

# A Study of Deliberate Metaphor in Ageing-Related Discourse in *Health News*

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**Abstract**—As China advances the Healthy China initiative alongside a proactive national ageing strategy, media representations of ageing have become increasingly central to the construction of national image in health discourse. This study draws on a self-compiled corpus of ageing-related texts published in *Health News*, an authoritative newspaper affiliated with the National Health Commission of the People's Republic of China, between 2020 and 2025. Guided by Steen's [1] four-dimensional model of Deliberate Metaphor Theory (DMT), the study examines the mechanisms underlying deliberate metaphor in the corpus. The findings indicate that *Health News* employs several types of deliberate metaphor, most notably competition, journey, and war, which are processed and activated across the dimensions of language, thought, reference, and communication. Future research could extend the analysis to multimodal representations and empirical validation, thereby broadening the scope of health discourse studies.

**Keyword**—health discourse, deliberate metaphor, ageing-related discourse, corpus-based research

## I. INTRODUCTION

Both the 20th National Congress of the Communist Party of China and the Third Plenary Session of the 20th CPC Central Committee stressed the need to pursue a proactive national strategy in response to population ageing. The publication of *Excerpts of Xi Jinping's Discourse on Healthy China* (《习近平关于健康中国论述摘编》) further promoted the Healthy China initiative from policy discourse to institutional practice. In this macro policy context, how to shape the social image of the elderly and promote a positive view of ageing through discourse practices has become an important topic for linguistic research in social governance. As an authoritative media outlet directly affiliated with the National Health Commission, *Health News* constructs elderly-related discourse through metaphorical language, conveying Chinese policy concepts such as “proactive health” and the integration of medical and elderly care, while also shaping the national narrative of positive ageing, including “silver economy” and “active ageing”. Existing studies often employ corpus-based methods, analyzing high-frequency words and fixed collocations to explore the construction of national image, thus providing a solid theoretical foundation for this study [2–4]. More recent studies have increasingly highlighted metaphor as an expressive linguistic tool in the shaping of national image, and a consensus is gradually being reached in academia [5–7]. Currently, health discourse research primarily focuses on health policy formulation and basic concepts and hot issues [8, 9], with insufficient attention to the role of health discourse in the construction of national image. An analysis of deliberate metaphors in health discourse on ageing populations can move beyond the

narrow scope of conventional health discourse research, which has long prioritized policy and academic-level analysis. It opens up a fresh analytical lens for health discourse studies, extends the application of deliberate metaphor theory to ageing-related topics within healthcare contexts, and offers new analytical dimensions and empirical grounding for the theoretical development and discursive innovation of research in this field. In response, this study selects a self-compiled corpus of texts on ageing-related discourse from *Health News* between 2020 and 2025 to explore how health discourse on elderly-related issues contributes to the self-shaping national image of China. The study aims to provide language strategies for optimizing health communication in the context of China's ageing population.

## II. LITERATURE REVIEW

### 1) Health Discourse

Health discourse [10] refers to the language used in medical inquiries, clinical treatment, rehabilitation, and healthcare settings, involving issues of physical and mental health and treatment [11]. Current research hotspots focus on three main areas:

Language Barriers and Mental Health: Liu Guohui and Zhang [12] empirically found that improved Mandarin proficiency significantly enhances migrant workers' mental health, especially among women, older generations, and non-northern dialect groups; Gao [13] proposed that psychological intervention for international students should focus on language barriers and cultural adaptation. Doctor-Patient Communication and Health Communication: Huang [14] explored doctor-patient communication in palliative care for oncology patients; Chen *et al.* [15] pointed out that the localization of health communication requires theoretical validation, expansion, and innovation in three stages, emphasizing cross-cultural context adaptation. Health Policy Discourse: Chen *et al.* [8] constructed a three-layered discourse system for “proactive health”, outlining policy discourse, academic discourse, and public discourse, and proposed a theoretical framework of five key dimensions and internal tensions. These multidisciplinary discussions not only enrich the research on health discourse but also provide profound theoretical perspectives for understanding doctor-patient interactions.

