



The Construction of the Identification System of the Intangible Cultural Heritage Protection of the Huaxian Woodblock New Year Picture Based on the Concept of Cultural Gene Map

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<p>Abstract: This study utilizes the cultural gene map theory to explore the identification, extraction, and mapping construction of cultural genes in Huaxian woodblock New Year paintings. The paper initially outlines the conceptual framework of cultural gene mapping and its applicability to intangible cultural heritage preservation. It subsequently analyzes the diverse characteristics of Huaxian woodblock New Year paintings, identifies and extracts core cultural gene sequences, constructs a mapping model, and visually presents it. The resulting map unveils the inherent cultural codes and transmission logic, offering a foundation and route for their protection, inheritance, transformation, and sustainable development.</p> <p>Keywords: Huaxian Woodblock New Year Paintings, Cultural Gene Map, Intangible Cultural Heritage, Map Construction.</p> <p>Copyright © 2026 The Author(s): This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY-NC 4.0) which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use provided the original author and source are credited.</p>	<p>Review Paper</p>
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1 INTRODUCTION

1.1 Research Background

Huaxian woodblock New Year paintings constitute a significant component of China's folk woodblock New Year paintings, boasting a long history and a distinctive style. They function as cultural vehicles, presenting the living customs of the people in the Central Plains region. Discovered around 2006, woodblock New Year paintings were officially recognized for their cultural significance and included in the national intangible cultural heritage list, with some being listed as early as May 20, 2006, and others in the second batch on June 7, 2008. As an independent branch of woodblock New Year paintings, their themes mainly focus on divine images and clan genealogies, with the production technique of "printing before painting." Their style is simple yet passionate and elegant, embodying folk beliefs. However, when compared to renowned production areas, the level of research remains relatively weak, public awareness is low, and the inheritance and development of this cultural heritage are confronted with numerous challenges. The safeguarding of intangible cultural heritage in China has reached a more advanced phase, with the government's active engagement and the establishment of a legal framework to ensure its long-

term preservation. Introducing the "cultural gene" theory provides a new perspective, and constructing a "cultural gene map" can help organize and present the inherent structure of intangible cultural heritage, providing support and avenues for the protection of Huaxian woodblock New Year paintings.

1.2 Research Objectives and Significance

This study introduces the concept of cultural gene maps to the domain of intangible cultural heritage (ICH), particularly traditional handicrafts, and develops a methodological framework that leverages these maps to enhance the preservation and promotion of cultural practices. Through the analysis of Huaxian woodblock New Year paintings, it surpasses conventional approaches by employing "cultural genes" as units and revealing their intrinsic structures via mapping, thereby crafting a "cultural navigation map" that comprehensively presents knowledge. Academically speaking, this offers a research framework for ICH studies, propelling systematic construction forward. Culturally, Huaxian woodblock New Year paintings embody an original ecological diversity. A comprehensive examination of the cultural significance and folk aesthetic values of Nianhua, traditional Chinese

New Year paintings, can reinforce cultural identity and bolster national pride. Practically, the gene the map and conclusions developed in this study act as a "cultural interpretation guide" for stakeholders, facilitating the inheritance, interpretation, transformation, and sustainable development of ICH.

1.3 Study Subjects and Scope Definition

This paper centers on the cultural system of woodblock New Year pictures in Huaxian, and focuses on the historical context and the typical style of the core production area since the Ming and Qing Dynasties. The research contents include the historical origins and legends, production skills, themes and forms of expression, folk beliefs and rituals, spiritual concepts and core values.

1.4 Research Methods and Framework

The following methods were adopted in this study:

1.4.1. Literature Research Method: Sorting out relevant academic papers, monographs, local chronicles and investigation reports.

1.4.2. Fieldwork Method: Conduct in-depth research in core production areas and interview representative inheritors.

1.4.3. Image Analysis Method: Analyze the collected images of artworks to extract visual cultural genes.

1.4.4. Model Construction Method: Draw on theoretical insights to construct the logic model of the cultural gene map and achieve visualization.

2 The Concept of Cultural Gene Map and Its Application in the Research of Intangible Cultural Heritage

2.1 The Origin and Core Concepts of Cultural Gene Theory

British biologist Richard Dawkins first coined the term "meme," proposing that cultural genes share similar transmission mechanisms associated with biological genes [i]. In 1998, the Oxford English Dictionary officially recognized "meme" as a valid entry [ii]. At the dawn of the 21st century, the Chinese Academy of Social Sciences, under the guidance of Ming Jiayin, introduced the concept of S-cDNA, a cultural genetic code that represents the cultural production and civilization [iii]. Scholars have proposed various definitions of cultural genes. Broadly speaking, cultural genes function as replicative factors and serve as fundamental units of cultural transmission [iv].

