

Archaeological Value Excavation and Connotation Analysis of Ceramic Decoration in Ming and Qing Dynasties and Its Enlightenment to the Development of Modern Cultural Creation

Jiang Li¹, Adzrool Idzwan Bin Ismail^{2*}

¹ School of Creative Industry Management & Performing arts, university utara Malaysia ,Malaysia /
Huainan normal university, china.

² School of Creative Industry Management & Performing arts, university utara Malaysia ,Malaysia.

Email: adzrool@uum.edu.my

Abstract

In order to explore the archaeological value of ceramic decoration and excavate its cultural connotation, this paper analyzes the ice pattern porcelain vase and glaze red vase in the Ming Dynasty, as well as the blue and white porcelain plate in the Qing Dynasty. This paper uses a 4K electron microscope (Dongguan, Guangdong) and an electronic scanner (Hebei, China) to observe the ornamentation, dyeing composition, material and shape of ceramics, and to explore their cultural connotations. The results show that the decoration of Ming and Qing ceramics contains a large amount of ZnO, SnO₂, PbO, BaO, and a small amount of Zr, Si and Pr, which are blue, yellow and orange, and the surface is bright and transparent. The patterns of the Ming Dynasty are delicate and diverse, and they show halo and crystalline spots, while the patterns of the Qing Dynasty are rough, thick and scattered. The cultural connotation of Ming Dynasty porcelain patterns is profound, including the simple culture of East Asia, while the Chinese local culture of Qing Dynasty porcelain patterns is obvious, mainly based on cultural reproduction. Therefore, the in-depth study of ceramic decoration in the Ming and Qing dynasties can excavate the connotation of Chinese and Western cultures, and promote the development of modern cultural creativity and innovation in strengthening archaeological exchanges between China and foreign countries.

Keywords: Ming and Qing Dynasty ceramic decoration, archaeology, cultural connotation, modern cultural creativity, enlightenment

1. Introduction

Ming and Qing ceramics have a very high position in the history of the development of Chinese porcelain, and the ceramic decoration of the Ming and Qing dynasties can reflect the social life and cultural outlook of the time, as well as the form of Sino-foreign exchanges, which is of great significance. It is worth mentioning that the ceramic decoration of the Ming and Qing dynasties has not been effectively protected and inherited by modern people. During the Wanli period of the Ming Dynasty (1573~1620 AC), ceramics paid more attention to the development of blue and white porcelain works, and blue and white porcelain

became the mainstream works of Ming Dynasty ceramics (Afonso et al., 2023; Castillo et al., 2022; Colomban et al., 2023), and produced a batch of porcelain with high decorative technology such as Wanli red and pastel, while Zheng He brought blue dyes such as Su Ma to the West, which made Ming Dynasty ceramics have many different decorative techniques. The decorative style of blue and white porcelain in the Ming Dynasty is mainly blue and white on a white background, and the decoration and painting on the surface of the utensils are mainly traditional patterns and patterns, showing the characteristics of simplicity and elegance. In the Ming Dynasty, blue and white porcelain ceramics were highly regarded for their unique style and were widely used in imperial court, and in the middle of the Ming Dynasty, ceramic decoration techniques such as red and pastel were developed. Among them, as a decorative technique, the use of bright red characterizes Wanli red, the dye is mainly East Asian dye, and the dye contains PbO, so its color is very smooth and rich, and will not fade easily. Pastels are painted on glaze, reduced at high temperatures, and the dye contains ZnO. In the late Ming Dynasty, various new decorative techniques appeared in ceramics, forming many characteristic styles that were continuously inherited, protected, and developed.

Relatively speaking, Qing Dynasty ceramics pay attention to the innovation and development of traditional crafts, which is reflected in the glaze red and kiln glaze, pastel and other processes of Qing Dynasty ceramics, which have been greatly developed. During the Kangxi period, ceramics made certain innovations and improved them, especially the glaze red technology of the Qing Dynasty, which was significantly developed and made remarkable achievements. Glaze red is a process in which the carcass of porcelain is painted with copper red and covered with a transparent glaze to complete the firing together. Because the copper red color is difficult to control, the success rate of red porcelain in the glaze is low, so it is extremely precious. Pink ceramics were deeply developed during the Yongzheng period (1723~1735 AC). It is a decorative technique called pastel that is painted on a white glaze and then a layer of transparent glaze is fired (Colomban et al., 2022; Colomban et al., 2022; Colomban et al., 2022; Coutinho et al., 2022). The Qing Dynasty pastels have various characteristics, such as very soft colors, extremely rich layers, and beautiful shapes. During the Qianlong period, the Qing Dynasty's artistic attainment of pastel pottery reached its peak, creating kiln-glazed ceramics with different characteristics. Moreover, the kiln glaze of the Qing Dynasty often has excellent effect and great charm, such as azure and rabbit hair, bean green, etc., each piece has a unique artistic charm. However, Qing Dynasty ceramics are divided into official kilns and private kilns, and they all have their own distinctive characteristics. The production of official kilns was basically provided to the royal family or given as diplomatic gifts at the time, and the quality and output were strictly controlled. The folk kiln will be closer to the life of ordinary people, and there are many different types, and the degree of freedom of decoration is relatively high, and it can be spread to all parts of the people (De Caro, 2022; Li et al., 2023; Norris et al., 2022), so it has been passed down to this day and has a high collection value. For example, the blue and white porcelain produced by the official kiln in Jingdezhen and the various terracotta figurines produced by folk craftsmen were

very popular at that time and impacted the future development direction of ceramic art.

