Rule of the Metaverse

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ABSTRACT

The moral, economic, security and other social Anomies in the Metaverse need to be corrected, and the social control of the Metaverse is on the line. The rule structure of the Metaverse should embody the concept of multiple co governance, including internal control rules and external control rules. Internal control rules occupy a dominant position in the Metaverse. When failure occurs, special intervention of external control rules is required. Dispelling the ethical difficulties brought by the Metaverse and maintaining the good and orderly meta cosmic space order depend on the ethical rules and autonomous rules of the Metaverse. External control rules need to be constructed from three levels: The internal visual threshold of the Metaverse, the comparison and interaction between the Metaverse and the real world, and the interconnection between the Metaverses. The Metaverse makes it possible to reshape the rules of social equality. The connection rules between the Metaverse and the real world can promote the coordinated development of the Metaverse and the real world. Breaking the barriers between Metaverses can establish an interconnection mechanism between different Metaverses.

Keywords: Metaverse; governance rules; pluralistic co governance; public order and good customs; internal control; external control

1. Introduction

Metaverse has developed rapidly in recent years, and the technology is constantly iterative. Metaverse means “Metaverse”, in which “meta” means another territory beyond things, and “verse” means version “Metaverse” can be translated into another version of the world outside the real world. In the Metaverse, the profound aggregation of people and numbers has become a basic activity to construct a new world and shape a new personality. The Metaverse is a new social form, and its complexity and multidimensional nature are incomparable in the past.

Since the 18th CPC National Congress, the CPC Central Committee has attached great importance to the development of digital economy and raised it into a national strategy. Improving the digital economy governance system has become an important proposition. Many fields of China’s digital economy have developed from willfulness to strong governance, such as Internet Financial platforms from encouragement to prohibition, e-commerce
platforms from inclusive and prudent supervision to setting “traffic lights” for their capital. The governance strength fluctuates too much and lacks predictability, resulting in poor governance effect and excessive sunk cost of the industry after governance. As far as the governance of the Metaverse is concerned, the primary problem is not freedom, but the establishment of a public order. People can have order without freedom, but they cannot have freedom without order[1]. “Man is not only an animal pursuing purpose, but also an animal following rules to a great extent. “In the Metaverse[2], each user cannot live as he pleases, and disputes will arise with each other, and people are not absolutely rational. Many times, there is no ideal situation of “doing what he wants without exceeding the moment”. Externalities, moral hazard and adverse selection make rules the rigid needs of the governance of the Metaverse. It is necessary to establish rules and regulations for the Metaverse before it causes great social risks, and clarify the red line of all parties involved in the Metaverse in advance.

2. Social anomie of the Metaverse

As a new form of society, the Metaverse is not perfect since its birth. The Metaverse often has social anomie problems in terms of social stability and order, which is detrimental to the long-term development of the Metaverse. The “social anomie” of the Metaverse refers to the chaotic situation of the Metaverse due to the lack of norms[3]. The social anomie caused by Metaverse is mainly reflected in the fields of morality, economy, security and so on.

2.1. Social essence of Metaverse

The goal of yuan cosmos is to provide users with an open, unrestricted and immersive environment, so that users can break through the traditional obstacles of time and space through their senses, and enhance their sense of existence, reality and interaction through technical support[4]. As a new thing, the ultimate form of the Metaverse is inconclusive. The possible forms of met cosmic development can be divided into twin world and primary world. The twin world is a parallel world that basically forms a mapping relationship with the real world. Through digital twin technology, the Metaverse moves the real world into the virtual space, or moves offline buildings and other objects, people’s work and life online, so as to complete the integration and symbiosis of online and offline. The twin world can support innovative service delivery ecosystems, such as the online concert hosted by American rapper lil NAS x on the roblox platform; Meta’s “unlimited office” allows users to immersively cooperate with colleagues online. Twin world mainly includes augmented reality world, life log and mirror world[5]. Augmented reality is the superposition of virtual objects into real space, so that people can use glasses, mobile phones and other augmented reality equipment to observe Pokémon go, which was popular all over the world in 2016, is a typical example. Open the software on the mobile phone, and more than 200 kinds of “baokemeng” monsters will appear on the real map of the mobile phone. Players flock to the streets to search and capture, fight or exchange and other game activities. It should be noted that the augmented reality world is based on the real world, which is nothing more than adding virtual characters and props to the real world, making the real world more fantastic and colorful. Life log refers to the system formed by people setting up accounts, connecting with others through WeChat, microblog and other social media, and automatically recorded by the Internet. The essence of life log is that people take the registered user as the avatar to replace the real self to implement the data recording of daily life, such as good thing sharing, exciting moments and mood expression people tend to develop their strengths and avoid their weaknesses. They use Meitu software to modify their photos or videos, cover up mistakes or unhappy behaviors, and exaggerate beautiful events on social media. It is difficult to be honest about their true colors without modification. The true self in the life log is naturally far from the real world. Mirror world is a world formed by completely projecting and reproducing the real world from the “panorama” or “Earth” of Baidu map to the digital exhibition hall of major museums, people can be immersive on the
Internet without leaving home and easily obtain information like the real world. The mirror world widens the boundary of the real world and improves the efficiency of the real world. The mirror world generates a virtual environment through an online computer, which enables multiple users in remote physical locations to interact in real time for various purposes[6]. The original world, that is, the virtual world is basically decoupled from the real world. The virtual world is full of things that do not exist in the real world. Most games represent a kind of virtual world. People’s flesh is in the real world and use the screen to compete or cooperate with each other in the virtual world “Number one player” and “out of control player” depict another kind of virtual world. People’s senses and consciousness are integrated into the virtual world, and different people can socialize and enjoy together[7]. Fortress night, “my world” and other products bring immersive social experience to hundreds of millions of users, blurring the boundary between games and social networks[8].

No matter what form, the essence of the Metaverse is a society. “The sum of production relations constitutes the so-called social relations and the so-called society. “Society[9] is a system in which people interact and form social relations. The immersive realism, ubiquitous network access, interactivity and scalability that the metauniverse relies on are all closely related to its social attributes[10]. Although virtual things permeate the Metaverse, people’s conscious communication and interaction are still the core. People’s common purport and benefits brought by connection urge people to build another world outside the real world. Since the Metaverse is different from the real world, the dispute between social realism and social nominalism can rest in the Metaverse. Society in the Metaverse is not a simple collection of individuals, but a real entity of objective existence. People can feel the existence of society and are constrained by social rules[11].

