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Stylization of Ukrainian Ornaments in Modern Knitted Products

Stiliziranje ukrajinskih ornamentov v sodobnih pletenih izdelkih

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Abstract

In order to incorporate national artistic heritage into the modern design and engineering of knitwear, the basic principles of the structural construction of Ukrainian folk art ornaments have been identified via a comprehensive study. The conducted research reveals the advantages of various ornaments acting as an influential factor on the perception of artistically expressive jersey clothing. Recommendations have been provided regarding the use of certain features of the ornamental structure in the process of modern knitwear creation in order to achieve the optimal ratio of utilitarian and aesthetic functions of clothing. The article evidences the fact that the peculiarities of the structural construction of any ornament influences the perception of artistically expressive items of women's knitwear. The work emphasizes the importance of the shape, plasticity of lines and amounts that determine the diversity and originality of silhouettes and the structural construction of products. The authors studied the sources of creativity, information about their major characteristics and provided research of the historical facts concerning the style of art and architecture of different regions of Ukraine. Basic ornaments that are typical of a particular region were transformed into patterns that were applicable for the production of knitwear. The authors proposed to use methanite in combination with other kinds of yarn to create the background for the stylized folk ornaments on the pieces of knitted clothing. They have proven that knitwear is becoming increasingly popular in the interior decoration of living spaces, in particular in the creation of decorative products made in "patchwork" style. The practical value of the research is in the identification of the main characteristics of the studied source for the production of a new collection. The obtained results may be used in the design of women's outerwear collections.

Keywords: clothes, ornaments, embroidery, arts and crafts, Ukrainian national products.

Izveček

Za uporabo narodne umetniške dediščine v sodobnem oblikovanju in inženiringu pletenin na podlagi celovitega pristopa so bila opredeljena osnovna načela strukturne kompozicije ornamentov uporabne umetnosti v okviru ukrajinske ljudske umetnosti. Izvedena raziskava razkriva prednosti različnih ornamentov kot odločilnega vplivnega dejavnika na dojetje umetniško ekspresivnih pletenih oblačil. Podana so priporočila za uporabo nekaterih značilnosti strukturne

kompozicije ornamentov pri ustvarjanju sodobnih pletenin, da bi dosegli optimalno razmerje med uporabno in estetsko funkcijo oblačil. Članek dokazuje, da strukturne posebnosti katerega koli ornamenta vplivajo na dožemanje umetniško ekspresivnih ženskih pletenin. Delo poudarja pomen oblike, plastičnosti linij in količin, ki določajo raznolikost in izvornost silhuet in strukturne zgradbe izdelkov. Avtorji so proučevali vire ustvarjalnosti in informacije o njihovih glavnih značilnostih ter raziskovali zgodovinska dejstva o slogu umetnosti in arhitekture različnih regij Ukrajine. Osnovni ornament, značilni za posamezno regijo, so se preoblikovali v vzorce, uporabne za izdelavo pletenin. Avtorji so predlagali uporabo metalizirane preje v kombinaciji z drugimi vrstami preje za ustvarjanje ozadja stiliziranih ljudskih ornamentov na pletenih oblačilih. Dokazali so, da pletenine postajajo čedalje bolj priljubljene pri okraševanju bivalnih prostorov, predvsem pri ustvarjanju dekorativnih izdelkov v stilu krpank. Praktična vrednost raziskave so določene glavne značilnosti proučevanega vira za izdelavo nove kolekcije. Dobljeni rezultati so se uporabljali in se lahko še naprej uporabljajo pri oblikovanju kolekcij ženskih vrhnjih oblačil.

Ključne besede: oblačila, ornament, vezenine, umetnost in obrt, ukrajinski nacionalni izdelki

1 Introduction

The theory of ethnos studies the origin of ethnic processes and their consequences for a nation's development. The importance of ethnos is growing in the same way as the value of each person and their life within a spiritual and cultural social environment. Ethnos is a cultural and spiritual community of people related on the basis of origin, language, cultural heritage, territory of residence and certain conditions and state formations. Humanity is made up of ethnic groups living around the globe. Each ethnic group is self-sufficient, regardless of the level of their political, economic or cultural development.

