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A New Model of News Media and Audience from a Futurological Perspective: Postprint

Authors: Xiong Xiaoxuan

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Abstract

This paper, from a futurological perspective and employing literature review and speculative research, addresses the question of how the relationship model between news media and audiences is transforming. The rapid advancement of information and communication technologies has eroded the dominant position of traditional news media—represented by newspapers and radio/television—in news information dissemination. Social media platforms have increasingly blurred the boundaries between news producers and audiences, moving beyond a binary-oppositional linear model and signaling a qualitative transformation in their interactive relationship. Analyzing these signs of qualitative change and predicting new interaction models is essential for the examination and development of mass communication theory.

Full Text

Preamble

Research: Media and Development
A New Model of News Media and Audiences from a Futures Studies Perspective

Abstract: This paper addresses the question of how the relationship model between news media and audiences is changing, employing a futures studies perspective through literature review and speculative research. The rapid development of information and communication technologies has eroded the dominant position of traditional news media such as newspapers, radio, and television. Social media platforms have increasingly blurred the boundaries between news producers and audiences, moving media and audiences beyond a binary, linear opposition model. This qualitative transformation in their interactive relationship warrants analysis. Examining these transformative signals and predicting

new interaction models is essential for testing and developing mass communication theory.

Keywords: futures studies; technology; news media; audience; Möbius strip
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Author: Xiong Xiaoxuan
Prospective Forecasting [3]

According to mass communication theory, traditional news media and audiences existed in a linear relationship model, positioned at opposite ends of an information flow thread. In the digital era, this classic linear model appears insufficiently comprehensive. Human society currently finds itself in Alvin Toffler's anticipated Third Wave, where technological transformation drives change throughout the information industry—from early visual news media (newspapers) to auditory media (radio), then to audio-visual media (television and the internet). Soon, assisted by VR (virtual reality) and AR (augmented reality) technologies, news media will enter an "immersive" era, unprecedentedly extending audience senses. In such a high-density information environment, audiences naturally develop different interactive relationships with news media. When the two ends of the linear communication model become indistinguishable, and when the primary carrier of news information shifts from atoms to bits, new metrics for communication effects become necessary. Analyzing and predicting a new relationship model is required to integrate new variables and compensate for the linear model's future limitations.

1. Overview and Introduction of the Futures Studies Perspective

Futures studies (also translated abroad as futurology)[1] emerged as a concept around 1930. Over the past century, it has absorbed knowledge from numerous disciplines, evolving from a nascent concept into an emerging field with a mature theoretical framework. Many foreign scholars have also applied futures studies theories to other disciplines. According to American historian W. Warren Wagar, futures studies was founded by H. G. Wells[2], but only matured into an independent discipline around 1960. With subsequent rapid technological development, it now possesses scientific methodologies and can serve as a sophisticated theoretical tool to analyze news media and audiences alongside established communication theories.

Contemporary futures studies examines future possibilities, design, and planning. Its core components typically form the focus of humanities and social sciences discussions. While humanities and social sciences generally emphasize analyzing driving factors and wild cards, the futures studies perspective specifically focuses on identifying precursor signals to predict emerging trends.

Futurists examine current technologies and trends not to verify known facts, but to forecast future trajectories.

Representative works combining futures studies with media include: *The Medium is the Massage* by media ecologist Marshall McLuhan and collaborators; futurist Alvin Toffler's *The Third Wave*; and MIT professor Nicholas Negroponte's *Being Digital*. The first incorporates thinking on digital media and McLuhan's four laws, while the latter two emphasize transformative technological forces on the media environment. More recently, Paul Levinson's *New New Media* and Kevin Kelly's *The Inevitable* have further developed research on future media and the information society. Domestic application of futures studies to media research remains limited, with the most representative work being Li Shihong's *Fission: The Visible Future* by a Chinese technology and finance writer. Overall, academic research in this area remains scarce, prompting this study to draw primarily on overseas literature and research findings.