### 2) Deliberate Metaphor Theory

Conceptual Metaphor Theory (CMT), first proposed by Lakoff and Johnson [16], conceptualizes metaphor as a systematic mechanism of cross-domain mapping, whereby

structure from a more concrete conceptual domain (the source domain) is projected onto a more abstract and complex domain (the target domain). Building on this cognitive-linguistic foundation, Steen [17, 18] developed Deliberate Metaphor Theory (DMT), which shifts the analytical focus toward the communicative purposes of metaphor use. By incorporating insights from both linguistic and cognitive dimensions, DMT was initially formulated as a three-dimensional analytical model [17]. More recently, the theory has undergone further refinement, with Steen [1] introducing the notion of slow metaphor down as well as a four-dimensional model encompassing language, thought, reference, and communication.

Research on deliberate metaphor has since expanded across multiple disciplines, including translation studies, discourse analysis, and pragmatics, each of which foregrounds different aspects of the phenomenon. In translation studies, scholarly attention has largely been directed toward identifying effective strategies for rendering different types of metaphor. For instance, some researchers propose using deliberateness and metaphoricity as key parameters for guiding metaphor translation [19], while others draw on both CMT and DMT to develop strategies for translating metaphor in Chinese political keywords into English [20]. Within discourse analysis, studies tend to focus on the functional roles of metaphor in situated texts. These include its contribution to the construction of social cognition and the shaping of public opinion [21], as well as its broader social-communicative functions [22]. Pragmatic approaches, by contrast, often emphasize empirical validation of theoretical claims. Notably, Gibbs [23] adopts a psychological perspective to experimentally investigate the notion of deliberateness, thereby offering an alternative line of evidence for DMT.

Despite these advances, existing research remains fragmented across disciplinary boundaries. Differences in theoretical orientation and methodological approaches continue to limit the integration of findings, suggesting that more systematic interdisciplinary engagement is needed to further advance the study of metaphor.

### III. MATERIALS AND METHODS

#### 1) Data Source and Research Procedures

This study draws on articles published between 2020 and 2025 in the “Elderly Health News” section of *Health News* that focus on older adults and elderly-care issues. The corpus contains 155 texts, comprising a total of 293,639 Chinese characters. Building on the above analysis, and to sharpen the focus on the research question, this study employed the Deliberate Metaphor Identification Procedure (DMIP) to identify and analyze deliberate metaphor in the health discourse corpus through a combination of artificial intelligence-assisted processing and manual interpretation. DMIP was introduced by Reijnierse *et al.* [24] as a procedure for the systematic identification of potentially deliberate metaphors. First, the texts were screened a second time: only news reports in which deliberate metaphors were used were retained, while overview or review-type articles were excluded. This yielded a final dataset of 145 texts, comprising 275,707 Chinese characters. Second, Steen’s [1] four-dimensional model of deliberate metaphor was adopted to interpret the cognitive mechanisms involved across four dimensions: language, thought, reference, and communication. Steen’s 2023 account explicitly refines the earlier model into a four-dimensional one.

