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An Application for Digital Apparel Design

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Araştırma Makalesi / Research Article

AN APPLICATION FOR DIGITAL APPAREL DESIGN

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ABSTRACT: Computer technology is utilized significantly in apparel design process. The use of computer technology makes it easier to create design variations as well as previewing in advance. This study aims to create digital fabric and apparel designs in accordance with the latest fashion trends inspired by the traditional "Cintemani" motif. This study is considered to be important since it aims to determine the process of creating fabric and apparel designs in digital media and also to use a traditional motif in today's fashion.

Keywords: Textile design, apparel design, digital apparel design, the cintemani motif.

DİJİTAL GİYSİ TASARIMINA YÖNELİK BİR UYGULAMA

ÖZET: Birçok işlemi kapsayan giysi tasarımı sürecinde, önemli ölçüde bilgisayar teknolojilerinden yararlanılmaktadır. Bilgisayar teknolojilerinin kullanılması tasarımın önceden görülmesinin yanısıra tasarım alternatiflerinin kolay oluşturulmasını sağlamaktadır. Bu çalışmada, geleneksel bir desen olan "çintemani" deseninden esinlenilerek günümüz moda eğilimleri doğrultusunda kumaş ve giysi tasarımları yapılması amaçlanmıştır. Çalışma hem dijital ortamda giysi tasarımı sürecinin belirlenmesi hem de geleneksel bir desenin günümüz modasında kullanılması açılarından önemli görülmektedir.

Anahtar Kelimeler: Tekstil tasarımı, giysi tasarımı, dijital giysi tasarımı, çintemani deseni.

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1. INTRODUCTION

Apparel design, which follows fashion trends and is formed around a theme, involves the stages of selecting colours, designing fabric motifs, arranging decorative materials and then finally: apparel design based on these selections. This process has been affected by utilizing computer technology. Therefore, specially created software programmes were developed for apparel design and are widely used today.

Apparel design begins with an idea or theme. The designer then selects the appropriate reference material for developing the idea, and combines it with imagination, layout, and colour sense to create the design [1]. Additionally the cultural reference of the society shows the idea or theme to the designer in terms of inspiration.

The best designs, influenced by traditional ideas, motifs, colours, and layouts, reflect new patterns and trends. These designs in turn significantly influence the international fashion. Textile designers today draw inspiration from a multitude of sources. The proliferation of exhibitions and published materials from all over the world make almost every culture and its artistic traditions easily accessible [1].

Ethnic designs are inspired by the traditional popular motifs associated with specific cultures or countries. These motifs include all forms of plants, flowers, birds, animals, human figures, scenic subjects, and geometric patterns. The treatment of ethnic designs varies from country to country and often highly stylized, sometimes in quite realistic, surprisingly sophisticated, or delightfully naïve formations [1].

Fashion designers need to present their collections, once designed, in a context that enables others to understand them. This usually means depicting the designs on a garment or an interior. This takes the designs to another level by putting them into a realistic environment and giving the collection a sense of place. Lately the industry has seen the arrival of a wealth of exciting new fashion illustration techniques, due partly to advances in digital technology [2].

Today, digital technology is accepted as one of the tools available to textile designers, and in some converters and design studios they have become an integral part of the design, colour, and repeat process. While welcoming the labour –and time- saving advantages provided by computer software, they also consider the computer's limitations, and emphasize that designers must have an understanding of traditional textile design aesthetics and hand painting methods [1]. Consequently, digital technology is changing the face of textile design, from methods of creating and presenting design to the ways in which they are realized [2].

Digital fashion, historically, has always been integral for fashion, but over time it has become a more prominent and relevant part of the fashion language. Not surprisingly, it is technology that has enabled the gradual development and ubiquity of print applied to apparel. Furthermore digital fashion print is intended to help the designer who can think laterally, using a non-linear and modular structure [3].

Imaging digital apparel design programs manipulate the data using screen pixels. The programs are used for idea generation, storyboards, illustration and many forms of apparel design. The software can offer much greater integration between fabric and apparel design, offering new possibilities to the designer. A new generation of designers is emerging from the colleges, and many of them feel comfortable with this technology, which they will undoubtedly increase the momentum of its application [4].

