

Conceptual Metaphor Analysis of Climate Change in Chinese Media: A Comparative Study of State-Run and Market-Oriented News Outlets

Chunxiang Zhou¹, Kasim, Z. M.¹, Mohd Hanafiah, H. A.²

¹ Faculty of Modern Languages and Communication, Universiti Putra Malaysia, Serdang, Malaysia

² Faculty of Educational Studies, Universiti Putra Malaysia, Serdang, Malaysia

Correspondence: Chunxiang Zhou, Faculty of Modern Languages and Communication, Universiti Putra Malaysia, Serdang, Malaysia.

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Abstract

This paper explores how conceptual metaphors and discourse strategies are used in climate change communication, focusing on how state-run and market-oriented news outlets shape public understanding through metaphor. The study examines two major Chinese English-language newspapers: the state-run *China Daily* and the market-driven *Sixth Tone*. The analysis covers articles published between 2020 and 2022, a period marked by key events such as President Xi Jinping's speech at the UN General Assembly and the COVID-19 pandemic. The findings highlight the metaphors each outlet uses to frame climate change and uncover the ideological influences that may shape public perceptions.

Keywords: conceptual metaphors, climate change, Chinese news reports, comparative study

1. Introduction

In 2015, at the 21st United Nations Climate Conference, Chinese President Xi Jinping appealed for international cooperation on the global climate crisis, which drew the world's attention to China's responsible role in addressing the issue. Since then, China has consistently been working on developing climate change actions and plans. This thesis is about conceptual metaphor analysis in climate change discourse from two Chinese newspapers in English, namely *China Daily* and *Sixth Tone*, which is set in pandemic period, during which significant events related to climate change have taken place. President Xi Jinping stated the commitment to peaking carbon emissions and achieving carbon neutrality at the United Nations General Assembly on September 22, 2020. In the same year, Covid-19 initially emerged in China at the end of 2019, rapidly spread worldwide, marking a critical event that has significantly impacted global health and economies. In 2021, the delegation from China joined the 26th Conference of the Parties to the UNFCCC (United Nations Framework Convention on Climate Change) and nailed down the details of Paris Agreement articles. At the 20th National Congress of the Communist Party of China in 2022, President Xi Jinping spoke about the importance of building a beautiful China, promoting sustainable development, and addressing environmental concerns. Conceptual metaphors in these two newspapers are analyzed and compared to reveal the frames developed in different newspapers around the pandemic periods. This study aims to investigate the dominant metaphors in the two different newspapers. It begins with the background of the study, which explains the reason for selecting climate change discourse from Chinese newspapers, the problem statement, scope, research objectives and questions, significance, conceptual framework, and conceptual definitions. The study is significant as it can provide effective strategies for people to understand the scientific ideas and improve the public's awareness of climate change crisis.

1.1 The Urgency of Climate Change Communication in China

Climate change has become a critical global issue, with severe consequences for ecosystems, public health, and economic stability. The Intergovernmental Panel on Climate Change (IPCC) 2022 report reaffirms how climate change is directly impacting ecosystem services that play a crucial role in supporting human health, livelihoods, and overall quality of life (Parmesan, Morecroft & Trisurat, 2022).

China is currently facing serious air pollution and ecological issues, making climate change mitigation a top priority (Shi et al., 2021). As one of the world's largest emitters of greenhouse gases, China's efforts to reduce emissions and transition to renewable energy sources are essential in addressing the global climate crisis. Additionally, China's vast population and rapid industrialization make it particularly difficult to respond to climate-related challenges such as extreme weather events, sea-level rise, and water scarcity.

The media in China has taken on the responsibility of conveying and amplifying the government's ambitions by widely discussing climate change. Researchers, such as Schäfer and Schlichting (2014), have noted an increase in the examination of climate change discourse within news media since the mid-2000s. Moreover, scholars like Boykoff and Roberts (2007) have highlighted the media's significant potential in explaining the complexities of climate change. The extensive coverage of these issues in newspapers, television, and daily conversations indicates a growing societal engagement with the topic. This reflects the media's critical role in shaping public understanding and perception of climate change, as well as influencing policy and public discourse on the matter.

Metaphors are often used in climate change communication to help make complex scientific concepts more accessible and relatable to the general public. To improve people's understanding of climate change, Bord & Fisher (2000) stated that the fundamental determinant of intentions to cope with global warming is the correct understanding of it and metaphor can be an effective way of impacting people (Bord, R. J., O'connor, R. E., & Fisher, A., 2000).

Many researchers have explored the corresponding relationship between the climate change discourse and responses. However, there is still a lack of cognitive analysis about climate change from news reports. Moser & Dilling (2007) stated there is a lack of public understanding of climate change. They considered it's a necessity to develop mental models to improve the public's awareness. Therefore, it's important to explore how conceptual metaphors can enhance public awareness and understand the cognitive impact on the public's mindset (Moser, S. C., & Dilling, L., 2007).

