A Study on the Adaptive Transformation of Cultural Translation in a Multimodal Ecological Environment: Taking the Haihunhou State in Nanchang as an Example

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Abstract

Taking the culture of the Han Dynasty Haihunhou State in Nanchang as a case study, this paper explores the adaptive transformation of cultural translation in a multimodal ecological environment. Drawing on the "adaptation-selection" theory of eco-translatology and the semiotic system integration model of multimodal discourse analysis, this study proposes a three-dimensional transformation framework that integrates linguistic, cultural, and communicative dimensions. This framework aims to tackle the challenges associated with cultural decoding and reconstruction in cross-modal dissemination of cultural heritage. By analyzing translation cases of unearthed cultural relics from the Haihunhou State, this paper suggests strategies such as terminology standardization for multimodal texts, visual representation and semantic reconstruction of historical and cultural symbols, and interactive translation design via augmented reality/virtual reality (AR/VR) technologies. The research reveals that cultural cognitive differences, characteristics of technical media, and audience needs are core factors influencing adaptive transformation, which require optimization through interdisciplinary collaboration, development of intelligent translation tools, and cultivation of composite talents. This study provides both theoretical and practical approaches for the international communication of cultural heritage, emphasizing the importance of balancing the excavation of local cultural genes and internationalized narrative reconstruction in the multimodal ecosystem to enhance the global acceptance and communicative power of Chinese culture.

Key words: Multimodal translation; Chinese culture; Adaptive transformation; Eco-transformation

1. INTRODUCTION

Cultural heritage, as a treasure of national culture, bears the historical memories of humanity and the codes of civilization. Its international communication has become an important way to promote cultural exchanges and enhance the soft power of national culture. In recent years, countries around the world have increasingly attached importance to cultural heritage, and the international community's demand for the understanding of diverse cultures has also been continuously growing. This has made the realistic need for cultural heritage to step out of its home country and reach the world more urgent.

At the same time, with the rapid development of digital technology, there have been tremendous changes in the ways and forms of information dissemination, and the development trend of the multimodal ecology has gradually become the mainstream. Traditional text-based dissemination can no longer meet the current needs of cultural heritage dissemination. The integrated application of multiple modalities such as images, audio, videos, and animations make the presentation of cultural heritage

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more three-dimensional, vivid, and lively. Multimodal dissemination breaks the temporal and spatial boundaries of cultural dissemination, broadens the channels and audience scope of the international dissemination of cultural heritage, and also brings new opportunities and challenges to the international dissemination of cultural heritage.

1.1 Research Background

1.1.1 The Evolution of Cultural Translation Theory and Multimodal Translation Research

In the 1980s, the school of cultural translation theory represented by Venuti emerged, marking the beginning of a new stage of the "cultural turn" in translation studies. James Holmes (1972) proposed in "The Name and Nature of Translation Studies" that translation studies should be established as an independent discipline and divided it into pure translation research and applied translation research, laying the foundation for the emergence of the cultural translation school. In the book "Translation, History and Culture", Susan Bassnett and Andrew Lefevere (1990) officially put forward the concept of the "cultural turn", which signified the prosperity of cultural translation theory. Later, in "Language and Culture: Context in Translation", Nida (1993) analyzed the cultural differences among different ethnic groups from the perspectives of linguistics, literature and culture, and translation. He advocated that translators should improve their cultural literacy to optimize the quality of translations, further enriching the cultural translation theory.

With the development of digital technology and the transformation of information dissemination methods, multimodal translation research has gradually become a hot topic. Starting from the perspective of semiotics, the theory of multimodal translation focuses on emerging multimodal translation practices, such as website localization translation, picture book translation, subtitle translation, etc. In "Research on Multimodal Translation Theory and Practice", Wang (2023) proposed that a successful international brand communication involves not only the accurate conveyance of linguistic information but also the global reshaping of brand images and cultural values. It requires the organic integration and innovative reconstruction of multiple semiotic systems such as images, sounds, and texts to adapt to the reception habits and aesthetic standards of different cultures. Wu (2021) proposed that he increasing development of new media culture and digital technology is actively driving diverse media forms. As the main agent driving cultural production, digital technology profoundly influences the coordination between verbal and non-verbal symbolic resources. In the digital era, electronic discourse constructs a hypertextual context, making the multimodal form of multiple semiotic systems possible. An increasing number of scholars have realized that in the translation of multimodal texts, translators need to comprehensively consider the influence of multimodal designs such as pictures, videos, fonts, and layout in the source text on the strategies of interlingual transformation, so as to achieve effective cross-cultural communication.

