

Developing Sustainable Clothing Design Using Chinese Auspicious Patterns

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Abstract Chinese auspicious patterns(吉祥图案) have been widely applied to Chinese garments. In order to develop sustainable and innovative clothing design using Chinese auspicious patterns, this paper explored how the patterns were applied to the traditional costumes, and figured out how the concept of cherishing things embodied through the auspicious forms. On this basis, we developed four designs conveying sustainability. The conclusions are as follows: firstly, by exploring the expression forms and symbolic meanings of auspicious patterns of Chinese traditional clothing. In this paper, we categorized them into three main categories, covering auspicious patterns in Chinese character form, auspicious patterns in pictographic form and comprehensive patterns. Secondly, this paper derived a concept of cherishing things(惜物) from Chinese culture, and developed a three-dimensional model showing how the concept can be applied: they are splicing of the waste fabrics, weaving and embroidering with waste or abandoned materials, and dyeing and painting with natural dyes. In addition, in the design practice, the upcycling of traditional Chinese auspicious patterns were completed by using three-dimensional models to realize the sustainable design of auspicious patterns. Finally, this paper developed a new fashion design that demonstrates the possibilities of diverse clothing design.

Keywords Chinese auspicious pattern, Sustainability, Design development, Cherishing things[惜物].

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Introduction

Nowadays, human society has developed into a new era focusing on ecological civilization, and the concept of green environmental protection and sustainable development has become the new way of life and behavior. In the current era of fashion diversity, fashion design should highlight new design concepts and innovative means such as resource conservation, recycling, and material upcycling to meet the diverse and individualized needs of today's society.

The concept of sustainable clothing has been of interest

to the design community since the 1960s, and since then diverse avenues have been tried in an attempt to reduce the environmental and social impact of clothing (Alison, 2017). While considering the environmental and socio-economic impact, Dr. Brisma defines sustainable fashion as the manufacture, distribution and use of clothing, shoes and accessories in a sustainable manner (Brismar, n.d.). In the traditional garment development model, waste has always

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existed, such as the leftover materials from cutting and the backlog of materials from inventory, and the discarded materials are increasing the burden on the environment (Lee & Choy, 2014; Setiawardhani & Park, 2022; Zhou, 2021). The data of Ellen MacArthur Foundation shows that the global fashion industry produces approximately 53 million tons of fiber each year. Of this waste, more than 70% ends up in landfills or is incinerated (Kknews, 2019). Therefore, this requires apparel practitioners to reduce wasteful behaviors at all stages of the apparel product life cycle, from the acquisition of raw materials, processing of fibers, yarns, and fabrics, to the design, manufacturing, and distribution of apparel, and consumer use and recycling .

The fashion sector which is known to play an important role in increasing environmental problems has a responsibility for sustainability that is increasing even more (Koca, 2019). Ann Thorpe argues that “a designer's sole power does not guarantee the stability of a country's economy, but we can start using the economy now to make clothing sustainable rather than just being used by it” (Kate & Lynda, 2019, p. 156). In the face of the increasingly serious textile waste phenomenon, the previous landfill or incineration has been unable to change the status quo, designers should be more aware of their social responsibility, pay more attention to the waste phenomenon in the process of garment development and production, and constantly explore different paths to try to achieve a sustainable design in fashion. Sustainable design and production methods incorporate upcycling, zero-waste and recycling, where upcycling is used to describe techniques that transform discarded items into higher quality products, as opposed to recycling, which adds value and extends the life of the material. The benefits of upcycling include using waste as source material, diverting it from landfills and in doing so reducing carbon emissions as well as other negative environmental impacts, upcycling has great significance to the sustainable development of fashion (Koca & Koç, 2020).

This thesis examines and organizes two main lines of research: temporal development (horizontal research scope) and cultural categories (vertical research scope) through prior data on the composition and production of traditional costume auspicious patterns (Chang, 2005; Li, 2020; Wu,

2009; Xu, 2015). On the one hand, the styles, characteristics, classifications and symbolic meanings of auspicious patterns from primitive to modern societies have been first studied and analyzed in a chronological development. However, limited research has been conducted to classify the expression and symbolic meanings of auspicious patterns through a combined graphic and textual tabular format. On the other hand, longitudinal studies from the depth of cultural categories mostly analyze the artistic and aesthetic characteristics of different clothing categories such as dresses, skirts and pants, underwear, shoes and accessories. A study of the existing literature reveals that there is almost no research focusing on sustainable design through traditional Chinese auspicious patterns. Therefore, this study focuses on the techniques utilized in traditional dress auspicious patterns and tries to apply them to the sustainable design of modern clothing.

