



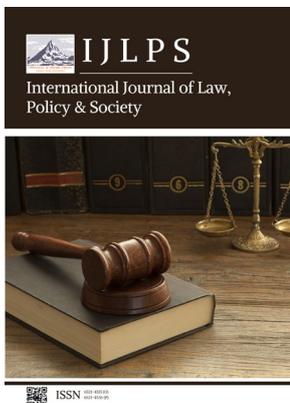
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# The Formation of Digital Human Rights: Starting from the Principle of the Relativity of Rights

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**Abstract:** Human rights, as a foundational and fundamental right, possess a high degree of abstraction, presenting challenges for human rights research. By analyzing human rights through the principle of relativity of rights and exploring the generational classification criteria for the evolution of human rights within the framework of the "three generations of human rights" theory, this study conducts an objective and comprehensive investigation into the realization of digital human rights within their historical and social context. Digital human rights encompass emerging sub-rights such as the right to personal information, the right to digital freedom, the right to digital justice, the right to digital property, and the right to digital dignity. The fundamental purpose of the intergenerational evolution of human rights ideology is to safeguard human freedom and development. Digital human rights represent the latest stage in the evolution of human rights and serve as the theoretical foundation for human rights development in the digital age.

**Keywords:** digital human rights; relativity of rights; right to personal information; right to digital freedom; right to digital property

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## 1. Introduction

The Universal Declaration of Human Rights, in its initial article, asserts that "All human beings are born free and equal in dignity and rights." These individuals are distinguished by their capacity for reason and conscience, which compels them to act towards one another in a spirit of brotherhood. However, in the 21st century digital age, novel forms of inequality in dignity and rights are emerging in the digital space, exerting a profound impact on people's production and daily life. The conceptualization of these notions proves challenging within the confines of conventional human rights frameworks.

In 2019, Professor Zhang Wenxian formally introduced the concept of "digital human rights" at the academic conference "Intellectual Property and Associated Rights". He defined it as the fourth generation of human rights. The advent of digital technology has ushered in a new era, the "digital age". The concept of "digital human rights" underscores the fundamental value of technology that prioritizes the human element. The realization and protection of fundamental human rights are at the core of digital technology's societal impact. The assertion that "without digital technology, there is no digital human rights" offers a profound insight into the contemporary significance of digital human rights.

In the contemporary digital era, the concept of "digital human rights" has undergone a significant transformation, possessing substantial theoretical significance and practical value [1]. Professor Ma Changshan has thoroughly examined the notion of "digital human rights" from multiple perspectives, including its developmental origins, conceptual

framework, and inherent value. He has argued that it holds considerable importance as a fourth-generation human right. Additionally, numerous scholars have explored the concept of "digital human rights" from the perspective of human rights digitalization and the digital transformation of human rights [2].

The observation and comprehension of human rights must be situated within the context of specific historical periods, societal frameworks, and sociocultural environments, as well as the specific legal relationships that define them.

The concept of digital human rights emerged in the digital era, representing a paradigm shift in the understanding of human rights in the digital age. This theoretical framework provides a comprehensive perspective on the evolution and current state of human rights in the digital landscape [3].

### *1.1. The Following Investigation Will Address the Challenges Associated with the Study of Human Rights Evolution*

Human rights, defined as the fundamental rights that are universally guaranteed to all individuals, embody the inherent dignity and value of every person. Sub-rights within human rights, such as the right to life, freedom, and property, form the cornerstone of human existence and serve as the foundation for self-realization and self-expression. The significance of these rights is not externally imposed; rather, it is derived from the consensus formed through human self-awareness and self-understanding. One research approach commences with definition. Human rights are defined as "rights inherent to all human beings". The term "human beings" in the definition signifies the subject of these rights, while "inherent" conveys the "ought-to-be" state of fundamental human rights. This description is characterized by its abstract and general nature, with a focus on the universal values inherent in human rights. The concept of rights can be characterized by universal, equal, inviolable, and inherent qualities. However, it is not designed to facilitate the examination of changes in rights themselves. It is evident that the vast majority of more specific rights can be associated with abstract basic human rights. Furthermore, nearly all specific rights that are protected by law can be traced back to the fundamental objective of safeguarding basic human rights based on the principle of prioritizing people. Consequently, it is challenging to study the evolution of human rights from the perspective of their definition.

Another research method concretely articulates human rights as a collection of sub-rights, including the right to life, property rights, freedom rights, dignity rights, and justice rights. This method analyzes the evolution of human rights through the expansion of the connotations of these sub-rights. Nevertheless, the sub-rights of human rights remain largely abstract, and sub-rights can be further subdivided. The method of listing sub-rights also complicates the effective observation and analysis of these rights. For instance, the concept of "freedom rights" is a highly abstract one. The conceptualization of freedom rights poses a significant challenge, due to the complexity inherent in defining and measuring their content. The subjects are unable to articulate the specific nature of "scope of freedom", "content of freedom", or "limitations on freedom". According to the prevailing scholarly consensus, traditional methods further classify the right to freedom into sub-rights. These sub-rights include personal freedom, freedom of speech, freedom of publication and assembly, freedom of association, freedom of procession and demonstration, freedom of religious belief, freedom of residence, freedom of communication, freedom of scientific research, cultural and artistic creation, and other cultural activities, as well as freedom of marriage. The proliferation of sub-rights divisions has the effect of exacerbating the ambiguity of the concept of human rights, leading to confusion in the criteria for determining human rights updates and creating logical contradictions in the research methodology itself. For instance, when a novel category of rights claim materializes, as long as it can be classified under a specific sub-right at a certain level, it can be posited that the sub-right at the higher level encompasses it, thereby concluding that human rights

have not evolved. However, the validity of such a conclusion is open to debate, given the fundamental nature of human rights and their ability to be linked to a wide range of specific rights.

