

Research on the Material and Expression of Murals in the Tang Dynasty

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Abstract—This paper first gives a brief overview of the material characteristics and expression techniques of the murals in the Tang Dynasty. Then it explores the methods of studying them and the significance and value of the status quo facsimile of them. Finally it expounds the enlightenment of the material application and expression techniques of the murals in the Tang Dynasty on the creation of contemporary fine brushwork.

Keywords: murals in the Tang Dynasty, mineral pigment, status quo facsimile of murals

I. INTRODUCTION

The Tang Dynasty was the golden age for the development of figure painting, as well as the boom period of Buddhism and temple construction. In the records, many painters then participated in the creation of murals, leaving excellent works. Han Yu described and praised the delicacy of mural art with his verse "The Monk Told Me That the Buddha Paintings on the Ancient Wall Was Magnificent and Could Be Seen Dimly with a Lamp". After the Song Dynasty and Yuan Dynasty, under the influence of Zen thought, the literati painting sprung up and the artistic appearance of "gorgeousness and comprehensiveness" was impacted. In the Yuan Dynasty and the Ming Dynasty, although there were occasionally fine works of mural paintings, it was far from that in the Tang Dynasty in terms of quantity and scale. The study and research of the murals in the Tang Dynasty is conducive to building up the confidence of the traditional culture. And it is of great significance to explore the materials and expression techniques of them to enlightening contemporary painting creation.

II. THE MATERIALS AND EXPRESSION TECHNIQUES OF MURALS IN THE TANG DYNASTY

A. The production of ground layer of murals in the Tang Dynasty

Mainly including temple murals and tomb murals, murals in the Tang Dynasty were very mature in terms of technology compared with previous dynasties. Its basic structure is composed of support, ground layer and facial pigment layer, and the production methods of ground layer are similar. According to the records in the "Construction Method" of the Song Dynasty, the method of making wall

surface is first to apply the coarse mud to the hemp fibers hanging down and let them dry, then to cover the wall with stirred mud, and smear with medium mud, and finally to mix the mud and sand and reapply and press several times to make the wall surface smooth and shiny. Taking the murals in the Mo Kao Grotto at Dunhuang as an example, the gravel rock surface in the grotto was taken as the support; a layer of silt mixed with sandy soil and straw grass was overlaid on the support by the method of pressing, which made the coarse silt layer of grass, upon which the fine silt layer formed by the mixture of the specific clay of the riverbed of Dangquan River and hemp was applied; and finally upon the fine silt layer a very thin layer of white powder such as kaolin, lime, or gypsum was brushed, and murals could be painted on this layer of white powder. Compared with the Taoist and Buddhist murals, in the ground layer of some tomb murals the silt layer of grass was omitted and the white powder later was directly brushed. This may had something to do with the time limit for making tomb murals. The departure time of the tomb owner determined whether the craftsman had enough time to make the base of the murals and also influenced the quality of the murals.

B. The use of mineral pigments in murals of the Tang Dynasty

In Zhang Yanyuan's "Famous Paintings in Previous Dynasties", there is a detailed record of mineral pigment, which is called "重采" ("zhong cai" in Chinese, also "重彩", means heavy color) in the book. And in ancient times painting was called "丹青" (danqing), a painting style dominated by heavy colors. The "丹" refers to cinnabar, and "青" to the mineral blue or peacock green, and sometimes to a pigment derived from plants. For example, some blue pigment used in the murals of Han Xiu's tomb was identified through analysis as indigo pigment with blue grass as dye. In murals of Kizil Grottoes, blue is mostly lapis lazuli; cinnabar and miniumite are widely to make red; the green pigment is mainly copper chloride; and white is mainly gypsum. According to research results of Gettens, Fogg Museum of Art, the colors used in the murals of the Mogao Grottoes at Dunhuang were made from 11 ingredients: soot, kaolin, ochre, azurite, malachite, cinnabar, miniumite, indigo-blue, jasmine-yellow and red flower (rouge), far from enough for

all the pigments used in Dunhuang frescoes. The painting process of mural painting of the Tang Dynasty is base brushing, ink outlining, coloring, re-outlining. Because of the coverage of mineral pigments, the early ink lines were often covered up in the coloring process, which need to be outlined again later, which is different from the "filling technique in dying" where the ink lines were vacated used in the murals in the Yuan Dynasty in the Yongle Temple of the Yuan Dynasty. Compared with the rich mineral pigments used in the temple murals, the colors of the tomb murals are and simple. There are lines-featured tomb murals found every now and then, and the colors used are mainly red, black, yellow, blue and green. Without rich colors as temple murals, though, the pigments used in tomb murals were mainly inorganic mineral pigments. Among them, red were made from iron oxide red, cinnabar, and miniumite, black from ink, yellow from mineral lithargite, iron oxide yellow and orpiment, and blue and green from azurite indigo and malachite.

