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“Data Domination" and “Algorithmic Hegemony": How Can Human Subjectivity Be Restored

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Abstract

In recent years, with the continuous development of the fourth scientific and technological revolution, new-generation artificial intelligence technologies and intelligent algorithms have been widely applied in all aspects of human production and life. Against the trend of in-depth and intensive human-machine interaction, the development of capitalism has presented prominent digital characteristics: data has become the core means of production in the era of digital capitalism, and algorithms have become a tool for the exploitation of humans by data. This paper takes the epochal positioning of human subjectivity and the fourfold alienated relationship between data algorithms and humans as the starting point, to explore the path of the return of human subjectivity in the era of digital capitalism.

Keywords

Data and Algorithms; Human Subjectivity; Alienation.

1. Introduction

In the present era, major online platforms rely on algorithmic technology to precisely push content that matches users' needs, which involves the repeated analysis of data—the core element—in the algorithmic calculation process. The ideas and reflections generated by humans through the exercise of subjective initiative, as well as the needs and concerns arising from humans' objective material living needs, are increasingly bound by data and algorithms. These human wills and concepts are not only predicted and marketed, but also trap people in a cognitive cage in the online world for a long time. Dennis Lang once pointed out that "data is power" [1], which means that in today's digital capitalist society, whoever controls data becomes the owner of the means of production in the digital age, namely the digital bourgeoisie or digital rich. The digital bourgeoisie, which directly owns data—the means of production in the digital age—has become the ruler that exploits the digital proletariat, and the capitalist relations of production have undergone a digital transformation. "The bourgeoisie, wherever it has got the upper hand, has put an end to all feudal, patriarchal, idyllic relations." [2] The destruction wrought by capitalist private ownership, alongside the advancement of digitalization, has permeated every dimension of digital life, giving rise to a regime of "data domination". This regime threatens the very essence of human subjectivity,that is to say "free conscious activity as the species-character of man" [3].

2. Human Subjectivity and Its Epochal Positioning

2.1. The Theoretical Approach of Human Subjectivity

Chinese and foreign philosophers in history have carried out detailed discussions on the topic of human subjectivity. The specific connotation of human subjectivity can be divided into

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several main schools according to the positioning of the relationship between human subjectivity and the material world.

The first school elevates human subjectivity to an all-encompassing, humanist conception of the human being. The original expression of this school was put forward by the ancient Greek Sophist school: "Man is the measure of all things: of things which are, that they are, and of things which are not, that they are not. [4]" This concept expresses that the measure of all things depends on human beings, the standard of all things is determined by human beings, and human beings are the fundamental basis for measuring everything in the world. It is the first time in the history of philosophy that philosophical thinking was pulled from heaven to earth, and is regarded as the origin of Western humanist thought. After the dark Middle Ages, Europe once again raised the banner of humanism: the Renaissance solved the problem of what kind of secular life human beings should live, the Reformation solved the problem of what kind of religious life human beings should live, and the Enlightenment solved the problem of what kind of political life human beings should live. The humanist thought in modern times is concentratedly expressed in Descartes' interpretation of "Cogito, ergo sum I think, therefore I am". This humanist thought is essentially an expression of subjective idealism, where human subjectivity serves as the all-encompassing standard and the ontological basis for the existence of all things.

The second school reduces human subjectivity to a sensuous, intuitive human being abstracted within the phenomenal movement of spirit. This school mainly refers to mechanical materialism and objective idealism advocated by German classical philosophy, particularly Hegel's thought of "Absolute Spirit" and Feuerbach's humanistic materialism. For Feuerbach, sensuous being constitutes reality; what is real is necessarily sensuous. Religion is a perceptual thing, and human beings are also perceptual things, so he held that the essence of religion is the essence of human beings. He equated human subjectivity with an intuitive abstraction, and regarded all human morality, and will as perceptual phenomena, thus taking such phenomena as the essence of human subjectivity. Consequently, the human being in Feuerbach's materialism remains an abstractly sensuous, intuitively given entity. Hegel and the Young Hegelians argued that human beings correspond to God: the omniscience of God corresponds to human rationality, the omnipotence of God corresponds to human willpower, and the perfect goodness of God corresponds to human love. The return to reality of God's objective ideal existence is the essence of human beings, and the good qualities that human beings endow God with are mapped as the ideal infinity of human beings, projected onto the finiteness of the alienated God. Such human subjectivity is a movement of the Absolute Spirit, and still refers to a perceptual human being.