The "genus-difference" research method is employed to analyze the evolution of rights. This method first determines the "genus" (the category to which a right belongs) and then distinguishes and connects it with other rights of the same genus. This process identifies the "differences" between rights, thereby explaining changes in rights. This approach has been the subject of substantial critique, as it does not adequately address the fundamental principles of rights. The "genus-difference" approach to explaining rights renders interpretations of the evolution of human rights susceptible to an interpretive cycle. An interpretive loop refers to a contradictory process in which understanding the overall meaning of a concept requires understanding its components, and understanding the meaning of the components requires understanding the whole. This forms a circular contradiction. When human rights are broken down into sub-rights, such as freedom rights, life rights, property rights, and dignity rights, if a new type of right claim can be explained through one of these sub-rights, it is treated as part of the content of human rights. This approach leads to the conclusion that human rights have not evolved. This methodological approach engenders an infinite loop, whereby the entity and its components interact and influence each other, thereby rendering it impossible to effectively distinguish between them. According to the principles of this research method, the concept of human rights appears to encompass all rights. Even if rights undergo evolution, they would still be attributed to this infinite cycle and difficult to prove as existing.

In addressing the issue of interpretive circularity, it is imperative to recognize that phenomena cannot be comprehended in isolation from the whole or its constituent parts. Instead, an objective perspective on the movement of rights must be constructed through the application of contextual knowledge, thereby gradually deepening the understanding of the phenomena. As the German theologian and philosopher Schleiermacher articulated, "As such, the true meaning of a text can only be understood when it is placed within its historical context."

### *1.2. The Following Investigation Seeks to Employ the Principle of Relativity of Rights to Interpret Digital Human Rights*

The investigation will determine the existence of "digital human rights" and their potential to function as the fourth generation of human rights, thereby facilitating an inter-generational renewal of human rights. An effective theoretical research method is necessary to achieve these objectives. The primary issues that must be addressed are twofold. First, it must explicate the process of updating the first three generations of human rights and identify the criteria for distinguishing between generations of human rights within this theoretical framework. Secondly, it is imperative to articulate the definition and existence of digital human rights and to verify through the aforementioned criteria whether they should be recognized as a new generation of human rights. The objective is to establish a cohesive articulation of the generational progression of the human rights system.

The principle of the relativity of rights functions as an effective research method for the evolution of digital human rights. This principle posits that rights inherently possess certain limitations from their inception; rights are relative, meaning that while they exist, they are also constrained by these limitations. The existence and evolution of rights must be explained and understood within the scope of these limitations, which must be identified based on the historical, cultural, and social development context in which they exist. The research methodology of the principle of the relativity of rights is reflected in Marxist jurisprudence, legal theory, and socio-legal theory.

Human rights can be defined as concepts that exist in ideology and legal systems, both of which belong to the superstructure. Marxist legal theory elucidates the relation-

ship between the economic base and the superstructure, with law, as part of the superstructure, being the manifestation of the will of the ruling class. However, this will be not arbitrary; it is ultimately determined by the material living conditions of this class. The superstructure, including the concept of human rights, is determined by the prevailing economic base of society during a given period, and in turn, the superstructure serves this economic base. Digital information technology has emerged as a pivotal production factor, disrupting conventional economic growth models and trajectories of productive force development. This new type of productive force is characterized by high technology, high efficiency, and high quality. This phenomenon is indicative of a series of changes in production relations. As an integral component of the superstructure, the human rights framework must demonstrate adaptability to the changes emanating from the economic base. The fundamental nature of human history is predicated on the process by which productive forces drive the evolution of production relations and social relations, including the continuous evolution and improvement of human rights. Consequently, as an integral component of the superstructure, the human rights framework must undergo a comprehensive update to align with the profound transformations in productive forces precipitated by digital technology. This update is imperative to ensure that the interests of the populace are more accurately reflected, thereby fostering social progress and development.

In the domain of legal theory, Bentham and Hart offered an interpretation of the concept of "rights" through the lens of the principle of the relativity of rights. Bentham's theory of rights as interests emerged from a critique of the prevailing "attributes and differences" approach to rights interpretation. Bentham employed the "linguistic delimitation" method to formulate the theory of rights as interests, positing that rights can only be comprehended within a particular relative context. He further elucidated that, "To have a right is to be in a position to obtain a benefit through the obligation of another in accordance with the intention of the law." Hart's work drew on Bentham's research methods, reflected on the theory of rights as interests, and further developed his own theory of rights as choices. He rejected Bentham's assertion that rights and obligations are one-to-one correspondences and are closely linked. Instead, he conceptualized rights as a form of two-way freedom. Hart advanced the notion that the concept of legal rights is limited to the prerogative of choice that is enshrined by law. He advanced the concept that rights do not merely represent the exclusive antithesis of obligations; rather, they signify autonomous decisions that can be made within the confines of a particular era and as delineated by legal frameworks. This methodological approach, which involves the examination of rights within specific and constrained contexts, also elucidates the relative nature of rights. Digital human rights, therefore, can be defined as the rights to freedom of choice, which should be protected within the bounds of the law in the digital age.

The sociological theory of law posits that legal frameworks mirror the values, customs, and cultural norms of the society that engenders them. This theory further asserts that legal systems evolve in tandem with societal transformations. The renowned sociologist Niklas Luhmann proposed the "second-order observation" method in his theory of social systems. First-order observation emphasizes "what is observed", while second-order observation simultaneously focuses on "how to observe". Second-order observers are capable of reflecting on their observation process, observing "their own observation of the object of observation", thereby eliminating the blind spots produced by mere first-order observation. The principle of the relativity of rights is a method of "second-order observation". The study commences with an examination of the manner in which human rights are observed, encompassing the historical and social context in which they are situated. It then proceeds to analyze changes in the content and limitations of human rights, thereby providing a more comprehensive analysis of digital human rights.

Human rights are inherently relative; they are subject to inherent limitations from the moment of their establishment, and their comprehension and study are confined to specific historical, social, and cultural contexts. The principle of the relativity of rights can

establish a second-order observation perspective for the study of digital human rights. This perspective analyzes the constraints on human rights in the digital age and interprets the evolution of their content. This research method facilitates a more comprehensive description of highly abstract human rights and the effective identification of standards for their intergenerational renewal. This theoretical approach is an effective model for the study of digital human rights.