Software programs of digital apparel design that work in very high resolution are now available. They produce high-quality line output and photographic images. Today, fashion retailers demand a fast response; the advantages of modifying drawings and printing them with variations of colour and pattern are therefore obvious. Retailers make many decisions from virtual fabrics and virtual garments created by 2D and 3D textile and drape programs. Woven, knitted or printed fabrics can be realized on screen and printed by inkjet printers onto fabrics for instant sampling. Collections can be visualized by mapping fabrics onto sketches and photographs, thus creating virtual models and reducing the amount of samples needed each season [4].

Computer-aided design systems developed for the use in fashion industry are usually in form of two different programs which complement each other. One of these programs operates by identification of the colours used in the collection, preparation of the models and fabric designs of collection and technical drawings. The other program operates by the construction of pattern, grading and marker preparation of collection [5]. Although there is a high cost of investing, the systems like Lectra, Gerber, Assyst may be the examples of the programs which are widely used in fashion industry only.

When the history of civilization is examined, many motifs belonging to the Turks are observed in apparel, wares used and architectural ornamentations. These motifs, which form the cultural wealth should openly be brought to an updated state and reinterpreted with lines consistent with today's fashion trends ready for transferral to future generations.

One of the traditional motifs of Turks with deep rooted history is the "Cintemani" motif. Coming from Central Asia, especially from Japan and China, to Europe and used widely in Turkish art. The Cintemani, which is a motif also called as "three spots", became a symbol of power. Thus it

was widely used in the clothing of the Sultans. In the Cintemani motif there are usually two adjacent circles with a third placed on top of the first two. This historical Cintemani motif is widely used in today's designs. The examples of the designs in which this motif is used, are given in Figure 1. However, its application in apparel design is limited.



Figure 1. Some examples of the Cintemani motif [6]

This study aims to create apparel designs in accordance with the latest fashion trends inspired by the traditional Cintemani motif. Fabric and apparel designs are created by using digital technology. This study is considered to be important since it aims to use a traditional motif in today's fashion and also to determine the process of creating apparel designs in digital media. As a result, a digital sample has been created which makes it possible to use traditional motifs with today's fashion trends.

2. THE THEME OF THE DIGITAL APPAREL DESIGN: THE CINTEMANI MOTIF

The Cintemani motif, which has three dots and striped design, is one of the significant motifs of the Ottoman court. This motif in the beginning emerged from Buddhist philosophy under the influence of ancient religion and customs but later was used by Turks who mixed it with animal skin patterns as a symbol of power. In the Ottoman period, this three dots and stripes design was named Peleng and it was very popular as the representation of power and royalty in Ottoman Art. In time, the Cintemani motif lost its meaning of power and royalty and became just a decorative design. Today it is favoured as one of the most popular traditional Turkish motifs [7].

Three circles composing the Cintemani motif are supposed to symbolize the three spiritual features of Buddha. It is also called the stamp of Timur Khan and can be found on the coins of the Timur period [8]. Consequently, the Cintemani, which originated in the Far East, was used in the Ottoman court especially in the underwear and caftans of the sultans and crown princes to symbolize power and fertility [9]. Furthermore, the Cintemani motif has also found a wider use in the decoration of woven fabrics for example; caftans, cloths, silk brocades, quilted turban covers, carpets and tiles rather than in the art of illumination [8].

The three circles drawn are similar to the spots on a leopard skin and the two wavy lines are similar to those of a tiger skin. That is the reason why it is extensively used in the decorating the caftans of the Ottoman Sultans and their

sons. Therefore, the Ottoman artists considered this motif to be a symbol of strength, power and sovereignty [8].

Topkapı Palace was a royal residence for the Ottoman Sultans and which has now been turned into a museum containing a large collection of royal period textiles. As analyzed as a system of apparel it was found that a woven pattern, called the Cintemani motif, which would become the decoder for this nameless system. Besides emphasizing the Cintemani motif as a conglomeration of many different societies and belief systems, it also shows the highly important role of textiles in Ottoman society. A role that determined who one was, where they came from, their social station, occupation, lineage, and wealth [10].

The caftan of Sultan İbrahim 1st has crescent moons integrated in the Cintemani motif, showing a very high conceptual quality. On this caftan, the group of three spheres is replaced with the crescents, forming in turn the Cintemani design [11].



Figure 2. The caftan of Sultan İbrahim 1st [11]

The cloud motif, which has a very important place in Turkish decorative arts, had probably originated from China [8]. It is also called the Chinese cloud as its origin goes as far back as the Far East [9]. The cloud motif issuing from the nose or mouth of an animal in Chinese miniatures represents the form taken by the hot air breathed out from animal lungs. This motif, in the hand of Turkish artists takes the form of a natural cloud with a realistic view [8]. There have been times when the cloud motifs had been interpreted as symbolized figures of dragons, considered in the Chinese mythology to be the protector and ruler of skies [9].

