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From Mimic Environment to Multiple Virtual Worlds: The Predicament and Breakage of News Reality in AIGC Era

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From the era of mass communication to the era of generative artificial intelligence, under the construction of big data, algorithms and computing power, the mimicry environment has gradually evolved into multiple virtual dreamland: digital replication technology builds the first long-distance online news, and strong editing and weak mining aggravate the alienation of news production and practice; the algorithm model generated randomly by probability creates the second news illusion, and the exhaustibility of calculation makes AIGC completely divorced from reality. Man-machine speech cuts off the rational and open dialogue in the public sphere, and interpersonal relationship falls into the social division woven by man-machine relationship. In this process, the authenticity of news has suffered a fierce impact. From the perspective of the development history of media technology, based on the theory of "mimetic environment" put forward by Lippmann, taking ChatGPT as a concrete case, this paper reveals the current situation of the continuous separation between the public and the real and objective environment by analyzing the evolution logic from mimetic environment to multiple virtual worlds, and puts forward some ways to break the ice, such as collaboration between eyewitness evidence and intelligent technology, cooperation between generative AI and journalists, collusion between recommendation algorithm and value orientation, so as to seek an effective path to protect the truth of news and bridge the gap between the virtual and the real world.

Keywords: mimic environment, virtual reality, AIGC

With the remarkable development of generative artificial intelligence technology, the mimicry environment in the era of mass communication has changed greatly, and new mimicry environmental problems have emerged in the era of intelligent communication, which makes us farther away from the real world. The word "pseudo-environment" was put forward as early as the 1920s, which coincided with the heyday of newspaper media in the era of mass communication. From the perspective of the development history of media technology, scholars Liu Dehuan and Hong Xinyi said that since the birth of the Internet, it has experienced three revolutions. The first revolution began with the birth of the first computer in the world in 1946. The desktop Internet allowed people to break through the time limit and soar on the information superhighway, making it normal to be online in time and at any time. The second revolution was accompanied by the popularity of smart phones. The mobile Internet enabled people to break through the space restrictions and become free mobile phone people. Interest and value replaced geography to enter a semi-mature society. The third revolution is the introduction of ChatGPT, a big language model, and the simulation of natural language by artificial intelligence opens the Internet era (Liu & Hong, 2023). In other words, until now, human beings

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are really in the information explosion society led by algorithms, computing power and data. From the era of mass communication to the era of intelligent communication, in addition to mass media and natural persons, machines have also become the builders of mimicry environment, especially the multiple virtual worlds built by generative artificial intelligence, which has expanded the connotation and extension of traditional mimicry environment theory, and people's understanding of the real world is also facing a more severe test.

Mimic Environment in the Era of Mass Communication

"Mimic environment" was first put forward by Lippmann in his book *Public Opinion* in 1922. The core question put forward by *Public Opinion* is "How is public opinion formed?". Lippmann argues that the media are trapped in the tool cage of public opinion communication from the objective environment and subjective human nature respectively. People can't get the truth because of complex factors such as external environment, media power and personal prejudice, so they put forward mimetic environment. The theory of mimetic environment holds that the information environment people come into contact with is not a mirror reflection of the objective world, but a "specious environment" after the selection, processing and structural treatment of mass media. The more complicated the external world is, the more the public depends on the mass media to obtain scenes beyond their own experience.

In the era of mass communication, the sender and receiver of information are clearly defined, and the disseminator is the authoritative gatekeeper in the information circulation market, occupying an absolute dominant position. This central, directional and single communication context leads to the narrowing of people's cognition of the real world. Barbie Zelizer, a famous American journalist, believes that news itself is to create an imaginative participation of the public in inaccessible events, and journalists are like shamans, bringing back important insights from a world that ordinary people can't reach. It is precisely because no one has shared this knowledge that what reporters know is valuable (Zelizer, 2022). From the side, it highlights that people are highly dependent on the information provided by news producers and disseminators. News is actually the fact that media practitioners have chosen it, which shows that the mimetic environment in the era of mass communication is the artificial environment after the media agenda is set. However, the reporter's choice of facts is inevitable. It is clearly pointed out in *Introduction to Journalism* (2020) that this is determined by the infinity of facts and the finiteness of reporting. The authoritative gatekeeper of mass media builds a window for people to watch the world through media positioning, audience demand, news source choice, angle presentation, writing style, etc. The subjective behavior of media practitioners greatly hinders the audience from perceiving the real world. Lippmann asserted that even if the reporter was a witness at the scene, he could not bring back the real report, because his own prejudice and personal imagination had changed the original appearance of the incident. Generally speaking, similar to Plato's cave theory, the audience is the cave man, the media is the torch, and the shadow is the operator. People live in the "fake environment" provided by the mass media and imagined by themselves all the time. Because it is impossible for the public to directly contact the complicated world and every event, it is difficult to make a wise judgment and can only act as an outsider (Lippmann, 1989).