### *1.3. Interpretation of the Principle of Relativity of Rights in the Development of Intergenerational Human Rights*

First, we analyze the theoretical framework of "three generations of human rights" using the principle of relativity of rights. The concept of "three generations of human rights" was proposed by Vasak, a French legal scholar and UNESCO expert, who posits that each generation of human rights corresponds to the basic rights demands of humanity during different historical periods of modern times.

The first generation of human rights emerged during the rise and development of capitalism. Its ideas originated in the European Enlightenment and reached their peak during the French and American Revolutions. It emphasizes the political rights of citizens, including freedom of speech, freedom of religion, the right to vote, and the right to be elected. At that time, human rights were a powerful weapon for revolution, as the bourgeoisie used them to oppose the feudal monarchies that imposed oppressive rule and the colonial powers that exploited their colonies. The concepts of freedom and democracy took root during the period of vigorous development of capitalism. During this period, the exchange of goods gradually became the basic form of economic interaction among people. Only free and equal subjects could fairly contract and freely exchange goods. With the tremendous revolution in productivity brought about by capitalism, people's ideas and demands for rights also advanced. People yearned to break free from the feudal system and religious oppression of their legal status and political power, and sought personal equality and freedom as well as political rights.

The second generation of human rights emerged in the 19th century, a period of vigorous development of the socialist cause in the world. Its main ideas were derived from socialist theory, and Marxism's criticism of the defects of capitalism, such as competition and oppression, served as the theoretical basis for the second generation of human rights. It reflected the absolute liberalism upheld by the first generation of human rights and placed greater emphasis on the universal economic, social, and cultural rights that people should enjoy. In the era of capitalist development, excessive economic freedom led to a series of social problems, and oppression and great inequality within the free economic system gradually became the main social contradictions. The wide gap between the rich and the poor created an insurmountable gap between people, leaving some people without basic living conditions and dignity. The emergence of second-generation human rights responded to people's demands that basic rights be guaranteed equally to all, regardless of wealth.

Third-generation human rights emerged with the rise of Third World countries. After World War II, the traditional colonial system collapsed, and many formerly oppressed colonies gained independence and regained political sovereignty. However, on the one hand, the vestiges of colonialism had not been completely eradicated, and these countries still faced numerous historical legacies. On the other hand, Third World countries were often oppressed by the industrialized countries due to their backward productivity and urgently needed to build and develop themselves. Independence brought demands for self-determination and collective development. The people of Third World countries sought to independently decide the affairs of their own countries and hoped to develop their nations on an equal footing. This quest for values, combined with the West's correction of excessive liberalism during this period, laid the ideological foundation for the third generation of human rights. The third generation of human rights places greater emphasis

on development rights and collective rights, including in particular the right to peace, the right to self-determination, and cultural rights. The countries of the Third World are home to the majority of the world's population, yet they possess extremely scarce material resources and means of production. The third generation of human rights responded to the demands of the people. After achieving political independence, economic and cultural independence became their urgent needs, and people demanded the resolution of inequalities between the rights of collective self-determination, cultural rights, and the right to peace.

An analysis of the generational renewal of human rights shows that the process of renewal in each generation has followed the basic logic of "ensuring that people enjoy the rights they should have as human beings", while the substantive updates of human rights in each generation have not deviated from the basic values of equality, freedom and fairness. Through the principle of the relativity of rights, it can be seen that the essence of intergenerational renewal of human rights lies in expanding the content of human rights in different historical periods and under different primary social contradictions to address newly emerging restrictions on rights and to meet new fundamental rights demands, thereby realizing the historical process of human freedom and development. Vasak argues that each generation of human rights is a revolution. The essence of the "three generations of human rights" theoretical framework is that human rights are constantly subject to new limitations in the historical period in which they exist, while at the same time evolving to respond to these limitations and thereby continuously fulfilling their function of securing basic human rights claims. The criteria for dividing the generational updates of the "three generations of human rights" are the expansion of the substantive content of basic human rights claims in different historical periods and the primary social contradictions of those periods. The fundamental purpose of human rights is to protect fundamental human rights, and the continuous updating and development of the content of human rights is the process of achieving this purpose. Further analysis and research on digital human rights should also be conducted within the social context of the current digital age.

## **2. "Digital Human Rights" Are a New Form of Human Rights in the Digital Age**

Human rights are an integral part of the superstructure. As human society progresses, the content of human rights evolves alongside changes in the economic base and advances in productive forces. Since the rise of capitalism in modern times, the ideals of freedom and equality have taken root in people's hearts, giving rise to the embryonic form of human rights ideology during the capitalist revolution. Throughout human history, eras have often been named after the core productive elements that have had the most significant impact on social progress at the time, such as the agricultural age, the steam age, the industrial age, and the current digital age. From new modes of production and consumption to the emergence of various new media and social networks, digital technology has profoundly influenced every aspect of people's lives. The development of digital technology has driven technological revolutions and industrial transformations, propelling the progress of the times. The "digital age" is a vivid description of the current stage of human societal development. While bringing convenience, digital technology has also given rise to a series of new human rights issues. Traditional human rights cannot explain the new social problems that have emerged, nor can they describe the universal rights demands of people in the digital age. The development of productivity has brought about new social contradictions, and a series of human rights issues that need to be resolved urgently have emerged. Digital human rights are the human rights of the "digital age", representing the collective basic rights demands of people in the digital age, while the digital age serves as the fundamental framework for observing and understanding digital human rights. In an era dominated by digital elements, human rights must also evolve in tandem with society.

To study human rights in the digital age, it is necessary to interpret their nature by starting from the essence of data elements. We must discover the characteristics of the

digital age, identify the restrictions on human rights in the broader context of the digital age, and recognize the new basic rights demands that arise as a result, while analyzing the changes in human rights in the digital age.