Moreover, human social genes determine the development of social systems.

2.2 Conceptual Connotation of Cultural Gene Map

The cultural gene map is the operationalization and visualization extension of the cultural gene theory, which uses the map to identify, classify, connect and present the core gene of the cultural system, and reveals the internal structure, inheritance context and logical relationship.

2.3 Analysis of the Characteristics of Huaxian Woodblock New Year Pictures as Cultural Gene Carriers

Huaxian woodblock New Year paintings are a cultural entity comprising multiple genetic elements. The core identifier is the craftsmanship gene 'printing before painting,' while the layout gene features unique composition and arrangement. The thematic gene reflects the agrarian beliefs of the Central Plains. Existing research classifies cultural genes into distinct systems according to various dimensions: explicit and implicit cultural genes based on their expression forms, and material and immaterial cultural genes based on their existence forms, and group or independent cultural genes based on genetic carriers [v]. Explicit cultural genes are directly perceptible elements in cultural heritage, whereas implicit cultural genes represent the underlying logic and internal structure hidden within it. This paper analyzes Huaxian woodblock New Year paintings by differentiating between explicit and implicit cultural genes based on their expression forms.

3 Identification and Extraction of Cultural Gene of Woodblock New Year Picture in Huaxian

3.1 Identification and Extraction of Dominant Cultural Genes

3.1.1 Geographic Environmental Gene

The geographical environment gene of Huaxian woodblock New Year Picture serves as the underlying structure for the breeding and survival of other genes, acting as an external condition that influences the development of the heritage system.

Hua County is located in the northeastern part of Henan Province(Fig.1), situated at the intersection of the ancient Jizhou, Yanzhou, and Yuzhou regions, with neighboring counties. The northern Henan region, part of the Yellow River alluvial plain, is rich in cultural heritage, featuring remnants of ancient embankments, numerous prehistoric sites, and historical tombs [vi].

