THREE MORAL CHALLENGES OF SURVEILLANCE CAPITALISM IN THE METAVERSE

You Zhang*

Abstract: 2021 has been called the first year of the metaverse, which is an independent virtual digital world that is both imitative and transcendent to the real physical world. Many tech giants claim that this technological innovation will bring huge opportunities and dividends to society, but some critics believe that it will also pose challenges to the current social ethics. The important moral challenges may stem from the data issue posed by the metaverse, which is believed to build an unequal relationship between users and service providers due to data-intensive technologies such as VR. This paper argues that the unequal relationships in data have caused the typical consequences of what Zuboff calls surveillance capitalism and posed three major moral challenges to our society, including alienation, exploitation, and domination. According to the Marxist account, alienation and exploitation arise from the existence of digital labor and the monopoly of means of production in the metaverse, while by referring to the Republican account of liberty, the emergence of domination can be attributed to the inequality of data possession.

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* School of Law, Huazhong University of Science and Technology, China.

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INTRODUCTION

Many old-school people today lament that face-to-face communication has gradually moved away from us, especially during the COVID-19 pandemic of the past three years, when social distancing control policies made more people engage in online interactions. While ambitious businessmen are seizing the opportunity to promote a new concept that had long existed in the works of science fiction --the Metaverse. This concept was originally proposed by novelist Neil Stephenson in his novel *Snow Crash*. And it was subsequently brought to the film screen, the virtual world OASIS in the sci-fi movie "Ready Player One" must have impressed every movie fan, which presents an attractive blueprint for the Metaverse.

2021 has been called the first year of the metaverse. In March of that year, game developer Roblox went public, proposing in its prospectus the concept of the metaverse as a sustainable, shared 3D virtual space, while social media giant Facebook changed its name to Meta in October of the same year, demonstrating Zuckerberg's ambition to participate in the development of metaverse. On one hand, the transformative proposition of the metaverse is thought to bring great convenience to our lives in the fields of education, and healthcare, and will become a platform for leisure, office, and social shared by all of humanity.[1] On the other hand, many scholars have launched critical studies on the risks of the technical aspects implied.[2]

However, the influence of the metaverse would not be limited within the field of science and technology. According to Kranzberg's laws, "Technical developments frequently have environmental, social, and human consequences that go far beyond the immediate purposes of the technical devices and practices themselves, and technology can have quite different results when introduced into different contexts or under different circumstances".[3] It implies that amid technological development a "digital revolution" is creeping in, which will bring us about new power and political relations. Thus, this paper hopes to provide a preliminary analysis of the moral risks that the metaverse will pose, based on a few political philosophy theories. Since the metaverse is a complex concept, in the limited space of this dissertation I will focus my attention on three potential moral risks posed by the problem of data in the metaverse.

This paper is divided into four sections. Section I introduces the definition of the metaverse and the surveillance capitalism that exists in it. Sections II to IV will discuss how surveillance capitalism that exists in the metaverse will lead to three moral challenges: alienation, domination, and exploitation.

I.   METAVERSE AND SURVEILLANCE

There is no consensus on the definition of the metaverse, as it is something that is still in its infancy and "may shift at any time as it continues to be built and used".[4] Similarly，scholars also have different opinions on what challenges the metaverse will bring to our society.

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[1] See Sang-Min Park & Young-Gab Kim, *A Metaverse: Taxonomy, Components, Applications, and Open Challenges*, 10 Ieee Access 4209, 4225 (2022).
[2] For example, some scholar point out that "AR causes relatively high effort and mental demand compared to conditions without AR." Nanna Xi, et al, *The challenges of entering the metaverse: An experiment on the effect of extended reality on workload*, Inform Syst Front 659, 672 (2022).
[3] Melvin Kranzberg, *Technology and History: "Kranzberg's Laws"*, 27(3) Technol. Cult. 544, 545(1986) .
[4] Jooyoung kim, *Advertising in the Metaverse: Research Agenda*, 21 (3) J. Interact. Advert 141, 142 (2021).

For example, from a health perspective, some scholars argue that the metaverse will have a negative impact on individuals' physiology and psychology;[5] Other scholars are concerned about the accessibility of the metaverse, believing that it will exacerbate the inequality seen by different groups of people;[6] Some scholars have also focused their research on the issue of avatars, arguing that avatars in the virtual world will pose a influence to agent identity.[7] Besides, another controversial issue in the metaverse is the data issue, and existing research generally believes that the metaverse relies on a large number of sensors such as live microphones, cameras, and eye trackers to collect more sensitive information than traditional systems.[8] It puts metaverse users under more comprehensive surveillance than the real world, and this surveillance is believed to bring new power relationships. This paper will focus on the data issues, the ethical challenges of the metaverse due to data, and the surveillance it brings.

A. Definition of Metaverse

Some scholars view the metaverse as "a visual world that blends the physical world and digital world";[9] while best-selling author and businessman Ball considers it as "a massively scaled and interoperable network of real-time rendered 3D virtual worlds"; [10] Legal practitioners Burger-Smid views that "it is a set of interconnected, always-on virtual environments that allow a person to effectively transcend the physical world".[11] Although each of these person has their unique description of the metaverse, by way of summary we can find that they all agree that the metaverse is essentially a digital virtual world that is parallel to the real world but can interact with the real world.

The main disagreement on the definition of the metaverse lies in the characteristics of the metaverse. Mystakidis, for example, describes this virtual world in terms of a perpetual and persistent multi-user environment.[12] While Ball considers this virtual world as a persistent, real-time rendered 3D world.[13] Despite the wide variety of these adjectives, we can distinguish

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[5] According a survey, "some of the fatigue symptoms related to VR use, such as 'motion sickness, eye strain, headaches, nausea, and dizziness due to heavy VR headset'". Besides, many psychological effects (depression and anxiety, addiction, social isolation, and abstinence from real, physical life) would also occur in users of metaverse. Ghada Refaat El Said, *Metaverse-Based Learning Opportunities and Challenges: A Phenomenological Metaverse Human–Computer Interaction Study*, 12 (6) Electronics 1379, 9 (2023).

[6] For example, some scholars argue that "most VR headsets are currently designed for middle-aged adults, without considering the needs of people in the K-12 age range (4 to 18 years) or older individuals......The same applies for people with physical or sensory disabilities, but also for those with low levels of digital literacy skill". Matteo Zallio & P. John Clarkson, *Designing the metaverse: A study on inclusion, diversity, equity, accessibility and safety for digital immersive environments*, 75 Telematics Inf 101909, 7 (2022).

[7] *See* Do Yuon Kim et al., *Avatar-mediated experience in the metaverse: The impact of avatar realism on user-avatar relationship*, 73 J. Retail. Consum. Serv. 103382, 1-11 (2023).

[8] *See* Ghada, supra note 5, at 8; Yogesh K Dwived et al., *Metaverse beyond the hype: Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy*, 66 Int. J. Inf. Manage 102542, 8 (2022).

[9] Yuheng zhao, et al., *Metaverse: Perspectives from graphics, interactions and visualization*, 6(1) Vis. Inform 56, 56(2022).

[10] Matthew L. Ball, *Framework for the Metaverse*, MatthewBall.vc (Sep. 3, 2023, 4:23 PM), https://www.matthewball.vc/all/forwardtothemetaverseprimer.

[11] Ahmore Burger-Smidt, *The metaverse and data privacy: Will regulation keep up?*, Werksmans Attorneys (Sep. 3, 2023, 8:23 PM), https://www.werksmans.com/legal-updates-and-opinions/the-metaverse-and-data-privacy-will-regulation-keep-up/#:~:text=The%20metaverse%20is%20a%20set%20of%20interconnected%2C%20always-on,physical%20world%20is%20shared%20amongst%20all%20of%20us.

[12] Stylianos Mystakidis, *Metaverse*, Encyclopedia (Basel, Switzerland) 486, (2022).

[13] Matthew, *supra* note 10.

these features into two categories by deconstructing the term metaverse itself. The root "verse" stands for universe or world, while the prefix "meta" denotes transcendence. Features like Real-time, persistent, and multi-user let the user feel that they are engaging in a complete world rather than a physical world derivation. In other words, the difference between the metaverse and the traditional Internet is that the immersive performance of its content makes users feel that they are in a new space similar to the physical world. Another part of the features makes the metaverse different from the physical world, such as the digital feature, which makes the practice in the metaverse free from the limitations of the laws in the physical world. Therefore, it can be said that the metaverse is a transcendence of the physical world.