There are many obvious kiln mouths and decorative styles in the Ming and Qing dynasties, such as Yixing kilns, etc., and many ceramic decorative styles created in these places are very distinctive and distinctive. Moreover, the ceramic works of the Ming and Qing dynasties have been enriched precisely because of these characteristic ceramic decorative styles. First of all, Jingdezhen kiln is one of the major birthplaces of Chinese ceramics, and its most famous style is blue and white porcelain. The pigment of blue and white porcelain is cobalt oxide, and the craftsman needs to paint many different patterns on the white ground porcelain, add a transparent glaze, and then fire it. Because the color of Jingdezhen blue and white porcelain is blue, the color is vigorous, and the lines are smooth and natural, so it has also become a classic in ancient Chinese ceramics; As we all know, Yixing kiln is most famous for its purple clay pot (Pan et al., 2022; Roqué-Rosell et al., 2021; Shuanghui & Fang, 2022). The purple clay pot is generally made of purple soil, its texture is relatively delicate, and its shape is very beautiful. Because of its good air permeability and adsorption performance, the purple clay pot can improve the taste of the tea, so as to maintain the original taste of the tea, and is therefore highly respected. For example, green glaze and so on were respected to a certain extent then. Obviously, each region's characteristic ceramic container style can reflect the local regional culture and traditional craftsmanship, and at the same time, it can also leave an extraordinary impact in the history of Chinese ceramics. Each style has its own unique beauty and has had an extremely profound influence on later generations of ceramics. Based on this, this paper makes a comprehensive study on "the archaeological value excavation, cultural connotation analysis and enlightenment to the development of modern cultural and creative decoration in the Ming and Qing dynasties", and first summarizes the genre and style characteristics of ceramic decoration in the Ming and Qing dynasties, and the unique connotation of ceramic decoration is basically present. Secondly, the cultural connotation of ceramic decoration in the Ming and Qing dynasties is deeply analyzed, revealing the social outlook, culture and art, and aesthetic concepts at that time (Sun et al., 2021). Finally, the pattern elements of ceramic decoration in the Ming and Qing dynasties are summarized, and the modern commercial value is analyzed in combination with their cultural connotations, and they are applied to the research and, development and design of modern literary and creative works, so as to achieve the purpose of inheriting traditional culture.

2. Research Methods and Results

2.1 Research Methodology

Taking the Ming Dynasty ice-patterned porcelain vase and glaze red vase, as well as the Qing Dynasty blue and white porcelain plate as the research objects, with the help of 4K electron microscope (Dongguan, Guangdong) and electronic scanner (Hebei, China) to observe the ornamentation, dyeing composition,

material and shape of ceramics, and explore their cultural connotations. The research samples are imitation fakes, and the relevant data and information are from the Internet, literature, etc., and the research process adopts a non-contact method to observe the patterns, materials and shapes of the samples, and analyzes them in combination with public research data. The research process did not involve issues such as protection, property rights and economic disputes, and the access to the data was approved by the copyright owner, so the research in this paper meets the requirements.

2.2 Ceramic dyes and materials

The material and dye analysis of the Ming Dynasty ice pattern porcelain vase, the glaze red vase, and the Qing Dynasty blue and white porcelain plate are shown in Table 1.

Table 1 Composition of ceramic patterns

sample	Stained material	Tire glaze	Firing conditions
Ice pattern porcelain vase	ZnO 、 SnO2 、 SiO2	Porcelain stone, kaolin, quartz stone, mullite	1100 ~ 1200℃
Red bottle in glaze	ZnO, 10% PbO		
Blue and white porcelain plates	ZnO 、 SnO2 、 BaO		

From the composition analysis results in Table 1, it can be seen that the ice pattern porcelain bottle is mainly made by increasing SiO2 and using the temperature difference to make ice pattern, the red bottle in the glaze is characterized by increasing PbO by 10%, and the blue and white porcelain plate is mainly imitating Ming Dynasty ceramics and increasing BaO, so the Qing Dynasty ceramic pattern is mainly imitated by the Ming Dynasty and improved. Among them, the ceramics of the Ming and Qing dynasties are based on porcelain stone, kaolin, quartz stone, mullite, 1100~1200 °C as the condition, and no more improvements have been made, and the measurement results are shown in Figure 1.