### 2.2. Social anomie of the Metaverse

The Metaverse is in the stage of random development from scratch. In the early stage of human society, people’s selfishness, greed, fear, cruelty and ruthlessness caused people to guard against each other, hostility and war. As an emerging thing, the Metaverse may also have a terrible natural state in which people compete like wolves, leading to the problem of “social anomie”[12].

**Moral anomie of the Metaverse**

The value orientation of the yuan universe not only includes the basic values of pursuing equality and freedom, highlighting justice and rationality, realizing harmony and order, but also includes the unique values matching the characteristics of the Metaverse, such as encouraging innovation and exploration, advocating diversified development and so on. In order to encourage exploration and development, metauniverse may support users to expand their own survival territory by damaging the property rights of others, or allow users to carry out violent activities. Whether these behaviors prohibited by law can be violated or exempted in metauniverse is the top priority of constructing the moral rules of metauniverse.

The self-representation of virtual characters created by the Metaverse in the virtual environment will affect the real behavior of users in the real world, which is called “Proteus effect”[13]. The behavior of users in the virtual environment will be affected by the behavior and attitude changes induced by the virtual role through the transformation of self-perception, and even adjust their behavior to adapt to the shape of their respective roles under the unwitting guidance, which is also supported by the “self-perception theory”[14]. Many games require players to perform actions they usually don’t participate in in daily life, and require players to commit theft, murder and participate in reckless violence if users act freely in the Metaverse without restrictions, they will also project the positive and negative effects to the real society, reflexively affect their decision-making rationality in real actions, and imperceptibly change the moral cognitive standards established by users for many years.

As the ID card of the Metaverse, the random creation of digital identity will violate the good
Digital identity is the unique virtual identity of Metaverse users. Users not only have identity identification numbers representing their unique identity, but also can locate and select their own external image according to their personal preferences. In “Robles”, users can show their identity characteristics by creating three-dimensional image and user name. The virtual image created by them is no different from the real image of human beings. Centuries of philosophical discussion and decades of social science research have explored the concept of “self”, but in the era of the yuan universe, only science fiction writers can imagine the distortion of identity that people encounter.\[^{15}\] If the user’s naming and image creation behavior is not screened, but created arbitrarily according to their own preferences, for example, if the user integrates insulting, aggressive or discriminatory elements into the character name or image dress, it will have an adverse impact on the healthy environment of the metauniverse.

The Metaverse platform will collect massive user data. With the increasing popularity and realism of virtual reality applications, the Metaverse threatens our privacy in new ways, from understanding our body movement mode to neural activity mode.\[^{16}\] If this data information is leaked, the consequences will be unimaginable Amazon, apple, Google, Facebook, Microsoft and other technology giants have always advocated password free authentication and\[^{17}\] authentication through fingerprint, face recognition or personal identification code. Metauniverse may continue this trend, and there will be more biometric technologies, such as audio and iris recognition.\[^{18}\] In the pre-universe era, if a user loses his password, the worst result is only the loss of some personal information. He can ensure the security of other data by recreating a new password. In the metauniverse, because biometrics are permanently associated with users, once they are leaked, they will be permanently lost and cannot be revoked, causing users to get into real trouble.

#### The economic anomie of the Metaverse

As a non-materialized form of property, the ownership confirmation of virtual property in the Metaverse is controversial. If the virtual property of the platform belongs to the user, the portability of the user’s virtual property will be derived. Users have the right to shuttle through different Metaverses with virtual property to obtain immersive game experience. At present, only the virtual property between different games belonging to the same company can be transferred. For example, the users of the game “monster hunter Story 2” under Capcom can obtain the game equipment of the previous game “monster hunter rise”. The virtual property data transmission between different companies is still lack of smoothness. If the virtual property belongs to the Metaverse platform, although it is reasonable for the platform to pay some labor because the virtual property transaction takes place on the platform, the crystallization jointly created by tens of thousands of users is improperly deprived by the platform, which is also contrary to the independent virtual economic system of the metauniverse.\[^{19}\]

There is a possibility of anti-competition in the Metaverse industry. Virtual reality technology has the essence of entertainment. It is based on hedonism theory. Imagination and emotional response are the key factors to promote individuals to participate in the virtual world. Users will use the Metaverse to help themselves escape from the real world and make the Metaverse a common place for people to kill time. Metauniverse competes with social software, entertainment tools and other “national total time” of users.\[^{20}\] On the premise that time is a hard constraint resource, users spend more time in one metauniverse platform and less time in another metauniverse platform. There will be anti-competitive behaviors of competing for users between the Metaverse platforms, and the Metaverse platform will use monopoly agreements, abuse of market dominant position, business concentration and other behaviors to crush other Metaverse platforms. For example, with high requirements for capital or technology, few companies have the strength to build a metauniverse and eventually retain millions of users Empirical
research shows that sunk costs are positively correlated with industry entry barriers[21]. For the development of the Metaverse platform, the sunk cost is the unrecoverable cost invested by the company in developing the system, and the estimated income must be greater than the cost of developing and maintaining the Metaverse platform. The start-up companies lacking funds will face great difficulties in entering the market. As the market share will continue to be squeezed and concentrated in the hands of several leading technology companies, Metaverse industry will become an oligopoly market. Unfair competition will also occur within the Metaverse. For example, when opening a shop, a user in the Metaverse platform will use the commodity name, packaging and decoration that others have a certain influence in the real society without authorization, and use the enterprise name, social organization name and name that others have a certain influence in the real society without authorization.

“Nothing in the world is certain except death and taxes. “The Metaverse platform cannot become a tax wasteland Metaverse presents human society in digital form[22]. Users still conduct virtual property transactions or create virtual property value in the Metaverse platform. Behind the virtual property transactions is the real currency transactions, which naturally cannot escape the tax collection and management. For example, the non-homogeneous token representing digital assets is a voucher to confirm the ownership or property interests of certain assets, which can become the link between virtual assets and real assets in the Metaverse for asset transactions. When legal tender is used to purchase non-homogeneous pass, the process may be subject to tax.

