The Ethical Risks of Generative AI News from the Perspective of Human-Machine Collaborative Narration

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Abstract. This research focuses on the application of generative artificial intelligence (AI) in the field of journalism and the ethical risks it poses. Through literature review and content analysis, it systematically collates relevant research findings from both domestic and international sources over the past decade. The research reveals that generative AI is deeply involved in news production through three main pathways: "embedding within general-purpose tools," "integration into intelligent platforms," and "development of proprietary systems." It serves not only as a non-core narrator, assisting in material collection, interview preparation, and content generation, but also elevates itself to a core narrator in data-intensive reporting fields such as finance, sports, and meteorology, thereby reshaping the network of news production relationships. However, lurking behind this technological empowerment are multiple ethical risks: endogenous risks including the erosion of news authenticity, weakened creativity, and value biases, as well as systemic risks such as digital trust crises, the expansion of platform power, and the deterioration of cross-cultural narrative ethics. The reearch proposes a governance framework of "synergy between technological safeguards and humanistic values," advocating for the strengthening of content auditing through generative adversarial networks, the establishment of a "middle ground" narrative practice involving human-machine collaboration, and the improvement of value alignment mechanisms in technological development to achieve the reconstruction of journalistic ethical order. This research fills a gap in micro-level studies on generative AI as a new narrative subject and provides theoretical references for the technological governance of journalism in the intelligent era.

Keywords: Generative artificial intelligence; AI-generated journalism; Ethical risks in journalism

1 Introduction

On July 7, 2023, the "News" section of Nature conducted an experiment where two scientists utilized ChatGPT to draft a relatively complete research paper within just one hour. Under the leadership of the AI industry, generative AI is advancing rapidly and and demonstrating broad application prospects. It continually pushes the boundaries

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of people's imagination regarding its applications, even reshaping news production processes to empower practical journalism. Currently, discussions surrounding the application of generative AI in journalism primarily focus on three aspects:

Firstly, the revolutionary impact of generative AI on journalism. On one hand, as generative AI reshapes news production processes, transforms journalistic working mechanisms, and drives multimodal transitions in news, it also poses challenges to traditional journalism education. The new paradigm for future journalism education will be intelligent journalism education. On the other hand, generative AI plays an innovative role in key areas of news production, such as assisting in news content creation, identifying news topics and angles, producing data journalism, conducting investigative and watchdog reporting, and fact-checking (Chang & Wang, 2025).

Secondly, the risks and challenges posed by generative AI to journalism. Under the impact of new technologies, journalism faces challenges in maintaining news independence, the diversity of news formats, and its humanistic essence. Meanwhile, news production will encounter multiple issues, such as difficulties in ensuring news authenticity, a gradual erosion of news creativity, and deviations in news values. Additionally, the adoption of this technology in journalistic practice may induce anxiety within the news communication industry, triggering risks such as digital trust crises, the expansion of platform power, weakened capabilities in reflecting reality, and governance failures.

Thirdly, the practical applications of generative AI in journalism. Existing studies have explored the potential of ChatGPT in audio-visual news production processes, intelligent applications, and cross-linguistic communication, while others have focused on Sora's application to predict the further rise of citizen journalism (Guo, 2025).

In summary, the application of generative AI in the field of journalism has become a research hotspot in academia. However, existing studies still tend to be macroscopic, mostly approaching the topic from the perspectives of structural changes and technological ethics, lacking microscopic research on generative AI as a new narrative subject. Exploring details should also be an integral part of "change," as they serve as the "whispers of history," providing robust support for grand narratives.

