

Analysis of Attitude Resources in "China Daily" News Reports on Japan's Nuclear Wastewater Discharge from the Perspective of Appraisal Theory

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Abstract: This paper adopts the appraisal theory attitude system of Systemic Functional Linguistics as the theoretical framework, using the news reports of "China Daily" on the discharge of nuclear wastewater by the Fukushima nuclear power plant in Japan as the corpus, to analyze the discourse characteristics of the Chinese mainstream media's reporting on Japan's discharge of nuclear wastewater. The study found that in the relevant news discourse, the proportion of judgment resources is the largest, followed by appreciation resources, and emotional resources account for the smallest proportion. In the emotional resources, negative emotional resources account for the vast majority, indicating a negative attitude towards the discharge of nuclear wastewater by Japan. In the judgment resources, the behavior is evaluated and the potential risks it may bring are assessed. The reports provide relevant facts and evidence, presenting to the public a protest and opposition to the discharge of nuclear wastewater. In the appreciation resources, there is an emphasis on highlighting the harm and impact of nuclear wastewater discharge on the global marine environment, calling for environmental protection.

Keywords: Appraisal Theory; Attitude System; Nuclear Wastewater Discharge; China Daily

1. Introduction

On August 24, 2023, the Japanese government officially began discharging nuclear wastewater into the ocean, which attracted international attention. This issue lies in its implications for environmental protection, public health, and international relations. On one hand, the discharge of nuclear wastewater may cause irreversible damage to the marine ecosystem, affecting marine life and fishery resources. On the other hand, the discharge may also pose potential risks to human health, especially for residents and fishermen in coastal areas. In addition, the issue of Japan's discharge of nuclear wastewater has sparked international concern and controversy. Some countries and international organizations have expressed concerns about the plan, fearing that the discharge of nuclear wastewater could have a negative impact on transnational marine ecosystems and fishery resources, and have called on the Japanese government to take more cautious and transparent measures.

Currently, there is a considerable amount of research on Japan's discharge of nuclear wastewater, but most of it focuses on international politics, aquaculture, and ecological issues. There is relatively little research on the linguistic aspects of news texts. This paper is based on appraisal theory for the study of the nuclear wastewater discharge incident, using the appraisal theory attitude system to analyze the linguistic characteristics of the reports and to explore and analyze the three subsystems under the attitude system: affect, judgment, and appreciation resources in the news reports, such as viewpoints, comments, and background.

2. Theoretical Foundation

Appraisal theory was proposed by Martin in the early 1990s of the 20th century. It is not limited to the field of literature; it has been widely applied in various fields such as education and communication studies. Appraisal theory classifies the three major attitude subsystems of affect, judgment, and appreciation based on the semantic field of discourse, targeting human emotions, behaviors, and character, as well as things and products, and has drawn the most comprehensive and detailed appraisal meaning system ^[1]. Appraisal theory discusses the language resources of discourse or speakers that

express, negotiate, and naturalize specific intersubjective relationships and ideologies. Within this broad scope, the theory is more concerned with the language of attitude expression in affect, appreciation, and judgment, as well as a series of resources that make the propositions and claims of the discourse interpersonal [2]. This paper conducts a discourse analysis of the news reports on the discharge of nuclear wastewater by Japan based on the appraisal theory attitude system, analyzing the emotional resources, judgment resources, and appreciation resources within the semantic field of the reports.

News discourse can report and construct the status and interrelationships between the actors of news events [3]. Through reporting, it conveys the facts presented by news events to the public, while also collecting multiple layers of different voices from society to express a variety of opinions. The appraisal theory attitude system, based on the different voices in news reporting, reports, elaborates and expresses social ideologies.

3. Research Purpose

The specific objectives are as follows: Firstly, analyze all the attitude resources and calculate the proportion of the three attitude subsystems. Secondly, analyze the emotional resources. And study the emotional resources such as anger, sadness, fear, and doubt, and how these emotional resources express people's positive and negative emotions. Secondly, analyze the judgment resources. And study the proportion of judgment resources in "*China Daily*" and the evaluation of the news of Japan's discharge of nuclear wastewater. Finally, analyze the appreciation resources of the text and study the viewpoints, comments, and judgments in the text. And explore the value and social significance revealed by the appreciation resources.

4. Research Method

This study is based on the attitude system in appraisal theory and uses the UAMCorpus Tool 6 to annotate the collected corpus to analyze the distribution and use of the three subsystems of attitude resources. The selected corpus for the study comes from "*China Daily*," with the keyword "nuclear wastewater discharge," covering the period from August to September 2023. After screening, 10 news reports on Japan's discharge of nuclear wastewater were selected, totaling 6499 words. By analyzing the vocabulary, sentences, and paragraphs in the reports, the study aims to reveal the attitudes and positions of the reports towards the incident of Japan's discharge of nuclear wastewater, helping us understand the media's reporting style and tendencies toward complex issues and their impact on the formation of public opinion.

