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Research Article

Ming Dynasty Blue And White Motifs And Their Influence On Contemporary Painting And Visual Arts

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ABSTRACT

In order to further understand the artistic characteristics of green-glazed pottery in the Ming Dynasty and the value of modern painting, this study takes the green-glazed pottery of the Ming Dynasty as the research object, such as the blue and white twined lotus flat bottle and the blue and white twig lid jar, etc., and uses the test 4K microscope to observe the tire glaze and blue and white pigments, and the Microsoft viso software compares the production style, decoration and style of the green-glazed pottery patterns to analyze, and classifies the artistic characteristics of the green-glazed pottery with reference to relevant literature. The results showed that the dyes of green-glazed pottery were mainly iron, manganese, cobalt and other elements, and the patterns were mainly arc-shaped lines, and there were halos and crystalline spots in the dyeing, and the color was gray-blue. At the same time, the green-glazed pottery of the Ming Dynasty are more artistic, and the bottle mouth and shape are mainly streamlined, and the proportion is close to the golden ratio. Therefore, the artistic characteristics of green-glazed pottery in the Ming Dynasty and the value of modern painting have the characteristics of the Ming Dynasty, which have a certain influence on modern painting and visual art, and promote the promotion of the value of modern painting and visual art.

Keywords: Ming Dynasty (1368-1677 AC); Green-Glazed Pottery; Artistic Characteristics; Modern Painting; Cultural Values.

INTRODUCTION

The Ming Dynasty (1368-1677 AD) was the golden age of the development of green-glazed pottery in China, which won praise for its exquisite craftsmanship, unique artistic style and rich cultural connotation. In the early days of the Ming Dynasty, the manufacture of green-glazed pottery began to rise (Ahmed, 2022), and in the early Ming Dynasty (1368~1458 AD), the production skills of green-glazed pottery were greatly improved, becoming the mainstream of the porcelain manufacturing industry at that time, and reached its peak in the late Ming Dynasty (1522~1677 AD).It then develops rapidly with vigorous vitality (Amadori et al., 2023). In the middle of the Ming Dynasty (1445-1522 AD), green-glazed pottery became the mainstream product of Chinese porcelain production and export, exported overseas, and contributed to the development of the Ming Dynasty economy, and the Chenghua and Jingdezhen Imperial Kiln Factories (Bajnóczi et al., 2021) appeared. The middle of the Ming Dynasty (1445-1522 AD) was an important historical period in the history of ceramic firing in China (Bost et al., 2023), and the quality of porcelain was very high, which is known as the "green-glazed pottery revival period". Zheng He traveled west seven times and brought back the "Sumaliqing" cobalt clay green material used in the production of green-glazed pottery, which is low in manganese and high in iron (Garofalo, 2020), and the fired blue and white color is bright and dense, interspersed with black imperfections that shimmer with a metallic sheen, and this color of pottery is called Yongxuan blue and white. Yongxuan blue and white fetal white and

delicate, the glaze layer is moist and thick, and the glaze color is mostly white and blue, which is another peak period after Yuan blue and white, and there is a saying that "all materials are fine, and blue and white are the most expensive" (Colomban et al., 2022). In terms of pattern decoration, Yongxuan blue and white changed the layered layout style of the Yuan Dynasty, appearing sparse and delicate, with flower, melon, and fruit as the main decoration, and less flowers, birds, and character ornaments (Goett-Zink et al., 2023). In terms of painting, the dot painting style of the Yuan and Hongwu dynasties was changed, and the color was filled with double hooks and small brushes to make the blue and white colors have different shades of brushstrokes (Kwong, 2020), which also became another important feature of Yongxuan blue and white (Inberg et al., 2020) . In the late Ming Dynasty (1522~1677 AD), Yongxuan blue and white flowers were in a variety of shapes, in addition to the common plates, bowls, plum bottles, jade pots, and spring bottles, there were also some newly created types of utensils, such as Baoyue bottles, Wuzun, flower pourings, octagonal candlesticks, and lying pots (Lin et al., 2020). At the same time, the late Ming Dynasty (1522~1677 AD) had obvious exoticism, which was due to the prosperity of foreign trade and cultural exchanges, and the import of Islamic culture in the Middle East and Central and Western Asia, which affected the production of some green-glazed pottery from modeling to decoration. During the Ming Dynasty (1368-1677 AD), green-glazed pottery was favored by Chinese and people around the world for its white and delicate glaze, beautiful blue, and elegant and vulgar decorative patterns, and was the focus of the world's major museum collections and the object sought after by collectors at auctions. Therefore, the in-depth study of green-glazed pottery in the Ming Dynasty is of great value. First, non-contact observation and testing of green-glazed pottery in Ming Dynasty green-glazed pottery was carried out to obtain measurement data of green-glazed pottery (Lin et al., 2023);Secondly, the green-glazed pottery was subjected to microscopic observation and enamel identification. Finally, the modeling and artistic characteristics of green-glazed pottery are compared, and the corresponding artistic value is summarized for better analysis. The specific process is shown in Figure 1.

