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Design Reinvention for Culturally Influenced Textile Products: focused on traditional Korean bojagi textiles

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Abstract

This paper introduces the idea of design reinvention applied to traditional cultural textile products to facilitate the design of a contemporary offering that meets the needs of a specific market segment. The focus of this study is to develop a new design tool which will facilitate the translation of traditional Korean bojagi aesthetics into design concepts for modern fashion textiles relevant to young consumers. In order to apply the concept of design reinvention to the traditional bojagi, a new bojagi textile design tool and a bojagi website were developed. Using the tool, some of the applications were tested by fashion industry experts in the UK whose market are young global consumers. The findings resulting from the interviews suggested that the fashion bojagi samples could be successfully commercialized for the contemporary fashion market.

KEYWORDS: Design reinvention, cultural textile products, modern fashion textiles, design marketing, Korean bojagi

Introduction

Design reinvention means to present something entirely new while maintaining a story or a message which involves the development of an existing product. Textile designers should be encouraged to consider processes of designing where they communicate both the old as well

as the new values of cultural textile design. Textile design can operate as a leading discipline of design reinvention if it incorporates the valuable knowledge of history and traditional heritage in a fluent process towards the success of a design enterprise (Perivoliotis 2005, 1).

Culturally related design is, from a strategic marketing perspective, employed as the basis for competitive advantage or product differentiation (Farr 1966, 6). The skill of storytelling and the knowledge of cultural understanding are needed by businesses as they try to create products and brand identities that have meaning - functional, cultural, mythical, symbolic, and the ethical meaning - around the world (Munnecke and Van der Lugt 2006, 8).

Textile designs and concepts which are culturally influenced incorporate the strengths of their textile history as a means of creating, producing and marketing new innovative designs. Harnessing the power of modern technical design capabilities with the creative heritage of traditional culturally based textiles can facilitate the development of numerous commercial possibilities within the textile and fashion sectors. Representing a product with a cultural style and a context can also enhance existing product lines and lead to the development of new market opportunities. Designing with cultural concepts, embodied with symbolic cultural meanings can aid revitalization.

The aim of this study is to examine and discuss the design reinvention process applied to Korean cultural textile bojagi products which were wrapping cloths with patchwork designs used for wrapping as well as for covering, storing, and carrying everyday objects. In order to apply the process, the study develops a computer based design tool, which enables the electronic manipulation of the traditional design components to create a reinvented fashion bojagi product suitable for a young consumer market. In this study, a model of design reinvention for Korean traditional bojagi is proposed and the resulting new fashion bojagi textile designs produced using digital printing and the proposed design tool are shown. It also describes the findings of the indepth interviews conducted with UK fashion retailers and designers to evaluate the design and commercial values of the new designs.

The concept of design reinvention for culturally influenced textile products

According to the Cambridge Dictionary (2011), the definition of “reinvent” is to produce something new that is based on something that already exists. Design reinvention essentially refers to a transformation of aesthetics; this can be applied to textile products as discussed below.

Design reinvention for textile products lies on a continuum of proceedings that begins with cultural values in traditional textiles, which are developed into contemporary iconic products within a popular contemporary industry and are finally implemented and commercialized. This will be discussed in more detail in the section of design reinvention of Korean traditional bojagi textile products.

Culturally influenced products are modernized traditional cultural products which have both cultural meanings and commercial values, therefore allowing these products to fit into contemporary markets. The process of design reinvention is considered to be an important inclusion of the design process for producing commercially successful cultural based products. The authors suggest two main ways to reinvent traditional cultural products: 1) through modernization or contemporization and 2) through popularization or globalization (see Figure 1).

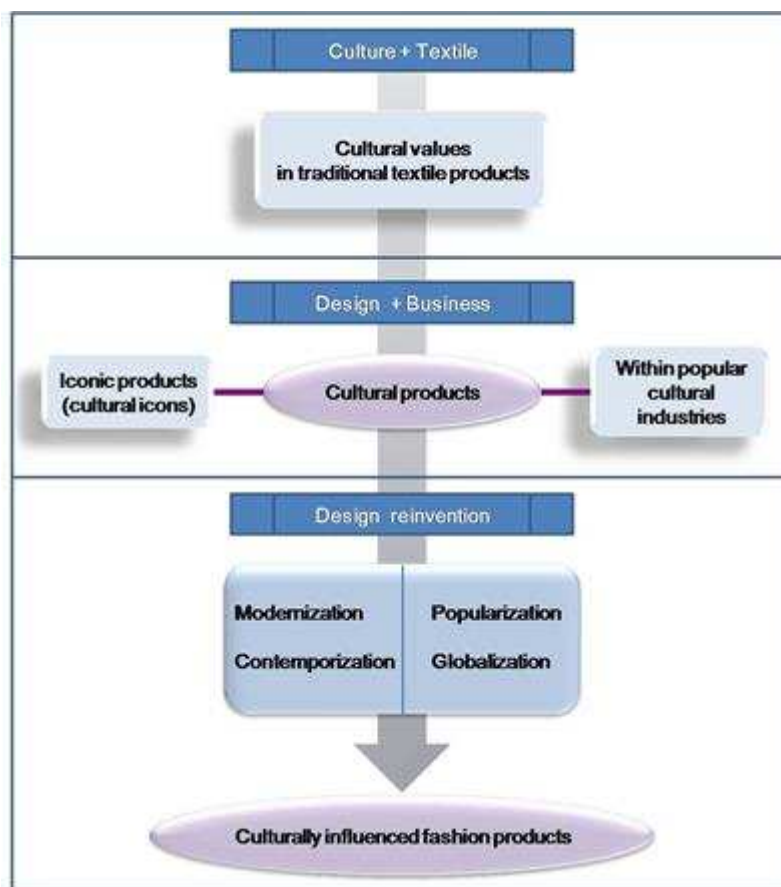


Figure 1 A design reinvention model for producing a culturally influenced product

Identifying cultural values in traditional textile products

Culture refers to a set of values, ideas and meaningful symbols that contribute to, communicate and represent individuals as members of a society. Indeed, traditional cultural products express cultural values as a symbol of a certain time and to certain members of a society (Shweder and LeVine 1984, 88).

As Davis (1992, 13) stated, the meaning of textiles and clothing is cultural, in the same sense that everything about which common understandings can be presumed to exist (the food we eat, the music we listen to, our furniture, health beliefs, to summarize, the totality of our symbolic universe) is cultural.

Hyun and Bae stated,

“Traditional textile patterns have great historical and cultural value as a conventional structure of reflecting native culture through the collective value system and natural and emotional background of our nation.” (Hyun and Bae 2007, 140)

In this light, design elements used by traditional textiles – pattern, color, form, material, construction, and function – reflect cultural identity and national image, containing historical and cultural values. In the textile and fashion industries, it could be considered important to develop cultural based fashion products which are clear in inherent cultural identity and have high stylishness (Hyun and Bae 2007, 139).

Understanding design business within the creative industries

The initial focus of design business was based on product development, with a strong sequential process orientation (Vazquez and Bruce 2002, 202). Design has moved toward a more iterative process with a marketing component. Thus, in this section, cultural product design will be discussed.