At present, all states are multiethnic. The gradual dissolution of small ethnic groups within an indigenous ethnic group has become natural, and is thus associated with the dynamic development of economic and political life. However, there is growing awareness of the importance of preserving the values of the ethnic culture of "minor" peoples perceived as the reminiscence of each ethnic group's history. Some scholars search for the origins of a cultural process and, accordingly, the peoples' cultural phenomenon, and actually forget about the derivation of the term 'original' itself, which is closely connected to 'native', i.e. the one that can be distinguished among others [1]. Folk art traditions contain one of the factors that determine national and ethnic culture. The higher the level of social development and technological progress, the faster and more irrevocably folk art disappears from everyday life. This fact was facilitated by the development of production, printing services and especially the media, including television. For example, nowadays in Ukraine the national folk traditions have been actively replaced by Western models of downscale mass culture.

Ukrainian folk arts and crafts gained a wide recognition both in the country and abroad. Their old, dynamic ornaments contain symbols of mysterious, enchanting nature, complex squalls of our history, peculiarities of lifestyle, as well as the kindness and generosity the Ukrainian people's soul [2].

Folk arts and crafts exist on the basis of hereditary traditions and develop in historical sequence as a collective artistic activity. This phenomenon is closely connected to the historical past. It never breaks the chain of traditions that are passed down from one generation to another, but is enriched with new elements.

Artistic craftwork is considered to be one of the historically determined organizational forms of folk arts and crafts, and implies the manufacturing of works of art with the use of creative handiwork. Today, decorative and applied art is viewed as an important artistic value that performs numerous cognitive, communicative and aesthetic functions. Life proves that arts and crafts are enriched with new aspects of philosophical and aesthetic features; a man is in need of beauty; therefore, arts and crafts' cultural and artistic value are gaining more importance nowadays [2].

Arts and crafts include numerous types of human artistic practice connected both to material and spiritual worlds such as weaving, painting, embroidery, carving, and turning. Some of them emerged at the dawn of human civilization: i.e. ceramics, bone and stone carving and weaving, while others such as lace making, tapestry, bead weaving and paper cuttings appeared much later [3].

In the design process nowadays, it is possible to actively exploit the achievements and principles of decorative art, which, in combination with rational approaches, can lead to a significant outcome. Design associated with arts and crafts has been perceived as

a broader field of art since its emergence, focusing on machine production.

1.1 Types of arts and crafts

The name *arts and crafts* comes from the Latin term '*decoro*' (literal translation: I decorate something). It is considered as one of the types of plastic arts, a specific form of artistic activity in the field of creating artistic products that have practical significance in everyday life and are distinguished by decorative imagery (dishes, furniture, fabrics, clothing, toys, etc.) [2].

Lozko G. [2] not only significantly expanded the range of ethnographic problems, but also studied the mythology of the Ukrainian people, state symbols, and sacred animals. In her work, Larysa Kostyuk noted that works of decorative and applied art, being under the influence of the spiritual content of time and being associated with spiritual culture, reflect the field of art culture and form an aesthetic and artistic environment in human life [3]. Tishchenko [4] researched the history of decorative applied art and outlined the time course of decorative art during its historical development. Rybiy [5] studied the folk arts and crafts of the Kharkiv province - carpet weaving, embroidery, Easter painting and development trends during the second half of the nineteenth - early twentieth century. In the work of Guseva [6], the importance of decorative and applied art is considered and the important role of decorative and applied art in the formation of the creative personality of the designer is emphasized. The article [7] deals with the creation of ornamental motifs in textile material incorporating various techniques, which is a common process of decorating clothes and interiors for Ukrainians.

