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Algorithm as Power: A Study of China's National Image Construction on International Social Media Platforms

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Abstract:
With the rapid development of Internet technology, social media platforms have become an important channel for national image dissemination. This paper takes "algorithm as power" as the theoretical perspective to explore the process of constructing China's national image and its influence on international social media platforms. Through data mining and analysis of international social media platforms such as Twitter(X) and Facebook, it is found that algorithms play the role of "gatekeepers" in information dissemination and have an important impact on the construction of China's national image. Therefore, this paper adopts a content analysis approach to reveal the differences between different platforms and the types of content they contain in shaping the country's image, as well as how algorithms affect the visibility and influence of such content. This study provides a new perspective for understanding the construction of China's image in the international public opinion arena, and is of certain reference value for China to formulate strategies to enhance its national image in international communication.

Keywords:
algorithmic power, social media platforms, national image

1 Introduction

With the rise of anti-globalisation and the accelerated evolution of the unprecedented changes of the century, the attitudes of countries towards China are quietly changing. Against the backdrop of diversified communicators, we can see China's diversified perspectives and lenses through algorithmic media platforms such as TikTok, Facebook, and Twitter(X). However, there are still major obstacles to China's overseas communication, making it difficult for China to deliver a good Chinese voice to the world in an imbalanced international public opinion arena. Yet we observe that different countries are still able to guide their own populations and influence their perceptions of China's national image. We can't help but wonder: in the context of platform-based empowerment, are there significant differences in the media of different countries, in terms of their reporting stance on China? Is there a significant correlation between reporting stance and reporting influence?

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2 Literature Review

2.1 Algorithmic power research

In the wave of the information and intelligence era, data has become the medium for carrying information and social value. In the face of the huge amount of data, the computational power required is far beyond human capacity, so the authority of social resource allocation has gradually shifted to the hands of algorithms. This shift makes algorithms not only mathematical tools, but also fuses with data resources and rises as a key new social power.

Scott Lash, a British cultural studies expert, offered a more succinct judgement on "algorithmic power" at the beginning of the 21st century: "In a society where media and code are ubiquitous, power increasingly resides in algorithms. " In his view, power realized through software and algorithms is a hegemony distinct from traditional, externally exerted force. Inspired by Lash, David Beer developed the concept of power through the algorithm, stating that "the power of the algorithm "The power of the algorithm is mainly reflected in the functions of the algorithm itself, such as classification, filtering, searching, recommendation etc., as well as the cultural connotations of the algorithm's decision-making, which is often perceived as objective, efficient and trustworthy.

According to Duan Weiwen, algorithmic governance should explore how to appropriately use the power conferred by technology to construct a way of life that allows people to live together, so as to transcend technological solutionism and gain wisdom beyond technological enslavement and social domestication. Thus, information and algorithms are not only about how we understand the world, it also actively constructs it. According to Yu Guoming, algorithms, as a new paradigm of power, play an important role in the acquisition of news clues, writing and editing, fact-checking, distribution and pushing, and audience reception, changing the way media power operates and the audience's position in communication.

In summary, these studies cover the macro-theory on algorithmic power to specific manifestations, and initially analyse the application of algorithms in the news dissemination chain and the manifestation of their power. However, they have not turned their perspective to the field of international communication, focusing on the construction of national image as a signal.

2.2 The Construction of China's National Image on International Social Media Platforms

The study of national image began in the 1930s and gradually emerged with the development of international relations and communication. Kenneth Boulding first regarded "national image" as a theoretical concept. He emphasised that actors in the international system respond to "images" rather than "objective facts". Robert Jervis analysed the roots of state image formation from a political psychology perspective, arguing that a country's image is an important determinant of whether and how it can achieve its goals, and that the desired image plays a greater role than a significant increase in military or economic power.

Xing Liju and Yan Chuanruolan studied the model of China's national image, and analysed that in the "other-image" model, Western countries tend to portray a negative image, and disseminate the image of China

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constructed by other countries to the domestic public through the overseas audience. It also discussed how China should make effective use of social media platforms to improve its national image. Taking China-related reports during the US-China trade war as samples, Wang Lili and Zhang Wenxiao analysed the constructed image of China, discussde the reasons for its bias from a constructivist perspective, and emphasised the importance of social media power to create a more realistic image of China.

To sum up, all the above scholars focus on analysing the discourse dilemmas and image perception gaps in the construction of the current national image, including the use of platform media to "self-image" the country, but few scholars examined the effects of platform media on the construction of China's national image from the perspective of the empowerment of algorithmic media platforms.

