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A corpus-based discourse analysis of China's national image constructed by environmental news in *The New York Times*

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The persuasive function of topoi—the conclusion rules connecting the arguments and claims—in national image construction through news discourse has been relatively under-researched. This article presents findings from a corpus-based discourse analysis of 21 China-related environmental news stories in *The New York Times* to address this gap. The corpus analysis of frequency was utilized to find out recurrent and characteristic topics in the news discourse, while the concordance analysis revealed the discourse prosody in the news stories. Topoi in the reported speech was scrutinized to uncover the persuasive intentions in the coverage and the press's opinion of China's pro-environmental actions. The findings demonstrate that China is constructed as a country pursuing economic growth at the expense of the environment and a country that is good at showing resolution of governance but with poor governance capacity. The paper suggests that China should spread environmental-related information more transparently using a vigorous international discourse system and diversify means of communication to offer the world more ways to see China's pro-environmental actions.

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Introduction

The slogan for World Environment Day in 2022 is “There are billions of galaxies and billions of planets in our galaxy, but there is only one Earth.” The quality of the earth’s environment will directly affect the quality of human existence, as it is the only home for humans. As the human-environment conflict worsens, the international community has taken various measures to protect the earth’s ecology and environment, such as the signing and ongoing promulgation of the United Nations Framework Convention on Climate Change (UNFCCC). It is increasingly recognized that the earth’s ecosystem is indivisible and that humans must work together to address environmental challenges.

As a result of the unprecedented changes in the global economic and political landscape and the impact of the COVID-19 pandemic, international relations are becoming increasingly complex. In such a situation, a powerful national image engenders a louder voice on the global stage. Since the national image not only consists of a country’s self-cognition but also the cultivation efforts of other agents in the international system (Boulding, 1959), the international communication of news plays an important role in shaping the national image (Xu, 1996).

The global reach and influence of U.S. media, both online and offline, across various forms of information dissemination, are widely acknowledged (Thussu, 2006). Through extensive coverage and commentary on environmental issues worldwide, U.S. media play a significant role in shaping the global public’s knowledge and attitude towards environmental events (Yan and Wang, 2008). Furthermore, given the coexistence of cooperation and divergence in environmental matters between China and the United States under the influence of national interests (Steeves and Ouriques, 2016; Cui, 2018; Xiong and Wu, 2021), American media’s portrayal of China’s environment is expected to be multifaceted. As such, analyzing China-related environmental news in mainstream U.S. media, such as *The New York Times*, can provide valuable insights into the international community’s perception of China’s environmental issues and its image construction in foreign media outlets.

The New York Times website is ranked first among mainstream American newspaper websites in the “Top 100 US news websites” (Feedspot, 2023), making it a highly authoritative and representative American media outlet. The newspaper has a long-standing history of covering ecological and environmental issues in China since the 1970s, making its coverage a suitable sample for research purposes (Wang, 2019). Thus, this study aims to examine news stories published in *The New York Times* to identify specific discursive practices that contribute to the construction of China’s national image. The research question that motivates this study is, therefore, “How is China’s national image constructed through discursive practices in news coverage in *The New York Times*?” This study will scrutinize reports from *The New York Times* to explore their representation of Chinese pro-environmental actions and attempt to provide suggestions for the country to better showcase its development journey and achievements.

Literature review

The discursive construction of the national image. Nations are perceived as imagined communities rather than solely as geopolitical entities and sovereign spaces where people and institutions reside (Benedict, 1983). This perception posits that nations are constructed in part through discourse that portrays various aspects of their identity (Hogan, 2010). National image refers to the abstract cognition of the public regarding a nation’s actions, characteristics, and spirit, and reflects the overall evaluation and

interpretation of the nation by the public (Xue et al., 2015). Scholars influenced by the theories of power, discourse, and constructivism have adopted a discursive perspective to study the construction of national image and identity (De Cillia et al., 1999; Wodak, 2011; Xue et al., 2015). National image is considered a crucial representation of national identity. Wodak (1999) argued that national identity can be perceived through discursive constructs, which encompass specifically constructed narratives of identity. The reproduction of these narratives of national identity, influenced by the ever-changing political contexts, continually shapes and reshapes a nation’s perceptions of the world (Martin, 1995).

Boulding (1995) posited that a national image reflects the collective cognition and evaluation of a nation by the international community, representing its internal view of itself. The evaluation of a country by both domestic and foreign publics dynamically constitutes the image of a nation. Previous studies on China’s image have focused on the construction of the other-shaping image by overseas discursive entities and the self-shaping image fostered by domestic ones (Xiang, 2013; Huan and Deng, 2021; Fan, 2013; Liu, 2023). These studies have adopted various approaches from a social constructionist perspective, aiming to provide a systematic discourse analysis of China’s image and identity construction. Critical discourse analysis (CDA), which explores the relationship between society, power, ideology, and language, has been widely employed in these studies (Wodak, 1999; Zhang and Wu, 2017) as it elucidates the connections between discursive acts of image construction and the social status quo. Following CDA’s view that discourse as a form of social practice dialectically interacts with social reality, the image of China is shaped by international exchange practices, and the interpretation of the image should be contextualized within the international backdrop.

Strategic communication tools, such as public relations and media diplomacy, are often utilized to enhance a nation’s image (Peijuan et al., 2009). News media play a significant role in shaping the public perception of a country both domestically and internationally, serving as an important means of building a country’s image (Wei, 2022). Previous studies on China’s image in news discourse have sought to investigate the specific representation of the national image, the processes through which the image is constructed, and the extent to which the constructed image is accepted by the public. In Western media reports, China’s image shaping often leans towards negation and negativity, with characterizations such as “a militant and obstructive force” and “a geopolitical threat” (Zhang and Wu, 2017), which can be explained within the international context of Western government’s dominance in international politics (Manzenreiter, 2010). Conversely, China’s self-shaping image is often projected as embodying qualities of peace, responsibility, and friendliness, which are achieved through media reporting on high-profile events with international significance, such as the Olympics (Niu and Duan, 2022), the implementation of the “One Belt One Road Initiative” (Xu and Jiang, 2019), and efforts to combat SARS and COVID-19 pandemics (Yin and Yang, 2021). These studies suggest that the news discourse in China’s media attempts to publicize China’s intentions to the outside world and promote mutual understanding in the international community.