Decorative art is one of the oldest branches of human artistic activity, as humans have been accustomed to decorating all surrounding objects since ancient times. The surroundings should be comfortable, practical and beautiful. Each item must be expressive in general: in design, proportions and details as well as in the process of its creation. Whatever a person wishes to do, whether it is to paint a pot, decorate a board with carvings, make a lace napkin, or weave patterns on fabric, everything requires some skill. Practical usage and beauty are always close traits in the work of artists. In order to create exceptional household items made from various materials (wood, metal, glass, clay, stone, fabric;), the practical use of the object and its beauty are most important

considerations for the artist. However, works of art not only demonstrate the aesthetic taste and the artist's imagination. Although today, such items are manufactured by the enterprises pertaining to the art industry, they retain national characteristics (Figure 1).

The field of arts and crafts drew attention of famous designers, sculptors, and painters such as M. Vrubel (ceramics), K. Somov (porcelain sculptures), and O. Polienova (wood carving and painting), M. Roerich and S. Malyutin (who developed extraordinary samples of tiles) [3].

Weaving is one of the oldest and most important elements of Ukraine's national culture. Decorative weaving implies the manual production manufacturing with the use of a loom. The process of weaving combines preparation of raw materials, spinning of threads, manufacture of fabrics and subsequent processing: bleaching, dyeing, piling, printing, etc.

Carpet weaving has been known since ancient times and has its history. It used to be widely spread in the East, in ancient Rome and in Kyivan Rus. Carpets are unique works of art revealing high technical skills of their manufacture; they are rich in ornaments, compositional elements and colors.

Embroidery is the most common type of folk arts and crafts; it involves creating ornamental or plot images on fabrics and leather by means of various handmade or machine seams.

Knitting is a popular type of art that involves the manufacturing of a one-piece fabric or individual products.

Lace is one of the popular types of folk decorative art; open-knit, cellular, decorative products with the use of linen, silk, cotton, metal and other threads can be made of it. Lace is used to decorate clothes and interior fabrics.

Beating, painting (embossing, printing press, drawing, haze, cymbal) are fabrics with patterns applied to them with carved boards (forms, seals, stamps); it is a type of fabric decoration that allows an ornament to be applied upon the ready-made fabric; it can be printed, but not in the process of weaving itself. The phenomenon is often called a *folk graphic* by the researchers.

Decorative leather finishing is a kind of decorative and applied art characterized by the use of specific methods of shaping and designing of various types of household items such as shoes and clothes. The main material applied for this craft is genuine leather, but since the twentieth century, it has been substituted by artificial textiles.

Ceramics: humans began to use clay as the first plastic and relatively solid material for the manufacture of utensils and magical ritual figures.

Weaving is a type of craft used in the manufacture of household and decorative products that can be made from a variety of elastic raw materials.

Artistic weaving is a kind of decorative and applied art; it refers to the process of making works of art and products from natural plant materials. Wickerwork has been known since ancient times; during that period weaving was used to make containers for storing grain.

Easter painting is a process characterized by exquisite symbolic ornamental motifs of geometric, floral, anthropomorphic styles, which are structurally applied onto the spherical shape of an egg.

‘Vytynanka’ is another type of art that refers to creating decorations made of paper. The ornament of traditional patterns in this case is geometric and floral;

figures made of paper can be anthropomorphic or zoomorphic [2].

Many people associate Ukrainian national clothes with an embroidered shirt, wide Cossack trousers, red boots, women’s wreaths of bright flowers and colorful ribbons. Although all of these elements are indeed characteristic of traditional clothing, Ukrainian folk costumes and Ukrainian products of applied art are much more complex and multifaceted. They combine the originality of the Slavic culture, exotic images of the East and exquisite elegance. The main details of national products were invented before the formation of Kyivan Rus, changed over time, and had completed their formation by 18th century.

Despite the fact that the basic elements of national clothing and products are the same throughout Ukraine, the differences are inherent in almost every region. Climatic and ethnic peculiarities of each region as well as particular traditions have influenced the



a)



b)



c)

Figure 1: Types of arts and crafts: a) weaving [8], b) easter painting [9] c) embroidery [10]

manufacture of various products of arts and crafts and clothing with nuances in the silhouette, cut, color, style of wearing, symbolism and originality of ornaments [1].

