

The Digital Protection and Inheritance of Intangible Cultural Heritage

-- Taking the Qing Dynasty horse-face skirt as an Example

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Abstract: In the context of the rapid development of the times, digitization, digital informatization, and digital transformation bring us closer to the humanist vision of a sustainable society in the digital age, and it also provides more possibilities for the work of safeguarding intangible cultural heritage. To keep them alive, they must be protected but also continuously transmitted and recreated from one generation to another. Based on an in-depth study of the Qing Dynasty horse-face skirt, this paper proposes to combine artificial intelligence, digital economy, big data, and other high-tech approaches to introduce the Qing Dynasty's horse-face skirt into the virtual world, to activate digital cultural heritage. The research expects to explore the digital protection and inheritance of the Qing Dynasty horse-face skirt, achieve the digitalization of culture, and bring the historical study of Chinese civilization to a deeper level.

Keywords: Horse-face skirts; Digitalization; Intangible cultural heritage.

1. Introduction

As an objective reflection of historical changes, the exploration of the horse-face skirt (mamian qun, a front flat panel that resembled the face of a horse) of the Qing Dynasty can, to a certain extent, analyze the popular aesthetics and fashion pursuits of the society during that time, which has certain historical and theoretical significance for the promotion of the protection and dissemination of Intangible Cultural Heritage (ICH) of clothing.

With the popularity of new media, the trend of digitalization and technology of intangible cultural heritage inheritance channels is becoming more and more apparent. Relying on big data technology to deal with the collection, storage, and even dissemination and utilization of ICH information, we can achieve the effective dissemination of ICH more rapidly, optimize the channels of ICH inheritance, and realize the organic connection and integration of traditional resources and modern technology, thus providing more convenient opportunities and means for ICH inheritance. The issue of how to combine intangible cultural heritage with digitalization is one of the most important topics we are facing at present.

2. Overview of The Horse-face Skirt in Qing Dynasty

The horse-face skirt was one of the basic dress styles for women in the Qing Dynasty which appeared before the Ming Dynasty, but there was no such designation as a horse-face skirt at that time, it was only applied as a skirt type of women's dress. In the Ming and Qing dynasties, horse-face skirts were basically the same in terms of shape and manufacturing process. The difference lies in that, on the basis of inheriting the Ming system, the Qing Dynasty's horse-face skirt became more complicated and decorative. This is in line with the great development and prosperity of the Qing Dynasty. In terms of

the classification of western clothing, horse-face skirt usually belongs to the "Interval pleated skirt" type.

2.1. The Basic Shape

According to Mr. Bao Mingxin's book *Modern Chinese Women's Clothing Fact*, he tried to give the definition of horse-face skirt: "One of the main skirt styles in ancient China, the most typical horse-face skirt was popular in the Qing Dynasty. There were four skirt doors, which were paired and overlapped, with the outer skirt door decorated and the inner skirt door less or no decoration"; "The side is pleated, the waist skirt is mostly white cloth, and the meaning of getting old together, with a rope or button fixed knot". This research integrates the collections of the China Silk Museum, Donghua University Museum, Jiangnan University Folk Costume Hall, and Soochow University Museum, and combines the research results with historical records to refine the basic shape and image model of the horse-face skirt of the Qing Dynasty.

The horse-face skirt of the Qing dynasty developed through the period and extended into different skirt variations, including 'Yue Hua Skirt' (Moonlight Skirt), 'Baizhe Skirt' (Pleated Skirt), 'Feng Wei Skirt' (Phoenix Tale Skirt), 'Lan Gan skirt' (Balustrade skirt), and other forms. The similarities and differences between the different shapes are mostly shown in the skirt width, especially in the changes on both sides of the skirt door.

2.2. Embroidery pattern

In the early Qing Dynasty, the horse-face skirts had complex and diverse patterns, including dragons, phoenixes, sea and cliff walls, pavilions and palaces, cloud patterns, as well as butterfly and flower patterns. These patterns in form show the characteristics of semi-suitable patterns, which means that the bottom of the pattern is suitable for the square shape of the skirt door (qunmen in chinese), while the top is flexible and versatile. The skirt door is surrounded (except for the waist part) with edge decorations, ranging from one to

many. By the end of the Qing Dynasty, the structure of the skirt door still existed but the pattern gradually disappeared, and finally, only the edge decoration remained.