The Metaverse needs the support of the value system. People trade in the Metaverse through virtual currency. In 2019, meta issued Libra. As a cryptocurrency, Libra currency can be closely combined with the application scenario of metauniverse to become a virtual currency that can buy goods, game services and even tangible assets in the visual space virtual currency will cause problems such as the confirmation of the ownership of property rights, the confirmation of the change time of ownership effectiveness, the guarantee and financing of digital assets, the supervision of virtual currency, the portability of virtual property and so on. In the real world, the central bank can adjust the money supply through money tools, but the virtual cryptocurrency lacks a similar mechanism. Metaverse will face deflationary pressure, and the money supply will be difficult to meet the growing trading volume[23].

**Security anomie of the Metaverse**

The novel and mysterious Metaverse has great temptation to minors. When minors enter the Metaverse, it is necessary to first evaluate whether the platform will have an impact on the normal psychological and physical development of minors. It is reasonable to allow minors to enter the Metaverse only when it is guaranteed that it will not have an adverse impact on the actual growth of minors. Users’ excessive addiction to virtual cyberspace will also lead to loneliness and depression and increase users’ aggressive behavior[24]. We must positively guide the behavior of minors in the Metaverse, limit their behavior that does not meet their mental development level, and protect minors as a special group in the Metaverse.

The Metaverse is not completely fair, and discrimination may also arise. First, entering the Metaverse requires not only external material conditions, but also certain learning ability and time cost. Metauniverse has extremely high requirements for network environment and docking equipment. For example, the network environment running metauniverse is expected to require more than the available broadband of the fifth-generation mobile communication technology to support high-resolution images. Docking into the metauniverse requires head mounted displays, such as transparent augmented reality (AR) or virtual reality (VR) devices, and tactile feedback devices to display the delay demand from motion to photons, so as to maintain the user’s sense of immersion[25]. The vulnerable groups with insufficient economic ability
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The high energy consumption of Metaverse operation is a challenge to ecological security. The normal operation of Metaverse depends on the huge Supercomputing Center and data center, and its heat storage and heat dissipation will consume a lot of electric energy. The high energy consumption of Metaverse operation can be seen from the ecological environment damage caused by Bitcoin mining. According to the carbon emission data of Bitcoin blockchain in China, without policy intervention, the annual energy consumption of Bitcoin blockchain in China will reach the peak of 296.59 TWH in 2024, generating 1305 million tons of carbon emissions, which will exceed the total annual greenhouse gas emissions of Czech Republic and Qatar. “Carbon peaking” and “carbon neutralization” are key works that must be promoted during the 14th Five Year Plan period. If the development of the Metaverse is detrimental to environmental benefits, the Metaverse will lose its legitimacy for long-term existence.

3. Social control of the Metaverse: The rules of the Metaverse driven by two wheels

Social control is to force people to do their part to maintain society and prevent them from engaging in antisocial behavior, that is, behavior that does not conform to the assumption of social order. People maintain control over their inner nature through social control. It is necessary to implement social control over the Metaverse platform to drive the internal and external control paths to achieve the best effect of governance, so as to limit, punish and correct the social anomie behavior in the Metaverse, restrict the behavior paradigm of the members of the Metaverse, maintain the necessary order of the Metaverse space and realize the Metaverse civilization.

3.1. Composition of the rules of the Metaverse: The embodiment of the concept of pluralistic co-governance

“History shows that where human beings have established political or social organizational units, they have tried to prevent uncontrollable chaos and to establish a form of order suitable for survival.” In reality, there are five social control paths to maintain social order: Ethical rules issued by unilateral controllers, contracts issued by controllers of both parties, social law enforcement rules issued by social forces, organizational law enforcement rules issued by organizations, and public law enforcement rules issued by the government. In the Metaverse, different social control paths play an indispensable role in different dimensions, outlining the outline of the Metaverse governance system. Social control can be divided into two categories according to whether external forces participate: One is called internal control, which means that social members consciously internalize norms and restrict their own behavior, which is manifested by internal to external and spontaneous self-control, including ethical rules, contracts, exemplary rules and organizational rules. The effect of internal control is the best. Once the standardization is internalized
successfully, the actor can consciously abide by it without supervision\[^{32}\]. The other one is called external control, which means that social members are forced by external forces to make concessions to external pressure\[^{33}\]. External control relies on government power to prevent deviance and encourage compliance\[^{34}\].

The multiple structure of the rules of the Metaverse is the concrete embodiment of the concept of pluralistic co governance. The concept of pluralistic co governance has existed in ancient China Gu Yanwu, a great Confucian, said in the records of Rizhilu: “if you govern alone, the punishment will be numerous, and if you govern by others, the punishment will be taken. “At present, under the idea of “social governance community”, the multiple structure of meta cosmic rules is conducive to the governance of the rapidly innovative meta cosmic ecosystem, including the digital social governance ecology of government and market, state and society, private interests and public welfare, and catering to the emerging and complex meta cosmic practice. First, as a new object, the social relations such as ethics, morality and transaction disputes caused by the Metaverse are different from the real society. For example, the Metaverse takes the smart contract as the underlying design framework, which is beyond the adjustment scope of the traditional contract law. The legal boundary and effectiveness of the behavior in the Metaverse are in the undetermined state, and the government intervention is in the vacuum state of superior law. The members of the Metaverse need to reach and implement the governance rules of dividing and stopping disputes by themselves, so as to deal with the profound changes in the membership and behavior. For example, the governance choice in Star Wars Eve is largely driven by players. The “suspension and prohibition policy” in the preamble shows that we can’t predict all the situations that players may encounter. Players are free of thought, creative and can create situations unexpectedly. This document only allows players to understand the policies we follow when dealing with these or similar situations\[^{35}\]. Second, as part or all of the mapping of the real society, the behaviors in the Metaverse have negative externalities, constantly challenging the traditional concepts of fairness and justice and balance of interests in the real society, and we need to focus on it from the perspective of government recognition, that is, intervention\[^{36}\]. For example, users in the Metaverse need to improve their level through props. In order to obtain props, users expand transactions to the real world, damaging the normal order of the market. Julian Baird, an American game journalist, conducted an experiment in which he could earn $47000 a year by trading digital props in Internet Genesis alone. The income is higher than the average income of middle school teachers, museum curators and firefighters, and does not meet the public’s expectations of fairness and justice. For another example, black snow interactive company specially employs Mexican workers to collect game props and sell them at a high price on ebay\[^{37}\]. Improper economic behaviors that disrupt the orderly operation of the price mechanism urgently need government intervention and correction. Third, in the process of continuous growth, the Metaverse platform gradually has the quasi-public attribute, which requires the developers of Metaverse to bear the social responsibility of “network management network” and have the management obligation for some behaviors of Metaverse community. For example, the developers of metauniverse can assume the governance responsibility of virtual product trading, set rules for the trading mode of virtual products, dispute settlement methods, third-party intervention in trading activities and other matters, and monitor the whole trading process through technical means to identify improper trading behaviors in time\[^{38}\]. Adopting the multi governance model of the Metaverse is conducive to ensuring that the Metaverse gives full play to its imagination in a standardized and orderly manner and alleviating the contradiction between order and vitality.