The third school identifies human subjectivity as real and concrete human beings, that is, human subjectivity from the Marxist perspective. Marx pointed out in Theses on Feuerbach that "But the essence of man is no abstraction inherent in each single individual. In its reality it is the ensemble of the social relations. [5]" This is an objective expression of human subjectivity. Marx gave a narrow definition of the essence of man: man is the ensemble of all social relations. Starting from the perspective of real sensuous human beings, he defined the essence of man by placing human beings in the objective conditions of social history, and thus human subjectivity is naturally clarified: human subjectivity is the different status of human beings in all social relations, that is, human beings in social practice. Marx also gave a broad definition of the essence of man, that is, "the essence of man is man himself" [6]. This is a definition of human beings from the humanistic standpoint, anti-religion and the perspective of the supreme value of human beings, which breaks through the defects of human subjectivity in previous idealism and mechanical materialism.

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2.2. The Contemporary Positioning of Human Subjectivity

With the continuous development of digital algorithm technology, capitalism has presented typical characteristics of digitalization and virtualization, and the discussion on human subjectivity should also move from the real world to the digital world. When considering the issue of human subjectivity in the digital age, we must adhere to the principle of human subjectivity established by Marxism, that is, "to be conceived as sensuous human activity, as practice" [7].

The digital bourgeoisie and the digital proletariat generated by digital capitalism are two contradictory and opposing classes. The digital bourgeoisie, which owns data as the means of production and algorithms as the ruling technology, will exploit the digital proletariat through digital labor. What people experience superficially is enjoying the convenience of the times brought by digital products, but in essence, it is a continuous process of digital labor that produces data. Such digital exploitation is more concealed than capitalist wage exploitation, and presents itself as the operating law of the digital age in intuitive phenomenology. Fundamentally, human beings under the "data domination" and "algorithmic hegemony" of digital capitalism are still human beings deprived of free and all-round development. The relationship between human beings and data algorithms has been alienated: human beings, as the producers of data algorithms, are alienated into "cloud serfs" of data algorithms; human beings, who should have been the subjects using data algorithms to facilitate their material life, have been reduced to appendages whose practice methods are prefabricated by data algorithms. In today's era of digital capitalism, human beings have lost their subjectivity in understanding and transforming the world through practice, as well as the dynamic role inherent in human consciousness.

3. The Alienation Between Human Beings and Data Algorithms

3.1. Analysis of the Alienation Between Human Beings and Data Algorithms

In the field of social production, "intelligentization has deepened the substitution logic of enabling technologies in the production field, not only further advancing technological substitution, but also generating intelligent substitution in the production field" [8]. Human production has undergone a historical transformation from mechanization to intelligentization, and with the development of this process, human subjectivity has been weakened layer by layer. On the one hand, large-scale mechanized production has replaced the original handicraft production, skilled workers have been forced to transform into mechanical workers, and the profit-driven nature of capital drives capitalists to expand investment in means of production, triggering a large-scale phenomenon of machine replacement of human labor. On the other hand, the science and technology developed by human beings have been continuously put into the field of mechanical production, accelerating the intelligentization of mechanical production. For example, the application of artificial intelligence in production can serve as the intellectual extension of human beings, and based on a certain degree of intelligent calculation of machines, machines have autonomy similar to that of the human brain. Large-scale manually operated machines have been upgraded to intelligent machines, mechanical workers have been forced to transform into intelligent engineers, and digital capitalism has not shed the shell of capitalism. It still triggers the phenomenon of artificial intelligence replacement of human labor in the process of expanded reproduction.