The content and composition of the pattern of the horse-face skirts are in line with the traditional Chinese patterns of the past dynasties. The pattern includes two categories: the

pattern formed by the fabric itself and the decorative pattern of the post-processing embroidery, as the saying goes, the pattern must be designed and the meaning must be auspicious. The design is mostly taken from natural flora and fauna, mountains and rivers, clouds, miscellaneous treasures, and characters to express good wishes.

Table 1. Features of the horse-face skirt shape










Period	Skirt Type	Dress Group	Characteristic	Example
Early Qing Dynasty	Yue Hua Skirt (Moonlight skirt)	Mostly Female	Inherited the characteristics of the Ming Dynasty, with one pleat per panel and one color per pleat	
Middle Qing Dynasty	Feng Wei Skirt (Phoenix Tale Skirt)	Female	Not for skirts alone. More decorative features than practical	
	Lan Gan Skirt (Balustrade skirt)	Female	The silk is cut into thin strips and distributed on the skirt, with the appearance of a balustrade	
Late Qing Dynasty	Baizhe Skirt (Pleated Skirt)	Female	The overall shape is similar to the Yuehua skirt and Langan skirt, which is characterized by a net structure between the folds	

Table 2. Classification and meaning of the pattern of the horse-face skirts

Theme	Pattern	Example	Implied Meaning
Plants	Chrysanthemum, Orchid, Lotus, Peony, Begonia, Pomegranate		Longevity, Purity, Wealth, Happiness
Animals	Butterfly, Couple Fish, Magpie, Mandarin Duck, Peacock, Red-crowned crane		Blessing, Abundance, Auspiciousness, Loyalty, Future, Longevity
Human figures	Gods (Hehe Er Xian), Beauty, Astrology		Family harmony, Beautiful, Auspicious
Scenery	Stones, Sea, Cliffs		Longevity, Generosity, Much Happiness
Geometric text	Chinese knot(wishful knot), Longevity pattern		Satisfaction, Success

The distribution of the single pattern of the horse-face

skirts is also particularly particular. The first form: It is a

relatively common form, that is, and the outer skirt door is decorated with independent large patterns, the side skirt is divided according to the interval of the railing side correspondingly with a small area of dotted pattern regular decoration. The skirt located on the side of the body usually has a relatively large number of patterns than other skirt patterns in accordance with a certain location for distribution of decoration. Finally, in the skirt door, some will be decorated with an independent small area of the pattern, or there will be no decoration. In the second form, the door of the outer skirt is decorated with an independent large pattern, and the skirt of the side is regularly decorated with an independent pattern of a smaller area according to the interval of the skirt division. The skirt located on the side of the body usually has a relatively large pattern than the other skirt pattern trimmed; last, the door of the inner skirt will be decorated with an independent small pattern. The third form, that is, the outer skirt door is decorated with a large independent pattern, and the side skirt is trimmed with a phoenix tail edge at regular intervals; it is hoped that the interval arrangement will reflect a sense of the order. In the fourth form, the outer skirt door is decorated with a large pattern, while the side skirt is decorated with a large scattered pattern of small independent patterns to show the sense of dispersed spaciousness. In the fifth form, the outer skirt door is also decorated with a separate large pattern, while the side skirt width is not trimmed; it highlights the central position of the skirt and pays more attention to the sense of decoration.

2.3. Cultural Connotation

Since the early Qing Dynasty, the dress system has gradually formed in all strata, and the traditional Manchu dress has become the mainstream among the folk. Among all social classes, the horse-face skirt began to become one of the main dresses for Han Chinese women and was also a typical style of female dress in the Ming and Qing dynasties. The rich style and pattern of the horse-face skirts of the Qing Dynasty not only represent the emotions and aesthetic preferences of the general population but are also a sign of the common thinking of long-term social groups, which is more symbolic than decorative. In addition, the horse-face skirt was also a materialization of the Confucian ideology and a reaction to the mainstream culture of the period. As a material medium for women to learn traditional etiquette, the horse-face skirt reflects the strict requirements for women in the background of a feudal patriarchal society (Figure 1).

