

The Innovative Design and Application of the Traditional Culture Story in the Paper Carving Lamps

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Abstract

Chinese paper carving originated from the Han Dynasty. Paper carving lamps combined with traditional culture in the cultural and creative market are popular. The paper takes the paper carving lamp as the research object, clarifies the relevant characteristics and classification of the paper carving lamp, and aims to analyze the innovative design and application of the paper carving lamp from the perspective of the paper cutting art. The article first expounds on the origin and development of the paper lantern, then analyzes the embodiment of traditional cultural stories on the paper lantern, summarizes its shortcomings, and puts forward suggestions for improvement to contribute to the innovation and development of the paper lamp.

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Background

Chinese paper carving originated in the Han Dynasty and keeps developing, and paper carving lamps are one of its innovative forms. The paper carving focuses on its layered depth of field, plus the light and shadow effects to present layers of beauty. Paper carving lamps combined with traditional culture are trendy in the cultural and creative market. This paper studies the innovation and application of conventional cultural stories in the theme of paper lamp, excavates the application of traditional cultural stories in the paper lamp, and adds bricks to the development of the paper lamp.

About paper carving lamp

1. Paper carving lamp overview

Paper carving, also known as paper relief, originated from the Han Dynasty. Ancient paper carving art was mainly bred in the soil of folk art, and its development was slow but never interrupted. Although the form is unchanged, it does not lose the spirit of innovation. The paper carving lamp is one of its innovative forms. The 3D paper lamp (Jian, 2021) is a breakthrough based on the traditional 2D paper lamp. The original simple paper presents a mysterious and dreamy picture under light and shadow through the layered paper carving patterns.

2. Classification and characteristics of paper carving lamps

Art paper carving can be divided into plane paper carving and three-dimensional paper carving (Zhuqing & Yongqiao, 2021). Flat paper carving is a two-dimensional paper carving on a plane, similar to paper cutting. What is essential is that the three-dimensional paper carving has multiple layers of prospect, middle, and background and is hollowed out at the same distance. Interdimensional paper carving can be divided into folded and unfolded (Kaili & Longxiang, 2021). Foldable paper sculptures resemble the Mount Fuji project created by Japanese designer Ohno. When no work is displayed, it looks like a book. Then, there is a boxed art paper sculpture. The frame is made of wood or plastic, with the front side on the left and the glossy panel on the outer layer. About ten layers of flat paper carvings are in the frame, usually consisting of foreground, central scene, and background. Interested readers can also carve it down by themselves and make paper carvings according to the abovementioned method, increasing interest in reading and participation (Song & Song, 2021).

3. Light and shadow design

The paper carving lamp's outline is distinct, the perfect fusion of light and shadow. The 3D paper carving lamp deduces the ordinary paper carving into a dream story. The front is a fine paper sculpture with a beam of light stuck in the back. Combined with traditional stories to create traditional cultural characters, warm yellow light through the layers of figures, presenting a romantic picture, clever design, and carefully polished

details, people can be moved at a glance. Levels, light, and shadow are lovely. Based on traditional paper-cutting, the craftsmen add innovative modern lighting elements to give the traditional paper carving new vitality and pay tribute to the artisans.



Figure 1 Luoyang Lijing Gate

The traditional culture and development course of paper carving lamps

Its origins can be traced back to the invention of Chinese Han Dynasty paper and improved paper in Germany in the 16th century. Paper carving lantern, also known as relief lantern, is one of the paper carving arts that originated in the Han Dynasty. Light and shadow appear on the paper, simplifying the complex, integrating ancient carving skills and modern manufacturing technology. Layers of different shapes of paper carving give

ordinary paper uniqueness under the overlap of light and shadow, according to the Jingwei reclamation, change to the moon, diving, and other traditional story images present a beautiful mood: Jingwei bird, moonlight, diving... in the collision of light and shadow, show a romantic dream picture, complete of three-dimensional and design. The paper carving lamp is not only a mysterious dream painting but also a lamp that shines into the heart. With the development of The Times, the paper carving began to appear as cubism, experimental and rigid paper carving in these three schools. After the paper carving spread to Europe, a new era of art began. Many foreign artists began to have a strong interest in paper carving, spreading it to all parts of the world.

