Analysis of the Current Situation of the Application of Algorithms in News Communication in the Era of Artificial Intelligence

Lili Ji

School of literature and communication, Shandong University of Technology, Zibo 255049, China.

Abstract

The functions of algorithm as a kind of intelligent media technology in news dissemination are mainly manifested as: mainstream media organizations use algorithms to increase productivity and reduce costs; technical organizations carry out news production and distribution to promote the spread of algorithm technology in the media industry and enhance The main power of news dissemination; algorithms change the understanding of the connotation of news value. At the same time, the functional blind spots of algorithms mainly include: media organizations cannot establish media styles through algorithms; technical organizations cannot gain widespread social trust; algorithms cannot make news value judgments.

Keywords

Artificial Intelligence, Algorithm, News Function.

1. Introduction

With the continuous introduction of smart technology into the field of news dissemination, news dissemination has shown a trend of intelligent media. Algorithms are the soul of smart technology. Algorithms have become the standard configuration of major mainstream media, portal websites, and information platform apps, and are widely used in the production process and distribution link of news dissemination, "Algorithm technology has begun to play a unique role in the media field, and the process of news production and news consumption is increasingly under the invisible control of algorithms. " Terms such as "robot news", "automation news", "algorithm news", and "machine writing news" are increasingly becoming mainstream in media and scientific discourse. The application of algorithms has aroused many attentions, November 29, 2019 Aurora Big Data released the "News and Information Industry Research Report 2019". The report pointed out that "intelligent recommendation algorithms improve the efficiency of information dissemination, but also cause users to worry about content quality, value issues, and algorithm black boxes. "The 2019 "China New Media Development Report" compiled by the Institute of Journalism and Communication of the Chinese Academy of Social Sciences believes that "intelligent technology has driven the overall transformation of the media industry. In the future, it is possible to achieve deep penetration of the entire content production process, and personalized distribution is possible. Reflected in the way of a private butler, the future trend of algorithm news is based on the reconstruction of interpersonal relationships on social networks, digital cages and algorithms are specialized in the reconstruction of the main body, and the dual dilemma caused by individualization brings social reshaping. "

This article focuses on the question of what functions the algorithm has achieved in the field of news communication as a means of intelligent media production, and what are the functional blind areas that cannot be achieved, and then think about the future development of algorithms in the news industry.

2. Algorithm is an intelligent media production method

Algorithms are not necessarily related to artificial intelligence. People use different algorithms in activities such as cooking, fishing, and planting crops. The intelligent evolution of algorithms is closely related to computers. In the 17th century, Leibniz invented a machine that can perform multiplication and division. In the 18th century, Wauconson invented a robot. In the 19th century, Holly invented the punch card tabulation machine. In the 1940s, humans created the first A general-

purpose computer. When the computer is connected to the network, emerging technologies such as big data, cloud computing, mobile Internet, and the Internet of Things provide the underlying support for the intelligentization of the algorithm, and the computing power of the algorithm has achieved a great leap. From the fact that CBS dubiously used a large computer to predict Eisenhower's election as the President of the United States in 1952, to 2014 the Los Angeles Times reported on the earthquake through robotic reporters,algorithms have changed from an auxiliary means to the core driving force of intelligent media in news dissemination.

3. The function performance of algorithms in news dissemination

American scholar Everett Rogers (EMRogers) proposed in his book "The Diffusion of Innovation" that the proliferation of a new technology is inseparable from early adopters, and it extends to other people or organizations. The impact of technology and social evaluation are important considerations in determining the dimension of its diffusion. The function of analyzing algorithms in news practice needs to be analyzed from three levels: early application of technology, organizational diffusion, and influence on news.

