Mapping the International Circulation and Reception of China's Poverty Alleviation Discourses Based on Framing Theory and Textual Similarity Analysis

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Abstract—As the assertion of discourse power is crucial for nations aiming to shape global narratives, the enhancement of international communication capacity has become a pivotal element for China. This study focuses on the linguistic landscape of the website of China Foundation for Rural Development, to examine how the discourse system of poverty alleviation, unique to this new era, is being communicated. It aims to explore the pathways through which this distinctive discourse system is disseminated globally. Employing the framing theory, the study clarifies the international communication routes and mechanisms of China's poverty alleviation discourse system, collecting relevant linguistic materials to reveal the characteristics of poverty alleviation discourse in its international representation at various structural levels. Furthermore, the study conducts a textual similarity analysis, including semantic and sentiment similarity, to evaluate the fidelity and credibility of translations. Offering vital insights for improving the dissemination of China's poverty alleviation experiences across cultural and linguistic barriers, this study significantly informs future scholarship on cross-cultural development discourse.

Keywords—international discourse, poverty alleviation, China Foundation for Rural Development, framing theory, textual similarity analysis

I. INTRODUCTION

Discourse power is pivotal in international relations, shaping global narratives to advance national interests [1, 2]. Critical discourse analysis reveals how language influences international power dynamics [3, 4]. Moreover, the dominance of Western cultural hegemony in global discourse has been pointed out [5, 6]. Different communication strategies and media platforms, such as social media, contribute to shaping international discourse power dynamics [7]. Developing countries, therefore, focus on enhancing international communication to assert their discourse power, utilizing various media platforms.

China, a rising global power, emphasizes its discourse system development to align global narratives with its objectives, particularly in poverty alleviation [8]. This study examines the linguistic landscape of the China Foundation for Rural Development (CFRD) website, a key platform for promoting China's poverty alleviation discourse. CFRD, established in 1989, is a significant national public welfare organization under the State Council's Poverty Alleviation Office.

The research will apply structural theory to analyze the CFRD website's language materials, clarifying the international communication mechanisms of China's poverty alleviation discourse. After finding out the frames presented in the website, it will compare semantic and sentiment similarities in the corresponding text to assess translation accuracy and fidelity. This study aims to understand how China's poverty alleviation discourse is disseminated globally and influences international narratives.

II. THEORETICAL FRAMEWORK

Lakoff introduced the theory of framing from a cognitive linguistics perspective, suggesting that architecture reflects people's worldviews and values through metaphorical thinking. He later applied framing in political research and described frames as cognitive structures that shape perceived reality [9, 10]. Words activate associated frames; for instance, "relief" evokes images of suffering and heroes who alleviate it, creating a framework for poverty alleviation when combined with "poverty."

Frames are categorized into surface and deep types. Surface frames, directly induced by words, include metaphorical and non-metaphorical varieties. Metaphorical frames, motivated by metaphorical words, can be projected into other frames. Surface frames activate deep frames, which are linked to worldviews, moral values, and socio-political contexts, influencing how people perceive the world. Official organizations' intentions are embedded in political discourse's deep frames, which can be subtly triggered by metaphorical surface frames to affect reasoning. Framing theory explores the interdependence of surface and deep frames, emphasizing that surface frames must align with deep frames in readers' minds to be effective.

III. METHODOLOGY

A. Research Object

The research focuses on the China Foundation for Rural Development website, chosen for its role in globalizing China's poverty alleviation discourse. A detailed selection process was conducted to identify key linguistic materials from the site, paying special attention to content aimed at international audiences. These materials are systematically cataloged for analysis, ensuring diversity and relevance. Notably, the final selection includes two parallel articles, one in Chinese and one in English, facilitating a comparative study of the discourse across different linguistic contexts. This approach ensures a robust and representative corpus, accurately reflecting CFRD's international narrative

on poverty alleviation.

B. Qualitative Analysis

In the first step, Framing Theory will be applied as the primary analytical lens to conduct a textual analysis of linguistic materials from the CFRD website. Framing Theory suggests that how an issue is presented (the frame) influences the choices individuals make about how to process that information. Frames highlight certain aspects of reality while excluding others, effectively shaping perception. Employing Framing Theory in our discourse system identification will allow us to dissect the ways in which poverty alleviation is conceptualized, presented, and promoted by the CFRD for an international audience.

C. Quantitative Analysis

The analysis consists of two parts: semantic similarity analysis, which tests the accuracy of text, and sentiment similarity analysis, which tests the fidelity of text.

