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Algorithmic Governance under Digital Capitalism: A Critical Examination of a New Mode of Power Operation

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Abstract

Algorithmic governance has emerged as a novel mode of power operation in the era of digital capitalism. Grounded in advanced technologies such as big data, cloud computing, and artificial intelligence, it exercises comprehensive governance over individuals and society through mechanisms including data extraction, personalized profiling, and behavioral prediction. From a Marxist philosophical perspective, this paper offers a systematic and critical analysis of the technological foundations, operational mechanisms, and power logic of algorithmic governance. As a key instrument of digital capitalism, algorithmic governance enhances the precision and efficiency of social governance on the one hand, while generating a range of structural problems, including algorithmic bias and discrimination on the other hand, privacy infringement and pervasive surveillance, as well as new forms of human alienation. These problems reveal the inherent contradictions of digital capitalism and demonstrate the deep penetration of capital logic into social life through algorithmic governance, thereby highlighting the existential predicaments faced by individuals in the digital age. To overcome the dilemmas posed by algorithmic governance, it is imperative to uphold a people-centered approach, accelerate the development of legal and regulatory frameworks, enhance individuals' digital literacy, and construct a pluralistic model of collaborative governance. Only through such efforts can algorithmic governance be guided toward ethical ends and facilitate the harmonious advancement of both digital and social civilization.

Keywords: algorithmic governance; digital capitalism; digitalization; critique

Since the early twenty-first century, alongside the rapid development of the information technology revolution, capitalism has entered a new historical phase. The widespread application of intelligent digital technologies across various domains of social production and everyday life has profoundly transformed capitalist modes of production and social formations, giving rise to a new contemporary form of capitalism—*digital capitalism*. By reorganizing capital accumulation through digital logics, digital capitalism enables novel modes of surplus value appropriation and extends its reach into ideology and social life through mechanisms such as algorithmic governance. As a result, the digitalized social order has increasingly come to function as a form of "second nature"(Lin Q., 2024).

Algorithmic governance has emerged as a novel mode of governance under the conditions of digital capitalism. By relying on the computational and predictive capacities of algorithmic models, it exercises subtle and often imperceptible forms of control over living subjects, enabling the precise regulation and guidance of individual behavior in order to achieve governance objectives. Algorithmic governance not only embodies the developmental achievements of digital technologies but also reflects the deep penetration of capitalist logic into social life—what Jürgen Habermas famously conceptualized as the "colonization" of the lifeworld by instrumental rationality. Within the logic of algorithmic governance, autonomous and free subjects are increasingly reduced to datafied and homogenized symbolic objects, while concrete and substantive human needs are supplanted by virtual needs manipulated by digital capital. Algorithmic rationality thus obscures the

exploitative essence of capital, making processes of human alienation more concealed and less readily perceptible.

The rise of algorithmic governance within the context of digital capitalism not only manifests the comprehensive penetration of capitalist logic into society through digital technologies but also highlights the concrete predicaments confronting individual life in the age of intelligence. Guided by Marxism, a critical examination of the forms of digital existence shaped by algorithmic governance—together with an elucidation of the underlying logics of capital and power—holds significant theoretical value and practical relevance for grasping the essence of digital capitalism and, further, for exploring pathways toward the construction of a progressive and life-affirming form of digital civilization.

1. The power-operational model of algorithmic governance in digital capitalism

In the era of digital capitalism, algorithmic governance is emerging as a novel mode of power operation. Grounded in advanced technologies such as big data, cloud computing, and artificial intelligence, it exercises comprehensive forms of control and regulation over individuals and society through practices including data extraction, profiling, and behavioral prediction. In doing so, algorithmic governance profoundly influences and reshapes individuals' ways of life, modes of thinking, and value orientations.

1.1 The technological foundations of algorithmic governance: big data, cloud computing, and artificial intelligence

In the era of digital capitalism, the widespread application of big data

technologies provides a solid technical foundation for algorithmic governance. Characterized by massive volume, high velocity, and great variety, big data aggregates information from multiple dimensions, including social media activities, consumption records, and geolocation data, thereby rendering human beings themselves “a kind of resource”(Ignas Kalpokas, 2022). Through the collection, storage, cleaning, analysis, and mining of seemingly fragmented and heterogeneous data, big data technologies make it possible to uncover latent patterns, trends, and correlations. Relying on their powerful data-processing capacities, digital capitalist systems achieve panoramic sensing and highly precise prediction of individual behavior and social operations. In this sense, big data supplies algorithmic governance with abundant “digital raw materials,” enabling algorithms to continuously learn, optimize, and evolve from vast datasets, and thus to steadily enhance their capacities for analyzing, predicting, and guiding both individuals and society. Undoubtedly, the realization of algorithmic governance is inseparable from the robust support of big data technologies.

