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| RESEARCH ARTICLE

Transcending the Matrix: Innovations and Future Prospects of Human Civilization's Information Dissemination Methods under the Hypothesis of Silicon-Based Life

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| ABSTRACT

This study addresses the increasing polarization in societal attitudes toward Artificial Intelligence Generated Content (AIGC) amid its rapid advancement. The research aims to clarify the complex relationships among AIGC, carbon-based life, silicon-based life, and the dynamics between collective and individual consciousness, with the goal of fostering a balanced public understanding of AIGC. Employing a hypothesis-driven methodology, the study associates AIGC with the concept of silicon-based life. It utilizes literature reviews, comparative analyses, and phenomenological studies to investigate the distinct roles of AIGC and carbon-based life in human development, particularly in the realms of communication and creativity. The findings highlight that AIGC, representing a form of collective consciousness, has brought about revolutionary changes in the speed and scope of information dissemination, especially within the communication sector. It has also significantly influenced the establishment of technological standards. However, this progress comes with challenges, including the risk of cultural homogenization. In contrast, carbon-based life remains essential for nurturing creativity and preserving ethical diversity. The study contends that AIGC should be viewed not merely as a tool but as a companion, comparable to silicon-based life, aligning with the natural principles of coexistence. Thus, a rational and balanced approach is crucial for integrating AIGC into human society.

| KEYWORDS

AIGC, Carbon-based life, Silicon-based life, Individual consciousness, Collective consciousness

1. Introduction

The rapid evolution of Artificial Intelligence Generated Content (AIGC) has ignited significant debate and exploration within academic circles and the broader public, particularly in its intersection with the theoretical concept of silicon-based life and its connection to collective consciousness, marking a novel and timely research avenue. This exploration is especially pertinent given the critical role of information dissemination throughout human history, where, despite the continuous evolution of communication mechanisms among carbon-based life forms, the intrinsic value of individual consciousness has remained constant. This raises a fundamental question: why is preserving the irreplaceable role of individual consciousness essential in an increasingly automated world, despite technological advancements? The research is essential due to the polarized societal attitudes towards AIGC, where reliance on it has led to a diminished sense of independent thought and user autonomy, exemplified by the homogenization of content on platforms driven by AIGC algorithms. Conversely, familiarizing the public with silicon-based and carbon-based life concepts is crucial, as it may shift perceptions of artificial intelligence from mere tools to biological companions coexisting with humanity, potentially reducing polarization and fostering greater openness and acceptance. To address these

issues, this study employs a methodological approach based on an extensive literature review, integrating well-founded hypotheses with real-world case analyses to enhance credibility and deepen the resonance of its findings with readers. This approach facilitates a nuanced exploration of the ethical, philosophical, and societal implications of AIGC, advocating for a balanced perspective that recognizes the value of both collective and individual consciousness in shaping the future of human communication.

1.1 Research Background
The integration of Artificial Intelligence Generated Content (AIGC) has, in recent years, catalyzed a significant transformation in sectors such as journalism, artistic production, and education, fundamentally altering both the creation and consumption of content. Underpinned by advancements in machine learning, natural language processing, and computer vision, AIGC has not only optimized the efficiency of content generation but also ignited critical philosophical discourse on the evolving nature of creativity and authorship in the digital era (Brown et al., 2020; Russell & Norvig, 2016). Concurrently, the exploration of life beyond the carbon-based framework has emerged as a focal point of scientific inquiry and speculative thought, challenging the paradigm that carbon's unique ability to form stable, complex molecules is integral to life-sustaining processes. The theoretical concept of silicon-based life, though still speculative, suggests that under alternative environmental conditions, such as high temperatures or low-oxygen environments, silicon-based organisms could potentially exist, thus extending the boundaries of our understanding of what constitutes life (Bains, 2004; Pace, 2001). The integration of these theoretical constructs with the historical trajectory of information dissemination highlights the enduring significance of communication in human society, from prehistoric cave art and oral traditions to the advent of the printing press and the digital revolution. Each technological innovation in communication has facilitated the more efficient and widespread transmission of knowledge, culture, and ideas, with the advent of AIGC representing the latest stage in this evolutionary process, potentially serving as a bridge between carbon-based and silicon-based entities. This research background provides a foundation for an in-depth examination of the mechanisms of communication in this emergent era, where the convergence of AIGC and the concept of silicon-based life poses profound challenges to traditional understandings of life, creativity, and interaction.