#### 2) Deliberate Metaphor Identification Procedure

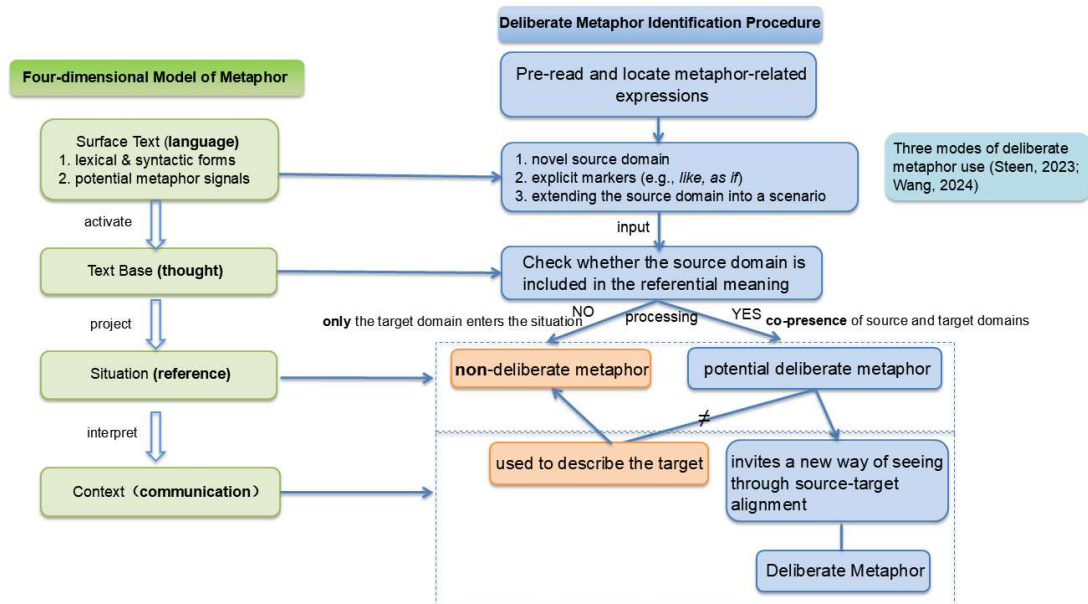


Fig. 1. Deliberate metaphor identification framework.

Note. Integration of the four-dimensional model (language, thought, reference, and communication) and the Deliberate Metaphor Identification Procedure (DMIP).

Steen [1] argues that metaphor processing should be understood as part of general cognitive processing. In other words, the cognitive processing of metaphor can be

explained by the Construction-Integration Model (CI Model) proposed by van Dijk and Kintsch [25, 26]. According to the CI Model, discourse comprehension can be divided into two

stages: construction and integration. During the construction stage, readers build the surface text and the text base, and then move to the integration stage, in which the situation model and the context model are established. On this basis, Steen aligns the four dimensions of metaphor with the four mental representations in the CI model. The surface text corresponds to linguistic structure and function, the text base to conceptual structure and function, the situation model to referential structure and function, and the context model to communicative structure and function [27]. Based on this framework, the present study constructs a Deliberate Metaphor Identification Procedure (see Fig. 1).

At the level of language, the data were first read manually to locate metaphor-related lexical items, with a view to identifying whether the surface text displayed any of the three indicators of deliberate metaphor: a novel source domain, explicit markers (e.g. simile markers such as *as if* and *as though*), or scenario extension (i.e. the development of the source domain into a fuller scene). At the level of thought, in most cases, metaphor in thought can be understood directly through the retrieval of the appropriate metaphorical concept, that is, through lexical disambiguation, without necessarily requiring cross-domain mapping. Within Deliberate Metaphor Theory (DMT), metaphor at the level of thought is referred to as metaphoric thought, whereas the process of interpreting metaphor through cross-domain mapping and subsequent access to a situation model is termed metaphorical thinking [27]. At the level of reference, non-deliberate metaphor can be interpreted directly through lexical disambiguation: no cross-domain mapping is involved, and only the target domain enters the situation model. By contrast, when metaphor is used deliberately, the concept triggered by the metaphorical expression is incompatible with the referent evoked by its co-occurring words and cannot be resolved at the stage of conceptual disambiguation. As a result, both the source domain and the target domain enter the situation model simultaneously. At the level of communication, if the contrast between the source domain and the target domain of a metaphorical expression offers readers a new perspective, the instance is treated as deliberate metaphor. If, however, the metaphor merely functions as a way of describing an object and does not redirect the reader's attention, it is treated as non-deliberate metaphor; in such cases, the expression can be understood solely from the perspective of the target domain.

#### IV. RESULT AND DISCUSSION

Drawing on the four-dimensional model, large language models, such as ChatGPT, were used only for preliminary familiarization with the coding procedure and for assisted identification, while all final annotations were manually checked and jointly reviewed by two researchers. In the end, 55 instances of deliberate metaphor were identified, with a Cohen's kappa of 0.850.