3.1 Mainstream professional media take the lead in introducing algorithm technology to improve news production efficiency and reduce institutional costs

Two American companies dedicated to natural language generation technology, "Narrative Science" and "Automated Insights" are considered to be the driving force of algorithm journalism in the United States, and they were the first to cooperate with mainstream media for automated news production Technology company. As early as 2010, Narrative Science Corporation began to provide professional robotic writing services for news magazines such as Fortune and Big Ten Network. On March 17, 2014, a magnitude 4.4 earthquake occurred in Los Angeles, USA. The Los Angeles Times was the first media to report on this event. This news was automatically generated by a robot named "Quakebot" in less than 3 minutes . In July 2015, the Associated Press used Wordsmith, an automated insight company's software, to automatically generate reports on company financial reports and college sports events, and can report quarterly financial reports for about 300 companies. Algorithms are increasingly used in mainstream media, such as Bloomberg's Cyborg, Washington Post's Heliograf, New York Times's blossom, and "Forbes" website's Narrative Science. In my country, in November 2015, Xinhua News Agency took the lead in launching an automated writing program called "Kaibi Xiaoxin", setting a precedent for central media machine writing. In addition, there are Tencent's Dreamwriter, CBN "DT Drafting King", and Today's Headline" Zhang Xiaoming", Southern Metropolis News "Xiaonan", cover media "Xiaofeng", etc.

The introduction of algorithms has greatly improved the efficiency of news production by media organizations, and its production speed has reached the order of seconds. For news, timeliness is its vitality. In the face of complicated social events, being the first to report it means to seize the opportunity. Such media can easily become the source of information. In the process of other media following up on related reports, it can effectively increase the exposure rate and increase the audience's attention, and it is in a favorable position in the fierce media competition.

Algorithms reduce news production costs and enhance the ability of media organizations to respond to market competition. According to statistics, the algorithm in the United States only costs $7 per manuscript, which is much lower than the labor cost. Compared with humans, the probability of errors in manuscript writing by robots is lower, and the robots can repair themselves or give feedback by using deep learning capabilities. The use of algorithms to collect information in dangerous areas such as war and the wild has greatly reduced the survival risks faced by human reporters. The weakening of machines' dependence on manpower has saved media organizations a lot of manpower input, allowing media organizations to have more capital for skills training of existing personnel, research and development and upgrading of new technologies, and development of the latest business content.

3.2 The algorithm technology organization enters news production and distribution, spreading the application of algorithms in the media industry, and strengthening the main force of news dissemination

The algorithm technology organization enters news production and distribution, spreading the application of algorithms in the media industry, and strengthening the main force of news dissemination.

In addition to mainstream media, there are three main categories of organizations that master algorithm technology: one is the upstream technology research and development giants such as IBM, Google, Facebook, Apple and China's BAT (Baidu, Alibaba and Tencent), etc.; The midstream technology research and development and application-oriented Internet information service platform, today, Toutiao, Daily Express, Yidian News, etc.; third, small and medium-sized R&D companies dedicated to providing special technology products, such as Graphiq (providing visual reports) and Automated Insights (Provide professional automated news writing service), Agolo (provide news summary service), HKUST iFlytek (provide voice and text automatic conversion service), Zhisou Giiso (provide automated writing service), etc. These three types of organizations are not full-time in journalism and communication. They are different in nature from professional media organizations. For example, Facebook's Zuckerberg and Toutiao's Zhang Yiming have emphasized the technical attributes of their own companies and do not consider their companies to be media organizations. However, they all intervene in the field of news dissemination in different ways, becoming a powerful force alongside professional media organizations and even forming a crushing situation.

Technical organizations mainly influence news dissemination in three ways. One is the cloud integration of media resources. For example, Google launched the News Lab project in 2015 to provide journalists with multiple resource support. The second is to cooperate with media organizations in the way of technology output. For example, Udacity, a nanodegree platform in Silicon Valley that provides skills training for journalists, provides cutting-edge courses. Technology companies including Google and Microsoft provide teaching materials, mentors and financial support for the platform. The third is to build a platform to integrate multi-media forces to settle in to improve the productivity and distribution of media content. For example, Facebook established its content platform Instant Articles in 2016, and invited many authoritative media such as "The New York Times", BuzzFeed, "Guardian", "Atlantic Monthly", "National Geographic", etc. to settle in. These media can publish news directly on Facebook , The user avoids the trouble of clicking the link and then jumping to read. On the one hand, media organizations can analyze the feedback of users' information consumption behavior to promote the matching of news production and user needs; on the other hand, the platform can promote the convergence of media news production and platform rules through traffic distribution. In the continuous running-in between the two parties, the media can better grasp the needs of users and provide more high-quality information sources for the platform, and the platform will continue to improve the algorithm to achieve pushes that are more in line with social needs, and reduce such things as "information cocoon rooms", "filter bubbles" and " The negative impact of algorithms such as information discrimination.