1.2 Research Background
The swift progression of Artificial Intelligence Generated Content (AIGC) has ignited considerable academic debate, especially with regards to its impact on collective consciousness and its theoretical links to silicon-based life. Underpinned by sophisticated algorithms and vast datasets, AIGC can create content that resonates with diverse audiences, influencing a collective consciousness characterized by shared beliefs and moral attitudes, as noted by Durkheim (1912). The rise of AIGC is seen by some as a step towards the theoretical development of silicon-based life forms that might exhibit a collective intelligence beyond individual human input, leading to a convergence of ideas that could reinforce dominant ideologies and sideline alternative perspectives (Jouhki et al., 2022).

The existing literature suggests that AIGC and the potential existence of silicon-based life challenge conventional ideas of creativity and communication. AIGC systems, by automating content creation, reflect on the hypothetical collective intelligence of silicon-based entities, prompting questions about the future role of human creativity in a world increasingly influenced by non-human entities (Tegmark, 2017). This intersection indicates a shift in collective consciousness dynamics, with human input increasingly mediated by artificial systems.

In contrast, individual consciousness, concerning personal experiences and awareness, is closely related to carbon-based life. All known life on Earth is carbon-based and is inherently connected to the development of individual consciousness, stemming from the complex interplay of biological, psychological, and environmental factors (Chalmers, 1996). Carbon-based life is distinguished by fostering individual creativity, emotional depth, and ethical discernment, which are central to human experience.

Scholarly work indicates that individual consciousness and carbon-based life are deeply interconnected, with the biological processes of life also giving rise to the rich spectrum of human thought and emotion (Harari, 2016; Palace Museum & Phoenix Television, 2020). With the expanding influence of AIGC, preserving individual consciousness is vital, as collective narratives promoted by AIGC might overshadow individual expression. This dichotomy presents a significant area for exploration, especially as society deals with the ethical and philosophical implications of these emerging technologies.

1.3 Problem Statement and Objectives
The proliferation of Artificial Intelligence Generated Content (AIGC) has introduced a critical challenge to the essence of human consciousness. As AIGC shapes collective consciousness, there is a growing concern that it may overshadow individual consciousness, which is vital for creativity, diversity, and personal expression. This dominance could lead to the homogenization

of ideas and marginalization of alternative perspectives, threatening the rich tapestry of human thought that is rooted in individual experiences and emotions.

This paper aims to address this challenge by examining the role of information dissemination in shaping both collective and individual consciousness. The primary goal is to explore the dual influence of these forms of consciousness on humanity, recognizing the benefits of AIGC, such as increased efficiency and enhanced information accessibility, while also highlighting the importance of preserving individual consciousness for fostering creativity and ethical diversity. The paper advocates for a balanced approach to ensure the coexistence of both forms of consciousness, contributing to the discourse on the ethical and societal ramifications of AIGC, and proposing strategies to safeguard the integrity of individual consciousness in an automated world.

2. Information Dissemination Plays a Crucial Role in Both Ancient and Modern Times

Information dissemination is a cornerstone of human societal development and holds paramount importance. From ancient times to the present, the methods of information transmission have evolved significantly. Initially, they relied on oral communication and correspondence, which, despite their simplicity, were crucial for maintaining social order and transmitting cultural and intellectual heritage (Smith, 2020). The development of printing technology marked a new era, with the widespread availability of books and newspapers greatly promoting the spread of knowledge and the progress of civilization (Eisenstein, 1980).

In modern society, the advent of telegraphy, telephony, and broadcasting technology accelerated the speed of information flow, enabling real-time global communication and information sharing that transcended geographical constraints (Standage, 1998). These technologies not only made everyday life more convenient but also provided robust support for social and economic development. The advent of internet technology has further elevated information dissemination, breaking the limitations of traditional media and allowing for faster and broader dissemination of information. The emergence of new media forms, such as online news and social media, has diversified and enriched the public's access to information sources (Castells, 1996).