Cloud computing constitutes another crucial technological foundation for the implementation of algorithmic governance. By integrating vast computational resources over the Internet and delivering them in a service-oriented and flexible manner, cloud computing can meet diverse individual demands. On one hand, it enables the collection and aggregation of massive personal data dispersed across various devices and platforms, forming large-scale and multidimensional datasets that provide robust support for algorithmic profiling and behavioral prediction. On the other hand, the formidable computational power of cloud computing supplies the

necessary resources for the training and iterative refinement of complex machine learning algorithms, thereby allowing algorithms to efficiently underpin automated governance across society. The integration of cloud computing with algorithmic systems enables digital capitalism to leverage both data and computational power to permeate and govern multiple layers of social life.

The rapid advancement of artificial intelligence (AI) has provided algorithmic governance with powerful momentum. As a crucial branch of science and technology, AI aims to simulate, extend, and even surpass the boundaries of human intelligence—as exemplified by recent achievements such as ChatGPT. Significant progress has been made across theoretical exploration, methodological development, technological innovation, and practical applications. Currently, AI technologies represented by machine learning and deep learning have achieved revolutionary breakthroughs, enabling algorithms to autonomously learn from massive datasets, extract features, optimize models, and develop preliminary capacities for perception, cognition, decision-making, and execution. Digital capitalism skillfully leverages AI technologies to train a series of sophisticated intelligent algorithms capable of replacing human labor in various domains of social life and performing specific tasks. Empowered by AI, algorithms become increasingly intelligent, personalized, and autonomous, thereby rendering algorithmic governance more effective and dexterous.

1.2 The operational mechanisms of algorithmic governance: data collection, individual profiling, and behavioral prediction

As the primary stage of algorithmic governance, the collection of massive data

serves as both its foundation and prerequisite. In this process, digital platforms play a crucial role. Acting as a bridge between individuals and capital, these platforms provide diverse services to users while capturing the vast digital traces they leave in cyberspace, transforming them into valuable data resources. Data collection is often covert, continuous, and comprehensive; every action of individuals on digital platforms—whether actively shared or passively generated—is susceptible to algorithmic capture. As Nick Srnicek observes, the business model of platform capitalism extracts data from individuals, monetizes it, and then leverages this data to attract more users, thereby generating yet more data. It is precisely through the continuous accumulation of massive personal datasets that algorithms can exercise their powerful computational, analytical, and predictive capacities, driving transformations in social governance models.

Digital platforms leverage advanced artificial intelligence technologies to perform deep mining and intelligent analysis of massive datasets, thereby generating highly personalized individual profiles—an essential step in unlocking the value of data resources. Within the process of algorithmic governance, AI algorithms conduct comprehensive analyses of multidimensional personal data, precisely mapping individual characteristics and gaining deep insights into personal needs, transforming individuals from abstract symbols into “real, living persons.” The creation of personalized profiles provides a solid foundation for digital platforms to deliver targeted services. As scholars have noted, algorithms extract meaning from our digital traces, converting our traits, behaviors, and relationships into data points, which are

then assembled into targeted personal dossiers(Li Y. Q., 2022). The widespread application of personalized profiling technology furnishes critical support for digital capital to deeply understand individual needs and optimize resource allocation, establishing itself as a central fulcrum of algorithmic governance under conditions of digital capitalism.

While individual profiling delineates the contours of the self in virtual space, algorithmic governance is ultimately oriented toward the precise prediction of individual behavior, which constitutes its core operational mechanism. By further mining personalized profiles and employing deep learning algorithms trained on massive volumes of historical data, digital capital has become capable of making relatively accurate forecasts of individuals' future actions. On this basis, capital actors strategically deploy targeted advertising and personalized recommendations to subtly steer individuals toward choices and consumption practices that appear to align with their personalized preferences while simultaneously serving the imperatives of capital accumulation. Algorithmic technologies thus profoundly transform data resources into instruments of intensive surveillance and behavioral guidance. As a consequence, individual subjectivity is weakened, and individuals may unwittingly become executors of algorithmic strategies rather than autonomous agents.

