

Functional Analysis of Algorithms in News Practice from the Perspective of "Human Augmentation"

Lili Ji^{1, a}

¹School of literature and communication, Shandong University of Technology, Zibo 255049, China.

ajll2008j@163.com

Abstract

Algorithm is a means of human enhancement. Mainstream professional media take the lead to introduce algorithm technology to improve the efficiency of news production and reduce the cost of the organization. Algorithm technology organizations are involved in news production and distribution, which diffuses the application of algorithms in the media industry and strengthens the main forces of news communication. Algorithm deepens the understanding of the concept of "news". While the algorithm is enhanced, it should also maintain restraint on the application of technology.

Keywords

Human augmentation, algorithm, function, news ,technology.

1. Introduction

Nowadays, algorithms have become the standard configuration of major mainstream media, portals, and information platform APP's. "Algorithm technology has begun to play a unique role in the media field. The process of news production and consumption are increasingly controlled by the algorithm." [1] Yu Guoming believes that algorithm is power, which constitutes a kind of power exercise and replacement of traditional power model, including the intelligence of news clues to bring about the dispersion of the right to information; the algorithm's programmatic collection of the right of news editors; In terms of verification, the algorithm builds social consensus through non-institutional power; in the news distribution and push links, the algorithm has ubiquitous dissemination power. [2] In 2013, Philip Napoli of Fordham University in the United States conceptualized the algorithm as a unique institutional form. It believed that institutional theory might be useful for understanding the function and influence of algorithms in media production and consumption. He believes that an algorithm is a form of code. If the code is a law and the law is a system, then a code form such as an algorithm should also be reasonably regarded as a system. [3]

The question this article focuses on is, from the perspective of "human enhancement" theory, what enhanced functions does the algorithm implement in the field of journalism, and what kind of thinking does the algorithm trigger while achieving human enhancement?

2. Algorithms are Means of "Human Enhancement"

The term "human enhancement" originally originated from the medical field, and refers to the application of biomedical technical means not for the purpose of treating diseases, but for the enhancement of human capabilities. Because it can make people's vision return to normal, but tied it to night vision binoculars can be regarded as human enhancement, because it can bring a field of vision beyond any human auxiliary vision. Since the beginning of the 21st century, with the continuous breakthroughs made by modern technology, people have realized that

technology can not only enhance human physical ability, but also enhance human brain's ability of cognition, analysis, emotion and other intellectual activities. The focus has gradually expanded from the field of bio-medicine to the wider field of social science and technology applications. Human enhancement has become an emerging topic in applied ethics today, including the study of artificial intelligence.

Algorithms are the product of artificial intelligence technology. They can provide human journalists and news media with new working capabilities. They can be applied to news reports under a variety of occasions and functions. Within the scope of algorithm applications, various human enhancement methods boundaries such as physiological enhancement and cognition are blurred, and the algorithm is therefore called a hybrid enhancement. So, specifically, what enhancements does the algorithm implement in news practice?

3. Enhancement of Algorithm in Journalism

American scholar Everett Rogers (EM Rogers) proposed in his book "The Diffusion of Innovation" that the diffusion of a new technology cannot be separated from the early adopters, and thus extended to other people or organizations. In the process, the impact of technology and social evaluation are important considerations in determining its diffusion dimension. To analyze the enhanced functions of the algorithm in journalistic practice, it needs to be analyzed from three levels: early application of technology, organizational diffusion, and impact on the press.

3.1. Mainstream Professional Medias Took the Lead in Introducing Algorithm Technology to Improve News Production Efficiency and Reduce Agency Costs

Two American Technology companies dedicated to natural language generation technology "Narrative Science" and "Automated Insights" are considered to be the driving force of algorithmic journalism in the United States. As early as 2010, Narrative Science began providing professional robotic writing services for news magazines such as Fortune and Big Ten Network. A magnitude 4.4 earthquake hit Los Angeles on March 17, 2014. The Los Angeles Times was the earliest media to report this event. This news was automatically generated by a robot named "Quake-bot" in less than 3 minutes. In July 2015, the Associated Press used the automated insights company's software, Wordsmith, to automatically generate reports on the company's financial reports and university sports events, and it can provide quarterly financial reports for about 300 companies. Algorithms are increasingly used in mainstream medias, such as Cyborg by Bloom-berg, Heliograph by the Washington Post, Blossom by the New York Times, and Narrative Science by Forbes. In China, in November 2015, Xinhua News Agency took the lead in launching an automated writing program called "Quick Pen Xiaoxin", which pioneered the writing of central media machines. In addition, there were Dream-writer from Ten-cent, First Financial News "DT Manuscript", and Today's Headline " Zhang Xiaoming ", Southern Metropolis Daily " Xiao Nan ", cover media " Xiao Feng ", etc.

