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Research on Visual Design of Miao Embroidery Driven by Cultural Gene Theory from Design Perspective

-- Taking "Colorful Threads Inheriting Glory" as an Example

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Abstract: This study focuses on Miao embroidery, a national intangible cultural heritage, introduces the cultural gene theory, and deeply explores its visual inheritance path. By analyzing the composition of Miao embroidery cultural genes and combining with the design practice of "Colorful Threads Inheriting Glory", this paper systematically expounds the logic and method of activating Miao embroidery cultural genes by means of visualization, realizing living inheritance and innovative development from the aspects of cultural gene mining, visual transformation and communication promotion, so as to provide theoretical reference and practical paradigm for intangible heritage inheritance, help Miao embroidery continue its cultural vitality in modern society, and promote the creative transformation and innovative development of excellent traditional Chinese culture.

Keywords: Miao Embroidery; Cultural Gene; Visual Inheritance; Intangible Cultural Heritage.

1. Introduction

1.1. Cultural Value and Inheritance Dilemma of Miao Embroidery

As an important material and spiritual carrier of Miao culture, Miao embroidery carries the collective memory, folk customs and unique aesthetics accumulated by the Miao people in the long history. In the cultural ecology of the Miao people without their own written language, Miao embroidery is known as the "history book worn on the body", which records the origin of the ethnic group, migration process, production and life, and spiritual beliefs with a unique visual code. In 2006, Miao embroidery was selected into the national intangible cultural heritage list, and its cultural value has been recognized by both the government and the academic community.

However, under the impact of globalization and modernization, the inheritance of Miao embroidery is facing severe challenges. From the perspective of inheritance subjects, influenced by modern lifestyle and diversified career choices, the younger generation's willingness to participate in the study and inheritance of Miao embroidery skills continues to decline, the traditional master-apprentice inheritance model is difficult to continue, and there is a generational gap in skill inheritance. In terms of communication, the traditional communication fields of Miao embroidery, such as Miao traditional festivals and folk rituals, are out of touch with the consumption and aesthetic scenes of modern society, and their cultural influence is limited to a small circle, and they are gradually marginalized[1]. Therefore, it is urgent to build a Miao embroidery inheritance and communication system suitable for modern society.

1.2. Research Status and Theoretical Introduction

In the field of intangible heritage inheritance research, many scholars have studied Miao embroidery from different angles. Some scholars focus on analyzing the technical characteristics and cultural connotations of Miao embroidery, and deeply explore the artistic characteristics of its stitches, patterns and the cultural significance behind them; others pay attention to the inheritance dilemma of Miao embroidery in contemporary society, and discuss the limitations of the traditional inheritance model and the impact of changes in market demand on its development. At present, in the research of intangible heritage inheritance, the relevant achievements of Miao embroidery focus on the analysis of skills and cultural connotations, or the description of inheritance difficulties, but the research on innovative inheritance paths by combining emerging theories and technologies is insufficient[2].

The cultural gene (Memes) theory was put forward by Richard Dawkins in The Selfish Gene. This theory regards culture as a complex system composed of cultural units with replicability, variability and selectivity. From the perspective of cultural inheritance mechanism, the elements such as skills, patterns and cultural meanings of Miao embroidery can be regarded as independent cultural genes. These genes complete cultural replication in intergenerational transmission, mutate in cultural exchanges, and realize adaptive retention in cultural ecology screening. The introduction of this theory can provide an accurate and systematic analysis framework for the inheritance of Miao embroidery, help to grasp the core elements of inheritance, avoid the fragmentary loss of cultural connotations, and carry out reasonable innovation according to the characteristics of genes, so that Miao embroidery can realize living inheritance. The design practice of "Colorful Threads Inheriting Glory" explores the visual inheritance path based on the excavation of Miao embroidery cultural genes, which is of great reference significance for intangible heritage inheritance research and practice.