1) Semantic similarity analysis

This analysis enhances the comparison of content on the CFRD website by integrating Jieba segmentation for Chinese text processing and AI lab technologies, such as XYZ, to generate word vectors. These pre-processed texts are then encoded by the ACESC model and evaluated using cosine similarity measures. This method assesses the accuracy of translated texts by quantifying the degree of similarity between vectors, ensuring the preservation of original meanings across different language versions.

2) Sentiment similarity analysis

Sentiment similarity analysis evaluates the consistency of sentimental tone in translated texts. Recognizing the importance of sentimental resonance in persuasive communication, this study employs sentiment analysis tools, specifically the Snow NLP model for Chinese text analysis. It measures variations in sentimental valence and intensity across different linguistic versions, ensuring that the translated texts not only convey the intended information but also evoke similar sentimental responses to the original text. This analysis helps in understanding how translation practices might affect the global impact of China's poverty alleviation narratives.

IV. RESULTS AND DISCUSSION

In this section, the results will be divided into several key sections to provide a comprehensive analysis of the structure and content of the CFRD website text. The purpose of this analysis is to provide a comprehensive understanding of the frame and content of the CFRD website text. By examining the metaphorical and non-metaphorical frames utilized, as well as the underlying values embedded in the discourse, this analysis aims to shed light on the communication strategies employed in the international dissemination of China's poverty alleviation efforts. Additionally, the semantic similarity and sentiment similarity analysis will provide insights into the coherence, consistency, and sentiment impact of the discourse.

A. The Frame in China's Poverty Alleviation Discourse

The surface frame is a psychological structure activated by words. The surface architecture primarily focuses on the linguistic and formal aspects, involving superficial cognitive processes. The surface frame can be divided into metaphorical surface frame and non-metaphorical surface frame. The former is activated by metaphorical language, while the latter does not involve conceptual metaphors and metaphorical expressions, and does not entail cross-domain mappings.

Table 1. The results of textual similarity

Number	Semantic Similarity	Sentiment Similarity (Chinese Text)	Sentiment Similarity (English Text)
S1	0.1387	−0.5859	0.9995
S2	0.0667	0.1779	1.0000
S3	0.1538	0.7783	0.9556
S4	0.1093	0.7964	0.9767
S5	0.0601	0.6369	0.9958
S6	0.0508	0.4588	1.0000
S7	0.1637	0.4939	0.9397
S8	0.0299	−0.7650	0.0449
S9	0.0792	0.6597	0.9886

The surface frame of China's distinctive poverty alleviation discourse system mainly consists of a series of conceptual metaphors. From the perspective of architecture and conceptual metaphors, the study finds that the conceptual metaphors implicit in China's poverty alleviation discourse system, as represented by the CFRD, activate different architectures. The below content showcases some examples for details.

"脱贫攻坚战" (It can be literally translated as the battle against poverty, and actually it represents the arduous efforts and determined actions taken to overcome poverty and improve the living conditions of impoverished communities.) refers to the war frame.

"对症下药、扶到点上、扶到根上" (It can be literally translated as diagnosing the problem accurately, targeting specific issues, and addressing the root causes and it highlights the importance of identifying and understanding the problem correctly, implementing targeted measures to address specific issues, and tackling the underlying causes that contribute to the problem.) refers to root frame.

"共同富裕的道路上迈出坚实的一大步" (It can be literally translated as taking a solid step on the path to shared prosperity and this expression signifies significant progress made towards achieving equal distribution of wealth and resources, and promoting inclusive development that benefits all members of society.) refers to journey frame.

Those frameworks emphasize the challenges of poverty alleviation and the principles that must be followed in poverty alleviation work. The use of metaphors vividly conveys new concepts and expressions in China's unique poverty alleviation discourse, making it more accessible and easy to understand.

The discourse on poverty alleviation in China also reflects many non-metaphorical surface frames. For instance, it emphasizes the principles of "putting the people at the center of poverty alleviation" and "taking corresponding measures based on the national conditions to promote the

process of poverty reduction." These statements can be summarized as the frames of "people" and "measures" in China's poverty alleviation discourse, shaping China's role as a driver in the global poverty reduction efforts.

B. Data of Textual Analysis

The data pertaining to semantic and sentiment similarity among the extensive Chinese and English texts have been computed and are presented herein. Owing to the substantial length of the texts, they have been assigned unique identifiers to facilitate concise representation. Detailed descriptions of these texts can be found in the appendix.