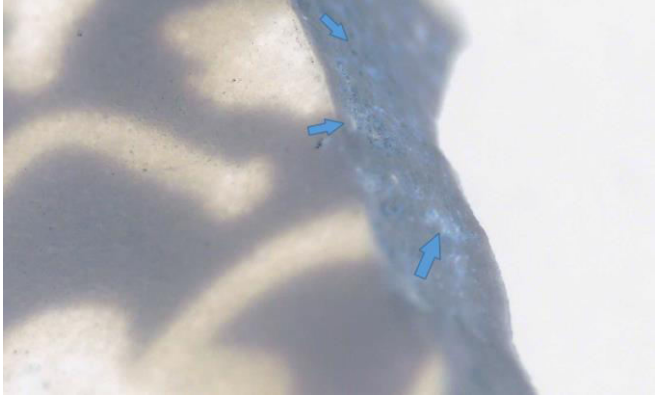


Fig.1. Material scanning results of tire glaze

The results of the glaze scan of ceramics in the Ming and Qing dynasties show that the glaze contains kaolin, quartz stone and other components, but the proportion of ingredients in the Ming and Qing dynasties is different. During the Yongzheng period of the Qing Dynasty, the development of ceramic decoration was very fast, and clarifying its historical development context will help future generations better understand and understand the value of ceramic art and culture in the Ming and Qing dynasties, and try to effectively protect and inherit it. As we all know, Ming ceramics attached great importance to innovation, and its mainstream was blue and white porcelain. It later developed many new processes, such as Wanli red and pastel. Qing dynasty ceramics were very traditional, mainly developing techniques such as red glaze and pastels. Secondly, during the Wanli period of the Ming Dynasty (1573~1620 AC), the development of ceramics benefited from the continuous development of economy and culture at that time, and as a result, the ceramic decoration style at that time also became very diverse and rich. During the prosperous period of Kangqian, the prosperity of social economy promoted the expansion and development of the ceramic market. During the Wanli period (1573~1620 AC), the gradual increase in foreign trade and the demand for ceramics began to increase significantly, allowing the ceramic process to be sustainably innovated, and then to meet the different needs of various consumer groups, and to improve the diversity of ceramic decoration styles, as shown in Figure 2.



Ming Dynasty gourd bottle



Fig.2 Comparison of gourd bottles in the Ming and Qing dynasties

As can be seen from Figure 2, the colors of the gourd vases in the Ming and Qing dynasties are almost similar, and the Qing Dynasty imitated Ming Dynasty porcelain, and the patterns and colors are similar. At the same time, in the Ming and Qing dynasties, the exchanges between China and foreign countries became very frequent, especially with Central Asia,

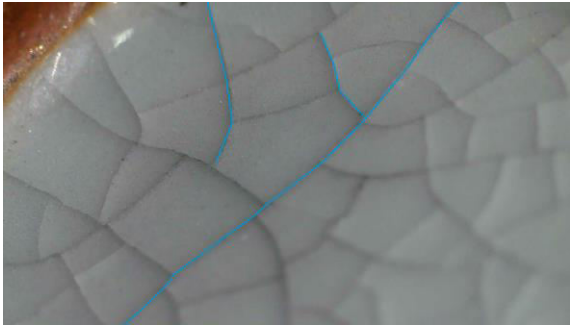
West Asia, and Europe, which had an impact on the innovation of decorative elements and styles, and had a certain role in promoting innovation. For example, traditional Chinese motifs began to merge with Western motifs, and then they were displayed in ceramic works, which allowed the new characteristics of decorative arts to be presented, and the fusion of Chinese and Western characteristic styles promoted the diversified development of aesthetics, and then the court culture also had a great influence on ceramic art. The royal family has extremely high requirements for handicrafts and has certain special requirements, so this also affects the continuous improvement of the skill level of the official kiln to a certain extent, and has a great impact on the creation of artists, and plays a role in promoting innovation. For example, in the Qing Dynasty during the Kangxi, Yongzheng and Qianlong periods (1622~1796 AC), the court's favoured crafts included pastel craft and enamel craft, which promoted the development of various skills in folk kilns. Each region will design ceramics that align with the local cultural characteristics according to the religious beliefs and festivals of the local people(Wang & Fang, 2022), so in the Ming and Qing dynasties, people can see many ceramics with local characteristics and folk elements. Ming and Qing dynasty ceramics unearthed in China. In China, people have discovered and unearthed many Ming and Qing dynasty ceramics through archaeology, especially in some ancient capital ruins or palace ruins, many Ming and Qing dynasty ceramics have been unearthed. Ming Dynasty ceramics are divided into blue and white porcelain, pastel and glaze red, the production process and decorative style of Ming Dynasty porcelain, social life information, etc. There are many ceramics unearthed in the Ming and Qing dynasties along the Silk Road, which are basically blue and white porcelain, so this can also reflect that the ceramic decoration style under the blending of Chinese and Western cultures in the Ming and Qing dynasties is generally blue and white porcelain. Based on this, people can better study the cultural exchanges between China and the West and provide them with detailed material materials. Finally, the excavation of Ming and Qing dynasty ceramics in overseas areas. During the period of Zhu Di of the Ming Dynasty, many Ming and Qing ceramics were also found in Southeast Asia, Central Asia, South Asia, Africa and other overseas regions, reflecting the international popularity of Ming and Qing ceramics at that time, and reflecting the influence of Ming and Qing ceramics on local culture.

2.3 Ceramic patterns

The pattern analysis of the Ming Dynasty ice pattern porcelain vase and the Qing Dynasty blue and white porcelain plate shows that the pattern presents different characteristics, the pattern of Ming Dynasty porcelain is more delicate, and the pattern of Qing Dynasty is rougher, the result is shown in Figure 3.