In the field of social life, "digital platforms often manage and control emotional workers through algorithms and data analysis" [9]. When people's simple life emotions are gradually predicted, and all their social life needs are precisely pushed by algorithms, it seems to be a concrete embodiment of the facilitation of people's lives on the surface, but essentially, the human-machine relationship between humans and algorithms has become a relationship of

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domination and being dominated. Superficially, people can freely choose different platforms and different networks for leisure, and meet diversified entertainment needs through digital networks. In fact, every browse and click of users is recorded as a piece of data, and numerous pieces of data accumulate into a digital profile. Algorithms then create a customized digital portrait for users, and platforms push content precisely according to users' preferences and concerns. When quantitative accumulation is reached over a period of time, an information cocoon will firmly trap people's lives. The ancient Greek philosopher Heraclitus once said that "you could not step twice into the same river", holding that all things are in eternal motion. In contrast, the information cocoon created by data algorithms for users means that "people always step into the same river": people are bound by their own needs, and by data and algorithms. Therefore, in essence, human beings in the digital world are truly deprived of freedom, and have completely reduced to walking corpses controlled by data algorithms.

At the level of human thinking, human beings and data algorithms present a dialectically integrated feature. The original intention of human beings to create data algorithms is to promote the intelligent development of the productive forces of human society, making the social life of human beings more controllable. However, under the development model of digital capitalism, data algorithms have become an uncontrollable force. The essence of human consciousness is the subjective reflection of the objective world, and its content must be the objectively existing material world. Human consciousness has created material data algorithms through the exercise of subjective initiative, and at the same time, data algorithms embody the subjectivity of human thinking, which makes data algorithms a unity of the objective reality of human practice and the subjective extension of human thinking. The more people rely on the great convenience brought by data algorithms to achieve full control, the more they suffer from the stagnation of thinking, which in turn leads to a loss of control. This scientific and technological crisis brought by digital technology has spread more intuitively from the field of production and life to the field of human thinking, and the technological revolution ultimately leads to a thinking revolution. Therefore, the public in the era of digital capitalism "must oppose the digital civilization of scientific and technological digitalization and algorithm prevalence that is 'towards control' popular in modern society, and establish a value orientation of 'towards resonance'" [10].

3.2. Characterizations of the Alienated Relationship Between Human Beings and Data Algorithms

First of all, this alienation is concentrated in the alienation between human beings and digital products. "The object which labour produces—labour's product—confronts it as something alien, as a power independent of the producer. [3]" On the one hand, human beings are separated from the products of their digital labor. The product of such digital labor is the data created by human beings, which is the core product in the era of digital capitalism. Through rule restrictions and user agreements, platforms allow digital capital to occupy data for free, and convert digital labor products into means of production as the fixed capital of the digital bourgeoisie. However, the public, as data producers, lose the right to possess, dispose of and benefit from the data, and even cannot fully export or completely delete their own data under the influence of the algorithmic black box. On the other hand, the data produced by human beings, after behind-the-scenes processing by algorithms, in turn becomes alienated data that dominates human beings. The richer the data, the clearer the digital portrait provided by the algorithm for users, and the more thorough the domination over data producers. The labor products produced by human beings have become a yoke around human beings themselves. In essence, human beings, as producers of data products, have been reduced to unpaid cloud serfs, and the fruits of their digital labor have been completely alienated into a capital force that dominates themselves.

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Secondly, this alienation is specifically hidden in the process of human beings' digital labor. In the era of digital capitalism, labor is no longer the embodiment of the free and all-round development of human's essential power, and human's digital labor is no longer a free act. "He does not affirm himself in his work but denies himself, does not feel content but unhappy, does not develop freely his physical and mental energy but mortifies his body and ruins his mind.3" On the one hand, the labor process of digital laborers is controlled by algorithms. Platforms use data algorithms to determine people's labor performance, labor rhythm and labor assessment. People labor for the labor target set by the algorithm, rather than for independently determined labor. Human beings have become passive executors of algorithmic instructions, a large amount of resource garbage required by algorithms floods the market, people's labor time is continuously accelerated by algorithms, and human initiative has become an appendage of algorithms. On the other hand, the boundary between labor and leisure has been completely eliminated. People have lost their own free time, and digital platforms have invisibly increased people's labor time, squeezing free time into rest time. The act of people taking rest is no longer to actively dominate their free time, but to recharge their batteries for better engagement in labor time. Essentially, all time has been completely reduced to labor time.