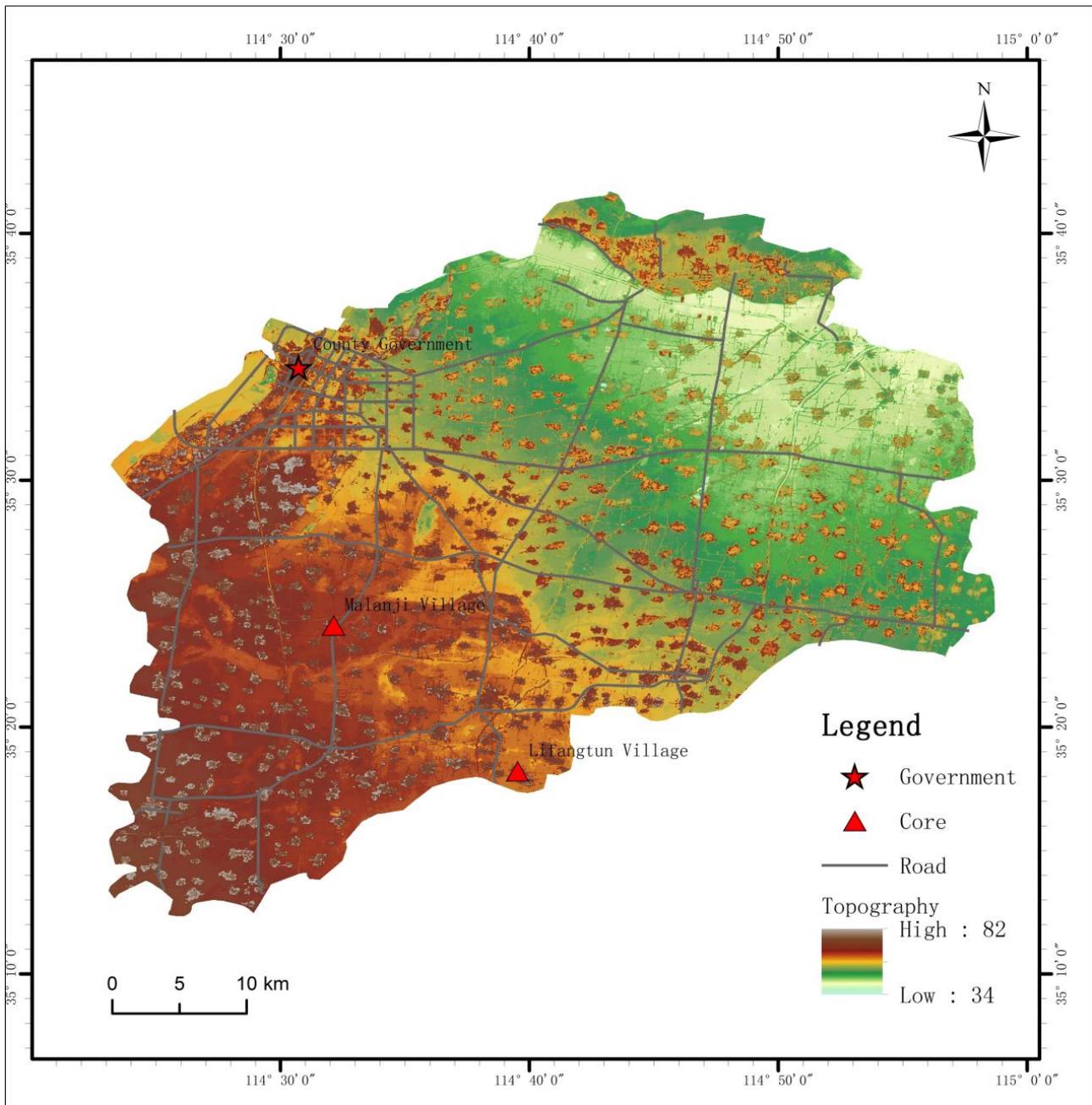


Fig. 1: Location

Historically, the core production area has suffered from inconvenient transportation, and the geographical traits of being "peripheral" and "closed" have, on the one hand, enabled the art system to preserve its original form, and on the other hand, delayed its discovery, transforming it into a "living fossil" of culture.

At the same time, Huaxian, nestled at the crossroads of four provinces, its "intersecting" geographical gene endows it with the role of a vibrant cultural exchange hub, fostering the emergence of a rich tapestry of deities and blending the rugged northern temperament with an air of refined elegance in its artistic style.

Moreover, Huaxian stands as a quintessential agricultural region, where the geographical economic gene of "agriculture as the cornerstone" firmly establishes the primary audience for New Year Pictures as farmers, with the core theme encompassing farming beliefs, family ethics, as well as praying for blessings and eliminating disasters. Its production, inheritance, and consumption patterns are deeply rooted in the small peasant economy.

3.1.2 Color Gene

The woodblock New Year paintings of Huaxian primarily feature themes such as divine images, ancestral portraits, and opera narratives. Their color palette places emphasis on high saturation contrasts, where red and

green constitute a distinctive chromatic system. This study examines the color genes through the sample "The

Deity of Jade Emperor and the Literary and Martial Wealth Deities (Fig. 2)".

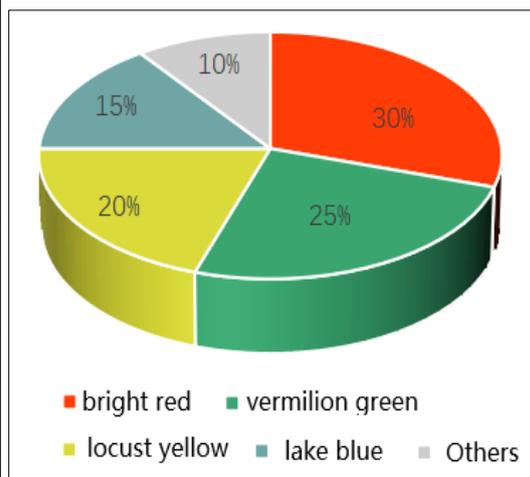
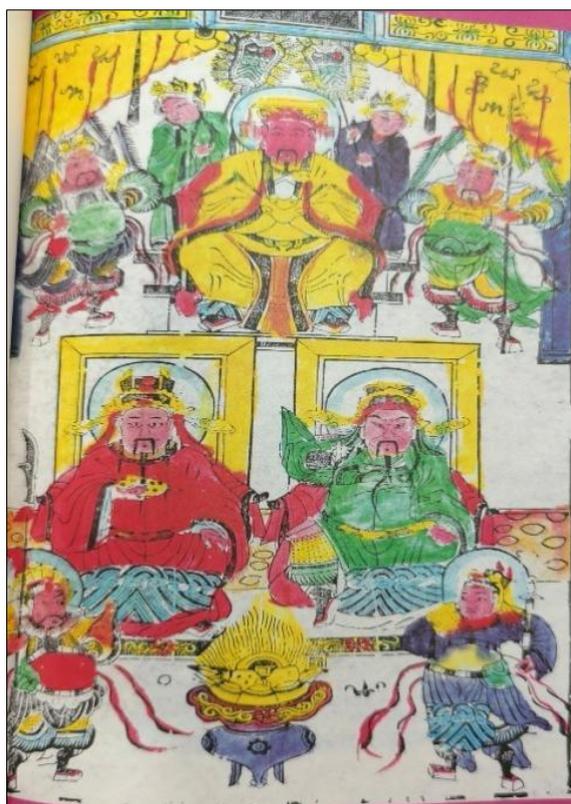