3.2. Characteristics of meta cosmic rules:

The application of compensation mechanism

**Internal control rules**

First, the autogenous spontaneity of the rules of
the Metaverse. The order rules formed spontaneously by the birth of the Metaverse are often disturbed by many internal and external disturbances, fluctuate greatly, and sometimes have undesirable and unreasonable defects, but they are still the basis of the Metaverse order[39]. In the real world, centralized operation is the main mode, the government controls political power, and various platforms act as “gatekeepers” and become the central node connecting consumers and operators[40]. Metaverse has found another way to establish a decentralized virtual space. People’s relations are flat. People’s free will is no longer transferred by the subjective will of the government and large enterprises, and is free from the influence of political power and economic power organizations in the real world, but is jointly decided by independent users. The decentralized nature of metauniverse is rooted in its blockchain as the underlying technology. The blockchain adopts a distributed storage structure, and multiple entities keep copies of the classified accounts[41]. Blockchain solves the dilemma that virtual assets can only be preserved and traded in the Metaverse, and breaks the barrier between the circulation of assets in the virtual world and the real world. The non-homogeneous pass attached to the blockchain makes the accounts and assets unable to be copied and split, and the assets are free from expropriation, deprivation or control, realizing a Metaverse decentralized economic system[42]. The decentralization of the Metaverse is manifested in the decentralization of ecological structure, transaction data, information storage and content production the spiritual core of the decentralization of the Metaverse is incompatible with the rules formulated by the authority, and the ethical and moral rules and the autonomous rules formed by the spontaneous participation of the members of the Metaverse become the dominant.

Second, the self-adaptability of the rules of the Metaverse. The Metaverse is born out of the real world. Virtual digital people and their identification, virtual property and its property rights circulation, and the rights, obligations and responsibilities of various subjects in the Metaverse are not exactly the same as many rules of the real society. For example, it is impossible to identify vulnerable groups simply by identifying virtual images. The application of tilt protection rules to them must also be considered in combination with the conditions and ability of users to enter and adapt to the Metaverse. In addition, the rules of each Metaverse platform vary greatly. As a global open community, different users in the Metaverse are located in different regions, and the cultural heritage and social customs naturally vary greatly[43]. Members of the Metaverse have the right to define different rules according to different scenarios, and allow the existence of differentiated rules adapted to different Metaverses.

Third, the self-implementation of meta cosmic rules. Metauniverse is supported by blockchain technology, which is far more intelligent and autonomous than ordinary network platforms[44]. A large number of behaviors in the operation of metauniverse can be performed automatically through smart contracts. From the permission, tracking and supervision of user operation behavior to the punishment of user violations, it can be completed automatically by algorithms without manual intervention, which greatly reduces the execution cost of metauniverse operation. Metauniverse developers only need to set the conditions to be met for the implementation of rules in advance, or determine the trigger point to be reached for violations, and smart contracts and algorithms can drive the automatic implementation of rules.

Supplemented by external control rules

The autonomy rules of the Metaverse are designed to maintain the social order of the Metaverse, including the contract connotation of negotiation and contracting. Private subjects in the Metaverse usually solve problems by reaching social contracts with stakeholders, and finally form autonomous rules[45]. In the case of a large number of people, there will be a phenomenon of bargaining restraint in the process of contracting, or a deviation from autonomy due to the obvious superiority of one Contracting Party over the other. The above problems lead to the deviation of the autonomy rules
of the Metaverse from the concept of freedom of contract and become a tool for specific classes to manipulate the game. The government should formulate basic guidelines as the bottom line thinking of arbitrary norms.

The mechanism of equal compensation, fair competition and survival of the fittest in real society can’t work for the chronic social diseases such as competition, taxation and quality standards caused by the Metaverse, and the social resources in the Metaverse can’t be effectively allocated, resulting in the so-called market failure. It is necessary for the government to intervene and correct through external forces, so as to return the meta cosmic order to the track of normal operation and balanced development. For example, if the developers of metauniverse are driven by interests and take advantage of technical advantages to track the whereabouts of users, record user conversations and collect user preference information as resources for unfair competition, the government can impose relevant responsibilities on the developers of metauniverse[46].

The government can intervene in the social governance of the Metaverse by establishing the filing and review system of autonomous rules. Decentralization does not mean that there is no supervision, and certain supervision does not mean that there is no room for autonomy. The appropriate intervention of the government can prevent the improper profit seeking behavior of the developers of the Metaverse and the behavior damaging the economic order and security order in the Metaverse. For example, the government can stipulate the minimum standards of the autonomy rules of yuan cosmic community, such as the standardization and transparency of service terms, which will promote the development and growth of meta cosmic community[47].

4. The internal control rules of the Metaverse: Based on the concept of public order, good customs and autonomy of will

The “original residents” of the Metaverse are mobile, multiple and distributed electronic bodies[48]. However, this does not mean that the Metaverse completely follows a different organizational mechanism from the real world. The Metaverse needs to use the ethical rules of the real world to punish the immoral behavior. Based on the spiritual core of decentralization, ethical rules and autonomous rules are important means to maintain group cohesion in the Metaverse.

4.1. Ethical rules of the Metaverse

“Science and technology ethics is a value criterion that must be observed in science and technology activities. We should adhere to promoting human well-being and respecting the right to life. Shape the cultural concept and guarantee mechanism for the good of science and technology. “Dispelling[49] the ethical difficulties brought by the Metaverse and maintaining the good and orderly meta cosmic space order depend on the ethical rules of the Metaverse.