When researching the construction of image discourse, some scholars utilize analyzing tools and approaches such as the discourse-semantic systems in Systemic Functional Linguistics (SFL) theory, the discourse-historical approach in (CDA), and conceptual metaphors theory, combined with in-depth interviews and small focus groups, to investigate how China’s national image and identity is discursively constructed and promoted externally

to an international audience (Shao, 2017; Liu and Chang, 2021; Ban and Pan, 2020; Yuan et al., 2022; Zhang, 2022). To gain a comprehensive and diachronic understanding of China's national image, scholars (Kim, 2014; Zhang and Wu, 2017; Yuan et al., 2022; Zhang, 2022) often employ a corpus-based CDA approach to identify universal and frequent characteristics of China's image across the entire corpus by examining collocational and other recurrent patterns associated with specific lexical items. Meanwhile, a critical discourse analysis-informed approach is deemed most suitable for scrutinizing specific stretches of text to locate the typical and recurrent linguistic patterns in the context.

In recent years, environmental issues have garnered global attention, prompting some scholars to undertake discourse research on China's ecological environment image. The objective of such research is to construct a more authentic and comprehensive national image that explicates the traditional Chinese ecological philosophy underlying the discourse. However, despite the significance of external perceptions of China's image on environmental issues, this area remains understudied in the existing literature. Ramo et al. (2008) believes that a positive image reduces the cost of significant friction to a negligible amount, whereas a negative image magnifies the cost of a minor conflict by a factor of many. Since the 21st century, the national image has been considered an important part of national soft power. Not only does studying the discursive construction of China's externally cultivated image help us grasp the function of discursive practices in portraying a national image, but it also helps explicate the positioning and perception of China in various affairs by the international community. Therefore, this study employs a corpus-based CDA approach to investigate the construction of China's national image in the context of environmental-related news coverage. The aim is to gain a comprehensive understanding of how Western perceptions of China's environmental protection and governance are shaped through discourse and to provide recommendations for China's external communication strategies.

Research methodology

Here, we describe the discourse-analytical approach and major analysis stages employed in our study.

The discourse-historical approach. We employ the discourse-historical approach (DHA), an influential school of critical discourse analysis (CDA), to conduct this study. As a problem-oriented interdisciplinary research field (Wodak and Meyer, 2009) that studies language and other semiotic systems in use, CDA focuses on examining the concealed, obscured, and apparent structures of dominance, discrimination, power, and control as they manifest in the language (Wodak and Meyer, 2016). The discourse-historical approach (DHA) upholds congruent principles and objectives aimed at elucidating the potentially persuasive or manipulative nature of discursive practices across a broad spectrum of social and political relations, processes, and circumstances (Wodak, 2001).

The examination of the national image is inherently intertwined with the realm of international relations. A critical and historical perspective of DHA allows the researcher to investigate and comprehend the international social and cultural context in which the images and identities are constructed through discourse as social practice (Hernández, 2008). The social constructionist perspective views image and identity construction as dynamically negotiating processes within the social context (De Fina et al., 2006). The ideologies concerning such negotiation and representation can be expressed through the reproduction component in discursive practices. Studies of news discourse

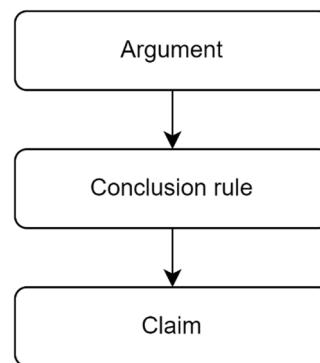


Fig. 1 Argument scheme in Wodak's (2015) analysis of the argumentation strategy. The components of a topos are summarized by Wodak. The arrows indicate the logical framework by which a topos is coherent. The argument is substantiated through a process of deductive inference grounded in the rules of argumentation.

have adopted the discourse-historical approach that integrates the analysis of ideology and news discourse (Chan, 2012). It offers a comprehensive and cohesive theoretical framework as well as conceptual tools, especially discursive strategies that are usually used to justify in-group and out-group their presentations.

Studies on image discursive construction, such as the constitution of anti-Semitic stereotyped images that emerged in public discourses (Wodak et al., 1990), the discursive construction of nation and national identity in Austria (Wodak et al., 2009), identity politics and patterns of decision-making in EU organizations (Wodak, 2011), etc. often contain three analytical stages: (1) Macro-analysis: identifying the specific content or topics of the discourse; (2) Micro-analysis: investigating discursive strategies; (3) Context-analysis: examining the linguistic means. In accordance with this analytical framework, the present study initially identifies salient topics of concern within the news coverage. As news can be persuasive and convincing due to the sophisticated usage of linguistic structures and argumentative rhetoric as well as the newspaper's manipulative intentions (Tirkkonen-Condit, 1996; Yang, 2015), the argumentation process in the argumentation strategy merits more consideration. Therefore, the argumentation discursive strategy is intensively investigated upon the key issues in the news coverage.

The objective of one employing the argumentation strategy is to justify and question the claims of truth and normative rightness. Topos (plural 'topoi') is a significant device used to achieve this aim. Wodak (2001) regarded topoi as "parts of argumentation that belong to the required premises" and "connect the argument(s) with the conclusion, the claim" (p. 74). With strong logical relevance, topoi closely combine the argument with the conclusion. When the argument follows the logic of certain topos, the corresponding argument scheme will enable the persuasive purpose to be realized (Wu, 2013). According to an argument scheme of a topos, the reasoning process could be broken down into three parts (see Fig. 1): (1) an argument, (2) conclusion rules, and (3) a claim (Shu, 2013; Wodak and Meyer, 2009). Scholars in the field of pragmatic argumentation have developed more detailed argumentation schemes for topoi. Rubinelli (2009) noted that a topos is composed of two main parts: (1) an instruction and (2) a law. The instruction prompts speakers to identify a suitable premise from an abstract perspective. Speakers use it to establish or refute a proposition with the help of the law. The law is a principle that ensures the reliability of the instructions' specified operations. Wodak's argument scheme could be refined by combining such a "dual structure" of topoi when analyzing the argumentative

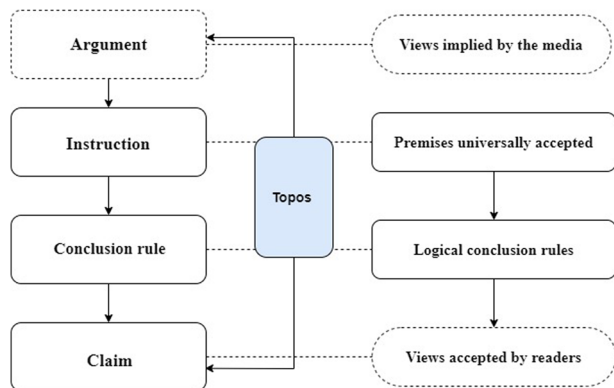


Fig. 2 The analyzing structure of topoi in reported speech is based on Wodak's argument scheme. The refined analyzing structure of topoi was utilized in this study. The dashed box represents viewpoints that are not reflected in the written manifestation in the news discourse. The contextualization of each component within the general structure of topoi in news discourse is represented by dashed lines. The solid arrow indicates the logical framework in topoi. When the content of a news report shows certain premises and conclusion rules in certain topoi, readers are inclined to draw a conclusion according to the logic of these topoi. The views accepted by the readers (the "claim") may suggest the persuasive intentions of the newspaper (the "argument").

character of discourse. After reproducing the argumentative process using the refined argument scheme, the argumentative and persuasive intentions of the discourse subject can be reflected with greater precision.

