

The Development of Broadcasting and Hosting from the Perspective of Media Intelligence-The Case of AI Anchors for Beijing 2022 Winter Olympics

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Abstract: *With the continuous progress of media technology, the media communication environment has undergone profound changes, and media intelligence has become a new trend of media convergence. As an innovative product of the combination of artificial intelligence technology and media communication, AI anchors have been applied to information communication in the Olympic Winter Games Beijing 2022, which has attracted widespread attention from the public. According to the current development of AI anchors, this paper uses embodied cognition theory to investigate the development trend of the broadcasting and hosting industry under the influence of intelligent media. On this basis, the paper takes AI anchors of the Winter Olympics as the research object, analyzes their application reasons and communication characteristics, and then explores the irreplaceability of human broadcasters and hosts by comparing them with AI anchors. The study of this paper will provide a feasible path for the development direction of human-machine symbiosis and a new case for the study of AI anchors.*

Keywords: *AI anchors; Media intelligence; human-machine symbiosis; Embodied cognition*

1. Introduction

Artificial intelligence technology based on 5G networks, big data, cloud computing and other Internet technologies have permeated all aspects of media work in recent years, with information production and dissemination becoming a key focus of media intelligence. AI anchors are an innovative application of artificial intelligence technology in the field of broadcasting and hosting, which can enhance the presentation of content through a more efficient mode of information interaction and promote the iterative upgrading of information dissemination methods. The Beijing 2022 Olympic Winter Games was the first global sports event to be held as scheduled since the COVID-19 pandemic. The theme slogan "Together for a Shared Future" embodied the vision of humanity for the future. As technology is the main driving force for social progress, technological innovation was the main feature of the Winter Olympics. Through this platform, many of the latest technological achievements have been presented to the public, among which the application of AI anchors has attracted the most attention. During this period, virtual anchors have applied to many fields such as sign language broadcasting, weather forecasting and live streaming, taking on some communication work of media organizations with the advantages of high efficiency, multi-discipline and low cost. However, virtual anchors cannot completely replace human anchors, they all take on the corresponding work with their unique advantages, and their cooperation will become a trend in the future.

2. Impact of intelligent media on broadcasting and hosting

2.1. Application of embodied cognition theory in the field of communication

Embodied cognition theory originates from Merleau-Ponty's phenomenology of perception, which is developed in opposition to disembodied cognition theory in traditional cognitive science. Disembodied cognition is the dominant trend of the first generation of cognitive science, emphasizing that cognition can function independently from the human body and is also the theoretical source of artificial intelligence.^[1] As the mainstream trend of contemporary cognitive science embodied cognition truly regards human beings as "all-rounds," advocates that cognition is an interactive production of the brain, body and environment, and stresses the unified development of body and mind.

Throughout the entire history of communication studies, most scholars have focused on the effects of

communication, social control and the role of communication, but rarely on the presence and absence of the human body. McLuhan's famous saying "the medium is the extension of the human body" implies that the media history under a technocentric perspective is a process in which technology is constantly embedded in the human body, resulting in its absence. With the widespread application of virtual reality and artificial intelligence in the field of communication, new technologies have removed the human body from the practice of communication, and the tendency of posthumanism has become more evident.^[2]

Faced with the dilemma of the human body being dissolved by technology, some scholars have begun to pay attention to the concept of "embodied cognition", which was once ignored by communication studies. Liu Hailong and Shu Kairong introduced the embodied cognition theory into communication in their research. They believe that disembodiment once dominated the study of the relationship between communication and the human body, and embodied cognition helps people explore the direction of communication in the new technological context.^[3] In general, embodied cognition is a new perspective for explaining communication phenomena under the influence of media intelligence. To some extent, this is to solve the problem faced by current communication research based on disembodied cognition.

2.2. Development of AI anchors under disembodied cognition

As one of the typical applications of artificial intelligence in broadcasting and hosting, AI anchors get rid of physical body constraints. It can also be engaged in the production and dissemination of media content in the absence of traditional practitioners. It is essentially a manifestation of disembodied cognition that benefits from the development of media intelligence and also contributes to the advancement of media information interaction models.

AI anchors were first born out of virtual presenters. In 2001, the world's first virtual host named ANANOVA with basic news broadcasting capabilities was born in the UK, breaking the human monopoly of the industry. Since 2018, China's artificial intelligence technology has developed rapidly, and AI anchors have begun to appear in people's eyes. China Xinhua News Agency (CXNA) launched the world's first AI male anchor Xin Xiaohao this year, which can imitate body movements and facial expressions of real people, instead of mechanized news broadcasting. AI anchors are gradually able to deliver high-quality news broadcasts due to the upgrade of artificial intelligence technology. For example, during the COVID-19 epidemic, Guangxi Satellite TV's AI anchor Xiaoqing can replace the human anchor to quickly and accurately broadcast news and interpret epidemic prevention and control policies. The broadcasting and hosting industry has ushered in the development trend of diversification, intelligence and virtualization with the increasing number of AI anchors.