Self discipline rules of members of the Metaverse: Strengthening of moral constraints

In the Metaverse, people’s identities have multiplicity, concealment and the interaction and integration of reality and virtual. Communication is manifested in three levels: “Virtual human virtual human”, “real human virtual human” and “real human real human”. At any level, the behavior of members of the Metaverse should be constrained by moral rules.

At the “virtual human-virtual human” level, take virtual sexual harassment as an example. In 2016, a female player wrote a document describing the sexual harassment he was subjected to in the game quiver. In 2021, when meta was testing the Metaverse platform “Horizon worlds”, a female tester claimed that she had been sexually harassed in the virtual world[50]. The unique function of meta cosmic virtual reality lies in the user’s complete immersion. The “visual fidelity” and “situational reality” of the virtual world make the subject’s
experience in the virtual world converge with the real world\textsuperscript{[51]}. When female users suffer sexual harassment in virtual reality, their feelings are no different from those in the real world. Similar to virtual violence, that is, users beat and kill other virtual characters in metaverse games. Uncomfortable violent stimuli in highly simulated situations will arouse strong emotional reactions. Pornography and violence should be prohibited in both the real world and the virtual world.

At the level of “real human-virtual human”, the “virtual reality resurrection” technology has triggered a reflection on bioethics. In the documentary “meet you” produced by Korean Culture Broadcasting Corporation, technicians “revive” the dead little girl Nayan with the help of virtual reality technology, so that Nayan’s mother and Nayan can meet again across life and death. The highly realistic “Resurrection” can comfort the living, but the creation of virtual digital human needs to use a large amount of sensitive data of the dead. After the virtual digital human is created, all its behaviors and words are controlled by technology, and the will of the dead can’t be respected, which will infringe on the personal interests and dignity of the dead.

At the level of “real people-real people”, users often take the image and experience of people in the real world as the blueprint when creating characters and game rules. For example, in the basketball game NBA2k online, users can create their own characters according to the external image of real stars through the face pinching system. The creation behavior of users is a mapping of people’s image and experience in the real world. If users maliciously use other people’s portraits, private life and other sensitive information, it will directly interfere with other people’s rights and interests and emotions in the real world in addition, if users use creative freedom to spread pornographic content, it will also damage the moral order of the Metaverse.

The Metaverse is a place where multiple values collide. Without a value orientation that can be followed and generally recognized by the society, the order foundation on which the Metaverse operates will collapse\textsuperscript{[52]}. Basic moral interests such as bioethics and sexual morality are the result of the development of social civilization and an insurmountable moral boundary for all\textsuperscript{[53]}. In the meta cosmic world, no one is allowed to damage the personal interests and dignity of others with the help of the cover of virtual identity. We should strengthen the construction of meta cosmic moral and ethical rules, require members to internalize morality and improve their self-discipline ability.

**Rules of mutual benefit of Metaverse platform: Upholding the principle of giving consideration to justice and interests**

Metauniverse is called a developer or creator driven economy, that is, users become the actual developers of the metauniverse platform. The new relationship between users and platform enterprises raises new corporate ethics issues. Taking “Robles” platform as an example, users as game developers undoubtedly create huge economic value for the platform, but the remuneration paid by the platform is far less than the value created by users’ labor\textsuperscript{[54]}. The platform allows developers to monetize their game creation and make money from the platform by acquiring a virtual currency called “robux”. However, robux currency system is completely controlled by the platform, which can earn about 75.5\% of the revenue from each sales, while developers can only get little or no revenue\textsuperscript{[55]}. In the future development of metauniverse, technology giants will undoubtedly always control the means of production, and they are in a strong position in the distribution of labor value. The fuzzy boundary between user games and labor makes the exploitation of other operators and users more hidden.

In terms of data privacy, metauniverse is a world built by data information. Compared with the Internet era, the collected data has a wider range and larger scale when entering the meta space, the user needs to input a large amount of personal information such as ID card, contact information, credit information, criminal record and so on, and the user’s interaction will also produce personal data
information. The platform grasps the code technology to control the user data information\[56\]. The enterprise’s pursuit of interests will induce it to abuse personal information and infringe the privacy of network users. Zuckerberg put forward a perfect idea for the development of metauniverse and claimed that privacy and security need to be integrated into the metauniverse from the first day. However, from 2018 to 2021, the personal information of hundreds of millions of Facebook users was leaked to the hacker community.

The infringement of Metaverse platform on other operators and users stems from its strong position. The advantages of means of production, technology, and information occupied by platform enterprises make it impossible to rely solely on the private rights of users and the public power of the government to resist this infringement. We should establish a correct value orientation for the development of Metaverse platform enterprises, and guide the platform to consciously assume social responsibility and obligations to users. The platform shall give consideration to corporate profits and social welfare, so as to realize the consideration of justice and profit. We should not only regard the immediate profit as the logical basis for our own existence and development, but also should pay attention to the overall interests of society and realize sustainable development. In addition, users join the Metaverse based on their trust in the platform and provide personal information to the platform. Therefore, the platform undertakes the obligation to protect personal information and shall not abuse personal information in pursuit of economic interests.

**Human rights subsidiary rules of meta cosmic Technology: People-oriented care**

The Metaverse follows the humanistic logic based on the development of human productivity. The rule design of the Metaverse should run through the concept of people-oriented, reduce the uncertainty brought by technology to mankind and benefit mankind\[57\]. The Metaverse attracts the influx of various modern technologies, blurring people’s cognition of life and non-life, life and death, reality and virtual, and challenging the ethical bottom line of today’s world\[58\]. For example, if a chip is implanted in the brain to get a real experience, will people really become a chip in the data processing system? After people enter the virtual world, if they can easily get a complete life experience in the virtual world, are they willing to return to the real world? Will the combination of gene editing and brain computer interface technology lead to a new round of ethical crisis?\[59]\?

The future development of metauniverse should take human’s right to life, human dignity and other human well-being as the bottom line value of scientific and technological activities the “credible AI ethics guide” issued by the European Union in 2019 establishes the “principle of preventing damage” as the ethical principle of scientific and technological development, that is, the development of intelligent technology can not bring negative impact to mankind and harm the interests of mankind. Metaverse is a new stage of scientific and technological development. We should adhere to the basic ethics of people-oriented science and technology without harming human interests to ensure that science and technology is good\[60]\.