The innovative design and application of the traditional culture story in the paper carving lamps

1. The embodiment of traditional cultural stories in the innovative design of paper carving lamps

The appearance of a paper carving lamp expands the expression space, and the art of paper carving breaks through the plane visual effect under traditional modeling. The theme of traditional paper carving is the traditional culture with auspicious meaning and festive style. It is mainly divided into patterns ("fu," "longevity," etc.), animal patterns (fish, dragon, phoenix, and other auspicious animals), flowers and plants patterns, etc. Behind these patterns have a unique moral meaning and traditional

cultural stories. For example, "serrated teeth" and "crescent moon" are essential features of Chinese paper carving culture (Qin, 2020). "Sabretooth" is usually used to shape the outline of the image, and the structure and decoration of the image are mainly along with the shape of the "crescent." Cultural connotation is an essential feature of Chinese paper carving culture. Common expressions are symbols and metaphors. For example, the northern paper-cut "Fu Lu Shouxi" is the bat "bat" harmonic "fu" fu, "deer" "harmonic" lu, "to peach" shou, "magpie" "xi" meaning "xi," the synthesis of "bat deer Shouxi" is the highest, the most comprehensive auspicious. Fulu Shouxi is the origin of Chinese traditional culture and myth, which is considered to be given to human beings by the celestial world. Exaggeration is also a common language of paper carving in China. The paper carving artists follow the principle of "the world comes to mind, and I cut the image." The paper-cut themes in the light and shadow paper carving are mainly divided into natural and virtual categories. The realistic theme is mainly natural and beautiful scenery. The virtual theme includes traditional cultural stories, fairy tales, constellations, festivals, game scenes, etc., usually displayed in a romantic and straightforward style, focusing on creativity and visual expression. Chinese paper carving artists do not have contemporary design knowledge, such as plane composition elements. However, they deeply understand contemporary composition rules such as symmetry, change, contrast, density, and repetition. Symmetry is the most commonly used technique in traditional Chinese art design. Symmetric shapes are common in traditional paper carving patterns, such as the couple and

weaver, which balance the picture. Paper carved lanterns use the auspicious meaning mode of traditional cultural stories from the perspective of theme, achieve the concrete form, embody the meaning of traditional culture (Yaojia & Yaoqi, 2019); reasonable use of realistic expression in modeling, reasonable and complete layout to realize the use of modern elements in the composition.



Figure 2 Goddess of the Luo River

2. The reference significance of traditional culture stories in the design and application of paper carving lamps
 - (1) Mining the urban characteristics

As a cultural and creative product, cultural creativity is an essential attribute of the art of paper-carved lanterns, focusing on the cultural implication of the works. Today, the inheritance and protection of traditional culture are booming worldwide. A country focusing on the design of light and shadow paper lanterns, taking into account the regional cultural characteristics, inherits the urban cultural characteristics and the cultural communication function of light and shadow paper lanterns. Due to China's long history and culture, the art of paper carving is widely distributed in China, and the pattern has strong folk characteristics. Paper-cutting in each region also has its unique characteristics. Such as the South is simple and elegant and exquisite, exquisite and lifelike artistry. The northern paper carving is straightforward, simple, unique, wild, and rough. This is more pronounced in the northwestern incision. Coarse is pure, delicate is exquisite, and the two interweave, colorful. Therefore, the design of lantern patterns carved on paper, according to the local cultural characteristics (Menglei, 2019), uses the corresponding characteristics of paper cutting. In the context of the northern region, the pattern design of the work focuses on depicting lifelike materials to reflect a straightforward temperament. With the southern region as the background, the material as pure as possible, elegant or pure, the pattern highlights delicate and exquisite.