1.1.2 Research Progress and Deficiencies of the Haihunhou State

Since the archaeological discovery of the Haihunhou State in the Han Dynasty in Nanchang in 2015, it has attracted extensive attention from the academic community and society. At the first Academic Forum on the Archaeology of the Haihunhou State in the Han Dynasty and Han Culture in 2024, a number of the latest achievements were announced. The Administration Bureau of the Site of the Haihunhou State in the Han Dynasty in Nanchang and the Site Museum have been actively carrying out their work. Through exhibitions such as the "Golden Haihun —— The History and Culture Exhibition of the Haihunhou State in the Han Dynasty", the Site Museum uses a variety of display methods. For example, it uses transparent display screens to show the principles of the use of cultural relics, takes the lead in creating a "four-layer glass showcase" to restore the structure of the main coffin, and combines multimedia animations with the actual tomb passage to display the layout of the tomb chamber, vividly presenting the culture of the Haihunhou State. It has developed more than 1,000 cultural and creative products in 25 major categories, promoting the Haihun culture to enter the public life.

However, in the field of translation and dissemination of its culture, there are relatively few studies at present. The existing translations mainly focus on simple texts such as the introduction of the site and the descriptions of cultural relics, lacking systematic research on deeply exploring and accurately translating the rich historical and cultural connotations of the it. In terms of multimodal translation, there is still no mature theoretical and practical system for how to disseminate the culture of it in a multimodal form, such as the exhibitions of the site museum and cultural and creative products, across languages and cultures, leaving a large space for research.

1.2 Research Objectives

1.2.1 Construct an analytical framework for the adaptive transformation of cultural translation in a multimodal ecological environment

This study is dedicated to establishing a systematic, scientific and practically guiding analytical framework to address the complexity and dynamics faced by cultural translation in a multimodal ecological environment. This framework will integrate multimodal semiotics, cultural translation theory and the theory of adaptive transformation, and analyze the collaborative mechanism of multimodal elements such as images, audio, videos, and texts in cultural translation. By distilling the laws and characteristics of information dissemination in different

modalities, and combining elements such as cultural differences, communication contexts, and audience needs, a multi-dimensional evaluation standard and strategy system for adaptive transformation will be established.

1.2.2 Explore the paths of localization and internationalization for cross-modal translation of historical and cultural heritage

This study aims to break through the traditional translation model and explore the balanced paths of localization and internationalization in the cross-modal translation of historical and cultural heritage. At the localization level, the study will excavate the local cultural genes and symbol systems contained in historical and cultural heritage. Combining with the cognitive habits, aesthetic preferences and cultural backgrounds of the local audience, it will use multimodal translation means to achieve accurate cultural decoding and effective dissemination, and strengthen local cultural identity. At the internationalization level, based on a deep understanding of the target language culture, the study will resolve cultural differences through multimodal translation strategies. It will reconstruct the presentation form of historical and cultural heritage in an international narrative way, so as to improve its acceptability and communication power in the international context.

2. THEORETICAL FOUNDATION

2.1 Core Theoretical Basis

2.1.1 The "Adaptation-Selection" Theory and Three-Dimensional Transformation Mechanism of Eco-translatology

Eco-translatology was proposed by Professor Hu (2001). Based on the "adaptation/selection" theory in Darwin's theory of biological evolution, and it regards translation activities as a process of adaptation and selection by translators in the translation ecological environment. This theory emphasizes that the essence of translation is the dynamic balance and transformation between the source language and the target language ecological environments. Its core concept of "adaptation-selection" reveals that translators need to carry out adaptive transformations in three dimensions: the linguistic dimension, the cultural dimension, and the communicative dimension.

At the linguistic dimension level, translators need to pay attention to the differences between the source language and the target language in terms of vocabulary, grammar, rhetoric, etc., to ensure the accuracy and fluency of the language expression in the translation. The transformation at the cultural dimension requires translators to break through the surface structure of the language, deeply understand the cultural connotations of the source language, and convey them to the target language audience through appropriate translation

strategies (such as cultural compensation, domestication and foreignization, etc.). The transformation at the communicative dimension focuses on the communicative function of translation activities. Translators need to adjust the translation according to the communicative context and the needs of the audience, so that the translation can achieve effective communication in the target language environment.