The significance of the social construction role of news discourse has been extensively examined (van Dijk, 1988; Trikkonen-Condit, 1996; Shao, 2017; Zhang, 2022). Its argumentative function, which has thus far garnered less scholarly attention, is just as crucial for the media outlet to propagate its ideology (Yang, 2015). DHA explores discourse practice via the intertextuality of text. The news discourse contains a large number of other people's utterances, which is the specific representation of intertextuality. The reported speech supports the ideas that the news is meant to convey, but the fragmented speeches lose a significant amount of information. The opinions conveyed by the press, therefore, are implicit and invisible. Readers receive the information conveyed by the media outlet and form their own opinions through the logical rules that a topos contains in the reported speech. Therefore, it is necessary to represent the dual structure of the topoi in the study of the reported speech in news discourse. It makes the process of communication and reception of ideas in speech clearer when we deconstruct the argumentation process of reported speech with the refined argument scheme which reflects the dual structure of topoi (see Fig. 2).

In the second research stage, this study focuses on "topoi" in argumentation strategy to evaluate the reported speech in news stories, which helps to identify the argumentative connotation and persuasive intent in news discourse.

Corpus linguistics, which examines language usage patterns on a large scale in natural discourse, can provide universal conclusions based on the corpus data. Previous studies (Stubbs, 1996; Baker et al., 2008; Hou, 2018) have demonstrated that corpus analysis is effective in revealing ideology in discourse. Hardt-Mautner (1995) was one of the first scholars to advocate for the integration of qualitative and quantitative analysis in critical discourse studies, combined with corpus linguistics. Baker et al., (2008) employed a combination of corpus linguistics approaches and Wodak's (2001) discourse-historical approach in

Table 1 Corpora size.

	Observed corpus	Reference corpus (NOW)
Word Tokens	20,789	1,664,120

his study, using collocation and concordance analysis to identify the discursive representation of RASIM (refugees, asylum seekers, immigrants, and migrants), and employing qualitative analysis to reveal the negative stance of the press towards RASIM. The amalgamation of CDA and corpus analysis makes it much more effective and objective to explore the relationship between the linguistic means of text and its function from the qualitative and quantitative perspectives. As such, this study adopted the DHA assisted by corpus tool to examine China's image constructed in the news coverage.

Research methods. Critical discourse analysis with corpus-based methods is used in this study. As an empirical research method, the corpus approach can provide a quantitative basis for critical discourse analysis, thereby effectively reducing the subjectivity and randomness of discourse analysis. The method also enhances the credibility of the discourse interpretation.

Data collection. There are two types of corpora involved, respectively the observed corpus and the reference corpus. The observed corpus of the research consists of 21 newspaper reports about China's environment in *The New York Times*. The news reports in the observed corpus are selected from *The New York Times'* official website (<https://www.nytimes.com/>). The reference corpus refers to the sub-corpus of the NOW corpus (News on the Web <https://www.english-corpora.org/now/>).

The NOW Corpus is a resource facilitating the determination of word frequency, phrase occurrences, and collocational patterns, organized by chronological units of year, month, and day. This resource encompasses an extensive compilation of newspapers and magazines from various global sources in a variety of world Englishes, including web-based newspapers and magazines. The reference corpus utilized in this study emanates from a sub-corpus extracted entirely at random from the NOW Corpus, typically comprising approximately 1/100th of the overall text pool. The aggregate count of word tokens amounts to 1,664,120, which is large enough to serve as a reference corpus. The sub-corpus of NOW is closer to the genre of texts in the observed corpus. It would be more likely to licit keywords that tell us something relevant about the focus on China's environmental issues in the news, rather than "words which are concerned with newspaper-style appearing as key" (Baker, 2014: p. 166).

The time scale of the observed corpus expands from October 18, 2017, to November 30, 2021. The timeframe starts with the 19th National Congress of the Communist Party of China (CPC) and ends with the 26th Conference of the Parties (COP26) of the United Nations Framework Convention on Climate Change (UNFCCC). This period covers an important era in which China endeavored to protect the environment and promote global ecological governance.

The reports were selected according to four keywords: *China*, *Chinese*, *environment*, and *environmental*. The data retrieved were saved in plain text format, totaling 20,789 tokens. This study employed AntConc3.5.9, a freeware corpus analysis toolkit renowned for its comprehensive toolset, which encompasses a robust concordancer, generators for word and keyword frequencies, as well as tools for cluster and lexical bundle analysis (Anthony, 2005) (Table 1).

Data analysis. This research is conducted under the framework of Wodak’s discourse-historical approach which comprises macro-analysis of the topics of a specific discourse, micro-analysis of the discursive strategies and intertextuality in the text, and context-analysis of the linguistic means. The stages of macro-analysis and context-analysis involve quantitative descriptions and qualitative interpretations. The micro-analysis of argumentation schemes of topoi focuses on qualitative explanation.

Initially, we utilized AntConc tools to generate frequency lists of full lexical items from the corpus. After the turn of the twenty-first century, corpus-based discourse studies proliferated. A large number of studies take the CDA theories as a foundation and incorporate the corpus analysis, such as examining the keywords list and concordance to explore the ideology hidden in the text (Qian, 2019; Li, 2020). By analyzing the frequency of linguistic patterns and discursive representations, language ideologies within corpora can be identified and investigated (Vessey, 2017). AntConc allows for the creation of keyword lists by comparing the frequency of lexical items in the observed corpus with a reference corpus. The keywords tool in Antconc calculates the keyness of words using either the chi-squared or log-likelihood statistical measures (Anthony, 2005). The selection of the log-likelihood test for the generation of the keyword list is because the chi-squared test’s reliability diminishes when the anticipated frequency falls below 5, thereby rendering the log-likelihood statistic the more dependable and frequently employed alternative (Rayson et al., 2004). Keywords that are more frequent in one corpus not only reflect the specific topics of the texts but convey some underlying information concerning a certain ideology (Scott, Tribble, 2006). The typical features and core themes of the texts can be revealed by analyzing the concordance of the keywords and referring to their lexical contexts (Lian, Mi, 2021).