1.3 The power logic of algorithmic governance: manipulation, discipline, and the shaping of the individual

Algorithmic governance, through the deep mining and analysis of vast data, precisely captures and predicts individuals' information and behavioral trajectories,

creating “digital portraits” of individuals and thereby manipulating their consciousness and actions. Digital capital, utilizing technologies such as algorithmic recommendations and personalized services, guides and shapes individuals’ thought patterns and decision-making behaviors, trapping them within the virtual environments constructed by algorithms. By reducing individuals to standardized data symbols, algorithms enable the comprehensive and meticulous classification and management of real persons, directing their behaviors. As one scholar points out, “Invisible ideological control and the manipulated collective unconscious have become the greatest concerns of the digital capitalist era”(Jiang Y. H., 2024).Driven by both digital technologies and capitalist logic, algorithmic governance covertly exercises precise control over individuals, thereby establishing a form of digital hegemony.

Algorithmic governance, as an intelligent governance tool, constructs a comprehensive digital disciplinary system by extensively collecting, deeply analyzing, and accurately predicting individual behavioral data. Compared to the “bodily discipline” traditionally imposed on workers in capitalist societies, this system introduces an additional dimension of “spiritual discipline.” Algorithmic analysis, as a novel source of cognition, challenges and reshapes traditional human modes of thinking. Under the influence of personalized algorithmic recommendations, digital laborers increasingly lose the freedom to choose their labor; their social attributes and individual characteristics are abstracted into a series of data labels, while different social statuses are obscured in digital space, giving rise to an algorithm-driven

disciplinary mechanism of “equality and freedom”. Beneath this seemingly neutral algorithm lies the operational logic of capital power, with digital discipline serving as a critical tool in shaping “docile individuals”.

As a covert and flexible governance strategy, algorithmic governance profoundly influences the form and cognition of individuals, shaping their perceptions and values. By transforming multidimensional information from real life into data symbols, algorithmic governance causes individuals to gradually lose themselves and their authenticity within the virtual experiences of the digital world. Capital, through algorithmic governance, deeply mines and analyzes vast amounts of data, gaining precise insights into individuals’ latent needs, and then subtly guides and shapes personal behaviors and thoughts through means such as personalized recommendations. Algorithms also capture and analyze individuals’ emotional data, thereby capitalizing on emotions(Zuo L. P., 2023). Capital deeply hijacks human emotions, reducing individuals to “emotional slaves” in the digital realm. The capitalization of emotions not only intensifies the alienation of individuals under capitalism but also erodes the genuine emotional bonds between people. Thus, emotional capitalism emerges as a new pathway for “shaping” individuals in the digital age. In short, individuals’ thought habits and value systems are imperceptibly reshaped by algorithmic governance, gradually transforming them into a form of digital existence that aligns with algorithmic logic.

2. The potential risks of algorithmic governance under digital capitalism

As a key tool of digital capitalism, algorithmic governance enhances the

effectiveness of social governance; however, it also harbors numerous risks and challenges, including algorithmic bias and discrimination, privacy violations and surveillance, as well as algorithmic manipulation and human alienation. These issues pose significant ethical, social, and political concerns, requiring careful consideration and regulation.

2.1 Algorithmic bias and discrimination: the illusion of technological neutrality

One of the major problems generated by algorithmic governance under digital capitalism is algorithmic bias and discrimination. Algorithms are by no means purely "neutral" technical entities that exist outside social structures and power relations. Technology is never neutral; rather, it constitutes a concrete manifestation and objectification of specific social relations and is ""highly dependent on the wider power relations, values and ideologies in society"(Jernej A. Prodnik, 2021). Algorithmic systems are inevitably embedded with the values and ideological orientations of their designers and users. Under digital capitalism, the capital logic of profit maximization profoundly shapes the design and implementation of algorithms, making it highly likely that existing social biases and forms of discrimination—such as those based on class, race, or ethnicity—are further entrenched and amplified through algorithmic modeling and application. It must also be emphasized that the data on which algorithms are trained are not inherently neutral or objective. Rather, they reflect human social activities, and their collection and processing are unavoidably influenced by prevailing power structures in society. The values and preferences of dominant social classes and groups are often directly inscribed in data

and subsequently learned and reinforced by algorithms. By contrast, the voices and needs of marginalized groups are more likely to be ignored or distorted in data representations, resulting in algorithmic governance that is structurally biased from the outset. Of particular concern is the way digital capitalism cloaks such biases and discrimination under the guise of technological neutrality, deploying algorithms as instruments of ideological legitimation. Algorithms are frequently portrayed as purely rational and objective mathematical models, a strategy through which capitalism obscures its power interests and misleads the public.