2.1.2 The Symbol System Integration Model of Multimodal Discourse Analysis Theory

Based on social semiotics, the theory of multimodal discourse analysis holds that language is not the only means of meaning expression. Various semiotic resources such as images, audio, videos, gestures, and spatial layouts jointly constitute the modalities for meaning construction. This theory emphasizes the collaborative effect of the multimodal symbol system, and its integration model includes three key elements: the complementarity among modalities, dynamism, and context-dependency. Complementarity means that different modalities complement each other in meaning expression. For example, images can visually present scenes, while texts can deeply interpret the connotations. The combination of the two can achieve three-dimensional information transmission. Dynamism is manifested in the fact that multimodal symbols continuously adjust their combination patterns according to changes in the context during the communication process to optimize the effect of meaning expression. Context-dependency emphasizes that the meaning of multimodal discourse needs to be interpreted in combination with specific social and cultural contexts.

2.1.3 Constituent Elements of the Multimodal Ecological Environment (Digital Media, Audience Needs, Communication Context)

The multimodal ecological environment is a complex system formed by the interaction of elements such as digital media, audience needs, and communication context. As the technical support, digital media includes short video platforms, virtual reality (VR), augmented reality (AR), social media, etc. Its development has greatly expanded the channels and forms of cultural dissemination, making the production, dissemination, and reception of multimodal information more convenient and efficient.

2.2 Research Significance of the Han Dynasty Culture of the Haihunhou State

2.2.1 Material Cultural Heritage: The Symbolic Value of the Bronze Tripod Inscribed with "Changyi Jitian"

Among the numerous precious cultural relics unearthed from the tomb of the Marquis of Haihun, the bronze tripod with three legs inscribed with "Changyi Jitian" has become crucial physical materials for the study of the society, economy, and culture of the Han Dynasty due to its unique historical connotations and cultural values.

On the outer wall of the abdomen of this tripod, there are seal script inscriptions with 15 characters arranged in 7 columns, which are as follows.

Example 1: 昌邑籍田铜鼎，容十斗，重卅八斤，第二。

Official Translation: The bronze tripod for the ritual plowing in Changyi has a capacity of ten dou, weighs forty-eight jin, and it is the second one.

From the perspective of the linguistic dimension of the "adaptation-selection" theory in eco-translatology, the lexical information such as "Changyi Jitian", "has a capacity of ten dou", "weighs forty-eight jin", and "the second" has been accurately translated, ensuring the consistency in information transmission between the translation and the original text in terms of language expression. It has adapted to the differences in lexical expressions between the source language and the target language, selected appropriate words for translation, and guaranteed the accuracy of the language expression in the translation, which meets the requirements of transformation at the linguistic dimension. From the perspective of the communicative dimension, taking into account the understanding needs of the target language readers, a relatively straightforward and easy-to-understand expression method has been adopted, enabling the target language readers to clearly understand the relevant information about the bronze tripod, achieving the purpose of effective information communication, and conforming to the principle in the communicative dimension that emphasizes the acceptability of the translation to the readers and the communicative effect.

2.2.2 The Deep Connotations of Intangible Culture: A Case Study of the Records in Funeral Laws Unearthed from the Haihunhou State

The bamboo slips of *Funeral Laws* unearthed from the Haihunhou State record that

Example 2: 彻侯衣衾毋过盈棺，衣衾敛束。（荒）所用次也。

Official translation: The clothing and quilts for a Marquis of the highest rank (Chehou) should not exceed the capacity of the coffin, and the clothing and quilts should be neatly bundled up. The materials used for the funerary canopy (huang) should follow the proper order.

When translating "彻侯", it is rendered as "Marquis of the highest rank (Chehou)". This approach not only takes into account the convention of expressing noble titles in the target language (English) by using "Marquis" to approximate the similar noble concept in Western culture but also retains the Chinese-specific proper noun "Chehou" with a parenthetical explanation to achieve accurate linguistic conversion. For terms such as "衣衾", "棺", and "敛束", they are translated as "clothing and quilts", "coffin", and "neatly bundled up" respectively, following English lexical expression habits to ensure the

translation is natural and fluent in language, conforming to the grammatical and lexical collocation rules of the target language.