In short, this dissertation defines the metaverse as an independent virtual digital world that is both imitative and transcendent to the real physical world and can interact with the real world.

B.   Surveillance in the Metaverse

The existence of the metaverse and the novel experiences it brings us to depend on some key technologies or infrastructures. "The Metaverse is an end-users-oriented integration of various layers of Information Technology (IT), where Human–Computer Interaction (HCI) would be the core technology."[14] The main technologies include Extended Reality (XR),[15] the Internet of Things (IoT),[16] cloud computing,[17] and 5G communication.[18] But those technologies are also considered data-intensive, which means that their application will expand the scope of data collection and increase the amount of data collected. According to Bailenson's research, using a VR device for 20 minutes would leave 2 million unique body language records.[19] Due to the embodied nature of these devices, the data they capture is bound to have strong personal attributes; While Cloud computing makes the collection, processing, and application of these data out of the control of users.[20] So many scholars believe that this will pose a huge threat to personal privacy, for example, Wang argues that there may be a risk of

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[14] *See* Ghada, *supra* note 5, at 1.

[15] Extended Reality (XR) is one of the most crucial technologies in the metaverse, which can be subdivided into Virtual Reality (VR), Augmented Reality (AR), and Mixed Reality (MR) technologies. *See* Stylianos, *supra* note 12, at 487.

[16] Haptic Internet, a new type of IoT technology, is considered to have an important place in the metaverse. It is a project that allows humans and machines to interact with their surroundings in real time through haptics while on the move and within a specific spatial communication range. *See* Gerhard P. Fettweis, *The Tactile Internet: Applications and Challenges*, 9 (1) Ieee Veh. Technol. Mag. 64, 64-70(2014).

[17] "In industrial Metaverse applications, massive computational resources are consumed to build physically accurate simulation environments. Prospective consumer applications will also challenge computing power requirements...... An explosively growing number of digital assets are crowding into the Metaverse". In this context, cloud computing or cloud network flow technology can effectively reduce the computing and storage burden of local devices. *See* Yang Cai et al., *Compute- and Data-Intensive Networks: The Key to the Metaverse*, 2022 1st International Conference on 6G Networking (6GNet) 1, 1-8(2022).

[18] Due to the large communication load generated by the above technologies, fast and stable data transmission technology is essential for the metaverse. 5G technology is considered a necessary infrastructure for the metaverse, "5G wireless technology is the 5th generation of wireless technology. It provides wireless communication with almost no limitations." Simar Preet Singh et al., *Fog computing: from architecture to edge computing and big data processing*, 75 J. Supercomput 2070, 2082 (2019).

[19] *See* Jeremy Bailenson, Experience on Demand: What Virtual Reality Is, How It Works, And What It Can Do, n.p. (1st edition, 2018).

[20] It has been criticized for building a "digital enclosure" to prevent users from accessing their data. *See* Mark Andrejevic, *Meta-Surveillance in the Digital Enclosure*, 20 Surveil Soc. 390, 390(2022).

privacy invasion during the collection, transmission, processing, and storage process.[21]

In the metaverse, user data is continuously obtained and utilized by service providers through various sensors, which is summarized by contemporary scholars as "surveillance". The so-called surveillance refers to: "scrutiny of individuals, groups, and contexts through the use of technical means to extract or create information";[22] Or "gathering of some form of data connectable to individuals".[23] One of the most famous theories of surveillance is Foucault's so-called panopticism, which was used to analyze 17th-century models of social discipline.[24] As technological, business, and policy changes accelerate the flow of information, concerns about surveillance and privacy increase. In this context, Lyon proposed the concept of data surveillance, arguing that such surveillance would not only limit people's freedom but also create long-term social differences.[25] Since then, Zuboff has proposed the theory of surveillance capitalism based on the development of big data technology, analyzing how surveillance constitutes a new relation of production.[26] In the metaverse, this surveillance as a breach of privacy will continue and become a more serious problem. There are two main reasons for this.

Firstly, the object of surveillance has changed. In the real world, the subject being monitored is a physical person, while in the metaverse it is monitored both the physical person and the user's avatar in the virtual world. For real-world surveillance objects, due to the application of VR, AR, and other data-intensive technologies, the amount of data obtained by the metaverse has greatly increased, and the scope of data collected has also expanded. Egliston argues that those devices would collect the data including the user's behavioral characteristics like head and eye movement, the user's pulse, and breathing, and may also include the data of the surrounding environment.[27] Therefore, the metaverse will lead to an increase in the intensity of surveillance of users in the real world. Unlike the real world, where human information needs to be captured by sensors, the behavior of avatars in the metaverse is composed of data and inevitably leaves digital traces. While real-world individuals will be able to escape surveillance temporarily, avatars in the metaverse will be under ubiquitous surveillance by what Zuboff calls the Big Other. In other words, due to the data nature of the avatar, its monitoring can be continuous and uninterrupted.

Secondly, the means of surveillance have changed, and surveillance in the metaverse era is more automated, which has led to a reduction in the cost of surveillance. During the Cold War, the GDR's Ministry of State Security (also known as Stasi) was considered one of the most efficient intelligence services in the world, reportedly employing 274,000 people to Maintain its domestic surveillance system. But in the metaverse, the efficiency of data collection is greatly improved with the help of big data technology, which allows Meta to maintain its global business with only 70,000 employees. Thus, technological disruption usage

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[21] Yuntao Wang et al., *A Survey on Metaverse: Fundamentals, Security, and Privacy*, 25 Ieee Commun. Surv. Tutorials 319, 334-335 (2023).

[22] Gary T. Marx, Windows into the Soul: Surveillance and Society in an Age of High Technology, 20 (2016).

[23] Gary T. Marx, *Surveillance Studies*, International Encyclopedia of the Social & Behavioral Sciences 733, 733 (2015).

[24] *See* Michel Foucault, Discipline and Punish: The Birth of the Prison, 195-230 (2nd ed. 1995).

[25] *See* David Lyon, Surveillance as Social Sorting: Privacy, Risk and Digital Discrimination, 1-28 (2002).

[26] *See* Shoshana Zuboff, *Big other: Surveillance Capitalism and the Prospects of an Information Civilization*, 30 (1) J. Inf. Technol. 75, 75-89 (2015).

[27] *See* Ben Egliston & Marcus Carter, *Critical questions for Facebook's virtual reality: data, power and the metaverse*, 10 (4) Internet Policy Rev. 1, 9 (2021).

of new tools has just brought new "material artifacts, software, and automated processes" for observation.[28] Meanwhile, AI and big data technology have also brought about the reduction of surveillance costs, and when surveillance is included in commercial operations, this cost reduction will inevitably lead to an increase in its application. The next sub-section will discuss how commercially operated surveillance will reshape production relations.

C.   Metaverse and Surveillance Capitalism

Ubiquitous surveillance in the metaverse not only means that citizens' privacy is at risk, but it can lead to a more far-reaching influence on social and economic systems. Current research generally refers to this new system as "surveillance capitalism" or "data capitalism". Zuboff describes the former as a "new form of information capitalism that aims to predict and modify human behavior as a means to produce revenue and market control".[The] latter has been described as "a system in which the commoditization of our data enables an asymmetric redistribution of power that is weighted toward the actors who have access and the capability to make sense of information".[29] Taken together, these two similar theories (hereafter use "surveillance capitalism" to refer to them) aim to describe the fact that personal information has become a resource of economic value, and on this basis form a new capitalist operating model that profits through the "appropriation and commercialization of personal data".[30]

A further description of surveillance capitalism can be developed from the premise and mode of operation of its emergence. Data resourceization is the main premise of surveillance capitalism, which means that data has become a new means of production, which can be used to produce and create wealth on the one hand, and to gain political power on the other hand. Economically, the commercial value of data has been proven by many studies, such as a study that found that DDEM (Data-Driven Marketing Economy) added $156 billion in revenue to the U.S. economy and fueled more than 675,000 jobs in 2012 alone.[31] Other scholars estimate that the value of the 2.1 trillion pieces of monetizable content-personal data at the time of Facebook's IPO was about 5 cents per data point or around $100 per user.[32] The asymmetry formed in data control will also lead to the asymmetry of knowledge and power[33] since communication and information have been historically recognized as key sources of power.[34] Like factory machines and financial capital, personal data has become the means of production that generates profit and power in surveillance capitalism.

Zuboff describes the operation of surveillance capitalism in her book. When someone uses Google as a search engine, this produces a "behavioral surplus", this collateral data created by the users when they use the engine, including the keywords, the number and pattern of search terms, how a query is phrased, spelling, punctuation, dwell times, click patterns, and

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[28] Andrew B. Whitford, *Surveillance and privacy as coevolving disruptions: reflections on "notice and choice"*, 6 (1) Policy Des. Pract. 13, 16 (2023).