Fig. 2: Picture and Color genes and their proportions of the Deity of Jade Emperor and the Literary and Martial Wealth Deities

Within its dominant cultural visual framework, color genes serve as pivotal elements, forming a highly stylized symbolic system imbued with cultural symbolism and artisanal craftsmanship. Four primary colors—bright red, vermilion green, locust yellow, and lake blue—establish the painting's foundational tones and spiritual ambiance. These colors serve not only a decorative function but also carry cultural symbolism and practical value. The vermilion red, extracted from cinnabar, graces the deity's robes, symbolizing solemnity and serving as a bridge between the mundane and the divine. The vermilion green, serene and radiant, enriches the attire of secondary deities, harmonizing visual impact and conveying a sense of vitality. The locust yellow, derived from natural plant pigments, highlights backgrounds, representing light and elevating the ethereal. The lake blue, clear and translucent, adorns garment borders, harmonize warm tones and create a serene atmosphere.

These four primary colors create a well-structured color scheme through contrast and harmony. The vibrant red and deep green, as complementary colors, enhance visual impact and create a festive ambiance, while the warm locust yellow and cool lake blue serve as transitional tones, brightening or stabilizing the composition. Following the principle of

"emphasizing the main subject with layered richness," this color coordination establishes the visual coherence of Huaxian woodblock New Year paintings.

3.1.3 Thematic Style Genes

Within the system of explicit genes in Huaxian's woodblock New Year pictures, the theme gene serves as the core. It functions as the "cultural narrative procedure" that determines both the "expressive content" and "creative object" of these pictures, and represents an image spectrum reflecting the spiritual needs and real-life experiences of a specific group.

(1) The Genealogy of the Deities

This represents the most extensive and core embodiment of traditional Chinese woodblock New Year prints, which have been a vital part of cultural heritage and festive celebrations for centuries. Repository of thematic genes, functioning as a genealogical expression system characterized by internal order and hierarchical structure. Its genetic characteristics transition from monolithic images to composite representations, ultimately culminating in the Pantheon, which forms a complete visual scheme of faith. The Pantheon, as a central religious edifice in ancient Rome, unified various deities under one roof, serving as a sanctuary for blessings and a refuge during times of calamity.



Fig. 3: PICTURE of the Genealogy of the Deities

(2) Ancestral Axis Painting

The "Ancestral Axis" is a unique thematic gene with regional identity and cultural depth. It is designed for ancestral worship during festivals, functioning as an image-based memorial tablet with a mausoleum-like

spatial configuration. This constructs a symbolic family mausoleum, representing the visual transformation and ritual solidification of "ancestral worship" and "filial piety," with its core principle being "revering ancestors and uniting the clan."



Fig. 4: Chinese juniper, Fagang Tower, pine and cypress trees, velvet flower tree and unnamed

(3) Opera Stories and Special Calligraphy

The thematic essence of opera stories captures the climax of local drama, fulfilling multiple functions. The textual artistic elements (such as plum blossom seal script couplets) transcend the mere function of textual

recording, embodying the principles of "expressing meaning through form" and "integrating character with paintings," thereby unifying visual narrative with textual connotations and appealing to a wide audience, from the common to the sophisticated.



Fig. 5: Opera Stories (The Legend of the White Snake; Cut off the King of Zhao; Luo Cheng's marriage proposal)



Fig. 6: Special Calligraphy (Plum Blossom Seal Script; Couplets of the Eight Immortals)

(4) Others

The woodblock New Year pictures in Huaxian encompass not only traditional New Year prints but also

a variety of printed materials, reflecting the rich tapestry of local culture and artistic expression of playing cards.