The term "digital" in the digital age refers to digital information technology. Binary digital signals composed of 0s and 1s can correspond to the two states of "on" and "off" in circuits, enabling the recording, editing, calculation, and transmission of information within electronic computer systems. This technology has revolutionized the use and dissemination of information and has produced a wealth of technical applications. Traditionally, information recorded in different forms and on different media, such as images, videos, and text, can all be translated into digital information. Chips, also known as integrated circuits, are a way of miniaturizing circuits. They are typically manufactured on the surface of semiconductor wafers and can perform arithmetic operations, logical operations, and data processing on digital signals, greatly improving human computing power. Electronic communication technology transmits digital signals through electromagnetic waves. Fifth-generation communication technology (5G) features high speeds, low latency, and large connections. Its excellent characteristics have broad application scenarios and are leading a new round of information technology revolution. Digital technology converts information from the real world into digital form, enabling it to be stored, processed, and transmitted. AI, as a further development of digital technology, uses artificially designed computers and algorithms to simulate human intelligence. Digital information technology and its applications have brought about a productivity revolution in the current era and ushered humanity into the "digital age". The digital age is characterized by virtuality, recordability, and parallelism.

### *2.1. The Digital Age Is Characterized by Virtuality*

Digital information technology has created a virtual digital space that is distinct from the real world. The rules of digital space are completely different from those of the real world and are determined by its technical characteristics. Lawrence Lessig argues that digital code is the rule of cyberspace, determining its restrictions and freedoms. The virtual digital space can serve as a site for labor production and economic activities, changing people's behavioral patterns and ways of thinking, and influencing various fields such as society, politics, economy, and culture. The virtual digital space has the characteristics of immediacy, plasticity and openness.

Virtual digital space has immediacy. In the virtual digital space, information spreads at extremely high speed, breaking the traditional constraints of space and time, allowing people to exchange information with entities in other parts of the world at any time and from any place. This has changed the operating mechanisms of economic activities and the pace of people's lives, increasing social efficiency. However, the efficient transfer of information also poses risks, such as the breach of personal data and the distribution of offensive content. Virtual digital spaces are malleable. People can use digital technology to create virtual environments to meet their needs, simulate real-world environments for experimentation and experience, and apply virtual reality technology in scenarios such as gaming, entertainment, and education. People participate in digital spaces through virtual identities. However, this malleability can also be exploited for malicious purposes, leading to phenomena such as cyberbullying and online fraud. Virtual digital space is open. This provides more opportunities for innovation and creativity, allowing people to unleash their imagination and creativity in virtual spaces. But it also gives rise to new forms of human rights violations, such as AI face-swapping and malicious photo manipulation. Digital space has changed the way people live and think, enabling them to communicate, engage and innovate in new ways. People no longer exist only as physical beings, but also as "digital beings" in the digital space. This has given rise to a number of human rights issues, such as violations of privacy, abuse of rights and the spread of false information. The rights violations that people encounter in virtual space are difficult to protect through

traditional human rights mechanisms and require updated human rights concepts and protection methods to address them.

### *2.2. The Digital Age Has the Characteristic of Recordability*

The digital age is an age of recordability, mainly due to the revolutionary changes in recording methods and the reduction of recording costs brought about by the development of digital information technology. Digital information is recorded on various media (such as USB flash drives and external hard drives) and can be easily stored, retrieved, and transmitted over networks using general-purpose devices. As technology advances, carriers that are small and inexpensive can store large amounts of information. In the digital age, every aspect of people's lives generates a large amount of information. Various daily activities such as online shopping, online chatting, identity verification, and file transfer are carried out in the form of digital information. Sensors such as satellite positioning, cameras, fingerprint recognition, and facial recognition are widely used. A large amount of personal information, such as people's location history and biometric passwords, is being recorded. Some describe the current generation of information as accompanying the entire process from cradle to grave. While large amounts of information are generated, users often lack effective control over their own information. Personal information is often collected and stored by online service platforms, and its use is not disclosed, making it difficult to ensure its security. The use of massive amounts of information can bring convenience to people's lives, but it can also bring a series of personal information security risks. In the digital age, personal information is used in a variety of scenarios, and its efficient circulation and security must be given equal importance. The right to personal information is a key area to be protected in digital human rights.

### *2.3. The Digital Age Is an Era of Parallel Worlds*

In the digital age, people live not only in the traditional physical world, but also in the digital world. They coexist in two interconnected but very different spaces. For example, the process of online shopping is essentially the creation and fulfillment of a sales contract. However, unlike traditional methods such as written contracts or face-to-face transactions, the entire fulfillment process consists of both online and offline components. The display and selection of goods, the negotiation and conclusion of contracts between consumers and merchants, and the offer and acceptance processes take place online through the exchange of information, while the actual delivery of goods is carried out offline by merchants through logistics companies. The entire process of online shopping is a combination of digital and physical space. In the event of a dispute, online and offline coordination is also required to resolve the dispute. The digital age has also given rise to new forms of digital property that do not exist in physical form, but in the form of information. The methods of infringing digital property are different from those of traditional property, requiring new legal concepts and technical measures to protect it. Digital property rights are an important component of digital human rights.

## **3. The Essence of Digital Human Rights**

The definition and essence of digital human rights must be interpreted within the context of the digital age in which they exist. The evolution of the three-generation framework of human rights theory must also be observed within this backdrop. The foundational objective of human rights is to ensure the safeguarding of human freedom and development. In the digital age, there is an increasing demand for fundamental rights, as well as new restrictions on personal liberties. This demand has led to a renewal of interest in the fundamental nature of digital human rights. It is imperative to initiate this inquiry with the foundational principle of the relativity of rights. A meticulous examination of the novel rights demands that are emerging in the digital age can facilitate the identification

of the shortcomings of traditional human rights concepts. This, in turn, can engender a more comprehensive understanding of the evolution of human rights.

The digital age is distinguished by its emphasis on virtuality, recordability, and parallelism. The virtual digital space exists in parallel with the real world. In the digital realm, the technological regulations that govern the storage and dissemination of digital information are regarded as the "natural laws" of this domain. These laws serve as the foundational criteria for the existence and limitations of rights within the digital space. In the digital realm, data functions as the fundamental "means of production", and individuals' control and utilization of information collectively represent the "productivity" of this digital space. Together, these elements form the economic foundation of the digital domain. Digital human rights are predicated on this foundation and evolve in accordance with it. Conventional human rights are instrumental in ensuring the survival and development of individuals in the tangible realm. In contrast, digital human rights must effectively safeguard individuals' survival and development in the virtual domain.