"彻侯(Chehou)" is a unique title of nobility in ancient China, with no exact equivalent in Western culture. By adding a parenthetical explanation, target language readers can understand the rank of nobility within this specific cultural context, achieving the transmission of cultural connotations. For "荒" (likely referring to the decorative or covering materials on coffins in funerals, i.e., "funerary canopy"), the translation combines an understanding of ancient Chinese funeral culture, selecting the expression "funerary canopy" that aligns with Western readers' cognition while retaining the original term "荒" in parentheses to reflect cultural uniqueness. This achieves adaptation and transformation at the cultural level, allowing target language readers to both understand the translation and appreciate the characteristics of ancient Chinese funeral culture.

3. ADAPTIVE TRANSFORMATION STRATEGIES OF CULTURAL TRANSLATION IN MULTIMODAL ECOLOGICAL ENVIRONMENT

3.1 Transformation Strategies in the Language Dimension

3.1.1 Cross-Lingual Coding Optimization of Multimodal Texts (Terminology Standardization)

In the multimodal ecological environment, the accurate translation of cultural heritage is of vital importance, and terminology standardization serves as the foundation for achieving this goal. Taking the turtle-shaped jade seal inscribed with "大刘记印(Daliu Ji Yin)" as an example, standardizing its related terminology can ensure the precision of information transmission across different modal texts. As a name with specific historical and cultural connotations, "大刘记印" should be uniformly and standardized translated as "Daliu Ji Yin," with detailed explanations of its origin and cultural significance in the terminology database, noting that it is a seal unearthed from the Marquis of Haihun's tomb and related to the identity of the Han royal clan. For "龟形玉玺" (turtle-shaped jade seal), "龟形 (turtle-shaped)" accurately describes its external features, while "玉玺 (jade seal)" clarifies its material (jade) and attribute as a seal.

Through the construction of a terminology database for the translation of cultural heritage and the standardization of terminology, consistent expressions can be maintained in various multimodal texts, such as museum exhibition introductions, online virtual tours, and academic research reports. This not only avoids misunderstandings caused by inconsistent translations but also helps improve translation

efficiency and lays a solid semantic foundation for cross-lingual cultural communication. For example, in the multimedia displays of museums, unified and standardized terminology can be used in text panels, electronic screen subtitles, and audio guides, enabling audiences, especially international visitors, to more accurately understand the information about cultural relics and enhance their cognition of the culture of the Haihunhou State.

3.1.2 Reconstruction of Linguistic Rhythm in Dynamic Subtitles and Audio Narration (Taking the Gilt Bronze Deer-shaped Weight Inlaid with Shells as an Example)

In multimodal communication, the linguistic rhythm of dynamic subtitles and audio narration is crucial for effective information transmission and audience comprehension. Taking the gilt bronze deer-shaped weight inlaid with shells as an example, linguistic rhythm must be reconstructed according to the characteristics of different modalities.

Dynamic subtitles typically appear in video displays, and as viewers have limited time to browse, the language must be concise and rhythmically compact. When introducing the gilt bronze deer-shaped weight inlaid with shells, the subtitles can be presented as: "鹿形砝码（Deer-shaped weights），镀金（Gilded），嵌贝壳（Inlaid with shells），工艺精美。" This concise expression, dominated by short phrases and sentences, quickly conveys key information, aligning with the visual reading rhythm of viewers watching dynamic videos and enabling them to grasp the main features of the cultural relic in a short time. Meanwhile, placing the English translation immediately after the Chinese term facilitates understanding for audiences with different linguistic backgrounds, avoiding interruptions to the viewing rhythm caused by frequent screen switching or pausing the video to check translations.

