

Survival, Life and Development: The Digital Space and Human Modernisation

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Abstract: The digital space has become a realm of existence, daily life and development in which people find themselves immersed without realising it, and which they utilise without a second thought. As a space of existence, the digital space reshapes human sociality and the essence of human being. As a space of daily life, it provides people with decentralised sharing platforms and poetic habitats, whilst integrating interpersonal interaction with the meaning of life. As a space for development, the digital realm drives a paradigm shift in human development from a time-oriented to a space-oriented approach, exchanging the spatialisation of time for human developmental space, thereby reshaping people's spatial perceptions and spatial survival skills—ensuring they neither suffer from being immersed within it nor feel anxious from being excluded from it.

1. Introduction

The digital space is a novel form of non-physical existence constituted by the interplay of information technology infrastructure, social interaction practices and cultural symbols. It is not a pre-existing spatial entity, but rather a mapped space that is gradually generated and reshaped through the complex interweaving of technology and culture. Driven by technological logic, it is also permeated by humanity's eternal pursuit of communication, identity and transcendence of limitations; it represents humanity's mathematical abstraction of information, and acquires its social nature through networked connections. Today, generative artificial intelligence, exemplified by ChatGPT, DeepSeek and Sora, is deeply embedding the relationships between humans and technology, humans and humans, humans and machines, and humans and nature within the digital space; the digital space is transforming the ways in which people exist, live and develop. The digital space has become a realm of existence, daily life and development in which people find themselves immersed without realising it, and which they utilise without a second thought. Existence within the digital space is no longer a choice, but a condition of modernity; it is gradually becoming a social space from which digital life cannot be separated ^[1]. The digital space provides people in modern society with convenient access to material resources and an abundance of intellectual nourishment, enabling those within it to transition rapidly from the industrial and information societies towards an intelligent society. Both now and in the future, how to seize the initiative in development and achieve human modernisation within a digital space characterised by greater inclusivity, autonomy

and humanistic care is a question that demands an urgent answer.

2. The Digital Space as the Existential Space for Human

As a space of existence, the digital space defines the way in which people live. Today, humanity is transitioning from a digitalised way of life to a way of life that is fundamentally rooted in the digital space; whilst this is not yet widely acknowledged, it is an indisputable fact. Whilst digital technology has expanded physical space, it has also created a digital space beyond the physical realm upon which people depend for their existence ^[2]. On the one hand, the new intelligent infrastructure established around modern applications has essentially covered humanity's physical living space, prompting a shift from a natural living space to a technological one; existence detached from such a physical living space is difficult to comprehend or achieve. On the other hand, human activities are increasingly becoming embedded within the digital space, or gradually forming a mode of existence where the physical living space serves as a supplement to the digital one. It is not difficult to imagine that, in the not-too-distant future, the digital space will become embedded in people's physical living spaces in a more intuitive manner, manifesting specifically as the personalisation and intelligentisation of physical living spaces through the application of smart technologies. As early as the late 20th century, the renowned American futurist Nicholas Negroponte boldly asserted in his book *Being Digital* that 'computing is no longer just about computers; it determines our very existence. "Massive central computers—the so-called 'mainframes'—have, almost everywhere in the world, bowed down to the personal computer. We have seen computers leave air-conditioned buildings, move into studies, sit on desks, and now find their way onto our laps and into our pockets."^[3] From the perspective of technological development, smart technology at that time was entering a human-computer environment based on initial interaction, yet Negroponte had already foreseen the future mode of human existence—a symbiotic existence between humans and technology accompanied by computers. Although it was difficult for people at the time to truly experience or practise digital spatial existence, today the views expressed in the book have become a reality.

As is well known, in the past, data appeared in the form of information (bits) and was stored within computers, whilst interaction between humans and technology (machines) tended to be one-way information output, often limited to the exchange of information rather than genuine interaction and communication. Consequently, from the perspective of technology or machines, they generally functioned as simple tools rather than as entities on a par with humans. However, with the evolution of technology to the present day, a digitalised mode of existence has gradually supplanted a merely digitised one. The intertwining of the virtual and the real, the enhancement of human spatial perception, the digitalisation of economic activities, and the diversification of human identity and forms of existence have collectively extended the human sphere of existence directly from the physical realm into the digital realm. Digital technology has dissolved the physical boundaries of traditional time and space, thereby vastly expanding the scope of human existence. Since time immemorial, humanity has reified and de-reified the existence of objects through a certain centrist cognitive and behavioural framework. Consequently, the extraction, exploitation and transformation of objects within the digital space are inevitable phenomena—for human survival, whether in the real world or in the digital space, first and foremost requires control; it necessitates the construction of a nest for one's own survival ^[4].