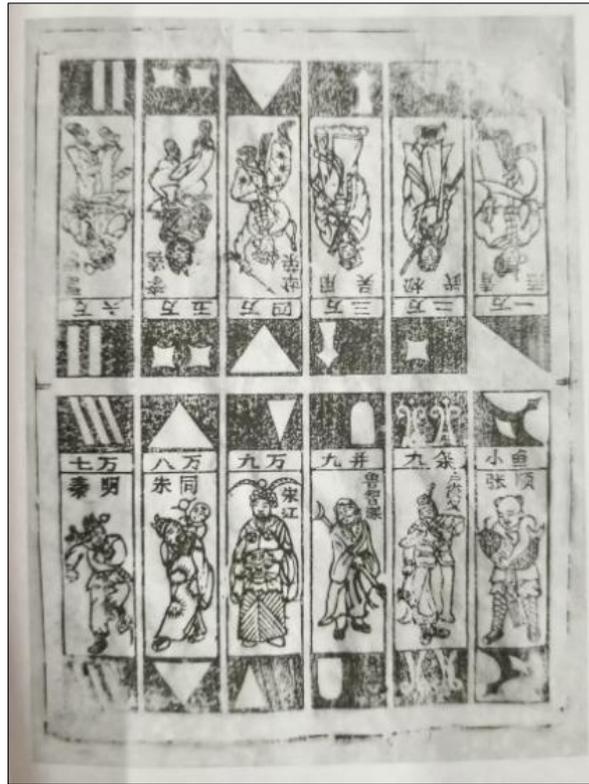


Fig. 7: Water Margin playing cards



Fig. 8: Underworld ticket supplement and Talisman paper horse

3.2 Identification and Extraction of Implicit Cultural Genes

3.2.1 Manufacturing Process Gene

The woodblock New Year painting craftsmanship in Huaixian is based on core techniques such as "printing before painting," which explains the reasons for its formation and inheritance and connects

explicit and implicit cultural genes. Unlike other regions, its unique process involves "printing line drawings first and then applying color painting." The workflow comprises five steps: sketching, board carving, line-drawing printing, hand-painting, and final mounting, which embody multiple implicit cultural logics (Fig.9).



Fig. 9: production process

3.2.1.1 Drawing the Blueprint

The woodblock New Year paintings of Huaxian are created by folk artists, most of whom are skilled craftsmen collaborating with painting workshops. Artists who specialize in traditional Chinese woodblock New Year's prints possess profound cultural knowledge, skillfully weaving folk legends and traditional motifs into their vibrant artworks. The initial sketches are created using incense sticks or pencils and are subsequently refined using small calligraphy brushes. Once the designs are finalized, they are generally not altered; the woodblock is only re-engraved when it becomes blurred.

3.2.1.2 Carving Board

This is a key factor that determines the quality of New Year paintings. Before carving, preparatory work like material selection must be completed. In divine portraits and mythological opera themes, facial rendering is crucial for the success of the carving, with artists typically starting with the face before proceeding to the rest of the composition, as evidenced by traditional woodblock prints where the face is often the focal point and is meticulously crafted to convey the essence of the character. other body parts.

3.2.1.3 Brush Printing

The process involves five steps: first, after the stencils are completed, they undergo grinding and trial printing; then, formal printing is carried out, followed by paper cutting and mounting.

3.2.1.4 Paintings

The process begins with coloring the printed line drawings. At first, only four colors were used; however, with the advent of chemical pigments, the color palette was expanded. To preserve color, pigments are mixed with sizing agents.

3.2.1.5 Framing

Statues and operatic mythological stories are Typically, they are not framed; however, genealogies

necessitate framing. Utilizing sorghum stalks for framing proves to be cost-effective and well-suited for rural regions.

3.2.2 Historical Evolution of Genes

Scholars present divergent perspectives on the origins of Huaxian woodblock New Year paintings, with the most prevalent theory attributing their introduction to Han Chaoying, an immigrant from Hongtong, Shanxi. During the late Yuan Dynasty, Central China experienced a drastic population decline and economic hardship, with the Ming the dynasty organized migrants from Shanxi, with Hongtong serving as the departure hub. Han Chaoying settled in Huaxian and brought in the craftsmanship. During the Qianlong era of the Qing Dynasty, Huaxian woodblock New Year paintings flourished to an unprecedented extent, with widespread participation from households in Li Fangtun Village. This led to the establishment of numerous workshops that continued to thrive well into the early Republic of China period. As the late Qing Dynasty witnessed national decline and the emergence of Western mechanical printing technology, annual production plummeted from millions to just over 500,000 pieces. Although the scale was smaller than before, some workshops still managed to maintain their operations and influence during the Republic period. During the 1930s and 1940s, prolonged warfare disrupted production and distribution. By the late 1950s, political campaigns had dealt devastating blows to Huaxian woodblock New Year paintings [vii].