The digital space is composed of digital information as its fundamental element. In the contemporary digital landscape, the governance of personal information is paramount for safeguarding human rights. The realization of individual information rights serves as the foundational principle for ensuring digital human rights. Classic human rights, including the right to freedom, the right to justice, the right to property, and the right to dignity, have also evolved to acquire new connotations in the digital space [4].

### *3.1. Personal Information Rights in the Digital Age*

People not only live in the real world, but also exist as "digital persons" in the digital space. Personal information constitutes the basic elements of "digital persons". The holders of personal information rights are natural persons, and these rights express the control and disposal of individuals over information derived from themselves. Personal information serves as the foundation for individuals to enter and participate in the digital space, and it is also the foundation and core of digital human rights.

From the perspective of the principle of the relativity of rights, it can be observed that the right to personal information has become a universal right claim of individuals in the digital age, and has the nature of fundamental rights, constituting the core content of digital human rights. First of all, in the digital age, personal information has widespread usage demands, and the control and disposal of personal information are fundamental rights that every individual should enjoy equally. People use fingerprints and facial recognition to prove their identity, clock in or conduct transactions, use satellite positioning for navigation, and use address information for online shopping delivery. The uses of personal information in everyday life are countless. The use of personal information such as fingerprints, facial features, and location is a basic need of people in the digital age, and the application scenarios of personal information are everywhere in our lives. Personal information is the "breath" of people in the digital age. Without it, we would not be able to move forward.

Second, personal information rights face serious risks of infringement, and specific provisions on rights and obligations are effective in protecting them. They should be interpreted and protected as fundamental rights. First, in the digital age, the collection of personal information is widespread, which actually increases the risk of violation. For example, people pass within the range of many cameras in their daily lives, and it has become almost impossible to prevent their facial features from being recorded. There are even cases of illegal installation of facial recognition devices, and in practice, there have been malicious infringements involving the illegal collection and sale of user information through facial recognition. Second, violations of personal information rights are covert, difficult to detect, and have serious consequences. There are cases of non-transparent or even illegal collection of personal information during its collection and use. Users may have their personal information, such as location, movement patterns, text messages, and

phone calls, maliciously collected by background programs while using their smartphones. Because users are unaware that their information is being collected, it is difficult for them to detect and remedy such breaches in a timely manner. Once personal information has been leaked, it cannot be recovered, and it is difficult to restore the information security status to the pre-leakage state, which leads to various side effects with severe destructive effects. Third, with the development of digital technology, the scenarios in which personal information is used in daily life are constantly increasing. As the frequency of personal information use increases significantly, the types of personal information used become more diverse, and the risks of personal information breaches increase accordingly.

In summary, personal information in the digital age has a wide range of application scenarios, affecting various aspects of people's lives and giving rise to new forms of rights violations. In the digital age, the need for control and mastery over personal information is universal and necessary, and the significance and importance of personal information rights continue to grow, having become a fundamental right that everyone should enjoy.

Some argue that personal information rights can be expressed as an extension of the concept of privacy rights in classical human rights. However, privacy rights tend to focus on protecting the confidentiality of one's private behavior, private spaces, and private information, while personal information rights emphasize both the efficient use and security of information, and thus differ significantly from privacy rights. Another view suggests that personal information rights can be interpreted by extending the connotations of human rights, such as freedom rights and equality rights. However, the subject matter of personal information rights is relatively clear, and the rights are expressed as the subject's demands for control, use, and security of his or her own information. These rights are difficult to explain in terms of liberty rights or equality rights. Moreover, the effective protection of personal information rights is the foundation for people to participate in the digital space as "digital persons" and a prerequisite for the realization of equality rights and freedom rights in the digital space. Personal information rights cannot be derived from the extension of traditional human rights, but should be protected as an independent sub-right within digital human rights.

China has enacted the Personal Information Protection Law, which defines personal information, establishes the rights of personal information owners, and outlines the obligations of personal information collectors and processors. The specific personal information rights set forth in the law have two attributes: control-based information rights and defensive information rights. However, these two categories of personal information rights face practical challenges, and the specific rules governing personal information rights often fail to adequately protect individuals' control over their personal information or to counteract unlawful infringements of such rights.

Defensive information rights refer to the right of users to prevent their personal information from being violated. In practice, defensive information rights face the challenges of difficulty in detecting infringements and obtaining remedies, and the results of such infringements are irreversible. First, infringements of personal information rights are often difficult to detect in a timely manner and difficult to remedy. When using network services, users do not have the necessary technical means to know when and where their personal information is being collected, and they are even less able to know when their personal information rights have been violated. Even if they suspect that their personal information has been leaked because they have received harassing phone calls, it is difficult to prove with evidence. The lack of evidence makes it difficult to obtain redress for violations. Second, once personal information is leaked, it cannot be recovered, and it is difficult to restore rights to their original state. The damage caused by such violations cannot be measured in monetary terms, and economic compensation cannot fully compensate for the damage caused to the parties by the leakage of information.

Control-based personal information rights are positive information rights, represented by the consent rule. The consent rule refers to the requirement that in personal

information processing activities, the methods, rules and purposes of information processing must be disclosed in advance, and consent must be obtained before personal information can be processed. This rule gives users the right to know and consent to the processing of their personal information. However, in practice, the personal information processing consent rules established by online platforms are mandatory, which effectively turns the consent rule into an obligation to provide personal information. In practice, the personal information processing terms are mandatory. First, the content is mandatory. Personal information processing rules are non-negotiable, and the vast majority of such rules are pre-drafted standard terms that users cannot negotiate with the platform according to their own will. Second, consent is mandatory. Many online platform services involve users' basic life needs, and users must select "consent" to obtain the services smoothly. The purpose of the consent rule is to establish an "informed consent" framework for the processing of personal information. However, in practice, this rule is only realized in form, and fails to ensure users' substantive awareness and voluntary consent to the processing of their personal information.