The purpose of this thesis is to develop upcycled designs using traditional Chinese auspicious patterns and to explore the sustainable development of traditional auspicious patterns. The research content of this thesis: Firstly, the theoretical background research, that is, through the research of the previous data about the traditional costume auspicious patterns, organize the representative Chinese traditional costume auspicious patterns, and categorize and explore their expression and symbolic meanings. Secondly, the study of the techniques utilized, the analysis of representative dress cases, the exploration of the concept of cherishing things embodied in the traditional dress auspicious patterns, and the exploration of sustainable design applications of the traditional Chinese dress auspicious patterns. Thirdly, the study of design practice, utilizing the three-dimensional model constructed in this paper to explore more possibilities of the traditional Chinese auspicious patterns in modern dress design, modernize the auspicious patterns and finally complete their sustainable development practice.

Literature Review

Expression of Auspicious Patterns







In ancient times, people began to use symbols and pictures

closely related to their lives as spiritual support, and totems can be considered the first special auspicious objects, as well as protective gods. Traditional Chinese auspicious patterns, refer to decorative patterns with moral meanings, which have a thousand-year history and are the crystallization of the artistic creativity of the ancients. Traditional Chinese auspicious patterns express the love and blessings of life, while traditional costume auspicious patterns are costume patterns formed by a combination of political, economic, cultural, religious, customary, psychological, and literary factors. Traditional Chinese auspicious patterns have been recorded as early as the Spring and Autumn Period, such as Longevity without Borders, Longevity of the Emperor, Longevity of the Southern Mountains, etc. They painted a cultural picture of early human society. The auspicious patterns symbolize health, prayer, exorcism, auspicious omen, endless generations and wealth (Wang, 2015), almost to the extent that “the picture must mean something and the meaning must be auspicious” (Shu, 2016).

Traditional Chinese costumes have a wide range of auspicious patterns, including flowers and plants, trees and

rocks, hummingbirds, insects and fish, birds and animals, characters, myths and stories, etc. The four Chinese characters wealth, nobility, longevity and happiness fully summarize the spiritual and cultural pursuits of the ancients (Yuan, 2005), and are an important part of traditional Chinese costume culture. It is an important part of traditional Chinese dress culture. This paper is based on the discussion on the composition method of silk auspicious patterns in the Ming Dynasty in the book History of Chinese Costume and combines with the information on traditional costume auspicious patterns and other prior studies, we have organized them according to their expression forms and symbolic meanings, and compiled three expression forms: Auspicious patterns in Chinese character form, Auspicious patterns in pictographic form and comprehensive patterns, as shown in Table 1 to Table 5. The references of auspicious patterns in Table 1 to Table 5 are all from Yuan Yuan’s Chinese Traditional Auspicious Patterns and Wu San’s Complete Collection of Chinese Patterns, and this study is completed with further collation and drawing based on the original pictures and textual materials.











Table 1. Auspicious patterns in Chinese character form

Chinese characters	Patterns	Meaning	Chinese characters	Patterns	Meaning
Fu (福)		Blessing and wealth	Shou (寿)		Longevity
	Figure 1. Auspicious patterns (Yuan, 2016, p. 269)			Figure 2. Auspicious patterns (Yuan, 2016, p. 268)	
Shou (寿)		Longevity and complete	Xi (喜)		Happy, Marriage is complete
	Figure 3. Auspicious patterns (Yuan, 2016, p. 268)			Figure 4. Auspicious patterns (Yuan, 2016, p. 269)	
Ji (吉)		Good luck, auspiciousness, wishful thinking	Wan (万)		Hope everything goes your way
	Figure 5. Auspicious patterns (Yuan, 2016, p. 269)			Figure 6. Auspicious patterns (Yuan, 2016, p. 270)	

The first form of expression, Auspicious patterns in Chinese character form, such as the character “Fu” in Table 1, which means blessing and wealth. The character “Shou” is designed in two forms, long and round, both expressing the blessing of longevity, but the long character “Shou” emphasizes the length of life, while the round character “Shou” emphasizes the integrity of life. “Xi” means glorious, joyful, happiness and good news, and it is used to express the joyful atmosphere when getting married and to wish the newlyweds happiness and joy. The character “Ji” means good luck, good fortune and all the best. The character “Wan” means all the best.