In the digital realm, modern intelligent technologies characterised by multi-intelligent, multi-scalar spatialisation and multi-layered interactivity represent quintessential spatialised digital symbolic technologies. These embed the human body into the digital space in a symbolic manner, causing the naturalness of the human body to recede within the digital realm. In its place emerge a

technological body of a vehicle-like nature and a social body in symbolic form. Of course, this does not imply the disappearance of the naturalness of the human body, but rather the extension and enhancement of the natural body by a non-natural body grounded in technology and symbols. Specifically, this non-natural body is capable of transcending the constraints of physical space and time, enabling free movement and interactive existence within the digital space. Although in the digital space the non-natural body constitutes the mode of human existence, and intelligent technologies have long ‘become the inorganic body of man’ ^[5], the natural body remains the fundamental subject of the non-natural or inorganic body. In other words, whilst the object-relationality manifested between technological artefacts in digital space tends to supplant intersubjectivity—and whilst communication and interaction among multiple subjects are formally realised through symbolic or technological agents—this does not fundamentally signify the complete withdrawal of the natural body. Rather, it retreats behind the scenes of bodily surrogates, becoming the true manipulator and possessor of these surrogates. Consequently, the mode of human existence in modern society is a modernised mode realised through bodily surrogates, unconstrained by the limits of time and space.

Judging by the manner in which the human natural body is represented in digital space, the substitute mode of existence of the human inorganic body or bodily prosthesis within digital space has altered the mode of human existence. That is to say, the sociality of humans in digital space is primarily realised through social constructions based on non-natural bodies. This exerts a severe impact on the strong social relationships constructed in reality through reliance on natural bodies, giving rise to a new phenomenon wherein people are more willing to trust others in digital space than those in familiar social circles. Consequently, the digital space has increasingly become an intermediary system linking ‘physical space’ and ‘social space’, blurring the boundaries between physical, social and digital spaces through ‘mapping’ and ‘reshaping’ and fostering their mutual interpenetration, ultimately giving rise to the ‘triple space’ of human social existence and evolution ^[6]. Within this ‘triple space’, the digital space constitutes a fundamental condition for modern human existence, a prerequisite for human modernisation, and a technological enabler of human socialisation. Those inhabiting it must first adhere to the operational rules of the digital space before learning the rules governing the social or physical space. Furthermore, as people exist within the digital space, the specific manifestations of their social nature have also undergone changes, transforming into a technological existence dependent on the inorganic body. People gather due to the technological nature of the digital space, and through this, they achieve their own transition from the natural to the social, or realise their leap from the traditional to the modern. At a deeper level, this transformation in humanity’s mode of existence within the digital space is clearly not confined to the realm of technological or digitalisation-based interpretations; it has now extended to the spiritual and cultural spheres, fulfilling humanity’s spiritual and cultural needs at a higher level. Furthermore, through the spiritual, cultural, or power-based discipline of the digital space, people are gradually adapting to its rhythms of existence. Humanity has thus become the ‘digital human’—a being capable of adapting to a digitalised existence.

3. The Digital Space as a Human Living Space

As a human living space, the digital space shapes people’s lifestyles. From the perspective of human life, the digital space creates a digital living environment in which people can establish virtual identities, visit virtual locations, engage in digital interactions, and experience a digital life unlike anything before ^[7]. People enter digital space through their inorganic bodies or bodily surrogates; the original natural body extends into a non-natural body. Whilst the natural body undergoes technological dismemberment and cultural reshaping within the digital space, the virtual

body that replaces it achieves cybernetic life extension, functional enhancement and physical modification ^[8], thereby transcending the temporal and spatial limitations of the natural body. This significantly improves people's quality of life. In other words, building upon their existence within the digital space, people can access the necessary resources for living with great ease, and are thus moving towards a better life.