In this analysis, we employed keyword analysis to identify the major topics of the news report and the general attitude of the press towards China by examining concordance lines with the assistance of the corpus tool. We ran the keywords procedure and obtained a total of 227 keywords. In accordance with this process, a keyness score was computed for each term within the observed corpus using the log-likelihood test, and the higher the keyness number the higher the likelihood that a word is a keyword. For further analysis, we selected the top 20 keywords with a keyness value above 100. These keywords were categorized into separate groups to facilitate qualitative analysis of the topics covered in the news report.

Next, we investigate the argumentation strategy, especially the topoi, used in the coverage’s reported speech to explore the persuasive annotation conveyed by the newspaper. CDA regards social practice as connected, simultaneous, and sequential discourse activities, which have certain echoes and repetitions between each other (Wodak, 2001). Fairclough (1989) first

described this as “intertextuality”. The reported speech in the newspaper which implicitly conveys the media’s opinions and attitude is a primary component of specific intertextuality. It has been proved in Tirkkonen-Condit’s (1996) study that when the newspaper expresses an opinion, attitude, or position on a news event, it obscures the genuine communicative goal, alters the emphasis of public opinion on the event, and so influences the general audience to support or oppose a particular social action. By selectively reporting the speeches of others, the news media guide and persuade readers to accept the views conveyed by news reports. Examining the argumentation strategy in reported speech helps reveal the persuasive intentions and latent attitude of the news media. The analysis of argumentation strategy in reported speech in selected news coverage was conducted through macro-analysis of news topics, using the concept of “topoi”. The reported speech in the chosen news articles was annotated, and the recurrent types of topoi were identified through close reading. The argumentation process of these typical topoi was revealed following the scheme in Fig. 2 to highlight the implied opinions of the news media.

Subsequently, we employ linguistic analysis to examine the notional words with high frequency, including verbs and nouns, in the concordance lines. Specifically, we select words that are typically related to environmental issues from the frequency list of the corpus under investigation for concordance analysis. The reporting style and intentions are examined through qualitative analysis within the context of the news coverage. Lastly, we conduct an examination of the historical and socio-political context to understand how China’s national image is constructed discursively.

Results

Macro-analysis. 227 keywords were extracted by comparing the observed corpus with the NOW corpus via Antconc3.5.9. The top 20 keywords (Table 2) were shown due to their representativeness.

To offer a much plainer picture of the main issues in *The New York Times* related to China’s environment, the keywords list was grouped into three categories (Fig. 3): places; people; and factors triggering the environmental crisis.

After examining the keywords in the first group with their concordance, it shows that except for China, Beijing and Shandong are the places attracting the most preoccupation from the media. Example (1) below shows that Beijing, as the capital of China, sometimes represents the government and is considered to be the pilot place to implement environmental policies. The implementation of government decisions and policies about the environment has been a focus for *The New York Times*. In addition to being the most populous city in China, Shandong Province has received much attention as well. Environmental problems in such an industrial province are to be expected, which

Table 2 The first 20 keywords in the corpus.

Rank	Keyword	Keyness	Frequency	Rank	Keyword	Keyness	Frequency
1	China	1787.24	300	11	Xi	182.44	28
2	CFC-11	623.39	74	12	chemical	178.91	33
3	coal	490.44	75	13	factories	159.39	25
4	Beijing	456.1	71	14	energy	153.45	54
5	emissions	445.88	69	15	officials	151.89	50
6	plastic	312.34	53	16	Shandong	132.14	17
7	pollution	303.4	49	17	carbon	109	09
8	ozone	303.04	37	18	electricity	122.7	31
9	climate	213.51	51	19	gases	121.87	19
10	foam	202.22	27	20	recycling	119.52	18



Fig. 3 Three categories of keywords. The top 20 keywords are classified based on their semantic connotations. The words in the blue box concern “place”. The words in the green box are related to “people”. The words in the purple box are associated with “Factors for the environmental crisis”.

reflects the fundamental picture of the pro-environmental actions in China.

(1) Since Beijing began in earnest to tackle its climate emissions just over a decade ago, it has slowly been weaning itself off coal—going from more than 70 percent of its total energy consumption in 2009 to around 57 percent in 2020. (*The New York Times*, 19 December 2017)

The second category includes people such as President Xi and government officials. It shows in concordance that the leader and the officials are responsible for the implementation of China’s goals and policies, such as in example (2) below. They are required to answer environment-related questions and, if necessary, put forward the solutions to the problems.

(2) Warning of coal shortages, Officials are trying to curb energy usage by telling residents not to use electric stoves and extinguishing lights on building facades and billboards. (*The New York Times*, 21 November 2020)

The keywords that are most frequently represented in the newspapers are the words closely related to environmental issues, such as pollution, energy, and climate in the third category. They are mentioned in the news to show “what China has done” and “what China is going to do” when confronting an environmental problem. Example (3) below is one of the examples that mentioned smog, tainted water, and other pollution threatening the environment. The measures taken by the government to address environmental issues are presented later.

(3) Over the past decade, Chinese Communist Party leaders have come to see smog, tainted water, and other pollution as serious threats to trust in the government. The government has made strides in curbing smog and slowing the growth of emissions of carbon dioxide and other planet-warming gases. (*The New York Times*, 24 July 2018)

The keywords listed above show that the news reports in the American mainstream media outlet *The New York Times* recognize the current situation of pro-environmental actions in certain Chinese cities, the government’s attitude and solutions to environmental problems, as well as China’s achievements in environmental governance and unresolved issues. After identifying the themes and focuses of the texts, an examination of the argumentative strategy concerning these major topics was conducted.

Micro-analysis. Here we unveil the argumentation process of typical topoi following the scheme in Fig. 2 to show the implied opinions of the news media.

Argumentative strategy in the reported speech about “place”. Shandong province was mentioned in the news about the

factories there that were using CFC-11—a chemical that jeopardizes the ozone layer. To draw the reader’s attention and add to the authoritativeness of the news, the reporter directly quoted the speech of an executive in the Environmental Investigation Agency to show the environmental problem in the province. In addition to the expert’s statement, several manufacturing employees are also reported.

