

Agenda Setting of Information Dissemination Regarding the Period of Nuclear Wastewater Discharge into the Sea on Social Media

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ABSTRACT

The discharge of nuclear wastewater from Fukushima, Japan into the sea is by no means a domestic matter of Japan, but a major event closely related to the lives and health of Chinese citizens. Based on the agenda-setting theory and using content analysis, this paper analyzes the differences in the agenda of information attributes among Party newspapers, metropolitan newspapers and the public from three perspectives. The research finds that Party newspapers and urban newspapers form a complementary public opinion guidance pattern with different agenda-setting strategies, and establish a two-way interactive relationship of information supply and demand as well as value resonance between the public and newspapers. In the global communication landscape, it not only provides a Chinese perspective for the international public opinion field, but also contributes media power to building a community with a shared future for mankind.

KEYWORDS

Social media; Nuclear wastewater; Agenda setting; Fukushima; Japan

1 Introduction

The discharge of nuclear wastewater from Japan into the sea is a major event related to the lives and health of Chinese citizens.

In April 2021, the Japanese government announced its plan to discharge the nuclear wastewater from the Fukushima Daiichi Nuclear Power Plant into the Pacific Ocean, which drew global attention. This incident originated from the tsunami triggered by the major earthquake in 2011, which caused severe damage to the nuclear power plant. To this day, there is still the problem of nuclear waste disposal. The capacity of the water storage tank was approaching its limit, and the government proposed an discharge plan in 2020. In March 2021, Prime Minister Yoshihide Suga, on the occasion of the 10th anniversary of the earthquake, although he did not specify the handling method, said that a decision would be made as soon as possible. On April 9th, the government officially announced the emission decision. On April 13th, the ministerial meeting confirmed this plan, raising concerns about Marine ecosystems and global environmental security. Starting from August 24, 2023, Japan began discharging nuclear wastewater from Fukushima into the Pacific Ocean, and the entire discharge plan will last for at least 30 years. Since the discharge of nuclear wastewater, news related to it has occupied the front pages of major media. Up to now, the discharge of nuclear wastewater is still ongoing, breeding ground for the intensification of public opinion.

At the international relations level, this act has triggered strong protests from neighboring countries. Republic of Korea, China and other neighboring countries are highly vigilant about Japan's move, fearing that their marine ecology and public health will be threatened, which has exacerbated regional tensions. Japan has acted unilaterally without fully consulting with neighboring countries and the international community, violating its obligations under the United Nations Convention on the Law of the Sea regarding environmental protection and cross-border environmental cooperation. This has damaged its international image and undermined regional trust. In terms of environmental policy, the discharge of nuclear wastewater from Fukushima has exposed loopholes in international environmental supervision. Although there are relevant international conventions, there are no clear regulations and effective mechanisms in the implementation, supervision and handling of cross-border environmental issues, making it difficult to effectively restrain Japan's actions. This has prompted the international community to re-examine and improve environmental policies, and to promote the establishment of a stricter and more enforceable marine pollution discharge supervision system to deal with such cross-border environmental risks.

With the development of The Times, new media has gradually become an important channel for public expression. On social media platforms, various social hot events collide fiercely in the online public opinion field, drawing people's attention to real life. During the period when nuclear wastewater was discharged into the sea, various news reports came in a continuous stream. The media and the public influenced each other. The media constantly updated the specific information of the nuclear wastewater, while the public expressed their opinions on social platforms. Moreover, through media reports and publicity, the public can understand the situation of society regarding the period when nuclear wastewater is discharged into the sea and form their own views and attitudes. Gradually, a close agenda-setting relationship has emerged between the media and the public, which has become a topic worthy of in-depth study.

2 Literature review

Agenda setting was proposed by M. E. McCoombs and D. L. Shaw in 1972. This theory holds that mass communication has the function of setting a "agenda" for the public. The news reporting and information transmission activities of the media influence the focus of public attention and the perception of the social environment in a way that endows various "issues" with different degrees of prominence. The process of media agenda setting is essentially a process in which the dominant political, economic and social forces manipulate and control public opinion. This theory provides a crucial theoretical support for this study. As a global environmental issue, how the media shapes public perception through agenda setting for the discharge of nuclear wastewater into the sea is precisely the core issue of the research.

The traditional agenda setting can be traced back to Lippmann's book "Public Opinion". In 1968, McCombs and Shaw conducted a survey on the US presidential election to study the impact of the media agenda on the public agenda. It is found that there is a high degree of correspondence between voters' judgments on current important issues and the issues repeatedly reported and emphasized by the mass media. In 1997, McCombs and Shaw proposed the second level of agenda setting: attribute agenda setting, which means that each object on the agenda has different attributes, that is, the characteristics used to describe them. When the news media report on an object, some attributes are highlighted while another one is glossed over. The media not only tells us what to think, but also how to think.