2.3. Development of human anchors under embodied cognition

From the perspective of embodied cognition, the emergence of artificial intelligence technologies has led to the departure of human anchors as communication mediators, but it is still impossible to ignore the importance of the human body in the cognitive process. The body is not only the basis of human existence in the biological sense but also closely related to human political, cultural and economic life. Compared with AI anchors based on data calculation, human anchors are not news broadcast machines. They have rich cognitive accumulation and can establish emotional connections with audiences through interaction. Facing the challenges brought by AI anchors in recent years, our traditional practitioners have broken the public's stereotype of them through personalized and diversified image-building. For example, CCTV news anchors use vivid and interesting language to interpret news in their short video programs, narrowing the distance between them and their audiences. They also update their work Vlogs on social media platforms to show viewers the multi-faceted nature of the presenters. In the process of AI anchors occupying survival space, human anchors have created a unique competitive advantage through personalized image-building and emotional interaction.

3. Case study of AI anchors for Beijing 2022 Winter Olympics

3.1. Causes analysis of applying AI anchors

3.1.1. Support from the government strategy

As the most innovative and representative application of artificial intelligence technology, AI anchors have achieved great development in China's media industry. China has attached great importance to the development of science and technology, and the application of artificial intelligence has become one of

the key national strategies in the 14th Five-Year Plan period. On 20 October 2021, the National Radio and Television Administration (NRTA) released the 14th Five-Year Plan for the Development of Science and Technology in Radio, Television and Network Audiovisual, which clearly states that virtual anchors and animated sign language should be widely used in news broadcasting, weather forecasting, variety shows and other programs, to innovate program forms and enhance the level of intelligence.^[4]

3.1.2. Market expansion of the virtual human

As the concept of “metaverse” became more popular in 2021, virtual digital human has attracted attention as a scene entrance linking the metaverse. It reflects the general trend towards the convergence of the virtual world and the real world. The virtual digital human can be divided into two categories according to their functions: identity-based avatars for social entertainment and service-based avatars that replace the services of real people. Currently, service-based AI anchors and identity-based virtual idols are hot spots in the market. According to the 2021 Virtual Digital Human In-depth Industry Report released by the market research organization QbitAI, the overall market size of China's virtual digital humans will reach 270 billion yuan by 2030. Among them, identity-based avatars account for about 65% and service-based avatars account for about 35%.^[5] The market for virtual digital humans will continue to expand, bringing people an immersive experience in the digital world.

3.1.3. Reflecting the technological features of the 2022 Winter Olympics

The technological element is one of the main characteristics of the 2022 Winter Olympics, which runs through the entire preparation process. At the beginning of the preparations, China established a leading group on technology for the 2022 Winter Olympics, focusing on zero-emission energy supply, green travel, sports technology, etc. Therefore, the 2022 Winter Olympics showcased several of the latest technological achievements to the public, such as carbon dioxide ice-making technology with no emissions, artificial snow-making technology that breaks the standard blockade, and intelligent vehicles using hydrogen fuel. In particular, artificial intelligence became one of the important technologies during the 2022 Winter Olympics, with 28 virtual digital people launched by 20 technology companies, including Tencent, China Mobile, Baidu and Alibaba, providing an excellent digital experience for the audience.

3.2. Characteristic analysis of AI anchors

3.2.1. Multi-field application

Different from only used for news broadcasts in the past, AI anchors can provide customized services according to specific scenarios and varied user needs. During the 2022 Winter Olympics, in addition to being used in news broadcasting and language translation, AI anchors have also been innovatively applied to sign language broadcasting, weather forecasting, and live streaming.

Firstly, CCTV News and Baidu AI Cloud launched an AI sign language anchor to bring real-time sign language interpretation to hearing impaired people in the news broadcast and event commentary of the 2022 Winter Olympics. Although about 430 million people worldwide have moderate or above hearing impairment, the AI anchor uses technology to overcome their barriers, helping them quickly get information about the competition and feel the passion of the Winter Olympics. Secondly, the AI weather anchor Feng Xiaoshu, jointly created by the China Meteorological Administration and Xiaolce Company, was online on major platforms half a month before the opening of the 2022 Winter Olympics, providing real-time weather reports for competitors and viewers. Different from the Summer Olympic Games, a large number of events in the Winter Olympic Games are held outdoors in mountainous areas, so accurate and timely meteorological information is inseparable. Thirdly, in order to better promote the 2022 Winter Olympics with digital technology, Alibaba, one of the technical service providers for the 2022 Winter Olympics, launched an AI live streaming anchor Dongdong. Because many people could not go to offline retail stores, the AI anchor first worked as a special reporter that introduced various Winter Olympics peripheral products to the public and then sold these products in the Taobao live room every night.

