Discussion on the Modern Development Path of Folk Paper-cutting Art Modeling Based on Computer-aided Analysis

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Abstract. As one of the most popular folk traditional decorative arts in China, the art of paper-cutting has a long history, and it is favored by everyone because of its easy access to materials, low cost, effective opinions and wide adaptability. Chinese traditional culture enriches modern design, while contemporary design inherits and innovates Chinese traditional culture and promotes the development of traditional culture. It mainly introduces the modern development of folk paper-cutting art modeling based on computer-aided analysis.

Keywords: Folk Paper-cut, Art Modeling, Contemporary Discussion, Computer-aided Analysis

1. Introduction
Chinese traditional culture helps to enrich China's modern design and helps Chinese culture and international culture to be integrated. Therefore, the essence of Chinese traditional culture must be applied to modern design. However, modern design also contributes to the development of Chinese traditional culture. Chinese folk paper-cutting is the most representative art style in Chinese folk art. It is the foundation of folk art and the mother art. It is one of the important topics in modern design research[1].

2. The basic situation of Chinese folk paper-cut art
As one of the most popular folk traditional decorative arts in China, the art of paper-cutting is not only a long history, but also popular with people with easy access to materials, low cost, effective opinions and wide adaptability. Paper-cutting has spread all over the country, influenced by local customs and customs, so that the paper-cut art of different styles is formed. As shown in Figure 1 below, it is an excellent embodiment of folk paper-cut art:
As shown in Figure 1 above, paper-cutting not only reflects the pursuit of beauty by the working people, but also shows the inner world of the working people. At the same time, its shape is unique and worthy of further study. Folk paper-cutting also embodies China's original philosophy, with its comprehensive, beautified and auspicious characteristics as its main form of expression. Folk paper-cutting, through its unique form of expression, vividly reflects the traditional Chinese cultural connotation and essence[2].

2.1. Paper cutting in the concept of folk art

Paper-cutting, also known as "engraving paper", is an art that uses paper as a processing object and uses a knife as a tool. Folk paper-cutting is created by the working people in order to meet their spiritual life needs. It lives in the deep soil of the workers and is not restricted by utilitarian thoughts and values. It embodies the most basic aesthetic concepts and spiritual qualities of human beings.

2.2. Traditional folk paper-cut view

The ingrained yin and yang philosophy of the Chinese nation is also reflected in the art of paper-cutting. The original paper-cut art master Yan Xiumei cut out the "catch the doll", holding the chicken in one hand, holding the fish in one hand, or holding the chicken in one hand, holding the rabbit in one hand, all symbolizing the philosophy of the sun, the moon and the earth with chicken, rabbit or chicken. The art of paper-cutting is not based on real things, but to create paper-cut works with an exaggerated imagination beyond the realities. They are not presented to everyone in a complicated form, but in a fresh and simple form, showing the hard work and simplicity of the working people[3].

3. The development of traditional folk paper-cut art by contemporary design

3.1. Contemporary design on the material of paper-cut art

For example, in the field of decorative painting design, it is possible to use a variety of decorative colored paper to make a paper-cut painting with the current style, and this kind of paper-cutting in the frame is not the paper-cut in the original sense. Traditional folk paper-cutting is limited by conditions, and it is cheaper and easy to cut. It is easy to be torn and easy to store. It cannot be easily stained and has a short service life. It is a folk paper-cut as shown in Figure 2 below. Contemporary styling of art:
As shown in Figure 2 above, the current paper-cut painting has broadened the traditional boundaries. It can use special art paper with long service life, hard texture and large thickness. It can also make magnetic paper-cut painting with modern technology. Repeating the paste, even breaking the boundaries of paper, using metal, fiber, textile fabrics to express the effect of paper-cutting, using paper-cut art to create a source of inspiration for the clothing, cutting the textile fabric into a hollow feeling, using the colors that modern young people prefer. It gives people a sense of modernity and history[4].

3.2. Contemporary design changes in paper cutting methods

The traditional folk paper-cutting art is only attached to the door frame furniture in the festival, and now it is applied to the clothing design to reflect the beauty of the paper-cut. The method of hollowing out or engraving is to facilitate the light transmission and the overall beauty, and the paper-cutting is used as a use of these elements in modern design allows for the design of three-dimensional, ever-changing products based on the openwork of paper-cutting.

3.3. Contemporary design innovation on paper-cut patterns

Beautifying and decorating life is a major function and feature of Chinese folk paper-cutting. In addition, due to the characteristics of tools and materials, some unique techniques in paper-cutting works (such as "crescent", "saw-tooth", etc.) are also important factors contributing to the decorative features. It is used in a wide range of applications, such as the Chinese zodiac stamps issued by the China National Stamps Corporation. Some of them directly use the works of folk paper-cut artists, and some of them are made by folks who use folk paper-cutting patterns. The decoration with paper-cut art can not only reflect the national characteristics of China, but also demonstrate the powerful vitality of folk paper-cut art. In contemporary graphic design, we should learn from the spiritual ideas and expressions of traditional paper-cutting art and create more works that represent the characteristics of national culture[5].
3.4. Contemporary design on the inheritance of paper-cut color

Most of the traditional Chinese paper-cut colors are bright, bright colors and strong contrasts. Later, the creators did not use boldly to avoid color inconsistency. It is well known that if we can use this color contrast well, it will produce another good effect. Monochrome paper-cut is a paper-cut work created with one color of paper[6]. The Chinese nation likes to use red to represent Jiqing and Xiang, and can set off the atmosphere of the festival. At the same time, strong colors can make customers more intuitive to see the goods, creating a desire to buy. Paper-cutting as a form of expression shows the Chinese people's love of red folklore. During the Chinese Women's World Cup, Ye Guangjie achieved a good design effect.

4. Conclusion

Paper-cutting and modern graphic design through the ingenious combination of computer-aided technology, give modern design new cultural connotation. Using scissors to cut out a certain shape in a virtual and real way, the meaning of this shape is reflected by the contrast between virtual and real, to reflect certain life scenes and inner desires. Although the art form is simple, the production does not seem very complicated. However, the spread of its package capacity is unmatched by other art. China's folk paper-cut art is a valuable asset of the Chinese nation and an important part of the world's national culture and art. It represents the belief and pursuit of Chinese designers. It has great communication with Chinese traditional culture and world culture and art. The unique cultural traditions of the countries of the world and the folk culture of the nation are increasingly valued and utilized by today's designers. The reason why I study and learn from it is because of my pursuit of beauty and the longing for the powerful vitality of modern civilization.

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