Personal information rights are the foundation and core of digital human rights, which require the protection of individuals' rights to control and dispose of their personal information. However, the specific provisions of rights and obligations struggle to ensure their effective realization. As a core sub-right of digital human rights, the right to personal information should be understood as a principled concept applicable in specific legal proceedings. Establishing "an individual's control over his or her personal information" as a fundamental principle can improve the efficiency of personal information rights protection in legal proceedings.

### 3.2. Digital Freedom Rights

Freedom rights represent a critical component of human rights, denoting "the rights of citizens to engage in activities in accordance with their own will, as prescribed or recognized by law". The term "freedom" is defined as a state determined by an individual's will and interests, thereby granting people the right to resist actions that undermine this state. Within the physical realm, the concept of freedom is frequently transgressed by means of coercion or force. In classical human rights, the right to freedom is primarily a defensive right, meaning that it can be invoked against acts that infringe upon freedom.

However, the pursuit of freedom in the digital realm is encroached upon by the information environment, thereby rendering digital freedom a novel form of liberty. In the contemporary era of an information explosion, the sheer abundance of content available enables individuals to consistently locate content that aligns with their preferences. Secondly, the integration of big data technology enables online platforms to provide customized recommendations, tailored to the specific preferences of individual users. This phenomenon, known as an "information bubble", engenders an environment where individuals are deprived of intellectual freedom due to their inability to access objective and truthful information. The information bubble has been shown to have a series of deleterious effects. Firstly, the phenomenon under scrutiny restricts people's information horizons, thereby preventing them from observing the world in a comprehensive and objective manner. Secondly, it has been demonstrated that this phenomenon results in individuals being exposed exclusively to information that is congruent with their pre-existing preferences, thereby serving to reinforce existing cognitive biases. This phenomenon impedes the acceptance and comprehension of novel concepts, resulting in the rejection and discrimination of divergent viewpoints. Thirdly, the information contained within information silos is one-sided, causing individuals to lose critical thinking and innovation capabilities, and making it difficult for them to make wise decisions and objective judgments. Fourthly, the compartmentalization of information leads to the formation of distinct, specialized information networks, thereby creating divisions among individuals based on

their access to diverse sources of information. This phenomenon has the potential to intensify conflicts and contradictions among groups with differing viewpoints, thereby contributing to an escalation in social instability. In the context of an extreme information environment, individuals find themselves confined within "silos", thereby relinquishing their autonomy.

In contradistinction to the defensive nature of classical freedoms, digital freedom is a positive freedom that requires protection as a sub-right of digital human rights. Digital freedom is the fundamental necessity to proactively preserve the objectivity and truthfulness of one's information environment. Within the digital domain, individuals should be entitled to demand objective, comprehensive, and equitable information. Digital freedom, therefore, can be regarded as a fundamental right in the digital age, for it enables individuals to make free judgments based on objective, comprehensive, and fair information, thereby truly realizing "free will". Epictetus's philosophy posits that true freedom is attained through self-realization derived from rational thinking, rather than through the fulfillment of one's desires. The elimination of desires, rather than their satisfaction, is the path to true freedom. This perspective effectively elucidates the essence of digital freedom rights. The phenomenon of being confined to an "echo chamber" of information that is tailored to one's own preferences has been demonstrated to have a deleterious effect on freedom of thought. In contrast, engagement with diverse, objective information that is intended to provoke judgment and reflection on one's own views and perceptions, as well as interaction with differing perspectives, has been shown to be conducive to the cultivation of true freedom. As Rousseau articulated, "Moral freedom is the only thing that can truly make humans their own masters."

Digital freedom rights necessitate not only protection but also regulation to prevent abuse. Freedom of speech is defined as the liberty to express thoughts and opinions on various issues through various forms. In the digital realm, this right is manifested as the entitlement to anonymous online expression. On the one hand, anonymous online expression has been shown to expand the ways in which freedom of speech can be exercised and to help protect personal privacy. Conversely, anonymous online expression entails potential risks, including the propagation of online rumors, cyber violence, and other chaotic phenomena, as well as the infringement of intellectual property rights. Online rumors have been shown to possess a considerable destructive capacity, thus becoming a primary target for censorship efforts. In the preceding year, the Cyberspace Administration of China divulged numerous instances of online rumors concerning sudden incidents, public policies, and social welfare. The administration proceeded to trace and close the accounts from which the rumors initially emanated, ultimately handling a total of 1,660 accounts in contravention of established laws and regulations.

The right to digital freedom is predicated on the principle of ensuring that individuals are able to operate in an objective and fair information environment, thereby enabling them to realize their "free will". This right is concomitant with the necessity of regulating the abuse of the right to anonymous online expression, which constitutes an integral component of digital human rights.

### *3.3. Right to Digital Justice*

Article 1 of the Universal Declaration of Human Rights, "All human beings are born free and equal in dignity and rights" is the classic expression of the connotation of the right to justice. The right to digital justice means that everyone should be treated equally with respect to digital rights. The right to digital justice is not only an integral part of digital human rights, but also a necessary condition for the realization of other digital human rights. The right to digital justice requires the guarantee of equality of subjectivity and fairness of rights and obligations in the digital space. The right to digital justice must address the phenomena of the "digital divide" and "big data rights" that undermine fairness.

The "digital divide" refers to the gap that exists between those who have access to the new technological tools of the information age and those who do not. In the digital age, people in remote areas and the elderly are unable to enjoy the convenience of digital information technology on an equal basis due to differences in the level of regional infrastructure, generational differences in age, and vast differences in the ability of people in different regions and ages to use digital devices. The popularization of digital technology applications is extremely rapid and has the advantage of being efficient and convenient, and some of these basic services have become indispensable to people's daily needs. The right to digital justice requires that the digital divide be addressed to ensure that everyone can enjoy the benefits of digital information in an equitable manner and to protect digital human rights.