2.2 Privacy violations and surveillance: the inescapable digital panopticon

Algorithmic governance under digital capitalism harbors a novel mode of domination characterized by digitalized panoptic surveillance—what may be described, borrowing from Michel Foucault, as a form of "panoptic transparency." Humanity has thus entered what Shoshana Zuboff terms "the age of surveillance capitalism"(Shoshana Zuboff, 2019). Within this regime, capital relies on big data analytics and algorithmic technologies to comprehensively collect, store, and utilize personal information, constructing an all-encompassing digital surveillance network. This network not only captures behavioral traces in cyberspace but also extends into multiple dimensions of individuals' offline lives. With the widespread adoption of digital devices, such as smartphones and wearable technologies, capital can monitor individuals' locations, behavioral patterns, and even physiological data in real-time, subjecting personal privacy to unprecedented challenges. Sensitive information—including daily habits, social networks, and consumption choices—is

capitalized as a tool for profit extraction, often without individuals' awareness and with little possibility for effective resistance, thereby posing a serious threat to personal autonomy and freedom. Under conditions of digital panoptic transparency, individuals' words and actions, emotional expressions, and even ideological inclinations are rendered susceptible to precise algorithmic analysis and prediction. As individual profiling becomes increasingly refined, personalized information filtering and behavioral guidance grow more pervasive, gradually eroding individuals' freedom of choice. The algorithmically constructed "filter bubbles" impede the circulation of diverse viewpoints, leading to the contraction of public space, while individuals are increasingly reduced to passive objects exposed to the inescapable glare of "digital sunlight".

2.3 Algorithmic manipulation and human alienation: individuals tamed by algorithms

Through the collection, analysis, and application of big data, algorithms provide individuals with personalized services while simultaneously exerting subtle yet pervasive influence and control. In this process, individuals are imperceptibly "tamed", becoming "alienated subjects" shaped by algorithmic systems. Personalized recommendations and precision marketing selectively deliver information and advertisements by analyzing individuals' digital characteristics, thereby steering and reshaping their behavioral decisions. Beneath the surface of convenience, such services entail an erosion of individual autonomy, a tendency further intensified by the algorithm-driven logic of social media platforms. Under the dynamics of the

"attention economy", the seemingly diverse and vibrant content of social media is in fact the product of algorithmic optimization. This not only marginalizes rational and in-depth discourse but also compels individuals to continuously adapt themselves to algorithmic preferences in order to gain visibility, attention, and recognition. More seriously, the manipulative and alienating effects of algorithms exacerbate the digital divide and deepen social inequalities. Vulnerable groups located on the disadvantaged side of this divide are further deprived of voice and agency, increasingly relegated to the margins of digital society.

3. A critique of algorithmic governance under digital capitalism

Algorithmic governance constitutes a key governance strategy of digital capitalism. In essence, it represents the penetration and encroachment of capitalist logic into the domain of biopolitics. To critique algorithmic governance is therefore to expose the alienating logic of digital capitalism, to awaken individual subjectivity, and to resist the invisible forms of control exercised by digital capital.

3.1 An ideological critique of algorithmic governance: the false promises of digital capitalism

Algorithmic governance, centered on intelligent algorithms and enabled by technologies such as digital platforms and big data, allows the exploitative logic of capitalism to permeate every corner of social life. At first glance, algorithmic governance appears to offer new momentum for social progress and development through its efficiency, precision, and personalization. Yet these seemingly attractive promises in fact constitute a form of false ideology that conceals the exploitative

essence of digital capitalism.

First, algorithmic governance intensifies capital's exploitation and control of labor. In the sphere of digital labor, workers are rendered objects of data analysis and prediction and are disciplined by intelligent algorithms; even their everyday lives are subjected to comprehensive surveillance. As a result, individuals lose autonomy and creativity, becoming mere appendages of algorithms and instruments of capital accumulation. At the same time, algorithmic recommendation systems and personalized services further exacerbate consumer alienation by manipulating desires and behaviors and disseminating a consumerist culture.

Second, algorithmic governance deepens the digital divide and exacerbates social inequality(Yan K. R. & Li Y., 2023). By "profiling" and categorizing individual characteristics, intelligent algorithms construct digital hierarchies and forms of identity stratification. Digital capitalists who control data and algorithms dominate the allocation of market resources, while the vast majority of individuals are reduced to "captives" of algorithms and "slaves" to data.