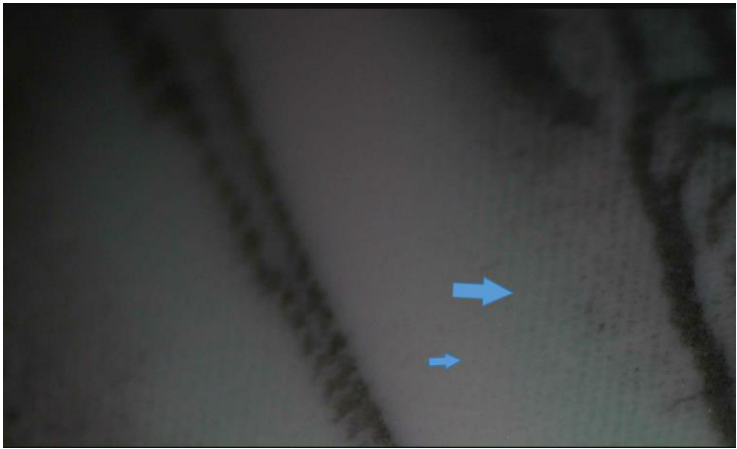
Ice pattern porcelain vase



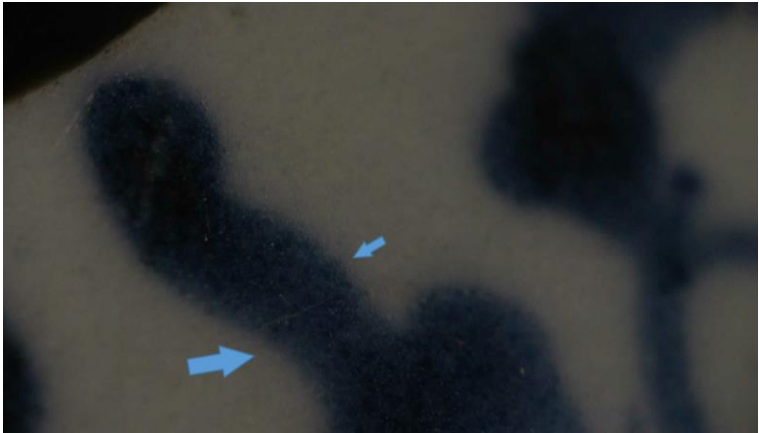
Qing Dynasty ice glaze

Fig.3 Patterns of ceramic decoration in the Ming and Qing dynasties

From the measurement results in Figure 3, it can be seen that the ice glaze of the Ming Dynasty is almost the same as that of the Qing Dynasty, and the ice glaze of the Qing Dynasty is not as rich as that of the Ming Dynasty, indicating that the ice glaze has become an important artistic pattern in the Ming and Qing dynasties, and is a representative of the porcelain production process at that time. Based on ice glaze, there are also similarities in the design patterns of the Ming and Qing dynasties. Moreover, Ming porcelain contains many crystalline spots, while Qing porcelain has less loudness, as shown in Figure 4.



Qing Dynasty porcelain



Ming Dynasty porcelain

Fig.4 Halo contrast of ceramic decoration in the Ming and Qing dynasties

As can be seen from Figure 4, the halo in the Ming Dynasty was clearer, while the halo in the Qing Dynasty was more blurred, mainly due to the differences in craftsmanship between the two and the different artistic points pursued. The pattern design of Ming and Qing ceramics has a very variety of symbolic meanings. For example, the more common dragon and wind patterns, longevity patterns, etc., in traditional Chinese culture, all symbolize auspiciousness and auspiciousness, so they are often used in court utensils and nobles' daily necessities, representing the blessing of a better life. In the late Ming Dynasty (1438~1578 AC), decorative patterns such as flowers, birds, fish, and insects in ceramic decoration had many symbolic meanings, such as plum blossoms symbolizing loyalty, magpies symbolizing auspiciousness,

etcPorcelain motifs also reflect the cultural traditions of contentment. For example, there are many Buddhist motifs in the decorative patterns of porcelain(Wang et al., 2023), such as Buddha statues and lotus flowers. Buddhist motifs reflect not only the change of faith but also the aesthetic tastes and social outlook of the rulers. For example, during the Jiajing period (1522~1566 AC), the theme of landscape and flowers reflected the ultimate pursuit of natural scenery and interest in life, as shown in Figure 5.



Qing Dynasty landscape bowl



Mincho Mountain Water Bowl

Fig.5 Landscape bowl in the Ming and Qing dynasties

As can be seen from Figure 3, the landscape bowls of the Ming and Qing dynasties are relatively similar, the landscapes of the Ming Dynasty are more simple, delicate and artistic, while the landscapes of the Qing Dynasty are more modern and present a certain Song Dynasty style.

2.4 Cultural differences in ceramic decoration

Interviews were conducted with experts on the color, meaning, pattern, and halo of the dye, and statistical analysis was conducted with the goal of determining whether there was a difference. The results are shown in Figure 6.