The right to digital justice also requires the governance of "big data rights". The term "big data" is a product of the development of modern digital information technology, and refers to data on a huge scale that can play a role in business strategies after being acquired and computed by enterprises, giving rise to the right to big data. Enterprises with huge amounts of data can assess consumer demand and consumption ability through the information advantage provided by the data, so as to make adjustments to their business strategies and optimize their profitability. The right to big data may pose a threat to the fairness of the market. With the advantage of big data, platforms with huge amounts of data will profile users, that is, build data models through information such as users' shopping preferences, living habits, and daily behaviors. It is undeniable that user profiling has certain positive effects, as it can directly connect the demand and production sides to improve economic efficiency. On the other hand, platforms can use user profiles to discriminate against consumers in terms of price or to engage in fraudulent activities. Platforms can use data to analyze the consumption levels of different users and set different prices for different consumers, which is known as "big data ripening". The platform can also deliver targeted advertisements to predict and guide consumers' consumption behavior. At the same time, "user profiling" in the digital space often involves excessive collection of personal information and violates the right to personal information. This is a serious violation of the right to digital justice.

In the era of rapid development of digitalization, people demand that the convenience and efficiency brought about by digital technology should benefit everyone fairly. The core of the right to digital justice is people's rights and interests to participate in the digital world on an equal footing and to be treated fairly, which is a basic human right demand in the digital era, and which requires that the use of digital technology follow the principles of fairness, impartiality and transparency. The right to digital justice is the true meaning of the development of digital human rights.

#### *3.4. Digital Property Rights Are Defined as the Rights to Control One's Own Legitimate Gains*

In traditional societies, property rights are generally embodied by tangible assets, signifying the dynamic interplay between control and domination over material resources and the safeguarding of enjoyment of those resources. A historical examination of the evolution of property rights reveals a correlation between the broadening of property's scope and the advancement of productive forces. The expansion of means of production and subsistence has been shown to be a significant factor in the broadening of property's scope. The content and methods of safeguarding property rights are contingent upon the nature of the property in question. In the digital age, novel forms of "digital property" have emerged, and the expansion of property objects similarly necessitates updates to the content of rights to ensure protection. Digital property rights are predicated on the notion that individuals possess the capacity to exercise control over and dispose of their digital assets. It is imperative to recognize that this framework is designed to safeguard the rights and interests of individuals with respect to their digital assets. In essence, it serves as a fundamental prerequisite for the realization of digital human rights.

Digital property is defined as information that is stored and circulated in digital form, lacking a physical manifestation. It is subject to novel forms of infringement and necessitates updated rights concepts and technical means for protection. The primary sources of digital property are property digitization and data commodification. The former refers to traditional property existing in the form of data, such as videos, audio, images, and text stored in digital form. The objects in question are endowed with property rights attributes, and in their digital form, they require new technological means for protection. The latter refers to data with property value, which, due to their ability to satisfy human needs, are regarded as valuable and tradable property, including electronic currency and virtual items. Digital property exists in the form of electronic data, and its possession, control, and transactions all require technical assistance. The management and exchange of digital assets frequently necessitate the utilization of third-party service platforms. The security of digital property is often threatened by data breaches, hacking, and other risks.

In the current digital era, a growing number of industries are undergoing a transformation and upgrading process driven by digital technology. This ongoing process has resulted in the continuous emergence of new types and higher-value digital property. Digital property has emerged as a significant component of social wealth and an essential element of individuals' legitimate property, necessitating legal recognition and protection. However, in practice, the identification, transaction, and inheritance of digital property still face numerous challenges. The establishment of legal status for digital property is imperative for the provision of legal protection, akin to that granted to traditional property. This legal framework is further instrumental in clarifying the ownership of digital property and ensuring the security of digital property transactions. Digital property rights are designed to safeguard individuals' lawful ownership and control over digital property, thereby ensuring that people's economic interests in the digital space are respected and protected. Digital property constitutes a novel category of property rights that has emerged within the digital domain. These digital property rights represent a significant component of digital human rights. The establishment of digital property rights is imperative for the maintenance of market order and the promotion of positive development in the digital economy.

In response to the rapid development of the digital economy, for instance, a 2022 document on data governance emphasized the importance of clarifying data ownership, encouraging secure data circulation, and improving mechanisms to support the data-based production model. It is imperative to acknowledge and comprehend the underlying principles that govern data property rights, circulation, transactions, utilization, distribution, governance, and security. Furthermore, it is essential to investigate mechanisms that facilitate the effective protection of data security, effective utilization, and compliant circulation. In addition, it is crucial to enhance the institutional mechanisms of the data element market and to cultivate a new type of production relations that is compatible with digital productivity through experiential learning and exploration. The document provides guidance for confirming the legal status of digital property and safeguarding citizens' digital property rights. In the digital age, the establishment of digital property rights is an inevitable requirement for safeguarding digital human rights, as digital property rights are closely linked to people's legitimate rights and interests.

### *3.5. Digital Dignity Rights*

The fundamental principle of dignity can be defined as "the most basic social status that individuals should enjoy and the most fundamental respect they should receive". Dignity can be defined as the combination of an individual's inherent value and the respect accorded by others in social relationships. Article 38 of the Constitution of the People's Republic of China formally acknowledges the inviolability of citizens' dignity rights. The first article of Chapter 5 on Civil Rights in the General Provisions of the Civil Code of

the People's Republic of China stipulates that citizens' personality dignity rights are protected by law. The right to digital dignity is defined as an individual's entitlement to fundamental respect in the digital domain and to maintain dignity free from infringement by others. The right to digital dignity necessitates the recognition of novel forms of dignity infringement in the digital domain, including instances of cyberbullying.

The advent of Internet technology has facilitated the dissemination of information in an efficient and convenient manner, thereby giving rise to a plethora of social media platforms. Software such as Weibo, WeChat, forums, and bulletin boards have become increasingly indispensable components of people's lives. The rapid dissemination of information has also given rise to numerous social issues, with "cyber violence" serving as a salient example. Cyber violence is defined as any act committed through the use of the internet that infringes upon others' legitimate rights and interests by means of insult, defamation, or attack, thereby causing reputational harm or other adverse effects. Cyberbullying is a grave issue that can have severe consequences, including the infringement of human rights and the disruption of online stability. Cyberbullying represents a grave infringement on digital dignity rights, and addressing this issue is imperative for ensuring the preservation of these rights.

