

## Research on the Effectiveness of Intelligent Publishing and Distribution Based on Behavioral Control Theory: Postprint

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### Abstract

This article discusses the epoch-making transformation that the emergence of artificial intelligence as a new technology will bring to the publishing field. Simultaneously, through behavioral control theory, it focuses on analyzing the negative impacts arising from the mechanistic drawbacks of intelligent publishing from three perspectives—distribution frequency, distribution content, and distribution effectiveness—and proposes corresponding countermeasures.

### Full Text

## Research on Intelligent Publishing Distribution Effects Based on Behavioral Control Theory

**Abstract:** The emergence of artificial intelligence as a transformative technology will bring epoch-making changes to the publishing field. This paper employs behavioral control theory to analyze the negative impacts arising from the mechanical drawbacks of intelligent publishing, focusing on three dimensions: distribution frequency, distribution content, and distribution effects, while proposing corresponding countermeasures.

**Keywords:** Intelligent publishing; Behavioral control; Targeted publishing

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With the proposal of “Made in China 2025,” China’s artificial intelligence industry has experienced explosive growth. On one hand, domestic and international technology giants such as Microsoft, Google, Baidu, and Alibaba have actively

joined the AI industry landscape. On the other hand, AI is rapidly achieving deep integration with traditional industries. Specifically in the publishing and media sector, artificial intelligence empowers the publishing industry, and intelligent publishing offers new ideas and directions for the innovative development of future publishing industries.

## 1. Current State of Intelligent Publishing Development in China

Intelligent publishing represents a new publishing format based on artificial intelligence technology that makes content creation, product distribution, and monetization more precise and efficient. The essence of intelligent publishing remains “publishing,” while “intelligent” reflects the characteristics of new technical means emerging during the publishing field’s transformation from digitalization and networking to intelligence. Intelligent publishing will be a crucial direction for the future development of China’s publishing industry.

Historically, the publishing industry has undergone three important stages: the digital publishing era, the network publishing era, and the converged media publishing era. In the digital publishing era based on digital typesetting technology, the industry achieved digitalization of traditional publication formats, giving rise to digital newspapers, digital books, and digital journals. In the network publishing era based on internet technology, digitalization extended from content to distribution. During this period, the industry leveraged online platforms’ advantages in information exchange to broaden publishing and reception channels, leading to the emergence of network-original literature as a representative form. In the converged media publishing era based on network media technology, the industry transformed toward full-process digitalization while enriching content presentation through multimedia processing of text, graphics, sound, and video.

According to the U.S. National Artificial Intelligence Research and Development Strategic Plan, AI development is in the initial stage of its third wave, with primary directions being computational intelligence, perceptual intelligence, and cognitive intelligence. Currently, at the industry level, AI is widely applied in finance, cybersecurity, insurance, education, transportation, healthcare, and other fields. Compared to individual humans, AI demonstrates higher efficiency and superior quality in handling batch and repetitive tasks, helping liberate humans from tedious mental and physical labor so they can devote more energy to creative endeavors. Reexamining the publishing industry from an intelligent perspective, intelligent publishing can externally enhance enterprises’ intelligent knowledge service levels and optimize content organizational structures; internally, it can transform production management models and organizational structures, thereby facilitating publishing process reengineering and content reshaping.

Numerous automated and intelligent systems applied in topic selection,

manuscript review, and sales will replace repetitive tasks requiring substantial human resources, such as intelligent information screening, intelligent topic planning, and intelligent review. In the intelligent publishing era, the industry employs technologies like holographic imaging, VR, AR, and intelligent voice to increase audience engagement and interaction rates while improving user experience. Targeted publishing based on AI technology achieves market-fit effects for products. Cross-media fusion enables information dissemination carriers to diversify from single-device dependence. Marketing models based on publishing brand shaping trend toward full IP industry chain development, thereby creating a convenient and intelligent new publishing format.

Therefore, facing the wave of digital-to-intelligent transformation in publishing, publishing professionals must put aside past differences and actively explore and innovate publishing management models, organizational structures, and technologies. Currently, AI applications in publishing have achieved certain results in assisting creation, machine production, and user experience. However, as the publishing field develops toward intelligence, the inherent mechanical drawbacks of AI technology will also negatively impact various stages of production, sales, and audience usage. Thus, we must remain vigilant and respond proactively to prevent potential problems.

## 2.1 Mechanical Drawbacks Based on Publishing Frequency

Through AI technology's data organization, analysis, and prediction of publishing topics, efficient production plans can be rapidly provided for various production stages. However, in the intelligent publishing era, facing complex information, publishing enterprises increasingly rely on personalized customization through intelligent technology to save time and reduce market risks.

