

# Digital Preservation and Visual Representation of Intangible Cultural Heritage Symbols

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**Abstract:** As the condensed carrier of the core elements of intangible cultural heritage, the digital preservation and visual presentation of intangible cultural heritage symbols are the core paths for the dynamic inheritance of intangible cultural heritage in the digital age. This article defines the concept and core cultural attributes of intangible cultural heritage symbols, explains the value of digital means for the inheritance of intangible cultural heritage in the era; from three dimensions of resource quality standards, visual translation accuracy, and resource circulation and activation, it systematically sorts out the prominent problems existing in the current digital practice of intangible cultural heritage symbols, and analyzes the causes and impacts of the problems based on local practical cases; targeted solutions such as "unified collection and storage standards, establishing a cultural review mechanism, and building an open and shared platform" are proposed to provide practical references for solving the predicament of "overemphasizing preservation but underemphasizing application" and "overemphasizing form but underemphasizing content" in the digitalization of intangible cultural heritage.

**Keywords:** Intangible Cultural Heritage; Digital Preservation; Visual Presentation

## 1. The basic framework and value of digital preservation of intangible cultural heritage symbols

### 1.1. Definition and classification of intangible cultural heritage symbols

Intangible cultural heritage symbols are the iconic representational units that carry the core cultural connotations, values, and memory attributes of intangible cultural heritage. They are the condensed carriers of the core essence of intangible cultural heritage and the primary medium for the public to recognize and understand specific intangible cultural heritage projects<sup>[1]</sup>. From the classification perspective, intangible cultural heritage symbols can be divided into three major categories. The first category is narrative symbols, which carry the origin legends, historical context, and community memories of intangible cultural heritage projects and can fully convey the development and evolution logic of the projects. The second category is representational symbols, which present the external identification characteristics of intangible cultural heritage projects in intuitive visual, auditory, or tactile forms and are the primary contact points for the public to establish their understanding of intangible cultural heritage. The third category is value symbols, which embed the philosophical thoughts, ethical norms, and aesthetic orientations carried by intangible cultural heritage projects and are the core carriers of the spiritual essence of intangible cultural heritage. From the characteristic perspective, intangible cultural heritage symbols have the feature of dynamic inheritance and are constantly updated and iterated as the community's production and life practices evolve, always remaining compatible with the cultural context of the corresponding community. This distinguishes them from static and fixed identifiers. At the same time, intangible cultural heritage symbols have the characteristic of community dependence, being a cultural interpretation belonging to a specific community. Intangible cultural heritage symbols have cultural uniqueness, and each category of intangible cultural heritage symbols corresponds to a unique cultural generation context and does not have completely repetitive intangible cultural heritage symbols<sup>[2]</sup>.

### 1.2. The necessity and contemporary value of digital preservation for the dynamic inheritance of intangible cultural heritage symbols

The preservation methods of traditional intangible cultural heritage symbols are highly dependent on oral transmission and physical records, and are restricted by many real factors such as the lifespan of

the inheritors, the aging and damage of physical media. The current inheritance of intangible cultural heritage symbols has a relatively high risk of loss. Moreover, in the traditional dissemination scenarios, the dissemination of intangible cultural heritage symbols is limited by regions and community boundaries and is difficult to reach a wider audience. With the popularization of modern production and lifestyle, the survival space of the original cultural context of intangible cultural heritage has been continuously squeezed, and the representational logic of some intangible cultural heritage symbols has gradually deviated from the public's cognition. Digital preservation methods can break through the physical limitations of traditional oral transmission and physical medium preservation, reduce the probability of the disappearance of intangible cultural heritage symbols<sup>[3]</sup>. They break through time and space barriers and expand the dissemination scope of intangible cultural heritage symbols. They fully record the generation context of intangible cultural heritage symbols and refine their interpretation framework to provide a complete basis for subsequent cultural interpretation of intangible cultural heritage symbols. They effectively avoid distortion, misunderstanding, abuse, and misuse of intangible cultural heritage symbols, ensuring the accuracy of intangible cultural heritage inheritance. The digital resource library formed by digital technology can integrate intangible cultural heritage symbol resources, establish a standardized system, break the information barriers of different regions, departments, and categories of intangible cultural heritage symbols, provide a complete resource foundation for the inheritance of intangible cultural heritage, and also provide materials for contemporary translation. Cultural designers and public communication providers can utilize the digital resources of intangible culture to innovate the application of intangible cultural heritage symbols under the premise of not deviating from the core cultural connotations, promoting the integration of intangible cultural heritage into the public's life.