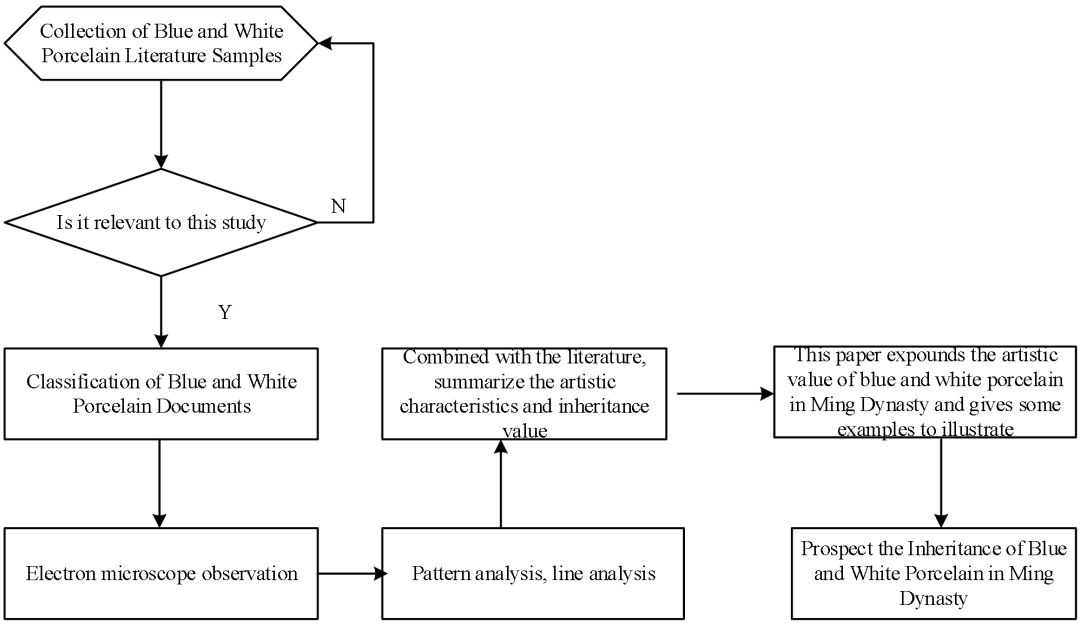

Figure 1. Research Flow of Ming Dynasty Blue and White Porcelain

RESEARCH METHODS AND RESULTS

Research Methodology

The 4K microscope produced by Guangdong Foshan Electronic Technology Co., Ltd. is used as the observation tool, and 4~5.5 times the objective lens and 1.2~2.4 times the eyepiece are used for observation, and the observation points are mainly the surface enamel, dye particles, and the color of the pattern of green-glazed pottery. The statistical software is mainly Mintab 18.1 software (2017 version), which records basic information such as green-glazed pottery enamel, particles and patterns, and provides a basis for later research. Among them, the observation of dyed materials is mainly based on published data, and comparative analysis is carried out. At the same time, the green-glazed pottery pattern is drawn to complete the contrast of the green-glazed pottery. The main observation indicators are: tire glaze, blue and white pigment, production style, decorative style, and artistic characteristics of green-glazed pottery.

Shape and Color

The blue and white twined lotus flat bottle and the blue and white twined twig lid jar were the observation objects, and the colors of different vases were compared, and the results are shown in Figure 2.

Figure 2. The shape of the Blue and White Twig and Lotus Flat Bottles

Figure 3. The Shape of the Blue and White Twined Twig Lid

In terms of the shape in Figure 2, the green-glazed pottery of the Ming Dynasty presents an arc-shaped and oblate shape. Blue and white entwined lotus flat bottle caliber, back diameter, height, thickness. Double lips, the mouth is lined with a circle of back lines, the neck is decorated with a lotus pattern, and there is a small ring nose on one side that can be tied to the cover. The lid is missing. Double-tie live rings on both sides of the shoulder. The front of the pot is bulging and there is a round navel in the center, as show in Figure 3.

In terms of the shape in Figure 2,The wall around the pot is decorated with sea water patterns, and the front is divided into twined branch lotus patterns, brocade patterns and sea water patterns from the outside to the inside. The back is light, the bottom is fine sand, the center is concave, and the flint red is obvious at the edges. Yongle period (1403-1424 AC) blue and white entwined lotus flat bottle(Liu et al., 2020). Flower entwined branch lotus lid jar lips, short neck, bulging belly, ring feet. The lid is topped with a jewel-shaped lotus flower button. The cover is covered with four ruyi cloud head patterns, and the interior is folded with branches and fruit patterns(Liu et al., 2023). The neck is decorated with a floral pattern, the shoulders are decorated with a lotus petal pattern, the abdomen is decorated with a lotus pattern, and the shin is a lotus petal pattern. The blue and white double circle at the bottom of the jar is written in regular script "Ming Xuande Year". Ring-footed flint red and sticky sand are distinct. The above utensils are all blue and white boutiques in the Yongxuan period, the carcass is firm and white(Liu et al., 2021), the glaze is moist and fat, and the glaze color of the white flashes blue like green jade. The blue and white hair color is suitable, and some of them flash the black spots unique to Yongxuan. The painting is natural and smooth, representing the highest level of blue and white in the Yongxuan official kiln. Compare the calibers of the two, as shown in Table 1.

Table 1. Comparison of Parameters of Different Green-Glazed Potterys

Name	Caliber (cm)	Height (cm)	Abdominal diameter (cm)	Bottom diameter (cm2).
Blue and white twigs and lotus flat bottles	6	43	20	12×38
Blue and white twigs lily lid jar	3.5	31	25	13×10

From the comparison in Table 1, it can be seen that the overall size of the blue and white twinked lotus lid jar is slightly larger, but the difference between the two is not significant, indicating that there is no significant difference in the design concept, and there is a certain similarity. Comparatively speaking, during the Yongle

period (1403-1424 AD), the blue and white wheel flower with gourd vase. This kind of utensil, also known as Baoyue bottle was first in the Yongle period (AD 1368~1398). Height 31cm, diameter 20cm. The mouth and neck are inverted in the shape of a bottle, the neck and shoulders are decorated with ribbons and ears, the abdomen is round, and the oval shallow hoop feet (Lu et al., 2022) samples of two types of blue and white porcelain were collected and counted, and the results are shown in Table 2.

Table 2. Comparison of Height and Diameter of Different Samples

Type	Index	Sample Size	Minimum	Maximum	Average Value	Standard Deviation	Median
Altitude	Blue and white twigs and lotus flat bottles	10	0.015	35.186	31.156	1.171	0.676
	Blue and white twigs lily lid jar		0.020	44.116	43.117	1.011	0.784
Diameter	Blue and white twigs and lotus flat bottles	10	0.012	20.171	20.369	1.296	0.759
	Blue and white twigs lily lid jar		0.007	28.194	25.414	1.360	0.775

From the comparative data in Table 2, the standard deviation of blue and white porcelain in the Ming Dynasty is small, indicating that it is relatively exquisite in terms of production technology, and there is no large difference. The specific correlation studies are shown in Table 3.

Table 3. Influence of Height and Diameter on the Manufacturing Process

Target metrics	Evaluate the results	Altitude		Diameter	
		Blue and white twigs and lotus flat bottles	Blue and white twigs lily lid jar	Blue and white twigs and lotus flat bottles	Blue and white twigs lily lid jar
Blue and white porcelain craftsmanship	correlation coefficient	0.533**	0.361**	0.340**	0.513**
	p-value	0.000	0.000	0.000	0.000
	Sample size	10			

Note: p<0.05 ** p<0.01

The correlation analysis of the relevant data shows that height and diameter have a direct correlation effect on the production process, indicating that height and diameter are the main evaluation indicators, and also proves that the research direction of this paper is correct, and the measurement of height and diameter plays an important role in the study of blue and white porcelain in the Ming Dynasty. Literature data were collected, and the indexes of blue and white porcelain were analyzed linearly according to the dichotomy method to find out the main factors affecting the blue and white porcelain process, and the results are shown in Table 4.