1.2 Research Objectives and Research Questions

This study analyzes the conceptual metaphors in the climate change discourse to discover how the metaphors frame the climate change discourse and raise public awareness about climate change in China. It explores the conceptual metaphors deployed in China Daily and Sixth Tone, which have distinct missions and roles in important Chinese cities, catering to different audiences due to their state-run or market-oriented criteria.

China Daily, a state-run English-language daily newspaper in China, provides news and insights on Chinese affairs to a global audience. China Daily is known for its balanced reporting, making it a valuable source for understanding China's perspectives on international events and domestic issues. Sixth Tone offers an insightful perspective on societal and cultural issues in China with much more focus on the local readers.

The two newspapers occupy prominent locations in China, specifically in Beijing and Shanghai, which are the country's political and economic centers. China Daily is a national newspaper located in Beijing, the political center of China. On the other hand, Sixth Tone, based in Shanghai, focus more on contemporary and local issues in China.

By comparing the conceptual metaphors used in the two distinctive outlets, this study is committed to examining the mapping structures between the source domain and the target domain and figuring out which mapping structure is preferred in the different newspapers. After analyzing the similarities and differences of conceptual metaphors, this study investigates how the different outlets shape public perception of climate change by manipulating conceptual metaphor tactics.

Based on the above research objectives, the research questions of this study are proposed:

- (1) What conceptual metaphors appear in news articles on climate change?
- (2) How does the distribution of metaphors related to climate change differ between China Daily and Sixth Tone?
- (3) How have the trends in metaphor usage related to climate change evolved from year 2020 to 2022 in China Daily and Sixth Tone?

By coping with these research questions, this study seeks to offer the linguistic methods to comprehend the climate change issue in Chinese news media.

2. Literature Review

2.1 Metaphors as Cognitive Tools in Scientific Climate Communication

Though climate change is widely recognized as a scientific term, it's necessary for students to be aware of and comprehend this scientific issue. Deignan pointed out that the young generation is particularly vulnerable to the consequences of climate change. Therefore, they need systematic knowledge about climate change at school (Deignan, 2017). Besides that, Morris also mentioned that to deal with the decreasing interest of participation of social scientific issues, it's essential to include them in textbooks (Morries, 2014). To help students hold conceptions of climate change, Niebert and Gropengiesser (2013) interviewed 35 18-year-old students. Materials were selected from their textbooks. Through metaphor analysis and qualitative content analysis, it revealed that students and scientists had different thinking patterns about climate change conceptions. In this study, it concluded that students' mental models could be reflected through metaphorical conceptions (Niebert, K., & Gropengiesser, H., 2013). Pauwels (2013) pointed out that scientists preferred to utilize metaphor to explain the complexity and uncertainty to the public (Pauwels, 2013). Koteyko and Atanasova (2016) held the same opinion with Pauwels (2013). They believed that metaphors were important tools to explain scientific concepts like climate change to non-specialists (Koteyko & Atanasova, 2016). Deignan, Semino, & Paul (2019) investigated the metaphors about climate change used in the research articles, educational texts and secondary school students. By interviewing students aged 11-16 from England, the study found that metaphors about climate change used by researchers were highly technical, the educational materials explained and extended metaphors. However, students may develop inaccurate understandings by developing their distinctive metaphors (Deignan, Semino, & Paul, 2019). In these studies, metaphors were used as the cognitive tool to perceive the scientific conception of climate change.

Though these studies have examined the function of metaphors in the scientific materials, they mainly discussed the contexts from experts to non-experts or from teachers to students in western countries. There is limited research on how the conceptual metaphors about climate change are deployed in Chinese contexts, particularly in state-run and market-oriented news outlets.

2.2 The Role of Metaphors in Political Discourse on Climate Change

Apart from being scientific discourse, climate change is widely considered as an important political issue since the challenge is confronted by the whole world. Metaphor analysis is considered as the vital tool to inspire international cooperation and global response. Shaw and Nerlich (2015) analyzed metaphors in 63 policy documents published between 1992 and 2012, revealing how metaphors were employed to discuss climate change in these documents (Shaw & Nerlich, 2015). Ahmed (2022) agreed political leaders played an important role in controlling climate change. He investigated metaphors used by world leaders and specialists to draw public's attention to address climate change. He argued that conceptual metaphor was an effective tool for performing a persuasive function and conveying speakers' messages (Ahmed, 2022).

Although these studies have discussed the metaphor usages in political contexts in depth, such as the political documents, country leaders, etc. There is still a lack of research on how metaphors raise public awareness in Chinese political materials, as exemplified by the climate change discourse in state-run and market-oriented newspapers. It is essential to figure out how Chinese media use metaphors to express intended climate narratives.

2.3 Framing Climate Change: Discourse Analysis in the Media

Scholarly attention has also been given to how climate change is framed in the media. Discourse analysis, particularly through the lens of framing theory (Gamson & Modigliani, 1989), has provided insights into how media narratives shape public awareness. Grundmann and Krishnamurthy (2010), for instance, employed a corpus linguistics approach to investigate how different countries' media framed climate change, highlighting the narrative features, and driving factors that influence public awareness (Grundmann and Krishnamurthy, 2010). In such discourse, metaphor stands out as a notable linguistic feature that aids in understanding climate-related issues.