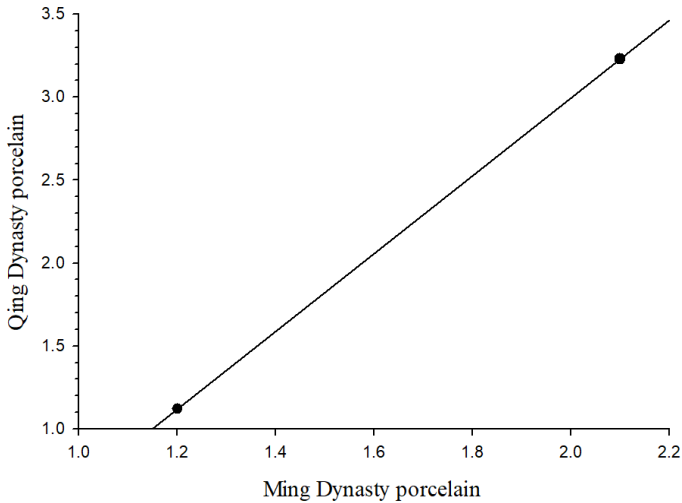


Figure 6 Differences in ceramic decoration between the Ming and Qing dynasties

From the test data in Figure 6, it can be seen that the ceramic decoration of the Ming Dynasty is more abundant, and there are more cultural connotations, dye colors, pattern meanings, patterns, halos, etc., which are obviously better than those in the Qing Dynasty. The main genres and styles of ceramic decoration in the Ming Dynasty are diverse, such as blue and white porcelain and pastel, Wanli red, etc. Among them, one of the most representative schools is blue and white porcelain, which is basically made by using cobalt oxide pigments and painting various patterns on white porcelain. In addition, Wanli red and pastel were also very important genres at that time, their colors and painting styles have their own characteristics, and there are obvious differences from blue and white. In addition, blue and white porcelain has the style characteristics of concise lines, vivid images and elegant tones. Secondly, the pastel tones appear softer and richer, and his works will draw some figures or landscapes, floral patterns, etc., with a strong style of the times. Finally, the main color of Wanli red is bright red, and its patterns are generally auspicious patterns, such as dragon and phoenix patterns and longevity characters. The decoration of Qing Dynasty ceramics is simpler, mainly divided into red and pastel glazes, kiln glazes, etc. Representative utensils and decorative techniques of Ming Dynasty ceramics: First, the representative utensils of the Ming Dynasty are blue and white porcelain. The decorative technique of blue and white porcelain is to paint different patterns on the white porcelain body through cobalt oxide pigment and then apply a transparent glaze to complete the firing. This decorative technique gives the blue and white porcelain of the Ming Dynasty unique characteristics, such as very simple lines and elegant tones. Wanli red was also the main decorative style of porcelain at that time. Wanli red uses bright red as the main decoration colour, and the patterns of Wanli red are generally auspicious, such

as dragons and phoenixes. With the strong clarity of red color(Wei et al., 2022), the creator can outline a strong sense of line and a vivid overall effect. In addition, pastel is also a typical style in Ming Dynasty ceramic decoration. The method of pastel glaze is very unique, it can make the tone of pastel very soft, very rich, and has a strong sense of freshness element characteristics, can show the lively side; second, the representative utensils and decorative techniques of Qing Dynasty ceramics. First of all, glaze red porcelain is the main representative ware of the Qing Dynasty, and its decorative technique is to paint copper-red color on the carmine glaze, and then cover it with a layer of transparent glaze, and complete the high-temperature reduction firing together, so as to fire. This process method makes the color of the red ware in the glaze very rich and elegant(Wei et al., 2023; Wu et al., 2021). Secondly, the pastels of the Qing Dynasty also have a very obvious ceramic decorative style. Qing Dynasty pastels need to be covered with a layer of transparent glaze on white ground, and then add different patterns and subject matter, so that the color becomes very soft and delicate and increases the sense of layering. Finally, the Qing Dynasty also created a lot of effects in kiln glaze, especially in pigment and temperature control, which also made the Ming and Qing ceramic art reach a new peak. Among them, the red glaze is very representative, and its characteristics include painting many different patterns on the carmine glaze. Pastel was also one of the important genres at that time, and it was well developed at that time. Qing Dynasty craftsmen used technical improvements to enrich the characteristic elements of glaze red and created many novel works. Secondly, from the perspective of pastel, the pastel of the Qing Dynasty is characterized by a relatively soft color and a very rich layer, so it is highly respected. In addition, the ceramic decoration of the Qing Dynasty created many characteristic effects, such as azure and bean green, which can show the breakthrough and innovation of technical and aesthetic expression at that time.

3. The enlightenment of ceramic decoration in the Ming and Qing dynasties to the development of modern culture and creativity

3.1 Promote the integration of Ming and Qing culture and cultural and creative connotations

The ceramic art of the Ming and Qing dynasties occupies a high position in the history of traditional Chinese crafts and is one of its important representatives, which can be applied in the design of modern literary and creative works. The decorative style and aesthetic characteristics of ceramic art in the Ming Dynasty can provide some inspiration for the design of modern literary and creative works, and provide corresponding reference. By integrating the traditional patterns and copywriting used in ceramics in the Ming and Qing dynasties into the design of modern cultural and creative works, modern cultural and creative works can be endowed with a certain traditional cultural connotation, and the sense of fashion can be enhanced, so as to achieve the effective integration of traditional craftsmanship and modern cultural and creative design. Promote the sustainable development of cultural and creative industries. Ming and Qing ceramic art is a valuable heritage in traditional Chinese culture, and it has always had a high status in the cultural and creative industry(Yang, 2021). Through the