[29] Sarah Myers West, *Data Capitalism: Redefining the Logics of Surveillance and Privacy*, 58(1) Bus. Soc. 20, 20 (2019).

[30] Bernd Carsten Stahl et al., *Surveillance Capitalism*, Ethics of Artificial Intelligence 39, 39(2023).

[31] John A. Deighton & Peter A. Johnson, *The Value of Data: Consequences for Insight, Innovation & Efficiency in the U.S. Economy*, 77 (2013), https://www.ipc.be/~/media/documents/public/markets/the-value-of-data-consequences-for-insight-innovation-and-efficiency-in-the-us-economy.pdf.

[32] Jonathan Cinnamon, *Social Injustice in Surveillance Capitalism*, 15(5) Surveill Soc. 609, 614 (2017).

[33] Shoshana Zuboff, The Age of Surveillance Capitalism: The Fight For a Human Future at the New Frontier of Power, 311(2019).

[34] *See* Manuel Castells, *Communication, Power and Counter-power in the Network Society*, 1 Int. J. Commun 238, 238(2007).

location.[35] Companies like Google and Facebook "recognize the gold dust in the detritus of its interactions with its users and took the trouble to collect it up from what is often referred to as the 'data exhaust' ".[36] This data can be analyzed to provide a detailed profile of each user so that it has the ability to accurately predict users' behavior and judgment. Finally, this processed data is sold as a product to advertisers and helps them accurately advertise to consumers. [37] Advertisers are willing to buy this data because it could "nudges" —deliver a particular message to a particular person at just the moment when it might have a high probability of actually influencing his or her behavior—to make the consuming decisions advertisers expect.[38]

The metaverse has become a hotbed for surveillance capitalism because of the increased bargaining power of service providers in it. Due to increased regulation stealing user and personal information without a bottom line is no longer a good option. The process of obtaining personal information by the service provider is a transaction process, the user obtains the service for free or at a lower price, and the service provider obtains the user's personal information as a price.[39] In the real world, people need to provide less information and have more alternatives, such as the option to use cash if they do not wish to leave a record of their card purchases. But in the metaverse, these alternatives disappear, if you decline this deal, you may decline metaverse service.

Furthermore, due to "network effects", the more services the metaverse can offer and attract more customers, the greater people's dependence on it. When most people choose to accept the service, many of life's necessary activities move to the platform, this makes the rest of the people have to join to survive. With the development of the metaverse, it will involve almost all aspects of life, entertainment, office, etc., it is foreseeable that it will become an important public place for people's social participation in the future, and the lack of social participation is considered to have a negative impact on personal physical and mental health.[40] So in this case, metaverse service providers have gained monopoly-like status, making their bargaining power with users greatly enhanced, and many users have to make deals with it despite not liking its data policy.

This section argues that surveillance, and surveillance capitalism, will continue to exist and be further strengthened in the metaverse. This fact also implies that the metaverse has many moral challenges, and the following discussions will be made around three of the main moral hazards – alienation, exploitation, and domination.

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[35] *See* Paul Michael Garrett, *'Surveillance Capitalism, COVID-19 and Social Work': A Note on Uncertain Future(s)*, 52(3) Brit J. Soc. Work 1747, 1749(2022); Also *see* Shoshana *supra* note 33, at 67.

[36] Shoshana, *supra* note 33, at 68.

[37] According to a study, "Google ads were wildly successful as a means for monetizing the company's search business: By perfecting an auction model for pricing and selling ads, its revenues grew rapidly with year on year growth rates in advertising revenues of 514% in 2002 and 246% in 2003." Sarah *supra* note 29, at 32.

[38] *See* Shoshana, *supra* note 33, at 77-78; Aron Darmody & Aron Darmody, *Manipulate to empower: Hyper-relevance and the contradictions of marketing in the age of surveillance capitalism*, 7 (1) Bd & S. 205395172090411, 3(2020); José Van Dijck, *Datafication, dataism and dataveillance: Big Data between scientific paradigm and ideology*, 12(2) Surveill Soc. 197, 200(2014).

[39] *See* Shoshana *supra* note 33, at 212.

[40] Nikhil Venkatesh, *Surveillance Capitalism: a Marx-inspired account*, 96(3) Philosophy 359, 381-382(2021).

II.   ALIENATION IN THE METAVERSE

One of the risks that surveillance capitalism creates in the metaverse is alienation. In the Marxist critique of capitalism, labor alienation is an influential argument, which Marx elaborated in his *Manuscript of Economics and Philosophy in 1844* As a form of capitalism, surveillance capitalism may also have alienation problems, but its specific form should vary according to the social context. Therefore, this section will also analyze the hidden alienation risks in the metaverse in combination with the "digital labor" theory proposed by contemporary scholars.

A.   Marx's Account of Alienation

The general concept of alienation is considered to be a description of a social or psychological problem, "a problematic separation between a self and other that belong together".[41] The word alienation originated from the Latin noun alienatio, which means "take away", or "remove".[42] This concept was originally used to refer to an individual's estrangement from God, the legal transfers of ownership rights, and mental derangement, and later it was first introduced to philosophical discussion by Social contract theorists.[43] Inspired by Hegel, who is considered to be the creator of the concept of alienation that we are familiar with,[44] Marx argued that "man does not experience himself as the acting agent in his grasp of the world, [the world] stand above and against him as objects, even though they may be objects of his own creation".[45] In Marx's concept of alienation, there are two main contents, the first is objectification, where part of the subject is separated from the subject and becomes the object; The second is domination, where the external object has power over the subject.

In the *1844 manuscript,* Marx discussed in detail how alienation manifests itself in labor and division of labor. He argued that the capitalist division of labor would lead to the problematic separation of man as subject from four objects: the product, the process of labor, the species-being, and fellow humans. It has been argued that there is an internal causal relationship between these four alienations and that the alienation of the labor process is the initial cause of the other three alienations.[46] Marx believed that in the process of labor, "labor is an external thing to the worker...he does not affirm himself but denies himself in labor...to torture himself physically and destroy his spirit".[47] The proletariat, who has gained formal freedom in capitalist society, has nothing but their labor, so they can only choose to sell their labor to capitalists for a living.[48] They can only engage in mechanical and tiring labor when the process of labor is no longer a free and self-fulfilling process for the proletariat, but out of their control and becomes a tormenting force of aliens.

The direct consequence of the alienation of the labor process is the alienation of the

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[41] David Leopold, *Alienation*, The Standford Encyclopedia of Philosophy, (Sep. 7, 2023, 11:18 AM), https://plato.stanford.edu/entries/alienation/.

[42] Hamid Sarfraz, *Alienation: a theoretical overview*, 12 Pak. J. Psychol. Res. 45, 45(1997).

[43] Those theorists included Grautius, Hobbes, Locke, and Rousseau. *See* David *supra* note 41; *Id.* at 46.

[44] *See* Erich Fromm, Marx's Concept of Man 47(2004).

[45] *Id.* at 44.

[46] *See* Xiaomang Deng, *laodong yihua jiqi gengyuan [Labor alienation and its source]*, 1983(03) Zhongguo Shehui Kexue 155, 155(1983).

[47] Karl Marx, Karl Marx: Selected Writing 85 (David McLellan ed. 2nd ed.2000).

[48] *See* G. A. Cohen. On the Currency of Egalitarian Justice, and Other Essays in Political Philosophy, 163–182 (1st ed. 2006)

products of labor. Marx argues that in the wages labor system, "wages, therefore, are not a share of the worker in the commodities produced by himself. Wages are that part of already existing commodities with which the capitalist buys a certain amount of productive labor-power".[49] This means that the product of labor condensed by the labor of the worker does not belong to the worker, but becomes a separate object.[50] Moreover, the product of labor became a dominant force hostile to the workers. Marx argued that "[t]he worker becomes all the poorer the more wealth he produces...... The devaluation of the world of men is in direct proportion to the increasing value of the world of things".[51] These products flow back into the hands of workers in the form of commodities, who have to spend money to buy the goods they need to survive, demonstrating the domination of the product over its subject.