3.2.2. All-day service

The biggest advantage of AI virtual anchors compared to human anchors is their ability to produce and broadcast news without interruption. On the one hand, AI anchors do not need to rest that can quickly enter a highly concentrated state of work even at night, so they can truly work all day long. On the other hand, AI anchors have powerful information acquisition and processing capabilities, so they can work online at any time, which is particularly suitable for coverage of catastrophic and unexpected events. For example, weather changes would directly affect the competition schedule, so dynamic weather

forecasting throughout the day was essential for the 2022 Winter Olympics. AI anchor Feng Xiaoshu could broadcast continuously according to changing weather without even taking a break, instead of only broadcasting at regular intervals like human anchors. At the same time, his broadcast included weather indices such as cold index, frostbite index and sun protection index, providing timely weather information for outdoor spectators, which helped spectators to watch the games healthily and safely.

3.2.3. High dissemination efficiency

With the support of cloud computing and artificial intelligence technology, AI anchors can automatically generate information according to the program set in advance and spread it in a standardized way while ensuring timeliness. For example, the 2022 Winter Olympics AI sign language anchor had both a sign language translation engine and a natural motion engine driven by technologies such as speech recognition and natural speech understanding. She was not only able to quickly translate speech in audio and video into sign language but also to translate sign language into virtual human expression movements in real-time, presenting accurate sign language expressions for the hearing impaired. In addition, AI anchor Dongdong, who live-streamed and sold goods in the official live broadcast room, could even interact with the audience based on their comments. The AI Script Generation would help Dongdong self-learn the relevant knowledge of the Winter Olympics and then quickly generate logical and interesting language based on audience comments, which allowed Dongdong to continuously output content and interact with the audience during the two-hour live streaming. There is no doubt that AI anchors can greatly improve the efficiency of information dissemination while saving a lot of manpower and capital costs.

4. Irreplaceability of human broadcasters and hosts

With the rapid development of artificial intelligence technology, whether AI can completely replace humans has always been a controversial topic, and it is no exception in broadcasting and hosting. It is undeniable that AI anchors play an active role in information dissemination with the improvement of media intelligence, but we cannot ignore the irreplaceability of human anchors in media work.

Different from AI anchors, the main feature of human anchors is that they have a unique and personalized image. The host is not a tool to deliver information, but a person with emotion and personality. The construction of a personalized image can reflect the personality and charm of the host. It is well known that many excellent CCTV presenters are loved by the public, not because of their status as CCTV presenters, but because of their strong charisma. Taking CCTV presenter Wang Bingbing as an example, her friendly and lovable image helps establish an emotional connection with the audience, which also enhances her influence on communication. In contrast, AI anchors are simulating the appearance of a real person and broadcast in a pattern based on computer programs, which does not allow for diverse and personalized news reporting. In the long run, the stereotyped hosting style is difficult to attract the attention of audiences.

In addition, emotionality is an indispensable factor for great presenters to create linguistic content that the AI anchors cannot have. Although AI anchors can imitate the expressions and body movements of real people while broadcasting accurately, the inner emotions are difficult for AI anchors to imitate. For example, news anchors will adjust their tone according to the content of the broadcast. When reporting disaster news, in order to express condolences and sympathy for the victims, the tone will become heavy. When reporting news about new achievements in the field of science and technology, the tone becomes excited to express congratulations. Although news reports need to transmit information to the public from an objective point of view, they also need to interact with the audience through emotional infection.

In summary, AI technology has gained market recognition for its low cost and high efficiency, but the reliance on AI technology is still weak in broadcasting and hosting. AI anchors are not yet able to completely replace traditional practitioners, and most of the work is still dominated by human anchors. The main reason is that the emotions and rules of human society and the morphological consciousness behind the fusion of different cultures cannot be learned by AI anchors in a short time.

5. Conclusions

Media intelligence has brought infinite possibilities to human society, but it has also brought enormous pressure to practitioners. The emergence of AI anchors has indeed brought changes to the

industry, but it does not mean that human anchors will be eliminated. Therefore, human-machine symbiosis is the direction of future development. On the one hand, human anchors should actively respond to challenges and improve their comprehensive strength and professionalism. On the other hand, the advantages of long standby time and fast information processing of AI anchors should be used to assist human anchors in their work. In fact, this is not a win-or-lose competition, but a process of working together and moving towards integration.

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