Multiple Virtual Worlds of Generative Artificial Intelligence

The change of media technology leads to the change of communication environment from centralization to decentralization. After the rise of generative artificial intelligence, one-to-one or one-to-many information

communication activities have changed the characteristics of traditional mimicry environment, showing new characteristics of multiple mimicry environment and immersive experience of virtual reality. It is said that the deep integration of media, people and society in the era of smart media communication is redefining the public's cognition of mimicry environment.

Online News Built in the Era of Data Replication

Walter Benjamin, a famous German philosopher and writer, thinks that the halo of mountains and branches in summer afternoon is a unique experience in the present time and space, and the era of mechanical reproduction has brought the disappearance of charm (Benjamin, 2006). It can be seen that the charm comes from the artist's personal experience, and in the era of digital reproduction, the direct challenge is the news production concept of social practice. Although there is a certain gap between the mimicry environment in the era of mass communication and the real world, journalists rely on "eyewitness evidence" to establish and maintain the authority of reporting beyond the daily experience of the public, and "on the spot" is still the only way for journalists to produce news. Nowadays, the witness practice is gradually disappearing under the impact of big data, and the remoteness, integration and online of the gathering, writing, editing and distribution links are increasingly becoming the general consensus of media production news. "On-the-spot" has been reduced to "online field" under the influence of intelligent media technology, and this phenomenon of "strong editing and weak mining" is causing the alienation of news production and practice. The emergence of generative artificial intelligence intensifies the alienation between news production and practice.

Three technical foundations of AIGC: big data is fuel, algorithm model is engine, and super computing power is accelerator. The first step to create AIGC is to collect data, which can be roughly divided into three types: one is electronic transcoding data from production practice activities, such as the Associated Press authorizing the previously accumulated news database to OpenAI Company to explore the possibility of AIGC applying news. There are two problems with coded data. On the one hand, the term news is born out of the old English words "newes" or "niwes" in the late 16th century, and "newness" is one of the primary standards to measure the value of news. The implosion of news data in the past can only serve as a footnote to history, and it is difficult to serve the demand of information in the world now. On the other hand, news is also known as the abbreviation of north, east, west, and south. A single data source is not enough to be regarded as big data. Data patents, privacy and copyright protection all make the interconnection between data more difficult, and the use of the same database published on the Internet makes the media lose the advantage of producing exclusive news. Second, computer data made out of nothing. News communication activities are the product of human production practice and social practice. Marx's news view is produced in proletarian news practice, and practice is the inexhaustible motive force of news production. According to the user's prompt, calculating the correlation between words by model algorithm is completely divorced from practical communication activities, and netizens criticized ChatGPT for its serious nonsense after using it. Where is the reporter? It has become a difficult puzzle in the era of digital reproduction. Third, the synthetic data that is difficult to distinguish between true and false. Computer operation data and human practice data flood into the network at the same time, and are indiscriminately grabbed and incorporated into the training database by generative artificial intelligence. Coupled with the super-computational light-speed replication, people can see the real world through the curtain like watching flowers in the fog. How can they see it really? Therefore, relying on the digital replication era of big data resources, the first virtual world has been set up.