(4) “The scale of this environmental crime is devastating, with massive potential impact on the climate and the ozone layer,” said Alexander von Bismarck, executive director of the group. (*The New York Times*, 24 June 2018)

The topos of threat is explained as “if a political action or decision bears specific dangerous, threatening consequences, one should not perform or do it. Or, formulated differently: if there are specific dangers and threats, one should do something against them” (Wodak, 2001, p. 75).

After reporting the information that eight factories in four Chinese provinces were using CFC-11 in the foam-making process, the journalist quoted the expert’s speech to covertly emphasize the possible consequence of the Chinese factory’s current working process. Following the analyzing structure of topoi in reported speech based on Wodak’s argument scheme in Fig. 2, the argument scheme of threat is constructed as follows (see Fig. 4). The premise in the scheme of the topos is general knowledge that CFC-11 is a chemical material harmful to the ozone layer. The conclusion rules that if a country uses hazardous chemical material, it should take action to delimitate it connects the premise and the claim. The argumentative rules implied that the production mode of factories in China now increases the climate crisis of the whole world. What is more, since the government should control illegal emissions, such emissions, however, have not been effectively stopped, another conclusion might be drawn that China’s environmental policy is not all-encompassing and is still something to be remedied.

Argumentative strategy in the reported speech about “people”. The selected news coverage shows that the officials mentioned in the newspaper always bring forward the decisions and policies on environmental issues, such as the example (5). Their speech represents China’s attitude toward the global environmental situation.

(5) Now, too, the Chinese government’s rush to stimulate an economic recovery after the Covid-19 pandemic gives officials at all levels reason to “go all out to make up for the loss,” as the deputy governor of the northwestern province of Gansu, Li Peixing, urged this summer. (*The New York Times*, 12 October 2020)

In Example (5), the reporter quoted the official’s speech about the economic recovery, and their command to “go all out to make up for the loss” (Huang, 2020). As a free direct quotation, this reported speech gave the reader a deeper impression than other statements (Xin, 2006). The argument scheme embedded in the reported speech first draws upon a widely recognized idea that economic growth should not be achieved at the expense of damage to the environment. The logical rule regarding the topos of threat that if a country pursues economic expansion and ignores the environment, the country is doing wrong and should stop its action may imply a certain conclusion (see Fig. 5). After putting the speech into the context of the complete coverage, it is found that the reporter introduced more information about China’s economic measures after the reported speech, such as “more construction permits reportedly were issued for coal-fired power plants in China in the first half of this year than in 2018 or 2019” and a possible consequence caused by the measure “by May, the concentrations of four air pollutants exceeded levels recorded a year earlier, according to the Finland-based Center for

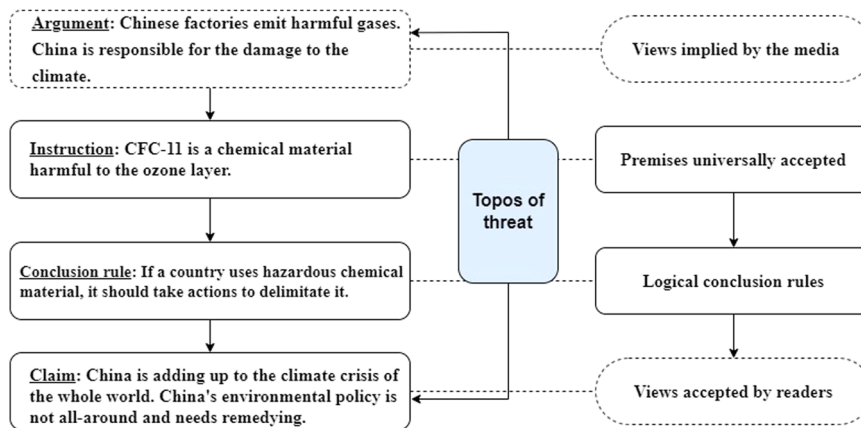


Fig. 4 The topos of threat in the reported speech concerning “place”. The possible perception process of the readers when they comprehend the news report in the logic of “threat” topos in example (4). The premise denoted in the news report is general knowledge that CFC-11 is a chemical material harmful to the ozone layer. The conclusion rules that if a country uses hazardous chemical material, it should take action to delimitate it connects the premise and the claim. The argumentative rules implied that the production mode of factories in China now increases the climate crisis of the whole world and China’s environmental policy is not all-encompassing and is still something to be remedied. The implicit argument that China is responsible for the damage to the climate suggested by the newspaper can be inferred from the claim.

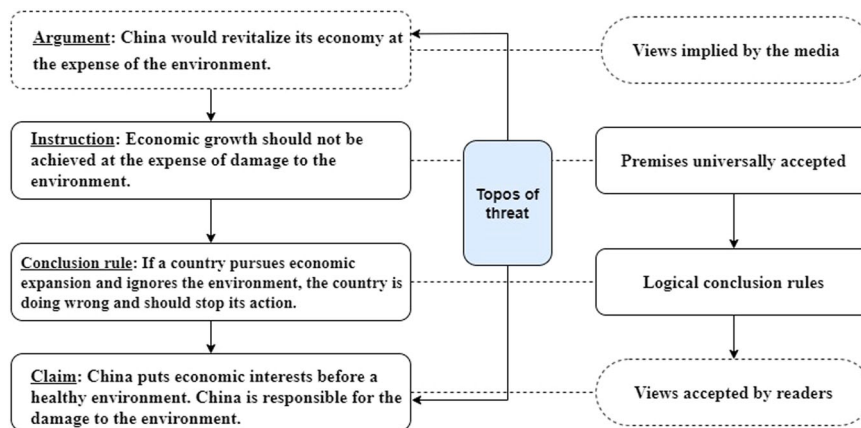


Fig. 5 The topos of threat in the reported speech concerning “people”. The possible perception process of the readers when they comprehend the news report in the logic of “threat” topos in example (5). The argument scheme embedded in the reported speech first draws upon a widely recognized idea that economic growth should not be achieved at the expense of damage to the environment. The logical rule regarding the topos of threat that if a country pursues economic expansion and ignores the environment, the country is doing wrong and should stop its action may imply a certain conclusion.

Research on Energy and Clean Air” (Huang, 2020). Such information together with a certain choice of reporting mode entrenches the reader’s opinion that a country puts economic interests before the world’s healthy environment.