3.3 Algorithms change the connotation of "news value"

Big data information collection and analysis technology allows much neglected or unacceptable information to enter the field of news dissemination, promote the development of news niche markets, and demonstrate the long tail effect of algorithm technology in the era of big data. For the audience, news no longer means major or unexpected events, but "relevant to me". The value connotation of news has changed. "The value of news previously defined by academic circles mainly involves five aspects: authenticity, timeliness, distinctiveness, interest, and proximity. However, under the current big data + thinking, the meaning and margin of content text labels The content production style of production + side distribution makes news value evolve into: immediacy, labelling, interactivity, contextuality and secularity." [2] The mining of local news value will be a new direction to meet the needs of the audience. The change to the concept of news connotation will bring about a change in

the presentation of news. Individualized, grouped, and socialized information coexist to meet the diverse needs of audiences at different levels.

4. As a developing technology, the algorithm still has certain functional blind spots and areas that cannot be reached

The current algorithm is more of a hybrid algorithm, requiring machines and humans to input information for it. While the algorithm is empowering the media, there are still functional blind areas that "cannot" be reached.

4.1 Algorithms cannot help media organizations form a unique style

In the new media environment, the news production model has shifted from "heavy assets" to "light assets", and shifted from relying on high input and high costs to using technology as the core driving force. For traditional media, the mastery of technology is not its strong point, but the stylized brand is still its greatest resource and core competitiveness. Media style is inseparable from the unique performance of reporters in news topics and reporting methods. It has been established in long-term news practice, spanning time and space, and passed on from generation to generation. For example, when reporters from the Washington Post, Bob Woodward and Carl Bernstein, faced pressure from the White House, they were not afraid of power, pushed for investigation of the incident, pursued the truth, and reported the "Watergate Incident" bravely. US President Nixon stepped down early, and the Washington Post became the embodiment of justice and democracy. Well-known mainstream media around the world have established their own brand styles, becoming models and benchmarks for today's media, such as the serious and prudent reporting style of The New York Times, the maverick, precise and rigorous reporting standards of The Guardian, Italy "Evening Post" advocates news authenticity and is known for its independence.

In contrast, algorithmic production of news relies on structured data and fixed production processes, and automatically matches news templates through built-in programs. It is an industrialized and stylized production model that believes in Taylor's high-efficiency management model. The algorithm works like a bread machine. As long as the ingredients and proportions are set according to the requirements of the recipe, anyone, even those who do not know anything about cooking, can make a perfect bread. Under the algorithmic mechanism, news can be produced as long as there are data, templates, and precise processes. The subjectivity and initiative of people are not emphasized, and the news produced often gives people a sense of familiarity and familiarity. Moreover, technology is universal and open. Any organization or individual can perform similar operations as long as they master the technology. If media organizations rely too much on technology and neglect the development of the potential of human reporters, it will be difficult to write personalized reports and cannot form their own media style.

4.2 Algorithm technology organizations are facing a widespread crisis of social trust

Journalism plays an important role in social development, including information warning, social education, cultural heritage, and entertainment. Professional media organizations play an important role in society, which is to provide objective and true information that meets the needs of most people, guide public opinion and form social consensus, and at the same time have the responsibility to dispel and correct false information such as rumors and lies. Professional media organizations rely on their unique position in social life for a long time and gain the high trust of the public. They are considered the "fourth right" after legislation, administration, and justice. Media reporters are awarded the "uncrowned king" and "on the ship of the country's voyage" "Lookout" and other honorable titles.

Although technical organizations such as Google and Facebook are increasingly penetrating the news field, they have all weakened the media color of enterprises and emphasized their technical attributes. They believe that platforms are not responsible for their content and the consequences. In the "Cambridge Analytica" incident exposed by mainstream media, it was reported that the data of 50 million Facebook users was improperly captured and used, and Facebook was fined heavily by the government. The US government has continuously launched antitrust investigations against

technology giants such as Google and Facebook. Their positioning, media exposure, and government antitrust investigations have made these technology platforms face the severe test of the decline in public trust. Various surveys on media trust have found that the audience's trust in mainstream and traditional media far exceeds that of online media. In 2017, Kantar surveyed more than 8,000 news consumers from the United States, the United Kingdom, France, and Brazil, and found that 27% of them believe that print magazines are the most trusted source of information for the audience, and only 33% of the audience believe that social media can provide Trustworthy news. In 2017, the Pew Research Center of the United States conducted a survey of 4,581 American adults and found that 67% of Americans watch news through social media, but as many as 57% of readers believe that news on social media is inaccurate.