C. Discussion

Example 1

Original Chinese text:

截至 2019 年年底,全国农村贫困人口约 551 万人,其中相当一部分居住在艰苦边远地区,处于深度贫困状态,属于脱贫攻坚"最重的担子""最硬的骨头"。

Original English text:

By the end of 2019, there were 5.5 million people still living in poverty, a significant number of whom lived in remote places or border regions under harsh natural conditions. These represent a significant challenge in poverty alleviation.

For this example, the original text employs metaphoric expressions such as "攻坚" (assault fortifications) and "最硬的骨头" (the toughest bone), vividly reflecting the significant difficulties encountered in poverty alleviation efforts and illustrating the social experiences and cognitive styles of the Chinese nation. However, due to differences in sociocultural context, linguistic habits, and cognitive styles of Western audiences, a direct translation to "assault fortifications" and "toughest bones" may lead to the frame of war and is not consistent with English expression habits. Therefore, the translator has rendered "最硬的骨头" as "a significant challenge," effectively conveying the central concept of the original text while omitting the warfare connotation of the action verb "攻坚," thus capturing the essence of the original meaning.

The data indicates that the textual similarity between the two sentences is highest, with a value of 0.1387. In terms of vocabulary, both texts use similar terms such as "全国农村贫困人口" (people still living in poverty) and "艰苦边远地区" (remote places or border regions under harsh natural conditions). Grammatically, both the original and translated texts employ similar sentence structures, though the original is more complex with multiple parallel phrases, while the translation is more direct and concise. Semantically, both texts convey the same fundamental information, emphasizing that a portion of the impoverished population lives in difficult areas, constituting a significant challenge in poverty alleviation efforts. However, the translation does not directly render the abstract concepts of "最重的担子" (the heaviest burden) and "最硬的骨头" (the toughest bone), instead expressing it as "a significant challenge in poverty alleviation." Despite slight differences in expression, the overall message and perspective remain consistent, highlighting the plight and challenges faced by this segment of the impoverished population and underscoring the critical

issues in poverty alleviation efforts.

In the example, the English text scores a sentiment value of −0.5859, while the Chinese text scores a sentiment value of 0.9995. The Chinese context describes the number of impoverished individuals and their challenging living conditions, emphasizing the significance of poverty alleviation efforts and expressing a positive sentiment stance. In contrast, the English translation focuses on the issue of poverty, highlighting it as "a significant challenge," which underscores the difficulties of poverty alleviation, presenting a negative sentiment. Despite the high textual similarity between the two sentences, the emotional connotations they carry differ significantly.

Example 2

Original Chinese text:

当前中国经济社会发展的战略目标是全面建成小康社会,战略重点在于补齐短板,扶贫工作则是其中最薄弱的领域。

Original English text:

To fulfill the strategic goal of building a moderately prosperous society in all respects, the strategic focus should be on improving areas of weakness, of which poverty alleviation is the weakest link.

For this example, in the two parallel English-Chinese segments, the English translation integrates three Chinese clauses into one sentence using an adverbial of purpose and an attributive clause, reflecting the cognitive processing differences between English and Chinese. Despite syntactic and grammatical variations between the two languages, the translation's ingenuity lies in the conceptual metaphor "补短板" (addressing weaknesses), which closely aligns with the well-known "barrel theory" familiar to Western readers. This alignment ensures that the translation resonates with the cognitive experiences of Western audiences.

The textual similarity between the two texts in the example is 0.0666, indicating a relatively low degree of similarity. Firstly, examining lexical similarity, there are some shared terms between the two texts, such as "战略目标" (strategic goal), "全面建成" (build), "小康社会" (moderately prosperous society), and "扶贫工作" (poverty alleviation). However, there are also differences in certain terms, such as "战略重点" in the original text translated as "strategic focus" in the English version, and "补齐短板" translated as "improving areas of weakness," reflecting variations in expression. Semantically, both texts share a similar theme and intent, emphasizing the strategic focus of the nation in achieving the goal of a moderately prosperous society, with poverty alleviation being a crucial aspect. However, the specific expressions differ; the original text more directly identifies poverty alleviation as the weakest area, while the translation uses the metaphorical expression "weakest link," which aligns with the cognitive experience of Western readers.

