

Digital Empowerment and University-Local Collaboration: Translation and International Communication of Shaanxi Intangible Cultural Heritage

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Abstract: Against the backdrop of China's national cultural digitalization strategy, advancing the international communication of intangible cultural heritage (ICH) serves as a critical pathway to enhancing the global appeal of Chinese civilization. With its abundant ICH resources, Shaanxi Province still faces prominent practical bottlenecks in the overseas dissemination of its cultural heritage. Grounded in eco-translatology and media affordance theory, this paper constructs an "integrated translation and communication" analytical framework to systematically investigate the dilemmas and optimization paths of Shaanxi ICH in English translation and digital international communication. The study finds that Shaanxi ICH is constrained by a non-standard translation system, weak digital communication capacity and the absence of a translation-communication collaboration mechanism. Targeted solutions are accordingly proposed, including category-based differentiated translation principles, an AI-enabled collaborative translation mode, multimodal content production and a university-local talent guarantee mechanism, which can provide practical references for the internationalization of regional ICH in central and western China.

Keywords: Shaanxi Intangible Cultural Heritage; International Communication; Digital Empowerment

1. Introduction

Driven by the iteration of digital technologies, the national cultural digitalization strategy is being steadily implemented. As affirmed by UNESCO (2018), cultural heritage has expanded beyond monuments and objects to include digital environments[1]. Therefore, enhancing the international communication effectiveness of

Chinese culture and strengthening the global appeal of Chinese civilization have become a key proposition of the current era. As a core living resource for cross-cultural dialogue and telling China's stories well, intangible cultural heritage (ICH) carries the cultural genes of the nation. The English translation and overseas dissemination of ICH, empowered by digitalization, has become a crucial lever for boosting national cultural soft power and building the Digital Silk Road.

With its profound historical heritage, Shaanxi is home to 4 UNESCO Representative Items of the Intangible Cultural Heritage of Humanity, including Xi'an Wind and Percussion Music and Chinese Shadow Puppetry, 91 national-level ICH items, and over 600 provincial-level ICH items. These resources cover diverse categories such as performing arts, traditional crafts and folk literature, represented by Qinqiang Opera, Northern Shaanxi Paper-cutting, Fengxiang Clay Sculpture and folk legends. The regional cultural features of north-south integration endow Shaanxi's ICH with unique potential for cross-cultural empathy, making it a core carrier for regional culture going global.

However, a review of relevant research reveals a notable absence of studies focusing on Shaanxi. Specifically, there are limited specialized translation studies on Shaanxi's ICH. Combined with field surveys, existing translation texts and overseas communication data, it is evident that the international practice of Shaanxi's ICH has long been constrained by multiple practical bottlenecks, resulting in a communication dilemma of inaccurate translation, limited reach and weak cultural recognition.

Against this background, this paper takes representative ICH items in Shaanxi as the core research objects. It integrates the three-dimensional theory of eco-translatology and the three-dimensional analytical framework of media affordances to construct an "integrated translation and communication" research model

for Shaanxi's culture. The paper systematically explores differentiated English translation strategies and multimodal digital international communication paths for Shaanxi's ICH against the backdrop of digital transformation. It aims to provide references for cultural and tourism authorities and ICH conservation institutions in Shaanxi, and offer replicable and scalable practical samples of Shaanxi's experience for the international dissemination of ICH in similar regions of central and western China.

2. Theoretical Foundations and Research Status

This part illustrates Eco-translatology and media affordance theory to construct an analytical framework, and a literature review was also conducted here.

2.1 Core Theoretical Support

The essence of Eco-translatology emphasizes "adaptation and selection", advocating that translation practice should follow the three-dimensional transformation principles covering the linguistic dimension, cultural dimension and communicative dimension. Professor Hu Gengshen, who proposed the concept of ecological translation studies, stated, "What we refer to as the ecological paradigm is a deepening and expansion of the research paradigm of ecological translation studies based on an ecological perspective; it follows the linguistic and cultural paradigms and possesses both meta-disciplinary and holistic characteristics. This ecological paradigm is both an adaptation and a complement; it is both a transformation and a transcendence[2]. It requires translation activities to balance the expressive norms of the target language, the conveyance of source-language cultural connotations, and cross-cultural communication goals. Therefore, this theory can provide a solid academic reference for formulating differentiated English translation strategies for different categories of Shaanxi intangible cultural heritage (ICH) texts.

