

Exploration on the Design Genes of Folk Blue and White Porcelain Decorations

Lei Wei^{1,2,a*}, Danya Zhu^{1,b}, Yun Chen^{1,c}

^a*1159870187@qq.com, ^b614203178@qq.com, ^c3149457727@qq.com

* Correspondence: 598436711@qq.com

¹ Art college, Jiangxi University of Finance and Economics, 330013, China

² Academy of Arts, Jiangxi University of Finance and Economics, Jiangxi, China.

Abstract. Blue and white porcelain is the representative of many arts and crafts in China. Folk blue and white porcelain are not as gorgeous and complicated as the official kilns, but its distinctive, fresh and simple blue and white porcelain decorative patterns are of important cultural connotation and historical significance. Through the investigation of the folk blue and white porcelain decorations, it is found in this paper that the dominant and recessive genes affecting the blue and white decoration are sorted out, in an attempt to improve the design and application efficiency and sustainable development path of blue and white porcelain ornamentation.

Keywords: component; Folk blue and white porcelain; design gene; meaning expression; Inheritance

1 Introduction

Blue and white porcelain is an important component of Chinese ceramic culture. It was identified that blue and white porcelain was currently first witnessed in the Tang Dynasty. The folk blue and white porcelain stems from those undereducated common people, serving as the product through the practice based on the aesthetic interest of the public, and its decoration expression exists widely in all aspects of life. Through researching the folk blue and white porcelain decorations from the perspective of images, and looking for the hidden design genes and meaning behind the blue and white patterns, the history and value connotation of blue and white porcelain decorations and its direction of future development can be discovered in a broader way.

2 The Concept of Design Genes

Genes in biology refer to the basic constructional ways and characteristics of life transmission. From the development of folk blue and white porcelain, after a thousand years of inheritance, blue and white porcelain decorations also have their construction and characteristics. A deep cultural accumulation has contributed to the artistic modeling characteristics and humanistic ideas of blue and white porcelain decorations and formed distinctive and inherited “design genes”.

3 Analysis on the Classifications and Reasons for Formation of Design Genes of Folk Blue and White Decorations

This paper summarizes them as structural and color genes, while the recessive genes are the expressive meaning to decoration. Through the classification of the design genes of folk blue and white decoration in terms of structure, color and expressive meaning, we analyzed the reasons for formation. This facilitates a more comprehensive understanding of the basic structure and development of blue and white decoration and their meaning.

3.1 Structural Genes in the Design Genes of Folk Blue and White Decoration

While the folk blue and white decorations are varied, there is a certain geometric outline, which is then detailed and refined. “When a piece of artwork is reputed to be featured as simplicity, one always refers to the fact that this work organizes the richness of meaning and diversity of forms in a unified structure”^[1], so the blue and white decorations are of high geometric meaning.

3.1.1 Aesthetic interest of the folk blue and white decorative circle

The roundness is the morphological composition of traditional Chinese culture and the spiritual archetype of Chinese art, which expresses the meaning of perfection.

The blue and white decorations are dependent on the porcelain, so the visual effect of decoration is closely linked to the process structure of the blue and white porcelain. The blue and white decorations can be analyzed from the shape of the blue and white porcelain. Due to the rapid development of Chinese brewing and foreign trade industry, the firing process of pottery, plate and goblet in the Yuan Dynasty has entered a very mature and stable stage (as shown in Table 1). Good control for the firing of blue and white porcelain processes can contribute to a high success rate.

Table 1. Statistics of Blue and White Porcelain Vessel Types Excavated in the Yuan dynasty in 2017^[2]

Vessel	Province Number	Central Secretariat	Liaoyang Province	Henan Province and areas in the north of Yangtze River	Jiangsu-Zhejiang Province	Jiangxi Province	Huguang Province	Shanxi Province	Gansu Province	Sichuan Province	Chagatai Khanate	Total	PCT (%)
Pot;		7		2	12	4	1		1	1	1	29	14.65
Plate;		8		2	1		2					13	6.57
Yi (container for wine);					1	1		2				4	2.02
Goblet;		25	1	2	29	10			1	Several fragments		68	34.34
Kettle		5										5	2.53
Cup;		4		1								5	2.53
Gu (a drinking vessel)						1						1	0.51
Bottle				2	5	2	2			2	2	15	7.58
Plum vase		3		2	6	6						17	8.59
Yuhu Spring bottle		6	1	2	3		2	1	1			16	8.08
Box		1			2							3	1.52

Censer				1	2	1			1	1	6	3.03
Bow	4	1		3	5			1		2	16	8.08
Total:	63	3	13	63	31	8	3	4	4	6	198	

The shape of the pottery is taken as an example, it is found that the structure of the pottery is rounded, with smooth lines and natural shape. More attention should be paid to the flow of its structure for the decorations attached to the vessel, in order to ensure a neat and proportional, balanced and coordinated sense of beauty. The “roundness” in its artistic expression not only represents the aesthetic interest of combining the structure of the vessel with the decoration, but also reflects the traditional way of thinking of the ancients. As Liu Fujing said: “The first and the last are rounded together, and the surface and the inside are one” (Wen Xin Diao Long - Rongcai), which proved that the former and the latter complementing each other is the key to the arrangement of the text.

With the rapid development of social technology and humanistic literacy, the pursuit of “roundness” by the ancients has become increasingly high, both in terms of technology and aesthetics, reaching its peak. This also makes the blue and white decorations on porcelain more vivid and dexterous, with high artistic connotation and appreciation value.

3.1.2 The skeleton structure of blue and white porcelain

Through the geometric method, i.e., retaining the main contours and special points in the figurative and complex images, a simple geometric approach of the point-line surface is adopted, with other factors omitted, based on the way of image symbolization, so that the basic skeletal structure of folk blue and white decoration can be extracted. In this way, its structural characteristics can be more intuitively discovered, with guidance for subsequent applications (as shown in Table 2).