Thirdly, the essence of this alienation lies in the dissolution of human subjectivity. "Alienated labor alienates from man his own body, external nature, his mental essence, his human essence.3" On the one hand, the species-essence of human beings is free and conscious creative activity, while in the era of digital capitalism, human creation and thinking are dominated by the traffic of data algorithms. As creative subjects of data production, to submit to the traffic carnival of algorithms, people no longer pursue the depth and artistry of content, but copy the hot spots created by algorithms and launch homogenized assembly-line works. On the other hand, algorithms seal off people's cognitive ability through information cocoons, and match people's basic necessities of life through platform recommendation mechanisms. People increasingly trust the judgment of algorithms, shifting from referring to algorithms to submitting to them, and voluntarily give up the species-essence of self-decision-making and subjective initiative. People have increasingly become a Feuerbach-style "intuitive human being", and degraded into a "one-dimensional man" from Marcuse's perspective under the discipline of algorithms.In essence, data algorithms eliminate the species-essential distinction between human beings and things-in-themselves, affix quantifiable and digital data labels to human beings, and human beings lose their real subjectivity and become virtual data.

Finally,this alienation is the digitization of interpersonal relationships."In place of the old bourgeois society, with its classes and class antagonisms, we shall have an association, in which the free development of each is the condition for the free development of all. [11]" The "true community" proposed by Marx refers to the state of social relations between people. When data algorithms force human beings to be alienated from their own labor products, labor process and human species-essence, the social relations between people are also alienated accordingly. On the one hand, interpersonal communication is cut by data algorithms, and platforms have become the intermediary of interpersonal relations. People's social interaction on online platforms is veiled by algorithms, the direct relationship between people has been transformed into word matching between labels, and the emotional communication between people has finally been replaced by algorithmic symbols and become a piece of data recorded in the system. On the other hand, algorithms split the concept of social community, tearing it into one circle after another. People's communication with each other can only stay within the circle, and people in different circles cannot have complete communication. The natural harmonious state of human beings has been disintegrated into the opposition of circles by algorithms, creating online wars on the internet. The hot topics created by algorithms have become the cyber Balkan Peninsula that ignites the powder keg between circles, and human beings who should have been in a community have been alienated into isolated digital nomads.

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4. Three Key Paths for the Return of Human Subjectivity

The Global Initiative on Artificial Intelligence Governance issued by the Cyberspace Administration of China clearly states that "Artificial intelligence is a new field of human development." "Artificial intelligence governance concerns the future of all humanity, and is a common issue faced by all countries in the world. [12]" General Secretary Xi Jinping pointed out that "Science and technology have never had such a profound impact on the future and destiny of a country as they do today, and have never had such a profound impact on people's life and well-being as they do today. [13]" This shows that promoting the return of human subjectivity under the state of data domination and algorithmic hegemony needs to be viewed from the height of national strategy, which is a governance issue related to the destiny of all mankind, as well as a governance challenge that all countries need to work together to address.

First of all, we should take "legislation for science and technology" as the core concept, and build a rigid institutional regulation system, which is the fundamental prerequisite for ensuring the return of human subjectivity. To solve the dilemma of algorithmic black boxes and data abuse, we must accelerate the improvement of special legal norms in the field of digital technology, and promote the legalization of scientific and technological ethics. Through legislation, we should clarify the ownership of data rights, establish citizens' right to know, consent, correct and delete data, and draw the legal boundary of data collection, processing and transaction. In addition, we should establish an algorithm filing, review and evaluation mechanism, clarify the principles of fairness and transparency of algorithms, prohibit unethical technological applications such as algorithmic discrimination and algorithmic monopoly, restrict the expansion of technological power with legal systems, and build a legal guarantee for individual subjectivity.

