

Translation Strategies for External Publicity of Heilongjiang Intangible Cultural Heritage in the AI Era

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Abstract

Heilongjiang Province is home to rich intangible cultural heritage (ICH) resources. However, in the process of international publicity translation, problems such as inconsistent terminology, insufficient transmission of cultural connotations, low translation efficiency, and a lack of quality feedback mechanisms have seriously constrained its effectiveness in international communication. With the development of artificial intelligence technologies, machine translation, natural language processing, and corpus construction offer new solutions for ICH publicity translation. This paper, based on the practical difficulties in the external public translation of Heilongjiang's ICH, proposes five optimization strategies: standardized terminology construction, human-AI collaborative translation, multi-solution selection for culture-specific items, audience-oriented dynamic content adaptation, and quantitative data-driven translation quality feedback. The research shows that AI technologies can effectively improve the standardization, accuracy, and adaptability of ICH translation, facilitating the high-quality "going global" of Heilongjiang's ICH culture, and providing practical references and methodological support for the external communication of Chinese culture in the new era.

Keywords

Artificial Intelligence; Heilongjiang Intangible Cultural Heritage; Publicity Translation; Translation Strategies; International Communication.

1. Introduction

With the accelerated pace of globalization, cultural soft power has increasingly become a key component of a country's comprehensive national strength. Intangible cultural heritage (hereinafter referred to as "ICH") serves as a vital carrier of national culture, embodying profound historical memory, regional characteristics, and the humanistic spirit. External communication and cultural publicity of ICH play crucial roles in shaping the national image and enhancing cultural identity[1]. Heilongjiang Province, an important region in Northeast China where multiple ethnic groups converge and interact, possesses rich and diverse ICH resources, such as the Hezhen Fish Skin Craftsmanship, the Daur people's folk songs, and the Oroqen people's birch bark craftsmanship, all of which exhibit distinct local features and ethnic customs. However, in the process of external translation and communication of Heilongjiang's ICH, problems such as inconsistent terminology, incomplete transmission of cultural connotations, and uneven translation quality have greatly restricted its international communication effectiveness and cultural influence.

In recent years, the rapid development of a new generation of information technologies, represented by artificial intelligence (AI), has brought new technical pathways and solutions for the external publicity translation of ICH. AI technologies, such as machine translation, natural language processing, corpus construction, and intelligent proofreading, can improve translation efficiency, standardize terminology expression to a certain extent, optimize cultural

context adaptation, and establish quality feedback mechanisms. Particularly in multilingual, multimodal, and multi-audience scenarios for ICH external publicity, the assisting role of AI technology has become increasingly prominent. However, current research on the systematic application of AI technology in ICH external publicity translation remains relatively insufficient, lacking systematic exploration that combines regional ICH characteristics and specific technological contexts.

Based on this, this study takes the external publicity translation of Heilongjiang Province's ICH culture as its research object, aiming to explore the potential pathways for AI technology to play a role in addressing the practical difficulties encountered in current translation practice. By constructing an optimization strategy model that includes a standardized terminology database, a human-AI collaborative translation model, a multi-solution decision-making mechanism, an audience-oriented content adaptation mechanism, and a quantitative quality evaluation model, this study seeks to improve the accuracy, adaptability, and communicative capacity of Heilongjiang ICH external publicity translation, facilitate the better "going global" of regional ICH culture, and provide practical references for the external communication of Chinese culture in the new era.

2. Current Situation of External Translation of Heilongjiang's Intangible Cultural Heritage

(1) Currently, Heilongjiang Province lacks a systematic, authoritative, and shareable translation resource platform for the external publicity translation of its ICH culture, and there is a lack of unified standards. Many ICH items with strong local characteristics have multiple English translations. For example, "赫哲族鱼皮制作技艺" is often translated as "Hezhe Fish Skin Painting," "Hezhe Fish Skin art," or "Hezhe Fish Skin Craft"; "东北二人转" is translated as "The Northeast song-and-dance duet" or "The Northeast Errenzhuan[2]." Such terminological inconsistency undermines the authority and professionalism of external publicity texts and creates significant 'soft internal friction' within the translation production chain, greatly undermining the collaborative efficiency of cross-cultural communication. Furthermore, the standardization of ICH terminology lacks dedicated corpus support. Compared with well-established terminology databases in fields such as science and medicine, digital terminology resources in the ICH domain are still in their infancy stage. Although Heilongjiang is rich in ICH resources, the collection, annotation, translation, and storage of relevant terminology have not yet been systematically conducted. Translators lack reliable references when dealing with specific ICH items and rely more on personal experience or ad hoc searches, making it difficult to ensure the accuracy and consistency of translations[3].