“Design is the process of seeking to optimize consumer satisfaction and company profitability through the creative use of major design elements (performance, quality, durability, appearance, and cost) in connection with products, environments, information, and corporate identity” (Cooper and Press 1995, 2)

Design also does not occur in isolation from other disciplines and professions but in relation to a wide range of different conditions. The external context around design is evident in business, society, technology, politics and the environment. It is also evident in designers’

relationships to the worlds of marketing, management, engineering, finance and economics. The internal context around design includes how branding and innovation, user and market research, client briefs and design audits, budgets and teams, and project aims and objectives, can be leveraged to harness the power of design activity for the benefit of business, society and the economy (Best 2010, 8).

As design is a unique factor in competition, skillful management and designing become imperative (Farr 1966, 6). Capitalizing on global trends also relate to creativity. Employing global trends is also one of the best ways to increase competitive advantage between commercial companies and even entire countries. The creative industries (also known as the creative economy) include the areas of design, arts and crafts, advertising, architecture, fashion, film, music, TV, radio, performing arts, publishing and interactive software (Best 2010, 8). An understanding of design, culture and business will be beneficial to design culturally influenced products.

The design reinvention process

There are two main approaches suggested for the design reinvention of traditional cultural products that are modernization/contemporization, and populization/globalization. 1) Modernization and contemporization are vitally important in the design process of cultural products, not only for these sectors to flourish, but also for the survival and proliferation of cultural traditions themselves (Naylor 1990, 180). These processes of modernization and contemporization are connected with design strategies when translating traditional cultural products into adapted offerings for contemporary markets.

The concept of modernization and its desire to exploit the latest materials and technology is expressed with new forms and designs of traditional cultural products. Modernized cultural product designs also have many associations with the new; from materials to technology and often the use of new methods of construction (Bhaskaran 2005, 122; Holder 1990, 123). Technological innovation drives modernization of cultural product design; the success of technological innovation resides in the marketplace (Gaynor 2002, 17).

New materials also provide a stimulus for designers, who are keen to rise to the challenge of creating a new aesthetic for contemporary cultural products. The potential of materials is transformed into another means of creating objects. This transformation is achieved through a combination of strategies, which include using designers to create fashionable and modern forms; the use of high technology; and the presentation of cultural objects (Sparke 1990, 192).

The underlying intention of the modernization and contemporization of traditional cultural products is that design is present and that the product outcome will fit into consumers' present day life (Julier 1990, 221).

2) The second method of cultivating design reinvention is the popularizing and globalizing of traditional cultural products worldwide. These processes are more related to marketing strategies; how business can meet the needs, wants and desires of potential global consumers. Mass media brings people from varying geographic areas around the world together in a global village via the Internet, e-commerce, and all electronic gadgetry which are supposed to make life easier and more productive (Gaynor 2002, 3; Hofstede 2001, 453).

Globalization includes the establishment of global institutional forms and global processes of identification and cultural products. Globalization refers in this context to the formation of institutional structures that organize the already existing global field, and forms that are either produced by or transformed into globally accessible objects and representations (Friedman 1994, 201).

The reinvention of bojagi textile products

Korean bojagi textile products are a category of textile design which incorporates strong characteristics - the use of color, pattern, fabric and style to convey meaning and aesthetic value. The manipulation of these characteristics became the basis of this reinvention of bojagi textiles into contemporary fashion items. Therefore, the aesthetics of bojagi textiles have potential to be modified and applied to modern fashion textile designs.

When applying the concept of design reinvention to the traditional Korean textile bojagi, a new bojagi textile design tool is proposed for designing modern fashion bojagi textiles as an effective translation from Korean traditional cultural iconic features into modern fashion products. Also, a website for popularization/globalization of Korean bojagi was developed to communicate with the study's target consumers. Three potential target markets that can be applied to future Korean cultural products were identified by Shin, et al (2011); the young trendy generation group, the tourist group and the designer business market group. The young trendy generation group (Korean/ Western) was selected as the primary target consumer group due to their expected interest and familiarity with the interactive components of the mass customization aspect of the design tool. This generation was also perceived to be aware of global fashion designs and the early adopters of innovative fashion apparel. This group

also overlaps with the tourist and the designer based business markets and therefore offers a great possibility to gain insights to allow future expansion.

As can be seen in Figure 2, the reinvention process for the Korean traditional cultural textile products known as bojagi is progressive and iterative.

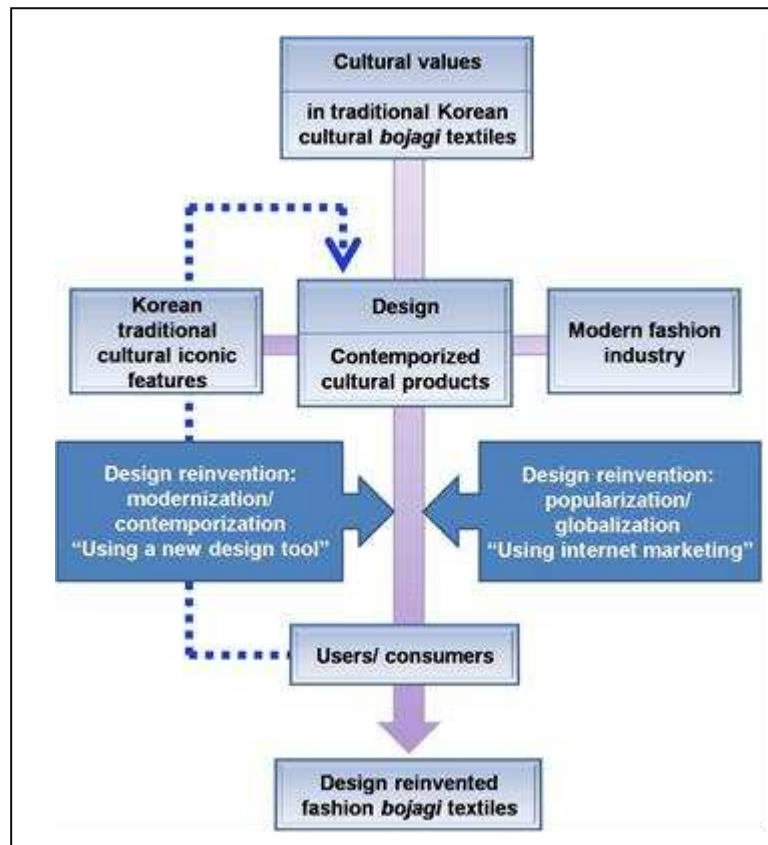


Figure 2 A process of design reinvention for Korean traditional bojagi

The cultural meanings of traditional Korean bojagi textiles

Korean wrapping cloths (bojagi) occupied a prominent place in the daily lives of Koreans of all classes during the Joseon dynasty (1392-1910), the period from which all surviving examples originated. Bojagi had a variety of purposes, such as covering a food table, draping a Confucian or Buddhist altar, wrapping a sacred text, or to carry objects. Covering a table or an altar signified the importance of the occasion. The wrapping of objects represented the individuals' concern for that which was being wrapped and respect for its receiver. There was an unspoken Korean folk belief that to wrap an object means enclosing and capturing good luck within a bojagi. Therefore special events, such as weddings, require an entirely new bojagi (Kim 1998, 13; Hur 2001, 35).

Traditional Korean bojagi which survived up until today are treasured as a unique expression of the character of the nameless women who created them by hand. The magnificent and refined wrapping cloths are works created exclusively by women of the late Joseon dynasty. Korean women of the Joseon dynasty were subjected to severe restrictions in all aspects of daily life by the ethics of Confucianism (Yi 1998, 25). In this respect, it seems that making bojagi and expressing their feelings and ideas was a way of controlling their sadness, and cherishing their hope for the afterlife as a free human being (Hur 2004, 20).

