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# Study on Banpo Painted Pottery Patterns in Fabric Pattern Design

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**Abstract** With rich varieties demonstrate ingenious patterns, the decorative patterns of Banpo painted pottery is regarded as full demonstration of the modeling conception and artistic creativity of people at that time. In today's fabric pattern design, traditional Chinese cultural elements are constantly being integrated to achieve people's pursuit of national, artistic and personality of fabrics. Based on the interpretation of patterns in Banpo painted pottery and from the aesthetic perspective of modern design, this paper explores its innovation in modern fabric pattern design by extracting and applying the classical elements of patterns in Banpo painted pottery.

## 1. Introduction

It is the painted pottery that was originally adopted as ritual vessel in the primitive ceremonies and made ritual vessel of great significance in the ceremonies <sup>[1]</sup>. In view of the fact that painted pottery is taken as daily necessities by people and its production is to meet the demands of the production, life and agricultural development of human beings, it is bound to the embodiment of people's production and life experience as well as cultural accumulation. In primitive times, people survived by relying on heaven and there was a close relationship between painted pottery and heaven, which endowed the two major functions of painted pottery: Offering sacrifices to heaven and serving as food utensils.

Among the Banpo painted pottery with a history of about 7000 years, the decorative patterns of Banpo painted pottery are considered to be the most distinctive, which is a crucial component of the traditional culture and visual art of ancient human beings. The decorative methods and surface texture of Banpo painted pottery include colored painting, stamping, scratching, stacking and so forth, of which the paintings with color pens and brushes are undoubtedly the dominant, that is, to draw black colors on brown-red (or orange-yellow) pottery fetuses [2]. It can be said that the patterns of Banpo painted pottery are the ancestor's whole sustenance for natural life, social life and spiritual life. Based on the analysis of the classical patterns and artistic charm of Banpo painted pottery, the connection between patterns and modern aesthetics is taken advantage of in this paper to enrich the design language of modern fabric patterns.

## 2. Classical Patterns in Banpo Painted Pottery

Banpo people observed and understood the ever-changing and colorful world with innocent and childish eyes as well as painted it on potteries with colored drawings <sup>[3]</sup>. Being concise and with profound implications, the patterns of Banpo painted pottery are adequate reproductions of the spiritual world of human beings thousands of years ago.



### 2.1. Fish Patterns (Figure 1)

As the decorative patterns with variable forms and compositions in Banpo painted pottery pattern, the fish patterns are mostly in the corresponding form of triangle and arranged counterclockwise, which are either figurative, abstract, semi-abstract, geometric, alone or composite, and are all characterized by vividness, conciseness as well as highly likeness in both forms and spirits. Formatting author names.

The side image of the fish swimming in water is selected by the fish patterns. The head, body and fins of realistic fish pattern are complete while the head is the most life-like. The approximate triangular head, the open mouth, the inside of the mouth and even the teeth are clearly painted. On the contrary, the Abstract fish patterns assume isosceles triangle heads and rhombic rectangle bodies, etc.<sup>[4]</sup>. Instead of focusing on the in-depth depiction of images, the fish patterns gradually got rid of the realistic style of describing the natural forms of fishes and evolved into the freehand geometric patterns in the later stage, which assume the symbolic meaning of holding things to speech will.



Figure 1. Fish Patterns

### 2.2. Human Face Patterns (Figure 2)

As the symbolic pattern of Banpo painted pottery, the human faces in human face patterns are mostly round, with eyes open or closed, the upper eyebrows and the lower philtrum are black while the middle part being white. The artistic effect of decoration is enhanced by such contrast of black-white-black colors. In the late Banpo style, it was frequently painted on gourd-shaped bottles or other thin neck bottles. Despite that the face patterns at that time had formed the concise geometric human faces after a long period of exaggeration and deformation, the facial features were still recognizable and emitted a strong artistic flavor.



Figure 2. Human Face Patterns

### 2.3. Human Face Fish Patterns (Figure 3)

The human face fish pattern is especially prominent in the patterns of Banpo painted pottery, where the human faces are painted as a circle, while above the eyes was painted with a black triangle of "high crown" (perhaps a hairstyle). The ears of the characters were painted with a pair of up-warping hooks and decorated with two opposite fish patterns, while the mouth was composed of two intersecting blank slants, which were also decorated with a pair of opposite fish patterns on both sides<sup>[5]</sup>. In addition, the front face pattern was also painted on the side of the fish heads, while such strange and mysterious image symbolized "comparing people to fish". Perhaps the human face fish pattern depicted a prehistoric wizard who was carrying a fish in his mouth and praying for a good harvest in both fishing and hunting.