In the information age, as people's contact frequency with information increases, their ability to selectively access information also improves accordingly. Targeted publishing based on AI technology makes content more aligned with public demand, enabling products to achieve market-fit effects. However, as publishing frequency increases, the mechanical drawbacks of AI technology in publishing become increasingly prominent. As American scholar Cass Sunstein mentioned in *Republic.com*, information narrowing means "people may thereby have a narrowed vision, or indulge only in their established tastes." With increased publishing frequency, to maximize economic benefits, publishing enterprises often rely long-term on demand-based personalized customization through intelligent publishing, exposing audiences to the risk of receiving narrowed content information.

American scholar Joseph Klapper proposed in *The Effects of Mass Communication* that audiences have selective characteristics when accessing information—they prefer content consistent with their existing positions, viewpoints, and attitudes while intentionally or unintentionally avoiding content that contradicts their predispositions. Currently, targeted publishing based on AI technology pri-

marily uses collaborative filtering technology to analyze audience groups with common interests and consistent views, thereby discovering new growth points while isolating content that contradicts audience preferences. However, since targeted publishing content is not comprehensive, increased publishing frequency traps audiences in an “information cocoon” state. Unconsciously exposed to personalized customized content provided by intelligent technology, audiences’ thinking patterns become long-term confined within certain boundaries, subtly leading to narrow vision problems.

Additionally, due to long-term exposure to homogeneous content, audiences naturally gravitate toward groups with convergent opinions. Meanwhile, as each member holds basically similar views on the same event, “groupthink” patterns gradually form within these commonality groups. With increased publishing frequency, excessive exposure to negative information about the same event easily generates misunderstandings and prejudices within these groups, and more seriously, can trigger severe group polarization phenomena.

## 2.2 Mechanical Drawbacks Based on Publishing Content

By organizing and analyzing long-accumulated publishing market data and combining big data with publishing content, publishing enterprises can achieve precise positioning of content based on audience demand. After years of development, the publishing industry has collected massive amounts of market information. However, facing such vast databases, how to quickly and effectively process big data has become an urgent problem in the publishing field.

Algorithms can quickly identify patterns from massive data and improve publishing efficiency. As an intermediate bridge connecting publishing content and big data, algorithms play a crucial role. However, publishing enterprises’ algorithm system construction remains in its initial stages. The speed of data analysis still lags far behind data generation, leading to the predicament that large amounts of data lose their value before being utilized. Faced with algorithm system construction lagging behind data generation, publishing enterprises cannot adequately grasp the constantly changing audience demands in the intelligent era based solely on past publishing experience and rules.

Secondly, Alibaba Group Chairman Jack Ma believes that truly large enterprises are not defined by scale but by mastery of core technology. Large enterprises must compete for technological innovation and become digital craftsmen. As an emerging technology, intelligent algorithms constitute important business secrets among publishing groups, creating algorithm auditing difficulties in the intelligent era. Former Alibaba Group Vice President Tu Zipei stated: “What the internet needs to review is not content, but algorithms.” Publishing enterprises can control audience behavior by influencing the information audiences access long-term. Taking the dispute between Hachette Publishing Group and Amazon as an example, since Amazon holds the vast majority of the global e-book market share, it can easily influence audience choices through intelligent

recommendation of similar books, thereby achieving unfair competition that weakens opponents.

Backward algorithm systems lead to unclear orientation in publishing production content. Relying solely on algorithm-recommended intelligent publishing will inevitably destroy the basic consensus long-established in society, leading to a lack of social values. Similarly, if publishing enterprises excessively pursue economic benefits, publishing content production risks becoming vulgarized.

### **2.3 Mechanical Drawbacks Based on Publishing Effects**

AI application in publishing aims to summarize human behavior patterns to predict and control audience demand. However, AI is not human intelligence—it enables machines to think like humans to assist in better information management and usage. What it lacks is not emotion, sympathy, and care, but humanity itself. Many believe that in the intelligent era, publishing control should be handed over to algorithms, ignoring the active role of human subjective consciousness and practical activities on the objective world.

Behind algorithms lies merely cold mechanical calculation. Information processing based on algorithms yields only statistically meaningful results. Since environmental and individual difference factors are closely related to final calculation results, deviations in calculation results affect final distribution effects. Due to the randomness of audience demand, publishing enterprises struggle to ensure data analysis effectiveness, easily leading to publishing resource waste.

Secondly, if initial database data already contains certain biases, intelligent publishing's deep learning results through data analysis will inevitably contain biases. Similarly, data bias impacts on publishing will certainly lead to other undesirable consequences. When publishing enterprises configure intelligent systems with biased data or when deviations occur in system decision-making, publishing content production will perpetually contain biases.