Table 1. The evolution of two transmission mechanisms

stage	time	Traditional communication and development	AIGC develop	feature
Word of mouth	Ancient to medieval times	Oral legends, and letters	-	Interpersonal communication and information dissemination are limited by distance and speed
The invention of printing	The 15th century	Books, newspapers	-	Information dissemination speed is accelerated, and knowledge is popularized
Telegraph and telephone	The 19th century	Telegraph, telephone	-	Real-time long-distance communication becomes possible
Radio and television	In the early 20th century	Radio, TV	-	Information spreads more widely and is more far-reaching
The rise of Internet	At the end of the 20th century	The Internet, the email	-	Globalization of information dissemination and enhanced interactivity
AI prime	The late 20th century to the early 21st century	-	Intelligent assistant, simple and automated content generation	The AI began to assist in content creation, but with limited capabilities
Machine learning development	In the early 21st century	-	Recommendation system, personalized content	Use algorithms to recommend content, personalized experience
AIGC rise	In the 2010s	-	Automatic news writing, poetry writing	Deep learning drives it, and AI can create complex content
before one	In the 2020s	-	High-level language model, multimodal generation	AI generation content is more diverse and realistic, including text, images, video, etc
future expectations	-	-	Self-learning and innovative content generation	AI may develop self-contained learning and innovation capabilities, and content generation is more personalized and intelligent

However, the rapid development of artificial intelligence, particularly the rise of AI-generated content (AIGC) technology, presents new challenges and opportunities in the field of information dissemination. AIGC, leveraging advanced machine learning algorithms and natural language processing, can automatically generate a variety of content types, including news articles, reports, and literary works (Brown et al., 2020; Russell & Norvig, 2016). While this technology has significantly improved the efficiency and quality of information production, it has also introduced complex issues. These include verifying the authenticity of information, constructing ethical norms, and defining responsibility attribution (Marr, 2020). Given the critical role information dissemination has played since ancient times, addressing and mitigating related problems is essential to preserve the integrity of information dissemination.

3. The Connection between AIGC and Silicon-based Life as Well as Collective Consciousness

The carrier of artificial intelligence—the computer, fundamentally based on silicon chips (Wang, 2006)—not only exhibits human-like characteristics but also evolves at an astonishing pace. This leads to the notion that AIGC can be considered a form of silicon-based life. Common in science fiction and futurology discussions, silicon-based life typically refers to hypothetical life forms based on silicon elements (Pace, 2001). Silicon chips, as the hardware foundation of artificial intelligence, provide the material basis for the existence of AIGC (Russell & Norvig, 2016).

Post-model establishment, AIGC undergoes refinement through learning from extensive data, a process akin to human learning. The content artificial intelligence learns is primarily derived from human creations and knowledge, enabling AIGC to accumulate and integrate a vast array of human wisdom, forming a collective consciousness (Kurzweil, 2005). When individuals pose questions to AIGC, the responses are informed by an integration of all human experiences and knowledge. Thus, the questioner is, in essence, communicating with a collective intelligence rather than an individual entity (Floridi, 2014). This collective consciousness endows AIGC with the ability to offer comprehensive and multifaceted insights, reflecting the power of collective human wisdom (Harnad, 2001).

As a manifestation of silicon-based life, AIGC showcases the immense potential of silicon chips and artificial intelligence technology. It also signals a future of deeper interaction and collaboration between humans and AI. Silicon-based life, enabled by silicon chips and AI technology, offers positive impacts across various domains, particularly in enhancing efficiency, facilitating knowledge sharing, and standardizing technology.
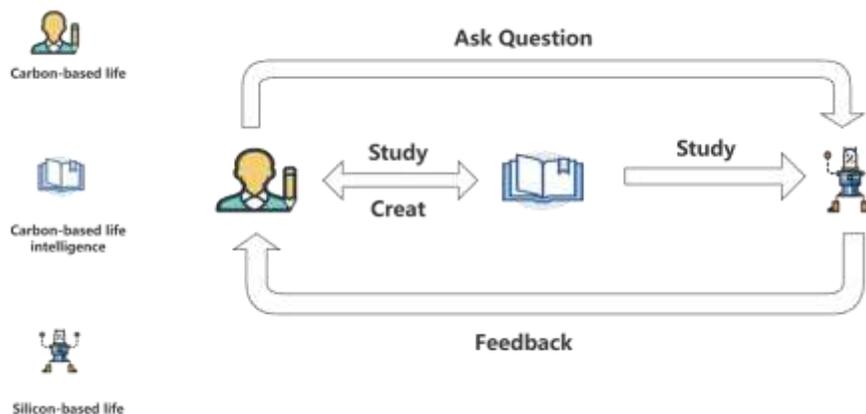