The second form of expression is Auspicious patterns in pictographic form, that is, the appearance or morphological characteristics of the auspicious pattern to express the auspicious meaning. As shown in Table 2, “pomegranate” and “grape” are both multi-fruits, and according to this feature, the ancient people often used the pictorial “pomegranate” and “grape” patterns to bless the newlyweds, hoping that they would have many children and grandchildren. The “dragon” signifies power, wealth, majesty and success, and is generally used to decorate court clothing. The “phoenix” is a sacred animal in ancient China, with a noble status, and the pictorial “phoenix” pattern signifies

Table 2. Auspicious patterns in pictographic form

Pictographic pattern name	Patterns	Meaning	Pictographic pattern name	Patterns	Meaning
Pomegranate (石榴)	 Figure 7. Auspicious pattern (Yuan, 2016, p. 170)	Many children, Many blessings	Grape (葡萄)	 Figure 8. Auspicious pattern (Yuan, 2016, p. 105)	Many children, Many blessings
Dragon (龍)	 Figure 9. Auspicious pattern (Yuan, 2016, p. 229)	Power, Wealth, Dignity and success	Phoenix (鳳凰)	 Figure 10. Auspicious pattern (Yuan, 2016, p. 235)	Power, Wealth and auspiciousness
Tiger (老虎)	 Figure 11. Auspicious pattern (Wu, 2009, p. 89)	Protect the healthy growth of children	Pine and cypress (松柏)	 Figure 12. Auspicious pattern (Yuan, 2016, p. 210)	Healthy, Long life
Mandarin ducks (鴛鴦)	 Figure 13. Auspicious pattern (Yuan, 2016, p. 63)	Harmonious and never separated	Auspicious (祥雲)	 Figure 14. Auspicious pattern (Wu, 2009, p. 319)	Auspicious, festive and happy
Unicorn (麒麟)	 Figure 15. Auspicious pattern (Yuan, 2016, p. 92)	Outstanding talent, Moral, Talent, Auspicious	Crane (仙鶴)	 Figure 16. Auspicious pattern (Yuan, 2016, p. 236)	Long life, Auspicious

power and fortune. The strong and fierce “tiger” is a symbol of the protector of children’s healthy growth, so the pictorial “tiger” pattern is often used on children’s clothing to ward off evil spirits and disasters so that children can grow up healthily. “Pine” is an evergreen plant that does not decay through the harsh winters and has a long life span, thus signifying health and longevity. “Mandarin ducks” are also called lovebirds, because the female and male mandarin ducks are inseparable and are regarded as a symbol of love, signifying harmony and never separation. “Auspicious” expresses auspiciousness, joy, happiness, and the desire for a better life. “Unicorn” means talent, virtue and auspicious omen. The “crane” symbolizes longevity and good fortune.

The third form of expression is the comprehensive patterns in which multiple elements are combined with each other, combining characters or patterns with different meanings to obtain a richer meaning of auspicious patterns, including combination of different Chinese characters, combination of different pictographs and combination between Chinese characters and pictographs. As shown in Table 3. (1) Auspicious patterns in combined Chinese character form, such as “Huan”, “Tian”, “Xi”, “Di”, which are combined together to create a joyful and festive atmosphere, is often used as a pattern to symbolize joy and celebration. “Shou, Ji, Xiang, Lu and Xi” are combined together to express the best wishes for blessings, wealth, auspiciousness and longevity.

Auspicious patterns in combined pictographic form. Table 4 shows a “child” holding a pictorial “fish” symbolizing prosperity and luck, combined with a pictorial “lotus” design, signifying rich every year. The combination of the pictographic “bats”, “peach blossom” and “coins” expresses longevity and prosperity. Table 4 combines the

pictorial “Bergamot”, “peach blossom” and “pomegranate” patterns, in which the pictorial “Bergamot” pattern expresses the symbolic meaning of good fortune, the pictorial “peach blossom” pattern expresses the symbolic meaning of longevity, and the pictorial “pomegranate” pattern expresses the symbolic meaning of many children and grandchildren. Another example is the combination of pictorial “auspicious” and “cranes”, which expresses power, wealth, longevity and auspiciousness. Both “dragon” and “phoenix” signify power, wealth, majesty and harmony, and the combination of the two was often decorated in ancient royal weddings to express the blessing of harmony and good fortune to the newlyweds.

Auspicious patterns in combined Chinese character and pictographic form. For example, Table 5 combines the pictographic “bats” pattern with the Chinese character “Shou”, which expresses longevity and prosperity. “bats” pattern expresses good fortune, and the combination of the two expresses the symbolic meaning of blessing longevity. The Chinese character “Xi” is a symbol of happiness and good auspiciousness, and the combination of this character with the pictogram “flower”, which represents wealth and good fortune, expresses the yearning for good things. Both “Xi” and “Magpie” express joy, and the combination of the two signifies the festive atmosphere. “Shou” and “peach” both mean longevity, and the combination of the two means wishing others good health and longevity.