Before employing futures studies as a "scalpel" to dissect news media and audiences, background research and data collection on relevant science and technology are necessary. For this paper's exploration of news media and audiences, we first identified and filtered information technologies that will significantly impact both fields, then created the following table based on McLuhan's classic four laws:

Technology	Retrieval/Replacement	Possible Impact on News Media and Audiences
5G Mobile Communication [4]	Replacement of existing mobile communication	Optimizes screen-reading experience, provides better technical support for news media on mobile terminals
Virtual Reality Technology [5]	Retrieval of "stage setting"	Provides new narrative genres, raises technical thresholds, enhances audience immersion in news reading
Augmented Reality Technology	Retrieval of "tangible" things	Offers multi-dimensional perspectives, transforms news and advertising genres, enhances audience immersion
Quantum Satellite Communication	Replacement of current (fiber optic) technology	Transforms speed and dimensions of news information flow to audiences
Artificial Intelligence Technology [6]	Retrieval of consciousness in human brain	Next technological singularity, transforms news gathering and distribution, redefines journalism rules, provides more refined information services for audiences

Technology	Retrieval/Replacement	Possible Impact on News Media and Audiences
DNA Information Storage	Retrieval of "knotting ropes to record events"	Extends lifespan of major news information, revolutionizes information storage
Quantum Computing	Replacement of traditional computing	Transforms algorithms for news information production

Notably, individual information technologies are mutually embedded and develop progressively, rather than influencing future news communication in isolation. These driving factors produce overlapping and similar potential impacts and can be categorized as core components of discontinuities in futures studies, poised to impact and even replace existing information communication technologies and industries.

2. The Past, Present, and Future of News Media

Before internet technology 普及, journalists primarily delivered print news and broadcast news to the public—the former through newspapers and periodicals, the latter via radio and television. Entering the new millennium, online news began competing for audiences, while around 2009, mobile devices forced traditional news media to transform. These two nodes became discontinuities in news media development. Paul Levinson's *New New Media* broadly categorizes all pre-internet media as "old media," first-generation internet media from the mid-1990s as "new media," and second-generation internet media flourishing after 2000 as "new new media"[7]. The "newness" of new new media derives from advanced technological means and digital environments.

Social media increasingly blurs media boundaries. Haewoon Kwak's 2009 Twitter study[8] found that the most retweeted posts were typically current news events, indicating that audiences encounter real-time news information on social media. Coupled with the wave of media convergence, traditional media have developed countless news apps, social media accounts, and websites, making it difficult to distinguish news media by platform alone. Meanwhile, future AI technology will join news information production, creating more news sources combined with immersive genres, advanced channels, and algorithms—inevitably generating far more news information than present.

Notably, screen-reading has become a trend that will persist. In future optimized information environments, news media will exhibit several changes compared to old media: (1) News content will provide stronger immersion and realism. Recalling McLuhan's classic "the medium is the extension of man," paper extended human vision, electronic screens extended hearing and vision, and combined with VR and AR, future news media will further develop touch,

smell, and even taste—diversified news genres extending more human functions. (2) New news media and audiences will integrate more closely, as optimized user experiences increase audience dependence on news media, and improved algorithms can verify news hotspots and refine audience segmentation. (3) Information redundancy will continue increasing. On one hand, media convergence and AI participation in production will create more information sources; on the other, immersive genres, advanced channels, and algorithms will generate exponentially more news information than today.

3. The Digitally Existing Audience

Audiences are typically defined in contrast to media. This generation has experienced the rapid development of internet and mobile devices over the past decade, developing fragmented reading habits. The increasingly developed information service industry has made personal existence more free and convenient. Virtual network communication has also added new types of interpersonal relationships to social civilization. The social impact of internet media has granted the general public tangible rights to public discourse and media access—the higher the degree of digitalization, the greater the release of media access rights.

These benefits derive from massive bits in the information age. Bits have replaced atoms as the medium of human information exchange. Previous communication tools merely switched between material atoms—for example, paper replacing bamboo slips and clay tablets—always constrained by time and geography. Paper could not transmit quickly and would eventually perish; limited preservation restricted those who could communicate through writing. Since bits replaced atoms, the cost for audiences to exchange knowledge and information has become cheaper, making human society increasingly dependent on convenient bits. MIT professor Nicholas Negroponte terms this bit-constructed mode of existence "being digital"[9].

