Research on the Challenges and Countermeasures of Online Public Opinion under Generative Artificial Intelligence

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Abstract. With the widespread application and sustained impact of AIGC (Artificial Intelligence Generated Content) technology, exemplified by Chat GPT, the ecology of online public opinion in the field of news communication is undergoing profound changes. The new characteristics of online public opinion, such as massive data, multimodal information, precise dissemination, content confusion, and efficient rate, present challenges including more complex information, emotional dissemination, intricate fields, and difficult judgment and analysis. To address these, responses can be formulated from macro, meso, and micro levels, including accelerating legislative standardization, identifying responsible entities, and enhancing personal literacy, thereby improving the governance capacity of public opinion.

Keywords: Artificial Intelligence, AIGC, Online Public Opinion, Challenges, Strategies.

1. Introduction

The success of ChatGPT has significantly impacted various fields, including information dissemination, e-commerce, and entertainment. Although the application of artificial intelligence in the field of news communication is not new, generative artificial intelligence represented by ChatGPT has brought shocks to the news field. AIGC, as a new method of content generation, empowers all aspects of media content creation. Applications like writing robots, interview assistants, video subtitle generation, voice broadcasting, video highlights, and virtual anchors are emerging and infiltrating every aspect from collection to dissemination, profoundly changing the media content creation mode. [1] Online public opinion, an important part of news communication, is also affected.

2. New Characteristics of Online Public Opinion under Generative Artificial Intelligence

2.1. Massive Data

ChatGPT, representing generative artificial intelligence, has risen strongly in the information content field. Machine-written news is not new in news communication, and social media is full of multimodal information data published by social robots. The data of online public opinion has always been considerable. With the development of AIGC technology, intelligent machines as communication entities are set to grow exponentially, presenting massive public opinion data.

2.2. Multimodal Information

Online public opinion information has evolved from single-mode to multimodal; from solely text to text, images, animations, videos, and audio. With breakthroughs in deep neural network technology in large models and multimodality brought by super deep learning, the human-like precision of generative artificial intelligence has increased. Therefore, machine-produced public opinion information will inevitably contain multimodal information, including text, images, animations, videos, and audio. Moreover, cross-model integration has begun, with multimodal information such as text symbols, graphic images, animations, and video audio set to further integrate, becoming the main force in current and future online information flow.

2.3. Confusing Content

The content of online public opinion is always heterogeneous and complex. On the one hand, content interpretation involves multiple entities and interpretations, even deliberate misinterpretation; on the other hand, the content itself is sensitive, topical, and divergent. The fragmentation, decentralization, and heterogeneity in current information dissemination align with the characteristics of generative AI. When AI like ChatGPT intervenes in the dissemination of public opinion, it may lead to circular reversal, diffuse compound public opinion, framed topic public opinion, and intermittent explosive public opinion risks. [2] Thus, the authenticity of public opinion content is harder to judge, presenting higher confusion.

2.4. Precise Dissemination

In the mass communication era, public opinion dissemination was not precise but involved large-scale mechanical replication. Under the AIGC context, with intelligent algorithms, deep self-learning, and widespread use of big data technology, intelligent machines can create unique public opinion texts based on user profiles, text information, and emotional attribute preferences. This allows for targeted and precise dissemination of public opinion texts.

2.5. Efficient Rate

Generative AI technologies like ChatGPT, with their big data, computational power, and strong algorithms, are fast and efficient in generating and disseminating online public opinion texts. AIGC technology makes it easy and efficient to generate multimodal information such as text, images, and video animations. Through big data technology, texts can be analyzed efficiently, selecting optimal dissemination channels or platforms for precise dissemination.

3. Challenges of Online Public Opinion under Generative Artificial Intelligence

3.1. Information Challenge: More Complex Information

Currently, China is at a critical period of social transformation, with complex and variable online public opinion information. The diverse interests and demands of social entities make public opinion more complex. Even regular disseminators in the formation of online public opinion may selectively highlight or hide part of the truth, not to mention deliberate guidance by others with ulterior motives. Under the background of generative AI, public opinion remains so, even more so. In the current public opinion ecology, fragmentation of public opinion, speed competition among various parties, and instantaneity of communication tools are tearing public opinion apart, making it more complex. Additionally, intelligent machines disseminate a large amount of false, simulated, interfering, toxic, and harmful public opinion information. In short, online public opinion information is more complex, presenting more challenges in collection, analysis, and monitoring.