Production Techniques of Auspicious Patterns

Traditional Chinese costumes are rich in auspicious patterns, including flowers, birds, fish, insects, birds and animals, which have a vigorous vitality and are the crystallization of ancient people’s wisdom and creativity, as well as their

Table 3. Auspicious patterns in compound Chinese character form



Chinese characters	Patterns	Meaning	Chinese characters	Patterns	Meaning
Huan (欢) Tian (天) Xi (囍) Di (地)		Full of joy and celebration	Shou (壽) Ji (吉) Xiang (祥) Lu (祿) Xi (囍)		Blessing, wealth, auspiciousness and longevity
	Figure 17. Auspicious pattern (Yuan, 2016, p. 269)			Figure 18. Auspicious pattern (Yuan, 2016, p. 269)	

Table 4. Auspicious patterns in compound pictographic form










Pattern element-1	Pattern element-2	Pattern element-3	Patterns	Meaning
Lotus (蓮花)	Fish (鯉魚)	Children (兒童)	 Figure 19. Auspicious pattern (Yuan, 2016, p. 139)	Rich every year
Bats (蝙蝠)	Peaches (桃)	Coins (古錢)	 Figure 20. Auspicious pattern (Yuan, 2016, p. 186)	Longevity and prosperity
Peach blossom (桃)	Pomegranate (石榴)	Bergamot (佛手)	 Figure 21. Auspicious pattern (Yuan, 2016, p. 170)	Good fortune, long life and many children and grandchildren
Pine (松樹)	Crane (仙鶴)		 Figure 22. Auspicious pattern (Yuan, 2016, p. 223)	Auspiciousness, longevity, wealth
Dragon (龍)	Phoenix (鳳凰)		 Figure 23. Auspicious pattern (Yuan, 2016, p. 68)	Power, wealth, majesty, good fortune and harmony between husband and wife

Table 5. Auspicious patterns in compound Chinese character and pictographic form

Chinese characters	Pattern element	Patterns	Meaning	Chinese characters	Pattern element	Patterns	Meaning
Shou (壽)	Bat (蝙蝠)	 Figure 24. Auspicious pattern (Yuan, 2016, p. 187)	Many blessings and longevity	Xi (禧)	Flower (花)	 Figure 25. Auspicious pattern (Yuan, 2016, p. 218)	Yearning for good things
Xi (禧)	Magpie (喜鵲)	 Figure 26. Auspicious pattern (Yuan, 2016, p. 48)	Festive atmosphere	Shou (壽)	Peach (桃)	 Figure 27. Auspicious pattern (Yuan, 2016, p. 218)	Health and longevity

aspiration and pursuit of a better life. In ancient China, the laboring people liked to apply auspicious patterns on all kinds of clothing materials, from the noble silk used by the court nobility to the common printed cloth of the folk, the production range is very wide. With the continuous progress of textile technology, the decorative techniques of auspicious patterns have developed from printing and dyeing to splicing, weaving and embroidery, and painting in various ways. The costumes decorated by various craft techniques not only have visual aesthetic value but also express people's blessing culture. Traditional costumes with auspicious patterns can be regarded as the mirror of history and culture, which reflects not only its surface form and symbolic meaning but also the concept of cherishing things reflected in its depth through different dimensions of exploration. Frugality, as a virtue of treating everything, is a rational and appropriate attitude toward external materials and internal material desires, a unity of external behavior and internal spiritual cultivation, and a unity of cost savings and desire (Yu, 2020). In this study, three representative ancient Chinese costumes are selected to analyze the production process of their auspicious patterns through the study of prior literature.

The first costume is a Chinese Qing Dynasty women's coat for the court noble women's clothing, from the splicing

weaving techniques, the front chest and armhole decoration of the clothing Ruyi(如意) pattern use the traditional splicing method, through the different small pieces of fabric through cutting, splicing, sewing, embroidery and other ways to complete the auspicious design of the decorative design, such material-saving, labor-saving and pleasing pattern decorative processing techniques not only to achieve the decorative role of clothing but also fully reflect the value of the ancient people in the design and production of clothing decoration. The way of reusing used materials for garments not only enriches the decorative effect of garments but also saves production costs, which can be said to kill two birds with one stone. The process of using leftover materials for pattern splicing largely reduces the waste of materials and reflects the cultural ideas in the design and production of ancient Chinese costumes. As shown in Table 6.

The second costume is a large-breasted women's shirt in lake green jacquard silk, with auspicious patterns decorated with techniques of weaving and embroidery, the hemline is embroidered with seed embroidery, and the collar, cuffs, and hemline are pieced together. The ancient people liked to use gold thread to weave and embroider auspicious patterns, such as dragon scales for the royal family, which were made with exquisite craftsmanship and obvious texture,