Bojagi fabrics were generally made in a square shape and, depending upon their use, came in various sizes ranging from one p'ok (about 35cm square) to ten p'ok. The bojagi used for wrapping a wooden mandarin duck, which the groom's family presented to the bride before the wedding ceremony as it is a common gift at weddings, were small and measured approximately one p'ok square. In contrast, the bojagi used for wrapping bedding were usually ten times larger (Kim 2003, 17).

Silk, gossamer, cotton and ramie woven fabrics were commonly used to make wrapping cloths in colors ranging from red, purple, blue, green, yellow and pink, to black and white. The construction and embellishment of bojagi were also diverse. Some were lined, others unlined; some were padded or quilted. Some were decorated with embroidery, painting, patchwork or paper-thin gold sheets. The most outstanding examples are embroidered and patchwork wrapping cloths. The embroidered motifs are based on trees, flowers, birds, clouds, fruits, dragons, phoenixes and ideographs. They are freely represented, making the embroidered designs often burst forth with a sense of abandon. When small pieces of cloth in different colors were used to make patchwork bojagi, the creative arrangement of the patchwork and the skillful balancing and contrasting of colors were distinctive features. The makers often created two-dimensional abstract designs of breathtaking beauty by fitting together different sizes of asymmetrical shapes (Kim 2003, 12).


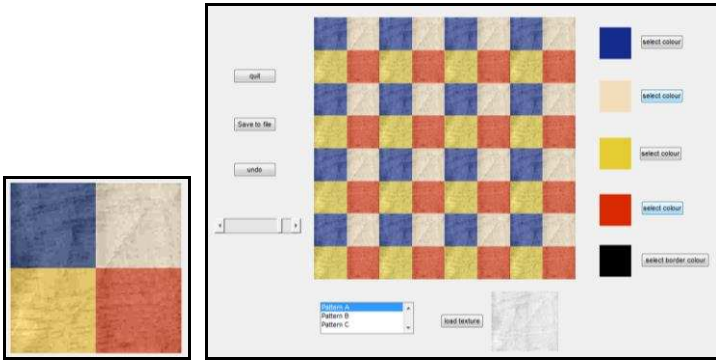
Nowadays, Korean traditional textile bojagi have been used to produce modern products such as mobile-phone cases, table runners, handbags, mufflers, tie pins, ties etc. Nevertheless, the variety of items and prices are limited and the range of products available does not adequately express Korean traditional or modern style. Thus, it would be beneficial to introduce a representative category for Korean cultural influenced textile products which accurately represent Korean historical and contemporary culture.

Developing the design tool

The MATLAB 7.0.4 GUI program was used for developing a new interactive bojagi design tool which offers three pattern types, five colors and six textures for selection from traditional Korean bojagi textiles in order to generate the users' own bojagi designs. This interactive textile design tool can allow the users and consumers to become involved in the design process. The design tool also can be an effective research and communication tool, not only for promotional activities, but also as an educational interface. Using this bojagi design tool allows the user to learn about the history and design characteristics and cultural meanings of the Korean cultural textile bojagi in an entertaining way. This section discusses how the design tool generates the traditional bojagi textile designs and explains the functions of the tool's buttons.

Pattern making

There are four pattern types of the traditional Korean bojagi; 1) square and triangle type 2) start from a square in the centre type 3) circles enclosing a four-petal and 4) irregular type. However, Choi and Eun (2004, 268) have argued that the irregular pattern type occupies the majority of bojagi patterns and the square type and starting from a square in the centre type are next. A small percentage is circles enclosing a four-petal type. Based on the popularity of the pattern types, three of the four types of pattern were selected to produce Korean bojagi patterns in this interactive textile design tool. Square type, start from a square in the centre type and irregular type are generated in Pattern A, Pattern B and Pattern C (see Figure 3).

Pattern A	
Korean traditional bojagi	New design sample by the tool
 <p>Silk sang-bo, 19th century (White and Hur 2003: 58)</p>	
Pattern B	
Korean traditional bojagi	New design sample by the tool

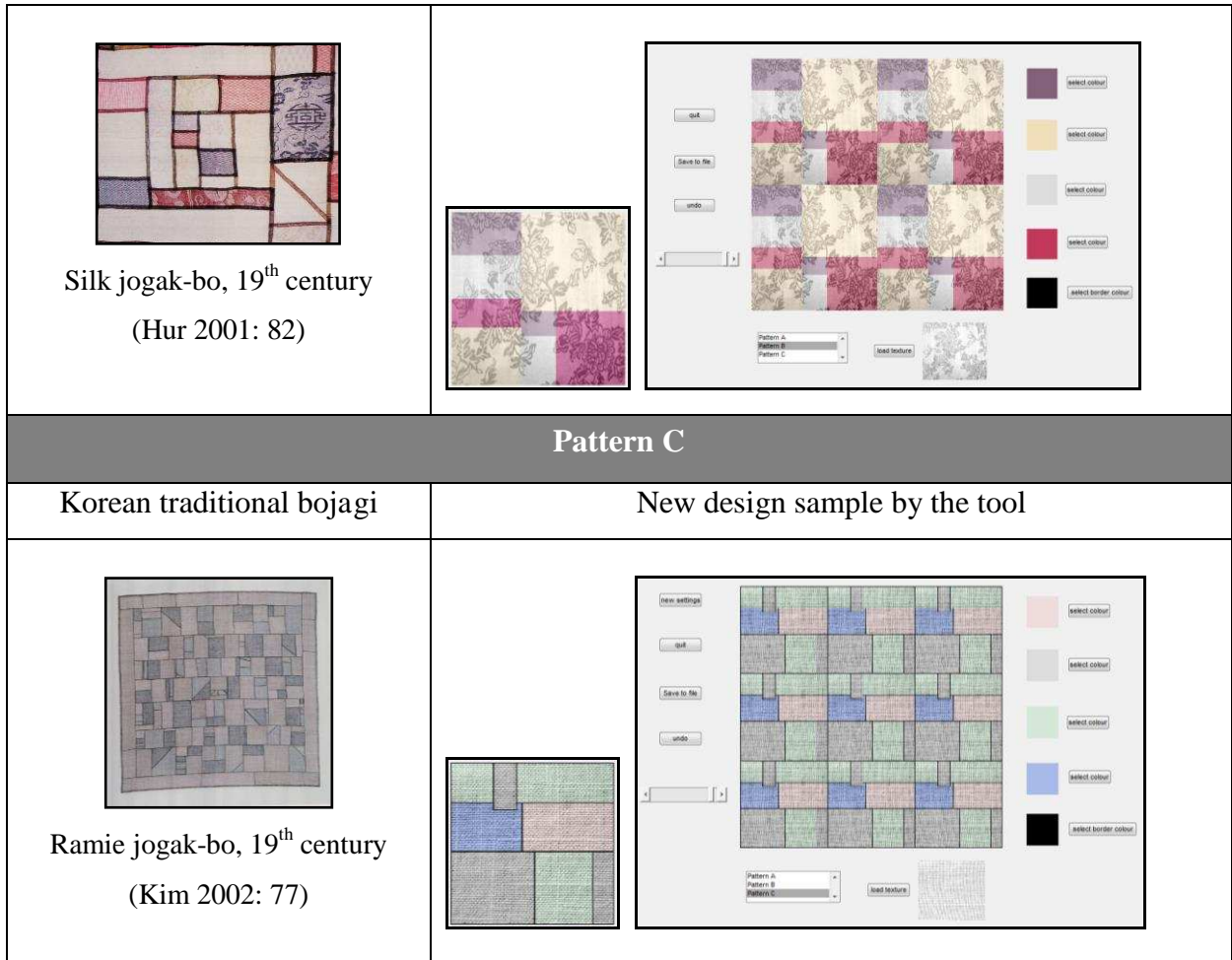
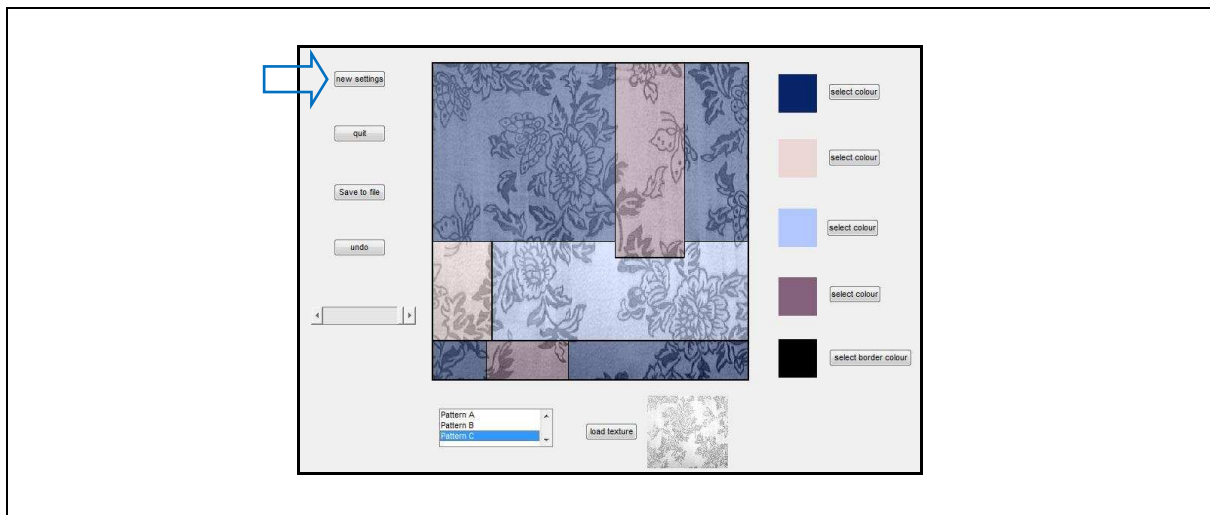


