Postprint: Applications of Artificial Intelligence Technology in Communication from a Communication Studies Perspective

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Abstract

The application of artificial intelligence technology in the field of communication has accelerated the intelligentization process of media. Intelligent media, leveraging multi-dimensional source channels, omnimedia communication methods, and precise information delivery approaches, is regarded as a novel sensory extension medium for humans. This paper aims to explore intelligent media technical means through literature research and theoretical speculation, analyze and prospect the application of artificial intelligence technology in the field of communication using classic communication theories, and thereby provide new perspectives and methods for interpreting the application and development of intelligent media.

Full Text

Preamble

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Abstract: The application of artificial intelligence technology in the communication field has accelerated the intelligentization of media. Intelligent media, with its multi-dimensional information sources, omnimedia dissemination methods, and precise information push mechanisms, is regarded as a new extension of human sensory media. Through literature research and theoretical speculation, this paper explores intelligent media technologies and analyzes and prospects the application of artificial intelligence in communication through classic communication theories, providing new perspectives and methods for interpreting the application and development of intelligent media.

Keywords: artificial intelligence; intelligent media; media extension theory; technological alienation; simulation

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Artificial intelligence, as a branch of computer science, is a new technical discipline that studies, develops, and applies theories, methods, technologies, and systems for simulating, extending, and expanding human intelligence. It is now widely used in all aspects of daily life and work. In the field of news communication, the penetration of artificial intelligence technology has become a phenomenal development, gradually transforming the media industry ecosystem across the information production chain.

1. Intelligent Media: The Extension of Self-Space in "Human-Machine Integration"

Driven by new technologies such as artificial intelligence, media is showing an intelligent trend, namely "intelligentization." Intelligent media has three major characteristics: "everything is media, human-machine integration, and self-evolution." This means that various intelligent media, including machines, can all become media; human intelligence will work together with intelligent machines and intelligent objects to construct new media business models; and human-machine integrated media will promote self-evolution through the interaction of human ability to control machines and machine ability to understand human thinking and preferences. In short, media will present an intelligent trend of human-machine integration and continue to evolve.

In McLuhan's "media extension theory," media exists as an extension of human senses in interaction, thus the media itself has integration with humans, and media promotes human development. Artificial intelligence is an extension of human thinking activities and can even be more precise in technical thinking. Using McLuhan's theory to examine intelligent media, we can regard "human-machine" as an integrated whole whose extended self-space eliminates spatial and temporal biases and improves the ability to cognize the objective world.

McLuhan argued that "in the mechanical age, we extended ourselves in space. Today, after more than a century of electric technology, have extended our central nervous system globally, eliminating spatial and temporal differences globally." Intelligent media will make this extension more extensive and enduring, and what is eliminated will no longer be merely spatial and temporal biases. This extension of self-space, driven by the intense pressure to adapt to exter-

nal systems, causes people to become unconscious and numb to the amputated parts in order to "protect themselves." Because any extension of oneself causes self-amputation, and this self-amputation brought by technology will accelerate the integration of humans and tools throughout society.

2. The Operational Paradigm of Intelligent Media: Constructing Future "Simulation" Landscapes

In information collection, with sensors as carriers and big data technology as support, information sources and collection dimensions are continuously broadened. In news editing and production, machine writing significantly accelerates the news production process, eliminates human errors while reducing writing costs. Meanwhile, in terms of information reception methods, audiences in the new media era have begun to pursue immersive audio-visual reading experiences. Media no longer relies solely on pictures, text, audio, and video to construct information environments for audiences, but incorporates virtual intelligence technologies such as VR and AR to visualize news information, achieving immersive presence and subjective perspective substitution from the sensory perspective of audiences. Finally, artificial intelligence also enables optimal allocation of information content push: through precise algorithms, it obtains data from various user platforms, gains insights into users' information needs, constructs comprehensive user cognitive maps, optimizes and integrates information, and achieves precise and efficient personalized push, thereby strengthening user stickiness.

In the information environment constructed by intelligent media technology in the news communication field, there are also numerous replicated "simulation" models. The entire objective environment presented through intelligent technology is also a manifestation of simulacra, with a degree of authenticity that even far exceeds its original. Simulacra no longer produces reality based on the original, no longer merely copying and reproducing. Reality is no longer as simple as objectively existing scenery, but rather "simulation" artificially reproduced. People are immersed in environments constructed by various information, simulations, and virtual symbols through intelligent technology. Replicas proliferate, and simulacra and simulation gradually become the main objects through which people cognize the world. Numerous models and symbols create people's life experiences, and the difference between models and reality is gradually dissolved. This creates a universal "hyperreality" illusion—hyperreality being the characteristic of simulation, where numerous models collectively constitute a new reality order. Social structure is also quietly changing, as humans gradually withdraw from simple labor and even thinking, and artificial intelligence begins to become the medium between humans and machines and floods into society. Intelligent media will also change the way people obtain information and cognize the world.