2 Research Methodology

This research primarily employs the literature review method to systematically collate and analyze relevant research findings on the ethical risks of AI-generated news both domestically and internationally. Firstly, through Chinese and international databases such as CNKI (China National Knowledge Infrastructure), Wanfang Data Knowledge Service Platform, Web of Science, and EBSCOhost, literature searches were conducted using keywords such as "AI-generated news," "artificial intelligence in journalism," "ethical risks in journalism," and "algorithmic ethics." Academic journal articles, dissertations, research reports, and other materials from the past decade were comprehensively collected. Secondly, based on criteria such as relevance to the research theme, scientific rigor of research methods, and reliability of data, the collected

literature was screened to eliminate repetitive and low-quality materials, ensuring the validity of the research data. Finally, utilizing content analysis, the screened literature was inductively categorized and summarized to dissect the main viewpoints, theoretical frameworks, and research gaps in current studies. This laid the theoretical foundation for this research, clarified the research direction and focus, and provided a solid theoretical support for in-depth discussions on the ethical risks of AI-generated news.

3 Data analysis and discussion

A recent comprehensive and systematic review article published in Nature summarizes the latest advancements and application prospects of artificial intelligence (AI) across various scientific domains, including the following aspects: AI is playing an increasingly vital role in multiple stages of scientific discovery. In data collection and organization, AI can screen vast amounts of raw data in real-time, automatically tag it, and generate additional high-quality training data through data augmentation (Hu, 2022). In the realm of representation learning, advanced techniques such as graph neural networks, self-supervised learning, and language models have demonstrated powerful capabilities in scientific sequence modeling. These methods enable the learning of more compact and transferable representations. AI not only aids in generating high-quality scientific hypotheses—such as searching combinatorial hypothesis spaces and mapping discrete hypotheses to continuously optimizable spaces—but also dynamically adjusts experimental directions through reinforcement learning. Fig. 1 shows the themes discussed in the following part.

Fig1. Ethical risks of generative AI news from the Perspective of Human-Machine Collaborative Narration

3.1 The Role of AI in Various Stages of Scientific Discovery

In computer simulations, AI systems can replace manually set parameters, solve differential equations, and use generative models for statistical modeling of complex systems, thereby enhancing the accuracy and efficiency of simulations. The development and application of AI hold significant implications for scientific discovery, to the extent that the scientific community is discussing the emergence of a fifth paradigm in scientific discovery driven by machine learning (AI4Science). Turing Award winner Jim Gray described the historical evolution of scientific discovery through four paradigms. Initially, there was the empirical science phase, which relied on direct observations of natural phenomena. Although notable patterns were observed, there was no systematic method for expressing them. Subsequently, the theoretical science phase emerged, characterized by theoretical models such as Newton's laws of motion and Maxwell's equations, derived inductively from empirical observations and generalized to broader contexts. The third phase was the computer simulation paradigm, which primarily leveraged the computational power of digital computers to solve these equations under more general conditions, as exemplified by MATLAB simulation models. Finally, the data-intensive paradigm emerged, utilizing the ability to collect, store, and process vast amounts of data to extract meaningful information and knowledge from big data (Zhang, 2024). Currently, many scientists believe that scientific research is on the cusp of a new paradigm, the fifth paradigm. Some scholars argue that the fifth paradigm is characterized by AI technology centered on virtual-real interaction and parallel driving, underpinned by the Internet of Intelligent Things (IoIT) and blockchain, while incorporating human values and knowledge. In industry, the fifth paradigm is also referred to as Industry 5.0. This novel approach to utilizing machine learning contrasts sharply with the data modeling of the fourth paradigm, as the data used to train neural networks stems from numerical solutions of scientific concepts and theories, rather than merely substituting for empirical observations on a large scale. We can view the numerical solutions of scientific concepts and theories as simulators of the natural world, enabling large-scale observations and computations at significant computational costs within domains of interest—such as predicting weather, simulating galactic collisions, optimizing fusion reactor designs, or calculating the binding free energies of candidate drug molecules with target proteins.