Digital dignity rights hold particular significance for individuals in the digital age, and these rights differ significantly from traditional dignity rights. The rapid dissemination of information on social media platforms is a salient feature of the contemporary age. Online rumors and defamatory information that infringe upon digital dignity rights can disseminate extensively in a brief period and may even escalate into a form of "cyberbullying". Infringement of digital dignity rights has the potential to engender a state of "social death" for the victim, resulting in the deterioration of their reputation and the dissolution of their social relationships, thereby impeding their ability to continue living within their social circles. In the event of a violation of digital dignity rights, the harm caused is often difficult to rectify. The individual may find it challenging to disengage from this pernicious stigma, as they are subject to societal pressures. A person subjected to "social death" experiences a loss not only of personal dignity but also of employment, familial relationships, and social connections. As social beings, humans not only require physical life but also the "life" derived from social relationships, necessitating the ability to live with dignity. The significance of digital dignity rights to an individual's well-being exceeds that of traditional dignity rights. Digital dignity rights demand the protection of an individual's personal dignity in the digital space. This protection must include safeguards against online rumors and cyberbullying. It must also ensure that individuals maintain an objective and normal social evaluation. Furthermore, it must preserve the health of their digital reputation, free from coercion through malicious moral blackmail.

Digital dignity rights are defined as the rights of individuals in the digital space to maintain their dignity. Ensuring that individuals' reputations are not infringed upon and that their dignity is fundamentally respected is imperative. Ensuring the safeguarding of digital dignity rights is imperative for enabling individuals to engage in normal activities in cyberspace with a sense of security, maintain stable social relationships, and ensure the stability of their production and livelihood. The establishment of digital dignity rights is not merely an endeavor to safeguard individual dignity; it also serves as a foundational element in the construction of a healthy and harmonious digital society. Ensuring the digital dignity of each individual is imperative for the advancement towards a more equitable, impartial, and comprehensive digital landscape. The right to digital dignity represents the latest expression of human dignity and is considered one of the core sub-rights of digital human rights.

#### 4. Conclusion

A theoretical framework for studying the evolution of human rights can be constructed based on the principle of the relativity of rights. It can be posited that the inter-generational evolution of human rights itself represents the evolutionary process of fundamental rights claims made by people in different historical stages and under varying social contradictions. The theoretical framework of the three generations of human rights elucidates the process by which the content of human rights continuously expands and the concept of rights is constantly updated to safeguard the "innate" fundamental rights of all individuals. The advent of digital technology as a pivotal production factor has precipitated the advent of the digital age, which is distinguished by its virtuality, recordability, and parallelism. In contemporary society, individuals now inhabit two distinct yet interconnected realms: the physical world and the digital space. The advent of the digital age has given rise to novel forms of human rights restrictions and fundamental rights demands, thereby necessitating an update and expansion of the content of human rights to address these challenges.

In order to address novel forms of rights restrictions and to safeguard new basic rights demands, classic human rights concepts should be updated and iterated into digital human rights. Digital human rights are defined as the fundamental rights of individuals in the digital age, with the overarching objective of safeguarding freedom and development in this domain. The expansion of fundamental rights necessitates an expansion of the content of human rights, which also constitutes the innovation of the concept of digital human rights. Personal information rights are defined as the prerogative of individuals to exercise control over information originating from themselves. This right serves as the foundation for individuals' engagement in digital affairs, a prerequisite for accessing the "digital space", and the crux of digital human rights. Digital freedom rights necessitate the safeguarding of an objective, comprehensive, and equitable information environment; the eradication of the influence of "information silos"; and the actualization of the "free will" on which people's thoughts and actions are founded. Digital justice rights necessitate the assurance of equitable access to digital technology services, the mitigation of the "digital divide", and the prevention of "big data discrimination" to ensure fair transactions in the digital domain. Digital property rights necessitate the protection of individuals' legitimate rights and interests in digital property, the recognition of the legal status of digital property, and the conferral of the same protection on digital property as is typically granted to traditional property. Digital dignity rights are defined as the set of principles and regulations that aim to safeguard the fundamental human rights of individuals in the digital domain. These rights encompass the prevention of "cyber violence" and the mitigation of "social death", which refers to the deterioration of one's reputation and social standing in the digital realm.

The study of human rights has undergone significant evolution throughout history. A comprehensive and objective examination of the evolution of digital human rights necessitates a consideration of this evolution through the lens of the digital age. The protection of human rights has been a perennial concern throughout history. Digital human rights represent a theoretical innovation in contemporary human rights and also the historical direction of human rights protection. Digital human rights research, which evolves in tandem with contemporary advancements, represents a pivotal approach to propelling the reform movement in the domain of human rights.

#### References

1. K. Mathiesen, "Human Rights for the Digital Age," *J. Mass Media Ethics*, vol. 29, no. 1, pp. 2–18, 2014, doi: 10.1080/08900523.2014.863124.
2. M. J. L. Baroni, "Fourth Generation Human Rights in View of the Fourth Industrial Revolution," *Philosophies*, vol. 9, no. 2, p. 39, 2024, doi: 10.3390/philosophies9020039.
3. S. Domaradzki, M. Khvostova, and D. Pupovac, "Karel Vasak's Generations of Rights and the Contemporary Human Rights Discourse," *Hum. Rights Rev.*, vol. 20, pp. 423–443, 2019, doi: 10.1007/s12142-019-00565-x.

4. A. Rouvroy and Y. Poullet, "The Right to Informational Self-Determination and the Value of Self-Development: Reassessing the Importance of Privacy for Democracy," in *Reinventing Data Protection?*, S. Gutwirth, Y. Poullet, P. De Hert, C. de Terwangne, and S. Nouwt, Eds. Dordrecht: Springer, 2009. ISBN: 9781402094972.

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