Human life is intrinsically linked to the digital space. Marx pointed out, 'Man lives by nature. This means that nature is the human body with which man must engage in a continuous process of interaction in order to avoid death. The so-called connection between human physical and spiritual life and nature is nothing other than the connection between nature and itself, for man is a part of nature' ^[5]. From this perspective, human life in the digital space constitutes a process of continuous interaction chosen by modern humans to avoid a regression to primitivism or to better realise their socialisation; that is to say, it is the process through which humans in the digital space achieve their own modernisation. The reason people are able to progress towards a higher quality of life in the digital space stems, on the one hand, from the fact that the digital space is a decentralised, shared living space. The sharing of material resources and spiritual and cultural resources, as well as the broader range of interpersonal communication and interaction facilitated by human-technology interaction, adds a sense of authenticity, immersion and fulfilment to people's lives in the digital space. On the other hand, this stems from the fact that the digital space is a poetic living space where 'everyone is a masterwork'. Provided they do not violate the ethical requirements of digital existence or the spirit of contract, people can lead lives of complete freedom within the digital space; they can freely create and share the minutiae of their lives, whilst also gaining insight into the lived experiences of others who, like themselves, are physically present in the digital realm. Because of this sharing—and the conditions of digital existence that make such sharing possible—people's actual lives within the digital space are by no means lacking in spiritual motivation. The composition of spiritual life is not something hollow or impractical; rather, it is the digital space and the spiritual nourishment beyond it that together enrich both human material and spiritual existence.

The digital realm is a lived world that people can experience directly. Today, the digital realm has become an experiential world in which people live—one that precedes both science and philosophy. People live within this digital realm without being constrained by it, or without intuitively perceiving any difference between living there and living in physical or social spaces. This demonstrates that digital space has become a space of everyday life; whilst it is not a physical, tangible space, it has become an interactive living space that integrates the meaning of people's lives. 'Not only does the consciousness of each individual engage with a world of experience that is unique to it, but all consciousnesses possess a world of experience that is common to them' ^[9]; this is the conclusion reached by Husserl regarding the interactive relationships between various objects in his study of the concept of intersubjectivity. The same holds true for those who live in the digital space. Although individuals participate in this lived world of experience through non-physical or symbolic bodies, this does not detract from the authenticity of their lives within the digital space. This is because it represents a true reflection of life extending from the physical body—that is, from people's real lives. With the support of the digital space as an intermediary system, lifestyles that were once impossible or difficult to achieve have now become a reality, needs such as food, clothing, shelter, transport and daily necessities, emotional comfort and commercial transactions can all be fulfilled within the digital space. Of course, this does not imply that the digital space is omnipotent, but rather that by leveraging its advantages, people can lead a better life than before.

From the perspective of the digital space's existence, its significance lies in enabling a concrete structure to serve as the spatial support and physical platform; the primary significance of a place lies in providing the experiential measure required for people to assess whether this environment

‘holds meaning’^[10]. As a support and physical platform for people’s technologised lives, the current digital space—backed by technologies that render it visible, perceptible and controllable—facilitates the transformation of the digital space from a potential living platform into a tangible living environment for people. This, in turn, provides the practical technological conditions and contextual support for people’s poetic dwelling. In summary, from the perspective of human-made constructs, digital space represents an aggregation and reflection of the lifeworld and its various elements and relationships; from the perspective of the lifeworld, digital space is the materialisation of the lifeworld and the elements and relationships that constitute it^[11]. It follows that, as a human living space, the digital space is capable of aggregating, integrating and reflecting the various interactions between people, between people and technology, and between people and objects. Consequently, living in the digital space implies that, as people’s daily lives unfold within it, the space becomes a materialised expression of their living environment; through this process of materialisation, the space itself is enriched and perfected, whilst the availability of life’s meaning becomes increasingly abundant. Furthermore, living in digital space, the creation of a human ‘authentic collective’ breaks through the closed nature of self-centredness. As social beings living within a community, humans overcome the duality of human existence; whilst transforming modes of production, they construct new forms of social interaction, representing true human modernisation^[12].