The remaining two forms of alienation are the result of alienated labor. Non-alienated labor is a "free conscious activity",[52] and this is a characteristic of human beings, hence what Marx called the species-being of human beings. In capitalist society, workers cannot freely and consciously participate in labor due to the pressure of survival, and can only use labor as a means of maintaining physical survival. In other words, alienated labor becomes an obstacle to the development of unique human abilities. Meanwhile, once the worker sees his species-being as a means to an end, he necessarily sees others as a means to an end. Capitalists see workers as a means to profit, while workers must compete with each other for the chance and price of labor.[53] So the otherwise united humans become mutually isolated individuals, and each individual opposes the others to increase their own interests.

B.   Digital Labor in the Metaverse

Marx's above statement is based on his observation of industrial capitalist society in the 19th century, but it seems difficult to find an obvious wage labor relationship between the platform and users of the metaverse, which seems to mean that the theory of labor alienation is difficult to apply in it. Users seem to act as consumers rather than a producer in the metaverse, since they exchange money for goods and services entering the metaverse, such as buying VR equipment, buying special decorations for their avatars, and so on. But as far as today's free social media situation is concerned, social media platforms are very welcoming to more users to accept their free services, which seems to mean that the platform is profitable in the process of users enjoying online services. Some scholars refer to this user online activity as "Internet prosumption",[54] or "consumption work",[55] to reveal the two-way interest relationship between users and platforms.

Fuchs uses the concept of "digital labor" in its book to refer to the process of users creating value for Internet platforms.[56] Its labor takes the form of unpaid activities of users, such as generating and sharing content, interacting with others, and contributing data. From the

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[49] Karl Marx, *Wage Labour and Capital*, 45 (2) Ninet. Century Prose 319, 320(2018).

[50] *See* Dan Smith Swain et al., The Oxford Handbook of Karl Marx, 363(2019).

[51] Karl, *supra* note 49, at 86.

[52] Karl, *supra* note 47, at 90.

[53] *See* Jan Kandiyali, *The Importance of Others: Marx on Unalienated Production*,130(4) Ethics 555, 562(2020).

[54] *See* George Ritzer & Nathan Jurgenson, *Production, Consumption, Prosumption: The nature of capitalism in the age of the digital 'prosumer'*, 10(1) J Consum Cult. 13, 13(2010).

[55] *See* Ursula Huws, *The reproduction of difference: gender and the global division of labour*, 6(1) Work Organisation, Labour and Globalisation 1, 4(2012).

[56] *See* Christian Fuchs, Digital Labour and Karl Marx 246 (1st ed. 2013).

accumulation logic of surveillance capitalism above, we can know what the Internet platforms have in common is that "they use a business model that is based on targeted advertising and that turn users' data (content, profiles, social networks, online behavior) into a commodity."[57] These data as commodities must have their producers, and these data are records of the user's online activities, which could be recognized as the production process of their personal data. Digital labor takes ideas and human subjectivity as the object, users externalize it through action or choice, and it is fixed in the form of personal data formed as a product.

Digital labor will be widespread in the metaverse for two main reasons. First, the metaverse aims to build a durable, and immersive virtual space, which means that it is designed to entice users to spend more time in it with more concentration. According to a survey, in Web 2.0, the time people access the Internet through mobile phones or computers has reached about 6 and a half hours per day in 2022.[58] The metaverse is believed to be more attentive to users than Web 2.0, and some scholars have proposed the concept of immersive time (ImT), which is the conscious, deliberate, and dedicated time spent using a headset and other accessories to continually engage in the metaverse.[59] When a user surfing the traditional Internet, he is still able to engage in other activities and multitasking (like talking with others), while the user's metaverse experience is almost completely disconnected from the real world and they could focus solely on the virtual experience. It is precisely because of this characteristic that many people who are disappointed with the real world choose to spend more time in the metaverse to escape reality.[60]

Second, the metaverse has the idea that it should be decentralized and emphasize user-generated content (UGC). These characteristics mean that metaverse users are not only experienced in this virtual world but should be builders or even regulators. Therefore, metaverse users will be encouraged to participate in the creation of metaverse content more frequently, which increases the actual data labor workload of metaverse users. In short, both immersive experiences and UGC in the metaverse make users spend more energy in the metaverse. While users experience the metaverse, they also participate in digital labor, and in the process, there is also a risk of alienation due to the separation of personal data from their creator, which will be discussed in detail in the next section.

C.   Alienation in the Metaverse

First of all, the process of users logging in and experiencing the metaverse in the metaverse replaces the traditional labor process. Therefore, the alienation of digital labor in the metaverse originates from this alienation of metaverse experience. The first thing to acknowledge is that there is a non-alienated metaverse experience, which is an experience driven by individual free will and self-realization.[61] For example, when we crave social, we

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[57] *Id*. at 247.

[58] *See* Simon Kemp, *Digital 2023: Global overview report*, Datareport, (Sep 8. 2023, 10:44 AM), https://datareportal.com/reports/digital-2023-global-overview-report.

[59] *See* Emmanuel Mogaji et al., *Immersive time (ImT): Conceptualizing time spent in the metaverse*, 72 Int. J. Inf. Manage. 102659, 2(2023).

[60] *See* Andrew Kuo et al., *Brave new World of Warcraft: a conceptual framework for active escapism*, 33(7) J. Consum. Mark. 498, 498(2016); Dai-In Danny Han et al., *Virtual reality consumer experience escapes : preparing for the metaverse*, 26(4) Virtual Reality 1443, 1443-1458(2022).

[61] Kandiyali define fully unalienated production as "work that (1) involves self-realization, that is, the exercise, development, and manifestation of our individual powers; (2) satisfies another's need; (3) is conducted with the

can chat with people from all over the world through the metaverse platform, and when we need entertainment, we choose to immersively experience the variety of games in the metaverse.

However, marketing practitioners have recognized that the more people stay online, the more this surfing time gives them access to data about consumers, and the more they can serve consumers with marketing messages.[62] The current operators of social media and online games have adopted this strategy. For example, *Fortress Night*, which is considered to be one of the video games closest to the metaverse, is set up with daily tasks. Players can get rewards if they log in to the game every day and complete certain tasks, which incentive ensures the number of daily online players. There is a study that predicts that intensifying the feeling of embodiment in the metaverse will make the metaverse more addictive than the traditional Internet,[63] which will make the metaverse experience no longer guarantee the self-realization or autonomy of the user. Addiction not only frees the metaverse experience from the control of the subject, but also has many adverse effects on the subject's physical and mental health, like mental illnesses such as isolation and anxiety, and physical health issues such as cyber sickness, eye soreness and trouble focusing, impaired hand-eye coordination, reduced depth perception, increased reaction time, loss of balance, and prolonged nausea.[64]

The alienation of individual experiences in the metaverse will directly lead to the alienation of their products – personal data. Users would generate vast amounts of personal data in the metaverse, much of which is described as "exhaust" because it is useless to users. However, Venkatesh believes that these personal data, such as users' likes on Facebook, search records on Google, etc., have become a digital commodity with huge economic value.[65] Huge profits drive internet companies to grab a lot of personal information, just as Zuboff argues that "Google knows far more about its users than they know about themselves".[66] Consequently, this sensitive data is out of the control of its subject and becomes the asset of the data company, with Facebook reportedly owning $97.7 billion in assets in 2012 in the form of 2.1 trillion pieces of user personal data.[67] Even more troubling is that in the endless data grabbing, Internet platforms have acquired asymmetrical control over personal information, which allows platforms to provide us with more sophisticated and personalized advertising[68]. Many users are unconsciously influenced by personalized advertising to make decisions that benefit advertisers. Therefore, personal data in the metaverse is not only separated from its subject but increasingly becomes a force opposed to its subject.

The alienation of digital labor in the metaverse will also lead to the alienation of species-being. This means that many times the user's experience of the metaverse does not develop its ability as a quasi-essence, but only as a means to other ends. From the previous discussion, digital labor is a kind of labor like agricultural farming and industrial manufacturing,

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intention of satisfying another's needs; (4) is used and appreciated by that other; and (5) is performed freely". Jan, *supra* note 53, at 571.

[62] *See* Emmanuel, *supra* note 59, at 4.

[63] Miguel Barreda-Ángeles & Tilo Hartmann, *Hooked on the metaverse? Exploring the prevalence of addiction to virtual reality applications*, 3 Front. Immunol. 1, 1-9(2022).

[64] *See* BEIS, *The safety of domestic virtual reality systems: A literature review*, Gov.Uk, (Sep 9. 2023, 4:51 PM.), https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/923616/safety-domestic-vr-systems.pdf.

[65] *See* Nikhil, *supra* note 40, at 366-367.

[66] Shoshana, *supra* note 26, at 83.

[67] *See* Jonathan, *supra* note 32, at 614.

