

Original Article

The Application of Bian Embroidery in Modern Fashion Design

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Abstract: Bian Embroidery is one of the national cultural relics of Henan Province in China, originating in the Song Dynasty. Its original art form, which combines traditional Chinese painting and calligraphy with embroidery instead of painting, has a substantial artistic value and has impacted the history of Chinese embroidery. This paper takes the art form and craft characteristics of Bian Embroidery as the research object, compiles and refines the collected historical materials of Bian Embroidery through literature analysis, physical evidence, and case study, and innovatively applies its pattern themes, an art form, color characteristics and craft techniques to modern clothing design. The practical application shows that the application of Bian Embroidery elements to clothing design can produce high aesthetic and cultural values, aiming to inherit and protect the traditional folk art of Bian Embroidery and to find innovative points where traditional handicraft and popular design meet. At the same time, it can not only make the traditional Bian Embroidery handicraft derived in modern clothing design but also provide a new idea and direction for the future development of Bian Embroidery and can enrich the products of modern clothing, develop new technology and new style, meet people's increasingly high aesthetic demand, inject fresh blood into the clothing industry, and can improve the cultural connotation of clothing itself, and bring the traditional handicraft of the Chinese nation to the world. It will also enhance the cultural connotation of the garments and bring the traditional handicraft of the Chinese people to the world.

Keywords: Bian Embroidery; Chinese ethnic culture; clothing design; aesthetic value.



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1. Introduction

In recent years, consumers have become more aware of the cultural and technical details of their clothing, traditional craftsmanship, and haute couture garments (Murzyn-Kupisz & Hołuj, 2021). It has become more popular in the world of fashion design. At the same time, with the rise of Chinoiserie, designers began to take embroidery elements as inspiration, combining different types of embroidery techniques with garment design, deepening the theme of "the nation is the world" and using the art of needlework to form a complete and unique form of ethnic culture, leading to a growing international and domestic interest in traditional ethnic, cultural elements and traditional crafts (An & Liu, 2021; Hu, 2023). Bian embroidery

originated in China during the Song Dynasty (Dezhong & Yichen, 2023). It is one of the intangible cultural heritages of Henan, with strong regional cultural characteristics and an important position place in the history of Chinese embroidery (An & Liu, 2021). Although the art of Bian embroidery has traveled through millennia, the minimalist style of Song aesthetic characteristics it upholds is still highly valued in interpreting contemporary design language, and consumers would like to see more revitalized applications of Bian embroidery (Hu, 2023).

Despite its place in Chinese embroidery, the art of Bian embroidery still has a significant gap in influence compared to the four great embroideries (Cluckie, 2008). Compared to Su embroidery, one of the Four Great Embroideries, emphasizes the inheritance and innovation of its skills and the ability to develop embroidery derivatives (Y. Zhang, 2021). Bian embroidery has extended the art of embroidery into the fields of clothing, interior design and home product design (Houze, 2015). It has brought out the fashionable charm of the ancient craft. Therefore, how to break through the tradition of Bian embroidery as a traditional handicraft, applying it to modern clothing design with an innovative art element symbol, and complete the clever integration of Chinese traditional Bian embroidery art and Chinese modern clothing design concept is very important. This paper will briefly sort out the theories on the development and protection of Bian embroidery art and artistic characteristics, analyse its peculiarities features on the basis of museum materials, collate and refine the collected historical materials of Bian embroidery through the methods of documentary analysis, physical examination and case study, and use its pattern, color and craft characteristic elements for the innovation and practice of clothing design, so as to provide new carriers and inspiration for the innovation of Bian embroidery art forms.

2. Materials and Methods

This paper takes the art form and craft characteristics of Bian embroidery as the research object, compiles and elaborates the collected historical materials of Bian embroidery through literature analysis, physical evidence, and case study, and innovatively applies its pattern themes, an art form, color characteristics and craft techniques to modern garment design. It aimed to inherit and protect Bian embroidery's traditional folk art and find innovative points where traditional handicraft and popular design meet. The practical application shows that the application of Bian embroidery elements to garment design can produce high aesthetic and cultural values.