2. Inheritance Logic of Miao Embroidery from the Perspective of Cultural Gene Theory

The cultural gene theory deconstructs cultural inheritance into the process of replication, variation and selection of cultural genes, providing a new analysis dimension for the

inheritance of Miao embroidery. The skills, patterns and cultural meanings of Miao embroidery, as the specific forms of cultural genes, follow a unique inheritance logic in the Miao cultural ecology. In terms of replication, Miao embroidery skills are replicated through oral instruction and heart-to-heart teaching between masters and apprentices and intergenerational transmission within families, so as to realize the replication of manual skills and creative experience; patterns and cultural meanings rely on carriers such as Miao costumes and folk rituals to carry out intergenerational replication of cultural symbols within the ethnic group[3].

In the dimension of variation, the cultural genes of Miao embroidery will mutate due to the differences in geographical environment and cultural exchange and integration of different Miao branches. For example, the Miao embroidery patterns of Qiandongnan Miao and Xiangxi Miao show different variation characteristics in shape and color due to regional cultural interaction. The selection mechanism is dominated by the cultural ecology. The cultural genes that are suitable for the inheritance needs of Miao culture and meet the aesthetic and life needs of the times are retained, while the others gradually decline. This also explains why some traditional Miao embroidery patterns have a narrow communication range in modern society, while patterns with simple aesthetic characteristics are more widely used.

The composition of Miao embroidery cultural genes is multi-level. As the technical basis of Miao embroidery inheritance, the skill gene covers the complete process of material selection, drawing, embroidery (flat embroidery, braid embroidery and other subdivided techniques), color matching, etc. Its inheritance is reflected in the intergenerational transmission of manual skills, which determines the process quality and artistic style of Miao embroidery works. Pattern gene is the visual core of Miao embroidery culture. It takes nature worship, ancestor memory and life scenes as themes, and constructs a unique visual symbol system through line shape, color matching and composition, conveying the cultural cognitive model and aesthetic preferences of the Miao people. As the spiritual core of Miao embroidery, the cultural meaning gene contains deep meanings such as praying for blessings, accepting auspiciousness and inheriting history, which maintains the inheritance context of Miao culture and enables the cultural memory and values of the ethnic group to be continued from generation to generation through embroidery works. These three types of cultural genes are interwoven to form the cultural gene pool of Miao embroidery inheritance, providing rich materials and value guidance for the visual inheritance of Miao embroidery[4].

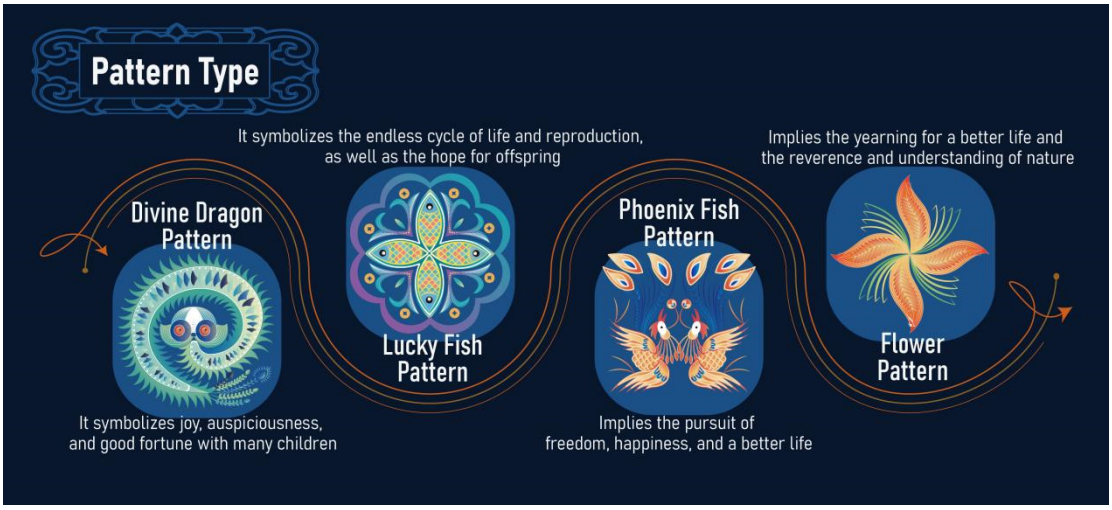

Figure 1. Display of Miao Patterns Drawn by the Author

3. Mining and Visual Transformation of Miao Embroidery Cultural Genes in the Design Practice of "Colorful Threads Inheriting Glory"