Figure 3 Examples of Pattern A, Pattern B, Pattern C

In the case of Pattern C, a new setting button is activated (see the arrow in Figure 4). It is not needed for pattern A or pattern B, which are fixed patterns. Pattern C is developed by generating the irregular pattern type of the Korean bojagi so that pattern C is programmed to randomly change the portion of each set of blocks of pattern C by clicking the new setting button (see Figure 4).

New setting button within the design tool



Pattern C samples by clicking new setting button

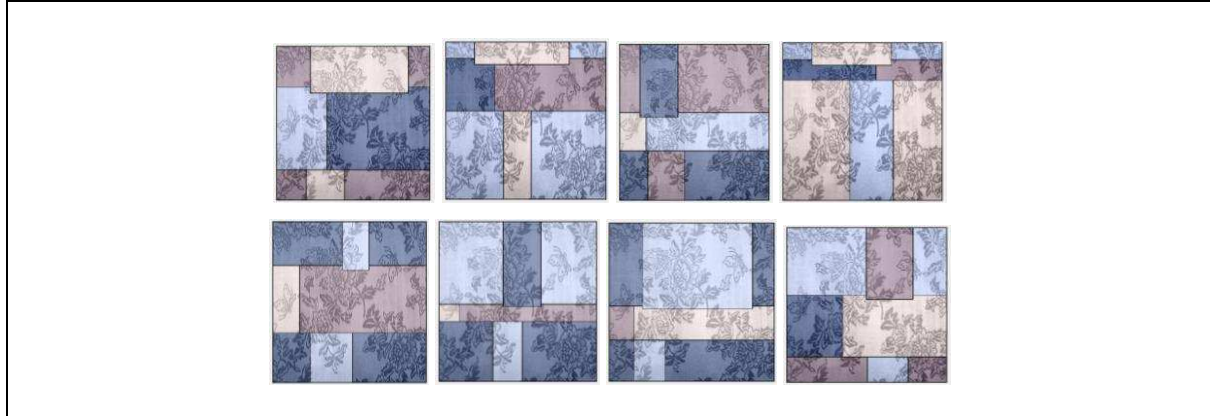


Figure 4 A new setting button of the design tool

Color selections

For the most part, five main colors were used for designing traditional Korean bojagi. An exception appears on some jogak-bo, where the diverse colors of leftover fabrics were used in patchwork form. The five main colors used were based on the five primary elements in Korean culture as well as the principle of yin and yang. Korean traditional color symbolism is based upon the five elements (wood, metal, fire, water and earth), five directions (east, west, south, north and centre), five seasons (cold, warmth, wind, dryness and humidity), and five blessings (longevity, wealth, success, health and luck). The five basic colors are blue, red, yellow, white and black (Hur 2003, 23). White was used as a supplementary color; black as the demarcation lines between different colors. Therefore, five color selection buttons are produced in the design tool. Four color selection buttons on the top are for the pattern design colors and the last selection button is for the border color (see Figure 5). Traditionally, bojagi

products are hand-made and a wide range of borders can be created depending on the makers' individual style or preference.