Figure 3. Human Face Fish Patterns

#### 2.4. Geometric Patterns (Figure 4)

Geometric patterns with distinct formal features are both independent and interrelated, both unique in form and profound in meaning. The possibilities of geometric patterns in Banpo painted pottery include: The first is point, of extension of which can produce long point patterns, short line patterns, long line patterns, fine line patterns, thick line patterns, wide band patterns, etc.; The undulation of points can produce curves such as ripple patterns, wave patterns, etc.; The rotation of points can produce S-shaped patterns, spiral patterns, etc. The second is that several major geometric patterns may have evolved from animal patterns. The representative geometric patterns can be divided into two categories, in which the spiral patterns are evolved from bird patterns, while the wavy curve patterns and vertical patterns are evolved from frog patterns <sup>[6]</sup>. Banpo geometric pattern is an imagery of the natural law of the solar and lunar cycle, such as the wide band pattern as the earliest form of painted pottery patterns. The implication of wide band pattern is extended by carving on it, through which the wide band pattern is divided from one to two and then from two to four, which embodies the worship of nature. Certain formation law of natural forms is followed by the emergence of geometric pattern decoration, while the pure decoration process from complex to simple and then from simple to complex is experienced <sup>[7]</sup>.

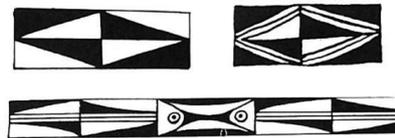


Figure 4. Geometric Patterns

### 3. Artistic Charm of Banpo Painted Pottery Patterns

Except for being the products of meeting the demand of cultural records and communication, the patterns of painted pottery also demonstrate high aesthetic value and artistic characteristics, which enhance the aesthetic feeling of pottery decoration and promote the development of painted pottery. The artistic forms manifested by Banpo painted pottery patterns not only necessarily contains the unique logic and thought of the ancestors, but also taken on the ability of comprehending and expressing pure aesthetic feeling <sup>[8]</sup>.

#### 3.1. Right Alignment

The two sides continual composition has been widely adopted in the plain patterns on Banpo painted pottery, which shows a clear direction and a fixed trend. The fish patterns almost all present the right-facing phenomena, with the big mouths and big heads to the right and scissors tail to the left; A right-rotating form is adopted by swirling patterns i.e. clockwise rotation; The raised sharp angle of Xiyin patterns also points to the right; The leaf patterns are mainly inclined about 40 degrees to the upper right, while the heads in bird patterns are inclined to the right while the wings and tails to the left. It can be concluded from the above that "right alignment" is adopted in the arrangement of patterns in Banpo painted pottery as the dominant direction, which is considered to be both of amusement and embodiment of the form of patterns full of interest and charm.

#### 3.2. Realism

Realism is to achieve a more realistic and objective reflection of the prototypes through the similarity between pattern images and natural forms, which is also the easiest choice of artistic ways to manifest the real life of society <sup>[9]</sup>. Fish patterns are depicted concretely in Banpo painted pottery basins with fish patterns, in which the fish eyes, teeth, whiskers, fins and tails are all depicted completely; The proportion of fish is close to the real with few exaggeration. Thin straight lines and triangles are adopted to form the shape of fish while the head-up view of the side perspective is taken, which is a preliminary summary of the natural form of fish <sup>[10]</sup>. The realism of fish patterns is regarded as the embodiment of the ancestors' feelings for living environment and their expectation of the harvest of fishing and hunting.

### 3.3. *Shadow-writing*

Shadow-writing refers to extract the image features and dynamic characteristics of objects with "shadows" while the details of the objects are neglected. The image of the fast-moving deer in Banpo painted pottery was sketched out in a few simple strokes without any details at all. The deer's expression in running is caught, while the necessary features in real life, such as antlers, tails, legs and rounded body, are merely outlined in general. Such generalized and concise artistic processing achieves the proper transmission of the dynamic charm of deer. As a vivid and interesting pattern that transcends the details of the image and reaches the verve directly, the portrayal of deer pattern is the manifestation of both the crisp and sharp painting techniques of the ancients and the highly generalized beauty of the objects.