In 2017, communication scholar Pan Zhongdang first introduced the concept of "affordance" into domestic new media research, pointing out it as a promising research direction for future new media studies[3]. As a systematic media research framework, affordance theory not only helps researchers interpret emerging media phenomena, but also evaluates the development

potential of new media technologies, forms and structures. Media affordance theory systematically illustrates the enabling mechanism of digital media for content production empowerment, community relationship building and scenario-based communication from three dimensions: production affordances, social affordances and mobile affordances. It can accurately dissect the functional paths of technologies such as short videos, generative artificial intelligence (GAI) and virtual reality (VR) in the international communication of ICH.

Built on the two theories, this paper explores the logic of "integrated translation and communication" for Shaanxi ICH culture.

2.2 Literature Review

At present, two mature research threads have taken shape in academia regarding the English translation of ICH for international publicity and digital communication, yet the integration between them remains insufficient, and there is a notable imbalance in regional research coverage. As for foreign studies, Cary Karp highlighted the advantages of virtual digital museums, arguing that establishing such museums can provide a better platform for showcasing and disseminating intangible cultural heritage (ICH)[4]; Marcello Carrozzino et al. combined VR technology with traditional handicrafts as a form of ICH to explore the specific role of VR technology in the digitization of ICH[5]; S. Kolay proposed the idea of integrating traditional Indian arts and crafts into games or animations to spark interest in ICH among the younger generation, thereby promoting its transmission and revitalization [6]; Alessandro Pozzebon and Silvia Calamai, drawing on the development of smart devices such as smartphones and tablets and people's reliance on them, explored the role of these devices in the presentation and dissemination of ICH information [7].

In domestic, scholars have focused on topics including terminology standardization, cultural adaptation and corpus construction, forming multiple analytical paradigms such as eco-translation and adaptation theory. Most studies take nationwide ICH items like Peking Opera and martial arts, as well as projects in southeastern China as research objects. Previous findings have verified the effectiveness of strategies such as culture-loaded word

translation and supplementary annotation, but specialized translation studies on ICH in western China are relatively scarce[8]. Concerning the study of ICH digital communication, existing research has confirmed that digital technologies such as short videos and intelligent algorithms can break the temporal and spatial barriers of ICH communication and foster a participatory communication ecology. Some studies have further proposed international communication paths including platform matrix operation and multimodal content production. However, most of them focus on technical channels and communication modes, and pay insufficient attention to the supporting role of front-end translation quality[9].

Focusing on Shaanxi, existing studies are mostly scattered in discussions on the living inheritance of ICH and translation skills of individual texts, lacking systematic research integrating English translation and digital communication. Therefore, it is difficult to provide holistic practical guidance for the international communication of Shaanxi ICH in the digital context.

3. Dilemmas of International Communication of Shaanxi ICH

Shaanxi boasts a rich variety of ICH resources with profound cultural heritage, which carries outstanding cross-cultural communication value. However, in the practice of digital transformation and international communication, its translation system and communication mode still face multiple practical bottlenecks, restricting the overall improvement of communication efficiency.

3.1 Lack of a Standardized Translation System

By sorting out and comparing English translation corpora from multiple channels such as official international publicity materials of Shaanxi, foreign-related cultural and tourism platforms, and public texts in ICH exhibition halls, it can be found that a unified standard system has not yet been established for the English translation of Shaanxi ICH for international publicity, with three prominent problems as follows.

First, there is no unified standard for terminology translation. The translations of the same ICH item name, technical concept and folk symbol vary greatly across different communication channels, and the translation of

proper nouns is highly arbitrary. This not only reduces the international recognition of ICH culture, but also hinders the brand building of ICH international communication. Second, there is a loss in the transmission of cultural connotations. A large number of culture-loaded words are translated literally without necessary contextual explanations and cultural background supplements. It is difficult for overseas audiences to understand the folk concepts, historical connotations and aesthetic characteristics embodied in ICH, which further amplifies the cultural discount effect in cross-cultural communication.

3.2 Weak Digital Communication Capacity

From the perspective of overseas communication practice, the overall digital international communication capacity of Shaanxi ICH still has obvious shortcomings, and a channel and content system adapted to the overseas communication ecology has not been built.