Relying on digital technology, metauniverse inevitably digitizes people’s identity, behavior and living environment “Dataism” regards “information flow” as the highest value, and believes that the whole human species is a single data processing system, and everyone is its chip. However, behind every virtual avatar in the Metaverse is man’s independent will. Digital communication should always obey man’s intention and uphold the highest human value, rather than “chip” man’s will. The technological innovation of Metaverse should follow humanism, prevent the destructive risk to mankind caused by improper application of technology, and give priority to human well-being in technological development.

**4.2. Autonomy rules of the Metaverse**

In the context of decentralization, what is staged in the Metaverse is no longer a monologue of
developers, and the members are no longer “string puppets” under the preset plot or existing rules. As a virtual space parallel to the real world, the design of the “script” and the development context of the “plot” of the Metaverse are in the hands of the members of the Metaverse. All parties involved keep running in and identifying with each other in the interaction and form a consensus. In this sense, autonomy rules are the order basis of the Metaverse and the value measure of the Metaverse.

Qualification rules of members

Members of the Metaverse act as a “virtual human”. According to the virtual degree compared with real people, “virtual people” have three types: digital people only existing in the Metaverse, virtual avatars of real people in the Metaverse, and virtual avatars of real people in the Metaverse as far as digital human and virtual avatar are concerned, we should judge whether they have qualified subject status based on whether they have artificial intelligence. If not, digital human and virtual avatar should be treated as objects; Otherwise, it has the subject qualification. As far as the virtual avatar is concerned, it is the complete mapping of the intelligence and thinking of real people in the Metaverse, but it is a little different from the activities of real people in the form of identity, the application of judicial evidence or the way of right relief[61]. Therefore, the virtual avatar is a natural rule qualified subject, and the identity rules applicable to the real world can certainly be applied to the virtual avatar, such as the judgment of capacity and the effectiveness of legal acts, which can be solved in accordance with the existing civil norms.

Property rights rules

By obtaining the non-homogeneous pass carrying the blockchain encryption technology, the Metaverse resource has a proprietary identification symbol, making it a virtual asset. Virtual assets are continuously created and produced in the Metaverse, and the problem of property rights also surfaced[62]. The property right rules of the Metaverse should be constructed to clarify the disputes arising from the ownership and utilization of virtual assets.

Property rights in the Metaverse mainly refer to the ownership, usufructuary right, security right and intellectual property right of virtual assets article 127 of China’s civil code recognizes the property interest attribute of virtual assets, which makes it possible to deal with property rights disputes of virtual assets with real-world rules. At the same time, based on the openness of blockchain technology, there are no technical obstacles to the publicity of all assets in the Metaverse, and the convenience of publicity is greatly improved. In addition, the virtual assets produced based on the user original content mode belong to the intellectual achievements of the creator, and the reproduction cost of Metaverse content is often lower than that in the real world. Therefore, the intellectual property rights of Metaverse members should be specially protected. Members of the Metaverse shall exercise their property rights according to their own wishes, but shall not abuse their rights to damage national interests, social and public interests or the legitimate rights and interests of others[63].

Transaction rules

Like the real society, metauniverse needs to realize value enhancement through circulation and trading, and the demand for metauniverse trading rules also arises. The trading rules of metauniverse include the entry, operation and exit rules of metauniverse trading.

First, the information publicity rules for the access of Metaverse transactions. The design purpose of meta cosmic access rules is not to raise the threshold for market entry, but to protect the transaction safety of the opposite party. The blockchain ledger is globally visible. By publishing the key information of the trading members in the metauniverse and storing it in the blockchain[64], the metauniverse realizes the publicity and public trust effect on all transactions, improves the reliability of the information, and then leaves the business judgment task of the transaction to the counterparty, forming a healthy. Trading environment at its own risk[65].

Second, the fraud prevention rules for the
transaction operation of the Metaverse. Virtual access and virtual property are easy to breed fraud, and developers may use consumers’ fuzziness about the rules and operation of the Metaverse to infringe on consumers’ interests. It is necessary to substantially coordinate consumer protection rules, especially regulate fraud against consumers, and deal with the problem of information deviation.

Third, the liquidation and reorganization rules for the exit of Metaverse transaction. The transaction exit rule can effectively isolate the business risks of people in the real world in the Metaverse, provide a perfect game mechanism for all parties to maximize their interests, force the members of the Metaverse to develop innovation, set the bottom line for the trading counterpart, and curb speculation in the Metaverse. Exit rules shall include liquidation and reorganization rules. Liquidation and reorganization rules suitable for the new technology of metauniverse should be established to make up for the information asymmetry between investors and debtors, build a good information transmission environment and reduce transaction costs.

**Dispute settlement rules**

Rights and remedies are inseparable, so it is necessary to clarify the claim basis of right remedies in the Metaverse. There is no essential difference between the existing tort rules and the applicable tort rules of the universal code. Behaviors in the Metaverse may infringe on people’s personality rights and interests in the real world. It should be clear that the use of personality rights and interests such as the image of real people in the Metaverse must obtain the consent of people in the real world. If people in the real world have died, their close relatives can consent on behalf of them for non-profit purposes.

People in the real world can perceive the urgency and reality of the damage of rights in the Metaverse based on immersive experience. It is very necessary to take self-help relief for infringement acts such as seizing virtual assets and personal injury. Metauniverse is a virtual society built by computer information system. Self-relief shall not be at the cost of destroying metauniverse computer information system.

In the face of disputes that are beyond the ability of the members of the Metaverse and difficult to solve, they can resort to the referee or administrative organ in the real world to achieve the purpose, but their judgment results or administrative decisions can’t inhibit the autonomous space of the Metaverse. There should be a certain limit for the referee intervention of external subjects. They should intervene only when the transactions in the Metaverse platform involve major public interests and national political and economic security.

5. The external control rules of the Metaverse: Based on the interaction between the Metaverse and the real world

The Metaverse is not only the digital mirror image of the real society, but also the positive reflection and new attempt of human beings to the ideal life in the future. The Metaverse enjoys the opportunity to rewrite the existing rules, and the persistent diseases of the real world can find utopian cure in the Metaverse. We need to build external control rules from three levels: The internal vision of the Metaverse, the comparison and interaction between the Metaverse and the real world, and the interconnection between the Metaverses, so as to realize the digital justice, sustainable development and win-win cooperation of the Metaverse.