The study of the horse-face skirt aims to explore the development of traditional fashion culture before and after the Manchu's entry into the borders, reflecting the politics, economy, and culture of the Qing Dynasty. From the physical perspective, the degradation and disappearance of the horse-face skirt in the Qing Dynasty represent the end of the era of horseback riding as a transportation, but as an auxiliary product of the era, it is still worth to explore the artistic characteristics that reflect the craftsmanship standard of the Qing Dynasty and the popular artwork of the present. Meanwhile, it is not only an artifact with the aesthetic value that can be appreciated but also a product with its own functional and symbolic characteristics.



Figure 1. Examples of women's dress in Qing Dynasty.

3. Status of Protection and Digital Trend of the Horse-face Skirt

3.1. Protection Status

In 1997, the Regulations on the Protection of Traditional Arts and Crafts issued by the State Council announced the official opening of the protection of intangible cultural heritage in China. In 2011, the Law of the People's Republic of China on Intangible Cultural Heritage marked the maturity of the concept of 'intangible cultural heritage'. In recent decades, China has been protecting and inheriting ICH from various dimensions. Because of the textile characteristics of the Qing dynasty's horse-face skirt, most of them are stored in local museums and they are difficult to be accessed directly. Research on the skirt is mostly carried out in the literature, and the form of storage is relatively homogeneous. With the progress of society, it is difficult to meet the needs of modern women's lifestyle, which has led to the disappearance of some of the handcrafted skills. As China's awareness of the protection of intellectual property rights of traditional culture is relatively late, the degree of attention and protection is insufficient, especially for traditional costumes, there is no systematic market entity to apply for intellectual property rights. Based on the above, there is a lack of targeted digital protection for Qing Dynasty horse-face skirt at the current stage.

3.2. Digitization of ICH data

Comparing with a large number of tedious documentation sorting work of ICH similar to the Qing Dynasty horse-face skirt, the construction of the database has important practical significance. At present, digital technology storage has become an important direction for the protection and dissemination of ICH. It has great advantages over traditional preservation methods, digital resources have great advantages such as large information storage, high safety factor, convenient retrieval and conducive to dissemination. Different from traditional communication methods, such as newspapers, museum exhibitions and TV, digital technology can attract more young people's attention to traditional costume culture through holographic images, cloud museums and VR-themed games, so as to deeply interact with audiences through digital interaction means and expand the transmission channels of Qing Dynasty horse-face skirts. Accelerating the process of combining digital technology and

ICH will lay a solid foundation for the protection and inheritance of the Qing's horse-face skirt, which is also the inevitable step of social development and technological progress.

4. Digital Protection Strategy for Qing Dynasty horse-face skirt

Digital technology has penetrated into every aspect of people's daily lives, dramatically changing economic, social, and cultural forms, and is gradually penetrating into every field of our social economy. The application of digital construction to the preservation and inheritance of Qing Dynasty horse-face skirts is of great significance in realizing the construction of an ICH database.

4.1. Using Digital Technology to Record and Protect

The use of digital technology is permanent and efficient for the preservation of ICH. In order to realize the digital protection and inheritance of the Qing Dynasty horse-face skirt, it is necessary to use artificial intelligence, the Internet of Things, Big Data, Cloud Computing, and other high-tech means to import the relevant materials of the Qing Dynasty horse-face skirt into the virtual world, so as to achieve deep integration.

The digital collection can be used to scientifically classify, store and process the different styles, patterns, techniques, and colors of Qing Dynasty horse-face skirt, and make an in-depth interpretation of the shape details separately. Through literature, interview, statistical analysis, and other methods, we can investigate museums with Qing Dynasty horse-face skirt, relevant folk clothing, and handicrafts, and inheritors of traditional clothing production, etc., so as to establish a digital resource archive and data platform, finally realize information resource sharing. For instance, VR technology can be used to conduct 3D modeling, showing the whole process of traditional manufacturing techniques of Qing Dynasty horse-face skirts; Adobe AI can be used to draw the traditional horse-face skirt patterns, so as to realize the dynamic protection of the patterns of Qing Dynasty's horse-face skirt; Cloud Museum can be used to spread its culture, popularize the historical origin, manufacturing process, pattern details, artistic connotation and so on.

