

# The Application of Traditional Technology and Modern Concept in the Restoration and Protection of Calligraphy and Painting

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**Abstract:** In recent years, with the development of science and technology, painting and calligraphy mounting technology has added more and more modern science and technology. Under such a background, painting and calligraphy restoration work combines modern concepts and modern technologies, while traditional restoration and protection technologies also occupy an important position. The concept of "repairing the old as the old" has become the key principle in painting and calligraphy restoration work, but after restoration, the state of painting and calligraphy will also be affected. At present, the impact of its effect on the subsequent protection of calligraphy and painting remains controversial, especially the introduction of modern restoration technology in the work of painting and calligraphy mounting puts forward a new proposition for the restoration and protection of traditional painting and calligraphy. Based on this, the article analyzes the application of traditional technology and modern concepts in the restoration and protection of calligraphy and painting, with a view to bringing inspiration to relevant practitioners.

**Keywords:** Calligraphy and Painting Protection; Painting and Calligraphy Restoration; Modern Technology; Restore

## 1. Introduction

With the further development of modern science and technology, the corresponding modern technology has gradually penetrated into the restoration and protection of calligraphy and painting. The application of modern technology in the restoration and protection of calligraphy and painting can effectively deal with problems such as inaccurate operation and time-consuming, but at the same time, it will also have a huge impact on traditional technology. How to effectively combine the two to improve the effectiveness of the restoration and protection of calligraphy and painting has become a key issue in the restoration and protection of calligraphy and painting.

## 2. Importance of restoration and protection of calligraphy and painting

In the process of the inheritance and development of our national culture, some good calligraphy and painting works recorded the humanistic thoughts and social background at that time, and have been passed on to this day, giving consideration to both artistry and historicity.[1] They have strong cultural relics value and have been respected by people in all dynasties. The ancient people's collection of calligraphy and painting relics can not only improve their cultural quality, but also enrich their cultural life and improve their spiritual interest. Ancient calligraphy and painting works are often recorded by site selection, silk and other materials. The collection effect of rice paper is relatively good, while silk is easy to shrink after writing and painting due to its thin texture, which makes it inconvenient to collect. These materials can improve the preservation effect after being mounted, and can also more effectively preserve the momentum and verve of the original work, which has a more intuitive effect on the expression of the artistic conception of the work. This is also the reason for the saying "three parts of painting, seven parts of mounting". Painting and calligraphy works can be better preserved after being mounted, and it is also more conducive for others to hang them for viewing. In the process of continuous development of painting and calligraphy art, painting and calligraphy mounting technology has also been constantly improved. Since the Song Dynasty, this technology has been continuously expanded and improved in practice, and has gradually formed a traditional technology with complete system structure and rich content. Now, the development of modern science and technology has brought a new impetus to the repair, mounting, repair and protection of calligraphy and painting. In history, although some famous

people's paintings and calligraphy were also mounted after completion, due to a long time, they were often affected by many factors in the process of moving back and forth, resulting in insects, rats, rodents, etc., which led to the damage of paintings and calligraphy works, such as ink peeling, moisture and mildew, and even picture breakage. In combination with the problems encountered in the circulation of calligraphy and painting cultural relics, which lead to the damage of calligraphy and painting cultural relics, it is necessary to remove the framing and repair the cultural relics in a targeted way, so as to restore the original appearance of the calligraphy and painting cultural relics as much as possible, and achieve the purpose of saving the cultural heritage.[2]

### **3. Traditional restoration process**

#### ***3.1 Cleaning and decontamination***

Calligraphy and painting cultural relics usually have a long storage time. In the long storage process, it is easy to have problems such as sewage impregnation and smoke corrosion. Therefore, when decontaminating, first use tools such as bamboo knives to remove the grainy dirt on the screen, and then wash the calligraphy and painting works of art. The methods of heart washing mainly include soaking, rinsing and brushing. When the brushing method is applied, the calligraphy and painting are laid on the desk in reverse, the brush is dipped in alkaline water and brushed gently on the back of the calligraphy and painting works of art, and the wet towel that is squeezed dry and rolled into a roll is rolled on the back of the calligraphy and painting works of art to absorb the dirt and dirty water brushed off. The sewage in the towel is squeezed out and absorbed again, until the water in the towel becomes light. The rinsing rule requires that one end of the table should be raised first, and the calligraphy and painting works should be rinsed repeatedly with warm water above 80 °C in combination with pen setting, so that the water can flow down naturally on the tilted table. When the soaking method is applied, it is necessary to put the painting and calligraphy into the special water tank prepared in advance, and change the water every few hours to ensure that the water in the tank is always kept clean until the soaking water can be kept clear. Through heart washing and decontamination, the dust and mildew on the heart of calligraphy and painting artworks can be effectively eliminated. At the same time, the acidic substances on the surface of calligraphy and painting artworks caused by paper aging can also be effectively removed, thus accelerating the separation progress of the two. When specifically using this technology for processing, it is necessary to adopt different methods of heart washing and decontamination for the storage time and the degree of contamination of the artwork. However, no matter which method is used, the problem of excessive cleaning should be avoided, otherwise it will lead to the color tingling of the calligraphy and painting artwork. In the process of further development of modern science and technology, the development and application of various decontamination agents are more in-depth, so some chemical decontamination agents can be applied in combination with actual needs to improve the decontamination effect. However, it should be noted that the chemical agents used must be completely removed after cleaning, otherwise it may lead to drug residue problems, causing further contamination of subsequent calligraphy and painting works of art.