### 3.4. *Deformation*

In accordance with the textual research, the deformation of the patterns of painted pottery is a gradual process from realistic animals to abstraction and symbolization: From realistic fish pattern to geometric pattern; from bird pattern to whirlpool pattern; from frog pattern to wave pattern. There are a number of changes in Banpo fish patterns. Some fins in the fish pattern are simplified into right-angled symmetrical triangles, some mirror fish patterns are abstracted into composite up-down-left-right symmetrical triangles, while some black and white fish patterns evolve into black and white triangles. According to the verification from books, firstly, the deformation of fish patterns reveals the ancient people's formal thinking to a great extent. Formal laws including symmetry, continuity, intersection, change are displayed to meet the demands of visual aesthetics; Secondly, the deformation of fish patterns implies witchcraft thinking. The mysterious witchcraft has been accompanied by human beings since its birth, while the deformation of fish patterns embodies the wizard's subjective thinking of objective things. In any case, deformation is to add new colors to life and thereby is derived from the beauty of chaos.

The decorative patterns of Banpo painted pottery also assume unique charm, including empathy, such as the swimming fish and the running deer depicted on the painted pottery, which places the anticipation of catching more fish and deer on the pottery; Decoration, such as the painted pottery patterns carved on the outer and inner walls of pottery with novel patterns as well as fluent and clean brushwork, which presents obvious decorative characteristics; Symbolization, such as human face fish pattern and human face geometric pattern, which carried a fish in the mouth and the triangle is like a hair bun or hat, which might be the representation of the totem or national emblem of Banpo clans; All these are to express the desire for a wonderful life by transforming the perception of nature into patterns and describing them on articles for daily use.

## 4. **Current Situation of Fabric Pattern Design**

In the current fabric market, similar and uniform pattern can be found everywhere, which is mainly due to the popularity of the Internet and the development of computer-aided design software. Digital printing technology has been adopted by an increasingly number of designers, while major websites have also been taken as inspiration for fabric pattern design. The numerous Internet image materials are copied, pasted, imitated and tailored by designers, while these simple and non-creative design elements lead to the vapidness of fabric pattern. At the same time, the design of fabric pattern is also tending to internationalization. Lack of excavation of traditional culture, fashion patterns on fashion weeks are frequently imitated by designers, which result in the single form of design works and the lack of visual elements with appeal and national cultural characteristics.

## 5. **Design of Fabric Patterns of Banpo Painted Pottery Patterns**

The formation of a new design concept is frequently inspired by other things, while the expression techniques can be referred, imitated and learned. The similarities between the pattern design of Banpo painted pottery and fabric pattern design include the form of composition, such as realism, deformation, symbolism, etc.; And the content of pattern, such as patterns of animals, characters,

plants and geometries, which all could be the sources of artistic creation for designers. Achieve the transmission of unique traditional artistic value and aesthetic view of the times by looking for the "basic form" of fabric pattern design in Banpo painted pottery and applying it to fabric pattern design in four manners, namely, color harmony, approximate repetition, scattered point continuity and Skeleton Filling, by virtue of modern computer aided design software.

### 5.1. Color Composition

As an essential part of pattern composition, color is interrelated with shape and pattern and play its role independently. Color is one of the crucial elements in fabric pattern design and its design determines the success of fabric. Remarkable color design attracts more consumers by virtue of its expressive power, while excellent color contrast design can achieve full transmission of the visual effect of the image. Pop art is regarded as the embodiment of the significance of color design and the exploration of the mystery of colors. As shown in Figure 5, with the basic shape and rectangle as the background, the four fish patterns present a clear primary and secondary, dense and balanced composition with the background, which forms a sharp contrast by adding bright and prominent colors. In terms of artistic form, the manifestation of rich color collocation increasingly highlights the main pattern, such as adjacent color, contrast color, similar color, similar color and so forth. It is not limited to a single way of expression that has made the mysterious fish patterns emit a ardent sense of color and thus enhance the visual impact; In terms of structure forms, four different fish are arranged as the basic unit into two groups in different positions and present regular repetition and continuity, which produces rhythmic beauty. Reasonable application of color design as well as the fluctuation, gradual change, staggering and contrast techniques are all capable of achieving effective improvement of the artistic appeal of fabric patterns.