5.1. Equality rules of the Metaverse: The extension of the concept of justice and joint and several in the Metaverse

Restatement of anti-discrimination rules: Application of the concept of substantive justice

Various inequalities in reality will be infinitely expanded in virtual reality. The Metaverse makes it possible to reshape the rules of social equality, transcend the limitations and prejudices of the real world, and critically evaluate the existing legal
system for those marginalized group members, the concept of substantive justice can give them the opportunity to get rid of the limitations of personal identity and regain control over self-representation\textsuperscript{[72]}. It is the proper meaning of the anti-discrimination rule to refuse unfair treatment without reasonable reasons, not to put a collective in a low position due to race, gender and other reasons, and to provide special protection for vulnerable groups in an unequal position\textsuperscript{[73]}.

Seize the new opportunity of the development of meta-cosmic technology and reshape the anti-discrimination rules. For example, it is common for the dominant party to discriminate implicitly, and the nature of this “indirect discrimination” is not clear in China\textsuperscript{[74]}. We can learn from the discussion on the imputability of indirect discrimination in various countries. In the Metaverse rules, with the help of algorithms, automatic decision-making and other new technologies, we can penetrate the formal equal treatment, directly point to the discriminatory intention behind the behavior, interfere with the decision-making process of the behavior subject, and require real-time evaluation of the adverse impact of the decision-making on different groups and timely adjustment of the behaviors that may produce differences\textsuperscript{[75]}.

**Improvement of consumer protection rules: Popularization of social standard concept**

The dematerialized goods and services in the Metaverse torture the offline consumer rules and require the cultivation of new Metaverse consumer protection rules. Consumers have become the main group of meta-cosmic activities. The identity of consumers itself means disadvantages in rights and information. They can’t realize rationality, equality and full knowledge, and need special protection of the law\textsuperscript{[76]}. At the initial stage of the development of metauniverse, consumers knew little about the operation mechanism and mode of metauniverse, and would face the dilemma of being forced to accept the unequal format terms of metauniverse developers when accessing it rashly. Developers may maximize the residual value of cancellers through technical means such as algorithmic collusion\textsuperscript{[77]}. The asymmetry between consumers and developers in technology and information should be corrected. Metauniverse developers should have the obligation to protect consumers’ right to know. They should have a more strict obligation to explain when providing metauniverse access services, ensure the neutrality of the operation process of metauniverse, and safeguard consumers’ basic transaction rights\textsuperscript{[78]}.

**5.2. Modulation rules of the Metaverse: Highlighting the concept of sustainable and coordinated development**

The yuan universe is inextricably linked with the real world\textsuperscript{[79]}. Shaping the connection rules between the Metaverse and the real world and realizing the coordinated development of the Metaverse and the real world are an important part of the mandatory rules of the Metaverse.

**The choice of tax system planning rules: A feasible way to promote the vision of common prosperity**

In the Metaverse, the wealth obtained by people through labor, trading and other means can be exchanged with the real world, and has corresponding property value\textsuperscript{[80]}. The transfer of virtual currency transaction will produce tax liability. The tax rules in the Metaverse help to determine the fair market price of virtual goods and promote the effective distribution of wealth\textsuperscript{[81]}.

Through the improvement of the tax system of the Metaverse, the distribution justice of the Metaverse can be realized. Taking the real estate tax as an example, Metaverse has the opportunity to reset the new land policy and real estate rules. The trend of the tax system of virtual property in the Metaverse can be seen from the classic Monopoly game. The designer of the monopoly game initially provided two versions of the game rules: One is to seize the land, sit on the starting price, and the land cost belongs to the land occupier. Finally, one person wins and all employees go bankrupt; The other is tax sharing and price increase for the public. The toll collected is shared by all players and will be
accumulated to a certain wealth first[^82]. The designer hopes to alert everyone through this allegorical game that the monopoly of land rent will become an important obstacle to social public wealth. The Metaverse should abandon the first game rule that reflects reality and adopt the second game rule to realize the common prosperity of the Metaverse. The tax system in the Metaverse starts from scratch. Without the heavy obstacles of vested interests, the reform of the tax system will be promoted more smoothly.

**Reconstruction of environmental protection rules: Transformation of practicing the concept of green development**

The construction of meta cosmic infrastructure should be transformed into a green development model. The government should invest financial and human resources to conduct empirical investigation on the operation of the server and data center of the Metaverse platform, and take corresponding regulatory measures to encourage Metaverse developers who provide green services. Specifically, the government can require the developers of meta cosmic platform to obtain corresponding certification on the environmental protection of products, and raise tax collection requirements for products with large pollutant emissions and energy consumption[^83].

On the issue of environmental protection, the economic incentive on the demand side is as important as the economic supervision on the supply side. The green development rules of the Metaverse should adapt to the different roles and behavior characteristics of the users of the Metaverse, stimulate the rational choice of consumers in the Metaverse with economic measures, and promote consumers to choose a more environmentally friendly Metaverse[^84].

**Design of monetary and financial rules: Measures to prevent systemic financial risks**

The financial system is an important part of the whole economic system. Its smoothness and stability depend on a stable economic environment and are of great significance to maintain a good economic operation order[^85]. In the Metaverse, digital asset investment was once hot. For example, it has become a trend to take the non-homogeneous certificate supported by art as an investment tool. However, there are a large number of foam in the virtual market, so the combination of Metaverse and finance should be extremely cautious, especially to avoid the self-reproduction and speculation of virtual currency divorced from real value and legal tender[^86].

The monetary and financial rules in the Metaverse should be regulated separately for non-homogeneous pass and homogeneous pass. As a tradable entity of specific digital assets, non-homogeneity pass is irreplaceable, supported by the market value of the specific assets[^87]. Its regulation should mainly include preventing speculation risk and regulating the circulation and conversion between non-homogeneous pass and legal currency. For the former, due to speculation and the aura of emerging markets, the rising trend of the non-homogeneous token value may lead to a large number of market foam and systemic financial risks, so the transactions that hype the non-homogeneous token market value should be stopped[^88]. For the latter, the government should especially prevent users from using the non-homogeneous token as a disguised financing channel to transfer the virtual financial risk to reality. At present, China has issued the announcement on preventing the financing risk of token issuance and other documents, which explicitly prohibits the financing trading platform from providing services such as exchange, trading and pricing of non-homogeneous tokens. In the future, we can further clarify the illegal liability of non-homogeneous token trading.