Audio narration has more time to elaborate compared to subtitles but still requires careful rhythm control. The introduction can start with a slightly slower pace: "Now, let's focus on a unique cultural relic, the deer-shaped gilded bronze weights inlaid with shells." This creates an engaging atmosphere. When introducing its shape, the rhythm can pick up slightly: "It presents a vivid image of a deer with smooth lines," highlighting the artifact's lively charm. When explaining its craftsmanship, such as gilding and shell inlay, the rhythm should slow down appropriately to emphasize the meticulousness: "The surface is carefully gilded, shining with a charming luster; the shells are skillfully inlaid, and every detail showcases the superb craftsmanship of ancient artisans." By adjusting the linguistic rhythm of the audio narration to match the artifact's characteristics and the audience's auditory habits, this approach better conveys the cultural connotations of the relic, enhances the listening experience, and achieves effective transformation of multimodal texts at the linguistic dimension.

3.2 Transformation Strategies in the Cultural Dimension

3.2.1 Translation and Explanation of Historical and Cultural Symbols

Example 3: 皇之不极，厥罚常阴，时则有下人伐上。

Official Translation: If the ruler fails to uphold the highest standards of governance, the corresponding punishment will often be prolonged ominous overcast weather (symbolizing political unrest), and in such times, subordinates may rise up against their superiors.

In this sentence, "阴 (yin)" is a symbol with rich historical and cultural connotations. From the perspective of ancient Chinese cultural concepts, "yin" is the counterpart of "yang" and a fundamental component of the yin-yang theory, which permeates ancient philosophy, medicine, astronomy, and other fields, serving as a basic theory for explaining natural and social phenomena. In this context, "yin" does not merely refer to overcast weather but is endowed with political symbolic meaning. Therefore, when translating, it cannot be simply rendered as "cloudy". To accurately convey its connotations, it is necessary to combine the context and translate it as "ominous overcast" (symbolizing political unrest), that is, "an ominous阴霾 (haze) symbolizing political turmoil."

This approach enables target-language readers to understand that in ancient Chinese culture, natural phenomena were often associated with political affairs. The natural phenomenon of "yin" was regarded by the ancients as a warning from heaven, implying potential chaos in the political order and possible rebellious acts by subordinates. This reflects the ancient ideological concept of "heaven-human induction" (天人合一), where heaven warns rulers through natural phenomena about the merits and demerits of their governance.

3.2.2 Visual Reconduction and Semantic Reinterpretation of Historical and Cultural Imagery

As a cultural image, "yin" can be visually reproduced and its meaning reconstructed in multimodal translation. In terms of visual reproduction, it can be presented through forms such as images and animations. For example, when producing an animated short film about the historical culture of the Haihunhou State, when interpreting this record, a scene of a gloomy and gray sky with thick, low-hanging clouds can be shown to create an oppressive and uneasy atmosphere, allowing viewers to intuitively feel the ominous feeling represented by "yin". Dynamic lines and light-shadow effects can also be combined, such as using twisted and unstable lines to represent political turmoil and dim light and shadow to strengthen the image of "yin".

In terms of semantic reinterpretation, it is necessary to enable target-language audiences to understand the deep cultural significance of "yin". While presenting

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visually, supplementary explanations can be added through subtitles or voiceovers: "In ancient Chinese culture, such overcast weather was not just a natural phenomenon but also represented political instability." The ancients believed that heaven would warn rulers in this way, implying that ministers might plot rebellions. Through this combination of visual reproduction and semantic reinterpretation, cultural barriers are broken, helping audiences with different cultural backgrounds understand the unique cultural images of ancient China and their embedded political and cultural connotations.

3.3 COMMUNICATIVE DIMENSION TRANSFORMATION STRATEGIES

In the multimodal ecological environment, as important interactive exhibition technologies, AR guides and VR scenarios can significantly enhance the cross-cultural communication effect between audiences and cultural heritage through innovative translation interaction design. Taking the turtle-shaped jade seal inscribed with "大刘记印 (Daliu Ji Yin)" unearthed from the Haihunhou State as an example, its translation interaction design should revolve around audience needs and cultural communication goals.

3.3.1 Translation Interaction Design for AR Guides

When audiences scan the turtle-shaped jade seal with their mobile phones or AR devices, a three-dimensional model of the cultural relic appears on the screen, triggering multimodal translation interactions. First, the seal inscription "大刘记印 (Daliu Ji Yin)" is highlighted with dynamic effects, accompanied by floating bilingual labels: the Chinese label reads "皇室宗亲身份象征" and the English translation is supplemented with a brief explanation: "This inscription indicates its connection to the imperial family, highlighting the noble status of its owner." For the seals turtle-shaped design, the AR interface automatically generates arrows pointing to parts such as the turtles back and feet. Clicking these triggers audio narration and text translation: "The turtle-shaped design symbolizes longevity and auspiciousness in ancient Chinese culture."