C. Special techniques in murals

In murals of the Tang Dynasty, in addition to the use of mineral pigments, there was a common use of metal materials. For example, the murals in cave 57 of the Dunhuang Grottoes, Bodhisattva headwear and body ornaments are embellished with gold leaf, bringing out the bodhisattva's radiant and peaceful face. Besides, there are also the special techniques of sticking metal foil in the murals of grottoes. In order to create the light behind the Buddha or the firelight, with the help of the candle lighting, the light from the metal foil is natural and real, which is quite good with the painted Buddha statues and murals, playing the role of rendering the atmosphere. The technique that cooperates with metal foil is embossed painting, whose effect basically lies in the enhancement of stereo perception of the lines and of the texture of the object. It was mostly used in the ornamentals on the body or artifacts in hands, and there were also cases where moiré embossed painting were used to render the atmosphere. Embossed painting was often used together with the technique of foliation, the metal foil material and three-dimensional embossed painting lines together, was very eye-catching in the performance of decorative objects. This technique is more commonly seen in the murals in Yongle Temple of Yuan Dynasty.

III. METHODS AND VALUES OF THE STATUS QUO FACSIMILE OF MURALS IN THE TANG DYNASTY

A. Basic methods of painting murals in the Tang Dynasty

The methods of fresco facsimile mainly include restoration facsimile, status quo facsimile and image facsimile. Before choosing a method of mural facsimile, one should first make clear the purpose of the facsimile.

The purpose of the restoration facsimile is to trace the mural back to its original state. According to the status quo of the mural, all external influences on the fresco, such as diseases, should be eliminated, and the mural is restored to its original form by using the same painting materials and techniques as the ancient artists. There is inevitably

adulteration of the imager's imagination and speculation, and it is often necessary to combine the scene with the consideration of environmental factors such as caves. Therefore the restoration facsimile is also called imaginary restoration facsimile. This method conducts the restoration based on the status of the mural.

The status quo facsimile of murals in the Tang Dynasty is to depict the current situation of the murals after the weathering of years. It not only requires the description of the picture content of the mural itself, but also the comprehensive description of the damage to it, and the main purpose is to restore the authenticity of the status quo of the mural. The description of the status quo also includes holographic facsimile, which is the description of the status quo of "full information" displayed on the mural picture. In his article "Mission and Responsibility in the Facsimile and Restoration of Ancient Murals", Li Chonghui explained that "the significance of facsimile lies mainly in the grasp of original nature of the murals and response to it, with its focus on the remaining original information scattered in the fragmented picture." In general, the status quo facsimile is technically the same as restoration, both being required to come close to the ancient appearance. Based on this, the former is required to facsimile and restore all the traces of damages, and has to perform subtractive techniques such as peeling or polishing according to the shedding of murals. This requires the materials and tools of the status quo facsimile to be similar to those originally used in making the work. For example, as for the selection of support and making of ground layer, linen paper or linen mounting board can be used to imitate the support and the mixture of soil materials such as Dunhuan clay and clam meal blended by gelatin can be used to imitate the ground layer and white powder layer. In addition, there are also facsimile methods that purely rely on painting techniques to achieve the similarity with the status quo of mural paintings. For example, the Japanese incidental image facsimile is a means of transferring the status quo of the mural painting to a thin paper. According to the latest English-Chinese dictionary of "Arts Terms and Techniques", the definition of "residual image" means that the image remains in the eyes of people after the source of the image has been removed. The method is to use thin Mino paper to cover the surface of the mural painting, roll up the paper with a stick, and expose the copied image between the quick folding and unfolding. The incidental image is then copied with the quick and transient image in the eyes of the copyist. The accuracy of the facsimile depends mainly on the observation and drawing ability of the copyist, because all the image information in the status quo of mural painting, such as the damages, must rely on the means of painting to achieve similar effects. Therefore there are certain requirements for the painter's painting ability.

Compared with the former two methods, image facsimile lays more emphasis on "painting". The mural, as a facsimile, only provides a feeling of resonance. It can be the color, or line, or shape, and the portrayer can only grasp a part of the elements he is interested in to carry out image description.

This profile can also be a variant of the original, emphasizing feeling over technique and effect.

B. The significance of the status quo facsimile of murals in the Tang Dynasty

Advances in science and technology continue to produce new achievements, such as panoramic scanning, micro-jet printing and holographic projection, which not only reduced the cost of copying and printing murals, but also made it possible to preserve and display the status quo of murals in the Tang Dynasty for a long time. Such technologies are favored by major museums and art institutions. For example, in 2013, "Brilliant Spectacle" — Dunhuang Art Exhibition was held in Zhejiang Art Museum, presenting the art of Dunhuang in an all-round way to the public. From the perspective of exhibition and observation, such exhibitions have made great progress on the road of popularizing and disseminating Dunhuang art, and also promoted the process of mass aesthetic education.