#### ***3.2 Uncover the old***

Different from the core washing and decontamination technique, uncovering the old requires uncovering the core paper in the original mounting and removing the original mounting cover. Before the specific operation of uncovering the old, the original work should be photographed for evidence so that it can be checked later. In the process of uncovering the old, the calligraphy and painting relics should first be washed and moistened. After the first two operations are completed, the uncovering should be carried out immediately. If the interval is too long, the paper element will hurt the water, causing the tension of the paper to be difficult to meet the subsequent needs. In order to avoid the damage to the calligraphy and painting works, we also need to select the disclosure according to the specific situation of the calligraphy and painting works. Before uncovering, first install plastic film on the table to ensure that the painting center can be fully extended, and ensure that the calligraphy and painting are in the uncovering position, and then lift the uncovering center completely. In this process, it is also necessary to avoid the falling off of fragments of calligraphy and painting relics. When uncovering the center, you should try to choose a position where the ink is relatively thicker to ensure that the center and the off paper can be effectively distinguished. When carrying out the exhumation, we should try our best to ensure that the exhumation can be completed in one go. However, if it is difficult to complete this process within one day due to various factors, we need to use a wet towel to cover the painting core and cover it

with plastic film to avoid the problem of water evaporation. If the color of the paint is unstable near the center of the painting, it is necessary to replace the clear water first, and then use the low concentration alum water to re-soak it. After it is dried, repeat the core lifting operation to ensure that the paint can maintain a relatively stable state, otherwise it may lead to the decolorization or even discoloration of the calligraphy and painting works of art, which is often irreversible.

### ***3.3 Underpinning***

After the heart uncovering is completed, it is necessary to repair the heart of the painting, so as to ensure that the tone of the calligraphy and painting works of art remains relatively stable. When the traditional calligraphy and painting are mended, it is usually necessary to ensure that the silk or paper to be filled has the same or similar texture and color with the painting center. If the painting center paper material is very scarce and difficult to find, the paper with lighter color should be selected as far as possible, and then full color should be used to maintain the color consistency of the calligraphy and painting works of art. After the repair is completed, further carry out the centering, and select the leather rice paper with strong tension for wet underpinning. If the flower core is incomplete, the antique rice paper needs to be pretreated first. Compared with other processes, the centering process has a simpler process, but it also has certain risks, which need to be treated carefully. Otherwise, once the centering is broken, it will lead to problems such as cracking, color bleeding, ink moistening, and double skin. Therefore, when carrying out the core supporting process, we should first do a good job of protection to avoid the ink color falling off and other problems during freehand painting or meticulous treatment.

### ***3.4 Panchromatic***

Panchromatic is the process of connecting the silk paper to the damaged part of the painting center and filling the painting meaning to ensure the continuity of color and content. The specific application has a strong dependence on the experience of the restoration personnel. The intuitive judgment of the restoration personnel on the painting and calligraphy works of art determines the overall look and feel of the painting and calligraphy works of art after the restoration is completed, which is also a process that can further strengthen the integrity of the painting and calligraphy works of art restoration. The specific full-color process mainly includes two steps: color filling and pen receiving. Color filling refers to the completion of the background color of the painting and calligraphy works of art, so as to ensure that the damaged paper will not have a sudden change in color, which will reduce the viewing quality and ensure the harmony of colors. The brush receiving is to further complete the broken position of the painting meaning after the color filling to ensure the continuity of the picture content. Before full-color painting, it is necessary to use alum water to brush the whole painting center and form a water-resistant film on the screen to ensure that there will be no halo during subsequent color make-up. On this basis, make a draft with a pencil, and complete the incomplete content or notes on the screen. When picking up the pen, it is usually necessary to start from small to large, from top to bottom, and paint repeatedly to ensure that the ink color and techniques are consistent with the original.

### ***3.5 Mounting***

After the painting and calligraphy cultural relics are mounted, they need to be mounted again in time. The effect of mounting will also affect the overall value of subsequent painting and calligraphy cultural relics. There are many factors affecting the specific mounting, and the selection of mounting also needs to be made according to the specific conditions of the mounting, but the key points are also the size, color matching, mounting design, seam treatment, etc.

## **4. Modern repair technology**

### ***4.1 Low temperature freezing pest control***

When restoring and protecting picture albums, ancient books, etc., you can usually use low-temperature freeze pest killing technology to protect and restore them. This technology achieves the effect of killing insects by rapidly cooling, and the temperature is usually kept below -20 °C. The application of this technology will minimize the damage to the calligraphy and painting cultural relics, and will not affect the paper color, etc. At the same time, the calligraphy and painting cultural relics treated by this technology will not suffer from repeated pests and other problems. At present, this

technology is usually applied to the processing of precious calligraphy and painting orphan books.

#### **4.2 Microwave extinction technology**

Microwave killing technology is usually applied to calligraphy and painting artworks with moisture content less than 8%. It can effectively kill the insect egg structure in calligraphy and painting artworks through microwave treatment within 70 seconds, thus achieving the effect of killing insects. This technology has been widely used because of its low cost and remarkable effect.

#### **4.3 Paper deacidification technology**

During the storage of calligraphy and painting works of art, the acidification of paper is an important reason for the aging and even fading of paper, and deacidification of paper can effectively avoid the aging and fading of paper. Specific treatment usually includes gas phase method, aqueous solution method and nonaqueous solution method.

### **5. Conclusion**

To sum up, paper is one of the four great inventions in ancient China, and also an important carrier for all nations in the world to record civilization and history and write cultural characteristics. At this stage, people pay more attention to the protection of calligraphy and painting cultural relics with rice paper as the carrier. At the same time, the development of science and technology has also provided a new impetus for the further development of the protection of calligraphy and painting cultural relics. The restoration and protection of calligraphy and painting needs to further combine traditional crafts with modern technology, strengthen the protection effect, and make more contributions to the protection of calligraphy and painting cultural relics.

### **References**

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