A total of 13 types of deliberate metaphor were identified in the corpus (see Table 1). Journey metaphor was the most prominent (21.82%), construing ageing as an inevitable yet manageable life course. It was followed by war metaphor

(16.36%), which foregrounds the coordinated response of the government and multiple social agents to population ageing. Next came nature metaphor (14.55%), competition metaphor (10.91%), and food metaphor (7.27%). Courier, economic, and family metaphors each accounted for 5.45%; life and machine metaphors each made up 3.64%; and drama, building, and music metaphors each represented 1.82%.

Table 1. Deliberate metaphor types in health news

Types of Deliberate Metaphor	Number	Proportion
journey metaphor	12	21.82%
war metaphor	9	16.36%
nature metaphor	8	14.55%
competition metaphor	6	10.91%
food metaphor	4	7.27%
logistics metaphor	3	5.45%
economic metaphor	3	5.45%
family metaphor	3	5.45%
life metaphor	2	3.64%
mechanical metaphor	2	3.64%
drama metaphor	1	1.82%
architectural metaphor	1	1.82%
music metaphor	1	1.82%

In the health discourse of the authoritative newspaper Health News, ageing-related discourse are systematically framed through deliberate metaphor, enabling readers to gain a clearer understanding of how the Chinese government has coordinated with multiple stakeholders to address population ageing. Deliberate metaphor can guide audiences, through discourse, to represent and compare the source and target domains [28], thereby activating a process of cross-domain mapping. Recent scholarship has likewise emphasized its role in prompting such mappings in discourse. Taken together, the various metaphors in the text construct a national narrative and governance orientation for ageing-related discourse. Journey metaphor presents ageing as a normal and manageable life course, highlighting phased goals and the allocation of resources. Nature metaphor, by drawing on familiar natural imagery, tones down the crisis-laden representation of the "ageing process" and lends public discourse a milder and more measured character. By contrast, war and competition metaphors do not position older adults as the agents of confrontation or competition; rather, they point to governmental mobilization and interdepartmental coordination, thereby foregrounding the government's leading role in advancing elderly care services. The following section focuses on the cognitive mechanisms underlying the 4 major instances of deliberate metaphor in the text.

##### 1) Journey Metaphor

Journey metaphor is used deliberately in these reports. The role of intention can be explained from the perspective of attention: the cognitive processing of utterances, including metaphor, often involves shifts in attention, and such shifts are driven by intention [29]. Put simply, readers regulate their attention in line with their communicative purposes and goals, directing it to particular dimension of discourse. In other words, readers may be prompted to attend to an expression explicitly as metaphor (see Fig. 2).

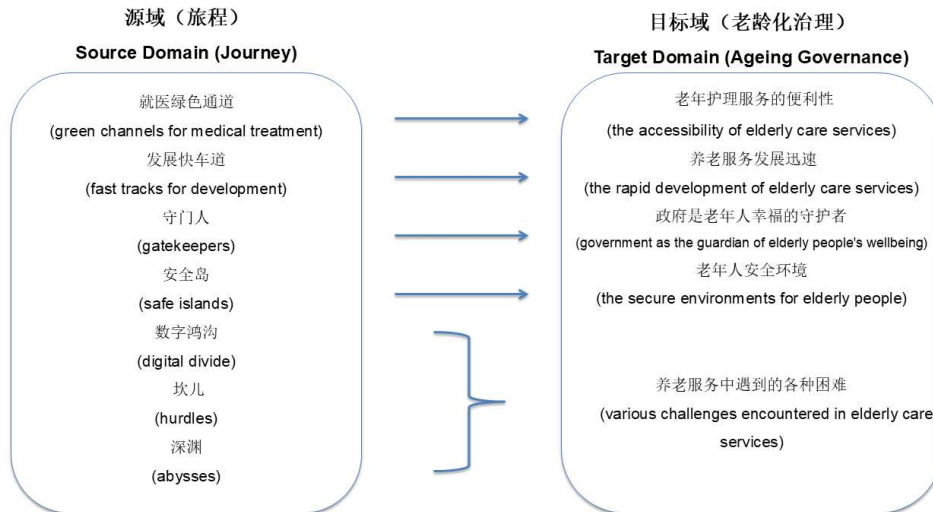


Fig. 2. Conceptual mapping of journey metaphor.