Though the studies have investigated many countries across the globe, there is no fine-grained examination about specific country (Hase, Mahl Schafer & Keller, 2021). Most existing discourse analysis studies are conducted in Western contexts or through comparative perspectives involving Western media. There is a gap in analyzing how Chinese media, particularly state-run and market-oriented outlets, frame climate change and how these frames differ.

2.4 The Importance of Metaphor Use in the Chinese Climate Change Context

The previous studies have already demonstrated the importance of metaphor analysis in climate change communication and discourse, emphasizing how metaphors shape public understanding, policy decisions, and societal responses to this critical global issue. Furthermore, in the Chinese context, the use of conceptual metaphor can help shape public opinion, influence policy decisions, and engage the public on the issue of climate change. Metaphors can simplify complex topics, making them more accessible to a broad audience. This is particularly useful in a country as diverse and linguistically rich as China, where clear communication can bridge language and cultural gaps. Metaphors rooted in traditional Chinese culture or history can particularly resonate strongly with the public. Metaphors can frame issues in a particular way, highlighting certain aspects while downplaying others, based on which the employment of conceptual metaphor can be used strategically to influence public perception. In addition, the metaphor use can facilitate communication with international audiences and enhance China's discursive power by conveying ideas and values effectively, which is one of the main aims of China's media coverage.

Although studies have investigated many countries across the globe, there is a lack of fine-grained examination of specific countries (Hase, Mahl, Schafer, & Keller, 2021). Therefore, there is a significant gap in working out how the metaphors are used in the climate change discourse in Chinese news media which are driven by the political party or markets to frame the climate narrative and shape public perception. Research is needed to explore how Chinese media strategically employs metaphors to frame climate issues for both domestic audiences and international diplomacy efforts.

3. Methodology

The news articles are selected during the critical climate change moments: year 2020, 2021 and 2022. The two carbon goals, carbon emission peak and carbon neutrality, were proposed in September 2020, 2020, which is a landmark in China's efforts to combat climate change. In October 2022, the 20th National Congress of the Communist Party of China (CPC) began, featuring a speech by Xi Jinping highlighting China's determination to strengthen ecological sustainability. This study will collect data from 2020 and 2022 to discover how the different newspapers explain climate change issues and what are the similarities or differences of conceptual metaphors from different newspapers to shape people's minds.

Due to the different genre of the newspaper, China Daily is the government-controlled newspaper and Sixth Tone is the market-oriented one, these two newspapers are selected to examine the conceptual metaphors in the climate change discourse. This study focuses on the news articles from the editors, articles written or republished by the news agency were deleted because of the over formal text style. Articles with the keyword 'climate change' were selected, while those that focused primarily on other topics were excluded. From China Daily, 130 articles were selected from 2020, 371 from 2021, and 183 from 2022. In contrast, Sixth Tone had 17 articles in 2020, 37 in 2021, and 44 in 2022. This data reflects the variation in climate change coverage between the two newspapers over these years.

3.1 Instruments

The tool used for data analysis in this study is Wmatrix (5.0), an online corpus analysis software that automatically codes the semantic domains of the uploaded corpus. It uses the Longman Multifunctional Classification Dictionary, which includes 21 upper semantic domains and 232 sub-semantic domains. Since Wmatrix has its own USAS semantic tagger framework, it is suitable for this research.

After automatic and manual tagging, word frequencies can be ordered. Wmatrix is used here to run collocation lists and analyze lexical bundles, helping determine the meaning of words in context and how metaphors highlight or obscure certain aspects of the text.

Although Wmatrix codes data quickly, manual work is still needed to identify metaphorical words, as corpus-assisted analysis may overlook hidden or implicit metaphors. To complement the software approach, manual methods like the Metaphor Identification Procedure (MIP) are introduced. MIP, proposed by the Pragglejaz Group (2007), helps identify whether words have metaphorical meanings in context by comparing their basic and contextual meanings. While MIP works well for indirect metaphors, Steen (2010) extended this with MIPVU, which identifies direct metaphors and implicit expressions like similes or analogies. Despite its limitations, MIP is sufficient for identifying indirect metaphors in this study (Steen, 2010).

MIP has two main shortcomings: broad definitions of lexical units (e.g., “smoke” as a noun or verb), and the challenge of determining a word’s basic meaning. To address conceptual metaphors, Steen (2007) proposed a five-step process: identifying metaphor-related words, identifying propositions, identifying open comparisons, identifying analogical structures, and identifying cross-domain mappings (Steen, 2010). Conceptual metaphors are recognized when the target domain is explained using a source domain, enriching the conceptual structure. Steen’s five-step procedure will be used in this study, detailed in section 4.

3.2 Analytical Framework

Two analytical frameworks were adopted in the current study. They are the critical metaphor analysis and comparative framing analysis. The critical metaphor analysis framework is used for analyzing the conceptual metaphor structures in the climate change discourse and the comparative framing analysis aims to interpret the underlying thoughts of texts.