Argumentative strategy in the reported speech about “factors”. When introducing the achievements and unsolved issues of China’s environmental governance, words such as “recycling, pollution, energy” are repeatedly mentioned. Examples (6) and (7) regarding the recycling policy in China merit further interpretation.

(6) Tang Damin, a campaigner in Beijing for Greenpeace East Asia, said in emailed comments that while “Beijing is addressing the problem seriously and pushing reusable containers as the right solution,” the policy would be far more effective with incentives like deposit return programs. (*The New York Times*, 01 January 2021)

(7) “The levels of environmental protection and recycling will really upgrade only if the entire supply chain follows through,” said Zheng Yixing, the founder of the Helihuo Environmental

Technology Company in Beijing, which promotes commercial recycling. (*The New York Times*, 20 January 2021)

In the news about the recycling policy and its implementation in Beijing, the reporter quoted a speech from a social group and a company. Their words were reported for the argument of two topoi, advantage and responsibility. The topos of advantage can be paraphrased by means of the following conditional: “If an action under a specific relevant point of view will be useful, then one should perform it”. The topos of responsibility is explained as: “Because a state or a group of persons is responsible for the emergence of specific problems, it or they should act to find solutions to address these problems” (Wodak, 2001, p. 75).

In example (6), the premise is that recycling is an environmental-friendly policy. Beijing, the capital of China, is strongly advocating the recycling policy. From the conclusion rule can we know that the nation’s policy is sound. The readers receive the message that China strives to reduce plastic pollution, which shows the responsible image of China. The achievements of China’s environmental governance are affirmed to a certain extent. The rest of this coverage, however, takes an oblique

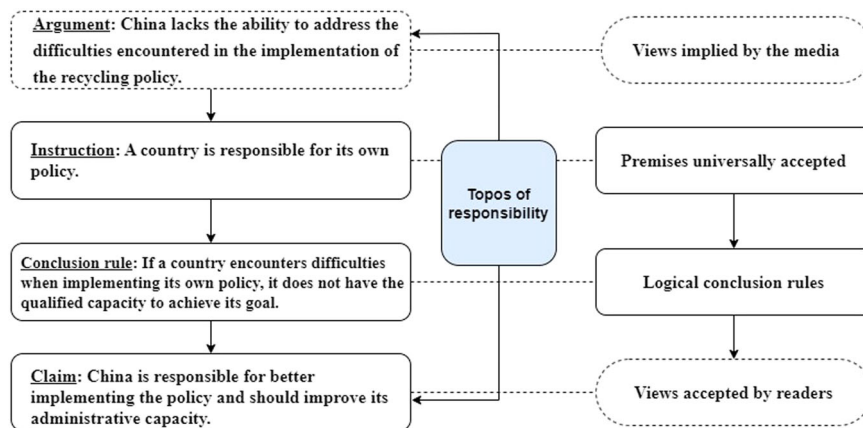


Fig. 6 The topos of responsibility in the reported speech concerning “factors”. The possible perception process of the readers when they comprehend the news report in the logic of “responsibility” topos in example (7). The premise denoted in the news report is that a country is responsible for its own policy. The conclusion rules connect the premise and the claim. The implicit argument that China lacks the ability to address the difficulties encountered in the implementation of the recycling policy suggested by the newspaper can be inferred from the claim.

Table 3 The top 20 notional words from the frequency list.

Rank	Frequency	Words	Rank	Frequency	Words
1	300	China	11	53	plastic
2	93	environmental	12	51	climate
3	86	Chinese	13	51	new
4	75	coal	14	50	country
5	74	CFC	15	50	officials
6	74	government	16	49	pollution
7	71	Beijing	17	49	power
8	69	emissions	18	48	last
9	61	year	19	39	production
10	54	energy	20	37	ozone

attitude toward the recycling policy. In example (7), we can infer that China might have some problems in the entire supply chain. The logic of topos of responsibility in this reported speech implies that since China has proposed this policy, it should also propose solutions for the associated issues and improve the capacity to implement policies (see Fig. 6).

Context-analysis. Mautner (2016) concluded that the discourse prosody shows what social issues a specific lexical term is associated with and the attitudes concerning those issues. The repeated occurrence of a word and its collocation in the coverage reflects an inclined attitude of the reporter. By analyzing the semantics and underlying meaning, we can discover the ideological values implied in the coverage, thus providing more forceful support for the discourse analysis of this study. In addition to the four keywords “China”, “Chinese” “environment” and “environmental” used to select the news reports from the website, the word “coal” with the highest frequency and “pollution”, which recurrently collocates with several other notional words such as “emissions, plastic, climate, and ozone” are selected for contextual analysis (Table 3).

“Coal” has appeared 75 times in the corpus. After checking the concordance of the word, it is found that the word has frequent occurrences with “increase” and “decrease” among the verbs, and “consumption” and “production” among the nouns (Table 4). The context shows that *The New York Times* paid attention to China’s use of coal. As China was permitted to cut carbon emissions after signing *The Paris Agreement* and proposed its “peak carbon dioxide emissions” and “carbon neutrality” policies,

Western countries have paid close attention to whether China can realize its commitments in the process of development. *The New York Times* seems to construct the related issues of coal consumption in China in a negative way. It can be seen that words such as “increase” and “rise” are of higher frequency, indicating the media outlet reported more coal consumption in China than its eradication and to some extent ignored China’s successes in reducing coal use.

“Pollution” is another word with high frequency in the corpus. The words, such as “curb”, “control”, and “reduce” co-occurring with pollution convey a seemingly positive discourse prosody (Table 5). These coverages are reported on Chinese leaders’ commitments and their implementation of environmental policy. The media recognized the achievements that China had made in some aspects of pollution treatment and commented, such as in example (9), “This is but one example of how China’s air-pollution policy may have been a bit too successful. The Chinese government deserves credit for its resolve in tackling the problem”. After extending the span, however, we found that more pundits took the view that China only made the promises but has been unable to achieve the goal, which is shown after the words such as “but” (see examples 8,9). The closest co-occurring words of the note word convey positive semantic prosody, but the words in a bigger span lead to a semantic transition and finally portray a contrasting attitude.

(8) China’s struggle to eradicate CFC-11 embodies the hurdles it faces in cleaning up after decades of frenetic industrial expansion when officials often treated pollution as a necessary price of prosperity. But it also has consequences far beyond the nation’s borders. (*The New York Times*, 24 June 2018)

(9) This is but one example of the ways in which China’s air-pollution policy may have been a bit too successful. The Chinese government deserves credit for its resolve in tackling the problem. Yet the rapid concentration of power under President Xi Jinping—helped along by the steady purging of officials suspected of corruption—has put apparatchiks and bureaucrats on edge. And their rush to please has unexpectedly distorted how environmental policy is made and implemented, sometimes with unwanted consequences. (*The New York Times*, 14 January 2018)

China’s national image constructed in *The New York Times*. The perception of national identity as a discursively constructed category is reproduced by the media and the press through communication among different social entities (Dekavalla, 2010).