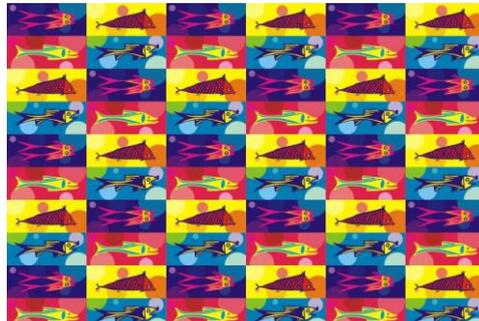


Figure 5. Color Composition: Fish Patterns

### 5.2. Approximation Repetition

Approximation refers to the similarity and incompleteness of images, which adds interest by repeating a variety of graphics. Being similar in shape, factors such as the color, size and direction can be designed in approximation. A perfect approximation is expected to be the continuous adjustment of the visual elements as a whole; Repetition refers to the arrangement of the same basic form, which is for the purpose of unity and thereby being orderly yet inevitably monotonous. Nevertheless, the human face patterns painted by the ancients on Banpo painted pottery are repetitions of the similar human face patterns. As can be seen in Figure 6, taking the human face patterns in Banpo painted pottery as the original form and stripping it from the traditional context and putting it into modern aesthetics to redesign, in which the ancient design method is adopted and repeated by following the basic shape. Changes and innovations in reshaping, adjusting and color are carried out in the extraction of face patterns to form quite similar graphics for rearrangement and repeated combination, thus giving new vitality and strong cartoon interest to traditional patterns. Approximation repetition of fabric pattern design demonstrates a unified and varied form, which improves the lively and clear effect as well as exhibits the integration of traditional and modern aesthetics, a new idea of fabric pattern design is thereby created.



Figure 6. Approximation Repetition: Human Face Patterns

### 5.3. Scattered point continuity

Scattered point continuity is a distributed continuous arrangement of dots in accordance with a certain distance and direction in the frame designed with one or more patterns as a basic unit. Without direct relationship with the major pattern, the auxiliary patterns are arranged around the major one in a form of irregular diffusion. As shown in Figure 7, three typical human face fish patterns are taken as the major pattern, while certain shapes of human face fish patterns are filled with graphics and matched with colors in the process of design, which breaks the stereotype of traditional human face fish patterns and forms a color pattern with modern aesthetic taste. Around it, the patterns of triangular, deer and ripple are scattered freely, which are distributed in the form of sparseness, density, non-uniformity and irregularity. The disorderly pattern combination is extended and expanded as a basic unit through the way of continuous formation to the four directions, thus avoiding monotony and rigidity. Another way of traditional pattern in fabric pattern design is created by the distinct major pattern and scattered auxiliary patterns.



Figure 7. Scattered Point Continuity: Human Face Fish Patterns

### 5.4. Skeleton Filling

As the design of a set of identical or similar basic forms, the existence of skeleton helps to achieve the internal unify of the design. Skeleton plays a jurisdictional role in the layout of images in design and determines the relationship between images in design beforehand. In the design, the skeleton firstly fixes the position of the basic shape, and secondly divides the picture into several skeleton units of the same size and shape, while the filling plays a coordinating and changing role by enriching the content of the skeleton. As shown in Figure 8, the shape of Banpo painted pottery is taken as the basic form of the skeleton, which assumes the same size, uniform direction and strong sense of order in the arrangement. Rigorous skeleton frames are arranged repeatedly in a diagonal way, which forms regular skeleton while repetition is for unification; After that, the geometric patterns of Banpo painted pottery are refined, in which patterns such as diagonal triangular, corrugated, grid, diamond, etc. are filled into the skeleton by means of two sides and four sides continual. The complex and novel picture effect is presented through organization and change. The filled patterns promote the formation of new images through the decoration of the skeleton, which provides greater possibilities for the inheritance of artistic charm of Banpo painted pottery.

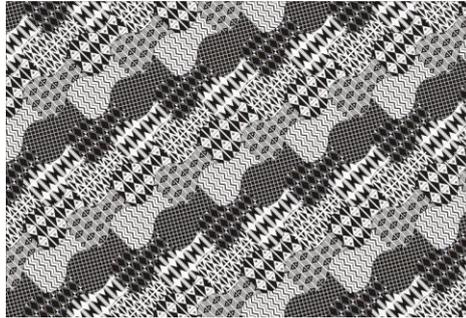


Figure 8. Skeleton Filling: Apparatus Type, Geometric Patterns

## 6. Conclusion

An increasingly number works integrating both traditional culture and fashion can be created as well as a diversified development path of fabric pattern design can be sought only by deeply rooting pattern design in the soil of traditional art and culture as well as achieving the integration of the essence of traditional culture and art with modern design. In conclusion, apart from inspiring the designer's creation, Banpo painted pottery pattern in fabric pattern design can also be refined the shapes, structures, application modes of traditional patterns, relying on which the redesign can be carried out with modern technology and design methods, which will endow Banpo painted pottery pattern a new visual perception and promote the formation of national and regional Chinese style of textiles through its application in fabric pattern design and integration with fashion trends, thus transferring the charm of traditional Chinese culture to the whole world.

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