effective innovative application and redevelopment of ceramic art in the Ming and Qing dynasties, people can promote the further development of modern cultural and creative industries. For example, people can apply the ceramic elements of the Ming and Qing dynasties to the design of modern handicrafts, household items, and other cultural and creative products to create cultural and creative works with Chinese charm and historical and cultural heritage. Finally, protection and inheritance. In the current society, it is of great practical significance to protect and inherit the ceramic art and cultural heritage of the Ming and Qing dynasties. Through in-depth excavation and research on the production skills and decorative styles of ceramic art works in the Ming and Qing dynasties, people can apply them to modern design and practice, which will be conducive to the effective protection and inheritance of traditional crafts, and can also improve the world's understanding and recognition of traditional Chinese culture, so as to stimulate people's interest and attention to traditional Chinese crafts. In modern design, Ming and Qing ceramic art has a good application prospect and a high application value in the development of cultural and creative industries. Moreover, the protection and inheritance of ceramic decorative works in the Ming and Qing dynasties is also a work that the current society needs to promote actively. Based on the effective excavation and utilization of this valuable resource, it can promote the revival of traditional Chinese culture in the current society and inject new vitality into the sustainable development of modern cultural and creative industries. For example, ancient books such as "Sending Away with the Wind" have recorded the contents of China's ships trading with other countries (Yang, 2021). By comparing and analyzing Ming and Qing porcelain artifacts and ancient documents unearthed overseas, people can better understand the trade and artistic exchanges and interactions between the East and the West in the Ming and Qing dynasties. Finally, we can understand the pottery technology and technological process in the Ming and Qing dynasties through archaeological data. Through archaeological data, people can know and understand the selection of pottery raw materials and their preparation process in the Ming and Qing dynasties. And learn about the main raw materials for ceramic production, including porcelain clay and glaze, painted pigments, etc. Based on the specific analysis of ceramic artifacts and kiln sites, people can also understand the types of pottery raw materials, their source locations, and processing methods in the Ming and Qing dynasties. These can help people understand the selection of raw materials and ceramic crafts' production and processing methods in the Ming and Qing dynasties. Secondly, molding and decoration techniques. Through archaeological data, people can also find the molding techniques and decorative techniques used in the pottery making process in the Ming and Qing dynasties. Its molding technology includes multiple processes, such as tire making, embryo drawing, kneading and molding. Its decoration techniques include blue and white painting, underglaze painting, and overglaze painting. Through the research and analysis of the ceramics of the Ming and Qing dynasties that have been unearthed, people can understand the molding techniques and decorative styles adopted by the craftsmen at that time. Finally, the kiln structure and firing

process. Obviously, archaeological discoveries can also help future generations understand the kiln structure and firing process of the Ming and Qing dynasties (Zhang et al., 2023).

3.2 Carry forward the traditional decorative elements in the Ming and Qing dynasties

In order to effectively integrate traditional elements and modern aesthetic concepts, it is necessary to first study the traditional elements in the ceramic decoration of the Ming and Qing dynasties. After archaeology, people can discover the distribution of ceramic production technology and kiln factories in the Ming and Qing dynasties, and carry out more in-depth research on this. Archaeologists can also use this to understand the level of ceramic technology in the Ming and Qing dynasties and the methods of selecting raw materials, decoration techniques, kiln structures, etc. Moreover, these actual discoveries are often consistent with some of the contents of historical records, such as some ancient craft works have recorded in detail the selection of raw materials and the production process of ceramics in the Ming and Qing dynasties. Moreover, archaeological unearthed porcelain artifacts can also supplement the information content in some historical documents, so that people can have a more comprehensive understanding of the Ming and Qing dynasties in history. Secondly, socio-economic and trade exchanges. Archaeological findings show that through a large amount of trade at that time, these Ming and Qing dynasty ceramics unearthed overseas can explain the socio-economic conditions and the scale of foreign trade at that time (Zhao et al., 2023). This physical evidence can corroborate the foreign trade information recorded in the historical documents of the Ming and Qing dynasties and complement each other to help people better understand the specific circulation of Ming and Qing ceramics in the international market at that time. In this way, people can also explore the implementation of the relevant maritime ban policy from the literature and compare and analyze it to provide evidence for future related research. Then, cultural exchange and artistic influence. In many locations at home and abroad, archaeologists have found some Ming and Qing dynasty ceramics with obvious exotic style characteristics, which shows that foreign cultures have influenced Ming and Qing ceramic art. It has been integrated and innovated in communication. For example, people need to understand the historical background and cultural connotation, production process, and pattern meaning of ceramic decoration in the Ming and Qing dynasties, based on the practical and comprehensive understanding and grasp of these elements, then, modern designers can integrate these traditional elements into modern cultural and creative design; In the fusion of traditional elements and modern aesthetic concepts, designers need to innovate their personal design concepts. For example, designers must transform traditional patterns and ornaments into a modern design language in several ways. In addition, designers can explore some innovative materials or technologies to better display these traditional elements of Ming and Qing ceramic decoration, and then better adapt to modern people's aesthetic concepts and needs. Then, cross-border integration. Cross-border integration is also one of the ways to achieve effective innovation in modern cultural and creative design of ceramic decoration in the Ming and Qing

dynasties. Integrating Ming and Qing ceramic decorative elements with various other fields, such as the integration of fashion design and architectural space design, will bring consumers a new visual experience. For example, the Ming and Qing Dynasty ceramic decorative elements are applied to the design of modern home decoration and related literary and creative works to improve the traditional cultural color and value of the works and meet the aesthetic requirements of consumers. Then, cultural storytelling. The cultural stories in the background of Ming and Qing dynasty ceramic decorations can enhance the cultural value and emotional connection of cultural and creative works. For example, by telling the moral and historical stories related to the work, a lot of emotional elements are injected into the design of the literary and creative works, so that consumers can get a unique cultural experience. Interactive experiences and the use of technology. Combined with current interactive technologies and multimedia methods, designers can provide users with new interactive experiences. For example, AR technology can be used to make the Ming and Qing Dynasty ceramic decorations truly "come alive" to show them in front of the audience, so that their viewing requirements can be satisfied(Zhou et al., 2024).