1.2 Techniques of certain types of arts and crafts

Weaving is one of the most significant types of arts and crafts that has analogies with the culture of different nation. It is associated with ethnic contacts, and is one of the most common showcases of the development of the Slavic peoples' arts and craft; it is considered a classic form of Ukrainian folk art that reveals rich treasures, and the creativity and artistic skills of the Ukrainian people. The use of new types of raw materials in the process of weaving has enabled new masters to arise in the creative field, and at the same time has changed the customary aesthetic qualities of the fabric in terms of its structure, texture and color. The sheerness and uniformity of yarn spinning makes homespun products lighter, softer, and more elastic, but takes away the originality of the natural beauty that is inherent to home-made yarn products [11].

At the end of the 19th and the beginning of 20th century, a horizontal loom was introduced in the process of weaving. In order to achieve high tenacity and pilling resistance of the warp, the sizing process was introduced before weaving [12].

A simple canvas was made using the technique of linen weaving; by pressing on two steps in sequence, i.e. two straps. Depending on the purpose of the fabrics, the number of loom straps could range between four and eight for the technique of *twill weaving* (plain, cross or braided fabric), but could reach up to 20 or more for *jacquard weaving*. There existed a great variety of ornamental motifs. The so-called technique of picked weaving was applied in the process of manufacturing decorative fabrics, as well as some items of clothing, pillowcases, towels and tablecloths. In such fabrics, the pattern has always projected above the surface. In western regions, the so-called *shirred weaving* (used in carpet manufacturing) was widespread, and in the Boikivshchyna and Lemkivshchyna regions, pile weaving (with the use of sticks, curls) was of primary importance [12].

With the development of light industry, the need for domestic fabric manufacturing disappeared, but the traditions of decorative weaving are still closely followed.

Easter painting faced local bans in the early 20th century. Each region has its own traditions of such type of painting. There are the Easter eggs of the Dnieper, Slobozhanshchina, Polissya, Podillya, Boikivshchyna, Hutsulshchyna, Lemkivshchyna and other regions [13]. In Slobozhanshchyna and Pokutka, *krapanky* are widely spread, while in Boykivshchyna and Lemkivshchyna, the so-called pinned eggs and *krapanky* are found. *Hutsul pysankas*, which are made with a scribe with a cone-shaped tube at its end, can be characterized by the most filigree ornamental motifs [14].

Easter eggs were typically made in spring, before Easter, by village girls and women, monastery monks and icon painters, young ladies and bakers. Therefore, the decoration techniques differed. In the countryside, eggs were painted in one color; sometimes they featured scratched patterns or they were ornamented with wax and painted in several colors. In cities, artificial techniques were implemented and eggs could be labeled with pieces of colored paper, foil, fabric or threads. People usually made Easter eggs for themselves, but occasionally also for sale at fairs [15].

Embroidery: Satin stitch is double-sided embroidery. *Straight and canted* types of this style are known in Ukraine. With the use of this technique, large canvases of fabrics can be covered with straight or canted stitches. In the Kyiv, Poltava and Chernihiv regions, the method is called a *plat band*, and in the Lviv region it is called *laying out*. Shirt tails and sleeve ends were embroidered using this technique [16].

Stem seam: For this technique, a stitch is applied from the front side, and then from the reverse side, from the right side to the left side, a certain number of threads is cast on and the needle is taken out on the front side, in the middle of the first stitch. All front stitches are applied from the left to the right, and reverse ones – to the left. This seam can be used to create straight or canted lines, as well as to outline the main ornamental elements. This seam was widely used in embroidery of the 17th and 18th centuries. In the Dnipropetrovsk region, this seam was called a *stalk or stalklet*, and in the Transcarpathian region – *stebnivka or stalklet*. In the Drohobych region it was processed as *lace*, and in the Hutsul region as *stitching*.