4.2. Build a Digital Cultural and Creative Platform

Exploring the development of cultural and creative industries related to ICH can perfectly combine its economic value and cultural value. The practice has proved that only by integrating ICH skills into products and people's daily lives can ancient skills be well inherited. For ICH projects that have market potential and development value and are relevant to consumers' daily cultural life, it is necessary to actively explore the industrial development mode, build a complete industrial chain of ICH development through commercial development in line with the law of the market economy, and attract more social resources to invest in the cause of inheriting and protecting ICH. In the meantime, the industrialization platform can be used to improve the stability and standardization of ICH productions, establish brand awareness, and promote the development of ICH consumer market while inheriting and innovating.

The continuous development of new products with market

competitiveness is the prerequisite and foundation for ICH-related enterprises/stores to maintain their vitality. In the era of a highly developed digital economy, the development of new products is transforming from the traditional mode to the platform-based open innovation mode. Taking the Qing Dynasty horse-face skirt as an example, combined with the development of a digital collection, it is feasible to generate a themed digital collection of Qing Dynasty horse-face skirts to meet the diversified collection needs of consumers. Cultural and creative products can also be developed, such as mystery toy boxes, ornaments, food, ACG, etc., and integrate traditional aesthetics into a modern design to realize the close combination of content intellectual property, and products. In addition, services such as "Cultural and Creative + Online Community" could be created to actively provide cultural and creative industry chains with "Research, Learning, Production, Marketing and Tourism" as the core as well as online and offline markets, so as to promote the preservation and inheritance of ICH.

4.3. Using Digital Media to Communicate and Display

Nowadays, employing and ongoing developing of digital platform support a more prosperous arts and culture world, and archiving, displaying, and disseminating the resources of ICH inheritance through digitalization is essential and is becoming more and more prominent following the trend and the raising number of digitalization and technology of ICH inheritance. It can say that it has enriched the types of cultural products and expanded the volume of the industry. Relying on big data technology to process the collection, storage, and even dissemination and utilization of ICH information, it can more rapidly realize the effective dissemination of ICH, optimize ICH inheritance channels, and realize the organic docking and integration of traditional resources and modern technology, thus providing more convenient opportunities and methods for ICH inheritance.

In the future, we expect to devote more energy to in-depth research and exploration of the Internet platform and digital image dissemination, and to promote the archival documents, pictures, video materials and innovative designs of Qing Dynasty horse-face dresses through online channels for the public to browse and appreciate, as well as to provide reproduction and download services. Through the construction of digital experience, static clothing can be presented in dynamic form by using video technology and audio-visual approaches, as well as adding historical background and characters to recreate scenes, to create an immersive exhibition viewing experience. Meanwhile, "cloud lecture" and "cloud classroom" can be combined to improve the public service function of museum intangible cultural heritage, improve the multiple spaces of public education, and promote the transformation of production mode with digital technology.

In addition, it is also necessary to actively tap the huge potential brought by video platforms and new media social platforms to intangible cultural heritage, strive to improve the public communication system, and stimulate the research and creation interests of designers or intangible cultural heritage enthusiasts. The specific implementation path can be based on data mining and analysis of users' views, favorites, and discussion contents, so as to establish a comprehensive evaluation index system and provide an effective reference for the future development path as well as the innovative

design of ICH, utilizing technology and creativity to boost traditional culture.

4.4. Conclusion

Digital protection and inheritance can cover the whole process of document research, data collection, database establishment, media platform construction, innovative design, cultural dissemination and innovation of Qing Dynasty horse-face skirts. Through combing, it is found that digital construction will provide a new pathway for the protection and dissemination of ICH, which ensures the plurality of ICH and enables people to interact with cultural heritage in new formats, and promote the public's cognition and understanding of ICH. At present, the digital research of cultural heritage is in the stage of transformation from theoretical to practical. It should establish the concept of sustainable development, actively promote the construction of digital humanities, and solve the problems of protection and inheritance of China's cultural heritage, so as to lay a solid resource foundation for the innovation of China's excellent traditional culture.

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