3.2 Construction of Conceptual Space and Scientific Mechanism Modeling

Large language models may form the basis for simulating concepts and theories, enabling humans to guide data-intensive research across diverse fields by leveraging a shared "conceptual space," thereby providing a theoretical foundation for data-driven research. In terms of representing the "conceptual space," AI can integrate large-scale datasets to form a "conceptual space" centered on AI technology characterized by virtual-real interaction and parallel driving.

By fully harnessing AI technologies such as deep learning, we can achieve interaction between virtual and physical spaces, constructing a parallel knowledge system spanning all scientific domains. For instance, models like GPT exemplify this approach, capable of answering questions in both philosophical and humanistic realms as well as grasping concepts in the physical world. Within the conceptual space, by exploring theoretical hypotheses, guiding experiments, and refining measurements, AI

can also provide reliable predictive models. At this juncture, AI technology functions more like an experimental tool within the data-intensive paradigm, assisting domain scientists throughout the entire process of hypothesis extraction from the conceptual space, experimental design, data collection, and analysis. For example, AI can automatically generate scientific hypotheses from the "conceptual space" using methods such as symbolic regression, control experiments through reinforcement learning, and conduct efficient numerical simulations. Within the conceptual space, AI can also establish an infrastructure based on the IoIT and blockchain, leveraging blockchain and smart contracts to achieve distributed, open digital organization and governance. This enables better integration of human values and knowledge within the conceptual space. By organically integrating human expertise with AI technology, a new model of human-machine collaboration can be formed (Sun, 2020). Within domain knowledge, the emphasis is on knowledge automation. Through methods such as knowledge representation, fusion, and utilization, AI can automatically acquire and apply knowledge. Algorithms employ AI methods such as search and reasoning, not limited to machine learning, and utilize generative approaches to expand datasets. Models fully leverage the conceptual space of large models to harness their scale effects.

3.3 The Connection Between Human-Machine Collaboration and Scientific Advancements

Organizationally, decentralized models such as Decentralized Autonomous Organizations (DAOs) and Decentralized Science (DeSci) are being adopted. The new scientific research paradigm of AI4Science represents a bridge connecting data-driven and theory-driven research approaches. Firstly, large language models like ChatGPT can be viewed as catalysts for revolutionary changes in complex scientific systems through advanced simulations. This can be understood through the concept of "digital twins," which extends the depth and breadth of scientific exploration beyond being mere tools for experimentation and analysis. Digital twins enable the integration of concepts and theories across multiple scales (or scientific domains) to precisely describe relationships within uncertainty theories. Secondly, the conceptual space offers the possibility of mechanism modeling for data-driven research within specific fields. Unlike traditional scientific modeling, which relies solely on data or mechanistic equations, the conceptual space bridges the gap between the two, forming a continuous modeling spectrum ranging from purely data-driven to purely mechanism-based approaches. This provides researchers with the flexibility to choose modeling methods based on their research needs. Consequently, AI4Science also makes it possible to mine causal relationships from data. For instance, the new generation of causal machine learning technologies is actively exploring this possibility, aiming not only to enhance model generalization capabilities but also to provide interpretable scientific insights. Additionally, by integrating domain knowledge such as symmetries, invariances, and physical laws into AI systems, AI4Science significantly enhances the predictive accuracy of models. This has led to AI assistants participating in daily laboratory research, collaborating with scientists to advance the scientific process.

More importantly, to fully harness the potential of AI, human-machine collaboration becomes pivotal. Deep cooperation between humans and machines is required at all stages, from knowledge extraction and model design to result interpretation. This not only necessitates innovative human-machine interaction interfaces but also calls for interdisciplinary collaboration and the cultivation of a new generation of researchers equipped with relevant skills.