"*China Daily*," a mainstream English newspaper in China, plays an important role in the media. As a media organization, the discourse in its reports can reveal its ideology, position, and values. By analyzing the discourse in the reports, we can understand how "*China Daily*" interprets and presents specific events and its guiding role in public opinion. The way of discourse used by "*China Daily*" in its reports can help us understand the media's preferences and strategies in information transmission. By analyzing the attitude resources used in the reports, we can better understand the media's description and evaluation of the event.

5. Analysis of Results

5.1 Overall Distribution of Attitude Resources

Table 1: Distribution of Attitude Resources

Attitude Type	Emotional resources	Judgment resources	Appreciation resources	Total
Number	23	57	44	124
Percentage(%)	18.55	45.97	35.49	100

The distribution of attitude resources is shown in Table 1. The judgment resource has the largest proportion, accounting for 45.97%. Next is the appreciation resource, accounting for 35.49%. Finally, the emotional resource accounts for 18.55%. From this table, it can be known that the judgment resource account for the largest proportion. The report provides an evaluation of the nuclear wastewater

discharge behavior, showing its judgment and understanding of the issue.

5.2 Analysis of Emotional Resources

Table 2: Distribution of Emotional Resources

Type of emotional resources	Number	Percentage(%)
happiness/unhappiness	6	26.09
security/insecurity	10	43.49
satisfaction/dissatisfaction	6	26.09
inclination/disinclination	1	4.35
Total	23	100

Emotional resources can express a person's positive and negative emotions. In the 10 articles selected from "China Daily," a total of 23 emotional resources were labeled. Emotional resources include four sets of content: happiness/unhappiness, security/insecurity, satisfaction/dissatisfaction, and inclination/disinclination. They are related in turn to "states of the heart" (such as joy, happiness, sadness, and love), ecological and social states (such as anxiety, peace, fear, confidence, trust, etc.), and the pursuit of goals (such as discomfort, curiosity, respect, etc.). Different values (positions, viewpoints, interests, etc.) use these to specifically express the emotional attitude resource. From Table 2, it can be known that in the "China Daily" news about Japan's nuclear wastewater discharge, the frequency of security/insecurity is the highest, accounting for 43.49% of emotional resources. Almost all of these are negative emotions. This reflects that the public shows more anxiety, concern, and fear towards Japan's nuclear wastewater discharge.

Example 1: Erwin Johannes Simanungkalit, chief editor of Natuna Today, agreed, saying that even he was quite ill-informed about the nuclear-contaminated water." We now have to give serious attention to this issue," he said. "I am *worried* about the Fukushima water causing damage to our marine habitat."(8/30/2023)

Example 2: Kinzaburo Shiga, a third-generation fisherman in Iwaki, Fukushima Prefecture, said he has been in the fishing industry for more than 50 years and is *worried* about whether the younger generation will be able to continue fishing.....and feels *anxious* about this season's fishing, which will continue until the end of June, the newspaper Fukushima Minpo reported.(8/28/2023)

Example 1 and Example 2, through interviews with the editor-in-chief and a fisherman, show that there is concern and anxiety about Japan's discharge of nuclear wastewater. At present, the Japanese government cannot provide sufficient evidence to prove that the discharge of nuclear wastewater is harmless to the marine ecological environment. Everyone is very worried that the marine ecological environment will be damaged. Fishermen who rely on the fishing industry are even more concerned about the marine ecological environment. If the marine ecological environment is damaged, it will affect all mankind. The use of words such as "worried" and "anxious" indicates that people disapprove of Japan's nuclear wastewater discharge and are anxious and concerned about whether the marine ecosystem will be damaged.

5.3 Analysis of Judgment Resources

Table 3: Distribution of Judgement Resources

Type of emotional resources	Number	Percentage(%)
Normality	25	45.46
Capacity	5	9.10
Tenacity	3	5.46
Veracity	2	3.64
Propriety	20	36.37
Total	55	100

In the study of evaluative resources, the judgment meaning involves ethics, referring to the evaluative attitude toward people and their behaviors based on different normative principles, such as admiration, criticism, praise, and condemnation ^[4]. In this corpus study, the evaluation of Japan's discharge of nuclear wastewater and the behavior of the Japanese government is mostly critical and condemnatory. Judgment resources can be divided into social permission and social dignity. Social

permission includes propriety and veracity. Social dignity includes normality, capacity, and tenacity. Judgment resources include social evaluative resources and social regulatory resources. Social evaluative resources are related to three aspects: behavioral norms (normality), competence in doing things (capacity), and perseverance (tenacity). Social regulatory resources are related to whether the behavior is truthful and reliable (veracity) and whether the behavior is proper (propriety)^[5]. Table 3 shows that "normality" and "propriety" take for the largest proportions, at 45.46% and 36.37% respectively, and are significantly higher than other judgment resources. It can be seen that for Japan's discharge of nuclear wastewater, the evaluation of this behavior is more of disapproval and non-recognition.