Being digital brings two novelties: the mixing of bits and bits about bits. Bits about bits refer to information that reflects other information, such as headlines and keywords in news that label other content. Tagging is a modern method for classifying and describing variables and characteristics. As people interact more with screen-based software, they inadvertently provide their own data, enabling backend central processors to build models and tag large user populations for classification. Recently, Google has used data processing and mining to recall user groups who have visited websites or clicked ads, implementing precision remarketing through data mining technology to maximize advertising conversion rates and attract advertiser funding. Such data mining technology has become quite mature within major internet companies. Regarding the second characteristic of future news media—closer integration with audiences—optimized algorithms and channels will produce tags enabling audiences to enjoy better information services and products, making large-scale audience tagging inevitable.

4. Linear Models and the Möbius Strip

After 梳理 the driving technological factors and development trends in both news media and audience domains, we have a realistic foundation for predicting their future relationship model, though mass communication theory provides necessary supplementary theoretical grounding. The 20th century was an era of traditional media monopoly over discourse power, prompting communication researchers to propose numerous theoretical models, among which Lasswell's linear model remains most representative. The original linear model featured unidirectional, linear communication from communicator through media to receiver, with two notable characteristics: (1) Uninterrupted transmission—unlike discrete communication, paper media and broadcast television platforms transmitted news information continuously; (2) Directional certainty—information flowed deterministically from communicator to audience.

As traditional media declines, the original interaction model has changed. A strong, clear thread now flows from audience to news media, such as timely, massive interactive feedback via social media comments and news app messages. Through bits, the visible distance between media and audiences has shortened. With news media further generalizing and audiences increasingly tagged, in digital environments both have become sets definable by bits (or future quantum states), with intersecting, overlapping, and mutually exclusive portions. The future interactive model must develop from the bidirectional linear model while accommodating the relationships among bits, news media, and audiences. Among numerous topological forms, the Möbius strip[10] provides inspiration.

The Möbius strip model has two crucial characteristics: First, it is a non-orientable standard example; second, it has no thickness. Non-orientability arises because the Möbius strip is a one-sided surface, making it particularly suitable for describing the indeterminate directionality and continuous nature of information diffusion between future news media and audiences due to technological development, generalization, and tagging trends. The Möbius strip does not deny the classic linear model—media and audience integration does not eliminate necessary communication channels and costs, and specific threads remain valid on the Möbius surface. Regarding thicknesslessness: bits construct future news stories (media nested within bits) and the relationship between audiences and bits (bits attached to human brains). This nested-inside and attached-to-surface relationship appears contradictory, but the Möbius strip perfectly resolves it. As a two-dimensional, thicknessless figure, the Möbius strip has no inside/outside division, eliminating this contradiction. In summary, the Möbius strip model represents a reasonable interactive relationship model.

5. Conclusion

This paper employs a futures studies perspective to analyze the future interactive relationship model between news media and audiences. It first introduces the current theoretical framework of futures studies, analyzes develop-

ment trends in news media and audiences within the digital era by combining cutting-edge technological contexts, and synthesizes these analyses to derive a Möbius model that fits future media-audience interactions. However, using futures studies to predict media development is often constrained by its interdisciplinary knowledge requirements. The 梳理 of cutting-edge technologies and relevant topology in this paper remains relatively superficial, and the Möbius strip interaction model awaits temporal verification.

[1] Ziauddin Sardar, *The Namesake: Futures; futures studies; futurology; futuristic; foresight—What's in a name*, Futures, Jan 4th 2010, p177-184.
[2] W. Warren Wagar (1983). "H.G. Wells and the Genesis of Future Studies". http://www.wnrf.org/cms/hgwells.shtml.
[3] Rolf Kreibich ·Britta Oertel ·Michaela Wolk, *Futures Studies and Future-Oriented Technology Analysis: Principles, Methodology and Research Questions*, DOI.

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

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