The sentiment score of the Chinese text is 0.9999, nearly reaching 1, reflecting a strong positive sentiment with clear developmental goals and efforts. Conversely, the English translation has a sentiment score of 0.1779, significantly lower, indicating a less pronounced emotional tone that is more neutral or ambiguous. Although the content of both

texts is similar, there is a noticeable difference in sentiment inclination, suggesting that the translation may not have fully captured the emotional tone of the original Chinese text. This discrepancy could potentially influence readers' understanding and perception of the nation's efforts in poverty alleviation.

D. Suggestions

To enhance translation accuracy and sentiment conveyance, it is crucial to strengthen the fidelity and precision of translations, recognizing that translation quality hinges not only on linguistic accuracy but also on cultural and social context comprehension. Translators should delve deeper into the source content and consider the target audience's cultural background and language habits to ensure reliability and appeal. Establishing a diverse translation team with varied linguistic skills, cultural backgrounds, and expertise can improve translation quality and cross-cultural communication. This team should be regularly assessed and provided with feedback. Moreover, maintaining sentiment consistency in translations is vital for accurate information transmission. Translators must sensitively capture and accurately convey the sentiment tone of the source text, ensuring that the sentiment resonance and cultural nuances of the original are preserved in the translation, thereby enhancing international recognition and influence of national rural development concepts.

V. CONCLUSION

In conclusion, the analysis of various narrative frames employed in the discourse on poverty alleviation underscores the intricate relationship between language, culture, and societal perception. Each frame, distinct in its conceptualization and expression, serves as a lens through which the complexities of poverty are understood and addressed. The translation of these frames across linguistic and cultural boundaries highlights the challenges and opportunities in conveying nuanced socio-political narratives.

The textual analysis data, while illustrative of the semantic and sentimental intricacies involved, emphasizes the need for translators to be attuned to the cultural and cognitive dimensions of the source material. The variations in similarity scores across texts reflect the dynamic nature of translation, where maintaining factual accuracy and the original message's emotional impact is paramount.

This study reinforces the importance of translation as a critical conduit for cross-cultural communication, particularly in the realm of socio-political discourse. Translators must adeptly navigate the balance between preserving the original narrative's essence and ensuring its relevance and resonance with diverse audiences. Future research should continue to explore translation strategies that enhance the clarity and impact of such narratives, fostering a deeper global understanding of and engagement with significant societal issues like poverty alleviation.

APPENDIX

S1 Original Chinese text:
截至 2019 年年底,全国农村贫困人口约 551 万人,其中相当一部分居住在艰苦边远地区,处于深度贫困状态,属于脱贫攻坚"最重的担子""最硬的骨头"。
Original English text:
By the end of 2019, there were 5.5 million people still living in poverty, a significant number of whom lived in remote places or border regions under harsh natural conditions. These represent a significant challenge in poverty alleviation.

S2 Original Chinese text:
当前中国经济社会发展的战略目标是全面建成小康社会,战略重点在于补齐短板,扶贫工作则是其中最薄弱的领域。
Original English text:
To fulfill the strategic goal of building a moderately prosperous society in all respects, the strategic focus should be on improving areas of weakness, of which poverty alleviation is the weakest link.

S3 Original Chinese text:
优化县域资源配置，有效动员链接社会资源。
Original English text:
Provide dedicated support for the development of social organizations as well as the introduction of social resources in underdeveloped area.

S4 Original Chinese text:
...构筑新时代的人才长城。
Original English text:
...build the Great Wall of Talents in the new era.

S5 Original Chinese text:
...感受北京继古开今的气象，感受传统文化与现代文明的交相辉映。
Original English text:
...feeling the spirit of Beijing's succession from the past to the present, and the harmony between traditional culture and modern civilization.

S6 Original Chinese text:
活动期间还组织了学生交流会……以培养他们的团队合作精神和自主学习能力，营造人人努力成才、人人皆可成才、人人尽展其才的良好环境。
Original English text:
During the event, a communicating meeting was also organized...to cultivate their teamwork spirit and self-learning ability.

S7 Original Chinese text:
这份沉甸甸的荣誉，不仅是对童伴妈妈们扎根乡村...
Original English text:
This heavy honor is not only for the children with the mothers rooted in the countryside...

S8 Original Chinese text:
乡村旅游扶贫...
Original English text:
Alleviating poverty through development of rural tourism...

S9 Original Chinese text:
该计划通过积极吸引社会资本、信息、师资和其他关键要素，促进农村地区的可持续发展。
Original English text:
The program facilitates the sustainable development in rural areas by actively attracting social capital, information, faculties and other key elements.

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