Table 4 The representative concordance of “coal”.

You just have to read them closely.	Coal	<u>production increases</u> appear to be an attempt
the world’s total last year—and	coal	<u>consumption</u> . (The share of coal in China’s
threaten global emission reduction goals.	Coal	<u>consumption</u> will <u>rise</u> by 6 percent compared to
year’s end it would slash its	coal	<u>consumption</u> by 30 percent more than the goal
emissions year or a hard cap on	coal	<u>consumption</u> . But the pledge only consolidated
in 2018 less than 8 percent of China’s	coal	<u>consumption</u> involved imported coal
reveals that beyond the immediate	coal	<u>production increase</u> , the government cites crisis
“We will make every effort to <u>increase</u>	coal	<u>production and supply</u> ,” said Zhao Chenxin,
about when Beijing will <u>eliminate</u>	coal	in recent days, President Biden was among
temporarily from an ambitious plan to <u>cut</u>	coal	<u>use</u> in some parts of the country

Table 5 The representative concordance of “pollution”.

pollute very little. The haste to fulfill	pollution	- <u>control</u> targets may also reveal a greater
Xi have brought significant gains against	pollution	so far. Steel production in China, after
steel production centers, to <u>reduce</u> air	pollution	by 15 percent this winter. Even tougher measure
satellite analyses of China’s air	pollution	<u>reductions</u> . And China has ratified and adopted
it declared all-out war <u>against</u> air	pollution	.The government issued an action plan requiring
governments demand that China <u>curb</u>	pollution	must be a plot to contain the
made great strides in <u>reducing</u> China’s	pollution	but a perfect storm of northern winds
had been inexorably <u>tightening</u>	pollution	standards. The country’s top priority has
had failed to reduce production to <u>lower</u>	pollution	In Inner Mongolia, a northern Chinese region
a systematic rollout to <u>clean up</u> plastic	pollution	The plan is likely to be welcomed

The New York Times seems to take the perspective of supervision of the environment to question the governance of the Chinese government. The questions and doubts create a “sense of presence” for the audience (Li, 2020), which enables it to manipulate public opinion. Furthermore, the reported speech covertly promotes the press’s opinion via the logical presentation of topoi, which may lead to the reinforcement of China’s image in the reader’s mind. Based on the above discourse analysis, this study summarizes China’s national images constructed by environmental news in *The New York Times* as follows:

- (1) Ignoring the balance between people and the environment in the context of economic growth

The New York Times published news stories about the overuse of chemical materials in some Chinese factories that pursue higher profits. The opinion that these factories are a threat to the climate was spread via the topos of threat in the reported speech, which helps construct an image of China that pursues economic growth at the expense of the environment. Except for the factories, the speech of Chinese officials, such as “go all out to make up for the loss”, was extracted intentionally, to show that China put economic interests before a sustainable environment.

- (2) Proposing actively the governance plan but with poor governance ability

The topos of responsibility were employed to imply that China has committed to bringing forward solutions to environmental issues. From the concordance analysis, however, we can see that the focus of the newspaper is on remedial action in China’s environmental policies. It gave the readers an impression that China was good at making commitments but could not achieve its goals and plans.

It seems that *The New York Times* potentially plays a role in the supervision and accountability of the environmental problems in China. However, the media outlet did not depict the facts comprehensively.

China’s emissions of CFC-11 have received significant attention from the media. A study titled “Increase in CFC-11 Emissions from Eastern China Based on Atmospheric

Observations” published in the journal *Nature* on May 22, 2019 (Rigby et al., 2019) revealed that global CFC-11 emissions increased from 2014 to 2017. Atmospheric samples from Korea and Japan showed that 40–60% of these emissions originated from Shandong and Hebei provinces in China. *The New York Times* focused its reporting on these two provinces and provided some emission figures, but did not provide any historical comparison with China or comparison with other countries. However, as early as 2019, when Rigby and his team’s study was published, China had already recognized the serious consequences of CFC-11 emissions and had taken remedial action, including tightening regulations on Freon production and emissions. In fact, China conducted a special law enforcement inspection against illegal acts involving ozone-depleting substances (ODS) in August 2018, as reported in an article titled “The Ministry of Ecology and Environment: No tolerance for illegal acts involving ozone-depleting substances” released on October 31, 2018, on CHINANEWS (Ye, 2018). Measures such as destroying illegal CFC-11 dens and seizing production of raw materials and illegal CFC-11 have been implemented over the past several years. Furthermore, recent studies published in *Nature*, titled “A Decline in Global CFC-11 Emissions during 2018–2019” (Montzka et al., 2021) and “A Decline in Emissions of CFC-11 and Related Chemicals from Eastern China” (Park et al., 2021), indicated that CFC-11 emissions in eastern China have decreased since 2021. *The New York Times* put its emphasis on the negative data of China’s CFC-11 emissions and offered merely a few words on China’s efforts and achievements. The lacuna of reports on the following studies which pointed out the decline in the emissions in China reveals the ideological inclination of the medium.

In addition to the incomplete depiction of China’s achievements, the news reports also overemphasized China’s pursuit of economic growth. Since the 19th National Congress of the Communist Party of China (CPC) when China unprecedentedly elevated the strategy of ecological conservation, China has continued to promote the process of protecting and improving the ecological environment. In advance of the 26th Conference of

the Parties (COP26) of the United Nations Framework Convention on Climate Change (UNFCCC), China has made great accomplishments in environmental governance. The *CHINA-NEWS* (www.chinanews.com.cn) and the *People* (www.people.com.cn) have reported that China focuses on the synergy of pollution reduction and carbon reduction and promotes the overall green transformation of economic and social development, thereby initiating the comprehensive modernization of the harmonious coexistence of man and nature. From 2017 to 2021, China witnessed several positive changes in environmental governance, including a decrease of 25% in the PM2.5 concentration in cities, an increase of 4.9 percentage points in the proportion of days with good air quality, an increase to 84.9% in the proportion of water bodies reaching or exceeding Class III, and national forest coverage of 23.04% (Yuan, 2022). In addition, China has actively participated in global environmental governance and made a solemn commitment to reach “carbon neutrality” by 2060.