3.3 Realize the integration of traditional culture and modern technology

Ceramic decoration in the Ming and Qing dynasties often incorporated some elements of social customs at that time, such as the use of different patterns and ornaments to show the daily life and festival activities of the Ming and Qing dynasties. For example, wedding ceramics are painted with lotus flowers and magpie patterns, which symbolize people's wishes for good luck and happiness in the family. In short, the embellishment of some patterns can convey the people's yearning and wishes for a free life and happiness at that time. Second, it reflects the religious beliefs of the people at that time. In the Ming and Qing dynasties, some ceramic decorations also contain a lot of religious beliefs, which can reflect the religious beliefs of people at that time. For example, patterns of religions such as Buddhism and Taoism also often appear on these ceramic objects. For example, some Ming and Qing dynasty porcelains will appear on Buddha statues, lotus patterns, Buddhist scriptures, etc., which can reflect the influence of Buddhist culture on the people of that time. In addition, Taoist symbols often appeared in the ceramic works of the time, and the appearance of these Taoist symbols could express the philosophical ideas of Taoism and thirdly, reflect the aesthetic concepts of the time. The decoration of ceramics in the Ming and Qing dynasties can often reflect the aesthetic concepts of the people at that time. Whether it is the color choice of blue and white porcelain in the Ming and Qing dynasties or the color selection of pastel porcelain at that time, these meticulous designs reflect the requirements for patterns at that time, and reflect people's pursuit and appreciation of beautiful things in various styles.

Moreover, the prevalence of some flower and bird pattern ceramics can also reflect the cultural atmosphere of the society at that time and highlight the common taste of the people of the Ming and Qing dynasties for the beauty of

nature and elegant art. This phenomenon is also reflected in historical documents, through the in-depth excavation of kiln site relics and analysis of people can deduce the various structure types of Ming and Qing kilns, their temperature control methods, firing cycle information, etc., based on this, future generations can also understand the level of ceramic firing technology in the Ming and Qing dynasties and the influence of various kilns on the quality of ceramics. The progress of science and technology has also improved ceramics' precision and aesthetic level. During the Ming and Qing dynasties, science and technology levels have been greatly improved and developed, such as glaze formulation, kiln construction, temperature control, etc., have been improved. These advances have greatly improved the efficiency and success of ceramic production, and have made all aspects of ceramic objects more refined and precise, such as shapes and ornamental details.

4. Conclusion

Ceramic decoration in the Ming and Qing dynasties is one of the treasures of traditional Chinese culture, which has a good inspiration for modern cultural and creative design and development. To better reflect the application value of ceramic decoration in the Ming and Qing dynasties, this paper first expounds the background of ceramic decoration in the Ming and Qing dynasties, and makes actual measurement documents, and then effectively excavates its archaeological value. The results showed that the ceramics of the Ming and Qing dynasties contained ZnO, SnO₂, PbO, BaO, and a small amount of dyes such as Zr, Si and Pr, which enriched the decorative colors. In addition, the decorative patterns of ceramics in the Ming Dynasty are delicate and diverse, and they show halo and crystalline spots, while the patterns of the Qing Dynasty are rough, thick and heavy, and the halo phenomenon is less, and the ceramic decoration of the Qing Dynasty is mainly designed to imitate the porcelain of the Qing Dynasty. Therefore, the ceramic decoration of the Ming Dynasty was more delicate, and the cultural connotation, dye color, pattern meaning, pattern, halo and so on were more, which was obviously better than that of the Qing Dynasty. This study has some limitations, mainly because it is difficult to obtain samples and the accuracy of non-contact measurement is low. More information and literature will be collected in the future for improvement.

WORKS CITED

-
- [1]. Afonso, L. U., Gomes, M. V., Gomes, R. V. (2023). CHINESE PORNOGRAPHY IN A PORTUGUESE NUNNERY: ON A TRANSITIONAL PERIOD BLUE AND WHITE PORCELAIN BOWL RECOVERED FROM THE SANTANA CONVENT (LISBON). *Antiquaries Journal*.

- [2]. Castillo, C. C., Fahy, B., Fuller, D. Q. (2022). Star anise from a fifteenth century Indonesian shipwreck. *Archaeology in Oceania*, Vol.57, No.3, pp. 214-222.
- [3]. Colomban, P., Franci, G. S., Gerken, M., Gironda, M., Mesqui, V. (2023). Non-Invasive On-Site XRF and Raman Classification and Dating of Ancient Ceramics: Application to 18th and 19th Century Meissen Porcelain (Saxony) and Comparison with Chinese Porcelain. *Ceramics-Switzerland*, Vol.6, No.4, pp. 2178-2212.
- [4]. Colomban, P., Franci, G. S., Gironda, M., d'Abriègeon, P., Schumacher, A. C. (2022a). pXRF Data Evaluation Methodology for On-Site Analysis of Precious Artifacts: Cobalt Used in the Blue Decoration of Qing Dynasty Overglazed Porcelain Enamelled at Customs District (Guangzhou), Jingdezhen and Zaobanchu (Beijing) Workshops. *Heritage*, Vol.5, No.3, pp. 1752-1778.
- [5]. Colomban, P., Ngo, A. T., Edwards, H. G. M., Prinsloo, L. C., Esterhuizen, L. V. (2022b). Raman identification of the different glazing technologies of Blue-and-White Ming porcelains. *Ceramics International*, Vol.48, No.2, pp. 1673-1681.
- [6]. Colomban, P., Ngo, A. T., Fournery, N. (2022c). Non-Invasive Raman Analysis of 18th Century Chinese Export/Armorial Overglazed Porcelain: Identification of the Different Enameling Techniques. *Heritage*, Vol.5, No.1, pp. 233-259.
- [7]. Coutinho, M. L., Veiga, J. P., Ruivo, A., Silva, T. P., Salas-Colera, E., Bottura-Scardina, S., Lima, A., Figueiredo, E., Cotte, M., Lima, M. M. R. (2022). An insight into the firing conditions of Chinese blue-and-white porcelain through XANES. *Journal of Analytical Atomic Spectrometry*, Vol.37, No.3, pp. 632-640.
- [8]. De Caro, A. (2022). From the Altar to the Household. The Challenging Popularization of Christian Devotional Images, Objects, and Symbols in 16th and 17th Century China. *Eikon Imago*, Vol.11, pp. 129-144.
- [9]. Li, C. Q., Wu, C., Gao, H., Wang, S., Guo, Y. L., Chen, Y., Jin, P. J. (2023). Chemical and microscopic investigation of historical wall bricks collected from the City Wall of Xi'an, China. *Journal of Cultural Heritage*, Vol.64, pp. 144-149.
- [10]. Norris, D., Braekmans, D., Shortland, A. (2022). Technological connections in the development of 18th and 19th century Chinese painted enamels. *Journal of Archaeological Science-Reports*, Vol.42.
- [11]. Pan, Q. L., Shao, J. F., Li, R. W., Cheng, L., Wang, R. (2022). Non-Destructive Analysis of Red and Green Porcelain in Qing Dynasty. *Spectroscopy and Spectral Analysis*, Vol.42, No.3, pp. 732-736.