(2) Give full play to the humanistic spirit

China has a long history of paper carving and a profound folk culture. With the advancement of urbanization and the gradual change of the

small-scale peasant economy, paper carving is gradually far away from people's lives, and the successors of paper carving art are less and less. This reflects the three significant contradictions of economy, technology, and culture faced by paper-cutting art in modern society. In short, as far as the requirements of economic development are concerned, the economic benefits brought by traditional paper carving are challenging to provide continuous support for the survival and development of the industry. Under the background of the rapid development of modern technology, mechanized equipment significantly improves the production efficiency of paper carving, thus considerably reducing the cost of artificial paper carving. The premise is that the three significant contradictions limit the paper carving art. First, from the economic value perspective, the essence of modern light and shadow paper carving lamps is a cultural and creative product. Compared with the traditional single artistic aesthetic function of paper carving, it also has the function of use and more product competitiveness. The composition of the paper carving lamp is not complicated. However, it also needs many materials, such as paper, wood frames, and LED lamps, which indirectly promote the development of various material production industries. Paper-carved lanterns usually appear in traditional festivals and exhibitions. Through various kinds of images, such as the appearance of Dragon Boat Festival zongzi, the pursuit of justice and light for commemorating Qu Yuan, often carrying people's good wishes and spiritual sustenance containing implications.

3. Lack of traditional cultural stories in the application of paper

carving lamps

(1) Single modeling element

Paper carving lamps with paper carving art as the primary form of expression, the style of paper carving determines the artistic expression of paper carving lamps (Jiaxing & Dan,2019). The art of paper carving is closer to the public's vision, which, to a large extent, meets the protection and development of the traditional historical culture of paper carving. Traditional paper carving is composed of points, lines, surface, and other elements, each element according to a specific image regular arrangement, such as the Mid-Autumn Festival Lantern Festival, familiar traditional culture story of the goddess of the moon, people usually choose the goddess of the moon and yutu these "fixed" character shape to do lanterns, more common is the zodiac [9]. These paper carving lamps image every year the lack of new ideas. The material is also mainly paper carving, bamboo frames, and candles.

(2) Single function

The making method of paper carving lamp is mainly to use layers of paper carved and folded together to form a complete scene picture, and then fixed with the frame; the LED lamp is placed on the back or interspersed in the multi-layer paper according to the effect of the display. After the LED light is lit, the light is projected through pieces of hollow paper, showing a three-dimensional effect. The paper carving lamp not only inherits the traditional paper carving art but also combines modern technology (Yina et al., 2018). However, the paper-carved lanterns usually

only have the simple ornamental and modern lighting value of carrying the traditional culture, and the modern light and shadow art is fully displayed. In real life, paper lanterns usually only appear in the traditional festival lanterns, which are not popular in the home. People's impression of paper lanterns still stays based on lanterns. As a cultural and creative product, there is no breakthrough in modeling and technology. Therefore, the application of improving artistic creativity and daily life is an essential topic for the development of paper carving lamps.



Figure 3 Tang Palace banquet

(3) Single material is used

Traditional paper carving mainly uses light, bright red paper, woolen paper, and rice paper to cut and carve, which limits the expression form of paper carving. In the development process of modern paper carving art, the change and innovation of materials are an excellent medium to express the new ideas of modern paper carving art. The material selection innovation and operability practicability can significantly increase the successful effect and quality of the paper carving lamp. The material selection of modern paper carving lamps will pay more attention to the thickness and hardness of the paper; too soft and too hard will reduce the presentation effect of the paper carving lamp significantly. Moreover, ensure the quality while there are performance requirements, light transmittance is good, not easy to damp mold and deformation.

(4) The production means are backward, and the cost is high

As a cultural and creative gift combining traditional handicrafts and modern industrial production, the paper carving lamp is widely praised by the market for its exquisite appearance and practical lighting function. Over time, some friends have a strong interest in producing, researching, and developing paper lamps and want to design and develop their products. If a single paper carving lamp chooses the factory enterprise customization, not only is the cost high, but many factories cannot meet the needs of a single customization. Traditional paper carving lamps are made by hand, take a long time, cannot receive too big, too urgent orders, and cannot adapt to the fast pace of the market demand.