3. The Development and Conservation of Bian Embroidery Art

Bian embroidery, also known as "Song embroidery", originated in Bianliang, the capital of the Northern Song Dynasty, and has a history of nearly 1,000 years (Dezhong & Yichen, 2023). It was called "court embroidery" in the Northern Song Dynasty. It became a folk art after the destruction of the Northern Song Dynasty and was named as Bianxi embroidery after the founding of New China. According to historical records, due to the political and economic status of the Northern Song government in the world at that time, Bian embroidery became the main treasure of the Northern Song government to be given or exchanged with Goryeo, Japan and even the present-day Xinjiang region. For over a hundred years during the Northern Song Dynasty, Bian embroidery was one of the most skillful, valuable, productive and influential embroideries in China, and it can also be called the national embroidery of China. Embroidery has a long history in China, the land of silk, as early as 5000 years ago, during the time of the Emperor, there are records of "colorful embroidery patterns" on clothing and the number of changes in the patterns to distinguish the size of official positions and status. This "clothing system" has been in place for thousands of years and has profoundly impacted social development. If embroidery was a practical art, in the Song Dynasty, it was not only a practical art but also a separate and valued art due to the emperor's and the literati's preference and love. It developed into a unique art form, with a special "literary embroidery courtyard" in the palace to embroider various calligraphic and pictorial designs to satisfy the needs of the upper classes and some private individuals.

It is a pity, however, when Chinese embroidery is mentioned, the first thing that comes to mind are the four famous embroideries of Su, Xiang, Shu and Guangdong. At the same time, fewer people know about Bianxi embroidery (Li, 2015). Bian embroidery, like other embroidery disciplines, has unique artistic style characteristics. Bian embroidery is famous for embroidering ancient and famous Chinese paintings. The embroideries are richly layered, ancient and elegant, rich in color, deep in meaning and culture. The works have the artistic effect of "better than painting" without losing the original writer's style. In this paper, through collecting relevant historical materials in museums and many literature reviews, we conclude that three factors limit the development and protection of Bian embroidery art.

3.1. Influence of Geographical Factors

Geographical factors influenced the development of Bian embroidery (Xu, 2016). Bian embroidery originated in Kaifeng, Henan Province, which was in the Central Plains and was the political centre of the Northern Song Dynasty (Yichen & Dezhong, 2021). During the Northern Song Dynasty, politics was enlightened, culture flourished and people lived in comfort and prosperity, enjoying culture and art. Situated at the confluence of two rivers, Kaifeng's well-developed water and land transport encouraged the flourishing of the merchandise trade, making it the most advanced commercial city of its time. In this environment, the first commercial embroidery in history, Bian embroidery, was born. Although the capital of the Southern Song Dynasty was moved in later years and Kaifeng ceased to be a political centre, its status as the political, cultural and economic centre of both North and South did not change. Although the modern city of Kaifeng no longer serves as the political, economic and cultural centre of China, and the development of Bian embroidery has its former glory, its unique artistic characteristics and locational advantages remain unchanged, and Kaifeng's status as an important distribution centre for goods and logistics in the central-eastern part of Henan Province remains unchanged, which is of great significance for the development and preservation of Bian embroidery.

3.2. Policy Environment Factors

During the Song Dynasty in China, scribes were valued, and people focused on spiritual and cultural cultivation and improving the quality of life. The embroidered clothing of the people was simple in style, mostly in the form of bibs, embroidered skirts, embroidered shoes, purses and other everyday embroidery (Zhang, 2014), made of cotton and linen (Fig. 1). The ruling class, on the other hand, lived in luxury and used embroidery for clothing, food, housing and transport. To solve the contradiction between supply and demand, the Northern Song government established the "Embroidery Institute" to recruit embroidery masters on its behalf. Many embroidery masters gathered in Kaifeng, who enriched the techniques of Bian embroidery and developed many new stitches, enriching the embroidery methods of Bianxi (Wang, 2015). After the founding of New China, Bian embroidery techniques were appreciated by the Henan provincial government and national leaders, and a modern Bianxi embroidery factory was established, reforming the previous backward production mode and adopting a combination of traditional handicraft and machine-based production.