Homogenization pass has no value support of specific virtual assets, the price is easy to be manipulated, and the risks of fraud, speculation, false investment and other related transactions are greatly amplified, so it should be subject to more strict and tough control based on the current virtual economic environment, the financial system must be based on legal tender. The government should prohibit the issuance and intermediary of all
homogeneous certificates, prohibit market entities from using homogeneous certificates for illegal financing, and ban the exchange of homogeneous certificates and legal tokens.

5.3. Connection rules between Metaverses: Implementation of the concept of sharing and co-construction

Leading enterprises in online games, social media and other fields have tried to open the door of metaverse with different ports and establish different metaverse platforms. Human beings expect metaverse to become a highly open “next generation World Wide Web”, rather than let developers become profit-making machines competing for customers and maliciously competing with each other through various banned means. We should break the barriers of various Metaverse platforms and establish effective mechanisms and rules for interconnection between different Metaverse platforms.

Arrangement of competition rules: Regulation of anti-competitive behavior in the Metaverse

The birth of metaverse is a huge and new leap in the development of mobile Internet, but metaverse has not yet reached the perfect state of virtual world. It has internal monopoly genes and has the trend of unfair competition of mutual imitation and plagiarism, which should be regulated through scientific anti-monopoly and anti-unfair competition mechanism.

The establishment and operation of metaverse need to invest huge sunk costs, and metaverse aims to achieve large-scale user access, with more prominent cross network externalities. Metaverse has an internal monopoly gene, which is easy to be monopolized by a few developers with strong economic strength and strong ability to control the market, causing great negative externalities to the market. Therefore, the behavior of developers restricting the openness and interoperability of the Metaverse should be regulated. For example, developers should be prohibited from locking users and suppliers, excluding potential competitors and substitutes by setting up special operating systems or hardware, conducting qualification review, etc., and from carrying out exclusive transactions or setting unreasonable trading conditions from metaverse software suppliers.

Unfair competition is also easy to occur between different Metaverse platforms, such as mutual imitation and plagiarism between competitive blockchain services, including the handling of popular programs, projects and works of art. In addition, developers use technical means to hinder the normal operation of products and services in other Metaverse in this platform. In the context of the growing rise of Metaverse, the government should pay attention to the specific competitive reality of Metaverse market, formulate anti-unfair competition rules, prohibit Metaverse developers from plagiarizing or transporting innovative digital products and virtual economy projects, prohibit them from using technical means to unduly restrict the procedures of other Metaverse, and maintain the fair competition order of interconnection between different Metaverse platforms.

Assumption of standardization rules: Establishment of meta-cosmic product quality criteria

The establishment of unified standards between Metaverse platforms is of great significance to realize the interconnection of different Metaverse platforms. At the technical level, unified technical standards related to computing, payment, blockchain and artificial intelligence should be established and improved to realize the interoperability of users, information, assets and other meta-cosmic elements; Gradually establish unified technical standards and audit procedures generally recognized by the Metaverse market, and improve the product quality of each Metaverse platform. For example, the exchange format of the same kind of digital art works in the Metaverse can be unified, and the “3D human Avatar” in the Metaverse adopts VRM format. At the value level, although the objective value of the works of art has not been determined, the government can
still explore to set relevant quality evaluation standards, supervise the circulation of works of art, burst the market foam of virtual digital works, and crack down on speculation in the virtual market.

The development of exchange tools between Metaverse platforms can promote the circulation of virtual products between different Metaverse platforms. Cross-chain technology for asset circulation in different blockchains has been produced. For example, bitxhub, a cross-chain service of fun chain technology, allows virtual assets to be exchanged between different heterogeneous chains on different platforms.

Application of the forwarding rule: Mitigation of the conflict of jurisdiction in the Metaverse

Metaverse developers have different nationalities, but Metaverse technology itself has no national boundaries.

Taking the jurisdiction of data security in the Metaverse as an example, a large amount of data is generated in the Metaverse all the time. The data security of the Metaverse is closely related to the national interests of countries participating in the Metaverse and the personal interests of citizens. The laws of the location of Metaverse developers may conflict with the domestic laws of other countries in terms of cross-border data collection, use, circulation and protection of Metaverse users. It is necessary to establish international unified rules for virtual world data protection, or establish a set of conflict of laws norms applicable to the domestic laws of various countries, and clarify the person in charge and management organization of data security. Accept the safety review and data entry-exit restrictions of relevant countries under specific conditions. Similarly, with the construction and improvement of the internal economic system of the Metaverse, the investment, operation and consumption behaviors of users from all countries in the Metaverse will become more complex and common. All countries need to establish coordinated and unified rules on the jurisdiction of relevant fields, so as to make the Metaverse develop into an obstacle free platform for global virtual cooperation.

6. Conclusions

The Metaverse is half angel and half devil. On the one hand, the Metaverse brings people a beautiful reverie of the ideal world. Human beings use literature and art to depict countless possible worlds, such as the solar system ruled by the Galactic Empire described in Isaac Asimov’s base series novels, the Middle Earth world imagined in Tolkien’s trilogy of the Lord of the rings, and the world woven by the wheel of time described in Robert Jordan’s wheel of time. These versions of the grand world flow between words and are formed in people’s imagination. The Metaverse is likely to land these versions of the world and turn each possible world into a real world. On the other hand, there may be a paradox of “Reflexivity” in the Metaverse, that is, human society is constantly endowed with the opposite meaning of the original intention of interaction. The Metaverse will make human beings locked in the endless empty “dream stealing space” and lose themselves, “like a ticking pendulum clock, dead”.

“The future has come, but it is not yet popular”. In 2021, under the organization of the Ministry of science, technology, information and communication of South Korea, more than 500 companies and institutions established the “Metaverse alliance”, and the Ministry of economy, industry and trade of Japan issued the investigation report on the future possibilities and topics of the virtual space industry. With the increasing recognition of metauniverse, various metauniverse platforms have sprung up, and the high integration of relevant supporting industries, the excessive hype of metauniverse can stop layout the governance rules of the Metaverse in advance to ensure that the correct development track is established at the beginning of its establishment. If the Metaverse becomes another star sea of human civilization, it can be expected in the future.

Conflict of interest

The author declares no conflict of interest.
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