Table 4. The Effects of Lines, Colors, Shapes, and Materials on Blue and White Porcelain

	Non-normalized coefficients		Normalization factor	T	P	Colinearity diagnosis	
	B	Standard	Beta			BRIGHT	Tolerance
constant	0.279	0.159	-	1.758	0.081	-	-
Lines	0.361	0.077	0.330	4.689	0.000**	1.274	0.785
colors	0.168	0.072	0.159	2.327	0.021*	1.203	0.831
shapes	0.113	0.066	0.118	1.728	0.086	1.196	0.836
materials	0.315	0.067	0.324	4.679	0.000**	1.229	0.814
R 2				0.440			
Adjust R 2				0.424			
F				C (4,144) =28.237, p=0.000			
D-W values				1.938			

Dependent variable: blue and white porcelain process;p<0.05 p<0.01

From the analysis in Table 4, lines, colors, shapes, and materials are the main factors affecting the blue and white porcelain process, so this paper should study blue and white porcelain from the above aspects. The lower part of the blue and white porcelain mouth is decorated with a circle of chrysanthemum motifs, the ribbon ears are painted with folded branches, the outer edge of the abdomen is painted with a circle of curly grass, and the center of the abdomen is an eight-petal wheel flower. There are also imitations of this musical instrument in the Kang, Yong, and Qian periods of the Qing Dynasty, but the shape is not as beautiful as the Yongqin, the weight is heavy, and the blue and white hair color does not have the rust of the Yongqin. The green glazed pottery of the Yongle period (1368~1398 AD) made the production style of the Yuan Dynasty from thick and powerful, from fresh and smooth. There are many types of utensils and different shapes (Lu et al., 2021). such as: plates, bowls, three-legged furnaces, high-foot bowls, plum bottles, etc., porcelain production is regular, the body is light, the weight is suitable, and the craftsmanship is excellent(Lueangjaroenkit et al., 2020), which shows that the pottery car billet and kiln technology is very mature at that time. The shapes of Chenghua blue and white ware are not as diverse as those of Xuande, but the delicate and delicate small utensils have become prominent products in this period. Zhengde porcelain, the fetal bone is heavy, and the shape of the utensils is reversed into Chenghua, and Hongzhi is a monotonous variety based on plates and bowls, which is more diverse, and the number of large utensils increases. Jiajing green-glazed pottery, in addition to firing all kinds of tableware, furnishings and flower pots (Mwai et al., 2023), fish tanks and other daily utensils, there are also a variety of religious offerings, the shape of the antique bronze style is more prevalent, with a rough appearance. Wanli blue and white ware is diverse, small pieces of fine utensils, large pieces of poor and shoddy, in addition to the common plates, bowls, bottles and the like in addition to the more stationery, the proportion of large utensils is also larger, such as flower pots, embroidered piers, plum bottles, etc. Judging from the shape of green-glazed pottery, the shape of blue and white at the mouth of the folk kiln in the early Ming Dynasty is relatively thick. At this stage, there are also Yuan Dynasty folk commonly used waist discs, the early belly is deeper, the circle foot is smaller (Shi et al., 2022), the bending is stiff, the bottom is thicker, the center of the plate has a round groove, and the later belly is shallow. The green-glazed pottery of the Hongwu period mainly includes "jade pot spring bottle", "tall bowl", "plum bottle" and "holding pot". During the Yongle period, the number of large porcelains decreased, and green-glazed pottery became exquisite and exquisite. Yongle green-glazed pottery generally has: high-foot bowls, high-foot cups, bottles, jars, plates, jade pots and spring bottles. During the Xuande period, the types of green-glazed pottery in the folk kiln were more numerous than those in the Yongle period, and the bottle mouth of the plum bottle was divided into flat mouth and plate mouth, and its size, neck length, and caliber were different, and the shape of the plum bottle was also different. The porcelain of the Xuande period, the official kiln is written more, and the predecessors have the evaluation of "Yongle is less(Sirenko et al., 2022), Xuande is more, Chenghua is fat, Hongzhi is showing, Zhengde is Gong, and Jiajing is miscellaneous". There is some truth in the saying that "Yide has a lot of money". In addition to the bottom of the plate and bowl, the Yide model lives in the center and mouth of the round ware, or the mouth, shoulder, waist and foot of the carving vessel, and there are even double models (such as acacia cover boxes, stationery boxes, etc. have annual models in the lid and the bottom foot), so there is a saying that "Xuande New Year is all over the body". Most of the official kilns in the Chenghua period have the six-character official model of "Chenghua Year of the Ming Dynasty", and the official model of Chenghua has two sides of the frame line in addition to the double circle line, but there are also only six-character paragraphs without wireframes, and even only one "day" character paragraph(Tatyana, 2021). The porcelain of the Hongzhi period is also mostly seen in the six-character section of the "Hongzhi Year System of the Ming Dynasty", and its characters are written more beautifully. During the Yongle period (1368~1398 AC), in addition to the six-character regular script of the "Zhengde Year of the Ming Dynasty", there were also four-character regular characters of the "Zhengde Year System". The blue and white of the Jiajing official kiln is mostly written in the six-character regular script of "Jiajing Year System of the Ming Dynasty". Some of them are written "Jiajing year" and "Ming Jiajing year". According to the change of shape, some write horizontal, vertical, and circular paragraphs. The book is mainly in the center of the bottom foot of the object. The font is thicker, the layout is compact, and the skimming is slightly stiff. The word "end" next to "stand" is relatively short, and the two points are often written vertically without slope. The blue and white of the folk kiln are common in auspicious words such as "rich and noble" and "ten thousand blessings"(Tulic et al., 2021). The following takes the Ming Zhengde blue and white infant play picture porcelain cup and the Ming Wanli crab pattern white glazed blue and white small dish porcelain in the collection of the Linxia Prefecture Museum as examples to illustrate the characteristics of green-glazed pottery in different periods of the Ming Dynasty. In addition to plates, bowls, all kinds of boxes, jade pots, plum bottles, large pots, embroidered piers, flower goblets, study utensils and other common products, especially popular square, prismatic ware, such as gourd bottles, square liters, square lid boxes, square bottles, melon prism jars and square saucers. In addition, in terms of ornamentation, the painting technique is basically based on outlining flat painting, with clear patterns and fine coloring. During the Wanli period, he pioneered the underlining blue and white painting technique, using a very light tone double hook pattern pattern, giving people