News Illusion Created by Statistical Algorithm

The closer information is to the real world, the less easy it is to be manipulated. However, the big language model leads us to the "readable, writable, reproducible and interactive" meaning Internet, but it only does not lead us to the real world, which is caused by the original characteristics of technology. Large Language Model (LLM), also known as text generation model, is a representative product of generative artificial intelligence. The technical framework it follows is mainly divided into three levels, namely: corpus system, pre-training algorithm, and fine-tuning algorithm. Corpus system is the basis of generative artificial intelligence, including information crawled from open source code base, shared by users voluntarily and obtained from various channels such as encyclopedias, books, newspapers, forums, etc., and after preliminary cleaning, a large number of unlabeled feeding data are formed. As for the pre-training algorithm, ChatGPT developed by OpenAI Company adopts a neural network model Transformer based on self-attention mechanism to process sequence data. In order to train the Transformer machine to learn how to efficiently mine the probabilistic correlation between words and contexts, the researchers of OpenAI adopted the cloze method, that is, deleting a word from a natural sentence and letting Transformer fill in the most suitable words according to the context and word prediction function. There is a technical term in the artificial intelligence industry called "self-supervised learning" (Deng, He, & Wu, 2023). In addition, in order to make Transformer have the ability of chatting and answering questions, the developer adopts prompt, that is, providing samples, so that ChatGPT can identify and master the template and quickly match the relevant answers according to the keywords asked by users. Finally, the fine-tuning algorithm is used to improve the language performance of ChatGPT and make it more suitable for human language expression habits. The fine-tuning algorithm introduces reinforcement learning from human feedback (RLHF) technology, which consists of reward model and near-end strategy optimization model. The reward model allows the annotator to sort the generated content and select the better answers. The near-end strategy optimization model performs gradient scoring again on the basis of the answers generated by the reward model, and further screens out the better answers, so as to improve the fluency of ChatGPT answers repeatedly.

Judging from the whole technical operation of the above-mentioned generative artificial intelligence, AIGC is neither an observation output of the real world nor a conscious deep-seated thinking. On the contrary, AIGC uses the exhaustibility of calculation, the statistical calculation ability of pure science and technology, and follows the inductive and deductive logic from the general to the individual. Li Dazhao once defined news as a portrait of a new and living social situation. The big language generation model represented by ChatGPT was completely divorced from the real social situation and unconsciously produced content in the vacuum of time and space disorder. Therefore, in the technological myth carnival of natural language model, AIGC can not be completely equated with news, but only creates a news illusion that is divorced from the real context. And ChatGPT will generate uncertain answers because of the update of database, the iteration of algorithm and the change of prompt words. Some netizens vividly call it "random parrot". From this point of view, the information generated randomly by algorithm probability is nothing more than creating the second virtual world in the intelligent age.

Prisoner's Dilemma Created by Man-Machine Dialogue

Generative artificial intelligence can be divided into interpersonal communication AI and mass communication AI according to the communication level. Take ChatGPT as an example, when ChatGPT as a

chat robot has a micro-dialogue with individuals, it belongs to peer-to-peer interpersonal communication; when ChatGPT talks with multiple users at the same time, it belongs to point-to-point mass communication. From the perspective of mass communication, first of all, the foundation of public openness and rational dialogue is cut off. Habermas, a German philosopher, believes that there is a public sphere composed of private individuals in society, which is open to all in principle. They express their opinions openly and freely on issues with universal public interests, and if they are large, they spread them through the media, and finally exercise democratic control over state activities. Habermas put forward that the primary feature of the public sphere is that many independent plural subjects need to be present at the same time and speak to each other, forming a meaningful space woven by the relationship between people. However, ChatGPT is a dialogue between man and machine, and the machine itself has the service nature of "machine is human", so it is difficult to form a high-quality rational dialogue between man and machine. In addition, man-machine dialogue is still confined to the private sphere, occupying the discussion space in the public sphere, and there is a new social division made by machines between people. Even if the content of the dialogue is circulated to the public domain again after data cleaning, not only the time limit has passed the context of the discussion at that time, but also the opinions after translation and combination have long been unrecognizable. Secondly, algorithm recommendation has been embedded in the generative artificial intelligence system, and the algorithm is driven by attention economy, which leads to the yellow news tide of intelligent media. Algorithm recommendation can be divided into hot list based on time series popularity and content push of "guess what you like". Hot list will push the content or topic with the highest interactive rate of watching and reading in a unit time period to users, just like a laser, and the direction of light irradiation is the focus of people's attention. Guess you like to use the user's browsing footprint as the initial source, describe the user's portrait, and recommend similar information to users. Whether it is a hot search list or guessing whether you like it, it will aggravate the information cocoon.