Scientific progress largely hinges on data collection, deepening our understanding of the world through experiments and observations, establishing corresponding models or theories, and empirically validating the predictions of these models to continually refine our theoretical foundations. The digitization of daily activities in laboratories and beyond means that researchers can now access more data from a wider range of sources today. For example, this encompasses everything from studying behaviors in research laboratories to analyzing vast amounts of human behavior on the internet. Meanwhile, data collected from increasingly sophisticated and precise tools has opened up new scales of scientific exploration, ranging from patterns of gene expression to light signals from galaxies. Advances in AI have provided new analytical tools for understanding these data sources, facilitating algorithm-based decision-making systems that combine data, mathematical models, and computational power to predict phenomena in the world. Through large-scale learning simulations, AI can assist researchers in generating systematic spaces of natural or physical concepts, creating "digital twins" of real-world systems for experimentation and analysis. AI can also streamline laboratory processes to enhance experimental efficiency and aid researchers in formulating and testing new hypotheses. These advancements rely on interdisciplinary integration, combining domain knowledge with the development of machine learning models, and feeding insights generated by these models back into the research domain.

3.4 Generative AI as a Non-Core Narrator in Journalism

In the intelligent era, machines primarily serve as human auxiliaries and extensions rather than independent production entities operating independently of humans. The media industry, too, is often evolving towards intelligence along the path of "human-machine collaborative news production." Generative AI's involvement in news narrative production mainly follows three approaches: "leveraging general-purpose tools," "embedding within intelligent platforms," and "developing proprietary systems."

Currently, most media organizations commonly adopt the methods of "leveraging general-purpose tools" and "embedding within intelligent platforms," treating generative AI as an assistant. With the effectiveness of these approaches, generative AI is gradually infiltrating the news narrative production process, operating as a non-core narrator to effectively enhance the productivity of human journalists. Specifically:

News Narrative Material Acquisition: Journalists can utilize general-purpose tools such as ChatGPT and ERNIE Bot to conduct "generative intelligent searches." Beyond obtaining key data and facts from vast amounts of information, these tools also generate reference links for the content, enabling journalists to verify and further explore the information. As Kovach opines, "the essence of journalism is constrained by

verification." Generative intelligent searches undoubtedly save journalists significant time, broaden news sources, and facilitate the construction of more comprehensive and in-depth narrative perspectives.

News Interview Preparation: Generative AI can serve as an "external brain" for journalists during interviews, generating responses to assist in refining original interview questions. For instance, technology journalist Kevin Roose pasted an interviewee's resume into ChatGPT and requested it to generate "10 thoughtful and insightful interview questions." The resulting questions were well-received and utilized in his podcast program.

Assisted News Story Writing: Assisting in news content production is the primary application of generative AI in journalistic innovation. The "People's Daily Online-Baidu ERNIE" collaboration has already been validated in application scenarios such as news summarization and report generation at the People's Daily Online Public Opinion Data Center. In the future, this model will also be applied to news event extraction and analysis, as well as news commentary aggregation and analysis. Le Monde, a French newspaper, leverages generative AI to empower human editors, enabling the production of approximately 30 English-language news stories per day. Evidently, in news narrative production, generative AI, as a "non-human actor," leverages its advantages in enhancing news production efficiency and quality, transforming the news narrative production model from a human-machine substitution model to a collaborative symbiotic one.

3.5 Generative AI as a Core News Narrator

In the context of a deeply intelligent society, people are beginning to transcend the traditional "tool theory" perspective and re-examine human-machine relationships. Generative AI is being more widely applied and, in exceptional circumstances, has even advanced to the role of a core news narrator, holding the ultimate decision-making power over the themes, angles, and styles of stories, and directly authoring them. Leveraging advanced machine learning algorithms, natural language processing, and multimodal content generation capabilities, generative AI can efficiently digest and parse vast amounts of data, enabling rapid information processing and in-depth analysis. "As different technologies have distinct internal and economic structures, they exhibit varying content biases." Compared to the "recognition" strengths of pure machine learning, generative AI excels at sifting through large volumes of unstructured data to identify logical focal points, extract critical information, create structure from unstructured data, and transform structured data into narrative texts. "In the future, news genres will further diversify, with real-time event coverage and informational reporting being increasingly handled by AI-Generated Content (AIGC), leaving limited space for human journalists in these areas." Financial news, sports coverage, meteorological reports, and other such news facts are often in a state of rapid flux and heavily rely on vast amounts of data. In the news narrative production of these topics, generative AI demonstrates pronounced narrative preferences.