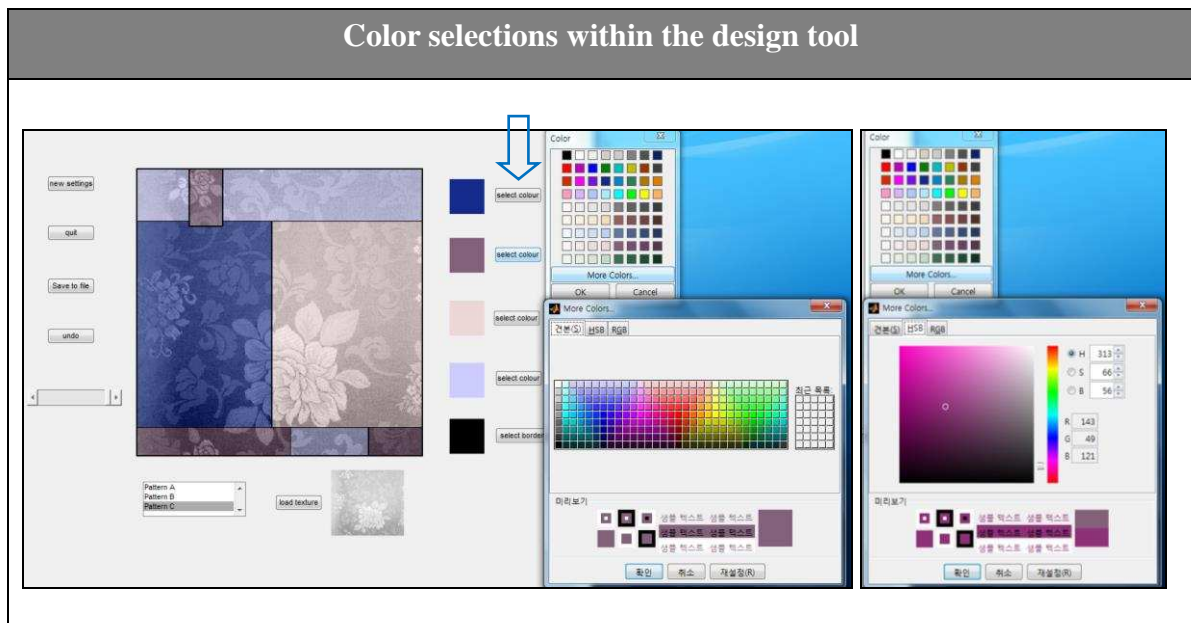


Figure 5 Color selections within the design tool

Texture selections

There were four main materials used for bojagi which were myeongju (fine silk with woven in patterns), mumyeong (cotton cloth), mosi (ramie), and sambae (hemp cloth). The materials can be selected when the user or consumer designs their bojagi through the website. The design tool had to incorporate texture images to allow the user to visualize the end fabric and make their design choices. The top section of figure 6 illustrates design samples without an incorporation of a textured image. It becomes plainly obvious that without textures there are only limited similarities to the traditional bojagi. Using textures within the tool enhances the experience significantly resulting in designs that very closely resemble the traditional bojagi. These examples demonstrate that the traditional Korean bojagi designs should be visualized by incorporating patterns, colors and textures. Therefore, it was essential to produce a section for a textured selection within the Korean textile bojagi design tool.

A design sample without a texture

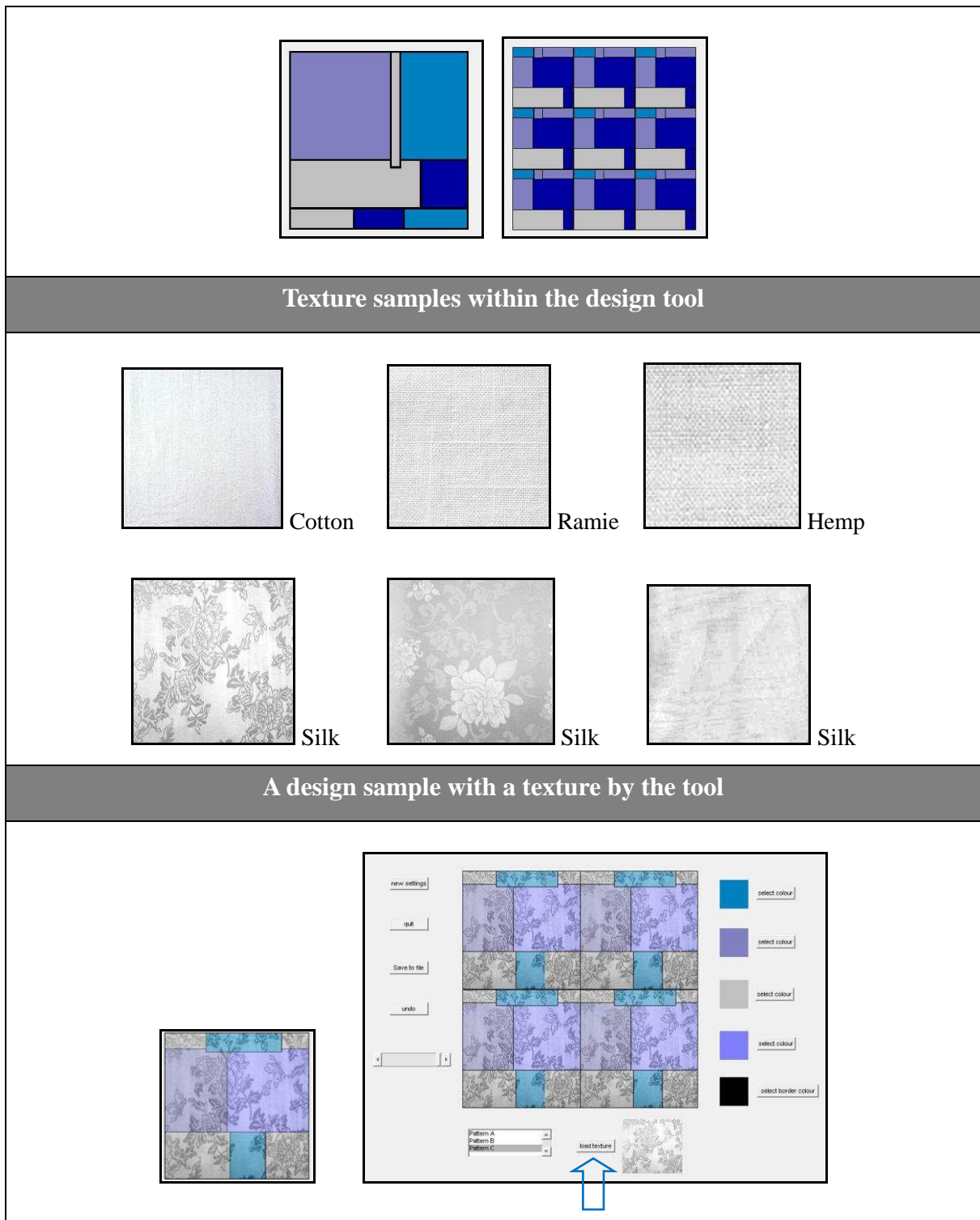


Figure 6 An example of a traditional bojagi pattern design without/with a texture

Scaling bar, undo, save to file and quit

A vital element when designing a textile pattern for a fashion product is repeating or scaling of patterns. Thus, a scaling bar has been developed for producing a repeated pattern. The

scaling bar can control a repeated pattern with four to thirty-six repeats of a pattern. By incorporating an undo button, users can return to see their previous design. On completion the designs can be saved as TIFF files by clicking the save to file button. Users can then click the quit button to exit.

Designing the Korean bojagi interactive website

The fundamental textile characteristics of Korean bojagi products - styles, patterns, colors and fabrics - became the basis of the content when designing this website. The content of the website consist of five categories - history, styles, patterns, color and fabrics of traditional Korean bojagi, and the design your own bojagi. The website was designed using the Adobe Dreamweaver CS4 HTML program. The category ‘design your own bojagi’ was developed using the new textile design tool for designing fashion bojagi textiles.

The concept behind this website was to introduce global young consumers to the traditional Korean cultural textile bojagi. The interactive website was a marketing and design tool incorporating both functional and entertainment aspects. Further, the website could be utilized to create a connection between consumers and manufacturers where consumer designs will be manufactured and sold online. This could possibly increase value through co-created designs featuring the patterns, colors and textures selected for new bojagi by consumers.