Critical Metaphor Analysis

Critical Metaphor Analysis draw upon the theories of pragmatics, corpus linguistics and other theories constructs the research framework of critical metaphor analysis. To analyze conceptual metaphors in the climate change discourse from the two different newspapers, this study adopts critical metaphor analysis approach. Critical metaphor analysis takes three steps: (1) Metaphor identification (2) metaphor interpretation (3) Metaphor explanation (Charteris-Black, 2004). Charteris-Black proposes two steps to identify metaphor: First step is based on the definition of metaphor to select possible metaphors in the designed corpus. Step 2 is further qualitative analysis of possible metaphors. As for interpretation of metaphor, it refers to excavating the relationship between metaphor and the pragmatic factors. Metaphor explanation mainly involves analyzing the persuasive role of metaphor according to social context. Charteris-Black argues that metaphor can evoke emotion and achieve persuasion through lexical choices (Charteris-Black, 2004).

Conceptual Metaphor Analysis

Traditional rhetoric has always regarded metaphor as a figure of speech that polishes language and improves rhetorical effect. Since Lakoff and Johnson (1980) published *Metaphors by which we live*, the field of cognitive linguistics has regarded metaphor as a cognitive tool and way of thinking for people to understand the world and believes that metaphor is rooted in people’s experience. Most of our conceptual system is metaphorical in nature. The contemporary metaphor theory proposed by Lakoff and Johnson etc. has offered a new approach to metaphor research, which has fundamentally changed the study of metaphor. The cognitive nature of metaphor has gradually become the focus of scholars’ attention. This study intends to analyze conceptual metaphors existing in the climate change discourse to dig out how these conceptual metaphors shape people’s perception about climate change issue.

4. Discussion

4.1 Discussion of Metaphors in Sixth Tone from 2020 to 2022

Discussion of Dominant Metaphors in Sixth Tone 2020

Based on the list of metaphors used in Sixth Tone in 2020, several deductions about how climate change news was reported can be made:

Table 1. All metaphors in Sixth Tone in 2020

Source domain	Types	Tokens	Resonance	% of total resonance
War metaphor	8	16	128	24.2
Color metaphor	9	42	378	71.3
Physical metaphor	4	6	24	4.5
TOTAL	21	64	530	100

Dominance of Color Metaphors: The fact that color metaphors account for 71.3% of the total resonance indicates a significant use of vivid, colorful language to describe climate change. Color words “green, yellow and red” are used metaphorically to indicate the degree of environmental protection. This refers to the metaphor usage strategy that color metaphors are apt to intrigue the imagination and evoke emotion, which facilitates the accessibility and relatability of abstract concepts. As the first ranking metaphor genre, color metaphors in this market-oriented newspaper are regarded as the preferable methods to describe the complex climate change terms, so as to strengthen its readability.

A Majority of War Metaphors: War metaphors occupy almost a quarter, which emphasizes the frame that addressing climate change is a battle or a fight. War metaphors are shown in the words: combat, fight, threat and save. In the mapping structure, people treat climate

change is just as warriors to the vicious enemy. It highlights the emergency and severity of the climate phenomenon in China, aiming to raise people’s awareness and encourage them to act against it.

A Small Portion of Physical Metaphors: The physical metaphors refer to the body parts or physical health, which are used to imply the significance of environment protection and the healthy status of the natural environment. It is shown in Table 1 that those physical metaphors take up 4.5% of the total resonance. Through constructing this mapping structure, these metaphors express the significance of protecting environment.

Integrated Impact of Metaphorical Approaches: The comprehensive use of color, war and physical metaphors form a filtered screen to select some climate change related opinions and values for the readers. Though the conceptual metaphors are not so prevalent in 2020 in Sixth Tone, it is still obvious to observe that the reports are striving to narrow the gap of climate change experts and general readers. The selection of metaphors makes the abstract scientific terms more intelligible and illustrates the necessity to focus on climate change.

Discussion of Dominant Metaphors in Sixth Tone 2021

There are more variations of metaphor usage in Sixth Tone 2021. More emotion metaphors are present and account for a large portion of the total resonance. The four main conceptual metaphors related to climate change are journey, physical, emotion and war metaphors, which frame the climate change discourse in multiple forms.

Table 2. Distribution of All metaphors in Sixth Tone 2021

Source domain	Types	Tokens	Resonance	% of total resonance
Journey metaphor	5	49	245	38.6
Physical metaphor	4	4	16	2.5
Emotion metaphor	8	37	296	46.7
War metaphor	7	11	77	12.2
TOTAL	24	101	634	100

Journey metaphors are easy to be identified, with 5 types of journey metaphors and 49 tokens. The words goal, step, and footprint appear in the Sixth Tone, suggesting that the process of dealing with climate change is like a journey. The long process involves creating paths and achieving a balanced environment, which is the final goal. When making efforts, people may encounter some obstacles to get rid of.

Physical metaphors are in a small portion. There are 4 types and 4 tokens, shown in the words “eyebrow, wake up and pulse”. This equates to only 2.5% of the total metaphor usage. It indicates a minimal reliance on metaphors related to physical attributes or characteristics when discussing climate change in these newspapers.