a fresh and elegant feeling. In addition to the traditional dragon, phoenix and floral patterns, there are also common themes such as courtyard baby play, fish algae, birds and birds, lotus pond mandarin ducks, tree and stone railings, and landscape figures. During the Jiajing period, because Emperor Jiajing believed in Taoism, there were a large number of ornaments that reflected the content of Taoism, such as eight immortals, eight trigrams, cloud cranes, Ganoderma lucidum and various trees, flowers and fruits holding the word "Fu" and the word "longevity". The green-glazed pottery of the Yongle and Xuande periods developed in a more beautiful and elegant direction on the basis of inheriting and integrating the blue and white brush painting style from the Song Dynasty to the Yuan Dynasty in terms of pattern decoration(Wang et al., 2020). The ornamentation is mainly plant patterns, such as entwined branch lotus, peony, rose, chrysanthemum, moon season, etc.; animal patterns are mainly dragon and phoenix patterns, and there are also a few unicorns and sea beast waves. In terms of pattern decoration, Chenghua tends to be more relaxed and pleasant(Wheeler et al., 2020), such as graceful flower branches and lively baby play pictures, etc., which can give artistic enjoyment. The theme of infant drama has been applied to porcelain as early as the Tang Dynasty, to be precise, it was not until the Xuande of the Ming Dynasty, especially the Zhengde and Jiajing periods, that it was the most popular. During the Jiajing period, Taoism was popular, and the themes of Taoist colors appeared more, and words such as "longevity" and "blessing" also appeared, and in addition to the common dragon and phoenix patterns in the Wanli period, various animals, plants and character patterns were also more popular. Especially in the period from Wanli to Chongzhen, the crab graphics on the green-glazed pottery appear in large numbers, and there are crabs in the painting regardless of the fine and thick porcelain.

Painted Dyes and Colors

During the Yongle period (1368~1398 AC), the production of green-glazed pottery in the Ming Dynasty resumed again, and there were new developments in varieties, shapes and ornaments, forming a unique style of this period. The three dynasties of Chenghua, Hongzhi and Zhengde played a role in the development history of green-glazed pottery in the Ming Dynasty. The green-glazed pottery in the early Chenghua period inherited the legacy of Xuande, and the fetus, glaze, color, modeling, and decoration were similar to the Xuande green-glazed pottery. In the middle of the period, the style changed greatly, and the blue and white material was made of domestic equal green material, and the hair color was light and elegant without black iron spots, and this color continued until the late Zhengde period. In the late Zhengde period, there was a blue and purple "Hui Qing" material blue and white, which laid the basic style of the blue and purple of the Jiajing, Longqing and Wanli dynasties. The shape tends to be delicate and handsome, and there are few large instruments, and it is developed to be generous. The fetus is white and greasy, the carcass is light, the glaze is thick and moisturized, there is a jade texture, and the glaze color is white and green and white. The ornamentation is mostly floral and animal patterns, and there are some religious influences, such as Sanskrit, Arabic, treasure pestle, lotus eight treasures, eight immortal patterns, etc., which are particularly obvious in the Zhengde period. Sketching lines began to appear in the drawing method, and the painting method of flat strokes was used within the lines. The blue and white twigs and blue and white lids were used as the research objects to observe the colors, and the results are as follows,as show in Figure 4.

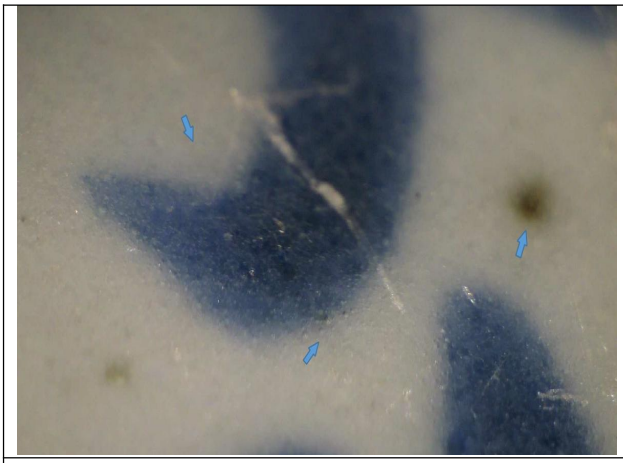

Figure 4. The Color and Pattern Test of Blue and White Twigs and Lotus Flat Bottle

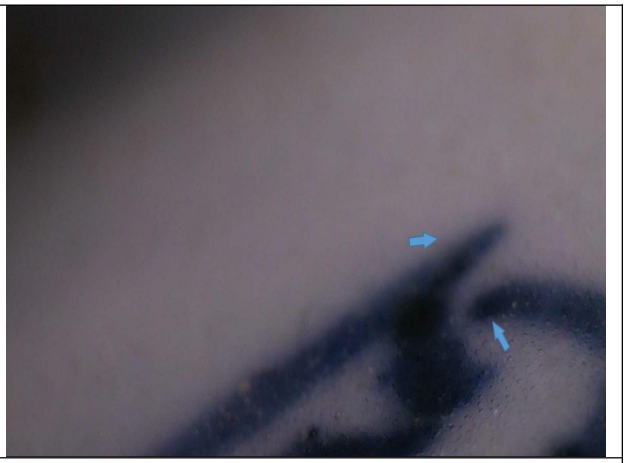

Figure 5. The Color and Pattern Test of Blue and White Twigs Lily Lid Jar

In terms of the shape in Figure 4,Comparing the two vases, it can be found that there are obvious bubbles in

both of them, and the pattern is streamlined, and the edge is haloed, and obvious crystalline spots appear, indicating that halo and crystalline spots are the main characteristics of the pattern of the Ming Dynasty (1368-1677 AC). The green-glazed pottery of the Yongle and Xuande periods is famous for its delicate and white fetal quality, crystal thick glaze layer, and strong blue and white color. The green-glazed pottery of the Yongle period (1368~1398 AC) is famous for its thin glaze and white glaze. Legend has always said that the green-glazed pottery used in the Yongle and Xuande periods was the so-called "Su Ma Liqing" brought back from Islam by Zheng He when he sailed to the West, which has a low manganese content and a high iron content. Due to the low manganese content, it can reduce the purple and red tones in cyan, and under the right heat, it can burn a bright color like sapphire blue,as show in Figure 5.