Example 3: China will closely track and assess the impacts of Japan's "*extremely selfish* and *irresponsible*" plan to discharge nuclear-contaminated water into the ocean, the National Nuclear Safety Administration said.(8/24/2023)

Example 4: Japan's unilateral action is seen as a display of extreme *self-interest* and *irresponsibility*, with the potential to inflict immeasurable harm upon the ocean ecosystem. (8/28/2023)

From Example 3 and Example 4, it can be seen that the Japanese government's behavior of discharging nuclear wastewater is criticized and not socially permissible. Such behavior is unconventional and unethical. In terms of social permission, the discharge of nuclear wastewater by Japan is subject to moral condemnation. The terms "irresponsible" and "selfish" reflect that there is no concept of protecting the ecological environment and no long-term consideration for green development concepts, focusing only on immediate interests. In terms of social dignity, the behavior of the Japanese government is unusual. The Earth is the home where all mankind lives, and the Japanese government is also a part of the global village. Not only has it failed to uphold the concept of protecting the ecological environment, but it has also brought unforeseeable harm to the marine ecological environment.

5.4 Analysis of Appreciation Resources

Table 4: Distribution of Appreciation Resources

Type of appreciation resources	Number	Percentage(%)
Reaction	10	22.73
Composition	14	31.82
Value	20	45.46
Total	44	100

Appreciation resources have three categories: reaction, composition, and value. "Reaction" describes the emotional impact on the reader and makes an evaluation based on that impact. "Composition" evaluates the description during the development process of an event. "Value" evaluates the social significance of an event. Appreciation belongs to the aesthetic significance category, but value is "the judgment of the non-aesthetic value (i.e., social value) of things, involving the importance, value, and meaning of things^[6]". Table 4 shows that among the appreciation resources, the largest proportion is value, accounting for 45.46%, followed by composition, accounting for 31.82%, and finally reaction, accounting for 22.73%.

Example 5: This *perilous* decision places an *unwarranted* gamble on the health of the worldwide marine environment and the world people's well-being, disregarding the larger collective interests and leaving us all to grapple with the consequences.(8/28/2023)

Example 6: Indeed, many have questioned the US administration's *hypocritical* stance of finding faults with almost every environmental protection policy of China while turning a blind eye to Japan's environmentally *destructive* act. As for Western media outlets, quite a few of them have focused on China's opposition to Japan's action, instead of questioning the Japanese government why it is going ahead with its *disastrous* plan despite the strong opposition from home and abroad.(9/12/2023)

Examples 5 and 6 demonstrate through words like "perilous" that the Japanese government's discharge of nuclear wastewater will lead to dangerous and destructive consequences. The consequences of such actions are very serious, severely polluting the natural ecosystem. Once the nuclear wastewater is discharged into the ocean and goes through the natural recycling system, it will pose a threat to every corner of the Earth. The reports show that this behavior is hazardous and destructive. At the same time, it calls for all mankind to jointly defend the ecological environment of

humanity. The Earth should be the common home of all mankind, which requires maintenance by all countries and all people.

6. Conclusion

Based on the appraisal theory, this paper analyzes the attitude resources in 10 articles from "*China Daily*" regarding the discharge of nuclear wastewater by Japan and finds that the most abundant resource is judgment, indicating that the behavior of discharging nuclear wastewater by Japan is immoral and irresponsible. Through a detailed analysis of the three subsystems of the attitude system, this paper aims to draw public attention to this event. The discharge of nuclear wastewater is an irresponsible and selfish act towards oneself, all of humanity, and the entire nature. The marine ecosystem needs to be protected by all people. Through a detailed analysis of attitude resources, this paper calls on all of humanity to jointly protect our Earth home, safeguard the marine ecosystem, and protect the environment on which we depend for survival.

This study also has certain limitations. First, appraisal theory is a relatively subjective research method, and the results are often influenced by the researcher's subjective experience and judgment. Second, the paper itself has limitations as it only selects reports from "*China Daily*" as the research object, without considering reports from other media, which may lead to biased research results.

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