From the definition, agenda setting encompasses the guidance of public agendas by media agendas and attribute agenda setting. In the issue of discharging nuclear wastewater into the sea, as the mouthpiece of the Party, Party newspapers need to publicize policy propositions and guide public opinion. For instance, when reporting on the event of discharging nuclear wastewater into the sea, Party newspapers such as People's Daily would start from a macro perspective like national stance and international responsibility, emphasizing the impact of the event on ecological security and international relations, and providing the public with authoritative and comprehensive information. Urban newspapers, targeting urban citizens, operate in accordance with market rules. When disseminating information about discharging nuclear wastewater into the sea, they focus on being close to citizens' lives and meeting their information needs. Their agenda setting emphasizes practicality and readability. In the event of discharging nuclear wastewater into the sea, due to their different positioning, Party newspapers and urban newspapers may present completely different agenda setting characteristics, which in turn leads to the differentiation of public perception.

Huang Chuxin's (2023) analysis of the public opinion on the discharge of nuclear wastewater into the sea indicates that the dissemination structure on different platforms significantly influences the public agenda. This discovery provides a methodological reference for this study, which is helpful for understanding the communication structure of social media and providing a basis for analyzing the platform differences in agenda setting. Based on Lippmann's view that "the news media shape the images in the mind", this study focuses on the number and frequency of reports by party newspapers and metropolitan newspapers on the discharge of nuclear wastewater into the sea, and analyzes how they set the significance of the issue through the scale of the reports. She Yingying (2024) 's research on the Japanese nuclear wastewater discharge into the sea from the perspective of emotional cognition theory provides an important dimension of public behavior analysis for understanding the information dissemination agenda setting of social media during the period of nuclear wastewater discharge into the sea, which helps us better understand how social media influences the public's cognition, emotions and behaviors towards the nuclear wastewater discharge into the sea through agenda setting. Most current studies on the information dissemination agenda setting of nuclear wastewater discharge into the sea on social media explore the phenomenon of agenda setting through text analysis of relevant information on social media platforms. Although this method can visually present the theme, tendency, etc. of the information, it has obvious limitations. The content analysis method is difficult to deeply explore the behavioral motives and psychological factors of users during the communication process.

Therefore, based on the characteristics of social media and the dissemination patterns of the nuclear wastewater discharge incident, innovative strategies for public opinion guidance should be explored. Since the party newspaper is the mouthpiece of the Party and the daily newspaper is the most popular newspaper among the general public, choosing the two most representative newspapers as the research objects of this article can better study the agenda-setting of information dissemination during the period of nuclear wastewater discharge. This article will introduce the agenda-setting theory and select the party newspaper, the daily newspaper, and the public for comparison to explore the analysis of information differences during the period of nuclear wastewater discharge.

3 The concept of agenda setting

The agenda-setting theory is a core theory that is highly valued in the field of mass communication and plays a crucial role in understanding information selection and communication influence. Regarding the concept of the agenda-setting theory, scholars at home and abroad have defined it from different perspectives. Lippmann's statement in his 1992 book "The Study of Public Opinion" that "the news media influence the influence in our minds" became the prototype of the

agenda-setting theory. The Agenda-setting Function of Mass Media was published by McCombs and Shaw in 1972, marking the birth of the agenda-setting theory. McCombs and Shaw define the agenda-setting theory as follows: The prominent coverage of a certain social issue or event by the mass media within a certain period of time will trigger the public's concern and attention to that event or issue, thereby making the social issue or event the central topic of public opinion discussion within that period of time. Chinese scholar Guo Qingguang defines the agendan-setting theory as the ability of mass media to assign different importance to topics through news reporting, information transmission and other means, thereby influencing people's judgment on the importance of topics.

With the continuous deepening of research and the changing development of the information environment in which the public is located, the agenda-setting theory has also gone through different development stages. In an interview, McCoems divided the development of the agenda-setting theory into five different stages, namely (1) the early research stage, where the correlation between the agenda of mass communication media and the public agenda was discovered; (2) The stage of guiding needs. In this stage, scholars' research on agenda setting theory began to focus on the factors influencing the intensity of media agenda setting, believing that public demands would affect the effect of media agenda setting, that is, "small demands produce weak effects, and large demands produce strong effects". (3) In the stage of attribute agenda setting, researchers believe that the media not only guides the public to pay attention to public issues or events, but also guides the public to care about the attributes of public issues or events. (4) Factors contributing to the formation of the media agenda. At this stage, researchers begin to explore the factors that prompt the formation of the media agenda. At this stage, Ganem believes that in the reporting of public issues or events by mass media, the appeal of a certain attribute to public attention may be higher than that of the reporting itself. (5) The significant impact of media agenda setting on the public and their characteristic attributes. At this stage, researchers mainly examine whether the coverage of topics by mass media will have a significant impact on the public's attitudes, concepts and behaviors towards the topics, and incorporate the audience into the research scope of agenda setting theory. After the research on agenda setting theory entered its fifth stage, along with the development of artificial intelligence technology and intelligent terminals, some scholars have begun to attempt to integrate public sentiment into agenda setting theory. They believe that mass media communication may not be able to determine the content of public thinking, but it can influence to a considerable extent the emotions in which the public thinks about problems. And this kind of emotion will have a profound impact on the entire information dissemination chain and the information audience.