In terms of the shape in Figure 5, due to the high iron content, black spots often appear on the blue and white parts. This naturally occurring black spot, contrasting with the intense blue color, is regarded as the "successful work" of Yong and Xuan green-glazed pottery that cannot be imitated. Chenghua, Hongzhi, Zhengde three dynasties used green material is imported green material and domestic green material miscellaneous use, from the literature recorded data, this domestic green material for the equality of green and stone green, this domestic green material iron content is less, so there is no longer Xuande kind of black spots. Jiajing blue and white is marked by the use of green materials, which is another prominent stage in the history of green-glazed pottery in the Ming Dynasty. Therefore, there is neither Yongle and Xuande blue and white black iron spots, nor does it produce the black and gray tones of stone green used in Zhengde, and it is stronger than the equal blue used in Chenghua, so Jiajing blue and white wins with blue and white color. Wanli blue and white, the pigments used in the early period are still used to return to green, and after the middle of the period, due to the severance of the return to green, the domestic green material is the Zhejiang material produced in Zhejiang Province, which can be confirmed in the relevant records of the "Ming Shilu". Referring to the relevant literature, it is found that the main component of green-glazed pottery in the Ming Dynasty is iron, but it contains a small amount of other elements, and the results are shown in Table 2.

Table 2. Comparison of Different Dyes

Vase	Element	Function
Blue and white twigs and lotus flat bottles	Iron, manganese, cobalt, recycling	Brilliant blue, gray, pale color
Blue and white twigs lily lid jar	Iron, Manganese, Cobalt, Cobalt, Sumali Green	Clear, elegant, blue with a grayish tinge

It can be seen that the dyes of green-glazed pottery in the middle and late Ming Dynasty contain a large number of imported dyes, which makes the colors more diverse and clear. Blue and white lotus plum vase. Height 34 cm, diameter 8.5 cm, base diameter 13 cm. The mouth is straight, and the mouth is larger than the average plum bottle. Short neck, sloping shoulders, bulging abdomen, shin adduction, flat sand bottom. The ornamentation is divided into 5 layers from top to bottom, separated by double-string patterns, which are diamond-shaped brocade pattern, entwined branch curly grass pattern, entwined branch flower pattern, entwined branch lotus pattern and Yanglian petal pattern. There are obvious seams on the abdomen, the bottom foot is not very regular, and the iron spots in the tire are obvious. This plum vase follows the Chenghua style, with a moderate thickness of the carcass, light blue and white hair color, precise double hook filling, thick glaze, and strong jade texture. Ming Zhengde blue and white Arabic handicap bottle. Height 29 cm, diameter 7.5 cm, base diameter 8 cm. Handicap, long neck, bulging abdomen, shin oblique, high hoop foot abduction. The carcass is thick and heavy, and there are obvious seams on the abdomen. The outer edge of the mouth is decorated with triangular waves, the neck is decorated with a raised leather strip, painted with dots, and the shin and foot are decorated with lotus petals and curly grass patterns. The main body of the neck and abdomen is patterned with arabesque spaced circles and petal-shaped openings, and Arabic characters are written in the openings. There are two lines of regular script in the blue and white double circle at the bottom, the font is dignified, and the strokes are tough. This bottle has a regular shape, a bright glaze, and an Arabic decoration that is more characteristic of the times. Blue and white has been used back to the green material, opening up the style of purple in the blue of Jia, Wan Qinghua for nearly a hundred years. The green-glazed pottery of the Jiajing, Longqing and Wanli periods is very different from the previous generation. First of all, the pigment of firing green-glazed pottery is changed to green material, and it is used in combination with the stone green material produced in Jiangxi(Xin et al., 2020), which is rich and bright, and the blue is slightly purple. This hue lasted for the Jiajing, Longqing, and Wanli dynasties, constituting a distinctive feature of the times. In the later period of Wanli, due to the cut off of the green material, the green material produced in Zhejiang was used instead, and the blue color was bright and elegant(Yang, 2021).

Celadon Ornamentation During the Ming Dynasty (1368-1677 AC)

Comparing the celadon ornamentation of the samples, it is found that the ornamentation pays great attention to the contrast between blue and white, as shown in Figure 6 and Figure 7.

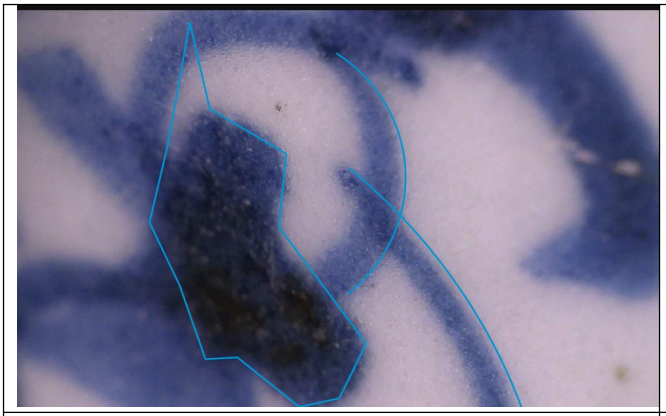

Figure 6. The Green-Glazed Pottery Ornamentation of Blue and White Twigs and Lotus Flat Bottles

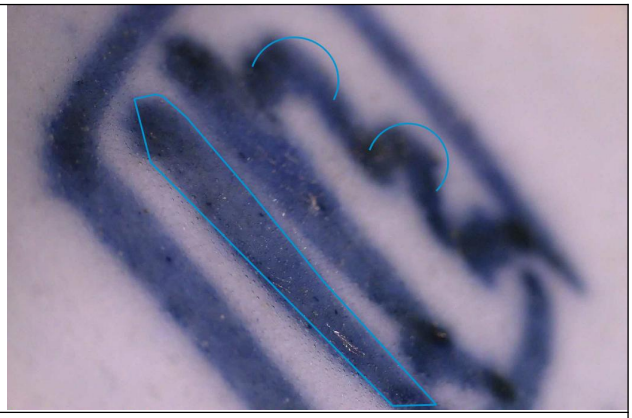

Fig.7. The Green-Glazed Pottery Ornamentation of Blue and White Twigs Lily Lid Jar