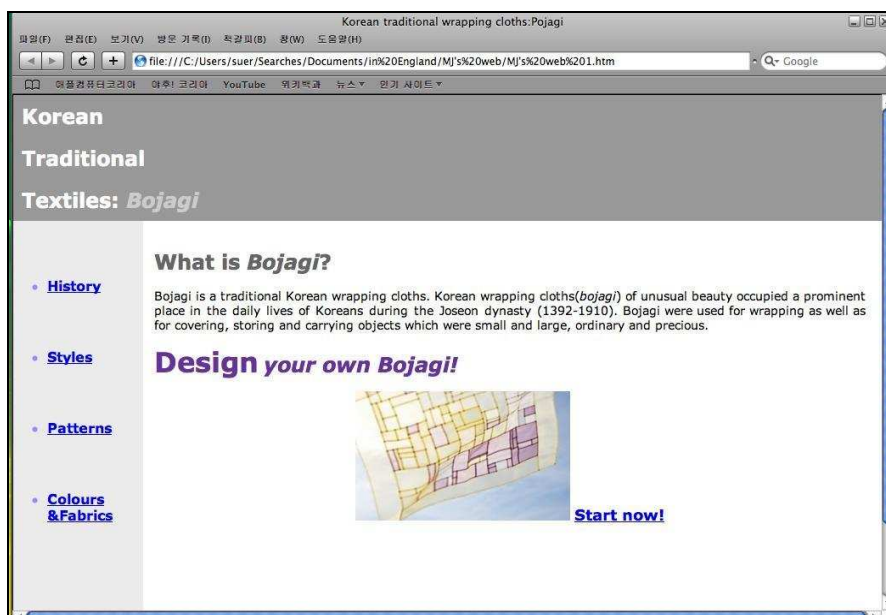


Figure 7 The first page of Korean bojagi website

Producing fashion bojagi design samples

This section aims to present some applications of fashion products by designing new fashion bojagi patterns. Using the bojagi design tool, a range of fashion bojagi patterns were designed by one of the authors (M.J. Shin) and digitally printed on five different fabric types; coated cotton stretch twill, coated plain broadcloth cotton, coated linen, coated heavy twill silk and coated medium-weight viscose/silk satin.

The majority of patterns were designed using pattern C, which was programmed to change the portion of each block by clicking the new setting button. The colors of the patterns were selected from both the S/S 2011 women's wear colors in WGSN's (Worth Global Style Network) trend report and the results of a color psychophysical experiment carried out in 2009 among target consumer groups in both the UK and Korea.

To show the possibilities of designing fashion products using the design samples, it was essential to put illustrations of the fashion bojagi applications on a bojagi fabric sample book. Adobe Photoshop 7.0 was used to produce the illustrations; this is a simple method of superimposing a design image over an existing photograph of a garment or room setting to illustrate a potential end use of the design. Fashion bojagi design samples consisted of home-textiles and fashion garments. The samples are shown in Figure 8.



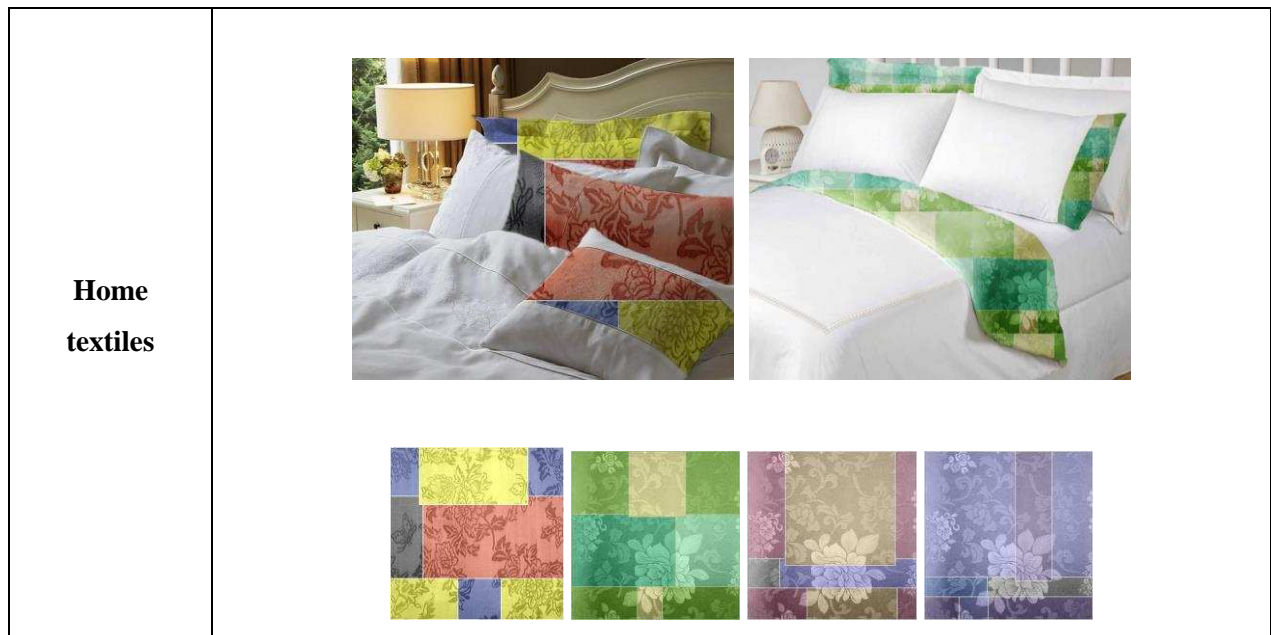


Figure 8 Examples of fashion bojagi designs

Evaluating the prototypes

Four fashion retail companies were selected to evaluate the samples. The criteria used for the evaluation of the fabrics included the participants' responses to the following questions: 1) What is your opinion of these fabric samples (patterns/ colors/ texture images/ fabrics)? 2) Do you think any of these designs could be of interest to your company? 3) Or, could you suggest any other company or brand that they may be relevant to? 4) Could you tell me which kind of fashion garment would be suitable for these designs? 5) Do you think these designs could fit into the fashion market? 6) Do you have any thoughts on the adoption of cultural textile products into mainstream fashion? 7) Other comments.

Participants

The participants were employees of high street, middle market and high end fashion companies in the UK; Cohen & Wilks International (a supplier for high street retailers), Next (a supplier for high street retailers), Mother of Pearl (a supplier for middle market retailers) and Hawick Cashmere (a supplier for high end retailers). The participants and their employees identified within the target of global young consumers. In particular, one designer, one fabric sourcing manager and one quality assurance manager at the high street fashion retailer companies and two designers at a middle market company and two designers at a

high end company participated in these in-depth interviews (see Table 1).

High street market		Middle market		High end market	
Cohen & Wilks International	Designer	Mother of Pearl	Two designers	Hawick Cashmere	Two designers
	Quality assurance manager				
Next	Fabric sourcing manager				

Table 1 Participants of four fashion retail companies

Procedure & findings

The interviews were based on an open-interview method which allowed for flexible conversation. Each interview began with an explanation of the purpose of the project and how the tool is used and how the bojagi patterns could be designed. The participants were then asked to look at the samples in the Korean bojagi fabric book, which was provided by the authors for this interview. Then, participants were asked to consider the samples from a commercial perspective and respond to the questions relating to the assessment of the Korean fashion bojagi fabrics.

The interviews allowed for a deeper investigation of the commercial values of the fashion bojagi designs, and an opportunity to analyze the design values of the fabric samples for fashion market applications. Cohen & Wilks is a dedicated apparel supplier offering comprehensive supply chain solutions to major fashion retail brands. This company specializes in manufacturing women's, men's and children's outer wear and casual wear for the retail market and offers an end to end service backed up by their partners. According to the interview, they emphasized that scaling is an important factor for designing so that one scale pattern design samples could be suitable for dresses and repeated small patterns would best fit into raincoats or scarf designs. The color combinations and choices were highly valued. However, the black colors of the bojagi design samples were recommended to be changed to dark indigo or dark blue. The design values of the floral texture images and fabrics were highly rated for use in particular fashion categories (home textiles and fashion

garments). It was suggested that these could for example, be used in table wear, beddings, cushions and curtains for home textiles which could suit Laura Ashley and Zara. They could also be used for dresses, blouses and scarves for women's wear, rain coats for children's wear as fashion garments. It would be suitable for M&S, Monsoon, Top shop and John Lewis. Commercial values of the design samples were assessed and they commented that these could be successfully commercialized for the fashion industry. Cohen & Wilks pointed out that high-end fashion designer brands are influenced by Eastern cultural textile products and this is still an ongoing process. However, it was highlighted that the method of manufacturing will be an issue as cost is a very important factor.