Additionally, in intelligent publishing, the statistical results obtained through algorithmic analysis constitute objective data. However, since intelligent systems were initially developed by humans, they involuntarily reflect developers' biases toward different data.

### **3.1 Application of Publishing Frequency Based on Reinforcement Theory**

American psychologist B.F. Skinner proposed reinforcement theory in 1954, stating that controlling spontaneous behavior of organisms in certain situations through specific methods can achieve the purpose of controlling and predicting their attitudes and behaviors, with reinforcement being the key condition.

Targeted publishing based on AI technology uses personalized customized content for process-based motivation of audience demand. As audience contact frequency with content increases, it ultimately causes gradual transformation of

audience demand in the expected direction. However, during the reinforcement process, phenomena such as information narrowing accompany the inherent mechanical nature of AI. Therefore, publishing enterprises need to strengthen guidance to prevent problems caused by audiences trapped in “information cocoons,” such as group polarization and reduced social cohesion. Simultaneously, the publishing industry must continuously promote the emergence and development of new intelligent production formats and healthy cultural consumption models. Publishing enterprises should uphold the quality-first principle, achieve high-quality cultural supply, enhance audience cultural identity and happiness, and strive for market-fit products with rich, substantial content possessing high ideological, scientific, and artistic value.

In the intelligent publishing era, audiences must not only accept diverse viewpoints and information but also maintain clear minds, actively seek or accept media literacy education, comprehensively improve media literacy awareness, consciously pursue healthy publishing content, and gradually develop refined reading tastes.

### 3.2 Application of Publishing Content Based on Attribution Theory

Attribution theory, first proposed by American psychologist Fritz Heider, is a social cognitive theory about individuals interpreting causes of others’ or their own behavior, aiming to control people’ s environments and their influenced behaviors by analyzing and inferring causal relationships of behavior.

As an intermediate link connecting publishing content and big data, algorithms can attribute audience behavior to ultimately predict audience demand. To fully utilize big data’ s value, algorithm model construction is particularly important. Intelligent publishing’ s algorithm system construction means systematically attributing audience behavior and providing solutions for publishing content. However, algorithms are not universal—each problem has a corresponding algorithm, and different algorithms may use different time, space, or efficiency to complete the same task. Therefore, how to combine algorithm system construction with specific business scenarios constitutes a major technical obstacle in the intelligent publishing era. In the intelligent publishing era, the realization of any premium publishing content is not completed through a single algorithm but can utilize organic fusion of multiple algorithms, such as content-based analysis, collaborative filtering analysis, and deep learning-based analysis, to promote intelligent transformation in the publishing field.

Secondly, to make algorithm auditing possible, algorithms should be made public. Additionally, intelligent auditing will still be unable to achieve the precision of manual auditing for a long time. For example, the currently popular music creative short-video social software Douyin employs dual machine and human review methods, immediately banning accounts upon discovering inappropriate content involving pornography or violence. Furthermore, national government departments should establish specialized algorithm auditing agencies to man-

ually review algorithm systems through professional personnel, ensuring publishing content aligns with correct value orientations. Simultaneously, national government departments should issue positive audit standards aligned with socialist core values to eliminate content orientation problems such as vulgarity, sensationalism, spoofing, money worship, mukbangs, “society” slack culture, feudal superstition, female insults, and content detrimental to minors, while encouraging publishing enterprises to vigorously publish healthy, beneficial, diverse, and spiritually enriching excellent content.

Finally, intelligent systems in intelligent publishing may not be perfect systems or tools, but they still possess advantages that humans themselves lack. After effectively understanding the causes and sources of intelligent deviations, publishing enterprises can minimize intelligent prediction deviations and effectively avoid subjective factors in intelligent publishing.

### 3.3 Application of Publishing Effects Based on Self-Regulation Theory

American psychologist Albert Bandura proposed self-regulation theory based on the concept of self-reinforcement in observational learning theory. He believed that human self-regulation makes one’s behavior vivid and selective, while human cognition and emotion exert important influences on one’s behavior.

On one hand, in the intelligent publishing era, we must clearly recognize that AI cannot replace human creative thinking—it is cold, while humans are warm. All predictions obtained by AI through mechanical calculations are based on statistical analysis of audience behavior, and humans, as the subjects of cognitive activities, are not passive. It is human behavioral choices that lead to these results. In this era of information overload, the cost for the public to obtain information becomes increasingly low while data generation speeds become increasingly fast. Therefore, we need to

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