In ancient Chinese arts, especially in miniatures, their subjects are usually taken from old legends. Similarly, decorative motifs are imaginary in conformity with these legends. As a matter of fact the cloud motif used abundantly in Chinese works symbolizes the flame and steam blown out during the fight between the dragon and the mythological creature "Simurg". There are documents,

proving that this is the origin of the Chinese cloud motif [8].

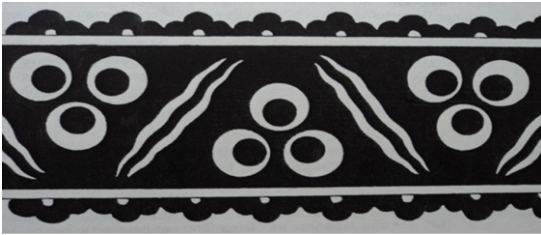


Figure 3. An example of the Cintemani and cloud motifs [12]

3. APPLICATIONS FOR DIGITAL APPAREL DESIGN

Graphic design programs could be examined in two groups which are bitmap-based and vector-based. While bitmap-based programs are composed of pixels, vector-based programs are composed of objects or shapes. Unlike bitmap-based graphics, vector-based graphics could be sized in accordance with any kind of resolution without compromising on quality. Adobe Illustrator program is a vector-based graphic design program. Consequently considering this program could be appropriate for digital apparel design; all drawings in the study were made in this program.

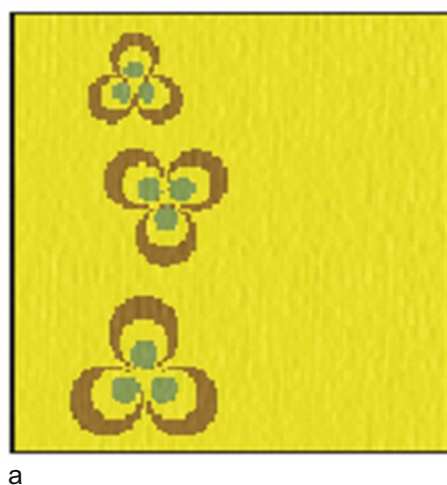
Urban Jungle is one of fashion trends of 2013. A sign of the times, the Urban Jungle reflects the need for a strong, daring, imposing, confident attitude to better integrate and confront the intense, everyday life of the city: effervescence, high performance, hectic rhythms and survival of the fittest. To

evolve everyday in urban environments, which slowly mutate into urban jungles, it has taken inspiration from the fantastic, primitive forest. Intense and wild, it symbolizes a thirst for survival and revives a dynamic, energizing primal force. This prints mimics and explores a rich Equatorial wildlife in luxurious camouflages or takes inspiration using graphic strength from indigenous traditions [13].

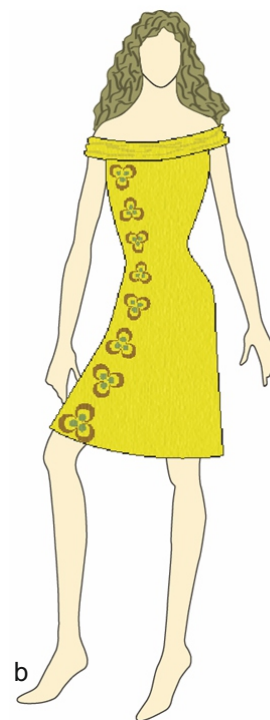


Figure 4. Fashion colour of 2013 [13]

In this study, with the use of a vector-based software application Adobe Illustrator, a digital fabric and apparel design were made. Primarily, fabric designs inspired by the Cintemani motif were made in consideration of fashion trends of 2013. Later silhouettes were drawn and apparels were designed in Adobe Illustrator. In the final phase the designed apparels were placed onto silhouettes in the program. In this study, the digital apparel designs created for the fashion industry are as follows.