4. The Digital Space as a Space for Human Development

As a space for human development, the digital space determines the manner in which humans develop. The digital space defines the essence of objects within its domain, typically through the occupation, fragmentation and reorganisation of the spatial dimensions of those objects. Digital space constitutes a convergent spatial ecosystem and structure where multiple spaces coexist, formed upon the integration of physical, social and even spiritual spaces. Its definition of objects begins at their very source; all entities embedded within digital space are compelled to express and present themselves according to the rules and forms of that space. This is particularly true of the real and concrete individuals connected to the non-natural or inorganic bodies situated within it. On the one hand, through the occupation, fragmentation and reconfiguration achieved by the spatial compression of objectified entities within the digital space, the digital space realises the sublation of the material forms of these entities, as well as the technological and spatial presentation and expression of their essential characteristics. Just as with the presentation and expression of human beings in the digital space, these are all realised through the appropriation, fragmentation and Restructuring to achieved by the digital space’s spatial compression of real, concrete and historical human beings, thereby endowing the human beings within the digital space with a technologised life and social attributes in a semiotic sense. On the other hand, considering human actions within digital space, digital space is to the inorganic body what physical and social spaces are to the organic body: the former provides the latter with the fundamental conditions for survival, life and development. In other words, the way in which digital space defines human development—or, conversely, the way in which people within digital space must realise their own development—requires adherence to the fundamental laws and logical forms of digital space’s development. It necessitates interaction with the technological discourse system, the universal technical language, and other constituent elements of the digital space; this process of interaction is itself the process of realising human development and modernisation.

In the digital space, the shift of human development from the temporal paradigm of physical space to the spatial paradigm of digital space has had a profound impact on human development. Specifically, space has gradually moved from a peripheral position to a central one, whilst time has

gradually receded from its former central position. At this juncture, digital technology—the very foundation of the digital space—is evolving at a rapid pace, leading to constant changes in human-to-human and human-to-technology relationships, as well as in the very nature of human development. The fragmentation of time is gradually being integrated along the historical continuum through the spatialisation of time, forming a magnificent, man-made developmental space underpinned by spatial concepts and spatial technologies. Of course, time has not disappeared here; rather, it exists by eliminating the temporal constraints and spatial barriers that hinder interaction between different spatial entities. At present, the digital space is propelling human society, in ways people could not have anticipated, from a ‘regional’ sphere of existence towards a ‘global’ sphere of development. The ‘world history’ once predicted by Marx and Engels is becoming a universal reality; the interdependence between nations, ethnic groups and economic entities across the globe is increasing, with their material and economic interests interpenetrating and merging to form shared interests^[13], thereby propelling humanity’s sphere of development from a regional one to a global one. With the continuous development of generative artificial intelligence, the consciousness of objects is gradually awakening; the social world is no longer merely a world understood by humans, but has become a world jointly interpreted and understood by humans and machines^[14]. and today’s digital space is precisely such a world of human-technology symbiosis. In the process of this symbiosis, humanity enhances its capacity to comprehend and reshape the world; it also progresses from barbarism to civilisation amidst the modernising tide of human-technology symbiosis, driving the modernisation of human society forward amidst the entanglement of constraints and liberation, limitations and freedom^[15].

Human self-development in the digital space. For people to achieve development within the digital space, they must engage in self-construction, self-organisation and self-improvement, whilst ensuring that they do not become detached from the digital space due to its fluid nature, nor overlook its tangible reality because of its intangible form. At the same time, they must act in accordance with the fundamental principles of the digital space, leveraging its spatial concepts and structural advantages to empower their capacity for development within it. They must achieve the co-existence and mutual growth of multiple spatial roles within the digital space, whilst also being adept at resolving the contradictions arising from the twin configurations of diverse digital spatial structures and the differences between disparate spaces, and bridging the fragmentation and exclusion of human multiple identities caused by the aggregative nature of the digital space. Furthermore, human development within the digital space manifests as individuals moving from the physical space into the digital space, immersing themselves therein and acquiring new spatial concepts and new spatial survival skills. They are able to navigate freely through diverse digital spaces and secure the material, livelihood and developmental resources necessary for survival; they can consciously utilise the time gained through the compression and conversion of physical, social and spiritual spaces into the digital space as a space for their own development, and can also treat the space gained through the compression of time as time for their own development. Conversely, those who remain confined to traditional spaces, or who maintain a hostile attitude or outright rejection of the new digital space, are unable to achieve their own socialisation within the digital realm, nor can they assist those already immersed in it to achieve modernisation. Therefore, from the perspective of technological socialisation, for human survival, life and development within the digital space—and to achieve human modernisation—a balance must be struck between technologicalisation and socialisation. One must neither become fully technologicalised, becoming part of the technology itself, nor pursue socialisation alone whilst abandoning or rejecting technologicalisation; otherwise, one would regress to an ‘atomic society’ and become an ‘atomic individual’, for the very emergence of the digital space is a product of technological socialisation. Consequently, the modernisation of humanity within the digital space constitutes a synthesis of

human technologisation and socialisation, and is itself a synthesis of human techno-socialisation. To detach from, sever ties with, or reject human techno-socialisation is to abandon human modernisation; one would either become a technological being or an atomised individual, ultimately being cast aside by the times.