Finally, algorithmic governance intrudes upon personal data privacy. Many digital platform corporations engage in large-scale collection, analysis, and utilization of personal data through algorithmic systems, seriously infringing upon individuals' privacy rights. Moreover, the opacity and autonomy of platform algorithms give rise to risks of data abuse and security vulnerabilities; once data breaches occur, personal privacy is transformed into openly exposed "public secrecy," posing threats to social stability and security.

In sum, through algorithmic governance, digital capitalism accomplishes a digital transformation of capitalist logic, extending exploitation and control into all domains of social life and turning algorithms into ideological instruments that sustain capitalist domination. Its purported promise of progress and development is, in reality, a concrete manifestation of exploitation and alienation.

3.2 A critique of the technological alienation of algorithmic governance: the extreme manifestation of instrumental rationality

Instrumental rationality is essentially oriented toward the maximization of utility, treating all objects as calculable and manipulable means while disregarding human subjectivity and intrinsic value. In the era of digital capitalism, instrumental rationality has been intensified to an unprecedented degree, particularly through the pervasive application of algorithms, by which both individuals and society are comprehensively quantified and instrumentalized, leading to a severe erosion of personal subjectivity and autonomy. Algorithms, which as productive tools ought to serve human ends, are instead appropriated by digital capital as embodiments of instrumental rationality and become alienated into instruments for dominating human beings.

Algorithmic governance subjects both individuals and society to comprehensive quantification through data, digitizing and symbolizing every aspect of personal life while remaining blind to the richness and diversity of the lifeworld and the vitality of the human spirit. Through data analysis and computation, algorithms monitor, predict, and control individual behavior and social processes, alienating human beings into

mere data sources and objects of application—passive "puppets on strings." This constitutes the first manifestation of instrumental rationality's intrusion into the lifeworld.

While pursuing the goal of utility maximization, algorithmic governance reduces interpersonal relations to data connections, negating the dimension of intersubjectivity and disregarding the emotional and ethical foundations of human interaction. As a result, affective bonds between individuals grow increasingly attenuated, and humane forms of communication gradually recede. The virtual, algorithmically structured digital world immerses individuals in the illusory gratification of online interaction while weakening their ties to the real world, fostering attitudes marked by aggressiveness in online discourse and even encouraging avoidance of face-to-face communication, which may in turn contribute to what is commonly described as "social anxiety." The algorithmic intrusion into interpersonal relations is quietly transforming the very nature of human interaction—this constitutes the second manifestation of instrumental rationality's colonization of the lifeworld.

As an extreme expression of instrumental rationality, algorithmic governance also disregards normative values such as holistic human development, fairness, justice, and freedom. Under algorithmic imperatives, efficiency becomes the overriding priority, while the demands of value rationality are relegated to secondary status. The historical data on which algorithms are trained often embed deep-seated social biases, and by reducing individuals to data symbols, algorithms neglect the uniqueness and comprehensive developmental needs of persons. Ultimately, this leads individuals to

lose the courage for independent thought and the space for personalized and all-round development. Digital technologies, having become instruments of capital's pursuit of profit, thus deviate from their original promise of fostering free and comprehensive human development. This constitutes the third manifestation of instrumental rationality's invasion of the lifeworld.

Taken together, these three manifestations demonstrate that algorithmic governance represents an extreme form of instrumental rationality in the contemporary era of digital capitalism and reveals the latter's underlying logic.

3.3 A critique of human alienation under algorithmic governance: new forms of alienation

As a novel form of power in the digital age, algorithmic governance not only reshapes the relationship between human beings and the world but also gives rise to new forms of human alienation. Under digital capitalism, human essence and the meaning of existence are being reinterpreted and redefined, while individuals increasingly appear to be reduced to prisoners of the digital images they themselves have created. Only through critical resistance can one break free from this contemporary "allegory of the cave" and return to an authentic sense of self.

Algorithmic governance renders individuals standardized and homogenized. As Johann Gottfried Herder once observed, each person possesses his or her own measure. Yet algorithms not only predict individual behaviors and needs through precise data interpretation but also deliver standardized services and content, drastically reducing the diversity of available choices and pushing individual behavior

and thought toward homogeneity. Through personalized recommendation systems, algorithms steer individuals into tailor-made "filter bubbles," in which the information to which they are exposed becomes increasingly uniform. This not only constrains individuals' epistemic horizons but also imperceptibly reshapes their worldviews and value orientations. Behavioral choices likewise begin to converge toward goals preconfigured by algorithmic logic, leading to the gradual erosion of individual differences.