Bilateral embroidery techniques include: punching, cutting, trimming, netting, scarring. These techniques were widespread throughout Ukraine,

especially in Kyiv, Poltava, Chernihiv, Cherkasy and Sumy [17].

Cutting: the technique consists of piercing a small hole with a needle or a wooden stick on the canvas, the surface around it is covered and acquires the shape of a circle, rhombus or square.

The cutting technique involves the warp and weft threads first being densely wrapped in the form of squares of different sizes, and then square holes are cut in the middle. They are then filled using the technique of double-sided decking or cross.

Openwork is transparent, light embroidery, which is performed only on the fabric of linen weave. In this technique, horizontal threads are pulled out, and the vertical ones are gathered into bundles and covered with threads [7].

Chatter or *embroidery with gold, silver and silk threads* is a type of arts and crafts and is the oldest way of decorating clothes, shoes and accessories. Today, chatter is used by modern designers in the making of dresses and skirts, shirts, sweaters, and vests. The study of the technological design process of modern knitted clothing based on the transfer and transformation of Ukrainian ornaments from bright threads to fabrics of different weaves is promising for expanding and updating the modern range of products and creating new collections of clothes. Chatter originated in the East, and later this art spread throughout Siberia, the Caucasus, the Volga region, Asia and Europe [3].

To design a modern folk style costume and to transfer transformations of folk embroidery into the framework of knitwear, the range of colors, ornaments, and the location of embroidery on the products of a selected region were analyzed.

In the process of embroidering in the central part of Ukraine (Southern region of Chernihiv, Poltava, Kharkiv, Kyiv, Northern regions of Dnipropetrovsk and Kherson), red and blue colors are used, often in combination with black. The red color is associated with the invigorating energy of the sun, love and joy of the earth. Black symbolizes soil fertility, which provides yield and abundance. The embroidery color scheme of Poltava costumes and shirts was enriched through the use of gray, blue, blue, green and brown colored threads. Accordingly, researchers believe that blue symbolizes cold and water. As for the green color, it symbolizes growth, development and desire to live. Brown is identified with sown land, and gray - with balance and the accomplishment of desires [18].

2 Materials and methods

In conducting the research of the types of arts and crafts, the authors used the methods of literary, visual and analytical analysis.

The reproduction of ornaments identical to the ornaments of traditional Ukrainian products of decorative and applied art was carried out by means of knitting. The following techniques were used to design knitwear products: weft knit, jacquard weave, tuckstitch two-colour Jacquard stitch and rib stitch. Designed knitted fabrics can be used for the manufacture of women's clothing and interior items. The ornaments are arranged in accordance with the traditions of Ukrainian folk products. All knitted fabrics are made by means of the *Brother flat-bed machine, 5th and 6th class*, with the technological capabilities that provide an opportunity to create a pattern in a certain location on the product. Semi-woolen yarn was used as the raw material with the following content: wool 70% + acrylic 30% + metallized thread "methanite" 100%.

3 Results and discussion

The complex and multifaceted decorative and applied art of Ukraine makes up a huge layer of a developing national culture, honoring the traditions that pertain to it.

On the basis of a complex approach, key principles of ornamental structures within Ukraine's arts and crafts have been defined. The conducted research provides an opportunity to reveal the advantages of an ornament as a determining factor of influence on the perception of artistically expressive products.

It is a well-known fact that the ornament is rather a complex system composed of various elements, signs and symbols that interact with each other, creating a holistic energy image that is difficult to understand [11]. In general, the motifs of the ornament are so intricately intertwined that it may be impossible to represent the extensive ornamental heritage in terms of the nature of each single ornament.

The authors analyzed and structured the peculiarities of the ornament constructions of decorative and applied art objects. The results of the analysis are presented in Table 1.

The conducted analysis revealed that each region of Ukraine had its own characteristic ornaments.