## **2. Issues of Digital Preservation and Visual Presentation of Intangible Cultural Heritage Symbols**

### ***2.1. Lack of Quality Standards for Digital Resources***

Although the current digital preservation work of intangible cultural heritage in China has achieved certain progress, problems such as incomplete resource collection dimensions and inconsistent data standards remain prominent, directly restricting the long-term utilization value of digital resources. In some regions, data collection focuses more on form than content, concentrating only on the external form of intangible cultural heritage symbols while neglecting the cultural context, community memory, and oral history of the inheritors behind the symbols. This results in digital resources being able to only present the form of intangible cultural heritage symbols but unable to convey their cultural core<sup>[4]</sup>. For example, when digitizing embroidery intangible cultural heritage symbols in some areas, only the visual form of the patterns was scanned using QR codes. The migration history of each ethnic group, the usage methods of specific festival scenes, and key information about the embroidery needlework techniques were not recorded. When designers use this database for creative development, they can only use the visual form of the patterns but cannot accurately understand and convey the cultural connotations behind the patterns. This even led to the misuse of sacrificial-specific patterns for daily consumer products, affecting the development and dissemination of intangible cultural heritage symbols. China has a vast territory, and intangible cultural heritage symbols vary greatly in different regions<sup>[5]</sup>.

### ***2.2. Cultural Distortion and Semantic Deviation in the Visual Presentation Phase***

During the visual translation and dissemination of intangible cultural heritage symbols, the intervention of commercial logic and traffic-oriented strategies can easily cause the symbols to deviate from their original cultural context, leading to risks such as cultural distortion, semantic deviation, and even being distorted and abused. To meet the demands of modern aesthetics and market dissemination, some disseminators have adopted regional evolutionary visual transfer methods, randomly simplifying and piecing together intangible cultural heritage symbols, causing the symbols to be detached from their original cultural scenes, resulting in the continuous disintegration of cultural semantics and ultimately the loss of the cultural core. Moreover, in the fast-paced marketization process, many commercial intangible cultural heritage visual creations are independently completed by design teams, lacking the participation of inheritors and cultural scholars belonging to the intangible cultural heritage community. Government agencies also lack effective cultural review mechanisms for this commercialized intangible cultural heritage visual dissemination, causing various incorrect interpretations of the cultural symbol connotations received by the public. Especially under the

guidance of new media and self-media dissemination, the logic of traffic reigns supreme, further amplifying the interpretation deviations of intangible cultural heritage symbols<sup>[6]</sup>. The algorithm recommendation mechanism of some dissemination platforms is more inclined to prioritize the promotion of visually impactful and highly entertaining content.

### ***2.3. Inefficient circulation and narrow application scope of digital intangible cultural heritage symbols***

At present, the transformation of intangible cultural heritage digital resources still faces many obstacles. There is a phenomenon of emphasizing preservation but neglecting application in various regions, which has affected the release of the value of digital resources. On one hand, many intangible cultural heritage digital resources are collected and stored by various cultural institutions and research units. This decentralized storage method results in insufficient openness and sharing of digital resources. Local institutions are restricted by various factors such as copyright and management mechanisms when applying them, and cannot achieve greater-scale sharing and transformation of resources<sup>[7]</sup>. Social entities also face high thresholds to obtain high-quality intangible cultural heritage digital resources and find it difficult to conduct secondary development and innovative application of intangible cultural heritage digital symbols at a lower cost. Moreover, the collection of intangible cultural heritage digital resources involves multiple stakeholders such as intangible cultural heritage inheritors, collection institutions, and investment entities. The copyright ownership and revenue distribution mechanism is still unclear, and there is a lack of relevant legal regulations. The commercial application of intangible cultural heritage digital resources is prone to cause rights disputes, which also affects the enthusiasm of various stakeholders to participate in digital transcription.

## **3. Strategies for Digital Preservation and Visual Presentation Optimization of Intangible Cultural Heritage Symbols**

### ***3.1. Establish a Unified and Standardized Digital Collection, Storage, and Quality Control System***

The government should strengthen the protection of intangible cultural heritage. The competent department should take the lead, in collaboration with cultural scholars, intangible heritage inheritors, and technical experts, to jointly formulate a comprehensive system covering all types of intangible cultural heritage symbols. The digital collection and collection standards for intangible cultural heritage symbols should be clearly defined, specifying the mandatory collection system for different categories of intangible cultural heritage symbols<sup>[8]</sup>. Ensure the cultural integrity of digital resources. For example, digital collection of visual intangible cultural heritage symbols such as traditional arts, traditional skills, and patterns should be carried out. In addition to basic two-dimensional and three-dimensional form collection, the corresponding cultural context, usage scenarios, inheritance lineage, and process parameters of the symbols must also be input simultaneously. Uniformly stipulate the technical parameters for data collection, as shown in Table 1.