From the test results in Figure 6, it can be seen that the lines of the green-glazed pottery decoration are relatively delicate and multi-dimensional arc shape, which has the artistic characteristics of landscape painting in the Ming Dynasty (1368-1677 AC). The green-glazed pottery of the Yongle period (1368~1568 AC) attached great importance to the "water separation" in the decoration. In order to make the decorative pattern of the whole object look more lifelike and have more layers, in the process of painting porcelain, it will first be depicted with lines, and after determining a rough outline, it will be evenly colored with various pigments, and through the contrast between blue and white, it will show a beauty with rich layers. In the early Ming Dynasty, the blue and white ornamental patterns of the folk kiln have their own uniqueness in color and ornamentation (Zhang et al., 2020), and the artistic characteristics and expressions of these ornaments have played a certain role in promoting the progress and development of Chinese pottery. The Ming Dynasty (1368-1677 AC) was a prosperous dynasty economically, culturally, socially, and politically, in which religious and cultural factors had a great influence on the ornamentation of green-glazed pottery,as show in Figure 7.

From the test results in Figure 7, During the Hongwu period, the ornamentation of folk green-glazed pottery not only inherited the patterns of the Yuan Dynasty, but also carried out certain innovations. The decoration of green-glazed pottery in the Yuan Dynasty is rich in layering(Zhang et al., 2020), with many decorative forms and complex layering, and the painting skills are mainly one stroke at a time, and the pattern structure is scattered(Zhang et al., 2022). In the Hongwu period, the ornamental level of green-glazed pottery was reduced, the ornamental layout became concise and sparse, the painting moved from realism to freehand, and the ornamental themes also became more extensive, including orchid, chrysanthemum, lotus, aquatic plants, cirrus clouds and the freehand of various natural scenes. The green-glazed pottery of Hongwu Min kiln has three characteristic ornaments: one is the landscape, the other is the flower, and the third is the "Fu" written in cursive. "Mountains and clouds and clouds" is a common pattern, usually appears outside the bowl, the bowl center often has blue grass or "Fu" word, outside the bowl is a large cloud pattern, between these patterns, there are distant mountains and rivers, so it is called "mountains and clouds and clouds". The overall style of painting is very concise, the upper part is mostly green-glazed pottery of the Ming Dynasty, and the lower part is left blank, and the decoration is random and sloppy. Floral patterns include chrysanthemums, peonies, lotus, etc., mainly based on flowers, supplemented by leaves, compared with the Yuan Dynasty, the flowers are larger and more, and in the Hongwu period, it is based on the landscape, combining flowers and leaves to form scissors, triangles and other shapes, in order to highlight the theme. The word "Fu" is written in cursive, and the character is written freely and strongly. In the Yongle period, the patterns of green-glazed pottery in the folk kiln have changed greatly in content and decoration, becoming more rounded and soft, and the picture has more agility and vitality.

Therefore, the overall pattern is bright, full of life, and shows the distinctive characteristics of the era. The ornamentation is usually composed of thick and thin lines, and the most common folk kiln green-glazed pottery ornaments are: plum blossoms, peony flowers, lilies, mandarin ducks, aquatic plants, lotus flowers, etc., in addition to the scenery of nature, it also contains many legends about the immortals. The common patterns on green-glazed pottery are decorated with the word "longevity", the word "Fu", the unicorn miscellaneous treasure

pattern, the moon shadow plum, the river cliff pattern, etc. First of all, cursive script evolved to regular script and official script, and the two characters of "Fu" and "Shou" were similar to those of the Hongwu period, but the penmanship was more thick and strong. Secondly, the moon shadow plum began in the Song Dynasty Jizhou kiln, and spread to the Ming Dynasty, the moon shadow plum was painted in the center of the porcelain plate or outside the porcelain plate with a pen, the crescent moon hung in the sky, with a few plum blossoms, so that the whole has a special temperament and charm. In the Yongle era, the unicorn pattern also began to appear, the unicorn is an auspicious beast, around it, there are some other patterns, such as ruyi, fire beads and other miscellaneous treasure patterns. In the Xuande period, his painting style was more bold and rough than that of the Yongle period, showing a heroic and free style. Before Xuande, the patterns of people, flowers and birds in the pattern were relatively rare, and after Xuande, various types of patterns emerged in endlessly, such as "Immortal Crane", "Three Friends of the Cold Year" and so on. In the official kiln, the dragon, phoenix, beast, flowers and birds and other patterns are still the main body, but the painting technique is more standardized and detailed than that of the folk kiln.Ming Dynasty green-glazed pottery, hollow carving patterns such as blessing, auspicious, longevity, etc., as well as the decoration of bats, are widely used in the design process of modern paintings, seal carvings, architectural modeling and couplets and other artistic products, and China has strengthened the propaganda of local culture, and now integrates more green-glazed pottery shapes into the design, and the lines and words of green-glazed pottery as the landmark content of Chinese traditional culture, in addition to the orchids, cranes, Narcissus is widely used in architectural decoration and has become an important design branch of modern architectural design, and the slender shape of green-glazed pottery has become the main modeling decoration in art decoration. Therefore, the excavation of the plastic art in green-glazed pottery is of great significance for the serious richness of design now.

THE INFLUENCE OF MING DYNASTY BLUE AND WHITE MOTIFS ON CONTEMPORARY PAINTING AND VISUAL ARTS

Inherit the Spirit of Traditional Culture

The development of ceramic art is inseparable from the accumulation of traditional Chinese culture, which has a profound influence on artistic creation and the life of the masses, and at the same time deepens the decorative significance of ceramic art. The decorative art of contemporary painting design has its own unique system, which is different from modern ceramic art and is more traditional in the form of artistic expression. Modern society is in a stage of rapid development, people's pursuit of art has changed, but also the desire to express a beautiful vision in a strong cultural atmosphere, the development of ceramic art has been affected by this demand to achieve rapid development.In modern clothing design, elements of Ming Dynasty blue and white porcelain are integrated to enhance the connotation of clothing design, as shown in Figure 8.