3.3.2 Translation Interaction Design for VR Scenarios

In the VR-reconstructed excavation scene of the Haihunhou State tomb, after audiences wear VR devices and enter the virtual space, the system intelligently pushes translation information based on their gaze focus. When audiences focus on the turtle-shaped jade seal, a virtual guide provides an immersive first-person narration: "As you can see, this jade seal with the inscription 'Daliu Ji Yin was carefully placed in the coffin, serving as a powerful symbol of the owner's status within the imperial lineage.'" Meanwhile, translucent dynamic subtitles will emerge in the scene,

displaying Chinese and English content simultaneously, with keywords color-coded for distinction.

4. SUGGESTIONS FOR ADAPTIVE TRANSFORMATION OF CULTURAL TRANSFORMATION IN MULTIMODAL ECOLOGICAL ENVIRONMENT

4.1 Analysis of Core Influencing Factors

Cultural and creative peripheral products hold significant importance for the adaptive transformation of cultural translation in a multimodal ecological environment, as they can enrich translation modalities, promote cultural understanding, and enhance communication effects. Taking the "Harmony and Auspiciousness" coffee cups (cultural and creative peripherals of the Haihunhou State) as an example, this section analyzes the core influencing factors affecting the adaptive transformation of cultural translation.

Example 4: 和合吉祥，龙纹与凤纹喻阴阳互生

Official Transformation: Harmony and Union, the Emblems of Good Luck, mirroring the profound Chinese cultural pursuit of balance, unity, and prosperity. The Dragon and Phoenix Patterns symbolize the Mutual Generation of Yin and Yang, which is a cornerstone of traditional Chinese philosophy, representing the harmonious interaction between two complementary forces.

These two phrases are excerpted from the official introduction to the "Harmony and Auspiciousness" coffee cups. From its official translation, it can be seen that great emphasis is placed on supplementary translations of cultural connotations.

"Harmony and Union" corresponds to "和合", directly conveying the meanings of harmony and integration. "The Emblems of Good Luck" translates "吉祥", highlighting its auspicious implications. "Mirroring the profound Chinese cultural pursuit of balance, unity, and prosperity" adds a cultural dimension, explaining that "Harmony and Auspiciousness" reflects Chinese culture's pursuit of balance, unity, and prosperity. This helps buyers understand the importance of the "Hehe" concept in culture and its connection to auspiciousness, making it clear that this is not just a simple combination of words but a profound cultural expression with deep symbolic/cultural meaning.

"The Dragon and Phoenix Patterns symbolize the Mutual Generation of Yin and Yang" is a basic semantic translation. "Which is a cornerstone of traditional Chinese philosophy, representing the harmonious interaction between two complementary forces" explains from a cultural perspective that the mutual generation of yin and yang is a cornerstone of traditional Chinese philosophy, representing the harmonious interaction between two

complementary forces. This aids buyers in understanding the cultural association between dragon and phoenix patterns and the mutual generation of yin and yang, as well as the important status of the yin-yang concept in traditional culture.

Thus, it can be seen that cultural cognition differences represent a key factor influencing the adaptive transformation of cultural transformation. Modern consumers generally have a less profound understanding of ancient philosophical concepts such as the mutual generation of the Five Elements and the interdependence of yin and yang. Also, foreign audiences have limited knowledge of traditional Chinese cultural elements like the "harmony and union" philosophy. A simple literal translation of "和合吉祥" into English cannot convey its rich cultural connotations, potentially leading to cultural misunderstandings. Additionally, foreign consumers have aesthetic perspectives and value orientations different from those in China, and their comprehension of the noble bearing and ritual significance embedded in the coffee cup design also varies. This necessitates considering how to adjust the expression in translation to align with the cognitive habits of foreign audiences.