In terms of channel layout, the account layout of Shaanxi ICH on major overseas social platforms such as TikTok and YouTube is relatively scattered, with dispersed operation entities, failing to form a coordinated and linked matrix communication pattern. Meanwhile, operators have insufficient adaptation to the algorithm rules and traffic logic of overseas platforms, resulting in very limited effect of precise content reach. In terms of content supply, existing overseas communication content is still dominated by static graphics and long documentary videos. Lightweight short videos, dynamic digital cultural and creative products, and immersive interactive content adapted to the reading habits of young overseas audiences are in serious shortage, with weak multimodal content production capacity. As for user participation, the communication mode is still dominated by one-way information output, lacking incentive mechanisms and participation channels for audience secondary creation. Cross-cultural communities based on cultural interests have not yet been cultivated, making it difficult to achieve communication fission through user co-creation.

3.3 Absence of a Translation-Communication Collaboration Mechanism

In addition to the respective shortcomings of translation and communication, the separation between translation production and

communication application is a deep-seated structural problem restricting the improvement of international communication efficiency of Shaanxi ICH.

On the one hand, most existing translation work follows the normative standards of traditional written translation, without considering the stylistic features, length limitations and expression habits of digital communication scenarios in advance. The scenario adaptability of translated content is insufficient, making it difficult to be directly converted into communication texts suitable for social platforms. On the other hand, overseas communication operation lacks regular support from professional translation forces. The update of multilingual content lags behind, and the quality of translations on different platforms varies, which is likely to cause deviations and misinterpretations of cultural information.

Meanwhile, the talent resources and disciplinary advantages of translation majors in local universities have not been fully leveraged during ICH international communication. Specifically, There is a lack of effective linkage among ICH conservation institutions, cultural and tourism departments, universities and communication platforms, making it difficult to form a complete communication system.

4. Optimization Strategies Proposed under Digital Transformation

This part further proposes targeted translation optimization strategies for the existing deficiencies under the digital transformation context.

4.1 Differentiated English Translation Principles by Category

Shaanxi's intangible cultural heritage can be divided into several major categories, including opera and music, traditional crafts, and folk tales. Each category has distinct textual characteristics and forms of presentation to international audiences, and foreign readers' approaches to understanding them vary significantly. Therefore, translators must apply the principles of ecological translation to adopt different translation methods for different types of intangible cultural heritage.

For stage performance-based ICH such as Qinqiang and Xi'an Drum Music, translations must preserve the original musical charm while ensuring that international audiences can grasp

the artistic vision embedded within. Unique technical terms—such as vocal styles, musical modes, and opera roles—can be annotated with Pinyin and accompanied by brief cultural explanations to retain local cultural characteristics. When translating lyrics, not only must the meaning be accurate, but the rhythm of the recitation must also be taken into account. We should minimize the use of local idioms that are difficult for foreigners to understand, focusing instead on conveying the emotions and imagery embedded in the text. When translating traditional crafts such as Northern Shaanxi paper-cutting and Fengxiang clay sculptures, pay attention to two points: standardize technical terms and describe the production steps in a simple and easy-to-understand manner. When translating folk literature such as folk legends and local tales, the focus should be on storytelling, and footnotes should be kept to a minimum. The narrative order can be adjusted to align with foreign readers' reading habits. When encountering difficult-to-understand cultural allusions, either briefly mention them in the text or provide a consolidated explanation at the end of the text, so that the translation is more readable and better suited for international dissemination.

4.2 Collaborative Translation Mode of “AI Plus Human Translators Plus ICH Inheritors”

Digital technology can effectively address the challenge of ICH translation output failing to keep pace with dissemination needs. To this end, a collaborative translation mechanism involving artificial intelligence, professional translators, and ICH inheritors can be established to ensure both translation efficiency and the accuracy of cultural expression.

First, AI can basically handle some pre-translation work. Drawing on a specially curated multilingual repository of Shaanxi's ICH materials, generative AI can be employed to produce initial translations of source texts and batch-generate multilingual subtitles, rapidly producing a large volume of translated content to meet the needs of digital dissemination scenarios—such as short videos and live streams—that require continuous content updates. The translations are then handed over to professional translators for refinement. Translators will make cross-cultural adjustments to terms with distinct local cultural

characteristics, adapt the writing style to suit overseas audiences, and correct any awkward expressions produced by machine translation to minimize misunderstandings arising from cultural differences. Finally, ICH inheritors conduct the final review. Drawing on their deep understanding of the craft and its folkloric significance, the inheritors verify the descriptions of production processes and cultural symbolism in the translations to ensure the content remains true to the cultural essence of the intangible cultural heritage.

With clearly defined roles and close collaboration among these three parties, the process effectively balances the need for efficient translation output, the preservation of traditional culture's authenticity, and the suitability of the content for overseas dissemination.