3.2. Dissemination Challenge: More Emotional Dissemination

In the mass media era, public opinion was mainly presented through mass media; in the internet era, it is mainly through the internet. With the development of big data technology and autonomous learning technology, public opinion dissemination is gradually becoming intelligent, with "one-stop" services like self-writing, self-editing, self-clipping, and even self-distributing. It's noteworthy that in this fast-paced, instant consumption information AI era, the two dimensions of emotion and information in public opinion dissemination are imbalanced. Under the influence of polarized consciousness, algorithmic technology, and traffic supremacy, there is a further bias towards emotional dissemination, inadvertently neglecting the information itself, presenting more challenges in the whole process governance of online public opinion.

3.3. Field Challenge: More Complex Fields

Online public opinion never exists in isolation but as part of the social governance system. In the public opinion field, there are multiple participating entities, diversified carriers, efficient speed, emotional dissemination, and group polarization. With the boost of generative AI, the field becomes more complex. With the application of AI in the field of online public opinion, the involvement of virtual robots, social robots, etc., makes the field virtual, digital, and intelligent, complicating the public opinion field. Coupled with the aforementioned complex information, any minor information online can form a butterfly effect, creating a huge public opinion vortex. Moreover, emotional dissemination muddies the public opinion field.

3.4. Governance Challenge: More Difficult Judgment

As mentioned, with the entry of multiple participants, including water armies, into online public opinion, such as natural persons and digital persons, the subject of net public opinion becomes complex and polarized. Emotional polarization filters out many original attributes, increasing the difficulty of public opinion analysis. Ambiguous texts and seemingly true information increase judgment and analysis difficulties. Additionally, some public opinions appear in more covert forms, such as special symbols, even "low red high black," muddying the information, making analysis more difficult.

4. Countermeasures for Online Public Opinion under Generative Artificial Intelligence

AIGC is a double-edged sword, bringing challenges to online public opinion governance and new opportunities. The countermeasures for online public opinion under generative artificial intelligence can be addressed from macro-governmental, meso-platform institutional, micro-individual, and technical provider perspectives.

4.1. Accelerate AIGC Legislation to Provide Legal Basis for Public Opinion Governance

With the wide application of AI in various fields, issues like "AI face-swapping scams" in news frequently arise; copyright disputes also occur in fields like news communication. Therefore, it's necessary for the government, as a social manager, to accelerate the introduction of laws and regulations in the field of AI, ensuring that generative AI technology centered on AIGC is not misused, to provide a legal basis for online public opinion governance. [3] Before legislation, relevant industry regulatory departments should also introduce normative measures and systems to ensure the regulated use of AI in fields like online public opinion, providing a management normative basis.

4.2. Strengthen Institutional Responsibility and Enhance Responsibility Subjects in Online Public Opinion Governance

From a social perspective, there are multiple institutions involved in online public opinion, among which network platforms providing public opinion exchange and news institutions guiding public opinion play a crucial role. Therefore, it's essential to strengthen professional ethics, industry self-discipline in news communication, ensuring that generative AI serves society and people better. News institutions and network platforms should establish strict systems, fulfill main body responsibilities, and consolidate social responsibilities. Law enforcement agencies should strengthen institutional responsibilities, severely crack down on illegal and criminal activities using AI in the field of online public opinion.

4.3. Enhance Personal Literacy, Strengthen Responsibility of Participants in Online Public Opinion

From a micro-individual perspective, citizens are also participants in online public opinion, belonging to the category of participating subject responsibility. Citizens should be responsible for their AI involvement in public opinion on the internet. The internet is not beyond the law, and any illegal behavior will be punished by law. Citizens should enhance personal legal consciousness and literacy, avoiding privacy infringement, insults, defamation, etc., in online public opinion participation. Additionally, citizens should improve information literacy and AI literacy to better utilize AI and avoid being used by others.

4.4. Improve Technical Means, Continuously Enhance Online Public Opinion Monitoring Technology Level

From a technical perspective, the application of AI in online public opinion monitoring technology has already begun. As technology providers, they should also fulfill main body responsibilities. In generative AI applications, filter toxic, harmful, and false information; strengthen semantic analysis technology, reduce one-sided, misleading public opinion information circulation; develop AI public opinion early warning technology, enhance information security; consolidate AI systems, stabilize information security; to promote safe and healthy development of online public opinion. [4]

5. Conclusion

Generative artificial intelligence has brought tremendous impact to online public opinion. Intelligent technology, represented by GPT, is reshaping our information space and affecting the real information life field of humanity. In online public opinion, we have to face a more complex ecology, but as a technology, generative AI can also be used as a public opinion governance tool to improve the social network public opinion governance system.

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