Figure 8. Blue and white Porcelain Cheongsam(Note: Information from www.baidu.com)

Figure 9. Blue and White Teacup （Note: Information from www.baidu.com)

From the analysis in Figure 8 it can be seen that the softening of the blue and white porcelain pattern and the modern long groove form can enhance the cultural connotation of the robe, and the national flower peony is used as the main decoration to represent auspiciousness and ruyi. The phoenix pattern is added on both sides of the

clothing design to highlight the status of women. Therefore, there are more opportunities for the integration of blue and white porcelain patterns and modern clothing.The green-glazed pottery of the Ming Dynasty are widely used, and the white drawing techniques and ancient color line drawings of the green-glazed pottery of the Ming Dynasty have been widely used in contemporary painting and design works, which have enhanced the decorative role of ceramic works. The characteristics of the times of modern society reflect the change of the aesthetic consciousness of the modern masses, and this influence will also change the development trend of traditional art forms, which requires ceramic workers to have a certain sensitivity to the times, continue to learn, make progress, and improve their comprehensive quality. For example, the blue and white teacup is also a fusion of blue and white porcelain with the teacup, as shown in Figure 9.

From the analysis in Figure 9, we can know that the green flower inserting needle is a fusion of modern popular art and the magpie shape in blue and white porcelain, and a large number of the characteristics of the triangular diamond shape of blue and white porcelain are used for analysis.In the expression of ceramic art, green-glazed pottery art is the most widely influenced form of expression. Therefore, in the creation of blue and white pattern art and ceramic art in the Ming Dynasty, blue and white is an important element used to express the artist's inner emotions and artistic sentiments, and it is not uncommon in various works of art.

The Artistic Characteristics of Green-Glazed Pottery in the Ming Dynasty are an Important Component of Modern Creative Painting Art

The blue and white pattern art and culture of the Ming Dynasty have spread to all parts of the world for a long time and have a far-reaching influence. Their market potential is immeasurable. The great influence of the blue and white pattern art culture of the Ming Dynasty on the world and its share in the world culture determine the value, prospect and potential of integrating the blue and white pattern art culture of the Ming Dynasty into modern painting and design. The design elements of the blue and white pattern art of the Ming Dynasty are vibrant. The animal motifs in the decoration mainly inherited and developed the original totems. For example, the reflection of the dragon pattern, the phoenix pattern, etcas show in Figure 10.

Figure 10. Blue and White Porcelain Paintings (Note: Information from www.baidu.com)

Figure 11. Blue and White Porcelain Oil Painting (Note: Information from www.baidu.com)

All of these have developed from the auspicious and sacred things worshiped by the Chinese people, such as dragons and phoenixes, which have strange styles and obvious signs of totem worship in primitive societies. The dragon pattern is the happiest and most sacred pattern of the Chinese nation. His paintings do not appear on bronzes, but descendants of dragons already exist in the Neolithic period. In the Bronze Age, true images of dragons appeared. It is a synthesis of different animal figures, a strange and mysterious animal figure created by the creative imagination of the elderly. Its original form was mainly a snake, because in ancient China there was a saying that dragons interacted with snakes: "dragons or snakes resemble snakes, and snakes or snakes resemble dragons". The image of the dragon was not uncommon in Shang and Zhou bronzes. It abstracts every part of the performance and reinforces the performance in a targeted way. The original image of the phoenix is a blackbird

(the blackbird is a totem of the Dongyi people in ancient China). Like the dragon, it is also an animal introduced by ancient people, and it is a sacred bird formed by the fusion of various animal images. Its feathers absorb the image characteristics of a peacock, and its sharp claws come from wild eagles. There is a description of the phoenix in the "Han Poetry Biography"as show in Figure 11.

"The image of the phoenix is like a man in front of a goose, behind the scales, with a snake neck and a fish tail, a dragon pattern and a turtle body, a swallow queen and a chicken pecking. "It also absorbs and blends the cultures of other clans. However, the phoenix motif has many variations that can be compared to the Kuilong motif, and also conveys a sense of mystery about the development of China's 5,000-year-old civilization. Whether it is court art or folk art, whether it is literary painting or religious painting, through the creative practice of painters, artists and craftsmen of the past, it has accumulated a rich variety of artistic expressions and forms.

The Artistic Characteristics of Green-Glazed Pottery in the Ming Dynasty are Integrated into the Art Design of Modern Creative Painting

Since ancient times, the blue and white pattern art of the Ming Dynasty has been characterized by the integration with architecture, as well as interaction and coordination, to achieve a harmonious and unified style. With the advancement of architectural technology and the development of aesthetics, blue and white porcelain has a higher degree of integration in architecture. The integration of blue and white porcelain and architecture is aware of the importance of the integration of architectural characteristics and blue and white porcelain, advocating environmental protection, green design, and humanized design, and applying modern elements to architecture. The profound connotation of the blue and white pattern characteristics of the Ming Dynasty profoundly reveals the relationship between man and nature, as well as the evolution of contemporary painting design, and has more traditional Chinese cultural elements. The application of the characteristics of blue and white patterns in the Ming Dynasty to modern painting design is a subject worthy of study and consideration, such as the application of blue and white porcelain patterns in architecture, as shown in Figure 12.

Figure 12. The Use of Blue and White Porcelain Patterns in Architecture(Note: Information from www.baidu.com)

Figure 13. The Role of Blue and White Porcelain in Architectural Decoration (Note: Information from www.baidu.com)

As can be seen from Figure 12, the lilies and apples in the blue and white porcelain are traditional Chinese auspicious patterns, so they are used in architecture and have high artistic value. Faith is an important part of culture, and it is the inheritance and development of blue and white pattern art culture in the Ming Dynasty. Without culture, basic beliefs disappear. There is no way out for contemporary painting design to abandon the artistic characteristics of Ming Dynasty blue-glazed pottery and follow the ass of the West all day long. With the implementation of the strategy of rejuvenating the country through foreign design, not only design products are sold in the market, but also its national cultural connotation is also increasing. These cultures profoundly influenced modern life through the use of their products, and even diluted the blue and white pattern characteristics and civilization heritage of the Ming Dynasty, so they were widely used in architecture in courtyard decoration, as shown in Figure 13.