Table 1: Analysis of ornamental structures in Ukraine's arts and crafts

Kinds of arts and crafts	Weaving	Carpeting	Embroidery	Carving	Pottery	Embossing
Type	pompous monumental floral motifs, plane, combinatory	gothic, floral, zoomorphic	endowed with sense	floral, zoomorphic, monumental, plane, combinatory	floral, geometric	zoomorphic, floral, fantastic, zoological
Shape/form	rectangle, decorated with traditional «vases» with birds and animals, diamond formations, story scenes	pompous and monumental floral motifs; rectangular, decorated with traditional «vases» with birds and animals, diamond formations, story scenes	pompous and monumental floral motifs; rectangular, decorated with traditional «vases» with birds and animals, diamond formations, story scenes	openwork, triangular, planar engraving, inlay, pyrography	spherical, disk-shaped	rhombus, triangular, quadrangular, circle
Colour	red, black, green, dark blue, yellow	red, black, green, dark blue, blue, orpiment, brown, pink	red, black, white, gray	Light and dark colors of wood, natural like (ranging from yellow to ash gray)	bright green, brown, yellow, white, green, dark-red	white, black, red and multicolor
Combinatory techniques	multiple repetition of motifs: figures with a uniform interval between them; placed one above another; a checkerboard pattern; located around the center of a pattern	multiple repetition of motifs: figures with a uniform interval between them; placed one above another; a checkerboard pattern; located around the center of a pattern	multiple repetition of motifs: figures, floral ornaments, similar interval between them	emphasizing of the natural beauty of wood	multiple repetition of motifs: similar interval between figures, uniform checkerboard order; figures are located around one another or one above another	multiple repetition of motifs: floral ornaments and intervals

Some of them use the same symbols, which differ only ornamentally.

Since ancient times, various ornaments have been used in the decoration of Easter eggs, which are considered one of the Easter symbols. In the past, Easter eggs were used as a precaution against natural disasters, fire, thunder and gossip. The methods of painting Easter eggs, their symbols and colors, differ not only within one region, but also from one city to another. Thus, Easter eggs in each region of Ukraine are special in their applied techniques and in their symbolism [19].

The inhabitants of Kherson, Zhytomyr, and Poltava are accustomed to producing ornaments symbolizing infinity. This ornament is a symbol of water, eternity and, at the same time, the flow of time. The cross, which is representative of one of the solar signs, is particular to the Odessa, Lutsk and Luhansk regions. It is a symbol of the Universe, the four corners of the world, four winds and four seasons. Residents of Kyiv and Cherkasy prefer the

ornament of Svarga (swastika), which symbolizes goodness and protection against wicked power [20].

Easter eggs of Ivano-Frankivsk, Kharkiv, Dnipropetrovsk and Chernihiv are characterized by a flower pattern that symbolizes joy, beauty and children. Simferopol uses the ornament of the sun, which is a symbol of unity and world order. It is also a symbol of a clear and sober judgment and justice. The ornament of three horns, which means “one of the most ancient”, has been found in Mykolaiv. Residents of Uzhgorod use the S-shaped ornament, which symbolizes eternity and is representative of the unity of opposites that is fundamental for the existence of the world.

Rivne is characterized by the ornament of forty wedges symbolizing a successful household, well-being and human virtues. In Lviv and Kharkiv, a branch or grain are peculiar symbols pertaining to the Lviv and Kharkiv regions. They are associated with fertility and early spring sprouts and are symbols

of endless life. Easter eggs of the Vinnytsia region can be decorated with the God's hand symbol that refers to power, patronage and integrity, or in other words, everything relating to the respect for hands. Inhabitants of the Zaporizhzhia region paint oak leaves while decorating Easter eggs. They symbolize masculine strength and power. In Sumy and Donetsk, such eggs are decorated with a comb like ornament symbolizing the rain, harvest and prosperity [21].

The ornaments, typical of a particular region, were transformed into patterns for knitwear production. As an example, Figure 2 presents the stages of developing a pattern for knitwear production, which was then used to create a map of Ukraine as an element of an Easter egg ("Pysanka") decoration. In this case, it is a pattern of the Vinnytsia region boundaries (Figure 2a). This region corresponds to the ornament shown in Figure 2b. This ornament has been transformed into a cartridge pattern by artistic means (Figure 2c).