At the surface-text level, journey metaphor employs expressions such as “green channels for medical treatment (就医绿色通道),” “fast tracks for development (发展快车道),” “gatekeepers (守门人),” “way stations in later life (晚年驿站),” and “safe islands (安全岛),” together with “the digital gap (数字鸿沟),” “hurdles (坎儿),” “abysses (深渊),” “the afterglow of life (生命余晖),” and “the final leg of life’s journey (生命最后一程),” to construe ageing as an inevitable life course that nonetheless requires systematic planning and careful safeguarding. At the text-base level, these expressions activate mappings between conceptual structures such as ageing and afterglow, disability and dementia and abyss, smart elderly-care platforms and bridges, and technological barriers and the digital divide. At the situation-model level, most readers are familiar with the ordinary course of human life and can therefore more readily understand the difficulties older adults face in later-life care, as well as the contributions made by the government, in

coordination with multiple parties, to addressing these problems. At the context-model level, the text seeks to portray the government as a governor that is both orderly in regulation and humane in protection, thereby alleviating anxiety among older adults about ageing. For example, the phrase “bringing older people back to a safe place (把老年人拉回安全地带)” vividly describes the difficulties faced by older adults with disability or dementia in obtaining affordable and accessible care. The government, cast as a “gatekeeper (守门人),” plays the leading role in safeguarding peace and security in later life for the elderly population.

### 2) War Metaphor

War metaphor is deliberately used to invite explicit comparison and cross-domain mapping between the source and target domains (see Fig. 3).

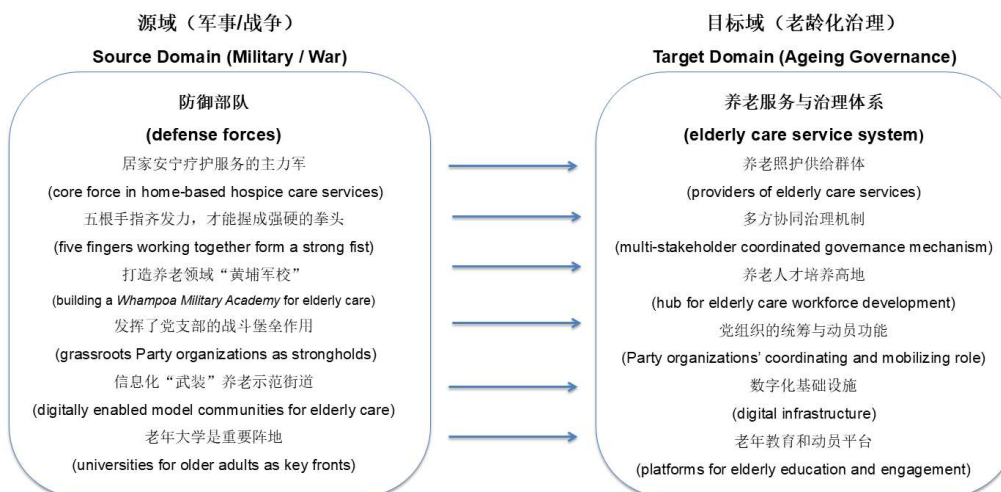


Fig. 3. Conceptual mapping of war metaphor.

At the surface-text level, war-related expressions such as “main force (主力军),” “key battleground (重要阵地),” “Whampoa Military Academy (黄埔军校),” and “stronghold (战斗堡垒)” highlight the division of labor and coordination among the government and its departments in

responding to population ageing. At the text-base level, these expressions activate mappings between warfare and elderly-care governance. At the situation-model level, readers can readily infer the collaborative logic of ageing governance from their familiarity with war scenarios involving tactics, branches of service, and strategies of attack and defense. At

the context-model level, war metaphor foregrounds governmental resolve and strategic action in tackling elderly-care challenges, reinforcing the image of an active and capable government.

### 3) Nature Metaphor

In health discourse on elderly-related issues, nature metaphor is often used to transform institutions and services into experiential domains that are familiar and readily perceptible in everyday life (see Fig. 4).