4.2 Optimization Strategies for Adaptive Transformation of Cultural Transformation

In the multimodal ecological environment, promoting interdisciplinary collaborative innovation between translation technology and cultural research holds significant importance for the adaptive transformation of cultural translation. To this end, it is crucial to first establish interdisciplinary research platforms by relying on universities and research institutions to gather experts from fields such as translation and culture, organizing regular online and offline exchange activities to share research achievements on Haihunhou culture and progress in translation technology, and exploring methods for accurately translating cultural vocabulary specific to the Haihunhou State. Additionally, developing technical tools suitable for cultural translation, such as intelligent translation assistants driven by artificial intelligence that utilize big data analysis of audience feedback to optimize translations—for instance, providing accurate translations and matching cultural interpretations for product introductions of Haihunhou cultural and creative peripherals—is essential. Equally vital is cultivating interdisciplinary composite talent by setting up interdisciplinary courses in universities to integrate knowledge of translation, culture, and technology, and enabling students to participate in practical translation projects for cultural and creative products to enhance their interdisciplinary application capabilities in the dissemination of Haihunhou culture, thereby injecting new vitality into the development of cultural translation.

5. CONCLUSION

This study focuses on the adaptive transformation of cultural translation represented by the Han Dynasty culture of the Nanchang Haihunhou State in a multimodal ecological environment, yielding fruitful results. Theoretically, it integrates theories such as ecological translation studies and multimodal discourse analysis to construct a systematic analytical framework, deeply analyzing translation cases of Haihunhou culture from the dimensions of language, culture, and communication, and clarifying transformation strategies for each dimension. Through research on cultural and creative peripheral products of the Haihunhou State, it reveals influencing factors such as cultural cognition differences—including difficulties in understanding between ancient and modern audiences, as well as Chinese and foreign audiences—how the characteristics of technical media affect translation presentation forms, and how audience preferences influence translation style choices. In response to these issues, optimization strategies are proposed, such as establishing interdisciplinary research platforms, developing adaptive technical tools, and cultivating composite talents, providing new ideas for the development of cultural translation.

Future research can be expanded and deepened in multiple aspects: promoting the development of cultural translation theories and practices by following emerging technological trends, continuously optimizing translation technology tools, and deeply exploring the needs and feedback of different audience groups on cultural translation to achieve effective cultural dissemination. Meanwhile, strengthening international cooperation and exchanges, carrying out transnational and cross-cultural research projects, learning from foreign cultural translation experiences, and enhancing the global communication influence of China's cultural heritage will help Chinese culture better reach the world and promote exchanges and mutual learning among diverse cultures.

REFERENCES

Lefevere, A., & Bassnett, S. (Eds.). (1990). *Translation, history and culture: A sourcebook*. London, UK: Routledge.

Holmes, J. S. (1972). *The name and nature of translation studies*. Amsterdam, Netherlands: Translation Studies Section, University of Amsterdam.

Nida, E. A. (2001). *Language and culture: Context in translation*. Shanghai, China: Shanghai Foreign Language Education Press.

Wang, H. L. (2023). *Research on multimodal translation theory and practice*. Hangzhou, China: Zhejiang University Press.

Hu, G. S., & Liu, A. H. (2016). New orientation, new exploration: From translation as adaptation and selection to eco-translatology. *Translation Horizons, 1*, 48-60+150.

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Hu, G. S. (2017). Applied translation studies from the perspective of eco-translatology: Some cases. *Shanghai Journal of Translators, 5*, 1-6+95.

[Anonymous]. (1997). Investigating translation from the standpoint of cultural history: Reading *Translation, history and culture* edited by Andre Lefevere. *Foreign Language Teaching and Research, 2*, 73-75.

Shu, L. X., & Tu, S. S. (2024). Research on cultural and creative product design of Haihunhou State Site Museum under narrative concept. *Tiangong, 24*, 49-51.

Wang, S. H. (2019). Bronze tripods unearthed from the tomb of Marquis Haihun in the Western Han Dynasty. *Agricultural Archaeology, 3*, 274.

Dai, Y. J., Shi, L., & Liu, L. (2024). Cross-cultural transmission of the "天人合一" ideology in the object images of Haihunhou State from a semiotic perspective. *Hunan Packaging, 39*(6), 10-15.

Chen, Y. (2024). Translation practice on new media platforms from the perspective of multimodal translation. *Popular Literature and Art, 17*, 97-99.

Wu, Y. (2021). Multimodal translation studies under media turn. *Journal of Foreign Languages (Journal of Shanghai International Studies University), 44*(1), 115-123.