The coupling of human existence, daily life and modes of development with the digital space constitutes a distinctive hallmark of human modernisation and a physical proxy for intelligent human existence; it forms the philosophical mirror image of human modernisation and defines the very essence of human development. The definition of the essence of human development by the digital space does not lie in the extent to which human bodily organs or consciousness are immersed in it, but rather in the degree to which humans, whilst carrying out activities of existence, life and development within the digital space, are oblivious to it. The former indicates a separation of humans from the digital space, whilst the latter signifies the fusion of humans with the digital space, growing and evolving together. The definition of the essence of human existence by the digital space is characterised by the individual being immersed in it without realising it, and using it daily without awareness; for at this point, the individual is both within and outside the digital space, able to perceive its entirety whilst simultaneously carrying out activities of existence, daily life and development within it, essentially achieving a complete integration of human modes of survival, living and development with the digital space; or, alternatively, achieving a state of immersion whilst possessing the corresponding spatial awareness and spatial survival skills, suffering no distress from being within it, nor anxiety from being outside it. At this point, the digital space becomes such an ordinary and 'intuitive' entity for humans that the development of the digital space is truly bound together with human development and modernisation.

5. Conclusion

Based on the three core dimensions of existence, life and development, this paper offers a profound analysis of how the digital space has been internalised from an external technological environment into the ontological essence of human existence, thereby becoming a key driving force behind human modernisation. The research indicates that the digital space has evolved into a fundamental space of human existence; it constitutes the fundamental condition of modern humans' 'being-in-the-world' and has become a sphere of existence in which modern humans 'dwell without realising it, and use daily without noticing'.

Firstly, on the dimension of survival, the digital space has reconfigured the ontological status of the human being. Humanity is transitioning from 'digital survival' to 'digital spatialised survival'; whilst the natural body recedes into the background, the extension and enhancement of human essential capacities within the digital space are realised through the 'inorganic body' or 'bodily prostheses'. This model of 'human-technology symbiosis' not only transcends the boundaries of physical time and space but also reshapes the generative logic of human social relations, enabling human sociality to find entirely new forms of expression through technological mediation, thereby affirming digital space as the fundamental arena of modern human existence.

Secondly, in the dimension of daily life, the digital space constructs a decentralised, shared and poetic habitat. It is no longer merely a carrier of information, but a space of daily life where humans integrate the meaning of life, facilitate emotional interaction and realise self-expression. Here, through virtual identities and digital interactions, people acquire material and spiritual resources, constructing a genuine and rich lifeworld. This process restores the meaning of life that modernity had fragmented within human society, whilst driving the logic of human life in the intelligent society towards a return from purely instrumental rationality to value-based rationality. Furthermore, through materialised expressions, it embodies humanity's aspirations for a better life, making the

‘real collective’ within digital space a possibility.

Thirdly, in terms of development, digital space has driven a historic shift in the paradigm of human development from a ‘time-dominated’ to a ‘space-dominated’ model. Within the digital space, by spatialising time to create room for human development, interaction costs have been reduced and the boundaries of development expanded. This has prompted people to acquire new spatial concepts and survival skills; through self-construction and role coordination, they have achieved a metamorphosis from ‘tradition’ to ‘modernity’ amidst the tension between technologicalisation and socialisation, thereby completing the leap from ‘geographical existence’ to ‘world-historical existence’. Thus, human modernisation manifests here as the dialectical unity of technologisation and socialisation: one must neither become a mere appendage of technology nor retreat to a state of atomisation by rejecting it.

In summary, human modernisation is essentially realised through deep integration with the digital space. A truly modern individual is a subject capable of navigating the digital space freely, allowing multiple roles to coexist and flourish, without suffering from being immersed within it or feeling anxious from being excluded from it. In the future, constructing a digital space that is more humane and inclusive, and balancing technological logic with human agency, will be the key to achieving human modernisation.

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