Emotion metaphors demonstrate a significant presence, with 8 types and 37 tokens, yielding a resonance of 296. This accounts for the largest share of the total resonance at 46.7%. The substantial use of emotion metaphors reflects the attempt to evoke specific feelings or emotional responses concerning climate change, which might be aimed at mobilizing public opinion or action.

War metaphors, with 7 types and 11 tokens, leading to a resonance of 77, make up 12.2% of the total resonance. This indicates a strategic use of conflict-related imagery to convey the urgency, battles, or challenges in addressing climate change.

In summary, emotional metaphors dominate the discourse, signifying a strong inclination towards engaging readers on an emotional level to possibly elicit a sense of urgency or personal connection with climate change issues. Journey metaphors play an important role in constructing the conceptual structure of climate change discourse, which remind people that addressing climate change is prolonged period. In contrast, physical metaphors are scarcely used, indicating a possibly abstract approach to discussing climate change that relies less on tangible, physical descriptors.

War metaphors are used to highlight the hardship and challenges people need to face and overcome. The scope of metaphors has been expanded, and mapping structures have been enriched in the local newspaper in 2021. The diverse strategies of using conceptual metaphors strengthen public understanding of climate change terms and highlight the climate change issue to increase a sense of urgency.

Table 3. Distribution of All Metaphors in Sixth Tone in 2022

Source domain	Types	Tokens	Resonance	% of total resonance
Building metaphor	2	5	10	0.5
Health metaphor	7	17	119	6.3
Color metaphor	10	124	1240	65.6
Journey metaphor	2	21	42	2.2
Emotion metaphor	10	48	480	25.4
TOTAL	31	215	1891	100

Dominance of Color Metaphor: Color metaphors, as the largest portion, account for 65.6% of the total resonance. “Green” and “blue” are two primary color metaphors to inspire the public’s anticipation and hope for a good environment. With 10 types and 124 tokens, these metaphors are the effective linguistic tool to describe the favorable aspects of changing the climate status.

Obvious Presence of Emotion Metaphor: The emotion metaphors make up about a quarter of the total resonance. With 10 types and 48 tokens, “suffer” and “hit” are the main emotion metaphors to indicate that the implications of the climate change may exert painful emotion on people.

Limited Use of Health Metaphor: Health metaphors are comprised of 7 types and 17 tokens, with 6.3% of the total resonance. Marked with the words “recover”, “be immune to”, and “health”, health metaphors are used to frame the climate change as a patient. It emphasizes the importance of saving the environment from being sick.

The journey metaphor, comprising 2 types and 21 tokens for a resonance score of 42, accounted for 2.2% of the total resonance. Although less prevalent, this metaphor introduces a narrative or process-oriented perspective to the discourse, suggesting the progression and potential pathways for addressing climate change.

Lastly, the building metaphor was the least represented, accounting for only 0.5% of the total resonance. It included 2 types and 5 tokens, with a resonance score of 10, indicating a minimal but still present use of construction or architecture-based metaphors in the climate change narrative.

In conclusion, the distribution of various conceptual metaphors showcases the rhetorical strategies, which aim to demonstrate the climate change issue in diversified aspects. The prevailing use of color and emotion metaphors depicts climate change narratives in a vivid and imaginary scenario, shaping the shared future for public. The complementary use of health, journey, and building metaphors frame the climate change issue in a way that it needs to get rid of obstacles with enduring perseverance.

4.2 Discussion of Metaphors in China Daily from 2020 to 2022

Discussion of Metaphors in China Daily 2020

The given table presents a distribution of various types of metaphors found in the “China Daily” throughout 2020, categorized into several metaphor types such as Emotion, Building, Money, Journey, Kin, War, Color, and Physical metaphors. Each category is analyzed across four columns: Types, Tokens, Resonance, and Percentage of Total Resonance.

Table 4. Distribution of All Metaphors in China Daily 2020

Source domain	Types	Tokens	Resonance	% of total resonance
Emotion Metaphor	14	106	1484	8.6
Building Metaphor	9	169	1521	8.8
Money Metaphor	4	20	80	0.5
Journey Metaphor	25	219	5475	31.8
Kin Metaphor	3	12	36	0.2
War Metaphor	5	90	450	2.6
Color Metaphor	14	582	8148	7.3
Physical Metaphor	5	8	40	0.2
TOTAL	79	1206	17234	100

Types column shows the number of different metaphor types identified within each category. Tokens column reveals the total instances these metaphor types were observed. Resonance measures the depth or impact of these metaphors within the context they were used, quantitatively. % of Total Resonance indicates each category’s proportion in creating an impact or resonance when compared to the total observed across all categories.

For instance, the “Emotion Metaphor” category has 14 different types occurring 106 times with a resonance of 1484, making up 8.6% of the total metaphorical impact. On the other hand, “Color Metaphor” stands out with 14 types occurring 582 times but with a much higher resonance of 8148, claiming 47.3% of the overall metaphorical resonance, the highest among all categories. The “Journey Metaphor” also holds a significant proportion with 25 types found 219 times, achieving a resonance of 5475, constituting 31.8% of the total impact. In contrast, some categories like “Money Metaphor” and “Physical Metaphor” had much less resonance at 0.5% and 0.2%, respectively, indicating their lower impact or frequency of use within the analyzed texts. The table summarizes that there was a total of 79 metaphor types identified across 1206 tokens with a cumulative resonance quantified in the final row.