In the early 1960s, the relaxation of China's policies triggered a partial revival in the New Year painting market. However, the Cultural Revolution dealt another heavy blow, leading to the destruction of numerous ancient editions. Despite a revival in the 1980s, the proliferation of modern printing techniques has led to a gradual decline in the daily presence of traditional Chinese New Year paintings, which have a rich history dating back to the Tang dynasty and were significantly impacted by the introduction of woodblock

printing. Since the 1990s, the advent of machine-printed deity New Year paintings has disrupted the traditional handcrafted woodblock prints, leading to a decline in their production scales and posing significant challenges to the cultural inheritance of these art forms.

3.2.3 Peripheral Intangible Cultural Heritage Elements

Huaxian woodblock New Year paintings are profoundly embedded within the local cultural ecosystem. Regional operas, such as Daxian Opera and Daping Tune, have deeply influenced their themes, aesthetic sensibilities, and spiritual essence, much like the cultural impact of woodblock New Year prints, which have profoundly shaped cultural themes, aesthetic sensibilities, and spiritual essence, forming a deep cultural co-construction. The central themes of local operas are in harmony with the Confucian ethical values embodied in these paintings. Woodblock artists convert dramatic climaxes into visual representations imagery, whereas opera-themed woodblock prints transform theatrical narratives into moral frameworks. Local operas function as both the narrative source and the value carrier for these woodblock prints, collectively reinforcing local cultural memory and collective identity.

4. Construction of Cultural Gene Map of Woodblock New Year Picture in Huaxian

This study identifies and analyzes the explicit and implicit cultural genes in Huaxian woodblock New Year paintings, utilizing a comprehensive approach that includes historical analysis, cultural significance evaluation, and current state assessment. Integrate historical materials to construct a multi-layered and structured theoretical model for cultural gene mapping. Centered on the "Huaxian Woodblock New Year Painting Cultural System," the model consists of two dimensions, namely "explicit cultural genes" and "implicit cultural genes," forming a "one body, two wings" framework that reflects both external material forms and internal cultural mechanisms.

The dominant gene encompasses elements that are perceptible and have a definite material form, and has three subtypes: (1) geographical environment gene, which reflects the natural and humanistic space; (2) color composition gene, which is a symbolic color symbol system; (3) theme and style gene, which includes the types of deity genealogy and ancestral axis painting, and forms the external cultural representation system.

The recessive gene focuses on intangible and logical factors, including three categories: (1) Manufacturing process genes, which are centered on the technical workflow of "printing prior to painting"; (2) Historical evolution genes, which trace the developmental trajectory since the Ming and Qing dynasties.

5. CONCLUSION

This study employs the cultural gene theory to explore the rich cultural heritage of Huaxian woodblock New Year paintings. Through literature analysis and field research, it integrates cultural information resources, including the Five Elements and zodiac animals, to construct a cultural gene map that reflects the deep-rooted traditions and artistic innovations of these paintings. Based on the forms of expression and identification dimensions, cultural genes are classified into explicit and implicit types. The explicit gene map illustrates external characteristics such as geographical distribution and color patterns, while the implicit gene map uncovers internal structural elements including production methods, historical development, and links to intangible cultural heritage.

The atlas systematically arranges detailed units under each gene category, employing logical connections to depict complex gene relationships. For example, the "agricultural ecology" gene in the "geographical environment" category connects with the "field ancestor belief" gene within the "thematic" category; the "migration and dissemination" gene in the "historical evolution" category is linked to the "fusion characteristics" gene in the "technique" category; moreover, the "intangible cultural heritage" gene interacts with the "thematic style" gene through interactive connections.

Through structured categorization and relational annotation, the atlas not only statically presents cultural system elements but also dynamically reveals their interconnections, forming a cognitive framework that serves both descriptive and explanatory functions. This offers professionals tools and references to understand Huaxian woodblock New Year paintings. Through transforming historical-cultural information into visual language, the study creates an atlas that integrates scientific rigor with popular science charm, providing theoretical and practical references for the protection, inheritance, and development of this intangible cultural heritage.

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