Figure 1. (a) and (b) Daily Bian Embroidery

3.3. Factors of Economic Development

In the early years of the Northern Song Dynasty, several policies were adopted to encourage the development of production in order to stabilize the social order (Chin, 2000). Many peasants grew cotton and hemp and planted mulberry trees to raise silkworms, which provided the material basis for the development of embroidery. Coupled development needs of foreign trade then, silk embroidery was exported in large quantities in transactions with Liao, Jin and Western Xia. Entering modern society, Bian embroidery boldly uses various composite materials in terms of materials, which are no less than the traditional silk, hemp and cotton materials in terms of color and texture (Phipps, 2011). In terms of market,

Kaifeng is actively developing its tourism industry, and Bianxi embroidery is closely related to local tourism as a landmark product of Kaifeng, and businessmen from all over the country bring in many orders. In terms of labor, Henan is a major labor export province, with the number of workers going to work each year among the highest in the country, while the wage level is at the bottom. As a labor-intensive industry, bian embroidery requires many female workers who are disadvantaged in employment. Therefore, there is an urgent need to vigorously develop the bianxi embroidery industry, not only to protect the heritage of traditional crafts, but also to revitalize the local economy and increase the income of the general public.

3.4. Factors of Cultural Tradition

As the ancient capital of the Seven Dynasties, Kaifeng was home to many literati and scholars who left many popular paintings and poems behind. The artists of Bian embroidery show the ink and brush of their predecessors through the silk thread in their own hands in a different form of expression from the paper carrier, realizing the re-creation of art and highlighting the unique charm of Bian embroidery as traditional art. Modern Kaifeng continues to nurture a new generation with its rich cultural heritage. Located in the central plain, Kaifeng has been relatively slow to modernize compared to the eastern provinces, and its folklore and folk customs are relatively well preserved, with many folk crafts having a broad mass base. These folk styles, folk customs and folk crafts are intertwined, influence each other and develop together, preserving the environment of the original culture and playing a role that any single cultural preservation cannot achieve.

4. Bian Embroidery Art Characteristics and Comparative Analysis

Through field research at Kaifeng Bian Embroidery Factory, Suhua Song Embroidery Art Museum and Kaifeng Royal Street, combined with relevant historical materials of Bian embroidery, this paper tries to analyze and summarise Bian embroidery and refine the artistic design elements with national characteristics of Kaifeng, Henan Province.

4.1. Pattern Subject Matter

During the Northern Song Dynasty, when the literati were so fond of elegance and painting and calligraphy flourished, the art of Bian embroidery was mainly based on calligraphy and painting. The main feature was to copy and embroider the works of famous calligraphers and painters, including calligraphy, landscapes, birds and flowers, pavilions, figures, floating clouds and embroidery of utensils (H. Zhang, 2021). To this day, copy embroidery is still the mainstream of this traditional craft. The common themes of Bian embroidery can be divided into four main categories: embroidery and painting, flora and fauna, figures and landscapes. The embroideries of this theme are imitations of oil paintings, Chinese paintings and sketches, with representative works such as Qingming Shanghe Tu (Fig. 2), Lady Guo's Spring Tour and Five Cows. The use of embroidery on traditional Chinese paintings gives them a different look and feel, allowing the viewer to appreciate the meaning of the original work and the charm of the embroidery at the same time. Most of the plant and animal motifs are flowers, birds, fish and insects, and the subjects are usually chosen for their auspicious meanings, such as peonies for wealth and prosperity, peacocks for a promising future, and horses for success. The floral and faunal embroideries, with bold colours and natural transitions, are vivid in form that bring flora and fauna to life. Most figures are portraits of famous people from home and abroad, such as Deng Xiaoping, Mahathir and Mona Lisa. This category of Bian embroidery depicts the details of people's expressions and attitudes to the fullest, and the work is so delicate and natural that it is impossible to tell from a distance, whether it is photography, painting or embroidery from a distance, reflecting the artistic charm of Bian embroidery. The scenery is embroidered according to a more realistic landscape pattern, with various styles that can express the magnificent landscape or convey the serenity of the forest.