2.3 Raising questions

To sum up, this paper constructs power research to algorithmic media platforms under the algorithmic perspective, trying to answer the following questions: in the context of platform-based empowerment, are there significant differences in reporting China's stance among media from different countries? Is there a significant correlation between reporting stance and reporting influence?

3 Method

3.1 Content Analysis

The paper adopts a content analysis approach to research in an attempt to answer the above questions.

3.2 Hypothesis

Based on the above issues, the corresponding hypotheses are presented here:

H1: There are significant differences in the media's stance on China coverage in different countries.

H2:The more positive the reporting attitude, the more influential the reporting, the more power the algorithm has.

In order to prove the hypothesis, the research uses content analysis to sample the overall population and to analyse the data.

3.3 Sampling method

The research object corresponding to this hypothesis is the three-year relevant tweets reports on each international social media platform from August 2021 to August 2024 as the research samples, and "China" is used as the search term, and the ones with greater influence are selected as the samples. We conduct judgemental sampling of such related tweets, extracting 30 samples of related tweets from each platform, for a total of 150 samples of related tweets, which have high values of views, likes, and comments, and therefore have a strong representativeness.

This hypothesis chooses YouTube, Facebook, Twitter (X), TikTok, and Instagram as the platforms for sam-

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ple selection for several reasons. One is because these platforms have a wide user base globally and have a significant impact on global culture and society. The second is that there is a wide variety of content on these platforms, ranging from educational content to entertainment, politics, economics, and the arts, covering a wide range of interests and fields. The forms of presentation are also diverse, including video, images, text and live streaming. The third is because these platforms commonly use algorithms to recommend content to users and present information streams in a personalised way. The fourth is that although these platforms have commonalities, they also have their own unique characteristics and user groups. With the advent of the Internet 3.0 era, their influence and strategic position in cross-cultural global communication become more and more prominent. Therefore, the texts of media tweets on these platforms accordingly are more platform-specific and reflect the attitudinal tendencies of the reporters more clearly.

4 Discussion and analysis

4.1 Description of data results

The data analysis of different countries' media's reporting stance towards China obtained a chi-square value of $\chi 2=141.485$, $p<0.001$, this result indicates that there is a significant difference between different countries' media in terms of their reporting stance towards China. The correlation analysis of reporting stance and influence obtained $r=0.429$, $p<0.001$, this result shows that there is a significant positive correlation between reporting stance and influence, i.e. when reporting stance tends to be in a certain direction, its influence tends to be enhanced in the same direction.

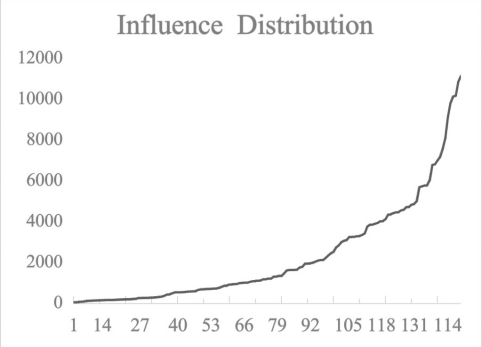


Figure 1 Influence Distribution

4.2 The link between differences in reporting stance on China and the motivation behind reporting influence

Sentiment analysis of the collected tweets on the discussion of the topic of "China" shows that there is a significant difference in the stance of different countries' media in reporting on China ($\chi 2=141.485$, $p<0.001$). Among the relevant tweets sampled for coverage, US institutional media and US self-published media accounted for 41% of the users. Media accounts from other countries, such as India, the UK, and Italy, also accounted for a certain proportion. The proportion of Chinese media accounts is relatively low, only 21%, and the degree of centrality is relatively low, i.e., Chinese media accounts have less interaction or information exchange with other media accounts, are not connected closely enough, and their influence and information

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dissemination ability are weaker compared to those of the U.S. and other countries. The statistics show that China's reporting stance and the construction of China's national image on international social media platforms are still mainly influenced and guided by Western media and Western discourse power, especially the United States, and that China's national image still shows a relatively low degree of influence and information dissemination ability compared to that of the United States and other countries. China's national image is still in a weaker position than foreign media's "other shaping" at the "self-shaping" level. And the reporting stance of different countries' media towards China is significantly positively correlated with their reporting influence ($r=0.429$, $p<0.001$). This result suggests that the bias in the stance of media covering China may significantly affect the influence of their reports, which also implies that reports with a clear stance are more likely to attract attention and spread. It is worth noting that this algorithmic power is not decisive, but rather "influences" the audience, and the recipients use their own discourse power or influence to re-circulate the tweets. China's national image is thus in a process of shifting hegemonic contestation. But in any case, this contestation is no longer at the level of content, but at the level of algorithmic power.