In the information dissemination on social media, in the context of major news events, it is still worth further exploration whether the agenda setting of the media and that of the public presents different attributes. Therefore, this paper will introduce with the agenda setting theory and select Party newspapers, metropolitan newspapers and the public for comparison to explore the analysis of information differences during the period of nuclear wastewater discharge into the sea.

4 Research method

The research subjects selected for this study using the content analysis method were reports from People's Daily, Guangming Daily, Southern Metropolis Daily, Yangcheng Evening News and the public regarding the period of nuclear wastewater discharge into the sea. The selected time period was from August 24, 2023 to May 1, 2024. A total of 374 reports on the discharge of nuclear wastewater into the sea have been counted. Through the content analysis of these news reports, and by analyzing the reporting genres, length, main topics, etc. of all the reports on the discharge of nuclear wastewater into the sea in two Party newspapers, two metropolitan newspapers and the public, this paper explores the comparison of the agenda setting attributes of the news reports on the discharge of nuclear wastewater into the sea in People's Daily, Southern Metropolis Daily and the public.

5 Research and analysis

Based on "fukushima" and "nuclear waste water" "nuclear waste water" "Japan sea" as keywords, respectively, in the people the people daily, Guangming Daily, southern metropolis daily and yangcheng evening news on weibo retrieval, get the above four newspapers in August 24, 2023-2024 on May 1, the number of posts published during (see table 1).

Table 1

newspaper	People's Daily	Guangming Daily	Southern Urban Daily	Yangcheng Evening News
Amount	230	19	26	99

The agenda-setting theory holds that mass communication often cannot determine people's specific views on a certain event or opinion, but it can effectively influence which facts and opinions people focus on and the order in which they talk by providing information and arranging relevant topics. In the coverage of the major international event of

Japan discharging nuclear-contaminated water into the sea, party newspapers and metropolitan newspapers have demonstrated different agenda-setting strategies, which have profoundly influenced their connection with the public, reflecting their differentiated roles in information dissemination and their interaction patterns with the public.

5.1 Party newspapers: authoritative voice and macro agenda setting

Party newspapers represented by People's Daily and Guangming Daily, through their commentary and news formats, have become authoritative channels for expressing official positions and viewpoints, fulfilling their mission as "mouthpieces". On November 2, 2023, People's Daily adopted the news genre to report "The Ministry of Foreign Affairs Responds to Japan's Third Batch of Nuclear-Contaminated Water from Fukushima Being Discharged into the Sea", directly quoting the original words of the spokesperson of the Ministry of Foreign Affairs, quickly and accurately conveying authoritative information at the national level to the public. The commentary article "The Ministry of Foreign Affairs: Japan Should Immediately Correct Its Selfish Behavior of Shifting the Risk of Nuclear Pollution" on August 25, 2023, delved deeply into the incident and strengthened the official position.

According to the data, the total number of comments (202,946.0), likes (4,419,195.0), and forwards (350,955.0) received by Party newspapers under the topic of discharging nuclear-contaminated water into the sea are much higher than those of metropolitan newspapers. This result is closely related to the agenda setting function of the Party newspaper. The Party newspaper, through a combination of news and commentary genres, sets the official stance and viewpoint as the core issue of public concern, guiding the public to view the incident of Japan discharging nuclear-contaminated water into the sea from the height of national and ethnic interests. At the critical juncture of the international public opinion confrontation, the Party newspaper points out the correct direction for the public to view the event, helps the public establish a clear understanding of the country's position, and builds social consensus at the macro level. The high interactivity of information in Party newspapers among the public reflects that in major international affairs, they urgently need to obtain official attitudes from authoritative channels as an important basis for their own cognition and judgment. Party newspapers are precisely the key medium to meet this demand, fully demonstrating their dominant position in agenda setting.

5.2 Metropolis daily: multiple perspectives and micro-agenda setting

Metropolitan newspapers represented by Southern Metropolis Daily and Yangcheng Evening News adopt a diverse combination of genres to meet the public's diverse information needs and practice the editorial tenet of "being close to people's livelihood". In a report titled "TEPCO Admits Over 60% of Stored Nuclear Wastewater Has Excessive Radioactive Substances" on August 28, 2023, the Southern Metropolis Daily combined data investigations. On February 28, 2024, the Yangcheng Evening News published a news report titled "Japan Initiates the Fourth Round of Nuclear-Contaminated Water Discharge", providing readers with in-depth information and tracking the progress of the incident respectively. It has enhanced the story-telling and appeal of the report.