[68] *See* Mark Andrejevic, *Surveillance in the Digital Enclosure*. 10 (4) Communication Review 295, 313 (2007).

so Focus argues that "information creation is itself a work process...... digital work on social media is a specific form of informational work".[69] Just like labor, experiencing the metaverse freely and consciously is considered non-alienated participation, receiving medical training, distance education, etc. are believed to foster a relaxed and creative learning culture that is inclusive, active, and experimental,[70] as well as improves cognitive processing, mental elaboration, and imagery ability.[71] However, social demands and fears of isolation often push users to experience the metaverse as a means rather than an end. In an information society, digital media has become an important means of communication for many people. "Isolation of an individual from communication and social networking will ultimately result in either death or an animal-like existence."[72]

Finally, users' alienation from their fellow humans is also a broader social consequence in the metaverse. This happens both between metaverse service providers and users, as well as between users and users. As far as the former is concerned, Zuboff monitors the relationship between surveillance capitalists and users as a "formal indifference".[73] Because in surveillance capitalism, surveillance capitalists only need to hire a few technicians, they do not depend on the support of a large number of users, so they do not have to pay as much attention to the interests of users as traditional capitalists consider the welfare of workers. In addition, in Focus's case study of Facebook, he noted that "alienation of the instruments of labor also means in the context of Facebook that the users do not own and control the platform".[74] Therefore, in the metaverse, the reciprocity between the platform and the user will be weakened, and the user will become a means for the platform to make profits.

In the case of the latter, since everyone can shape themselves through their digital avatars and digital properties, the relationship between users in the Metaverse will be hidden behind the veil of data. This brings us to Marx's theory of commodity fetishism, since commodities and people have a direct social connection, while people and people are indirectly connected, the relationship between people is obscured by the relationship between people and things.[75] Data in the metaverse is likely to become a new fetish due to its status as a necessary medium for communication, and the alienation between humans behind it is believed to cause addiction, social isolation, and abstinence from real, physical life.[76] A Metaverse user with gorgeous fashion may be sought after by everyone. And humble virtual dwellings may be despised by neighbors. This will cause many people to compare their virtual properties, such as the fanatical worship and pursuit of game currency or game equipment by players in online games.

In summary in a metaverse that is still fostered by surveillance capitalism, users will inevitably face alienation from their data, their behavior, their species-being, and fellow humans. Such alienation would undoubtedly be a moral risk of the metaverse itself and hinder

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[69] Christian, *supra* not 56, at 250, 254.

[70] *See* Stylianos, *supra* note 12, at 490.

[71] *See* Vanja Bogicevic et al. *Virtual reality presence as a preamble of tourism experience: The role of mental imagery*, 74 Tourism Manage. 55, 56(2019).

[72] Christian, *supra* not 56, at 254.

[73] Shoshana, *supra* note 26, at 76.

[74] "After Facebook's initial public offering, its 12 executive officers and directors controlled together 61.1% of the class B stock (Facebook Registration Statement, Form S-1)." Christian, *supra* not 56, at 256.

[75] *See* G. A. Cohen, Karl Marx's Theory of History: A Deference, 115-133(1979).

[76] *See* Mel Slater et al., *The Ethics of Realism in Virtual and Augmented Reality*, 1 Front. Virtual Real 1. 7-8 (2022).

the pace of human self-realization and prosperity.

III.   EXPLOITATION IN THE METAVERSE

Surveillance capitalism in the metaverse will not only cause the challenge of alienation but also have another major drawback of capitalist society, that is, economic exploitation between opposing classes. Marx constructed his theory of exploitation through the theory of surplus value, which this section combines with the aforementioned theory of digital labor to discuss the potential risks of exploitation in the metaverse.

A.   The Marxist Account of Exploitation

Exploitation is a very controversial concept, with Kymlicka arguing that the ordinary definition of exploitation is "taking unjust advantage of others".[77] However, different political philosophical theories have different views on the definition of unjust. It has also been argued that exploitation does not necessarily mean injustice, and that exploitation is unjust only when it is conditioned by other conditions -- such as violating the freedom or other rights of others.[78] Vrousalis summarizes the general structure of exploitation as "A exploits B if and only if:(1) A benefits, (2) from a social relationship with B, and (3) by taking advantage of B".[79] This deconstruction can be applied to most accounts of exploitation, including the Marxist accounts of exploitation referred to in this section.

Marxist account of exploitation refers specifically to the value (in the form of a product) extracted by the capitalist from the worker's labor, over and above the remuneration (in the form of a wage) for the worker's labor.[80] Marx argues that in the commodification of labor in a capitalist society, workers are free to sell their labor, so workers and capitalists are in a relationship of wage labor. In addition, capitalists only employ workers when they can extract "surplus value" from them, so the capitalist can obtain the benefits produced by the workers in the labor. Finally, taking advantage means "A does that by taking advantage of certain important features of B, features that are central to B's person, her life or well-being".[81] The reason this non-reciprocal surplus value transfer can exist in the free exchange of labor markets is that the "worker, whose only source of income is the sale of his labor-power, cannot leave the whole class of buyers, i.e., the capitalist class".[82] Returning to Vrousalis' structure, Marx's account of exploitation can be summarized as follows: capitalist gain surplus value from wage labor, by taking advantage of worker's lack of means of production.

Of the above three points, in addition to the fact that the employment relationship is easier to understand, the other two points are worth further description. First, the theory of surplus value argues that the worker's one day can be divided into two parts, The worker gets paid for his labor in the first part of the day in the form of a wage, when a reciprocal relationship is maintained between the worker and the capitalist. In the rest of the day, however, he keeps

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[77] WILL KYMLICKAM, CONTEMPORARY POLITICAL PHILOSOPHY : AN INTRODUCTION, 178 (2nd ed. 2002).

[78] *See* Allen Wood, *Unjust Exploitation*, 54 (S1) SOUTH. J. PHILOS 92, 92-93(2016).

[79] *See* Nicholas Vrousalis, *Exploitation: A primer,* 13(2) PHILOS. COMPASS.e12486, 1-14 (2018).

[80] Will, *supra* note 77, at 177-187.

[81] Nicholas, *supra* note 79, at 2.

[82] Karl, *supra* note 49, at 9.

working but gains no pay. His labor during this time is called "surplus labor".[83] The value of the product produced in the "surplus labor" is called "surplus value". Exploitation is the process of transferring this "surplus value" from the worker to the capitalist without compensation, and this transfer is considered to be non-reciprocal -- it is A receiving something from B without giving an equivalent in return.[84] Thus, the Marxist account of exploitation holds that capitalists benefit from surplus value.

Marx believed that, in fact, workers' labor under capitalism was neither truly voluntary nor entirely for the benefit of the workers themselves. It is not truly voluntary, because workers are forced. After all, they lack ownership of the means of production.[85] The means of production are all the material conditions necessary for people to engage in the production of material materials, that is, the sum of the means of labor and the objects of labor, which can generally include land, plant, machinery and equipment, tools, raw materials, and so on. Productivity can only be generated if labor and means of production are combined. In capitalist society, workers control only their own labor, while the means of production are monopolized by capitalists, so workers cannot complete production alone, but need to sell their labor power.[86] Thus, capitalists enjoy an advantage in the labor market by virtue of their possession of the means of production.

B.   Instruments of Production in the Metaverse

Although we discussed earlier that there is a new form of labor in the metaverse - digital labor, this is still not enough to prove that there is Marx's account of exploitation in the metaverse. Certain conditions need to be met for exploitation to exist, and Roemer lists three points in his paper: (1) unequal ownership of the capital stock, (2) labor markets, and (3) scarcity of capital relative to the labor available for employment.[87] From the previous discussion, similar to the traditional labor market, capitalists buy workers' labor with wages, and in the metaverse, surveillance capitalists exchange users' data with metaverse services. Both labor and personal data are considered commodities and are formally freely traded in both markets. Therefore, there is a personal data market in the metaverse, which satisfies Roemer's second condition. The first and third conditions seem less clear in surveillance capitalism, and it deserves a longer discussion.