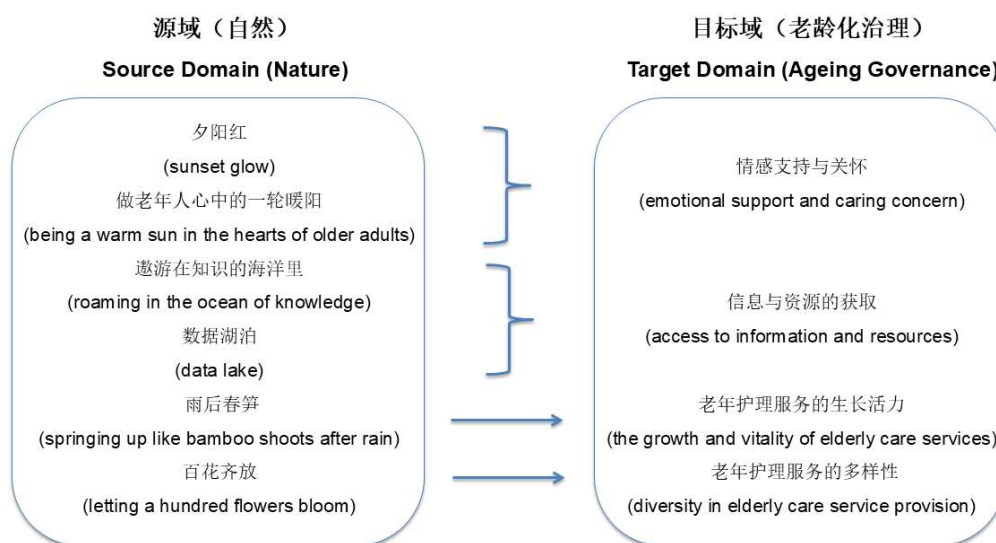


Fig. 4. Conceptual mapping of nature metaphor.

For example, expressions such as “sunset glow (夕阳红)” and “being a warm sun in the hearts of older adults (做老年人心中的一轮暖阳)” use sunshine and warmth to evoke emotional support and caring concern. Phrases such as “roaming in the ocean of knowledge (遨游在知识的海洋里)” and “data lake (数据湖泊)” depict learning and access to information as natural resources that can be drawn upon. Expressions like “springing up like bamboo shoots after rain (雨后春笋)” and “letting a hundred flowers bloom (百花齐放)” correspond to the diversity and vitality of elderly-care service provision. Meanwhile, the statement “population ageing is not a ferocious flood (人口老龄化不是洪水猛兽)” mitigates alarmist representations of ageing and instead frames it as a normal and inevitable life process.

More specifically, at the surface-text level, nature-related expressions such as “sunset glow (夕阳红),” “warm sun (暖阳),” “the ocean of knowledge (知识的海洋),” and “letting a hundred flowers bloom (百花齐放)” facilitate readers’ comprehension. At the text-base level, these expressions activate conceptual mappings between warmth and care, the ocean of knowledge and the accessibility of elderly-care knowledge, and bamboo shoots after rain and the supply of elderly-care services. At the situation-model level, by drawing on shared human experience of natural phenomena—such as plant growth, seasonal change, and landscape features—the text enables readers to understand the elderly-care governance system projected by these concepts in a more direct and concrete way. At the context-model level, images such as the “sunset (夕阳)” redefine ageing, weakening the entrenched cognition of an elderly crisis and resistance to ageing, and instead foregrounding the ideas of accepting ageing and facing population ageing squarely. At the same time, they highlight the government’s

leading role in the development of elderly-care services, thereby enhancing public acceptance of relevant policies.

### 4) Competition Metaphor

Competition metaphor is used deliberately to emphasize that the government-led provision of elderly-care services is oriented toward the goal of healthy ageing. Through interdepartmental coordination and resource integration, a concerted force is formed in which all parties “pull together in the same direction (拧成一股绳),” while quantitative evaluation and comprehensive accountability are used to ensure the effectiveness, standardization, and sustainability of elderly-care policy implementation.