- [12]. Roqué-Rosell, J., Pinto, A., Marini, C., Burgos, J. P., Groenen, J., Campeny, M., Sciau, P. (2021). Synchrotron XAS study of Mn and Fe in Chinese blue-and-white Ming porcelains from the second half of the 15th century. *Ceramics International*, Vol.47, No.2, pp. 2715-2724.
- [13]. Shuanghuai, W., Fang, J. (2022). Chaiyao: A "Lost" Porcelain Ware from Tenth-Century China. *Chinese Historical Review*, Vol.29, No.2, pp. 115-129.
- [14]. Sun, M. P., Sun, Y. J., Wei, H. C., Hou, G. L., Ji, X. B., Xie, L. Q., Zeng, Y. X., E, C. Y. (2021). Luminescence Dating of Relics in Ancient Cities Provides Absolute Dates for Understanding Human-Land Relationships in Qinghai Lake Basin, Northeastern Tibetan Plateau. *Frontiers in Earth Science*, Vol.9.
- [15]. Wang, S. H., Fang, J. (2022). CHAIYAO: A "LOST" PORCELAIN WARE FROM TENTH-CENTURY CHINA. *Chinese Historical Review*, Vol.29, No.2, pp. 115-129.
- [16]. Wang, W. X., Wen, R., Zhang, Y., Jiang, J. X. (2023). The Microstructure of "Iron Spot" on Blue-and-White Porcelain From Jingdezhen Imperial Kiln in Yongle and Xuande Period of Ming Dynasty. *Spectroscopy and Spectral Analysis*, Vol.43, No.1, pp. 190-197.
- [17]. Wei, T., Roche, C., Papadopoulou, M., Jia, Y. L. (2022). The TAO CI ontology of vases of the Ming and Qing dynasties. *Applied Ontology*, Vol.17, No.3, pp. 423-441.
- [18]. Wei, T., Roche, C., Papadopoulou, M., Jia, Y. L. (2023). Using ISO and Semantic Web standard for building a multilingual terminology e-Dictionary: A use case of Chinese ceramic vases. *Journal of Information Science*, Vol.49, No.4, pp. 855-870.
- [19]. Wu, B., Zhao, W. J., Ren, X., Liu, X. M., Li, B., Feng, S. L., Feng, X. Q., Zhao, H. (2021). Firing process and colouring mechanism of black glaze and brown glaze porcelains from the Yuan and Ming dynasties from the Qingliang Temple kiln in Baofeng, Henan, China. *Ceramics International*, Vol.47, No.23, pp. 32817-32827.
- [20]. Yang, D. X. (2021a). Phantom Porcelains: Zhangzhou and Yoshida Polychrome Dishes with Seal Design. *Ming Qing Yanjiu*, Vol.25, No.2, pp. 175-201.
- [21]. Yang, S. X. (2021b). Piezoelectric Sensing Element-Assisted Ceramic Art Process Optimization and Visual Quantitative Characterization. *Journal of Sensors*, Vol.2021.
- [22]. Zhang, R., Kennet, D., Brown, P. J., Song, X. H., Wang, G. Y., Zhai, Y., Wu, M. J. (2023). Longquan celadon: a quantitative archaeological analysis of a pan-Indian Ocean industry of the 12th to 15th centuries. *World Archaeology*.
- [23]. Zhao, L., Wan, X. F., Kang, B. Q., Li, H. (2023). Chemical Compositions of Chinese Glazed Tiles from an Imperial Mausoleum of the Liao Dynasty. *Ceramics-Switzerland*, Vol.6, No.4, pp. 2008-2017.

Archaeological Value Excavation and Connotation Analysis of Ceramic Decoration in Ming and Qing Dynasties and Its Enlightenment to the Development of Modern Cultural Creation

Zhou, X. Q., Gao, X. P., Rehren, T., Wei, C. M., Wei, Q. W., Cui, J. F. (2024). Glassmaking remains from the 12th to 14th centuries CE glass workshop in Boshan, Shandong Province, China. *Journal of Archaeological Science-Reports*, Vol.53.