In Roemer's model, capital combined with labor produces products -- corn in his case. In Marx's account, the productive forces are the unity of means of production and labor, which includes three elements: all labor, instruments of production; objects of production. Thus, what Roemer calls inequality and relative scarcity of capital stock can also be considered inequality and scarcity of means of production. In the metaverse, if the user's ideas and human subjectivity as the object of labor, the user's experience in the metaverse is a labor process, and the personal data with advertising value as the product, then we still omit an important element in the description of the production in the metaverse, that is, the instruments of production. The large amount of raw personal data generated by users is called digital exhaust because they cannot directly generate value, and only large amounts of aggregated processed personal data

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[83] Matt Zwolinski et al., *Exploitation*, The Stanford Encyclopedia of Philosophy, (Sep 8. 2023, 10:05 PM) , https://plato.stanford.edu/archives/sum2017/entries/exploitation/.
[84] *See* Nicholas, *supra* note 79, at 4.
[85] Matt, *supra* note 83.
[86] Allen, *supra* note 78, at 102.
[87] John E. Roemer, *Socialism Revised*, 45 (3) Philos. Public Aff. 261, 268 (2017).

have commercial value. Like the machines that mine ore and the furnaces that smelt it, the sensors needed for data collection and the computing power needed for data processing are the instruments of production in surveillance capitalism.

Data collecting and processing capacity will be very unequal between metaverse service providers and users. For example, data processing capacity depends on the one hand on data centers with millions of "virtual servers" and the other hand on data scientists who master new methods related to predictive analysis, reality mining, life pattern analysis, etc.[88] These means of production thus require large upfront investments, and only a small number of Internet giants have this capability. In addition, this ability is also considered relatively scarce. Some scholars argue that in surveillance capitalism society is divided into three "data classes": those who create data, those who collect it, and those who can analyze it.[89] The analysis class is a very lean team of people who have the technical expertise to engage in personal data analysis. While computer coding and data analysis skills have always been scarce area, their size has shrunk dramatically with the rapid rise of big data and the development of new tools and algorithms to handle large unstructured data sets.[90] Therefore, in the metaverse, surveillance capitalists unequally possess relatively scarce data collection and analysis capabilities, which allows them to meet Roemer's remaining two conditions.

C.   Exploitation in the Metaverse

In the first two sections, we discussed the Marxist account of exploitation and the conditions that support exploitation in the metaverse. This section will build on previous discussions and discuss specific forms of exploitation in the metaverse, which is the process of transfer of surplus value. As mentioned earlier, the source of surplus value in the capitalist system of production is the unpaid labor of workers. Accordingly, in the current information society, many scholars argue that there exists "digital free labor",[91] and "unpaid jobs".[92] This form of labor is considered an important means of exploitation in advanced capitalist societies. Because Internet users engage in many value-creating activities without being commensurately remunerated. These free digital labors include: accessing the site, writing messages, participating in conversations", free labor of Internet tinkers in the "open source" movement,[93] or searching, discovering, and evaluating city locations in Google Maps.[94] By this, users consume their own private time to generate data with economic value. Personal data can be used for advertising and UGC could attract more people to visit.

While the user's experience creates tremendous value for service providers, they could not enjoy the benefits directly. Cookie technology is a widely adopted technique in user data acquisition practices, first introduced in Netscape's Navigator 1.1 browser, which enables

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[88] Shoshana, *supra* note 26, at 80.

[89] *See* Lev Manovich, *The Promises and the Challenges of Big Social Data*, Debates in the Digital Humanities 460, 470 (2012); Mark Andrejevic, *The Big Data Divide*, 8(1) Int. J. Commun 1673, 1673 (2014).

[90] *See* Thomas H. Davenport & D.J. Patil, *Data Scientist: The Sexiest Job Of the 21st Century*, 90 (10) Harv. Bus Rev. 70, 70-78 (2012).

[91] Tiziana Terranova, *Free Labor: Producing Culture for the Digital Economy*, 18(2) Technol. Cult. 33, 33 (2020).

[92] Christian, *supra* not 56, at 255.

[93] *See* Tiziana, *supra* note 91, at 49.

[94] *See* Alexander Tarr & Alexander Tarr, *Will Review for Points: The Unpaid Affective Labour of Placemaking for Google's "Local Guides"*, 123(1) Feminsit Rev. 89, 89 (2019).

servers to track user activity in a way that facilitates e-commerce.[95] Today, almost all of our websites receive a similar inquiry from Cooike: "To improve your experience, we (and our partners) store and/or access information on your connected terminal on your connected terminal with your consent to all of our websites and apps".[96] This means that in transactions to obtain personal data, the user only receives "better service" by providing personal data, and the advertising revenue actually generated by this data is hidden behind the veil. This is similar to the statement that the price of labor as a commodity is the wages rather than the value of the commodity it produces, which justifies exploitation under the morality and laws of capitalist society.

Although some scholars point out that users receive immaterial rewards after selfless labor, digital rewards such as "badges" or higher "user level".[97] Besides others argue that people could get recognized during digital labor, since when audiences actively engage in the production of media content, they would have the opportunity for authentic self-expression.[98] But these rewards do not eliminate exploitation, just as Marx argued that raising workers' wages could not eliminate capitalist exploitation. Unlike classical political economists such as Ricardo, who believed that surplus value arises from the unfair exchange of labor and wages between workers and capitalists, Marx argues that surplus value arises from the inequality of ownership of the means of production. Although surveillance capitalists can give users many other rewards, they cannot own the final data product because they lack the means of production in the data economy. If and only if the value of the final data product is higher than the cost of providing the service, the surveillance capitalist will make a deal with the user. Just as Fisher argues "less alienation creates more exploitation",[99] surplus value and exploitation will persist despite the user receiving some reward.

Exploitation has been proven by many scholars to exist in Web 1.0 or Web 2.0, and the next task of this subsection is to discuss whether exploitation will continue or even intensify in the metaverse. The answer to this question is yes, due to the strengthening of the extraction of absolute surplus value and relative surplus value in the metaverse. In Marx's account, the history of capitalist production can be seen as the history of capitalists striving to raise the rate of surplus value and workers fighting each other vigorously against each other. "The capitalists may increase the amount of surplus value extracted from the working class by two means: (1) by absolute surplus value -- extending the working day as long as possible, and (2) by relative surplus value -- by cutting wages."[100] The characteristics of the metaverse will facilitate the extracting of these two means.

First, the immersion and persistence of metaverse experiences will lead to enhanced capture of absolute surplus value. The most direct way to intensify exploitation is to strengthen the extraction of absolute surplus value, that is, to increase the full value produced by each worker without changing the amount of necessary labor. In traditional capitalist wage labor, this is reflected in increased work intensity and longer working hours; While in surveillance

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[95] *See* Sarah, *supra* note 29, at 27.

[96] This text comes from the database *Wiley online.*

[97] Valeria Pulignano et al., *Why does unpaid labour vary among digital labour platforms? Exploring socio-technical platform regimes of worker autonomy*, HUM. RELAT. 19 (2023).

[98] *See* Eran Fisher, *How Less Alienation Creates More Exploitation? Audience Labour on Social Network Sites*, 10 (2) TRIPLEC 171, 182 (2012).

[99] Eran, *supra* note 98, at 171.

[100] *Surplus Value*, ENCYCLOPEDIA OF MARXISM, (Sep 10. 2023, 5:28PM), https://www.marxists.org/glossary/terms/s/u.htm.

capitalism, it is manifested in increasing the amount of time users spend online and increasing the density of data extraction. On one hand, in the context of the metaverse, a truly immersive virtual environment created by cutting-edge technologies and a stable and enduring virtual environment allowing individuals to inhabit and transform by actively participation could attract users to spend more time in it.[101] On the other hand, Immersive relies on cutting-edge technologies such as augmented reality, real-world graphics rendering, and digital twins are data-intensive technologies,[102] meaning that the metaverse will collect more personal data per unit of time.

Second, the extraction of absolute surplus value has limits and provokes resistance, so a more moderate way is to extract relative surplus value, that is, to increase the proportion of surplus labor by shortening the necessary labor time. In other words, reduces the value of labor. So a more moderate way is to extract relative surplus value, that is, to increase the proportion of surplus labor by shortening the necessary labor time. This entails lowering the price of labor, which is determined by the time to produce a fixed set of commodities to reproduce workers' labor capacity from one day to the next.[103] In traditional capitalism, this is often done through technological innovation to increase productivity. Current research has found that data-intensive companies are trying to replace real-world data with synthetic data, or data produced artificially at a time when surveillance is increasingly encountering social and regulatory resistance.[104] This will reduce the need for data from users while meeting the needs of machine learning. In other words, the technology enhances the capture of relative surplus value by reducing the amount of data necessary to sustain metaverse services.