Take the statement that “今后常态化封闭式管理将成为北京养老机构服务重启前的‘必选项’” as an example. First, at the surface-text level (the language dimension), the expression “mandatory item (必选项),” marked off by quotation marks as an explicit signal of deliberate metaphor, intentionally redirects the literal notion of “service resumption (服务重启)” toward the source domain of an examination. Second, at the text-base level (the conceptual dimension), although a degree of semantic discontinuity exists at the surface level, coherence can be achieved through cross-domain correspondence and conceptual integration: implementing routine closed-loop management prior to reopening is like completing a compulsory question in an examination, only by meeting the required standard can the subsequent process move forward, allowing elderly-care institutions to resume operation in a stable manner. Third, at the situation-model level (the referential dimension), this mapping is projected onto a concrete governance scenario: by drawing on the familiar rule of “completing the compulsory step before moving on (先完成必答项再进入下一步),” readers can understand that elderly-care

institutions must first implement closed-loop management and pass verification before they are qualified to restart service provision. Finally, at the context-model level (the communication dimension), by using examination procedures as a frame of reference, the author guides the public toward an understanding of the “resumption” policy and, in doing so, conveys a communicative intention to construct the image of a modern state that is people-centered, coordinated and efficient, scientifically governed, and age-inclusive.

#### V. CONCLUSION

This study shows that *Health News* systematically employs a range of deliberate metaphors, most notably competition, journey, and war, to structure ageing-related discourse. By activating cross-domain mappings across the dimensions of language, thought, reference, and communication, these metaphors function as an important mechanism for organizing meaning and guiding readers’ interpretation in health discourse. Through an in-depth analysis of texts on ageing-related discourse, this study advances research on health discourse and future research may be extended to multimodality representation and empirical research, thereby broadening the scope of health discourse studies.

#### CONFLICT OF INTEREST

The authors declare no conflict of interest.

#### AUTHOR CONTRIBUTIONS

Shuyan Wang and Zhenghao Rong conducted the research. Shuyan Wang drafted the initial manuscript, while Zhenghao Rong supervised the study and revised the manuscript. All authors have approved the final version of the manuscript.