4.3 Construction of Core Terminology English Translation Standards

Standardizing the translation of specialized terminology is fundamental to the standardization of translations of ICH for international audiences, and it is also the key solution to the current issue of inconsistent translations across different platforms. We can categorize terminology related to Shaanxi's ICH into three major categories: general terms, terms unique to Shaanxi, and terms derived from cultural allusions. By comprehensively cataloging core ICH terms, we can establish clear translation guidelines for each category.

For general terms, we should directly adopt internationally recognized and commonly used translations to facilitate understanding by overseas audiences; For terms unique to Shaanxi, translations should balance public usage habits with cultural authenticity; where authoritative translations already exist, they should be directly adopted, while terms without established standards should be rendered using Pinyin accompanied by explanatory notes. For terms involving historical or folkloric allusions, translations must both restore the original meaning and provide a brief contextual introduction, striking a balance between effective cultural communication and the reader's cognitive load.

Based on this tiered translation framework, *the Manual for the English Translation of Core Terms of Shaanxi's ICH* will be compiled to establish a comprehensive and unified set of

translation standards. This provides a consistent linguistic foundation for the production of various digital content, such as short videos and online exhibitions, thereby eliminating inconsistencies in translations across different institutions and platforms at the source.

5. Innovation Paths for Digital-Enabled International Communication of Shaanxi ICH

Digital transformation provides technical support and channel innovation opportunities for the international communication of ICH. Relying on the diverse affordances of media technology, Shaanxi ICH needs to build a three-dimensional communication system from four dimensions: content production, social operation, scenario embedding and talent support, so as to address the current dilemma of weak communication capacity.

5.1 Technology-Enabled Multimodal Content Production

Relying on the technology empowerment feature of media production affordances, a multimodal and multi-level digital content production system is constructed to adapt to the fragmented content consumption habits of overseas audiences.

On the one hand, generative artificial intelligence technology is used to conduct lightweight transformation of ICH elements such as Qinqiang Opera, shadow puppetry and Northern Shaanxi Paper-cutting, to produce short and accessible digital content such as popular science short videos, dynamic pattern stickers and folk animations, lowering the cognitive threshold for overseas audiences. Meanwhile, VR and augmented reality (AR) technologies are used to restore ancient Qinqiang opera stages and shadow puppetry performance scenes, to create immersive digital exhibition products and enhance the audience's sensory experience and sense of cultural immersion.

On the other hand, a collaborative production mechanism of "Professionally Generated Content, and User Generated Content" is established. Official operation entities produce high-quality benchmark content and control the cultural core and communication orientation. At the same time, the standardized translated digital material library of ICH is opened to encourage global audiences to carry out secondary creation and adaptation based on the materials, amplify

communication potential through user participation, and form a positive cycle of content production.

5.2 University-Local Collaborative Talent Guarantee Mechanism

Sustainable international communication cannot be separated from professional talent support. It is necessary to give full play to the disciplinary advantages of local universities and build an integrated university-local collaboration mechanism of “scientific research, teaching and practice”.

At the talent training level, integrate content such as Shaanxi ICH English translation and digital cross-cultural communication into the practical teaching system of translation majors, develop supporting teaching cases and training projects, and embed practical training such as overseas platform operation and multimodal content translation into actual courses, to cultivate interdisciplinary talents with both translation ability and digital communication literacy.

At the practice implementation level, encourage universities to co-build practice bases with local ICH conservation institutions and cultural and tourism departments, and form ICH communication practice teams guided by professional teachers and participated by students, to undertake routine work such as ICH text translation, overseas account content operation and audience feedback sorting. This not only provides stable talent supply and intellectual support for communication practice, but also realizes the transformation of scientific research achievements into practical applications, forming a two-way empowerment pattern of talent training and communication practice.

6. Conclusion

Shaanxi ICH carries profound historical and cultural heritage and is an important part of China's fine traditional culture. Promoting its international communication is not only an inherent requirement for the living inheritance of culture, but also an important path to enhance local cultural soft power.

At present, the overseas communication of Shaanxi ICH still faces practical problems such as inconsistent translation standards, insufficient digital content supply and scattered communication channels, so it is highly urgent to address these dilemmas. Digital technologies

such as artificial intelligence provide new solutions for ICH going global. They can not only improve translation efficiency and unify terminology standards, but also support the creation of multimodal content such as short videos and immersive experiences, to better adapt to the overseas communication ecology. Meanwhile, through university-local collaboration, joint efforts can be formed to jointly promote Shaanxi ICH culture to go global more effectively.

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