At the same time, behaviors that deviate from algorithmically predefined norms are often subject to various forms of "penalty," further reinforcing behavioral conformity and homogenization. In sum, algorithmic governance precipitates the erosion of individuality and difference, transforming human beings into standardized and homogenized data points and, ultimately, standardizing and homogenizing the human subject itself.

Algorithmic governance renders individuals increasingly dependent and passive. From the perspective of subjectivity, algorithmic governance undermines human agency and autonomy. Relying on advanced algorithms, various digital platforms conduct deep mining and analysis of vast and complex datasets to provide individuals with customized information recommendations and decision-making support. As a result, individuals gradually develop a pattern of passive adaptation to algorithmic arrangements, accompanied by a decline in their capacities for independent thinking and autonomous choice.

While the intelligence and automation of algorithms do address certain practical

problems, they also cause individuals to progressively lose initiative in their interactions with algorithmic systems, slipping into a state of passivity. Under conditions of precise algorithmic recommendation and prediction, individuals often accept algorithmic selections uncritically, without reflecting on or questioning the underlying logic and value judgments embedded in algorithms. This weakens critical thinking abilities and, in turn, deepens individuals' dependence on algorithms, forming a self-reinforcing vicious cycle. In sum, as people become accustomed to relying on algorithmic recommendations and decisions, autonomy and independence gradually erode; individuals are shaped and manipulated by algorithms and ultimately reduced to appendages of digital power.

Algorithmic governance renders individuals partialized and fragmented. From a cognitive perspective, algorithmic governance intensifies the phenomenon of filter bubbles, leading to a progressive narrowing and distortion of individuals' cognitive horizons. By selectively pushing information based on personal preferences and historical behavioral data, algorithms construct a closed-loop information ecology that confines individuals' understanding of the objective world to increasingly limited frames.

From the perspective of temporal experience, algorithmic governance likewise generates problems of "fragmented attention," exacerbating the fragmentation of individuals' sense of time. In the era of digital capitalism, algorithm-driven information streams continuously stimulate human senses, making it difficult for individuals to sustain prolonged attention on a single object. As some scholars have

observed, the pace of information flows far exceeds the adaptive capacity of the human brain, resulting in a “poverty of experience”(Claudio Bueno, 2017). In this context, learning, work, and everyday life are broken down into fragmented temporal units, with individuals frequently switching between different applications and platforms, leaving little space for deep reflection or immersive engagement with life.

4. Coping strategies for algorithmic governance under digital capitalism

In the face of the various challenges and problems brought about by algorithmic governance under digital capitalism, it is imperative to actively explore effective responses. Marxism provides clear theoretical guidance in this regard: it is essential to uphold a people-centered orientation, focus on the all-round development of human beings, and promote the construction of a well-regulated, orderly, and pluralistic framework of algorithmic governance based on co-governance.

4.1 Establishing a human-centered approach to algorithmic governance: reshaping the relationship between humans and technology

A human-centered orientation constitutes the core of algorithmic governance. Establishing such an approach means fundamentally reshaping the relationship between human beings and technology, preventing algorithms from exerting oppressive or alienating effects on individuals, guiding digital technologies toward the common good, and fostering the free and comprehensive development of human beings.

Upholding a human-centered approach to algorithmic governance means taking the people’s aspiration for a better life as its primary principle and fundamental

objective. As General Secretary Xi Jinping has emphasized, “We must adhere to a people-centered development philosophy and implement the new development concept”(Xi J. P., 2022). This important statement provides clear normative guidance for algorithmic governance. Algorithmic governance is not an end in itself but a means; its ultimate purpose lies in enhancing people’s well-being. Accordingly, algorithms must be designed, deployed, and optimized on the basis of popular needs, so that the fruits of development are distributed more equitably and benefit the broadest segments of society. Particular vigilance is required to prevent algorithms from degenerating into instruments of capital accumulation and personal manipulation, ensuring that their operation aligns with the interests of the people and safeguards human subjectivity in the age of artificial intelligence.