3. Alienation: The Impact of Artificial Intelligence Technology in and Beyond the Communication Field

Future intelligent media will simultaneously become the external brain of both gatekeepers and audiences, a sensory extension for both senders and receivers. From the gatekeeper's perspective, artificial intelligence technology can broaden information sources, increase information collection dimensions, and ensure both content integration and precise push during the dissemination process. From the audience's perspective, users' "self-space" will be more profoundly extended, immersively experiencing the "presence" of news events from multiple senses, and information reception will become more personalized and humanized, making users the protagonists in the information transmission process.

However, intelligent media may also become an over-relied-upon and trusted communication medium. As user stickiness continuously strengthens, intelligent media will also become more convenient, personalized, free, and entertaining. Information will no longer be examined, contemplated, or tested. Through dissemination generalization, it becomes fragmented and loses its original system. The application of artificial intelligence technology in media has changed the way people obtain and perceive information. Information that previously required speculation, logical deduction, reinforced memorization, expression, and various experiences to acquire has become readily available. In the decoding process, it weakens human logical reasoning and speculation, changing people's inherent ways of memorizing information.

If humans over-rely on artificial intelligence technology, shifting the object of cognitive memory from information itself to technical tools, it will weaken people's speculative and creative abilities, severely restricting technological innovation and civilization inheritance. In this process, once people's thinking becomes lazy and shifts more attention to entertainment and consumption needs, they will once again be alienated into "one-dimensional" people, losing not only the internal nature of critical negation and transcending reality, but possibly even the basic abilities to cognize and transform the world.

In the Frankfurt School, Marcuse comprehensively revealed the process of people's gradual alienation with technological development in modern civilized society. In his view, the root of human alienation lies in technological progress. Marcuse believed that technology has transformed from liberating humans to controlling them, and the method of control is to instrumentalize humans: "The dynamic of continuous technological progress is filled with political content. The logos of technology has become the logos of continued enslavement. The liberating power of technology—the instrumentalization of things—has become the shackles of freedom: the instrumentalization of humans." As mentioned earlier, technology accelerates the integration of humans and tools. As an objective capability, science and technology restricts and dominates humans as subjects. After technology reaches a higher level, humans are still enslaved by technology like objects, and humans are not even conscious of this process.

In Marcuse's view, on the dual basis of absolutely dominant efficiency and continuously improving living standards, technology has become the main force conquering society's centrifugal forces. Technical rationality brings assimilation and integration. Different classes in society, regardless of their hierarchical differences, have been assimilated in their production and lifestyle. Furthermore, politics, economy, and culture only have one dimension consistent with existing ideology and systems.

Similarly, technological progress has brought integration in lifestyle and cultural fields. Society's politics, economy, culture, and ideology are integrated through technology. Technology has become the intermediary that merges political, economic, and cultural systems, integrating all oppositions and possessing the ruling function of ideology. Technology changes production methods, and the rule of technical rationality has also become a new type of totalitarian rule, transforming from liberating humans to imprisoning them. "In this world, technology provides enormous rationality for human unfreedom, proving that autonomy and self-determination are 'technically' impossible, because this unfreedom does not appear as unreasonable or political, but as submission to technical equipment that expands life's comfort and increases labor productivity." Beyond the communication field, the convenience and comfort that artificial intelligence technology provides for humans in all aspects of social life may become the chains that enslave humanity. When entertainment proliferates and people worship replica consumption and symbol fetishism, the belief in spiritual needs is more likely to shift to the physical worship of numerous "simulations."

"The increasingly advanced technology, highly standardized social order, universal implementation of optimization principles, and highly efficient social mechanisms may in turn become the opposite of humanity, potentially turning humans into controlled objects and sacrifices of technology, order, and efficiency." Alienation is the impact of technology on humans to a certain extent, but technology is not the only cause of alienation. We should have a clear understanding of this.

4. Conclusion

From a communication perspective, artificial intelligence technology is not merely a single technology, but a behavioral state formed by the interaction between humans and machines, intelligent machines. It is a complete set of technical paradigms encompassing multiple disciplinary fields including computer information science. Intelligent media has become part of human senses, a "self-space" medium that extends outward to cognize the world. Due to its communication characteristics and role in society, we can see many possibilities for its future development. However, technology is neutral. We should view it objectively, apply it rationally, and keep the reins of technology and the ruler for cognizing the world in our own hands.

References:

[1] Peng Lan. Intelligent Media: The Wave of Future Media—New Media Development Trend Report (2016)[J]. International Press, 2016.

[2] Mei Qionglin. Transparent Media: On McLuhan's Phenomenological Intuition of Media Essence[J]. Humanities Magazine, 2008.

[3] Yao Gengjun. Examining "Artificial Intelligence Threat Theory" through McLuhan's "Media Extension Theory" and Its Phenomenological Philosophical Foundation[J]. New Media Research, 2015.

[4] Yu Guoming. Intelligence: The Core Logic of Future Communication Model Innovation—Also on the Basic Operational Paradigm of "AI + Media"[J]. News and Writing, 2017(3).

[5] Herbert Marcuse. One-Dimensional Man[M]. Chongqing Publishing House, 1988: 135.

[6] Huang Yan. On Marcuse's Thought of Technological Alienation[J]. Forward Position, 2011.

Note: Figure translations are in progress. See original paper for figures.