Figure 1. The learning process between humans and machines

4. The Essential Differences in Information Dissemination Mechanisms Between Carbon-based Life and Silicon-based Life

The fundamental differences in information dissemination mechanisms between carbon-based and silicon-based life are deeply rooted in the distinct processes of transmitting individual versus collective consciousness. For carbon-based life, such as humans, information dissemination is intrinsically linked to direct, interpersonal communication. This process is profoundly shaped by individual consciousness, encompassing personal experiences, emotions, and ethical judgments. Although this mode of communication may be limited in scale, it uniquely fosters personalization, emotional richness, and ethical depth in the transmission of information (Chalmers, 1996; Nussbaum, 2001; Ricoeur, 1991). Traditional forms of communication, such as storytelling and face-to-face interactions, exemplify this model, where the exchange of ideas is nuanced and reflects the diverse perspectives of individuals, thereby enriching the collective human experience.

In stark contrast, the dissemination model associated with silicon-based life, particularly with the rise of Artificial Intelligence Generated Content (AIGC), represents a radical transformation. Silicon-based entities, exemplified by advanced artificial systems, operate on a global scale, disseminating information rapidly and uniformly, thereby contributing to the emergence of a more homogenized collective consciousness. This form of consciousness is characterized by the aggregation of knowledge and experiences, processed and synthesized by vast networks of data and artificial intelligence systems (Lévy, 1997)(Durkheim, 1912). The extensive use of the internet—now reaching over 5 billion users globally (DataReportal, 2023)—illustrates this shift. AIGC, as a product of modern information technology, minimizes individual biases by synthesizing and disseminating content that reflects the collective experiences of humanity, thereby ensuring consistency and reliability in the information shared (Smith et al., 2020). For instance, AIGC algorithms generate news summaries or academic content derived from comprehensive data sets, offering standardized narratives that embody the collective understanding of various topics.

The contrast between these two models—individual consciousness in carbon-based life and the more homogenized collective consciousness in silicon-based life—highlights a significant divergence in how information is generated and disseminated. Carbon-based information dissemination prioritizes the unique, subjective contributions of individuals, thereby enhancing the ethical and emotional quality of communication. Conversely, silicon-based dissemination, driven by a more homogenized collective consciousness, prioritizes uniformity, consistency, and the rapid distribution of information across vast networks. While this approach reduces the risks associated with misinformation and personal bias, it may also lead to the suppression of diverse individual perspectives.

To further illustrate this distinction, consider the example of personalized learning versus AI-driven educational platforms. In a traditional classroom setting, a human teacher (carbon-based) tailors lessons to the unique needs and backgrounds of each student, fostering individual growth and creativity. In contrast, an AI-driven platform (silicon-based) might provide standardized lessons derived from collective educational data, ensuring consistency and broad accessibility, yet potentially overlooking the nuanced needs of individual learners.

While the collective intelligence of silicon-based life offers unparalleled efficiency and consistency, the irreplaceable value of individual consciousness, which characterizes carbon-based life and fosters creativity, emotional depth, and ethical diversity, must not be overlooked.

5. Advantages and Applications of Silicon-based and Carbon-based Life Forms in Diverse Fields

Silicon-based and carbon-based life forms exhibit unique and unparalleled strengths within their respective domains. The individual consciousness inherent in carbon-based organisms has been the wellspring of human creativity, innovation, and ethical reasoning (Chalmers, 1996)**.** In contrast, the collective consciousness characteristic of silicon-based entities plays a critical role in the efficient processing of vast datasets and the consistent dissemination of standardized knowledge across global networks (Lévy, 1997).

5.1 Efficiency and Standardization in Silicon-based Life: The Energize of Collective Consciousness

AIGC has revolutionized the field of news dissemination by significantly enhancing the speed and efficiency of content production. During large-scale events like the Olympics, the ability of AIGC to generate and distribute content in real-time becomes particularly evident. For instance, when Chinese table tennis player Fan Zhendong won the championship, news of his victory spread instantaneously across various media platforms, including television, social media, and mobile apps. This rapid dissemination was largely driven by AIGC systems that automatically generated news articles, summaries, and social media posts based on live data feeds. Such systems analyze vast amounts of information in real-time, synthesizing it into coherent narratives that can be distributed almost immediately (Zhou, 2022). The key advantage here is the unprecedented speed at which information is processed and disseminated. Traditional newsrooms, which rely heavily on human reporters and editors, are limited by the time it takes for individuals to gather, process, and publish information. AIGC, however, bypasses these limitations by automating the content generation process, allowing for almost instant publication. This capability is particularly valuable during high-stakes events where timely information is critical. Moreover, AIGC-generated content can be tailored to specific audiences, further enhancing its relevance and engagement potential (Wang & Li, 2023). This transformation in news dissemination not only improves efficiency but also ensures that accurate and up-to-date information reaches a global audience swiftly, reducing the reliance on slower, human-driven processes.