From the perspective of interpersonal communication, generative AI provides you with privately customized micro-content services. Users are immersed in the interest cage woven by algorithms, constantly strengthening their own views and forming an extremely "self-centered" paranoid personality. This is extremely unfavorable to the spiritual communication of interpersonal relationships and the shaping of sound personality in the real world. Through the mass communication of AIGC, a new social division is formed, which hinders the open and rational discussion in the public domain, and the human-computer communication of AIGC damages the interpersonal relationship in reality. Generative artificial intelligence has compiled the cage of the third virtual world.

Breaking the Cage and Bridging Multiple Virtual Worlds with the Real Environment

Although the mimicry environment in the era of mass communication can't be called a mirror reflection of the real objective world, it is also rooted in the social production and life practice and the personal witness of journalists. On the other hand, the multiple virtual worlds fabricated by generative artificial intelligence are completely divorced from the cognitive context of the real world, and automatically generate information in a vacuum society, with fewer and fewer answers to practical problems, and the mimicry environment gradually evolves into the illusion of multiple virtual worlds, causing social disorders. Breaking the false cage, guarding the news truth and bridging the gap between multiple virtual worlds and real society are urgent problems to be solved.

Cooperation between Eyewitness Evidence and Intelligent Technology

Journalists are the eyes of the media, and the witness evidence of journalists at the scene is regarded as the key word of news practice and the symbol of producing high-quality news, so as to construct the authority and authenticity of the report. Eyewitness evidence has also been adapting to the ever-changing media technology. Early witness statements spread to distant places orally through floating population, businessmen, tourists and other groups. The invention of printing made newspapers aware of the huge audience's information needs and began to send correspondents to the scene of the incident, becoming witnesses of distant events and bringing back signed news reports. Photography technology makes photos be crowned as "silent witnesses", and the recording contains the truth fragments that were ignored at that time. Camera technology promotes the live news broadcast into reality. For a long time, on-the-spot witness and news report have formed a benign symbiotic relationship. But generally speaking, in the era of mass communication, eyewitness evidence mainly depends on the presence of human body. In the era of intelligent media communication, technologies such as sensors, drones, Internet of Things and 5G have activated remote news gathering methods. Technology is not only an auxiliary tool for journalists, but also a substitute for journalists. The mobile intelligent terminal allows the public to directly participate in the news scene, and the main body of news production is generalized. Although media technology seems to be weakening journalists' eyewitness identity, eyewitness evidence is still the guarantee of news authenticity and authority, but eyewitness evidence is outsourced to big data encoded by UGC, OGC, and PGC in the face of generative artificial intelligence. Generative artificial intelligence can not only reuse the historical witness evidence by retelling, analyzing and forecasting, but also quickly sort out and edit the witness evidence of journalists, non-journalists and other major groups and objects such as sensors and drones into news after comprehensive networking, thus realizing real-time live broadcast. The increasingly intelligent technology does not take news production away from the soil of real practice. Instead, it should cooperate with eyewitness evidence, see and listen to others and other things, and be deeply rooted in the real objective world.

Generative AI Is Associated with Journalists

Automated news originated from a financial news writing program developed by Thompson Company in the United States in 2006. Automated news in China began with financial news generated by Tencent's writing robot Dreamwriter in 2015. Matt Carlson, an American scholar, defines automated news as news text formed by structural processing of data under program model algorithm with little or no human intervention. There are three kinds of automatic news production methods: one is to generate news articles by using structured data read by computers, which are widely used in sports, finance, natural disasters, medical and health care, weather forecast, elections and so on; the second is to generate personalized products in the form of labeling by mining users' reading content and habits to enhance the stickiness with users; the third is to match the collected materials with the data model of journalists to generate works with unique journalist style. This concept of using rigorous social science to produce news can be traced back to the accurate journalism in the 1960s. No matter what kind of production mode, the data from the real world are used, and then the natural language that conforms to human expression habits is calculated and presented through the algorithm model. However, AIGC is extremely powerful. The automatically generated content includes not only the explicit content such as common images, texts and audio, but also the internal logic content such as strategies, plots and training data,