The introduction of the algorithm has greatly improved the efficiency of media organizations in producing news, and its production speed has been calculated in seconds. For news, timeliness is its vitality. In the face of complicated social situations, being first to report means to seize the opportunity. Such media can easily become the source of information. In the process of other media following up on relevant reports, it effectively increases exposure, increases audience attention, and is in a favorable position in the fierce media competition.

Algorithms reduce the cost of news production and enhance the ability of media organizations to cope with market competition. According to statistics, in the United States, the algorithm only costs \$ 7 for writing a manuscript, which is much lower than the labor cost. Compared to

humans, robots have a lower probability of writing errors, and robots can use self-healing or feedback using deep learning capabilities. The use of algorithms to gather information in dangerous areas such as war and the field has greatly reduced the survival risks faced by human journalists. The weakening of the machine's dependence on manpower has saved a lot of manpower investment for the media organizations, allowing them to have more capital for skills training of existing personnel, research and development of new technologies, and development of the latest business content.

3.2. Algorithm Technology Organization Involved in News Production and Distribution, Diffused the Application of Algorithm in the Media Industry, and Strengthened the Main Forces of News Communication

In addition to mainstream media, there are three main types of organizations that master algorithm technology: first, upstream technology R & D giants such as IBM, Google, Facebook, Apple, and China's BAT (Baidu, Alibaba, and Ten-cent), etc ; Midstream's technology R & D and application-based Internet information service platforms such as daily express, and a little information; the third is small and medium-sized R & D companies committed to providing special technology products, such as Graphiq (providing visual reports), Automated Insights (Provide professional automated news writing services), Agolo (provide news digest services), China's Xunfei (provide voice and text automatic conversion services), Zhisou Giso (provide automated writing services), etc. These three types of organizations are not full-time engaged in news communication. They are different from professional media organizations. Like Zuckerberg of Facebook and Zhang Yiming of today's headlines, they have emphasized the technical attributes of their own companies and do not consider their companies to be media organizations. . However, they all intervened in the field of journalism and communication in different ways and became a powerful force alongside professional media organizations and even formed a crushing situation.

There are three main ways in which technology organizations influence news dissemination. The first is the cloud integration of media resources. For example, Google launched the News Lab project in 2015 to provide a variety of resources for journalists worldwide. The second is to cooperate with media organizations in the form of technology output. For example, Udacity, a nanometre 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 the presence of multiple media forces to improve the productivity and distribution of media content. For example, in 2016, Facebook established the content platform Instant Articles, inviting many authoritative media such as New York Times, BuzzFeed, The Guardian, Atlantic Monthly, National Geographic, etc, and 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 behaviors to promote the match between 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. To improve the quality of news, provide more high-quality information sources for the platform, the platform continues to improve the algorithm to achieve more in line with social needs, and reduce the negative effects of algorithms such as "information cocoon", "filter bubbles", and "information discrimination".

3.3. Algorithm Involvement Deepens Understanding of the Concept of "News"

Big data information collection and analysis technology has brought many previously neglected or unrecognizable information into the field of news dissemination, promoted the development of news niche markets, and showed the long tail effect of algorithm technology in the era of big data. For the audience, news no longer means a major or unexpected event, but "relevant to

me." The value connotation of news has changed. "In the past, the value of news as defined by the academic community mainly involved five aspects: authenticity, timeliness, significance, interest, and proximity. Under the current big data + thinking, the meaning and edge of content text labels the production mode of production + side distribution makes news value evolve into: immediacy, labeling, interaction, scenario and secular. "[4] As a result, many experts predict that "in 2019, local news will become a key driving force for the future of the journalism industry" and "compared to any time before, whether in new media or print media, local journalism will be more independent" [5] Mining the value of local news will be a new direction to meet the needs of audiences.

4. Conclusion

Peng Lan pointed out that while using intelligent technology to enhance news production capacity, it is also necessary to strengthen judgment on technical risks, maintain a certain degree of restraint, and reduce the risks brought by technology. These risks include abuse of data power, algorithm black boxes, and algorithmic bias etc. [6] Human-machine mutual correction mechanism should be established to actively exert human subjectivity and unique value.

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