(2) Insufficient Expression of Cultural Connotations and Limited Contextual Adaptation Capability

Intangible cultural heritage typically has profound historical origins, ethnic beliefs, lifestyles, and value systems, which are often oversimplified or lost in the process of foreign language translation. In external publicity translation, many translations merely provide a superficial description of basic information about ICH items, failing to delve into their underlying cultural logic and spiritual significance. For example, "东北传统大秧歌" is not just a form of song and dance but also embodies the affection of the people of Northeast China for nature and for life. Simply translating it as "folk dances" makes it difficult to convey its deep cultural significance[4]. Simultaneously, existing translations have a limited capacity for contextual adaptation. Different target audiences, such as ordinary tourists, cultural researchers, and international media, have varying levels of receptivity and interest in ICH. However, current external publicity materials often adopt a "one-size-fits-all" translation strategy, lacking detailed

consideration of the target language's cultural background, reading habits, and cognitive frameworks. Such context-inadequate translation often creates comprehension barriers or cultural distance among target language readers, thereby diminishing communication effectiveness.

(3) Inefficiency of Traditional Translation Models and Lack of Quality Feedback Mechanisms

The current external publicity translation of Heilongjiang's ICH relies primarily on manual translation, a process that includes data collection, terminology verification, initial translation, proofreading, finalization, and other steps. The overall cycle is relatively long, making it difficult to meet the timeliness requirements of external publicity. In particular, in a multilingual, multi-platform, and high-frequency publishing environment, the traditional model exposes problems such as slow response speed, a high degree of repetitive work, and strained human resources. More critically, existing models lack a systematic, closed-loop quality feedback mechanism. Once translations are completed and published, there is almost no mechanism for tracking and evaluating the effectiveness of external publicity, such as whether the translation is understood by target readers, whether it elicits positive responses, or whether there are errors or controversies. This "feedback-free" state makes it difficult to identify and correct translation quality issues and leaves experience accumulation and process optimization unsupported by data. Even when proofreading is conducted, it is largely based on subjective judgment, lacking quantitative indicators and subsequent validation, thus failing to form a virtuous cycle of continuous improvement.

3. Optimization Strategies for AI-Empowered External Publicity Translation of Heilongjiang's Intangible Cultural Heritage

(1) Standardization Strategy: Standardized Construction of an ICH Terminology Database

To address the problems of terminological confusion and the lack of unified standards in the external publicity translation of Heilongjiang's ICH, artificial intelligence technology can provide systematic solutions for the standardized construction of an ICH terminology database. First, natural language processing (NLP) technology can be used to collect and automatically align existing ICH literature, external publicity materials, and bilingual texts, extracting high-frequency terms and their contextual information to create an initial term inventory. On this basis, machine learning algorithms can be employed to classify, annotate, and model relationships among terms, constructing a multilevel terminological system covering categories such as item names, craftsmanship processes, cultural symbols, and ethnic appellations.

Second, the standardization of a terminology database requires formulating and maintaining standards. AI technology can assist in establishing term review and update mechanisms for the same. By comparing multiple authoritative translations and referring to official terminology used by international ICH organizations, such as relevant UNESCO documents, AI can provide recommended solutions for term translations. Simultaneously, the terminology database can be designed as an open and shareable platform to support translators' online queries, feedback, and suggested revisions. The system can then adjust the quality of the term recommendations based on user behavior data and expert review results. Taking "赫哲族鱼皮制作技艺" as an example, the system can automatically retrieve existing translations, analyze usage frequency, and annotate source authority, ultimately facilitating the formation of a standardized translation suitable for different cultural contexts, such as "Hezhen Fish Skin Craftsmanship," thereby providing a reliable basis for subsequent external publicity translation[5].

(2) Collaborative Strategy: A Human-AI Collaborative Model for Accurate Translation

Artificial intelligence is not intended to replace human translators; rather, it aims to improve translation efficiency and accuracy through a human-AI collaborative model. In the external publicity translation of Heilongjiang's ICH, a collaborative workflow of "AI pre-translation + human proofreading + feedback optimization" should be established[6]. Specifically, machine translation models can first perform rapid initial translation of source texts, which is particularly suitable for descriptive, information-dense ICH texts. AI systems can also automatically identify potential culture-specific items, ambiguous sentences, or low-frequency terms and flag them for the translator's attention.

Human translators then proofread and refine the output, leveraging their irreplaceable advantages in cultural understanding, contextual judgment and stylistic control. For example, AI might literally translate "萨满舞" as "Shaman Dance," but a translator could supplement it with explanatory information or choose a more communicative expression based on the target audience's cultural knowledge. Another key aspect of human-AI collaboration is establishing a feedback loop: each modification a translator makes to the AI's initial translation can be recorded and learned by the system, which then fine-tunes subsequent translation models to gradually adapt to the linguistic features and cultural contexts of this text type[5]. This human-AI complementary model leverages AI's speed advantages of AI while ensuring the cultural accuracy and naturalness of the translation.