4. Suggestions on traditional culture stories in the innovative design

and application of paper carving lamps

(1) Combined with the use requirements

With the vigorous development of China's market economy, the material products of the whole society have also begun to be significantly enriched, and the consumption requirements of human beings have also been sought from the original single material satisfaction and began to seek product quality, use feelings, humanized design and so on. Today, when China is vigorously developing the cultural and creative industries, it is the further development of people to bring the Chinese traditional humanistic and art elements into the redesign and development of cultural consumer goods, which is also the new direction of people's efforts. As an exquisite and popular art form, Chinese traditional paper carving art has a unique cultural attraction. It is also favored by the broad masses who like Chinese traditional culture. However, the traditional Chinese paper-cut art forms are usually relatively flat and unable to express the profound scene relationship. The multi-level stacking and hollow processing of modern light and shadow paper carving technology can supplement the defects of traditional paper carving technology, which is the application of the inheritance, expansion, and innovative development of traditional paper carving technology [11]. In addition, due to the low cost of light and shadow hollow-out, the benefits of art appreciation and DIY operation experience also solve the problem of commodity homogenization and improve the prospect of development and promotion.

(2) Combined with modern production technology

With the emergence of laser engraving, paper sculpture art also began to break through the time limit of traditional manual sculpture. Graphic processing software can draw the desired graphics on the computer, with a laser engraving machine carved out to cut the paper. With the integration of computer and laser engraving machine technology, carving paper in light and shadow paper engraving lamps has entered a considerable period of popularization and industrialization. The product cycle has been significantly reduced, and small batch production has become possible. Paper carving is one of the critical uses of laser processing technology. Laser engraving has advantages that cannot be overcome by the traditional mold stamping method. First, it can be processed through non-contact type, no "tool" damage, does not directly affect the paper products, and will not produce machine deformation and mold depreciation loss. Secondly, the laser processing can be done by software drawing. This allows for the rapid carving of various complex shapes and full use of the materials. Finally, due to the fast speed and high precision of laser processing, the hollow effect is more precise and meticulous, which can follow the trend of paper technology and give the paper more artistic value! However, this does not mean that the handicraft industry will disappear in this era as long as the paper carving art is revived through the redesign of light and shadow paper-cut lights, artistic skills, and craft modeling to present a new image.

(3) Maintain the consistency of modern spiritual needs

The traditional paper carving of the Chinese zodiac, fish, shrimp, crab, and various flowers and flowers are combined with the traditional cultural story scene paper-cut patterns, integrating the craft, new animal and plant elements, natural and life scenes, thus enriching the paper-cut patterns. For example, elements such as the sun, rivers, mountains, and trees can be placed in an image to integrate them into the daily image successfully. Combined with the "silk brake" process, it depicts creatures with hairy tentacles, such as sea anemones and jellyfish. It shows the seawater's ripples and the sea surface's weightlessness with the soft tissue's elegance. At the same time, it properly uses folding and cutting techniques to show a series of characters and animals, just like Nu Wa cast the clay figure into the light and shadow paper carving. As it repeats, it becomes decorative and ordered. To enrich the details, fill the color blocks with serrated, crescent, and dots. Large leaves are filled with "new moon" and "dots." Light and shadow paper carving blocks provide rich details while not losing the foundation and enrich the expression of the picture. "Memory Teahouse" illustration lamps and lanterns are based on the customs of the 24 solar terms across China. The walls of the teahouse express the folk memory of the grain rain season. The beauty of nature and harmony render the atmosphere and enhance the indoor atmosphere. "Memory Teahouse" light and shadow series of paper carving lamps represent the combination of traditional Chinese folk activities, using the folding and cutting technology of traditional paper carving technology. The exquisite works combine the "crescent moon" and the "dot" knife method. The designer integrates the narrative elements of local traditional culture into

the design and combines the light and shadow narrative techniques to enhance the viewer's emotional experience, inherit the traditional culture, and arouse people's memories. Moreover, it can promote development.

Summary

This paper reveals the related characteristics and classification of paper-carved lanterns. Through the study of the innovative design and application of the paper carving lamp in the traditional culture, the paper carving lantern is analyzed and understood from the perspective of paper carving art. It reflects the importance of the perfect combination of light and shadow in the design of lamps and the integration and coexistence of the traditional paper-cut art form and modern design thinking. The lamps and lanterns carved on paper have the practical and decorative features of modern lamps and lanterns and make the whole design humanized through the unique artistic language; I hope to learn from the design and application of paper carving lamps.

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