The main purpose of technology research and development is profit. Technical organizations actively promote the integration of algorithms and news, largely for the social diffusion of technology, in order to obtain greater economic returns. The pursuit of profit makes it face moral torture. In the balance between profit and morality, technical organizations can replace part of the functions of media organizations, but they cannot become real media.

4.3 Algorithms cannot replace human reporters in realizing independent value judgments on news

Value judgments are based on human values and subjective knowledge, and are evaluated and judged on specific objects. The judgment standard is generally the application value of the object to people. The value of news is embedded in news facts. Journalists and editors have accumulated experience and understanding of value through long-term news practice activities, and formed the judgment standard for news value. In fact, reporters and editors use values to identify whether news is valuable and what value it has and the size of the value. In this process, journalists can decide which events are to be reported, which ones need to be discarded, and how to report on news. News values can guide the audience and the media to form similar or consistent news effects by coordinating the relationship between various departments of the media, the media and the audience. Views, thereby exerting the social function of the media.

Algorithms are the product of human technology. They do not yet have the ability to autonomous and self-judgment. It still reflects the subjective consciousness of the designer behind it, and is not neutral as many technology companies advertise. Apple's voice assistant, Siri, caused public outrage over its anti-abortion stance. The Russian version of Siri was accused of discriminating against homosexuality and was considered to have incorporated Apple's own position into the algorithm. Google's image recognition algorithm labels black people as gorillas, which makes people wonder whether the algorithm has been implanted with racial discrimination. Studies have found that among the people who apply for credit loans in the United States, there are always more whites than blacks, and it is difficult for people to explain the principles. When such an algorithm is applied to news production, it may show the position of a specific group.

The non-neutrality of algorithms, the limited understanding of human language, the ambiguity of algorithm application and legal boundaries, the non-standard nature of big data capture, etc., make algorithms unable to become an independent third-party force, replacing human reporters' perception of news facts. value judgement.

5. Conclusion

In the book "Machines and People: Accenture on New Artificial Intelligence," Paul Dougherty and James Wilson, two technical officers of Accenture, said, "The third wave of corporate transformation has created a huge, dynamic And the diversified space, humans and machines cooperate with each other in this area to achieve performance improvement. We have made this space the'missing middle ground'." [3] The diagram is as follows:

Leadership	empathy	create	judge	training	explanation	sustain	enhance	Interactive	reflect	handle	iteration	prediction	adapt
Human specialized activities				Humans make up for the lack of machines		Artificial intelligence gives humans superpowers				Machine-specific activities			
				Human-machine collaboration activities									

Humans and machines have their own areas of expertise. The functional boundaries of humans and machines should be clarified, and the tasks that humans are good at should be assigned to humans, so that machines can play their strengths. In the vast middle ground, machines are used to provide humans with superpowers, humans make up for the lack of machines, and strive to promote the cooperation between humans and machines, and the two sides become partners in symbiosis.

The human-machine approach proposed by Accenture can provide a useful reference for media professionals in the field of news communication to deal with the relationship with algorithms. Media professionals should strengthen their understanding of algorithms, understand their principles and functions, and give full play to the human enhancement potential of algorithms. Extend human body functions. At the same time, outside the middle zone, give full play to the unique abilities of human beings, such as emotions and judgments, and disintegrate and melt these abilities into news and communication activities to promote the value of people in the era of intelligent media.

References

[1] YU Guo-ming, YANG Ying-ying ,YAN Qiao-mei:The Algorithm is Power: The Algorithmic Paradigm Revolution in the News Communication, Editorial Friend,vol. 05 (2018), 5-12.

[2] LI Wei-na:Innovation and Reflection of information Dissemination Mechanism Based on Algorithmic Technology, Journal of Northwest Minzu University (Natural Science) 01 (2019), 86-91.

[3] (U.S.) Paul Dougherty, James Wilson: Machines and Humans-Accenture on New Artificial Intelligence (CITIC Publishing Group, China 2018),p.11.