Regardless of technological advancement, human beings remain primary, while technology is secondary. Adhering to the Marxist historical materialist perspective, algorithmic governance should take the free and comprehensive development of human beings as its fundamental standpoint, guaranteeing human primacy in technological relations and preventing technology from becoming an alienated force that dominates human life. At the same time, it is essential to promote a harmonious, symbiotic, and mutually beneficial relationship between humans and algorithms. While algorithmic governance has significantly enhanced social productive forces and injected new momentum into human development, its loss of control or misuse can also infringe upon individual rights and exacerbate the digital divide. A dialectical approach is therefore required: while fully harnessing the positive functions of

algorithmic governance, it is necessary to reaffirm a human-centered value orientation, strengthen interdisciplinary research, and promote collaborative innovation across fields such as artificial intelligence, neuroscience, and psychology. In this way, the humanization and personalization of algorithms can be continuously improved, ultimately realizing coordinated development and mutual benefit between human beings and algorithmic governance.

4.2 Improving the legal framework of algorithmic governance: strengthening accountability and regulation

To effectively address the various potential risks posed by algorithmic governance, it is essential to accelerate the improvement of the legal framework governing algorithms and to strengthen mechanisms of accountability and regulatory oversight.

Only by accelerating the improvement of the legal system for algorithmic governance, refining accountability mechanisms, innovating regulatory approaches, and strengthening international cooperation can algorithmic governance develop in an orderly and healthy manner. It is imperative to expedite the establishment of a dedicated legal and regulatory framework for algorithmic governance that clearly defines fundamental principles, normative boundaries, and legal responsibilities, thereby laying a solid legal foundation for the proper governance of algorithms.

Equally crucial is the improvement of accountability mechanisms in algorithmic governance. As a complex and systematic undertaking, algorithmic governance involves multiple actors, including algorithm developers, platform operators, and end

users. It is therefore necessary to clearly delineate the responsibilities and obligations of each party and to construct a collaborative governance framework characterized by shared responsibility and coordinated action.

In addition, innovation in regulatory approaches has become indispensable. As algorithms increasingly exhibit cross-jurisdictional, end-to-end, automated, and opaque characteristics, traditional regulatory models are no longer adequate for the demands of the intelligent age. Accordingly, regulatory concepts must be updated, regulatory instruments diversified, and the anticipatory, targeted, and effective capacities of oversight enhanced. Strengthening ex ante governance is particularly important, including the improvement of mechanisms such as algorithmic registration, review, and assessment, in order to prevent governance risks at their source.

Finally, reinforcing international cooperation in algorithmic governance is of vital importance. Algorithmic governance is inherently a global issue, and no single country can address all related challenges in isolation. It is therefore necessary to deepen dialogue and cooperation with other countries on the basis of mutual respect and win–win collaboration, jointly exploring international rules for algorithmic governance and collectively responding to shared challenges.

4.3 Cultivating individual digital literacy: enhancing autonomy and critical capacity

At the individual level, in the era of digital capitalism, it is essential to continuously enhance one's digital literacy and to strengthen autonomy and critical capacity, so as to discern directions within an increasingly complex digital

environment, make effective and reflective use of technology, and ultimately become an active participant in the construction of digital civilization.

Individuals must strengthen their understanding of and capacity to use digital technologies, cultivating autonomous consciousness grounded in independent thinking and rational judgment, while the state and society should create favorable conditions for the enhancement of individual digital literacy. Individuals should take the initiative to familiarize themselves with frontier technologies such as big data, artificial intelligence, and blockchain; master key skills including online information retrieval, information filtering, and data analysis; and enhance digital security awareness by learning how to protect personal privacy and data security and guard against cyber fraud and malware.

In a digital environment characterized by algorithmic recommendation and information overload, individuals are prone to losing their bearings and conforming unreflectively. It is therefore essential to uphold one's subject position and independent personality, adopt a cautious and critical attitude toward online information, and avoid blind following or credulity toward rumors. Individuals should learn to distinguish truth from falsehood, resist misinformation and "brainwashing-style" propaganda, and maintain clarity of judgment when confronted with algorithmically pushed content, adhering to sound values and ethical standards. Conscious opposition to cyberviolence and the maintenance of civility and friendliness in cyberspace are likewise crucial to ensuring that individuals do not lose themselves amid digital complexity. Moreover, individuals should penetrate the

capital logic underlying digital technologies and remain vigilant against their alienating effects on human subjectivity.