Discussion of Metaphors in China Daily in 2021

The table outlines the distribution of various metaphor categories as found in “China Daily” throughout 2021. It categorizes metaphors into eight different frames: Physical, Cloth, Health, Emotion, Building, Color, War, and Journey. For each category, the table provides a count of unique metaphor types, the total occurrences (tokens), the combined metaphorical impact or resonance, and its percentage of the total resonance.

Table 5. Distribution of All Metaphors in China Daily 2021

Source domain	Types	Tokens	Resonance	% of total resonance
Physical Metaphor	7	45	315	0.6
Cloth Metaphor	7	31	217	0.4
Health Metaphor	11	154	1694	3.3
Emotion Metaphor	12	87	1044	2.1
Building Metaphor	16	347	5552	11
Color Metaphor	29	1155	33495	66.1
War Metaphor	9	206	1854	3.7
Journey Metaphor	27	241	6507	12.8
TOTAL	118	2266	50678	100

Physical Metaphor: Features 7 types with 45 occurrences, contributing a resonance of 315 and accounting for 0.6% of total resonance.

Cloth Metaphor: Encapsulates 7 types and 31 tokens, yielding a resonance of 217, or 0.4% of the total.

Health Metaphor: Includes 11 types that appeared 154 times, generating a significant resonance of 1694, which represents 3.3% of the total.

Emotion Metaphor: Comprises 12 types with 87 instances, producing a resonance of 1044, equating to 2.1% of the overall resonance.

Building Metaphor: Captures 16 types that occurred 347 times, resulting in a resonance of 5552, or 11% of the total resonance — indicating a noteworthy presence.

Color Metaphor: Dominates with 29 types and 1155 tokens. The resonance is not directly provided, but it significantly impacts at 66.1% of total resonance. This showcases the dominant usage and influence of color metaphors within the content.

War Metaphor: Features 9 types and 206 instances, with a resonance of 1854, making up 3.7% of the total resonance.

Journey Metaphor: Presents 27 types that appeared 241 times, having the largest resonance of 6507, which accounts for 12.8% of the total resonance. This implies a strong thematic focus on journeys or progressions.

The table’s “TOTAL” row indicates an aggregation of 118 types across all metaphor categories, with 2266 total occurrences. The cumulative resonance emphasizes the broad spectrum of metaphorical language used in “China Daily” over the year, with Color metaphors being particularly prominent, followed by a significant emphasis on Journey metaphors. This distribution underscores the diverse metaphorical strategies utilized in the newspaper to convey various frames and narratives, highlighting the importance of visual and spatial metaphors (Color, Building, Journey) in its content.

Discussion of Metaphors in China Daily in 2022

Table 6 provides a summary of metaphor distribution in China Daily throughout 2022, categorizing metaphors into six distinct types: Health, Emotion, Building, Journey, Color, and War. For each metaphor type, the table lists the number of unique metaphorical concepts (Types), the total occurrences of these metaphors (Tokens), their combined significance or impact (Resonance), and their proportion of the overall metaphorical resonance in the communication (% of total resonance).

Table 6. Distribution of All Metaphors in China Daily 2022

Source domain	Types	Tokens	Resonance	% of total resonance
Health Metaphor	3	40	120	0.7
Emotion Metaphor	19	117	2223	13
Building Metaphor	16	166	2656	15.5
Journey Metaphor	21	247	5187	30.3
Color Metaphor	14	478	6692	39
War Metaphor	4	66	264	1.5
TOTAL	77	1114	17142	100

Health Metaphor is represented the least, with 3 types and 40 tokens, creating a resonance of 120, which constitutes 0.7% of the total metaphorical impact. This suggests a minimal emphasis on health-related metaphors in the discourse.

Emotion Metaphor is more prevalent, with 19 types and 117 tokens, yielding a significant resonance of 2223, or 13% of the total resonance. This indicates a strong emotional component in the narrative.

Building Metaphor involves 16 types and 166 tokens, with a resonance of 2656, accounting for 15.5% of the overall resonance. This suggests metaphors related to construction or architecture play a considerable role in shaping the discourse.

Journey Metaphor appears prominently, with 21 types and 247 tokens, generating the highest resonance of 5187, which is 30.3% of the total resonance. This highlights a significant use of journey or path metaphors, possibly indicating narratives of progress, challenge, or transition.

Color Metaphor is the most dominant, with 14 types and 478 tokens, resulting in a resonance of 6692, equating to 39% of the total resonance. This suggests vivid and impactful use of color-related metaphors in communication, potentially enhancing the narrative’s vividness or emotional appeal.

War Metaphor is used sparingly, with 4 types and 66 tokens, leading to a resonance of 264, or just 1.5% of the total resonance, indicating minimal reliance on conflict or battle metaphors.