Table 6. Qing Dynasty white butterfly Tuanshou(团寿) jacket


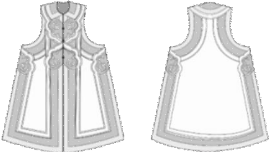








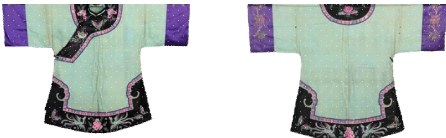













Case 1. White butterfly Tuanshou(团寿) jacket	Auspicious patterns			
 <p data-bbox="282 1403 574 1452">Figure 28. Cambric shoulder in Qing Dynasty (Yan, Fang, & Yin, 2010, p. 281)</p>  <p data-bbox="315 1617 544 1662">Figure 29. Style drawing The photo was drawn by the author</p>	<p data-bbox="725 1260 768 1279">Collar</p>   <p data-bbox="686 1560 796 1652">Wan(万) pattern It means good luck in everything</p>	<p data-bbox="868 1260 911 1279">Chest</p>   <p data-bbox="815 1550 962 1662">Ruyi (如意) pattern It means auspiciousness, satisfaction and good luck</p>	<p data-bbox="1011 1260 1053 1279">Edge</p>   <p data-bbox="982 1560 1100 1652">Butterfly pattern It means auspiciousness and longevity</p>	<p data-bbox="1125 1260 1236 1279">Bottom pendulum</p>   <p data-bbox="1110 1560 1239 1652">Tuanshou (团寿) pattern It means longevity and complete</p>
Technologies				
Splicing				












Table 7. Han Dynasty lake green jacquard silk blouse

Case 2. Lake green jacquard silk blouse		Auspicious patterns			
		Collar 	Chest 	Edge 	Bottom pendulum 
Figure 30. Women's clothing in Qing Dynasty (Hou, 2018, p. 43)					
Figure 31. Style drawing The photo was drawn by the author		 Peony pattern It means wealth and beauty	 Butterfly pattern It means wealth, auspiciousness and longevity	 Flower and grass pattern It means auspiciousness and wealth	 Phoenix pattern It means symbolize happiness in marriage
Technologies					
Weaving and embroidery					

reflecting wealth, power and status. The folk, while respecting the trend of the court, reconsidered from the perspective of abstinence and replaced the expensive material

of gold thread with tin or even other cheaper materials, such as the embroidery of flowers and plants on the cuffs of this woman's shirt, which is made of tin instead of gold thread

Table 8. Tang Dynasty women's large sleeved jacket and skirt (襦裙)

Case 3. Women's large sleeved jacket and skirt (襦裙)		Auspicious patterns		
		upper outer garment 	Skirt 	Drape silk (披帛) 
Figure 32. Tang Dynasty jacket and skirt (襦裙) (Yuan, 2005, p.66)				
Figure 33. Style drawing The photo was drawn by the author		 Peony pattern It means wealth and beauty	 Flower and grass pattern It means auspiciousness and wealth	 Phoenix pattern It means power, status happiness in auspiciousness
Technologies				
Dyeing and painting				

(Hou, 2018). This approach not only achieves a visual aesthetic effect comparable to that of expensive materials such as gold and silver thread but also saves production costs. This cost-reducing production technique continues to be widely used in modern times and is a reflection of the cultural ideology of ancient Chinese dress design and production. As shown in Table 7.

The third costume is a Chinese Tang Dynasty large-sleeved jacket with a long low-cut skirt inside and a large-sleeved lapel sarong outside, showing a graceful and gorgeous appearance. The matching sarongs are mostly made of light sarongs. The waistline of the Tang Dynasty jacket and skirt (襦裙) is raised to the armpit, the style is wide and flamboyant, and it is fashionable to have a frank chest. The skirt is very rich in style and color, and the waist is decorated with a comprehensive patterns form consisting of flowers and grasses, expressing auspicious omen and wealth. The main techniques of decoration of the auspicious patterns of the

shown in Table 8.

In summary, the craft of making auspicious patterns for traditional costumes through the above three cases. Case 1 expresses the idea of saving the surplus fabric by stitching the fabrics together. Case 2 fully embodies the idea of saving in garment production by replacing expensive gold thread with less costly silk thread material for weaving and embroidery. Case 3 uses vegetable dyes for printing and painting, embodying the idea of reducing waste and pollution. Based on the above three case studies, this study has clarified how the concept of thrift is embodied in the traditional Chinese auspicious patterns and constructed a three-dimensional model of the concept of cherishing things. The three dimensions cover splicing, weaving and embroidery, printing, dyeing, and painting, to lay the physical material support for the sustainable innovative design application research of traditional costume auspicious patterns, and to achieve the sustainable innovative design