Next is a UK based high street retailer offering mainstream fashion and accessories for men, women and children together with a range of home ware. Next International has more than 180 stores throughout continental Europe, Scandinavia, Russia, the Middle East, India and Japan and also has a growing website capability worldwide. In this interview, the design values of the patterns were highly rated and they mentioned these bojagi designs looked similar to Mondrian art work. The color combinations were also highly valued but they preferred slightly lighter colors than those used in the design samples. Next International also stated that floral texture images would be perfectly suitable for their company. Similar to Cohen & Wilks, they recommended that cotton fabric samples would be good for T-shirts and silk design samples would suit scarves or dresses as fashion garments. The respondents also believe the bojagi designs would be suitable for home textiles, and two fashion brands (M&S and Monsoon) were recommended as suitable fashion brands. Next also suggested that the design samples have commercial value for the fashion industry, however, again the cost of production and price of the end products was emphasized as a major concern. Similar to Cohen & Wilks, Next mentioned that cultural factors can give great added value to provide differentiation in the fashion industry. This has been particularly prevalent in the high-end fashion market recently.

The company Mother of Pearl offers high quality fashion and accessories for women and collaborates with celebrated artists to produce a series of prints, which form the foundations of the collection. During this interview, the design samples were highly valued and they also mentioned that these bojagi designs looked like Mondrian art work. Mother of Pearl particularly liked one big scale pattern for dresses. The color combinations and choices were highly rated but they also preferred slightly lighter colors than were produced for the design samples. They suggested that it will be great to produce single colored pattern styles. Similarly like the previous two companies, small scaled floral texture images were favored

for women's jackets. They recommended that coated linen fabric samples would suit the home wear markets and satin silk design samples could fit into fashion products such as shirts, dresses, blouses and scarves. Jonathan Saunders was recommended to be a suitable fashion brand match for these design samples. They also indicated that the design samples could successfully commercialized to go into the fashion industry. However, a big consideration will be scaling as different scales of pattern designs can create different fashion styles. They suggested to combine printing with embroidery for fashion bojagi designs. It was also pointed out that cultural values regularly come into fashion trends and then each fashion brand interprets the main trend to match their brand image.

Hawick Cashmere is based in an original nineteenth century Mill in Hawick, Scotland. They offer high quality cashmere fashion and accessories for men and women. They have a number of outlets including a store in Elizabeth Street, London and stores in Switzerland, Germany, Slovakia, USA and Japan. Hawick Cashmere has interests in block pattern designs and geometric designs so that the patterns were all well received by them. They pointed out that scaling of the patterns plays an important role in block style patterns and one big scale pattern would be more suitable for scarf designs. The color combinations and choices, along with the design values of the floral texture images were highly valued to produce fashion products. Hawick Cashmere recommended Laura Ashley and Pierre Frey as suitable fashion brands for the design samples to produce home textiles. Zara and Monsoon were suggested as suitable fashion brand to produce fashion garments such as dresses, blouses and scarves. Commercial values of the design samples were assessed and they commented that the design samples could be effectively commercialized into the fashion industry. Furthermore, Hawick Cashmere emphasized that the design tool itself would be invaluable for fashion designers and they were highly interested in its use for print patterns on cashmere which was their future plan. They also pointed out that cultural values are playing an increasingly important role in general fashion trends with a growth in inspiration coming from Asia. In Table 2, a summary of the findings at Cohen & Wilks International, Next, Mother of Pearl, and Hawick Cashmere is presented.

		Cohen & Wilks International	Next	Mother of Pearl	Hawick Cashmere
Design values	Patterns	<ul style="list-style-type: none"> ● We like these block pattern designs. ● Most of designs look gorgeous but we have to think about the scale of the patterns. For example, one big scale pattern is suitable on a dress and a very small scale pattern could fit into a raincoat or a scarf design. 	<ul style="list-style-type: none"> ● Patterns are all very nice and it looks like Mondrian art work. 	<ul style="list-style-type: none"> ● Patterns look really lovely and cool and also it reminds me of Mondrian art works. ● We usually use printing and these patterns have come out very well. Especially, we love one big pattern printed on dress. 	<ul style="list-style-type: none"> ● We love these block pattern designs and geometric designs. ● It looks gorgeous and beautiful. Specifically, one big scale pattern will be suitable for a scarf design. ● Generally, a proportion (scaling) of the patterns plays an important role in block style patterns.
	Colors	<ul style="list-style-type: none"> ● Color combinations and 	<ul style="list-style-type: none"> ● Color combinations are great but if these colors 	<ul style="list-style-type: none"> ● Color combinations and 	<ul style="list-style-type: none"> ● Color combinations and color choices

		<p>color choices look very trendy and fashionable.</p> <ul style="list-style-type: none"> ● An intense color combination on coated medium viscose satin silk is very nice. However, we would like to recommend changing the black color to a dark indigo or dark blue color. 	<p>can be made slightly lighter than now, it will be more appropriate for fashion garments.</p>	<p>color choices are very nice and luxurious.</p> <ul style="list-style-type: none"> ● However, if these colors can change to be slightly brighter than now, it will be more appropriate for fashion garments. ● Also, one suggestion is designing one color pattern design but based on these pattern styles. 	<p>look very sophisticated and luxurious.</p>
	Texture images	<ul style="list-style-type: none"> ● Floral texture images are beautiful and these images are 	<ul style="list-style-type: none"> ● All floral texture designs are suitable for our company. 	<ul style="list-style-type: none"> ● Small scaled floral texture images look very delicate and these fine 	<ul style="list-style-type: none"> ● Small scaled floral texture images look good and these textured images

		<p>suitable for fashion garments.</p>		<p>texture images can be applied to design a jacket for women.</p>	<p>can be applied to design fashion products.</p>
	<p>Fabrics</p>	<ul style="list-style-type: none"> ● Designs printed on coated linen and cotton will be suitable for home-textiles such as cushions, curtains, table wear and bedding. ● Silk design samples could fit into fashion products like a scarf, a dress or a blouse. 	<ul style="list-style-type: none"> ● Designs printed on cottons will be suitable for T-shirts and silk design samples could fit as fashion products like a scarf or a dress. 	<ul style="list-style-type: none"> ● Designs printed on coated linen will be appropriate to the home wear market and both heavy and satin silk design samples could fit into fashion products like a shirt, a dress, a blouse and a scarf. 	<ul style="list-style-type: none"> ● Designs printed on coated linen will be appropriate for interior designs and satin silk design samples could fit into fashion products like a scarf or a dress. As a matter of fact, it will be possible to print on cashmere.