(3) Optimal Decision-Making Strategy: Multi-Solution Generation Mechanism for culture-specific Items

One of the greatest challenges in the external publicity translation of ICH is the handling of culture-specific items (CSIs), which refer to cultural elements that lack equivalents or corresponding concepts in the target language culture. Under traditional translation models, translators typically rely on personal experience to choose a translation method, lacking a process of comparison and optimization. Based on large-scale bilingual parallel and domain-specific corpora, AI systems can automatically generate multiple translation solutions for the same CSI, covering different strategies such as transliteration, literal translation, free translation, paraphrasing, and annotation[7]. For example, for "鄂伦春族桦树皮船," the system might output: (a) "Oroqen Birch Bark Canoe" (literal translation), (b) "Oroqen 'Muke'" (transliteration + explanation), (c) "Birch Boat of the Oroqen People" (free translation), and other solutions[8]. On this basis, the system can provide decision-making support based on multidimensional indicators, including conventions for similar expressions in the target language, term recommendation levels from the database, and usage frequency and feedback effects in previous external publicity materials. Translators can then select the optimal solution or combine and adjust options based on the specific external publicity scenario and audience characteristics of the target language. This multi-solution generation mechanism avoids the limitations of a single translation method to a certain extent, providing translators with richer choices and a more solid basis for decision making.

(4) Dynamic Adaptation Strategy: Audience-Need-Oriented Content Optimization Mechanism

German scholar Hans Vermeer proposed the Skopos theory in the late 1970s, which states that "the purpose of translation determines the methods and strategies of translation[9]." Different external publicity audiences have significantly different receptivities to ICH information, interest preferences, and cultural backgrounds. Traditional translation models often adopt a "one-size-fits-all" output, making precise communication difficult. Artificial intelligence technology can enable the "tailored" optimization of external publicity translation through audience profiling and content dynamic adaptation mechanisms[10].

Specifically, based on user data (such as country/region of origin, dwell time, click behavior, search keywords, etc.) or preset audience categories (such as ordinary tourists, culture enthusiasts, and professional researchers), AI systems can automatically identify the target

audience type and their needs. For ordinary tourists, the system can generate concise, vivid, story-driven translations with lower cultural barriers, highlighting the interest and visual impact of ICH items. For cultural researchers, it can retain more original terminology, historical background, and craftsmanship details, providing translations that are closer to academic norms. Furthermore, AI can automatically adjust the translation length, sentence structure, and tone based on the output platform (such as promotional brochures, official websites, and social media video subtitles). This dynamic adaptation mechanism allows the same ICH content to present different "faces" to different audiences, effectively enhancing the precision and communicative power of external promotion.

(5) Quantitative Feedback Strategy: AI-Supported Translation Quality Assessment System

Traditional translation quality assessment often relies on the subjective judgment of proofreaders, lacking systematic and quantifiable evaluation indicators, and the communication effect after translation publication is difficult to track. Artificial intelligence technology can construct a quantitative assessment system covering multiple dimensions—"language quality, cultural transmission, and communication effect"—to achieve continuous monitoring and optimization of translation quality.

At the language quality level, AI can automatically detect indicators such as grammatical errors, terminological consistency, and sentence complexity, providing quantitative scores. At the level of cultural transmission, the degree of cultural connotation retention can be assessed by comparing the cultural information density between the source and target texts. Sentiment analysis technology can also be used to determine the potential attitudinal sentiment (positive, neutral, or negative) that a translation may evoke in target language readers. At the level of communication effect, AI can integrate backend data from external publicity platforms (such as click-through rates, reading duration, shares and reposts, sentiment of comments, etc.) to establish a correlation model between translation quality and communication performance. The results of these assessments can be periodically generated into reports, providing feedback to translation teams and terminology database management platforms to guide subsequent adjustments to translation strategies and optimize the terminology database. Through this closed loop quantitative feedback mechanism, the external publicity translation of Heilongjiang's ICH can achieve data-driven continuous improvement, steadily enhancing external publicity effectiveness[2].

modern clothing development, designers need to put traditional embroidery patterns into more diverse parts of clothing. For example, shoulders and waist can effectively break through the traditional mindset and give people a refreshing feeling. For designers, when using embroidery, they should also deal with the traditional embroidery art scientifically, and further optimize the effect of patterns according to the current consumers' needs and fashion frontiers, so that the overall decoration and color matching are more fashionable. For example, in some haute couture conferences, many design products will use bead embroidery, plate gold and other three-dimensional embroidery to decorate the whole clothing, which makes the three-dimensional effect of the whole clothing stronger and elegant.

4. Conclusion

Intangible cultural heritage is an important carrier of a nation's spiritual memories. The distinctive culture of Heilongjiang Province not only requires effective inheritance and protection but should also cross national borders to achieve broader international exchange and dissemination. In the context of the artificial intelligence era, for Heilongjiang's ICH culture to achieve high-quality "going global," it is necessary to actively embrace technological change and uphold the authenticity and depth of cultural transmission. Only through the synergistic

efforts of technology and the humanities can the story of Heilongjiang's ICH be truly well told and the voice of China be effectively communicated.

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