*Table 1: Digital Resource Repository of Intangible Cultural Heritage*

<b>Year of Establishment</b>	<b>Database Name</b>
2006	National Intangible Cultural Heritage List Database
2011	Dunhuang Intangible Cultural Heritage Digital Resource Database
2015	Database of the National Intangible Cultural Heritage Representative Inheritor Recording Project
2015	Baidu Encyclopedia of Intangible Cultural Heritage
2021	Traditional Chinese Medicine Intangible Cultural Heritage Database
2022	"One Map of Henan Intangible Cultural Heritage" Platform
2024	Hezhe Ethnic Group Yimakan Resource Database
2025	Nanning Intangible Cultural Heritage Special Database

Data source: National Cultural Resources Department

Clearly define the minimum resolution, storage format, and metadata field requirements for different types of resources, eliminating compatibility barriers across regions and institutions. At the same time, establish a standard dynamic update mechanism. Every three years, the standards should be iteratively optimized based on technological development and practical needs to adapt to the application requirements of advanced collection technologies. We should strengthen the management of intangible cultural heritage digital preservation and visual presentation projects. During the project

initiation stage, define the indicators for resource quality assessment. Require all commercial institutions to include the completion degree of implicit information collection, the qualified rate of original data filling, and other indicators in the project acceptance criteria to avoid the orientation of emphasizing quantity over quality. During the project implementation stage, the review institution should implement a dual review system. All completed digital resources must be reviewed and confirmed by the inheritors of the intangible heritage belonging to the community, as well as by technical experts. Only after meeting the standards can they be included in the resource library. During the acceptance stage, the project team should introduce a third-party evaluation institution to conduct sampling tests on the completeness, accuracy, and compatibility of digital resources. Projects that fail the acceptance should be rectified and completed before finalization. This will prevent low-quality and low-value resources from entering the resource library from the source.

### ***3.2. Establish a culture-oriented visual translation review mechanism***

The cultural subjective department should collaborate with industry associations, traditional cultural inheritors, and design experts to jointly compile the "Visual Innovation Application Guide for Intangible Cultural Heritage Symbols", clearly defining the basic principles for visual translation of different types of intangible cultural heritage symbols: For intangible cultural heritage symbols carrying special cultural connotations such as rituals and ceremonies, it is clearly prohibited to modify, combine, or use them in inappropriate commercial scenarios<sup>[9]</sup>; for general intangible cultural heritage symbols, it is stipulated that core identification elements and cultural characteristics must be retained during the translation process, and the core representational elements must not be distorted or modified. Establish classification guidance rules, specifying the translation scale and precautions for different application scenarios, providing clear behavioral references for creators, and reducing errors in visual presentation from the source. The cultural department should conduct classified reviews of commercial intangible cultural heritage visual creations: For intangible cultural heritage symbols with national-level core significance and visual creations with special cultural significance, they must be confirmed by the inheritor of the intangible cultural heritage community for cultural accuracy, reviewed for the rationality of the representation by cultural scholars in related fields, and filed with the local intangible cultural heritage protection department before being publicly released; encourage design enterprises to establish a regular intangible cultural heritage advisory mechanism, inviting inheritors to participate in the entire design process, avoiding cultural deviations from the creative stage. We introduce an official certification system for intangible cultural heritage visual creations, granting certification marks to creative products that meet cultural accuracy requirements. This enhances public recognition of genuine intangible cultural heritage creations and squeezes out the survival space for distorted content.

### ***3.3. Build an open and shared digital resource activation application platform***

Cultural management departments should coordinate cultural institutions across the country to establish an online platform for sharing intangible cultural heritage digital resources. They should integrate the scattered digital resources stored in various regions, and follow the principle of fully opening up and granting authorization at different levels to promote the openness of intangible cultural heritage digital resources. For general intangible cultural heritage digital resources without copyright disputes and available for public use, they should be freely made available for download and use by the public; for intangible cultural heritage digital resources involving the rights of inheritors and having commercial value, reasonable authorization thresholds should be set, and clear open rights for different purposes should be specified. At the same time, local cultural and museum institutions, research units should establish a resource openness assessment mechanism, and incorporate the degree of resource openness and social application volume into the performance evaluation indicators of the institutions, breaking the management orientation of "emphasizing storage but neglecting openness", and reducing the threshold for social entities to obtain high-quality intangible cultural heritage digital resources. For intangible cultural heritage digital resources collected with public funds, the copyright belongs to the public cultural institutions, and the commercial application income of these resources should be returned to the intangible cultural heritage communities and inheritors in a certain proportion; for intangible cultural heritage digital resources collected with private capital, the rights distribution ratio between the collection institution and the inheritor should be clearly defined, and the reasonable share of the inheritor in the resource income should be guaranteed. At the same time, establish a standardized copyright authorization mechanism for intangible cultural heritage digital resources, launch a unified authorization template, clearly specify the authorization fees, usage scope and revenue distribution

rules for different application scenarios, reduce disputes over rights in the commercial application of resources, and enhance the enthusiasm of all parties in the digital construction of intangible cultural heritage.

#### 4. Conclusion

The digital preservation and visual presentation of intangible cultural heritage symbols are important measures for inheriting excellent traditional Chinese culture and integrating intangible heritage into contemporary life in the digital age. Currently, the digitalization work of intangible heritage in China has achieved phased progress, but it still faces practical challenges such as uneven resource quality, cultural meaning deviations, and insufficient value transformation. Cultural management departments should strengthen unified digital collection and quality control. We improve the review mechanism for visual translation, balance the relationship between modern aesthetic demands and the inheritance of cultural core, open up the connection channel between resource supply and market demand, and further enhance the collaborative mechanism of multiple entities to adapt to the long-term development of intangible heritage digitalization.

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