Blue and white porcelain can be used as a kind of design theme and content for courtyard decoration, which has important value for inheriting national culture and promoting the art of blue and white porcelain. The blue

and white pattern art of the Ming Dynasty is widely used in modern art, fully embodying various techniques such as gorgeous dexterity, simple and exquisite, clean, rough, warm, elegant, simple and luxurious. Whether it's short Ming Dynasty blue and white motifs, circular decorative motifs carved on wooden panels, exaggerated popular paper cuts, or heavily colored woodblock prints, they all provide a rich expressive and schematic decorative language for current creative pattern design. In the history of our country, the agrarian society has left a rich historical legacy. Therefore, in order to get out of the road of "nationality", we must take root in the soil of national culture, learn the art and culture of Ming Dynasty blue-glazed pottery, and carry out creative transformation, so that the application of traditional Chinese design elements in contemporary creative painting design has both "nationality" and "epochality". In this way, modern creative painting design can be truly "international".

Changing the Aesthetics of Contemporary Painting and Visual Arts

At present, the research of blue and white porcelain also pays great attention to three-dimensional expression, and carries it out in different forms and displays the specific content as follows (Figure 14).

Figure 14. Dislocation of a Blue and White Porcelain Vase (Note: Information from www.baidu.com)

Figure 15. Three-Dimensional Effect of Blue and White Porcelain (Note: Data from www.baidu.com)

The staggered distribution of blue and white porcelain can enhance its three-dimensionality, giving people a sense of light sideways, so as to enhance the objective performance of blue and white porcelain and produce a more distinctive visual effect. Contemporary painting design contains a variety of artistic expressions, and its development history has distinctive characteristics of the times, showing the aesthetic tendency of modern artists. Contemporary painting design is based on the patterns and lines of blue and white porcelain of the Ming Dynasty, including creative techniques and color variations, and more and more artists are beginning to focus on personal expression. In terms of painting expression, painters began to pay attention to the expression of the way of thinking, absorbing the essence of Ming Dynasty painting, showing the characteristics of modern art, and making modern art and Ming Dynasty art aesthetically integrated. The blue and white patterns of the Ming Dynasty focused on the use of lines, which is the accumulation of history and culture, and the pursuit of smoother lines in technique. Modern art requires the use of bright colors, the use of ideas to express artistic style, and the innovation of art forms, materials, and technology. Modern art design also requires the development of innovative thinking and creative work from all aspects. At the same time, it is necessary to pay attention to the inheritance of blue and white porcelain culture, learn from the experience accumulated by predecessors, add Western painting in time in the creative process, pay attention to the hollow form of oil painting, and enhance the three-dimensional sense of blue and white porcelain, as shown in Figure 15.

It can be seen that the integration of blue and white porcelain patterns with modern hollow and 3D visual design can not only inherit the color of blue and white porcelain, but also reflect a national cultural connotation and realize the integration of Chinese and Western paintings. Through the research, it can be seen that under the three-dimensional display, the Ming Dynasty ceramic painting shows a trend of integration of Chinese and

Western. The three-dimensional display of blue and white porcelain is the embodiment of the artist's creative intention and creative spirit, and the superb use of color glaze techniques will enhance the artistic value of ceramic works. China's faience painting art is deeply influenced by foreign culture, so in the performance of ceramic art, more attention is paid to the visual impact of decoration, restoring the content of traditional literature, but this situation is not common, in fact, the blue and white porcelain painting design of the Ming Dynasty was weakened by the influence of foreign culture, and people pay more attention to the practicality of its decorative function when using faience art. The performance of blue-glazed pottery in the Ming Dynasty is the most common, and the creation of blue-glazed pottery in the Ming Dynasty is not only a copy of the blue-glazed pottery of the Ming Dynasty, but also a play and excavation of the value of ceramic art. In the creative process, ceramic artists can often give full play to the advantages of ceramic technology, the expression techniques and techniques of the Ming Dynasty blue glaze pottery innovation, so that it is more in line with the performance characteristics of ceramic art, three-dimensional display also emphasizes the integration of poetry, words, printing and painting, but in the process of three-dimensional expression, often limited by their own creative characteristics. The technical limitations of the past have also been improved with the development of the times, which is conducive to the embodiment of the connotation of blue-glazed pottery in the Ming Dynasty.

CONCLUSION

To sum up, this study focuses on "Ming Dynasty Green-glazed pottery and Their Influence on Contemporary Painting and Visual Arts" to carry out in-depth research and analysis and further clarify the significance of studying Ming Dynasty green-glazed pottery from the perspective of archaeology. Combined with the above background, this study takes the green-glazed pottery of the Ming Dynasty as the research object and summarizes the artistic characteristics and modern painting value of the green-glazed pottery of the Ming Dynasty. Therefore, the detailed analysis and research on the decoration techniques, color application and plastic art characteristics of the green-glazed pottery of the Ming Dynasty in China are carried out, which effectively proves that the integration and application of the green-glazed pottery of the Ming Dynasty in China are gradually advancing to modernization and internationalization. The results show that the proportion of the blue and white pattern in the Ming Dynasty is reasonable, similar to the golden section line, and the color appears to be halo and crystalline spots, and the colour is grey-blue. Moreover, many grey and black patterns appeared during the Ming Dynasty (1368-1677 AC), mainly because the colors were mixed with iron, manganese, cobalt and other elements. Therefore, studying green-glazed pottery during the Ming Dynasty was important in modern painting and visual art.At present, the patterns and colors of blue and white porcelain are widely used in modern clothing, porcelain and architecture, among which peonies, plum blossoms, bats, magpies and other patterns are also used in modern daily necessities, such as cups and bowls, so as to realize the inheritance of the connotation of blue and white porcelain in the Ming Dynasty. In addition, the line thickness of blue and white porcelain changes, and the fusion of diamond, square and other graphics in Western design, to achieve the contrast between Chinese and Western design, and better display the connotation of blue and white porcelain. Therefore, the blue and white porcelain of the Ming Dynasty has an enlightening effect on the theme of modern design and integrates with modern design.There are some deficiencies in this study, mainly reflected in the number of blue and white porcelain samples, as well as part of the incomplete data, it is impossible to conduct a comprehensive study of blue and white porcelain. In addition, the blue and white porcelain adopts non-contact research, and the research results of some components are incomplete. In the future, more advanced detection equipment will be used for analysis, so as to improve the accuracy of the research results and make up for the shortcomings of this study.

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