In the realm of wireless communication, AIGC's impact is equally transformative, particularly in addressing the challenges of standardization across different national frequency bands and communication protocols. Wireless communication infrastructure development has often been hampered by the lack of uniform standards, making it difficult to achieve seamless connectivity across borders. AIGC has the potential to mitigate these issues by enabling AIGC-as-a-service (AaaS) models through edge computing. Deploying AIGC models on edge servers allows for the provision of real-time, low-latency services tailored to specific user needs.

This approach not only improves service quality but also optimizes resource allocation, ensuring that the system operates efficiently even under varying conditions. For example, in edge networks, AIGC can dynamically adjust to different communication standards and frequency bands, providing a unified user experience across disparate systems (Kim & Park, 2022). This ability to harmonize diverse communication protocols is particularly beneficial in regions where infrastructure development is inconsistent, enabling broader access to wireless communication technologies. Furthermore, AIGC's role in standardization extends beyond mere technical compatibility. By generating content and services that conform to global standards, AIGC helps create a more consistent and predictable communication environment. This uniformity is crucial for the widespread adoption of wireless technologies, as it reduces the barriers to entry for new markets and ensures that users have access to reliable and high-quality communication services regardless of their location (Chen & Zhang, 2023).

In both news dissemination and wireless communication, AIGC demonstrates its ability to significantly enhance efficiency and promote standardization. By automating the content generation process, AIGC ensures that information is delivered rapidly and accurately, meeting the demands of a fast-paced global audience. In the field of wireless communication, AIGC's capacity to harmonize diverse standards and optimize resource allocation through edge computing models exemplifies its potential to overcome long-standing challenges in the industry. These examples underscore the transformative impact of AIGC across various sectors, highlighting its role in shaping the future of information dissemination and communication technologies.

5.2 Innovation and Ethics in Carbon-based Life: The Unique Value of Individual Consciousness

The role of individual consciousness in carbon-based life forms, particularly humans, is irreplaceable when it comes to ethical decision-making and scientific innovation. Individual consciousness enables the formation of personal ethical frameworks, allowing for nuanced moral reasoning that can transcend the strict application of laws. A poignant example is the film Dying to Survive, which depicts the story of Cheng Yong, a man caught in a moral dilemma between adhering to patent laws and the ethical imperative to save lives by providing affordable medicine. This narrative highlights how individual moral reasoning can challenge existing legal frameworks and lead to societal change. The film, grounded in real events, illustrates the power of personal ethical judgments to influence and reshape legal and institutional systems. It resonates with the Confucian principle of balancing legalism with human compassion, demonstrating the critical importance of individual consciousness in navigating and resolving ethical dilemmas (Wang, 2018). This example underscores how the personal moral consciousness of individuals can act as a catalyst for legal and social reforms, driving changes that are sensitive to human needs and ethical complexities.

In the domain of scientific innovation, individual consciousness is equally essential, as it fuels the curiosity and independent thinking necessary for groundbreaking discoveries. Sir Isaac Newton's discovery of gravity is a prime example of how individual consciousness, particularly through the lens of personal curiosity, can lead to significant scientific advancements. Newton's intellectual journey began with a simple, yet profound observation—an apple falling from a tree—which sparked his curiosity and led him to question the forces governing the natural world. This initial curiosity, a core aspect of his individual consciousness, drove him to challenge the established scientific doctrines of his time, particularly those rooted in Aristotelian physics. Newton's ability to think independently and critically, free from the constraints of prevailing scientific norms, allowed him to formulate the law of universal gravitation, a cornerstone of modern physics. This example illustrates how individual consciousness, characterized by curiosity and independent thought, is a driving force behind scientific innovation. It is through this unique personal engagement with the world that transformative ideas and theories emerge, contributing to the advancement of human knowledge (Smith et al., 2020).