Figure 2. Bian Embroidery-QingMingShangHe

4.2. Colour Characteristics

The colours used in traditional Chinese folk art are generally bold, which are usually chosen for their high purity, which can create a festive and cheerful atmosphere (Wu & Kyungsun, 2022). The colour characteristics of Bian embroidery follow the colour rules of traditional folk art, with a rich and vibrant colour scheme. The colours of the peony, a more classical subject in the painting category, are often red, peach and yellow, and these colours contrast strongly with the green of the leaves, creating a strong impression. Although the contrast of the colours is very strong, the shades, light and dark, or excesses between the colours are very natural and balance the visual stimulation of the strong contrasting colours in the category. On the other hand, due to the strong decorative meaning, the colour combination is often very beautiful and atmospheric, and the composition is more strict, neat, and taut, thus forming the stylistic characteristics of Bian embroideries with strict, neat, and beautiful patterns.

4.3. Craft Techniques

Bian embroidery has passed through three important stages, from "folk embroidery" to "court embroidery" and then to "folk embroidery". Since the Song Dynasty, Bian embroidery has established the corresponding production training, management system and competition mechanism, and researched and innovated many kinds of embroidery stitches, such as set stitch, straddle and needle, bump needle, winding needle, rolling needle, flush needle, joint needle, positive bump needle, laying needle, nail thread, net embroidery, seed embroidery and other stitches. Each piece of Bian embroidery must prepare the base material, apply the bandage, draw the design, select the rusty needle, and select the silk thread before completion. Each preparation process requires extra care and colour before the final embroidery can be made. Different stitches are used in the embroidery process, and different parts of the silk are used in different colours, and the natural over-colouring will produce different aesthetics. Bian embroidery art, based on the inheritance of "Song embroidery" technology and subject matter, largely absorbed Henan folk embroidery characteristics, i.e. the use of needlework, and then based on the flat needle-based techniques, gradually innovated and summarised 36 needlework methods (Figure 3), and on this basis combined with the use and innovation of more needlework methods.

For example, the "mon-needle embroidery" in Bianxi embroidery is the main stitch used to show the background filling of the design (Fig. 3), with long and curving threads and a sense of movement that can enhance the lightness of the embroidered image. When embroidering realistic works of Western oil painting, the embroiderers innovated the "cross stitch", using several threads to interweave the rich and varied colours, allowing a natural transition between warm and cold tones, reflecting the three-dimensional perspective of oil painting, and bringing out the sense of perspective and light in oil painting.



Figure 3. Bian Embroidery 36 stitch methods

4.4. Comparative Analysis

Through the comprehensive comparison between Bianxi embroidery and the "Four Famous Embroideries", the unique design elements of Bianxi embroidery are summarised (Table 1).

Table 1. Comparison of Bian Embroidery with design element of the four embroideres

Name	Design elements unique to Bian embroidery	Other embroidery design elements
pattern	Famous paintings, landscapes, peonies, life scenes	Su embroidery is mainly cat embroidery; Xiang embroidery is mainly tiger embroidery; Shu embroidery is mainly fish embroidery; Cantonese embroidery is mainly dragon embroidery
color	Beautiful colours, high purity of contrasting colours, natural colour transitions	Suzhou and Hunan embroideries have elegant colours and low purity; Shu embroideries have bright and vibrant colours and high purity; Cantonese embroideries have gorgeous and rich colours and high purity
craft	Locked-edge embroidery, rolled-needle embroidery, seed embroidery, monk's needle embroidery, cross-embroidery, forming a more neat and three-dimensional embroidery surface, smooth and soft texture, the combination of real and imaginary movement and static Bianxi embroidery art.	Suzhou embroidery is based on random needlework, with realistic realism; Hunan embroidery is based on coiled and swirling stitches, with layers of embroidery applied, vivid and three-dimensional; Shu embroidery is based on short stitches and virtual and real stitches, delicate and rigorous; Cantonese embroidery is based on mixed gold thread and nail gold embroidery, rich and gorgeous.