a



b

Figure 5 a. Digital Fabric Design 1 b. Digital Apparel Design 1

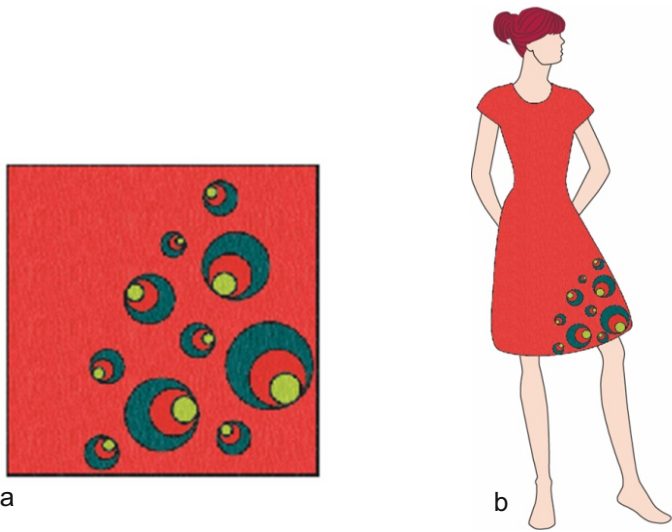


Figure 6. a. Digital Fabric Design 2 b. Digital Apparel Design 2

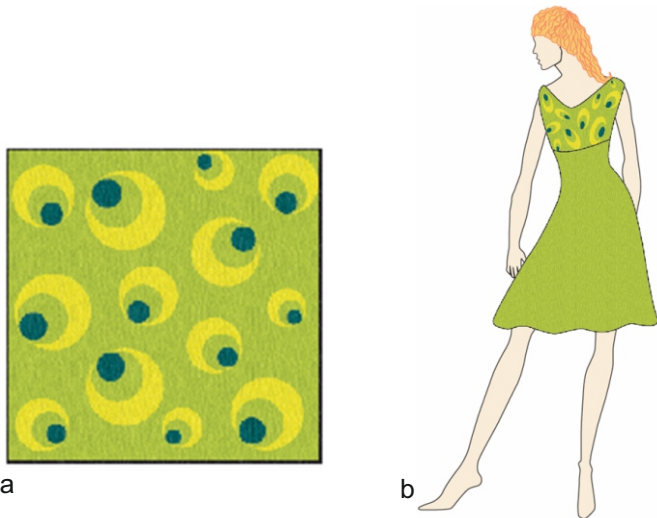


Figure 7. a. Digital Fabric Design 3 b. Digital Apparel Design 3

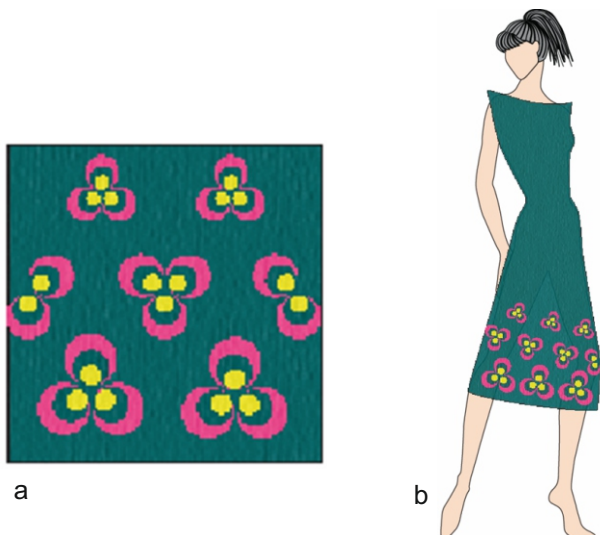


Figure 8. a. Digital Fabric Design 4 b. Digital Apparel Design 4

4. CONCLUSION AND RECOMMENDATIONS

Clothing is a cultural phenomenon, which holds an important position in human life. Many of cultural elements change in time and gain different characteristics. The human desire for variety requires contemporary reinterpretation of cultural elements. For this reason, in this study traditional Turkish motifs were used in the apparel designs with today's prevailing interpretations.

A digital apparel design application was implemented in this study with the aim to introduce the Cintemani motif to the fashion world and gear its interpretation according to today's fashion trends. The use of the Cintemani motif as a theme is considered to bring a novelty to the fashion industry. In the study the Cintemani motif was modified, fabric designs were formed and apparel designs were made in consideration of contemporary fashion trends.

In view of the applications done in the study, use of traditional motifs possessing cultural traits as themes in apparel designs, their manifestation in global dimensions and wide spreading of such apparel designs may be advisable. While digital apparel applications are being done it is possible to render them visually, so designs can be made much faster, and aesthetic imagery can be obtained in order that fabric and apparel alternatives may be developed later.

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