Finally, the concept of "Factory Planet" also reveals the expanding risk of exploitation in the metaverse.[105] The exploitation of user labor in the metaverse is indicative of a phase of capitalism in which we find an "all-ubiquitous factory that is a space of the exploitation of labor".[106] Exploitation in industrial production is limited to working hours, while exploitation in domestic work is limited to the family. While social media and mobile internet have further expanded the scope of exploitation to the entire planet, the metaverse may further strengthen this trend, not only in scope but also in intensity as mentioned earlier. In this ubiquitous factory, users who lack data processing capabilities cannot meet needs such as social participation on their own and have to trade personal data for services in personal data transactions. Surveillance capitalists who control the means of production gain surplus value by selling personal data, which constitutes exploitation in the metaverse.

IV.   DOMINATION IN THE METAVERSE

The previous section argues that differences in data processing capabilities have led to a relationship of economic exploitation between users and service providers in the metaverse. However, the difference between the two goes beyond data processing capabilities to control the data itself. The lack of control over personal data is believed to create a power gap that

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[101] Shahper Richter & Shahper Richter, *What is novel about the Metaverse?*, 73 Int. J. Inf. Manage 102684, 6-7(2023).

[102] Ben, *supra* note 27, at 6-7.

[103] Francisco Paulo Cipolla, *The Mechanism of Relative Surplus Value*, 50(1) Rev. radic. polit. econ. 116, 121 (2018).

[104] James Steinhoff, *Toward a political economy of synthetic data: A data-intensive capitalism that is not a surveillance capitalism?*, New Media Soc, 1 (2022).

[105] Nick Dyer-Witheford, Digital Labour, Species Being and the Global Worker, 485 (2010).

[106] Christian, *supra* note 56, at 279.

creates a dominant relationship between users and service providers. The massive personal data grabbing of metaverse service providers and the existence of so-called "digital enclosure"[107] make domination the third moral challenge brought by the metaverse to our society. This section will analyze this issue in conjunction with the republican account of freedom and privacy theory.

A.   Freedom of Non-Domination

Before discussing the dominance that exists in the metaverse, it is necessary to review the general theory of domination advocated by republicanism. Among the various schools of political philosophy, the most in-depth discussion of domination should be the republican scholars, who argue that the existence of dominance is the cause of the erosion of individual freedom. Republican theorists argue that the existence of domination is responsible for the deprivation of individual freedom, which is a critique of liberal non-interventionist accounts. Liberals assert freedom as an exclusion from external interference. Isaiah Berlin refers to this idea as negative freedom, which is "an area within which a man can act unobstructed by others".[108] This idea became the dominant theory in political philosophy after Bentham and William Paley[109] but has recently been challenged by republicanism. For republicans, this account of freedom fails to cover all situations in which it is appropriate to say that individual freedom has diminished. They argue that individual liberty could also be derogated without any actual interference, and summarized their account as "freedom as non-domination".

Republicans believe that domination is typically expressed in the relationship between "liber and servus, citizen and slave".[110] For its definition, one of the most widely known version comes from Pettit who argues that "someone dominates or subjugates another, to the extent that (1) they can interfere (2) with impunity and at will (3) in certain choices that the other is in a position to make".[111] In his later writings, he summarized dominance in a relatively short sentence "B has a power of interfering in the choice that is not itself controlled by A".[112] Thus, the unfreedom of the republican account depends on a persistent state of power, not on whether a particular decision is interfered with. Laborde and Maynor conclude that "domination is a function of the relationship of unequal power between persons, groups of persons, or agencies of the state".[113]

So the understanding of power relationship is the key to understanding domination. Pettit argues that it has three characteristics. Firstly this power is a capacity to interfere with the choices of others. The interference here is similar to the liberal account, including "removal, replacement, or misrepresentation of options".[114] However, Pettit gives it three restrictions: (1) such interference must be aimed at worsening rather than improving the situation of others; (2) it must occur through the intention, or at least negligence, of a party; (3) the ability of interference must be a practical ability, which we might call -- a capacity that is more or less

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[107] Mark Andrejevic, *Surveillance in the Digital Enclosure*, 10(4) Communication Review 295, 297 (2007).

[108] Isaiah Berlin. et al. Liberty : Incorporating Four Essays on Liberty, 121 (2002).

[109] *See* Neil, Hopkins, *Freedom as Non-Domination, Standards and the Negotiated Curriculum: Freedom as Non-Domination*,49 (4) J. Philos. Educ. 607, 609(2015).

[110] Philip Pettit, Republicanism: A Theory Of Freedom And Government, 32 (1997).

[111] *Id.* at 53.

[112] Philip Pettit, On the People's Terms: A Republican Theory and Model of Democracy, 50 (2012).

[113] Cecile Laborde & John Maynor, Republicanism And Political Theory, 5 (2008).

[114] Andrew Roberts, *A republican account of the value of privacy*, 14 (3) Eur. J. Political Theory 320, 325(2015).

ready to be exercised -- not a capacity that yet to be fully developed.[115] Secondly, this ability must be arbitrary, which means that it fails to track the avowable interests of the subject, and the operation of this ability is unchecked, which means that the only constraint to it is the operator's own will.[116] Finally, domination needs not to be comprehensive, and a qualified dominator only needs to have the discretionary capacity to interfere with certain choices of others.

Republicans use the cases of "benevolent slave owners" and "rule by law" to support their account of freedom as a more appropriate alternative to liberial's. The former describes a situation in which freedom remains unfree without interference, while the latter describes a situation in which freedom is not diminished despite interference. The former assumes that a kind slave owner never interferes with the choice of his slaves, under the analysis of the liberal account, these slaves are undoubtedly free which contradicts intuition. Republicans could better handle this situation, who argues that one person has dominating power over another -- does not require that the person who enjoys such power actually interferes -- could lead to unfreedom.[117] The latter assumes that there are two states, one governed by many laws, and the other governed by an arbitrary monarchy. In a liberal account, citizens of the former state have less freedom since they are interfered with by laws. While republicans argue that as long as the law is not an instrument of the arbitrary will of any individual or any group, but respects the common interests and ideas of people,[118] the rule by law does not pose the risk of domination.

B.   Domination in the Metaverse

Although service providers promote the metaverse as a free community, on the one hand, due to its decentralization, personal negative freedom will be less interfered with by public power, on the other hand, its virtual nature can allow users to open a second life with infinite possibilities, thereby enhancing personal positive freedom. However, behind the appearance of freedom in the metaverse, due to the acquisition and possession of users' personal data by service providers, there is an implicit risk of domination. Domination that exists in the metaverse presupposes that there is a specific power relationship between the user and the service provider, and this power relationship needs to give the latter the ability to interfere arbitrarily with the former. This arbitrary power is considered to come from the loss of privacy caused by the service provider's possession of the user's personal data.

Privacy issues are considered to be one of the most important challenges that the metaverse poses to our society. A survey of 300 developers on the Agora platform, one of the builders of the metaverse, revealed that 33% of respondents cited data privacy and security as the biggest hurdles the metaverse must overcome.[119] Fernandez & Hui argue that the technology of supporting metaverse introduces new ethical and privacy dilemmas as continuously sensing devices are made to expose users to privacy at sensory, behavioral, and

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[115] *See* Philip, *supra* note 110, at 53.
[116] *Id.* at 59.
[117] *See* Philip, *supra* note 110, at 64.
[118] *Id.* at 36-41.
[119] *See* Team Agora, *SURVEY: Developers Cite Data Privacy and Security and Disinformation and Hate Speech as Top Metaverse Challenges*, Agora Newsroom, (Sep 11. 2023, 4:59 PM), https://www.agora.io/en/news/survey-developers-cite-data-privacy-and-security-and-disinformation-and-hate-speech-as-top-metaverse-challenges/.

communication levels by collecting large amounts of metadata.[120] Other scholars believe that in the metaverse, malicious parties can collect sensitive information from the online profiles and public information of social network users, in addition, data leaks and unintentional data releases, or incorrect security or privacy protection configurations may also cause privacy problems.[121]

Research by privacy scholars shows that the loss of privacy leads to changes in power relations. The traditional liberal view is that the value of privacy lies in the guarantee of autonomy since it leaves us the physical and psychological space that we need to reflect on ourselves and our lives.[122] A new view of privacy is that the value of privacy lies in providing agents an antipower.[123] The concept of antipower is raised by Pettit, who argues that antipower is what comes into being as the power of some over others is actively reduced and eliminated.[124] Pettit believes that resources are the main factor influencing antipower and that bullies always have more resources at their disposal than those who are bullied.[125] Privacy guarantees individual's control over his or her own data and information, which as a resource in the information society will increase the antipower of its owner.