<p style="text-align: center;">Commercial values</p>	<ul style="list-style-type: none"> ● The design samples are successfully commercialized for the fashion industry. ● We are definitely sure these designs are all suitable for the fashion market. 	<ul style="list-style-type: none"> ● The design samples have commercial value to go into the fashion industry. ● But the main issue will be cost of the products. 	<ul style="list-style-type: none"> ● The design samples are successfully commercialized to go into the fashion industry. ● Particularly, silk designs could fit into the high street fashion market and linen and cotton designs should be suitable for the luxury high end home-textiles market. 	<ul style="list-style-type: none"> ● The design samples are effectively commercialized to go into fashion industry. ● Also, we think the design tool will have a big commercial value in fashion industry for fashion designers. 	
	<p style="text-align: center;">Suitable fashion products and brands</p>	<p style="text-align: center;">Fashion products</p>	<ul style="list-style-type: none"> ● Home-textiles: table wear, beddings, cushions and curtains. ● Fashion garments: 	<ul style="list-style-type: none"> ● Home-textiles for interiors ● Fashion garments and accessories: dresses, T-shirts and scarves 	<ul style="list-style-type: none"> ● Home-textiles for interior designs ● Fashion garments and accessories: dresses, shirts,

		dresses, blouses and scarves for women's wear, rain coats for children's wear.		blouses and scarves	
	Fashion brands	<ul style="list-style-type: none"> ● Fashion brands: M&S, Monsoon, Top shop and John Lewis. ● Home-textiles: Laura Ashley and Zara home wear. 	<ul style="list-style-type: none"> ● M&S and Monsoon 	<ul style="list-style-type: none"> ● Jonathan Saunders 	<ul style="list-style-type: none"> ● Fashion brands: Zara and Monsoon ● Home-textiles: Laura Ashley and Pierre Frey
Adoption of cultural values into main stream of fashion	<ul style="list-style-type: none"> ● A lot of cases are out there. Especially, high-end fashion designer brands are influenced by eastern cultural textile products and it is still an ongoing process. 	<ul style="list-style-type: none"> ● Probably, there are many cases. Because cultural factors could be a great value-added factor to provide differentiation in the fashion industry. ● Particularly, this process has happened 	<ul style="list-style-type: none"> ● Generally, cultural values come into fashion trends and then each fashion brand interprets the main fashion trend to match their brand image. 	<ul style="list-style-type: none"> ● Nowadays, cultural values are getting important in general fashion trend and most inspirations come from Asia. 	

		<p>in the high-end fashion markets more frequently.</p>		
<p>Other opinions</p>	<ul style="list-style-type: none"> ● For a successful translation into the fashion industry, using a modern way of manufacturing may be necessary. ● Probably, the traditional way of Korean bojagi products will have some limitations. First of all, a hand-made system will raise the cost of the products and also being time consuming will be an issue. Secondly, consistency of quality of the products and thirdly, it may be hard to control the weight of the products. 	<ul style="list-style-type: none"> ● Our main issue is the price of the product. So if we will buy and use these designs to produce fashion products, we might not be able to keep the cultural meanings of these patterns. But, you can find a relevant fashion brand in the high-end fashion market. ● One thing I would like to suggest for designing is using appliqué design to produce fashion bojagi 	<ul style="list-style-type: none"> ● Scaling is a big issue in the fashion design process. ● Depending on different scales of pattern designs they will go into different fashion styles. ● Also, combining printing and embroidery design could be useful for proposing a new fashion bojagi product. 	<ul style="list-style-type: none"> ● Scaling of the patterns will be a main issue to produce fashion bojagi products. ● Printing on cashmere is also one possibility to produce fashion products. ● Especially, the design tool is exactly what we need to design for printing on cashmere so we are very interested in that tool.

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Table 2 Summary of the findings from four interviews (Cohen & Wilks International, Next, Mother of Pearl and Hawick Cashmere)

Conclusion

This study developed models for the reinvention of traditional cultural products to meet the needs of contemporary target markets through aesthetic transformation into modern products. The focus of the study was about how to develop a new computer based design tool for translating traditional Korean bojagi's cultural aesthetics into design elements and to design fashion bojagi prototypes that meet the needs of the contemporary target markets.

Design reinvention begins with a cultural value, which is developed into a contemporary product within a popular cultural industry, and then undergoes some form of reinvention (modernization/contemporization or popularization/globalization), and is finally manufactured and commercialized (see Figure 1). The process of design reinvention for Korean traditional bojagi was proposed as shown in Figure 2. These models presented how the traditional Korean bojagi textile products could be translated to a modern popular product using modern technology to suit young consumers. For an efficient communication with target consumers, internet marketing through the development of an interactive web interface was employed. The web based design marketing tool can be utilized for understanding consumer preference, product development and the early promotion of Korean bojagi as a fashion fabric. The 'design your own bojagi' section was an interactive design tool which provided a choice of three pattern types, five color choices, and six texture image selections. The design elements were all derived from the traditional Korean bojagi textile products.

To evaluate designs produced using the Korean bojagi design tool, it was necessary that the fashion bojagi applications had to be examined by fashion industry experts who target global young consumers. The authors produced a Korean bojagi sample book, which included nine fashion bojagi pattern designs which were digitally printed on five different fabrics. These designs were produced by using the Korean bojagi design tool. Four fashion retail participants, ranging from high street to high end fashion markets, were interviewed to evaluate the fashion bojagi design samples. The findings from the interviews indicate that there is potential for a translation from the traditional Korean cultural textile products into contemporary fashion products. The industry experts from the four fashion retailers agreed that cultural factors are becoming more important in fashion trends and this could be a great value-added factor to produce differentiation. However, cost is very important for fashion suppliers and retailers and the move towards mass customisation has certainly had an effect. Also, scaling for repetition is a big issue in the fashion design process to generate different

pattern designs for appropriate fashion bojagi textile designs. The evaluation results of the Korean fashion bojagi applications by the four companies suggest that the design samples could be successfully commercialized for the young consumers market.

Limitations

As with all research, limitations must be considered and there will be many avenues in which future work can be carried out to discover more about the applications of the concept of design reinvention as an aspect of design management.

First, the Korean website including the design tool could only generate a restricted number of Korean bojagi designs. Therefore, putting on new patterns or texture images based on the traditional Korean bojagi designs could produce various options for designers and consumers to design fashion bojagi textiles.

Second, the applications of Korean bojagi designs were only illustrated as home-textiles and fashion garments for women's wear in this study and the evaluation is restricted to the UK. The illustrations used in the Korean fashion bojagi sample book may have constrained the imagination of the interviewees with regard to wider end-use possibilities. In the interview with Hawick Cashmere, they pointed out that if the file format for saving the new textile designs could be changed to a JPEG file format in the textile design tool, it will be a very useful design tool for fashion and textile designers. The tool and the designs themselves would be of interest to others in other parts of the globe based on the results of the study. Therefore, the research can be enlarged by applying these designs to different product types and also it could be conducted in other countries in the future.

Further research

Application of the concept of design reinvention to another country's cultural products and other product categories (industrial products, art works, toys and graphic designs such as typography) is potentially of considerable value to the design of commercially reinvented products. An understanding of this concept as a design marketing tool which will be a bridge among designers, marketers and technicians with close collaborations is potentially of great value across numerous subject fields in the future.

There are at least three categories for future research: Taking advantage of new opportunities which emerge within the creative industries to use and interpret the traditional heritage will be helpful to keep a balance between historical tradition, current needs and the benefit of future generations. Secondly, a potential future research study is the development

of a design marketing model for translating cultural factors through design elements. The effective translation model of the past into the present can be considered to not only bring traditional cultural references into modern product designs, but also could promote design elements (such as color, pattern, style, etc.) of different countries' cultures into marketing strategies. The third category for future research is the further development of the design tool by using digital technology for the global market. Design creativity using advanced digital technology brings new opportunities to designers and global consumers, which has huge potential for the consumer-led design market. For example, application designs for cultural products would be an educational and promotional marketing tool for a global society.

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