From the perspective of protection and restoration, the status quo facsimile of the mural is still an irreplaceable research method. Even though most institutions have a very mature mural protection technology support, for example, part of the tomb murals of the Tang Dynasty in the collection of Shaanxi History Museum have received good technical protection, but most temple murals are still exposed to the nature, and the situation of wall peeling and the fading of murals year by year still cannot be reversed. Through the description of the status quo of the murals, the subtle changes of murals in the Tang Dynasty can be observed and inferred. It is even possible to accelerate the changes of the mural replicas by manual intervention so as to make corresponding protection and restoration countermeasures. From the perspective of art appreciation, the reproduction of murals made by scientific and technological means is far from vibrant to convey the rich mineral color levels in the murals of the Tang Dynasty, let alone the magnificence and charm of the Tang Dynasty. For students majoring in fine arts, the status quo facsimile of the murals is a must in their study and research of the murals in the Tang Dynasty, which enables them not only to learn the production techniques of the murals in the Tang Dynasty, but also to obtain a new artistic language through the use of mineral pigments. This also makes the status quo facsimile of the murals an irreplaceable means of painting learning.

IV. ENLIGHTENMENT OF MURALS IN THE TANG DYNASTY ON CONTEMPORARY FINE BRUSHWORK

A. Mineral pigments enrich the expression language of contemporary fine brushwork

The techniques of contemporary fine brushwork are mainly derived from traditional scroll painting. The materials are mainly silk paper, and the pigments are mineral pigments and vegetable pigments. However, after the Song and Yuan dynasties, the promotion of literati painting and ink painting, as well as the slow development of figure painting after the Tang dynasty, led to the gradual short shrift to mineral

pigment. For a long time in the past, tin-tube Chinese painting pigments and watercolor pigments were favored by fine brushwork painters. Since they had fewer impurities, and were transparent and easy to carry, tin-tube such pigments replaced mineral pigments that needed to be mixed with glue. This kind of chemical pigment in the process of rendering shows a clean and thin texture, and does not leave ink marks easily even after repeated rendering on paper and silk, so it is prone to easy to show the elegant tone. However, a part of the painters are not satisfied with the color texture of the tin-tube pigment. Since the 1980s of the last century, students studying in Japan have found that Japan has developed the traditional Chinese mineral pigments in its own land, forming the unique color style of Japanese paintings. And it takes the facsimile of Duanhuang murals and other traditional Chinese murals as a compulsory course for Japanese painting majors. The students brought the materials and techniques of Japanese painting back to China, which aroused the attention of the painting circle. Since then, a series of discussions about strong color drawing painting have been carried out.

The rediscovery of traditional mineral pigments and the combination with newly developed artificial mineral pigments have enriched the material techniques of contemporary fine brushwork. Couple with the analysis and facsimile of the murals in the Tang Dynasty, the elaborate-style painters have blazed a new path of effective heavy-color paintings, which has made the contemporary elaborate-style paintings full of new vitality. First of all, the use of mineral pigment itself has a simple and thick texture, having unique advantages in the performance of ethnic figures, working people and historical subjects. Secondly, by analyzing the exfoliation of the mineral face layer of the murals in the Tang Dynasty, the painters found a new artistic language, and tried the technique of subtraction in the fine brush-painting. Finally, in the use of metal foil, a new technique of accelerating the oxidation of foil color change by heating sulfur was obtained through mastering the law of oxidation color change of metal foil in the murals in the Tang Dynasty. This plays a great role in enriching the language and increasing the gradation of picture, so that the Chinese fine brushwork not only has a beautiful color appearance, but also has a strong and majestic temperament. In addition, whether it is temple or tomb murals, the scale and size of the murals in the Tang Dynasty are very consistent with the form of contemporary paintings. Contemporary painters can therefore learn the form composition and color language of the murals in the Tang Dynasty for large-scale creation.

B. The spirit of traditional culture in the murals of the Tang Dynasty

After several generations of accumulation, murals of the Tang Dynasty tend to reach a broad and lofty realm. Its mural paintings present a more gorgeous and magnificent scene of color, and surge with a healthy and clear emotional color, fully showing the artistic character of the Chinese nation. Not only that, the mural artists in the Tang Dynasty used their rich imagination to show the characteristics of

pictorial painting in the murals. For example, in the scene of music and dance in Dunhuang murals, dancers and the flying apsaras in the sky together construct the Buddhist world imagined by the painter. The painting technique used in the description of real life of Qiuqi murals is also rather impressionistic. Based on color blocks, shading or the boneless method is used to present the decorative figure, which expresses a kind of impressionistic style, gives people a real and natural aesthetic feeling, and permeates with the breath of real life. This fully conforms to the painting concept "pursuit of artistic conception" in Chinese painting.

V. CONCLUSION

The murals in the Tang Dynasty are not only the treasure of the Chinese nation, but also a bright pearl in the world cultural heritage. Through the description of the status quo of the mural paintings in the Tang Dynasty, the materials and expression methods of the traditional mural paintings can be learnt. And through continuous study and speculation, more cultural spirit in the murals of the Tang Dynasty will be excavated. The spirit of inclusiveness and openness in these works led contemporary artists to explore new ideas and reach new heights of art.

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