Secondly, clarifying the boundary of the responsibilities of market entities is the core starting point for standardizing the operation of technology. As the main controllers of data and algorithms, technology enterprises and internet platforms should assume the main responsibility for technological governance, build an internal scientific and technological ethics review mechanism within enterprises, abandon the utilitarian technology orientation, and ensure that algorithm design and data application are in line with public interests and individual rights and interests. At the same time, we should improve the accountability mechanism for market entities, impose penalties on market entities that illegally abuse data and implement algorithmic hegemony, promote the return of technological application to the core value of "people-oriented", and adhere to the principle that the development of science and technology should benefit the people.

Finally, we should promote national digital literacy education and consolidate the foundation of social cognition, which is an important support for resisting algorithmic hegemony. "As the main body of data generation, every user should clearly realize the importance of data to their own privacy. [14]" The lack of public digital cognitive ability is an important social inducement for the penetration of algorithmic hegemony. The state should consider incorporating digital literacy, data security and algorithm ethics into the national education system, carry out science popularization education for all age groups, improve the public's cognitive level and discrimination ability of data risks and algorithm logic, break the public's passive acceptance state such as information cocoons and algorithm dependence, cultivate social subjects with rational digital cognitive ability, and lay a social cognitive foundation for the return of individual subjectivity.

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5. Conclusion

This paper has systematically investigated the crisis of human subjectivity in the era of digital capitalism, centering on the dual logics of data domination and algorithmic hegemony. Grounded in the Marxist theoretical perspective of real, concrete human beings and their practical subjectivity, this study traces the historical transformation of human subjectivity from the physical world to the digital space, and deconstructs the four-dimensional alienation embedded in the relationship between human beings and data algorithms.

The analysis shows that under the rule of digital capital, the alienation between humans and data algorithms presents a layered and deepening structure. At the level of labor products, data generated by users' digital labor is appropriated by the digital bourgeoisie for free, and human beings as producers are reduced to unpaid cloud serfs dominated by their own labor outcomes. At the level of the labor process, algorithmic management penetrates all aspects of work and life, blurring the boundary between labor and leisure, and turning individual time into an extension of capital accumulation. At the level of human essence, information cocoons and algorithmic dependence stifle free conscious creative activity, dissolve the subjective initiative of thinking and decision-making, and degrade human beings into one-dimensional existences attached to algorithms. At the level of social relations, algorithmic filtering and label matching replace direct emotional communication, disintegrating real community bonds and isolating individuals into fragmented digital nomads.

In response to this fourfold alienation, this paper constructs a three-dimensional path framework for the restoration of human subjectivity. First, rigid institutional regulation through science and technology legislation is the fundamental prerequisite: clarifying data property rights, standardizing algorithm operation, and restricting the expansion of technological power with the rule of law, so as to provide institutional guarantee for the realization of individual subjectivity. Second, clarifying the governance responsibility of market entities is the core starting point: urging platform enterprises to establish internal ethical review mechanisms, abandon the utilitarian orientation of traffic supremacy, and return technological development to the value orientation of benefiting people. Third, improving national digital literacy is the cognitive foundation: popularizing data security and algorithmic ethics education, breaking the passive acceptance state of algorithmic domination, and cultivating rational and autonomous digital social subjects.

Fundamentally, digital technology and intelligent algorithms are extensions of human essential power, not tools for capital to create new forms of exploitation. The return of human subjectivity does not mean negating technological progress, but re-establishing the human-centered value principle in the digital order, so that the development of digital civilization always serves the free and all-round development of human beings. In the context of the global governance of artificial intelligence, promoting the construction of a fair, inclusive and people-oriented digital society is not only the proper meaning of responding to the crisis of technological alienation, but also a common mission facing all mankind in the digital age.

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