Although China, as a developing country, has a long way to go on the road to green development, it has taken responsibility and always given equal consideration to economic benefits and environmental protection, making great efforts to contribute to global environmental governance.

The aforementioned discourse on the negative portrayal of China in *The New York Times* can be attributed to the intricate socio-cultural context. The global environmental governance landscape has become increasingly complex due to unprecedented changes and the ongoing pandemic, with countries taking positions based on their political and economic interests. Since the Trump administration took office, the United States has consistently emphasized the challenges posed by China, framing the “China threat” as the basis for its view of the country and fueling intense strategic competition. This perspective of China as a threat is also reflected in the realm of environmental governance, where China is often portrayed not only in its own right but also in terms of America’s values and interests in relevant reports (Lee, 1990). As a renowned newspaper, *The New York Times* may not be exempt from the political logic of safeguarding national interests. Reporting is fundamentally influenced by the need to benefit national development and uphold long-term national interests (Luo, 2013). This national interest-oriented ideology is particularly evident in the newspaper’s coverage of conflicts of interest between China and the United States, often resulting in an exaggerated portrayal of China’s environmental problems within such a framework. As a result, the news coverage in *The New York Times* is not purely informative, but rather biased and influenced by this accountability to a particular perspective.

Discussion

This study examined the discourses about the Chinese environment in *The New York Times* with the help of corpus techniques. In the discursive construction of the Chinese environment, the media employed argumentative schemes to construct China as a country that puts economic growth before the environment and proposes promising goals but is powerless to achieve them. News discourse affects the production and reception of what the complex messages in news reports or commentaries mean and leads the audience to accept a certain value in an unnoticeable way. To some extent, it underpins the construction and reconstruction of social reality. In the news context, the subjects (e.g., reporters, editors, etc.) are constrained by factors such as social and cultural contexts, situations, and subject identities, in addition to some basic factors such as news facts and news values. When the subjects show their opinions, attitudes, and positions

on a news event, they might disguise their actual communicative intentions, and lead the masses to support or oppose a certain social action by sophisticatedly using linguistic structures and rhetoric (Tirkkonen-Condit, 1996), which makes news discourse persuasive and convincing. Therefore, news discourse, mediating between the subjects and readers, not only has the function of expression but also assists in promoting the hidden ideology (Yang, 2015). Previous research on the discursive construction of China’s image in the Western media has predominantly utilized the framework of Systemic Functional Linguistics, with a particular focus on the interpersonal function of linguistic representation and lexical semantics that reflect the news media’s attitude. In this study, the persuasive connotation in news coverage was examined, and building upon the interpretation of the discourse connotation in image construction, it further demonstrates the persuasive logic employed by the media and its role in shaping readers’ cognition.

In terms of China’s image construction, the portrayal of China’s environmental image by *The New York Times* aligns with the broader trend in Western media’s depiction of China’s image in politics (Liu, 2017), economy (Ma, 2015), the safety of public sanitation (Zhang, 2022), sports (Manzenreiter, 2010) and other domains, which tends to emphasize negative aspects (Zhang and Wu, 2017). As discussed earlier in the preceding section, this pattern is closely intertwined with the political and economic dynamics between countries. Manzenreiter (2010) argues that the advanced image of China failed to win over the hearts of Western public. China had little chance in the meaning-making competition, which the Western media dominated. The analysis of the empirical data from global opinion polls in his study shows that the Western public has an inertia to develop a sympathetic understanding of China. Manzenreiter points out that the misperception is also concerned with the mainstream media. Rather than preparing the space for a dialectic exploration of alternative modes and views of the various entities throughout the world, the media contribute to the reinforcing of national stereotypes. In response to the ideological stance of Western media, China should proactively highlight its achievements to the global audience. This could include sharing transparent environmental data, promoting traditional Chinese ecological philosophy to international audiences, and utilizing platforms such as the United Nations or other international organizations to disseminate China’s self-constructed environmental image. These efforts can contribute to fostering a more comprehensive understanding of China’s environmental governance among the international community.

Conclusion and implications

By conducting a corpus-based CDA, this study has found that the environmental news in *The New York Times* paid attention to the topics of “the current situation of pro-environmental actions in certain Chinese cities”, “government’s attitude and solutions to environmental problems”, and “China’s achievements on environmental governance and unresolved issues”. The newspaper employs the topoi such as “threat” and “responsibility” in the argumentation strategy to construct China’s national image as “ignoring the balance between people and the environment in the context of economic growth” and “proposing actively the governance plan but with poor governance ability”. With the support of the corpus tool, the media’s possible intention to exaggerate China’s deficiencies in environmental governance is better revealed.

To build an active national image on the global stage and better unite with the international community on environmental issues, China ought to spread environmental-related information about

itself more transparently via a vigorous international discourse system and diversify means of communication to give the world more ways to see its pro-environmental actions. Furthermore, the conflict of interests and ideology should not hinder the development of global environmental governance. Rather than competition, countries should shoulder their responsibilities jointly and work together to safeguard the beautiful earth.

This research offers a fresh analytical direction that sheds light on the portrayal of China's image in news discourse, specifically focusing on how China's image in terms of environmental governance is depicted by *The New York Times*. The understanding of China's image goes beyond the mere production of discourse. Equally important is how the Western public perceives the image constructed by the media, as it contributes to a comprehensive analysis of image construction. Therefore, an important future direction in the discursive construction of China's image could involve studying the public response to the shaped image, in order to gain insights into how it is received and interpreted by the target audience. On the other hand, it is recognized that while the samples within the sub-corpus are drawn from the timeframe spanning 2010 to 2016, this interval does not perfectly coincide with the temporal boundaries of the designated target corpus, which spans from October 18, 2017, to November 30, 2021. The rationale behind the random selection of the sub-corpus rests on its potential to offer a representative glimpse into the broader corpus. Nevertheless, the temporal incongruity between the reference corpus and the observed corpus introduces certain constraints. Consequently, the study's capacity to capture the emerging keywords, particularly during the later period, is potentially compromised. Subsequent studies are encouraged to address and ameliorate this issue by enlarging the corpus's capacity and temporal scope for further advancement in the field.

Data availability

The datasets analyzed during the current study, which serves as the reference corpus, are available in the NOW (News on the Web) repository, [<https://www.english-corpora.org/now/>]. The datasets serving as the observed corpus are available from the corresponding author upon reasonable request.

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Competing interests

The authors declare no competing interests.

Ethical approval

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Additional information

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