Under the report "TEPCO Admits that Over 60% of Stored Nuclear wastewater contains Excessive Radioactive Substances", the most popular comment "Whether the stored water exceeds the standard or not is not important; what matters is whether the treated water discharged meets the standards" demonstrated the public's focus of attention and direction of thinking regarding the incident. Through such reports, urban daily newspapers set specific issues and details of public concern as topics, becoming an important medium for the public to express their emotions and positions. Although the total number of comments (508.0), the total number of likes (10,293.0), and the total number of forwards (399.0) of the metropolitan Daily under the topic of discharging nuclear-contaminated water into the sea are far lower than those of the Party newspaper, it actively responds to public concerns, promotes in-depth discussions and participation of the public in the event at the micro level, and also collects public feedback to incorporate into subsequent reports. Form a virtuous interactive cycle of "public questions - media answers", and achieve the agenda setting strategy of "being close to people's livelihood".

5.3 The public and newspapers: information supply and demand and value resonance under the interaction of agendas

The different agenda-setting strategies of Party newspapers and metropolitan newspapers have established a two-way interactive relationship of information supply and demand as well as value resonance between the public and newspapers. In major international events, the Party newspaper stabilizes public sentiment with authoritative information and guides the public to view issues from a macro perspective. The agenda it sets is holistic and guiding. Amid the cognitive chaos caused by cross-border issues, the Party newspaper has effectively alleviated the public's information anxiety when facing global crises through stable agenda output. The metropolitan daily focuses on the perspective of the public's daily life, answers the public's doubts about the details of events, and meets the public's personalized information

needs. The agenda it sets is more relevant and service-oriented. Although the interaction data of metropolitan newspapers is far lower than that of party newspapers, their agendas are closer to the public and have become a bridge connecting macro issues with individual experiences.

The two complement each other. This synergy not only avoids the generalization of macro narratives but also prevents the trivialization of micro discussions, enabling the public to understand the essence of events at the height of a "community with a shared future for mankind". Jointly build a comprehensive and three-dimensional information dissemination network, enabling the public to not only grasp the macro situation but also gain an in-depth understanding of the minute details of events. In the global issue of Japan discharging nuclear-contaminated water into the sea, this three-dimensional agenda layout not only enhances the depth and breadth of public awareness, but also demonstrates the collaborative effectiveness of China's media ecosystem in major events. It not only gathers international consensus with authoritative voices but also safeguards the public's right to know information from the perspective of people's livelihood. Eventually, in the interweaving of diverse discourse, it shapes a public discussion space that combines ideological depth with the warmth of reality.

6 Conclusions

In the reports on the incident of discharging nuclear-contaminated water into the sea in Japan, Chinese Party newspapers and metropolitan newspapers demonstrated different agenda-setting strategies, forming a complementary pattern of public opinion guidance. Relying on its authority, the Party newspaper conveys its official stance in the form of news and commentary, sets national interests as the core issue, and guides the public to view events from a macro perspective. Its high interaction data indicates the public's reliance on authoritative sources, highlighting the crucial role of Party newspapers in consolidating social consensus and alleviating information anxiety. The metropolitan daily, on the other hand, focuses on the perspective of people's livelihood. Through investigative reporting and event tracking, it responds to the public's concerns about technical details. Although the interaction volume is relatively low, the hot comments under its reports reflect the public's inquiries about scientific basis and embody the micro-agenda interaction of "public questioning - media answering".

The division of labor between the two types of media has constructed a three-dimensional communication network. Party newspapers set the tone with macro narratives to avoid public opinion from losing focus. The metropolitan daily supplements with micro issues to enhance its relevance. This kind of synergy not only prevents the generalization of the national narrative but also avoids the trivialization of discussions on people's livelihood, enabling the public to grasp both the political significance of events and pay attention to their practical impacts. In global issues such as the discharge of nuclear-contaminated water into the sea, Chinese media, through differentiated agenda Settings, have not only maintained the stability of the public opinion field but also guaranteed the public's right to know, demonstrating the public value of the media ecosystem in complex issues. By applying the agenda-setting theory, a further understanding of the direction of public opinion and the public regarding the report on Japan's nuclear wastewater discharge into the sea not only reflects the wisdom of Chinese media in guiding public opinion in major international events, but also highlights the institutional advantages of the socialist news communication system with Chinese characteristics. In the global communication landscape, it not only provides a Chinese perspective for the international public opinion field, but also contributes media power to building a community with a shared future for mankind.

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