For governments and the state, it is necessary to strengthen top-level design and improve digital infrastructure so as to facilitate individuals' participation in digital life. At the same time, efforts to govern cyberspace should be intensified, including cracking down on illegal and criminal activities and fostering a clean and orderly online environment. Equally important is the reinforcement of digital education by incorporating digital literacy into the national education system and raising the overall level of digital skills across society. This can be achieved, for example, through the organization of diverse digital literacy training programs and practical activities aimed at enhancing individuals' digital competencies.

4.4 Building a collaborative governance mechanism with plural participation: leveraging the positive role of social forces

In the era of digital capitalism, traditional government-centered governance models are confronted with profound challenges. It is therefore imperative to fully mobilize the forces of society at large and to construct a new governance framework characterized by pluralistic participation and collaborative co-governance, in order to effectively address the complex challenges of social governance in the era of digital capitalism.

As a bridge between government and the market, social forces possess distinctive advantages in coordinating diverse interests and promoting social cohesion. Social organizations not only provide a voice for multiple interest groups and facilitate the

effective resolution of social conflicts, but also deliver diversified public services, thereby compensating for gaps left by government and market provision. In order to address the risks associated with algorithmic governance, it is necessary to construct a collaborative governance platform with pluralistic participation and to ensure smooth channels for social forces to engage in algorithmic governance.

Algorithmic governance is a systematic undertaking that requires the joint participation of multiple actors, including government, enterprises, social organizations, and the general public. By establishing mechanisms for dialogue and consultation, encouraging cross-sectoral cooperation, broadening participation channels, and strengthening capacity-building, it is possible to enhance societal awareness of and engagement in algorithmic governance and to foster a collective governance synergy. At the same time, it is essential to cultivate a positive and healthy public opinion environment in order to build broad social consensus.

Algorithmic governance not only bears on a country's long-term development but also directly affects the vital interests of every individual. Accordingly, strengthening public education, deepening media coverage, and making use of online platforms for interactive communication to raise algorithmic literacy and guide rational public participation are necessary conditions for constructing a collaborative governance mechanism with plural participation. In short, in the face of the challenges posed by algorithmic governance under digital capitalism, only by adhering to the principles of pluralistic participation and collaborative co-governance, actively leveraging the role of social forces, continuously improving legal institutions, and building open and

inclusive governance platforms can society effectively respond to algorithm-induced governance challenges, advance the modernization of algorithmic governance systems and capacities, and promote the harmonious development of digital civilization and social civilization.

5. Conclusion

In the era of digital capitalism, algorithmic governance has emerged as a novel mode of power operation. While it enhances the efficiency of social governance, it also gives rise to a range of pressing problems. Phenomena such as technological alienation, individual alienation, and the widening digital divide associated with algorithmic governance reflect the inherent contradictions of digital capitalism and underscore the deep penetration of capitalist logic into social life. Marxist philosophy offers a critical theoretical lens and a powerful intellectual tool for examining algorithmic governance and uncovering the underlying logics of capital and power that sustain it.

In confronting the challenges posed by algorithmic governance, it is imperative to adhere to a people-centered development philosophy, establish a human-centered approach to technological development, and reshape the relationship between human beings and technology so as to ensure human subjectivity in the age of artificial intelligence. At the same time, efforts should be accelerated to improve the legal framework of algorithmic governance, strengthen accountability and regulatory oversight, and provide solid institutional safeguards for its proper functioning.

At the individual level, continuous enhancement of digital literacy is essential in

order to strengthen autonomy and critical capacity, enabling individuals to become active participants in the construction of digital civilization. At the societal level, the positive role of social forces should be fully mobilized through the establishment of collaborative governance mechanisms with pluralistic participation, thereby forming a powerful collective force capable of addressing and ultimately mitigating the harms associated with algorithmic governance.

In confronting the challenges posed by algorithmic governance, it is imperative to adhere to a people-centered development philosophy, establish a human-centered approach to technological development, and reshape the relationship between human beings and technology so as to ensure human subjectivity in the age of artificial intelligence. At the same time, efforts should be accelerated to improve the legal framework of algorithmic governance, strengthen accountability and regulatory oversight, and provide solid institutional safeguards for its proper functioning.

At the individual level, continuous enhancement of digital literacy is essential in order to strengthen autonomy and critical capacity, enabling individuals to become active participants in the construction of digital civilization. At the societal level, the positive role of social forces should be fully mobilized through the establishment of collaborative governance mechanisms with pluralistic participation, thereby forming a powerful collective force capable of addressing and ultimately mitigating the harms associated with algorithmic governance.

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