3.1. Data Collection Stage: Deeply Excavating Cultural Genes

The "Colorful Threads Inheriting Glory" team, in accordance with the cultural anthropology field investigation method, went deep into the Miao settlements in Qiandongnan, Guizhou, Xiangxi, Hunan and other places, adopted the method of "participatory observation + in-depth interview", participated in Miao festivals and embroidery inheritance activities, observed the creation, skill teaching and cultural exchange of artists, and captured the vivid form of cultural genes; interviewed senior artists and inheritors, recorded the skill inheritance, inspiration sources and cultural understanding from the oral history, and excavated the tacit knowledge. At the same time, a wide range of Miao embroidery objects from different branches and historical periods were collected, and a database was built by means of 3D scanning and high-resolution imaging, including object images, process parameters and cultural backgrounds. In addition, the team cooperated with Miao cultural researchers to study the literature such as Miao Ancient Songs, sorted out the historical origin, context and context of genes, and realized the integration of field investigation and literature research, so as to ensure that the gene mining has both practical vividness and academic depth.

3.2. Information Selection Stage: Extracting Effective Information

From the excavated gene pool, the representative and inheritable skills, patterns and meaning genes are selected. For example, the skill genes select the core techniques of braid embroidery and flat embroidery; the pattern genes extract typical patterns such as butterfly pattern, dragon and phoenix pattern and geometric pattern; the cultural meaning genes focus on the connotations of "Butterfly Mother"

creation legend, migration memory, praying for blessings and accepting auspiciousness, as the core information of visual design. At the same time, combined with modern design concepts and audience needs, the genes are creatively transformed. In pattern design, the outline of butterfly pattern is simplified, the symmetrical form is retained, and minimalism and geometric composition are integrated. For example, the complex butterfly pattern is refined into a geometric shape, which is suitable for modern aesthetics. In color application, the "multicolor flat coating" of the Miao people is integrated with Morandi color system and gradient color, which not only retains the traditional charm, but also shows the sense of fashion. For example, low-saturation gradient is used to simulate the color hierarchy of Miao embroidery. In terms of cultural meaning transmission, focusing on the legend of "Butterfly Mother", a dynamic story line is conceived to present the cultural connotation through visualization [5].