In financial news narration, Bloomberg pioneered the development and launch of Bloomberg GPT, a large language model tailored for the financial industry, as early as

March 2023. Leveraging its proprietary global financial database, Bloomberg GPT generates news briefs and categorizes internal news narratives. In the realm of sports news narration, Quickplay has collaborated with Google Cloud to utilize generative AI in producing highlight reels and generating long-form videos, injecting vitality into the streaming experience of sports events. In meteorological news narration, The Weather Channel, an American weather information channel, employs generative AI to create automated weather updates and concise weather news segments, which are then disseminated on social media platforms, providing recipients with instant weather information. In narrating these preferred topics, generative AI assumes the role of a core news narrator, reshaping the content production relationship network. Based on algorithmic and procedural settings, it excavates and presents content within narrative topics that can elucidate narrative value.

4 Conclusion

As generative AI becomes capable of storytelling and inhabiting our narratives, a new paradigm of multi-agent collaborative storytelling has emerged. The advent of the intelligence era signifies that human society is moving towards an era of symbiosis and coexistence with machines. The inclusion of new journalistic narrators has altered the original information order and narrative landscape. To prevent information disorder and potential ethical lapses, it is imperative to systematically guide the collaborative journalistic storytelling of the "human-machine symbiosis."

Firstly, we should adopt a proactive approach by leveraging generative AI to detect and defend against fake news, even though it may introduce narrative biases leading to credibility issues. For instance, technologies such as "Generative Adversarial Networks" can be utilized to pit AI systems against each other: one attempts to generate increasingly realistic fake news, while the other strives to enhance its detection capabilities. This "cat-and-mouse game" can help improve the accuracy of detection systems and integrate narrative content into the verification process. Simultaneously, it is crucial to harness the core values of journalists and gatekeepers. Rather than avoiding the use of generative AI in news generation, more attention should be devoted to understanding how and what kind of news it generates.

Secondly, we should discard biases against generative AI and embrace it as a means to expand the creative potential of journalistic narratives. Fear of generative AI often stems from viewing humans as mere tools, rather than recognizing their unique creativity. Therefore, we should strengthen the power of narration by accepting generative AI as a creative partner. Regardless of whether the medium is data or language, high-quality storytelling remains the core value of narration. Thus, we should not be confined to existing narrative formulas. Instead, humans and AI should collaborate to tell compelling stories that resonate with personal life experiences, avoiding detached or indifferent perspectives.

Lastly, we should rekindle the humanistic spirit and innovate journalistic narrative practices in the "interstitial space." "Artificial intelligence does not replace humans but rather 'augments' human intelligence. In the realm of collaborative cooperation between humans and machines—the 'interstitial space'—both humans and intelligent machines leverage their respective strengths." Therefore, it is essential to transcend the

dichotomy between humans and machines, explore the narrative strengths of each within the "interstitial space," and uphold the unique attributes of human narrators—such as leadership, empathy, creativity, and judgment—while fulfilling functions like training, explaining, and maintaining coherence to compensate for the shortcomings of machine-generated narratives. In 2022, the White House Office of Science and Technology Policy proposed the "Blueprint for an AI Bill of Rights," which identified five principles centered around safety, non-discrimination, privacy, and human values to guide the development of generative AI systems, as well as outlining specifics for implementing these principles throughout the model development lifecycle.

Achieving alignment between human and machine values in the use of generative AI has always been a human pursuit. In the practice of journalistic narration, it is even more crucial to excavate narrative values and prevent ethical issues from arising in cross-cultural narratives facilitated by generative AI.

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