These examples clearly demonstrate that individual consciousness, with its capacity for ethical reasoning and creative thinking, plays a fundamental and irreplaceable role in advancing both moral and scientific frontiers. While collective consciousness in silicon-based life forms, such as AIGC, can enhance efficiency and standardization, it is the distinct and irreplaceable nature of individual consciousness that continues to drive human innovation and ethical progress. The examples provided highlight the critical importance of maintaining and nurturing individual consciousness in the face of rapidly advancing technologies that prioritize collective over individual reasoning.

6. Co-Creation and Mutual Success: Harmonious Advancement of AIGC and Carbon-Based Life

The integration of Artificial Intelligence Generated Content (AIGC) with the unique creativity and moral judgment inherent in carbon-based life forms offers significant potential for co-creation and mutual success. However, a critical evaluation of an over-reliance on AIGC reveals risks, including ethical dilemmas and content homogenization. On short video platforms, for instance, AIGC is increasingly used by creators who often rely on repetitive templates and clichés. This trend is exemplified by the popularity of online short dramas such as The Blind Wife's Revenge and Unreachable Love. These productions, driven by the pursuit of high traffic and rapid content output—a domain where AIGC excels—demonstrate a concerning trend towards uniformity in content and plot. Although these dramas may vary in their details, they share remarkably similar basic plot structures and character

relationships, reflecting a broader issue of diminished innovation and diversity in content due to the overuse of AIGC (Zhang, 2021).

The consequences of such content homogenization are profound, particularly in shaping the perceptions of impressionable audiences. The repetitive portrayal of power struggles and domineering relationships in these dramas can foster unhealthy fascinations among younger viewers, diverting their attention from valuable cultural heritage and more meaningful narratives. The ethical implications are significant, as this content often lacks positive moral values, potentially leading to a distorted worldview among its audience. Thus, unchecked use of AIGC, without the guiding influence of human creativity and ethical considerations, risks promoting a culture of uniformity that stifles diversity and innovation (Zhang, 2021).

However, when the strengths of AIGC are harmonized with human consciousness, the potential for mutual success becomes evident. A compelling example is the Riverside Scene at Qingming Festival 3.0 art exhibition, a collaboration between the Palace Museum and Phoenix Television. This project utilized AIGC technology, including 8K ultra-high-definition array walls, dynamic holographic projections, and VR technology, to transcend the limitations of time and space, providing audiences with a groundbreaking immersive experience. Here, AIGC facilitated the efficient and precise execution of a complex, multi-sensory exhibition, while human creativity ensured that the content was rich, culturally relevant, and ethically sound. The result was a harmonious blend of technology and art, offering an innovative way to experience historical content while meaningfully engaging with cultural heritage (Palace Museum & Phoenix Television, 2020).

The success of such projects underscores the importance of integrating AIGC with the irreplaceable elements of individual consciousness, such as creativity, ethical reasoning, and cultural awareness. By doing so, we can mitigate the risks of content homogenization and ethical lapses while leveraging the speed and efficiency of AIGC to enhance the quality and reach of creative works. This synergy between AIGC and human creativity not only enriches content production but also fosters a more dynamic and diverse cultural landscape, where innovation and tradition coexist harmoniously.

7. Conclusion

In conclusion, this study has demonstrated that the hypothesis of associating AIGC with silicon-based life is not only reasonable but also insightful in understanding the broader implications of collective consciousness. AIGC, representing a form of silicon-based life, has indeed introduced significant benefits in information dissemination, particularly through its speed and efficiency. However, it also poses challenges, such as the risk of homogenization, which underscores the limitations of a purely collective consciousness-driven model.

The research affirms that individual consciousness, inherent in carbon-based life, remains irreplaceable. It is the driving force behind human creativity and innovation, essential for addressing complex challenges and ensuring ethical diversity. While AIGC can complement human capabilities, it should not be seen as a replacement for the unique contributions of individual consciousness.

The contributions of this research lie in its interdisciplinary approach, which integrates perspectives from communication theory, consciousness studies, and information technology to offer a nuanced understanding of the evolving relationship between AIGC and human society. However, the study's limitations include a reliance on theoretical frameworks and existing literature, with a lack of empirical data and long-term analysis of AIGC's effects.

Future research should focus on interdisciplinary collaboration, particularly in exploring the ethical implications of AIGC and its long-term impact on human society. Such efforts will be crucial in developing a balanced approach to integrating AIGC, one that values both collective and individual consciousness, and ensures the sustainable co-evolution of carbon-based and silicon-based life in the digital age.

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