In the metaverse, when users' privacy is violated by service providers and lose control of their personal data, they will lack the antipower to resist domination. Accordingly, due to the lack of antipower restrictions, service providers have arbitrary powers. Zuboff argues that "user dependency is the fulcrum of the surveillance capitalist project...... Most people find it difficult to withdraw from these utilities, and many ponder if it is even possible".[126] In the metaverse, a large number of services need to be provided by a large amount of data aggregation, and users who do not master data often have to rely on service providers. As more and more functions will be accessed in the metaverse, users' avatars or accounts will become increasingly important to individuals. When the data that maintains the avatar and account is in the hands of the service provider, the survey provider can easily make the user submit by denying access, deleting the data, banning the account, etc., and the user lacks the counter-power to fight it.

Arbitrary power also means that it will be exercised with the ultimate goal of maximizing the interests of the service provider, which is equally evident in surveillance capitalism. Zuboff argues that there is "radical indifference" in surveillance capitalism, which means that Surveillance capitalists lack organic reciprocity with those who are sources of consumers or employees.[127] Since traditional capitalist production requires a large number of employees and consumers composed of residents, capitalists need to promote the welfare of the population to obtain stable employment and expand consumption. The number of employees needed by surveillance capitalism is greatly reduced, and its buyer becomes

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[120] *See* Carlos Bermejo Fernandez & Pan Hui, Life, *the Metaverse and Everything: An Overview of Privacy, Ethics, and Governance in Metaverse*. arXiv:2204.01480, (2022), https://arxiv.org/abs/2204.01480.

[121] *See* Yan Huang et al., *Security and Privacy in Metaverse: A Comprehensive Survey*, 6(2) Big Data Min. Anal. 234, (2023).

[122] *See* Andrew Roberts, *Forewords Why Privacy and Domination?*, 4 (1) Eur. Data Prot. Law Rev. 5, 6 (2018).

[123] *See* Bryce Clayton Newell, Forewords · Privacy as Antipower: In Pursuit of Non-Domination, 4 (1) Eur. Data Prot. Law Rev. 12, 14 (2018).

[124] *See* Philip Pettit, *Freedom as Antipower*, 106(3) Ethics 576, 588 (1996).

[125] *Id.* at 589.

[126] Shoshana Zuboff, *Surveillance Capitalism and the Challenge of Collective Action*, 28 (1) New Labor Forum 10, 24-25(2018)

[127] *Id.* at 21.

advertisers. As a result, the welfare of metaverse users is no longer important to service providers, which will make them more arbitrary in using their power.

As we have seen, the arbitrary power that constitutes domination needs to be able to interfere with the choices of others. In the metaverse, the power that service providers acquire through user data is also considered to be able to interfere with user choices in three forms. First of all, the survey provider can make the user voluntarily give up this option by imposing a large enough sanction on the option he does not want to see. Users are considered to have a chilling effect when they choose under surveillance, which makes them voluntarily abandon some options that they believe will bring negative results.[128] This deterrence may be further heightened in the metaverse because the user's avatar is tied to more interests than current Internet accounts. It is conceivable that a digital avatar tied to all of your bank accounts, social accounts, and gaming accounts would bring far more damage to the user if blocked than if a single functional account were blocked. So some scholars argue that as we move into an increasingly automated, networked world, our freedoms will be limited as governance improves.[129]

Secondly, when the user's choice is known to the survey provider, the latter can preemptively delete some options that are not favorable to it, so that although the user has the formal freedom of choice, his or her choice has been interfered in essence. And this form of interference is more common in the Metaverse. Since the Metaverse is a virtual digital world, many physical obstacles are no longer obstacles in it. This on the one hand facilitates the extension of the user's positive freedom, but on the other hand, makes it easier for the service provider to practice interference. For example, if a service provider does not want a user to access a certain area, then they can close it off by simply entering a few commands, but in the real world, it may be costly to build a fence or hire guards. Thus, removing the user's option also becomes easier in the metaverse.

Finally, in terms of misrepresentation, Pettit argues that successful manipulation "will affect the exercise of your cognitive capacity to choose between certain options even if it leaves your objective capacity in place. By means of manipulation, I may succeed in getting you to choose as I wish."[130] Thus, if survey providers know users' strategies, fears, and weaknesses, they can devise counter-strategies, manipulate and nudge users in the direction of choices they think are more desirable, or coerce users into taking options that survey providers prefer.[131] Personalization of content by service providers to users is considered to be a typical example of manipulation, where the service provider changes the content of the item pushed by obtaining the user's search history thus inducing the consumer to spend money.[132] In the metaverse, user data is more fully grasped by service providers, which will lead to further strengthening of their ability to misrepresent.

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[128] *See* Shoshana, *supra* note 26, at 82.

[129] *See* Jack M. Balkin, *Room for Maneuver: Julie Cohen's Theory of Freedom in the Information State*, Jrslm. Rev. Legal Stud. 79, 82 (2012) ; Julie E. Cohen, What privacy is for. 126(7) Harv. Law Rev. 1904, 1918-1926 (2013).

[130] Philip, *supra* note 112, at 55.

[131] *See* Andrew Roberts, *A republican account of the value of privacy*, 14 (3) Eur. J. Political Theory 320, 336 (2015).

[132] *See* Neil M. Richards, *The dangers of surveillance*, 126(7) Harv. Law Rev. 1934, 1939 (2013).

C.   Common Knowledge and Domination

Van Dijck argues that "a large number of people -- naively or unwittingly -- trust their personal information to corporate platforms".[133] These people seem unaware or unconcerned about possible domination and are happy to trade personal data for metaverse services. Pettit believes that when the three conditions of domination are satisfied, the society will form common knowledge, that is, the dominated person realizes that he is in a dominated relationship.[134] And because of the existence of this knowledge, the dominated will take the initiative to cater to the dominators' preferences to avoid actual interference. Therefore, the dominated will voluntarily give up some options that they would have chosen, so even no actual interference constitutes a limitation on autonomy. Thus common knowledge seems to be a necessary condition for the restriction of freedom in domination without actual interference.

This view seems to cut the link between domination and freedom, but it is a misunderstanding of republican non-domination freedom. Non-dominant freedom is not concerned with the autonomy of the agent in the face of specific choices but with the power relationship between the agent and others. In other words, freedom of non-dominance is concerned about the state of being a free person, while freedom of non-intervention is concerned about freedom in concrete choices. Therefore, the identification of freedom in the republican account does not depend on whether there is a loss of autonomy in specific choices, but on whether there is domination in the power relations in which the agent is placed.[135] The simple fact that we depend on others—others have acquired the power to interfere arbitrarily— undermines our freedom. Roberts and Pettit also acknowledge that an exception to common consciousness is the manipulation of individual and group options of the dominated, where common knowledge may not exist but the dominated is still influenced by power. [136] Manipulation in the metaverse is also considered to be the riskiest means of interference. Users are often not aware of the significant value of their data, but their choices are still substantially at risk of interference by the service provider.

CONCLUSION

In conclusion, this dissertation argues that the metaverse, as a virtual digital world is both reductive and transcendent to the real physical world and can interact with the real world. It allows our activities to transcend the physical barriers of the real world to some extent but still poses many moral risks to our society. Because of its digital properties, the risk of surveillance of users in the metaverse is greatly increased, and this gives rise to a new mode of accumulation, which Zuboff calls surveillance capitalism, and which is thought to pose three ethical challenges.

The technologies that the metaverse relies on (e.g. XR and IoT) capture large amounts of data, and cloud storage technologies prevent users from controlling over their data. This process puts metaverse users at risk of alienating themselves from their data, behavior, class nature, and others. And in the metaverse due to the alienation of users and service providers into two opposing classes, this class division and opposition is seen to create two other moral

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[133] José, *supra* note 38, at 197.
[134] *See* Philip, *supra* note 110, at 59-60.
[135] *See* Christian Dahl & Tue Andersen Nexø, To Be Unfree 37–54 (2014).
[136] *See* Andrew Roberts, *Privacy, Data Retention and Domination: Digital Rights Ireland Ltd v Minister for Communications*, 78 (3) Mod. Law Rev. 535, 544 (2015).

challenges. Economically, the greater data processing capacity of service providers enables them to exploit users' "digital labor" in data-service transactions with them. Politically the service provider dominates the user because it holds a lot of personal data about the user and acquires the arbitrary right to interfere with the user's decisions at will.

Since the metaverse itself is a nascent and rapidly evolving matter, any exploration of it at this stage is based on limited observations and appropriate conjectures. Although this dissertation argues that it will pose great challenges to our society, many developing technologies may also be called effective measures to avoid these risks, and research on this issue will also be my future focus.