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#### REFERENCES

- [1] P. Baker and T. McEnery, “A corpus-based approach to discourses of refugees and asylum seekers in UN and newspaper texts,” *Journal of Language and Politics*, vol. 4, pp. 197–226, 2005.
- [2] X. Wang and K. Hu, “A corpus-based study on the dissemination and reception of the English translation of ‘xiaokang society’ in mainstream media in the US, UK, and India,” *Technology Enhanced Foreign Language Education*, no. 3, pp. 13–20, 110, 2024.
- [3] R. Xi, “Selection and salience: A multimodal corpus-based study on multimodal figurative framing of ‘the Belt and Road Initiative,’” *Foreign Languages Research*, vol. 43, no. 1, pp. 29–38, 67, 2026.
- [4] M. P. Marks, *Metaphors in International Relations Theory*. London, U.K.: Palgrave Macmillan, 2011.
- [5] Y. Zhao and R. Wang, “Unfavorable views of China reach historic highs in many countries,” *International Communications*, no. 3, pp. 17–21, 2021.
- [6] Y. Zhao and M. Yang, “Special features and rhetoric principles of diplomatic metaphor,” *Contemporary Rhetoric*, no. 3, pp. 54–66, 2022.
- [7] C. An and L. Tang, “Structural morphology, writing orientation and internal tension of discourse system of ‘proactive health,’” *Journal of Shenyang Sport University*, vol. 44, no. 1, pp. 73–79, 2025.
- [8] L. Chen and J. Wu, “A review of applied research on health discourse metaphors abroad: Origins and development (1993–2024),” *Foreign Languages Research*, vol. 42, no. 2, pp. 34–41, 93, 2025.
- [9] B. H. Davis, “Interpersonal issues in health discourse: Caregiver-resident interaction in Alzheimer talk,” in *Interpersonal Pragmatics*, M. A. Locher and S. L. Graham, Eds. Berlin, Germany: Mouton de Gruyter, 2010, pp. 381–404.
- [10] Y. Ran and M. Wei, “Pragmatic research on health discourse: Retrospect and prospect,” *Foreign Languages Bimonthly*, vol. 43, no. 6, pp. 1–9, 157, 2020.
- [11] G. Liu and W. Zhang, “Putonghua proficiency and the mental health of migrant workers: An empirical study based on Chinese General Social Survey,” *Applied Linguistics*, no. 1, pp. 40–49, 2020.
- [12] B. Gao, “Research on prevention and crisis intervention mechanisms for mental health problems of international students in Chinese universities,” *Studies in Ideological Education*, no. 5, pp. 131–134, 2018.
- [13] F. Huang, “A bibliometric analysis of research in international journals on communication in oncology and palliative care,” *Foreign Language and Literature Studies*, vol. 36, no. 1, pp. 45–59, 2019.
- [14] L. Chen, H. Tang, and S. Liu, “Rethinking and reflecting on the localization of health, environmental and risk communication research in China,” *Journalism & Communication Review*, vol. 78, no. 3, pp. 15–27, 2025.
- [15] G. Lakoff and M. Johnson, *Metaphors We Live By*. Chicago, IL, USA: University of Chicago Press, 1980.
- [16] G. Steen, “The paradox of metaphor: Why we need a three-dimensional model of metaphor,” *Metaphor and Symbol*, vol. 23, no. 4, pp. 213–241, 2008.
- [17] G. Steen, “Developing, testing and interpreting deliberate metaphor theory,” *Journal of Pragmatics*, vol. 90, pp. 67–72, 2015.
- [18] G. Steen, *Slowing Metaphor Down: Elaborating Deliberate Metaphor Theory*. Amsterdam, Netherlands: John Benjamins, 2023.
- [19] L. Shao and Y. Yu, “The identification and translation of deliberate metaphors in *The Last Quarter of the Moon*,” *Foreign Languages and Literature*, vol. 39, no. 4, pp. 1–13, 2023.
- [20] W. Lu and H. Chen, “A study of the English translation of new-era keywords about China,” *English Studies*, no. 2, pp. 136–145, 2020.
- [21] W. Zhang and S. Wang, “The cognitive power of deliberate metaphors in the reports of COVID-19 outbreak,” *Journal of Tianjin Foreign Studies University*, vol. 27, no. 2, pp. 114–127, 161, 2020.
- [22] X. Zhao and Y. Wu, “Integration of multimodal pedagogy and embodied-cognitive linguistics,” *Foreign Languages in China*, vol. 22, no. 4, pp. 4–10, 22, 2025.
- [23] R. W. Gibbs, “Do pragmatic signals affect conventional metaphor understanding? A failed test of deliberate metaphor theory,” *Journal of Pragmatics*, vol. 90, pp. 77–87, 2015.
- [24] W. G. Reijnierse, C. F. Burgers, T. Krennmayr, and G. J. Steen, “DMIP: A method for identifying potentially deliberate metaphor in language use,” *Corpus Pragmatics*, vol. 2, no. 2, pp. 129–147, 2018.
- [25] T. A. van Dijk and W. Kintsch, *Strategies of Discourse Comprehension*. New York, NY, USA: Academic Press, 1983.
- [26] W. Kintsch, “The role of knowledge in discourse comprehension: A construction-integration model,” *Psychological Review*, vol. 95, no. 2, pp. 163–182, 1988.
- [27] J. Wang and Y. Liu, “The latest development of the deliberate metaphor theory: The four-dimensional analytical model and the slow processing of metaphor,” *Foreign Language Education*, vol. 45, no. 5, pp. 32–38, 2024.
- [28] G. J. Steen, “Attention to metaphor: Where embodied cognition and social interaction can meet, but may not often do so,” in *Metaphor: Embodied Cognition and Discourse*, B. Hampe, Ed. Cambridge, U.K.: Cambridge University Press, 2017, pp. 279–296.
- [29] D. S. McNamara and J. Magliano, “Toward a comprehensive model of comprehension,” in *The Psychology of Learning and Motivation*, B. H. Ross, Ed. New York, NY, USA: Academic Press, 2009, pp. 297–384.

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