The TOTAL row sums up the overall metaphor usage across all categories in China Daily for 2022, with 77 unique metaphor types found in 1114 instances, contributing to a collective metaphorical impact. The exact total resonance is not specified but culminates to 100% across all categories mentioned.

This distribution reflects the frames and narrative strategies employed in China Daily’s communication for the year, with a notable emphasis on journey and color metaphors, suggesting a focus on vivid, impactful storytelling that guides readers through narratives of change, progression, or vivid depiction.

4.3 Trends in metaphor usage related to climate change evolved over time in China Daily and Sixth Tone

The evolution of metaphor distribution (Table 7,8,9,10) about climate change in the Sixth Tone newspaper from 2020 to 2022 showcases several notable features and trends:

Table 7. All metaphors in Sixth Tone in 2020

Source domain	Types	Tokens	Resonance	% of total resonance
War metaphor	8	16	128	24.2
Color metaphor	9	42	378	71.3
Physical metaphor	4	6	24	4.5
TOTAL	21	64	530	100

Table 8. Distribution of All metaphors in Sixth Tone 2021

Source domain	Types	Tokens	Resonance	% of total resonance
Journey metaphor	5	49	245	38.6
Physical metaphor	4	4	16	2.5
Emotion metaphor	8	37	296	46.7
War metaphor	7	11	77	12.2
TOTAL	24	101	634	100

Table 9. Distribution of All Metaphors in Sixth Tone in 2022

Source domain	Types	Tokens	Resonance	% of total resonance
Building metaphor	2	5	10	0.5
Health metaphor	7	17	119	6.3
Color metaphor	10	124	1240	65.6
Journey metaphor	2	21	42	2.2
Emotion metaphor	10	48	480	25.4
TOTAL	31	215	1891	100

Increasing Complexity and Diversity: Over the three-year period, there is a clear increase in the complexity and diversity of metaphors used. The total number of types of metaphors rises from 21 in 2020 to 31 by 2022. This growth signifies an expanding linguistic repertoire employed by the newspaper to discuss and frame climate change, reflecting a possible increase in the sophistication of discourse around the subject.

Change in Dominant Metaphors: The dominant metaphor evolves each year. In 2020, the “Color metaphor” was the most prevalent in terms of resonance, accounting for 71.3% of the total resonance. By 2021, the “Emotion metaphor” took the lead with 46.7%, and in 2022, the “Color metaphor” returned as the most dominant, significantly increasing its lead with 65.6% of the total resonance. This fluctuation indicates shifts in the narrative focus and potentially the emotional or visual framing that the publication believes resonates most with its audience when discussing climate change.

Introduction and Disappearance of Metaphor Categories: New metaphor categories are introduced in subsequent years—such as “Building metaphor”, “Health metaphor”, and “Building metaphor” again in 2022 not present in 2020. Moreover, some metaphor categories disappear or are not explicitly mentioned in the following years, highlighting an evolving editorial strategy or changes in the perceived effectiveness of certain metaphors in conveying climate-related issues.

Increase in Tokens and Resonance: There is a noticeable increase in both the number of tokens (from 64 in 2020 to 215 in 2022) and the overall resonance of all metaphors combined (from 530 in 2020 to 1891 in 2022). This trend suggests not only a higher frequency of metaphor usage but also a greater impact or density of these metaphors in the discourse, potentially indicating a more engaged or urgent approach to discussing climate change over time.

Steady Presence of Color Metaphors and Emotion Metaphors: Though there are some variations in tokens and resonance in different metaphors, color metaphors and emotion metaphors still maintain a steady presence, compared with other metaphors. This consistent use of metaphors in Sixth Tone, the market-oriented newspaper, signify publisher’s intension to intrigue public’s emotion and draw their attention to the climate change issues. This kind of newspaper mostly prefers metaphors that can evoke readers’ interest and resonance.

Overall, the gradual increase of metaphor distribution in the Sixth Tone newspaper from 2020 to 2022, albeit with types or quantities, shows they persist in portraying climate change issues effectively. With the employment of diverse metaphors, the conceptual structures have been expanded to different fields and frame the climate change in a complex web, which strengthen public understanding of the scientific and abstract terms.

Analyzing the metaphor distribution in climate change discourse from China Daily from 2020 to 2022, several trend features emerge:

Table 11. Distribution of All Metaphors in China Daily 2020

Source domain	Types	Tokens	Resonance	% of total resonance
Emotion Metaphor	14	106	1484	8.6
Building Metaphor	9	169	1521	8.8
Money Metaphor	4	20	80	0.5
Journey Metaphor	25	219	5475	31.8
Kin Metaphor	3	12	36	0.2
War Metaphor	5	90	450	2.6
Color Metaphor	14	582	8148	47.3
Physical Metaphor	5	8	40	0.2
TOTAL	79	1206	17234	100