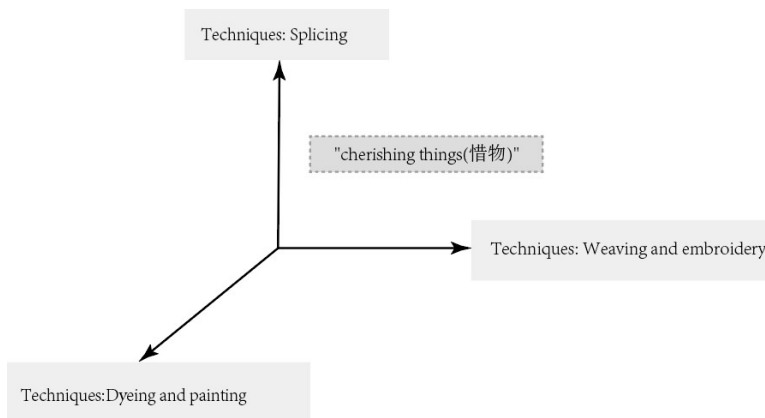


Figure 34. Three-dimensional model of the thought of cherishing things(惜物) in auspicious patterns of clothing

skirts are printing and painting. In ancient times, the substances used for coloring textiles were mainly derived from mineral pigments and natural dyes, of which the latter were mostly vegetable dyes, extracted from pigments of plant roots, stems, leaves, flowers, peels, etc. The materials and methods used reduced environmental pollution and were the embodiment of cultural ideas in the design and production of ancient Chinese costumes, which are still used today. As

research of ancient Chinese traditional costume auspicious patterns by combining the concept of cherishing things. As shown in Figure 34.

The traditional Chinese concept of cherishing things contains profound philosophical ideas and aesthetic concepts. Respecting the sky, using them to the fullest, using them sparingly, and using them skillfully are the basic views of creation gradually formed by the ancient people of China in

the practical activities of clothing production through continuous inheritance and innovation. If material poverty can only lead to “passive frugality”, the special feature of frugality in the Chinese cultural tradition is that it is an “active frugality”, which has nothing to do with the amount of wealth and materials. This is not a helpless choice out of material scarcity, but a “moral and rational” initiative to be frugal, which is the wisdom of the Chinese people’s life. The concept of cherishing things has been passed on to today’s society and is also part of the concept of sustainability. Therefore, this paper investigates the compatibility of traditional Chinese auspicious patterns with modern sustainable design by employing the cherishing things stereoscopic model.

Method

Due to the purpose of this paper, the three-dimensional model of cherishing things constructed above to develop the traditional Chinese auspicious patterns in an upcycling way to receive the sustainable design of auspicious patterns. The goal of upcycling is to prevent the wasting of potentially useful materials by making use of the existing ones (William, 2005). The purpose of upcycling is to prevent waste of materials and to utilize existing materials. Upcycling focuses on using discarded materials without purchasing new materials, minimizing costs and waste, and generating new value from discarded materials through redesigning. Upcycling is also related to re-assessing and recreating which pave the way to innovation and value (Koca & Koç, 2020).

In this study, the upcycling design process of Chinese traditional auspicious patterns is based on the three-dimensional model of cherishing things, which breaks people’s inherent ideas by collecting various kinds of waste materials such as discarded paper, discarded wool balls, used plastic bags, used foam, used fabrics that have lost their value, and exploring them through splicing, weaving and embroidery, printing and dyeing, and painting. The design of the costume pattern is inspired by the auspicious pattern of the civil official costume of the Ming Dynasty in China, The crane Buzi(褙子), which was generally used by the royal



Figure 35. The auspicious patterns of the civil officials of the Ming Dynasty (Qvshi, 2020)

family in ancient China, and the auspiciousness symbolizes noble power and status, while the crane symbolizes longevity and auspicious omen, both of which are typical representatives of ancient traditional auspicious patterns. As shown in Figure 35.

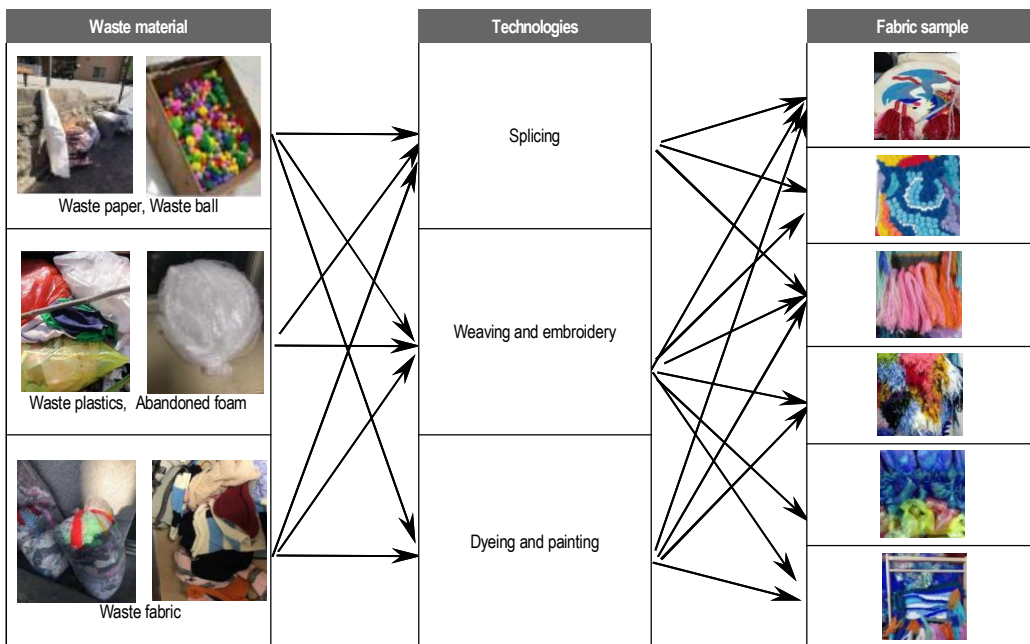
Extracting and simplifying the auspicious pattern and using the process in the three-dimensional model to gain the upgrade design of the pattern. It not only expresses the cultural value of the garment but also conforms to the design intention of upcycling of the auspicious pattern. For instance, as shown in Table 9, discarded decorative wool balls are used to decorate plastic garments and using the splicing techniques in the diorama to form the style of auspicious patterns, thus achieving upcycled materials. Through upcycling design of auspicious patterns, resource pollution and wasteful behavior are reduced in garment development, turning waste into treasure and minimizing the impact of product development on the environment.