A two-colour Jacquard stitch was used for the pattern. The pattern cartridge was installed and

stored in the memory card by the medium of specialized software and the PPD-120 device [22] (Figure 2d). The knitted fabric with the pattern was manufactured by means of a *Brother 6 class flat-bed machine* (Figure 2e). Similarly, knitwear was decorated with the patterns that are inherent to each region of Ukraine.

According to the shape of every single region, knitted map elements were produced. As a result of the project, a large decorative Easter egg decorated with knitwear was created, in order to be presented at the 7th All-Ukrainian Easter Egg Festival 2017, organized by "Folk Ukraine". The festival was held in Sofiyivska and Mykhailivska Squares on 8-23 April. It is considered an exhibition of national art craftworks that takes place in the capital city, although it travels all the year round throughout Ukraine and abroad [23].

The decorative product "*Pysanka (Easter Egg)*" ornamented with Ukraine's map made of "patchwork" style knitted elements (Figure 3) was presented there.

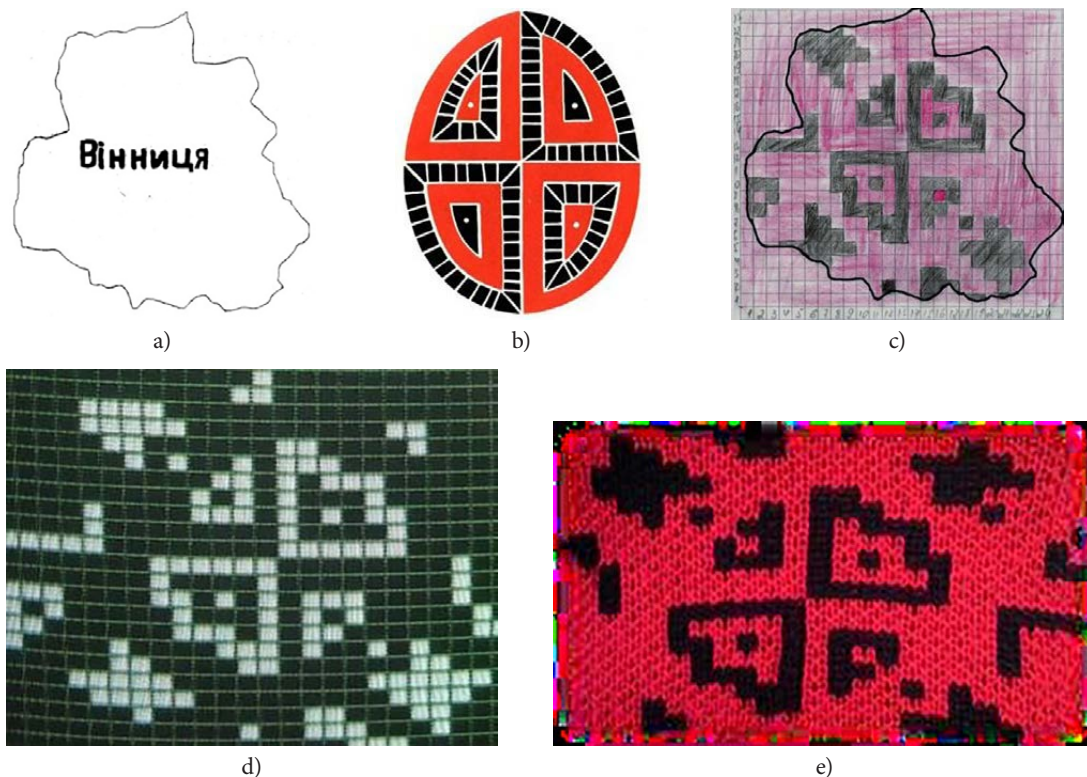


Figure 2: Stages of development of structures and technologies for creating the decorative product "Pysanka" (Easter egg) [24]: a) boundaries of the Vinnytsya region, b) the ornament stylized in for creating pysankas (Easter eggs), c) transformed ornament cartridge pattern d) element of ornament designing program, e) knitwear sample with a color ornamental composition projected by a programming tool