Table 12. Distribution of All Metaphors in China Daily 2021

Source domain	Types	Tokens	Resonance	% of total resonance
Physical Metaphor	7	45	315	0.6
Cloth Metaphor	7	31	217	0.4
Health Metaphor	11	154	1694	3.3
Emotion Metaphor	12	87	1044	2.1
Building Metaphor	16	347	5552	11
Color Metaphor	29	1155	33495	66.1
War Metaphor	9	206	1854	3.7
Journey Metaphor	27	241	6507	12.8
TOTAL	118	2266	50678	100

Table 13. Distribution of All Metaphors in China Daily 2022

Source domain	Types	Tokens	Resonance	% of total resonance
Health Metaphor	3	40	120	0.7
Emotion Metaphor	19	117	2223	13
Building Metaphor	16	166	2656	15.5
Journey Metaphor	21	247	5187	30.3
Color Metaphor	14	478	6692	39
War Metaphor	4	66	264	1.5
TOTAL	77	1114	17142	100

Increasing Diversity and Complexity: There is a noticeable increase in the diversity and complexity of metaphors used over the years. While the total number of distinct source domains remained relatively stable (from 79 in 2020 to 77 in 2022), the types of metaphors used evolved. For instance, new categories like ‘Cloth Metaphor’ and ‘Health Metaphor’ appear in 2021.

Dominance of Certain Metaphors: Throughout the three years, certain metaphors dominate in terms of resonance. The ‘Color Metaphor’ is consistently the most resonant metaphor, growing from 47.3% of the total resonance in 2020 to an astounding 66.1% in 2021, although it slightly drops to 39% in 2022. Nevertheless, the percentage of color metaphors still outweighs the other metaphors, conforming with the Chinese government’s Beautiful China initiative, which aims to build an ecologically balanced country.

Shifts in Resonance: “Journey Metaphor” experienced a notable shift over the years. In 2020, journey metaphors accounted for 31.8% which is more than a quarter. Then in 2021, the resonance dropped to 12.8% and then rises back to 30.3%. The fluctuating changes of journey metaphors indicate different priorities adopted by the government-run newspaper. More kinds of conceptual metaphors appear in the narratives, which replenish the single majority.

Decline of Metaphors: There are money metaphor expression in 2020, with words like valuable and rich. Money metaphors highlighted the value of environment and huge wealth the environment might bring. They disappeared in the subsequent years, which reflected the emphasis had been shifted and transferred from money metaphor to different areas.

In summary, while some metaphor categories like building metaphor and emotion metaphor steadily show their presence in the climate change discourse, other metaphors like money metaphor and physical metaphor disappear or temporarily vanish in their occurrence. The trends in metaphor distribution in China Daily from year 2020 to 2022 reveal an evolving variation of conceptual metaphors. Combined with editorial focus, public interest, and government policy, the distribution of metaphor categories fluctuated correspondingly. The diversified use of conceptual metaphors and shifts in the metaphor categories showcase government-run newspaper’s purpose in demonstrating China’s responsibility and ambition for overcoming climate change.

5. Conclusion

By using conceptual metaphors to discuss climate change in a creative linguistic approach, both newspapers make the complex and sometimes abstract issue more accessible to readers.

In 2020, Sixth Tone began employing metaphors like “war,” “color,” and “physical.” In 2021, it shifted to metaphors like “journey”, “emotion”, and “building”, and in 2022, it concentrated on metaphors like “color” and “emotion.” This development demonstrates a move away from adversarial and concrete imagery, and toward more nuanced and emotional depictions, possibly in an effort to evoke a greater level of emotional response and comprehension from readers.

China Daily, in contrast, tends to use metaphors such as “journey,” “color,” and “building.” Throughout the years, “emotion” and “health” metaphors have become particularly prevalent. The “color” metaphors could be used to illustrate the vibrancy and diversity of life impacted by climate change. The constant use of “journey” metaphors could represent the continuous and group effort required to address climate change. The emphasis on “building” metaphors in 2022 indicates that new frameworks, strategies, and policies for addressing climate change may be the focus.

Regardless of whether it is a local or state-run newspaper, they have played an important role in helping people understand climate change by employing different metaphor strategies. Sixth Tone focuses more on local and emotional metaphorical frames to connect with its community. In contrast, China Daily adopts a broader approach, highlighting policies that show China's efforts in addressing climate change. These differences demonstrate that various media outlets engage their readers with climate change by highlighting different aspects of the issue.

Due to its complexity and individualization, this paper doesn't reach the survey of audience reaction towards the conceptual metaphor strategy. It is recommended that a subsequent empirical experiment be conducted in future research to explore the effectiveness of the conceptual metaphors. Besides, more extreme climate-related events occur in and outside China, so studies conducted over a more extended period and comparing more countries are necessary to investigate the post-climate change reaction.

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Authors' contributions

Dr. Chunxiang Zhou and Assoc. Prof. Dr. Kasim, Z. M. were responsible for study design and analysis. Dr. Mohd Hanafiah, H. A. was responsible for data collection. Dr. Chunxiang Zhou drafted the manuscript. Assoc. Prof. Dr. Kasim, Z. M and Dr. Mohd Hanafiah, H. A. revised it. All authors read and approved the final manuscript.

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