Results

The four works developed in this study all employed traditional Chinese auspicious patterns to develop upcycled designs.

The silhouette of the dress garment design of Product I is a simple H-shape, highlighting a circular auspicious pattern on a straight silhouette. The materials used for the whole garment are textiles, woven bags, foam and other discarded waste. By recycling them and using the techniques of splicing, weaving and embroidery, printing, dyeing and painting to complete the upcycling design of discarded

Table 9. Design and development of materials for works



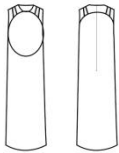
materials, the traditional Chinese costume auspicious pattern of the crane is achieved. The pattern on the chest is a crane and auspiciousness extracted from traditional auspicious patterns and redesigned, then combined with hand weaving and embroidery, the auspicious patterns are spliced on the dress to express longevity, blessing, and nobility. The dress is made of discarded blue plastic, and the skirt is designed with recycled wool, which is disassembled and decorated into a hem. The dress is layered by adding five layers of materials. The color of the work is mainly blue to symbolize the sky and nobility, including Blue, Dark blue, Navy, Red, Orange, Yellow. At the same time, the auspiciousness pattern made by the same technique is used in the headdress so that its overall costume echoes.

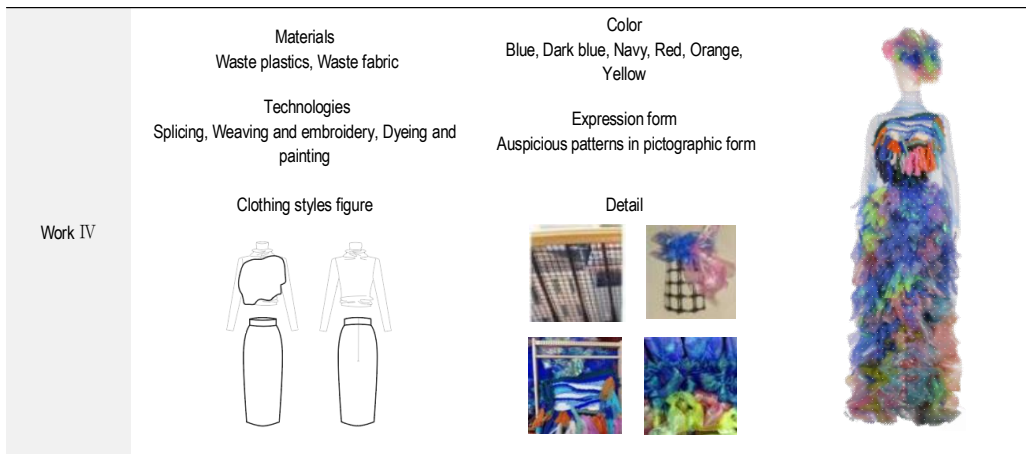
Product II applies the techniques of splicing, weaving and embroidery, printing and dyeing and painting to finally gain the upcycling design of the cranes, the auspicious pattern of Chinese traditional clothing. The design shape of the top is an exaggerated T-shaped silhouette, highlighting its sense of volume. The traditional hand-knitting method is used to dismantle the discarded knitted sweater, and then the dismantled old wool yarn is hand-embroidered on the printed

and painted old fabric to achieve the recycled design of the fabric. The auspicious pattern of the lower skirt is completed by employing old wool yarn splicing, weaving, and embroidery to decorate the auspicious pattern of cranes and auspiciousness. The two auspicious patterns are combined with each other to express auspicious omen, power, and blessing. The color scheme of the work is high purity with Blue, Dark blue, Navy, Red, Orange, Yellow. Meanwhile, the neck is decorated with discarded lace. In order to achieve a better color matching effect with the garment, its original color is transformed by printing and dyeing, making it appear in high purity red and pink.