Against this background, we can see that the power of algorithms in Western media, especially in the United States, has largely shaped the stance of reporting on China and China's national image on international social media platforms. The reason for this phenomenon is that Western media, with their advanced technology and broad user base, hold the initiative of algorithmic recommendation. By filtering and pushing information through algorithms, these media make it easier for reports that conform to Western values and positions to be widely disseminated, thus achieving control over public opinion, while Chinese voices are often marginalised. This algorithmic bias has led to challenges in China's "self-shaping" of its national image, which has been less effective in China's international communications than the foreign media's shaping of China's national image.

Differences in media reporting stance stem from differences in national interests, political systems, cultural backgrounds and values, which is particularly obvious in the process of information dissemination, the media, as a purveyor of national interests and values, the content of its reports is often affected by the country's political, economic and cultural backgrounds, and these interests are reflected in the reporting stance, and through the algorithm's filtering and recommending mechanism, which further affects the reporting the dissemination strength of the story. Algorithms, as an emerging form of power, play an increasingly prominent role in information dissemination, determining which information is widely disseminated and which is marginalised. Taking the United States as an example, due to its competitive relationship with China in political, economic and military aspects, the US media tends to report on China with certain negative colours. On the other hand, some developing countries, such as those in Africa and Latin America, whose media reports on China are relatively objective and positive due to their friendly and cooperative relations with China.

4.3 Analysis of differences in reporting positions on China and the social impact of reporting

In today's context of globalisation, the results or implications of this phenomenon are far-reaching, and differences in media reporting positions may lead to biases in the international community's perception of China. In countries with too much negative coverage of China, their populations misunderstand China's development achievements, foreign policy and international image, thus affecting the development of bilateral

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relations. On the other hand, in countries with more positive reports, their populations hold a higher degree of goodwill towards China, which is conducive to the promotion of bilateral friendship and cooperation. Differences in media reporting positions may also exacerbate polarisation in the international opinion arena. On the one hand, the Western media, with their strong communication power, spread their negative reports on China around the world, causing certain damage to China's international image, while on the other hand, the media in China and other countries actively speak out, spread positive energy, and endeavour to rectify the imbalance in the international public opinion arena. This polarisation of public opinion has made it difficult for the international community to form a unified stance when dealing with China.

The weak posture of China's national image may lead to a deepening of the international community's misunderstanding of China, affecting China's international status and soft power, which also weakens China's international influence to a certain extent. In international relations, this negative image may become a pretext for certain countries to adopt hostile or preventive strategies against China, which will then increase China's diplomatic pressure in the international arena. At the same time, the unequal distribution of algorithmic power has also exacerbated the information cocoon effect, with audiences from different positions becoming more entrenched, making it easier for international audiences to accept reports from a single perspective, reducing the diversity of viewpoints and the possibility of dialogue. As a result, prejudice against China has deepened, and in the process, China is seen as a "zero-sum game" enemy, and its national image will inevitably be affected.

In addition, the positive correlation between reporting stance and influence may lead to a polarised public opinion environment. To a certain extent, this phenomenon has led to the "Matthew effect" in media reporting, which means that reports with a clear stance are more likely to gain widespread attention, while neutral and objective reports are relatively difficult to stand out. In media reporting, a clear-cut report can often quickly gather a group of supporters, thus forming a powerful force of public opinion. However, such power can also lead to a fragmented public opinion environment, exacerbating the confrontation between different viewpoints. In the long run, the international public opinion arena may fall into a state of "public opinion tearing", which is not conducive to the dissemination of China's voice overseas. In addition, the positive correlation between reporting stance and influence may intensify the competition among international media, and in order to seek higher attention, the media may compete to launch reports with a clear stance in order to stand out from the competition. To a certain extent, this kind of competition drives the media to continuously improve the quality of their reports, but at the same time, it may also lead to reports pursuing the eyeball effect too much and neglecting the truth and objectivity, which in the long run will seriously undermine the credibility of the international media.