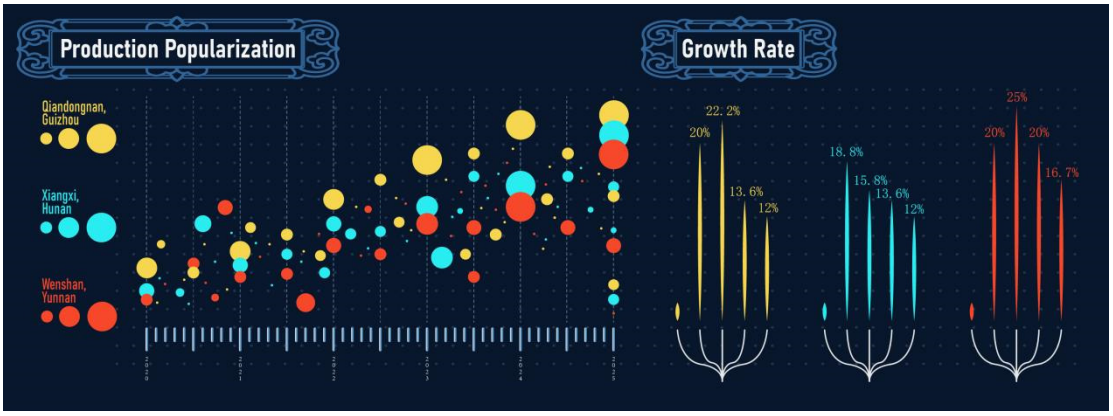

Figure 2. Analysis Chart of Production Popularization Drawn by the Author

3.3. Visual Design Stage: From Culture to Visual Translation

In the design of "Colorful Threads Inheriting Glory", the historical axis of development is used to present the changes of Miao embroidery: the "flower clothes and bird patterns" of the Dongxie Miao in the Tang Dynasty, the "local brocade" and "embroidered clothes and skirts" of the Guiyang Miao in the Ming Dynasty, and the "brocade clothes" and "Miao brocade" of the Qiandong Miao in the Qing Dynasty. The wavy line and circular node are used to intuitively display the historical inheritance of Miao embroidery. In terms of geographical distribution, the Chinese map is used to mark the provinces where the Miao people live, such as Yunnan, Guizhou and Hunan, so as to distinguish the cultural differences of Miao embroidery in different regions and help the audience understand the regional characteristics of cultural genes. The cartoon characters are used to present the links of selecting fabrics and patterns, depicting, stretching the cloth, color matching, Unpicking and embroidering step by step, so as to build an immersive production scene and let the audience clearly understand the technical process of Miao embroidery. In the part of production tools, the functions of bead needles, embroidery threads, embroidery needles, etc. are displayed and labeled to convey the details of skill genes. A circular chart is used to present the raw materials (such as indigo, sappanwood, etc.) and the corresponding colors, and combined with the raw material extraction process (boiling, filtering, dyeing) to analyze the source of the color genes of Miao embroidery. In terms of the color matching logic of embroidery, the relationship between monochromatic, similar colors, multiple colors and simple/complex patterns is connected by lines to show the wisdom of color application of Miao embroidery and help understand the color inheritance of cultural genes.

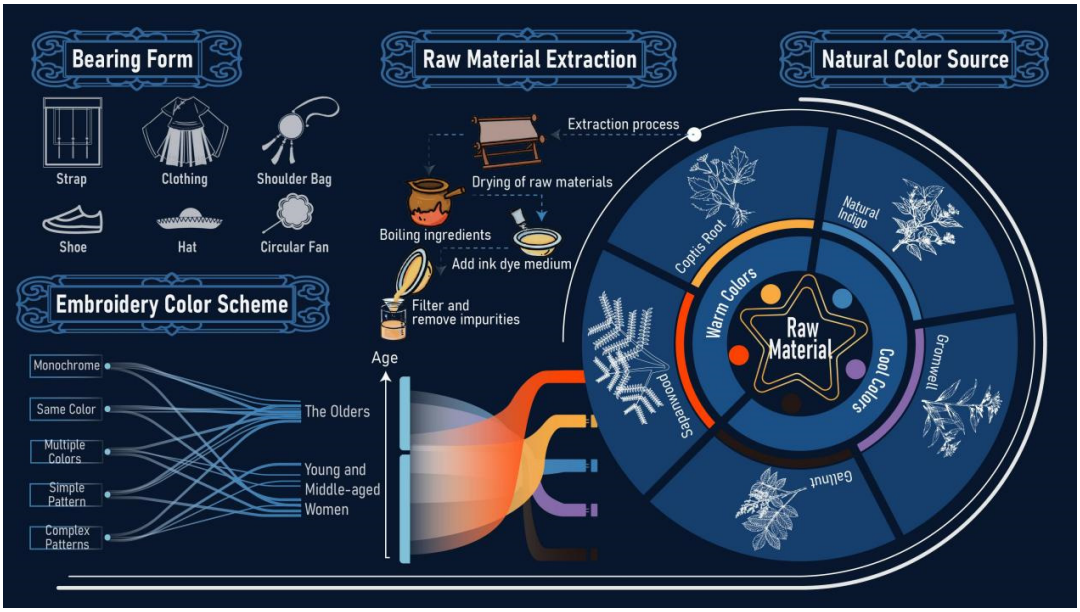

Figure 3. Final Display Chart of Information Visualization Works Drawn by the Author

4. Conclusion

The inheritance of Miao embroidery is related to the continuation of Miao culture and the protection of national cultural diversity. The cultural gene theory provides a new thinking for the inheritance of Miao embroidery. "Colorful Threads Inheriting Glory" explores the visual inheritance path through gene mining, transformation design and diversified communication. Practice has shown that the excavation of cultural genes is the basis of inheritance, visual transformation is the key to innovation, communication and promotion is the way to expand, and evaluation and optimization is the guarantee. In the future, we need to continue to deepen the theoretical application and practical innovation, so that Miao embroidery can shine in modern society, provide a model for intangible heritage inheritance, promote the creative transformation and development of excellent Chinese culture, and help build a cultural inheritance system with national characteristics and contemporary value.

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