The shape of Product III is a simple H-shape, which is classic and generous. The dress uses the techniques of splicing, weaving and embroidery, printing, dyeing and drawing to obtain the upcycling design of the apparel. Through the decorative technique of splicing, the discarded decorative wool balls are spliced on the plastic material of the dress and arranged according to their different sizes and colors to form the patterns of auspiciousness, and with knitting to decorate the top part of the dress, the patterns signify good luck, power and blessing. The material of the

Table 10. Description of works

	Design description		Work
Work I	<p>Materials Waste paper, Waste plastics, Abandoned foam, Waste fabric</p> <p>Technologies Splicing, Weaving and embroidery, Dyeing and painting</p> <p>Clothing styles figure</p> 	<p>Color Blue, Dark blue, Navy, Red, Orange, Yellow</p> <p>Expression form Comprehensive patterns, Auspicious patterns in pictographic form</p> <p>Detail</p> 	
Work II	<p>Materials Waste plastics, Waste fabric</p> <p>Technologies Splicing, Weaving and embroidery, Dyeing and painting</p> <p>Clothing styles figure</p> 	<p>Color Blue, Dark blue, Navy, Red, Orange, Yellow</p> <p>Expression form Comprehensive patterns, Auspicious patterns in pictographic form</p> <p>Detail</p> 	
Work III	<p>Materials Waste plastics, Abandoned foam, Waste ball, Waste fabric</p> <p>Technologies Splicing, Weaving and embroidery, Dyeing and painting</p> <p>Clothing styles figure</p> 	<p>Color Blue, Dark blue, Navy, Red, Orange, Yellow</p> <p>Expression form Auspicious patterns in pictographic form</p> <p>Detail</p> 	



skirt is knitted with old wool, and the layers are overlapped to highlight the visual hierarchy of the dress, and the bending characteristic of the old wool is cleverly used to increase the richness of the dress. The color design of the work is Blue, Dark blue, Navy, Red, Orange, Yellow, applying high purity contrasting colors to highlight the pattern form better.

The overall shape of the product IV work is A-shape, and the material of the top and bottom skirt are discarded materials. Upgrade the design of auspicious patterns by using splicing, weaving and embroidery, printing, dyeing and painting techniques. The top is redesigned by hand splicing, weaving and embroidery of old wool yarn, completing the abstract auspiciousness pattern, which symbolizes status and expresses nobility, good fortune and sincere blessings. The auspiciousness pattern is splicing onto a vegetable-printed mesh top, and the underskirt is designed in an exaggerated shape, various high-purity colored old textile materials were cut into strips and secured by hand knitting.

Using recycled household waste black plastic lattice to form a fluffy visual material. The colors are Blue, Dark blue, Navy, Red, Orange, and Yellow. And the head is decorated with the same technique as the lower skirt to complete the look. Meanwhile, the head ornaments and the lower skirt are decorated with the same technique, making the whole set of clothing shapes more integral.

The development process and design explanation of Product I-IV are shown in Table 10.

Conclusion

This paper takes the auspicious patterns in traditional Chinese costumes as the theme and obtains the following research conclusions by studying more possibilities of sustainable design.

Firstly, three expression forms of costume auspicious patterns can be summarized: auspicious patterns in Chinese character form, auspicious patterns in pictographic form, comprehensive patterns, and outlined the design application samples of traditional costume auspicious patterns in modern clothing according to their form classification. Secondly, three sets of representative traditional costumes were selected by using the case study method to explore how auspicious patterns are applied to traditional costumes and clarify how the concept of thrift is reflected in the form of auspicious patterns, and build a three-dimensional model of cherishing things.

The research contributions of this study cover innovation in research theory and innovation in research practice. Firstly, theoretical innovation. Using the case study method to summarize and sort out the composition forms and production methods of traditional costume auspicious patterns, the three-dimensional model of cherishing things was constructed from three aspects: splicing, weaving and embroidery, printing, dyeing and painting, providing theoretical reference and more possibilities for sustainable innovative fashion design. Secondly, innovation in practice.

Based on the three-dimensional model of cherishing things constructed in this paper, we have developed four designs that communicate the concept of sustainability by using an up-cycling approach to explore more possibilities of traditional costume auspicious patterns in modern costume design and provide ideas and inspiration for sustainable innovative design and development of traditional costume culture.

The cherishing things three-dimensional model constructed in this paper is a kind of exploration and innovation, and we will read more related theses to traditional costume auspicious patterns and further verify and supplement the research findings.

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