5. Application of Bianxi Embroidery Art in Modern Clothing


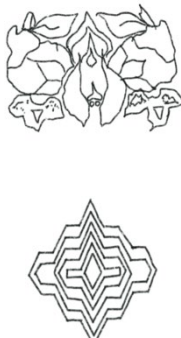






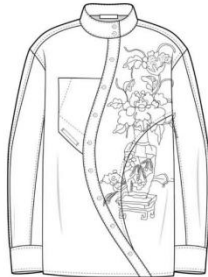
Through the analysis of the characteristics of Bian embroidery art, this paper tries to extract the representative design elements to be applied in modern clothing design, expecting to form the appearance image of Henan national culture clothing with high recognition.

5.1. Application of Bian Embroidery Pattern Elements

This paper conducts practical research on the application of character patterns, regional landscape patterns, peony patterns and famous painting motifs that are unique to Bianxi embroidery patterns. It

explores the integration and innovation of patterns and clothing design by using the law of pattern composition and the principle of clothing aesthetics (Table 2).










Table 2. Image extract of Bian Embroidery and application in modern fashion design

Pattern	Extraction section	Design concept	Application Practice (Author's Original)
		<p>This design deconstructs the geometric pattern of bianxi embroidery, combining the petal motif in this hat tail with a geometric pattern suitable for a modern T-shirt design.</p>	
		<p>This design breaks up and reconstructs the botanical pattern, applying a floral pattern to a modern sweatshirt, with a balanced composition of shoulder and pocket patterns to give the style a dynamic, stylish personality.</p>	
		<p>This design uses a vase still life motif in the shirt to symbolise the youth's pursuit of individuality and the spirit of national culture.</p>	

5.2. Application of Color Elements in Bian Embroidery

According to the color characteristics of Bianxi embroidery, it is carefully extracted and combined through the principles and methods of color composition and tried to practice its application in clothing design (Table 3).


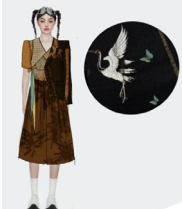
Table 3. Color extract of Bian Embroidery and application in modern fashion design

Pattern	Color Characteristics	Color Composition Method	Application Practice (Author's Original)
	Intense contrast		
	Fresh and unsatisfied		
	Light and melancholy		

5.3. Application of the Characteristics of Bianxi Embroidery Process

Through the innovation of Bian embroidery process, a new visual appearance is formed while maintaining the charm of Bian embroidery—first, the innovation of embroidery thread material. Traditional embroidery thread is mainly silk thread and cotton thread. In modern garment design, we can try to use chemical fibre embroidery thread with strong colour fixation and good wear resistance instead of traditional embroidery thread, and soft and smooth wool embroidery thread with easy knotting can also add new possibilities to traditional embroidery thread materials.

Table 4. Arts and crafts extraction and creation of Bian Embroidery and application in modern fashion design

Drawing Process	Process innovation	Application Practice (Author's Original)
	The fusion of new techniques - the fusion and innovation of traditional Bianxi embroidery stitches and modern beadwork, forming a visual effect of texture-rich patterns	This design applies new techniques to the garment, with bold compositions and novel combinations of elements, bringing traditional elements into an avant-garde and individual style of clothing. 

Second, the adjustment of the number of strands of embroidery thread, the traditional Bian embroidery is exquisite, the embroidery thread is mostly split silk to embroider, in the design can be innovative according to the style of clothing: for example, in the style of thick floss or personality of fashion clothing, you can use a higher thread density of embroidery thread. Finally, the combination of new techniques. Bian

embroidery, characterized by its beautiful, neat and detailed embroidered surface, can be combined with beadwork, creating a visual effect with a strong sense of texture (Table 4).

6. Conclusions

Bian embroidery has a unique artistic charm due to the influence of Song Dynasty culture. The embroidery is influenced by painting, and its composition and colors are similar to Chinese painting and calligraphy. Bianxi embroidery has inspired the creation of garment design through the research and development of 36 stitches with a strong sense of three-dimensionality and the use of ancient and elegant color composition rules. At the same time, it also injects more impetus into the innovation of the Bian embroidery art form and the heritage of Henan national culture.

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