Figure 3: “Pysanka” (Easter egg) decorative product ornamented with knitted fabric elements to be presented at the 7th All-Ukrainian Easter Egg Festival 2017, Sofiyivska Square, Kyiv [24]

3.1 Stylized ornament in the process of manufacturing Ukrainian products

The creative use of national artistic heritage leads to the designing of new forms of clothing. It should be noted that modern clothing design focuses on the creative interpretation of folk clothing. At the same

time, the folk decorative designs are used in weaving in general; carpet weaving, embroidery and painting (Figure 4).

In Kyivan Rus, chatter has been known since the 9th century. Threads for gold and silver sewing were made of gold and silver, flattened into thin plates and cut into narrow stripes. A metalized thread for quilting in Ukraine was called *kanitel* or *sukhozlitka* and looked like a piece of a thin wire. Gold quilting was used to decorate church utensils, uniforms and festive clothing.

The authors studied peculiarities of gold and silver threads usage in folk embroidery, carpet weaving, and weaving in the regions of Ukraine to develop a collection of knitted clothing. The information is presented in Table 2.

Gradually, instead of gold and silver threads, a gilded thread was used. It was then subsequently substituted by an artificial one of various colors. The thread made of a thin film (coating), covered with a thin layer of metal was named “Lurex” in honor of the “Lurex” company, a manufacturer of nylon and polyester Lurex yarn. Brass, copper or aluminum foil can be used for the manufacture of the latter.

Therefore, the authors proposed to produce a collection (Figure 5) of knitwear based on two-color Jacquard stitch or rib stitch, using methanite in combination with another type of yarn to create the background and stylized folk ornaments on knitwear pieces (Figure 6).



Figure 4: Design solutions based on the use of folk ornamental decorative elements: a) Valentino collection, spring-summer 2015[25], b) Moncler Gamme Rouge collection, autumn-winter 2016 [26]

Table 2: Types of arts and crafts using gold and silver threads in different regions of Ukraine

№	Types of arts and crafts	Regions applying gold and silver threads
1.	Embroidery	Ternopil, Kyiv, Zhytomyr, Rivne, Volyn, Poltava, Lviv, Bukovyna
2.	Carpet weaving	Poltava, Kyiv, Podillya, Transcarpathian, Chernihiv, Lviv, Bukovyna
3.	Weaving	Polissya, Sumy, Chernihiv, Hutsul, Ivano-Frankivsk, Podillya, Dnieper, Bukovyna, Volyn, Poltava



Figure 5: Knitwear collection produced with the use of stylized folk ornaments. Author: N. Starovoitova, 1980s [27]



Figure 6: Sketch of the author’s collection and samples of knitted jacquard weave [27]: a) collection model, b) ornaments of the author’s collection, c) stylized ornaments based upon modern transformations

4 Conclusion

The results of the conducted analysis revealed that each region of Ukraine had its own ornament. The authors found that some regions used the same symbols that differ only ornamentally.

The article focuses on the fact that the use of characteristic ornamental motifs is proven by the desire to achieve the greatest artistic expression in arts and crafts design solutions. The work emphasizes the importance of the shape, plasticity and amounts of lines, which determine the diversity and originality of silhouettes and structural construction of products.

The authors provide recommendations for the use of certain features in the structural construction of ornaments in the development of modern women's knitwear in order to achieve the optimal ratio of utilitarian and aesthetic functions.

The article demonstrates that the peculiarities of the structural construction of any ornament influences the perception of artistically expressive women's knitwear.

The authors present the results of the study based upon the peculiarities of folk embroidery, ornamental motifs of embroidery patterns and their location. They carried out the analysis and grouped the main characteristic symbols of ornaments than can be used to decorate clothes designed for various purposes. The obtained results provide an opportunity to highlight national features of certain types of clothing that bring about creative ideas and innovations in the process of designing new models.

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