which makes people have a huge misunderstanding that AIGC can be used to produce news and even eliminate journalists. But in the end, the core of AIGC is deep synthesis technology, which is different from the portrayal of the mimicry environment from the objective real world. AIGC contains a mixture of the real world and the virtual world. Just like a couplet in the dreamland of *Dream of Red Mansions*: "False is true and false when it is true, and there is no place for inaction", AIGC deviates from the definition of news authority of "reporting of recent facts". Therefore, AIGC is not equal to automated news, and there are essential differences between them. If AIGC is to be applied to the field of news, it is necessary to install four limbs and five senses to develop humanoid robots to sense the real world, or it is necessary for AIGC to cooperate with journalists, who provide materials of the real and objective world, and AI produces news in a limited range.

Recommendation Algorithm and Value-Oriented Collusion

The recommendation algorithm of AIGC greatly improves the efficiency of information production and dissemination. As people transfer the right to choose and distribute information to the recommendation algorithm, the algorithm naturally plays the role of gatekeeper. In the era of mass communication, the editor checks the authenticity of information and the quality of content. In the era of intelligent media communication, the algorithm checks the audience's interest and the efficiency of information screening. The only criterion for measuring news value has become traffic economy, so the credibility and quality of information can hardly be guaranteed. Ding Shengchao, an algorithm expert, holds that the algorithm needs to keep pace with the times and be constantly updated to adapt to the environment and policy, and the sustainable development of the recommended algorithm needs the correct guidance of value orientation. Technical problems can be completely solved by technology, and algorithms are used to supervise algorithms. First of all, code sensitive words, automatically filter out bad information, explore how to embed moral and legal norms into intelligent writing programs, and improve the level of artificial intelligence by self-learning of machines, so as to automatically identify content that violates legal and moral norms. Secondly, personalized push technology mechanically isolates personal preferences from other useful information from the outside world, ignoring users' need to know the information needs of the outside world in multiple dimensions. Therefore, it is necessary to improve the analysis scope of recommendation algorithm, combine personal needs with social public interests, and timely push hot and key news about national development and people's livelihood, so as to avoid the problem that the push theme is too single and concentrated on the technical level. Thirdly, adding the categories, habits and preferences of users' personal browsing information to users' personal accounts is also aimed at reminding users to wake up, because no matter whether there is personalized recommendation technology or not, people have subjective initiative, and may only choose the content they are interested in and thus actively fall into the information cocoon. Finally, we should correctly recognize the two sides of technology, be alert to the extreme individualism cage created by the algorithm, innovate the news reporting form on the basis of persisting in reflecting the objective reality environment and news authenticity, broaden the news communication channels, improve the transparency of the algorithm to meet the users' right to know, narrow the information gap, and guide the algorithm to develop in a positive direction.

Conclusions

In the era of mass communication, people mainly rely on the "mimicry environment" provided by the media to understand the objective real world. Although the limited coverage determines that the mass media

can only reflect a certain part of reality, the reporter's on-the-spot witness largely ensures that the information comes from the real world and the news is authentic and authoritative. However, the triple virtual world created by the era of intelligent media that relies on big data, algorithms and computing power intensifies the deviation between the mimicry environment and the real world. The data space that is difficult to distinguish between virtual world and reality leads to the fracture of people's cognition of the real world. AIGC completely ignores the social public function of the media as an environmental monitor, which leads to the social cognitive disorder of the public. The theory of "compensatory media" put forward by Paul Levinson, an American media theorist, holds that human beings are making rational choices in the process of media evolution, and the subsequent media are all compensation for the previous media, thus guiding the direction of media evolution (Levinson, 2014). Similarly, in the face of the rise of AIGC in the era of intelligent media, the first step is to perceive the limitations of multiple virtual worlds constructed by AIGC on the public's cognitive reality environment, and the second step is to regain people's initiative and value rationality in social production practice and guide the media to serve the beautiful real world.

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