Table 2. The Basic Skeleton Structure of Blue and White Decorations

Decoration Names	Skeleton Structure		
Single Decoration	Symmetrical		Balanced
Continuous Pattern	Consecutive double-square		Consecutive four-square
Suitable Pattern	Centrifugal Centripetal	Rotary Radial	Balanced Scattered
Corner Pattern	Symmetrical		Balanced

3.1.3 The spatial layout form of blue and white decoration

Although the composition of the blue and white decorations varied a lot, distinctive features still exist. The composition of the blue and white decorations emphasizes “blue and white contrast, interspersed with water”. This sentence means that the contrast between blue and white needs to be considered for its impact on the whole picture, making the picture sparse and dense, static and dynamic, staggered but well-spaced, which is also the main reason for the visual impact of blue and white porcelain decorations.

In addition to the composition form of contrasting tones, the layout form of the decorations is also diversified. Influenced by the structure of the bottle, the combination of the main decoration

and the secondary decoration presents different pattern effects. There are three main layouts of blue and white porcelain decoration: one is the layered composition, which means that different decorations are arranged in layers to achieve a harmonious and unified picture; and the other is the through-view layout, which is mainly based on the layout of blue and white porcelain after the Ming Dynasty, this layout is influenced by Chinese painting themes and uses the composition of Chinese painting on blue-and-white porcelain vases, reflecting the effect of near-real and far-void through the shades of color and the depiction of details; the third is the balanced layout. The artisan, through his familiarity with the structure of the vase and his skill in painting the ornaments, painted the ornaments on the top of the vase in a balanced way, not limited to other compositions. But no matter which composition layout, we must follow the law of “decorative content is of clear priority with harmonious picture.”^[3]

3.2 The Color Genes in the Design Genes of Blue and White Porcelain Decorations

Color is one of the dominant characteristics of the craft. The combination of blue and white in blue and white porcelain is vivid, clear and elegant, and extremely varied and layered.

3.2.1 Blue and white in the traditional sense

the Chinese color system has the five primary colors of cyan (blue), white, crimson (red), black and yellow, which are constantly extended in traditional Chinese culture and represent different directions and the five elements.^[4] In traditional Chinese culture, blue corresponds to the wood of five elements, which represents life, with the meaning of strength and hope, and is located in the east in terms of orientation. Blue ranks the first of the five colors in the Chinese system. Blue and cyan were believed to ward off evil spirits, and most Taoist priests in folklore wore cyan-colored Taoist clothing and cyan was often used for rituals. White corresponds to the gold in five elements, and is located in the west in terms of orientation. In ancient times, white represented the poor, and the common people were called Bai Ding, Bai Yi, etc. In the Chinese five-color system, white is the essence.

The five-color system has a very important historical and cultural connotation in traditional Chinese culture from ancient times to the present, and the two colors of blue and white have been an important part of the five colors since ancient times. They are the crystallization of people's history, culture and wisdom, and serve as irreplaceable material expressions of economy, politics, culture and art.

3.2.2 Green and white of blue and white porcelain

The color combination of white and cyan is very subtle. The white color is the base of the blue and white porcelain color, with a certain ratio of hemp warehouse clay mixed with kaolin. The better the quality of the porcelain clay is, the more translucent the white porcelain will be fired. China's white glaze porcelain was first recorded in the North and South Dynasties. The Sui and Tang Dynasties has reached a very mature stage of porcelain, where the whiteness of porcelain can reach about 70%, so it laid a good foundation for the emergence of blue and white porcelain.

The application of cobalt material appeared in the Spring and Autumn period, and the early blue color turned greenish and then dark and finally grayish. Until the late Yuan and early Ming dynasties, the rapid development of oxidized cobalt material and the appearance of Persian suma

lime made the blue color of porcelain endow people with a mild and serene feeling, which made the blue and white porcelain more widely welcomed by people of different classes.

Since the blue and white porcelain is limited by color, raw materials and techniques, it is very difficult to present the desired effects. Our ancestors succeeded in mastering the technique of firing blue and white porcelain through continuous attempts and research, making blue and white porcelain become a highly distinctive and exclusive memory in the long history. Therefore, the extraction colors to achieve a more satisfactory traditional cyanotype color needs to continue to be explored.

3.3 Expressive Meaning of Folk Blue and White Decorations

The content of folk blue and white decoration embodies nationalization and popularization, which is related to people's desire for a better life and their simple and pure aesthetic interests. The folk blue and white decorations originated from realism are characterized by natural spontaneity and closeness to life.

Influenced by national culture, the natural environment and the social environment, most of the blue and white decorations with metaphorical meaning entail the following metaphors for the description and pursuit of daily life: depictions of beautiful things and landscapes; good hopes for family harmony, children's birth and longevity; sincere prayers for a successful career and peace and prosperity; auspicious messages for the imperial examinations. There is the consciousness that needs to be conveyed by folk activities, such as ritual activities, festival celebrations and the worship of totems by the nation, like the Eight Treasures motif. There are the expressions of literary themes, historical stories, myths and legends, which are formed for people's memory of history and reverence for life.^[5]

4 Conclusion

The development of the blue and white porcelain decorations is influenced by the natural and social environment and has formed its own unique design gene system. It has unique beauty and connotation in terms of structure genes, color genes and expressive meaning. The issue of whether it can be effectively inherited and protected still depends on the innovative design of the "beauty, ingenuity, clarity and rhythm" of the blue and white decorations. Exploring the design genes of folk blue and white decoration needs to systematically sort out and analyze their characteristics, to preserve their qualities in design, and to make the road of preservation and development of Chinese traditional culture go further and further.

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