Media coverage can often shape the international community's perception of an event, and influential media outlets may be able to drive the course of international events through their reporting positions. In this case, media coverage is no longer a mere reflection of reality, but may become a force that influences the direction of international politics. In addition, the positive correlation between the reporting stance and influence of international media may put pressure on the media environment in developing countries. In international communication, Western media, due to their strong influence, may have a demonstration effect on the media in other countries, leading some media in developing countries to mimic the stance of the Western media in

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their coverage of international events, thus neglecting local perspectives and voices.

The emergence of this conclusion actually reflects the selective reinforcement of algorithmic power in the process of information dissemination, which may lead to the media directing public attention to certain topics through its reporting stance, thus enhancing its influence; reports with a specific stance may attract audiences with similar views, thus creating a greater influence among a specific group of people; reports with a strong stance may be more likely to stimulate an emotional response from the audience and thus increase its communication power and influence. When a story's stance matches the audience's values, it is likely to resonate, thus increasing the impact of the story. Algorithms not only amplify the voices of certain reports, but also invisibly shape the public's perception of China, a phenomenon that has had a profound impact on the shaping of China's national image. Positive stance reports are recommended by algorithms, which help to enhance China's international image, while negative reports may lead to misunderstanding and stereotyping of China by outsiders. This difference in influence based on the stance of media coverage not only affects the perception of the international community, but may also have a practical impact on China's foreign relations and international trade.

4.4 Exploring Strategies to Address the Differences in China Reporting Stance and Reporting Influence Effect

In order to effectively deal with the wide-ranging impact of algorithmic power, we certainly need to take a series of measures. First, it should strengthen its own research and development and application in the field of algorithmic technology to enhance algorithmic power so as to spread China's voice more effectively. Second, we should encourage the media to produce diversified content, improve the quality and credibility of their reports, and reduce their reliance on algorithmic recommendations, so as to balance reports from different positions and ensure the comprehensiveness and objectivity of information, so as to enhance their competitiveness in the arena of international public opinion. At the same time, we can promote the transparency of algorithms on international social media platforms, expose possible algorithmic bias, and let users understand the logic of information recommendation, so as to reduce the impact of algorithmic bias on reporting positions and promote the fairness of information dissemination. In addition, we should also enhance international communication capacity through multilateral cooperation and dialogue, build a diversified international communication network, establish a fair and balanced international information dissemination order, promote the exchange and understanding of different viewpoints at the same time strengthen the building of international communication capacity, disseminate China's voice through multi-language and multi-platforms, and enhance the global influence of China's story to counter the reporting of a single position. Lastly, to enhance public media literacy, educate audiences on how to identify and critically consume information, and reduce the spread of bias and misunderstanding.

Through these efforts, we hope to gradually break down the information barriers constructed by the Western media through the power of algorithms, so that China's national image can be presented more fairly and objectively in the international arena, thus contributing to the promotion of global understanding and dialogue, and in this process, China will also continue to study and learn from advanced international experience and improve its own international communication strategies and skills, with the aim of In the process, China will also continue to learn and learn from international advanced experience and improve its international com-

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munication strategies and skills, with a view to occupying a more proactive position in the global information age. The differences in media reporting positions have likewise had an impact on the international news dissemination order. In the information age, news dissemination channels are diversified, and media reports with different positions compete on the same platform, which can easily lead to information confusion and blurring of the truth; for this reason, it is necessary for the international community to work together to safeguard the order of news dissemination and to promote the establishment of a fairer and more transparent international information exchange mechanism. In this way, China can, to a certain extent, balance the asymmetry of information in the international public opinion arena, gradually improve its ability to "self-mould" its national image, alleviate the challenges posed by the positive correlation between reporting stance and influence, and present China's true face in a more fair and comprehensive manner.

5 Conclusion

In the current situation of China's international communication, the construction of China's national image has achieved certain results, and a large number of content showcasing China's development achievements and cultural charms have emerged on international social media platforms, with the advantages of China's rich cultural resources, its growing comprehensive national strength and a large group of network users. However, at the same time, we also face problems such as unbalanced information dissemination and Western media bias, which are manifested in the lack of international discourse power, algorithmic bias and technical barriers. In order to cope with these dilemmas and thus enhance our international communication capacity, we should strengthen the construction of the foreign communication system, improve the efficiency of communication, cultivate communication talents with an international outlook, and improve the quality of content. We should also use new technology to innovate communication means, break the algorithm-is-power situation, deepen international exchanges and cooperation, and enhance the right of international discourse. In short, China's international communication road is a long way to go. Only by comprehensively improving our international communication capacity can we better shape our national image, break down the barriers of international communication, and carry the arduous mission of connecting the world, promoting understanding, and transmitting peace and development.

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