



SCHOOL OF GRADUATE STUDIES

“DESIGN” Department

Doctoral Program "DESIGN"

**PATTERNMAKING AND DRAPING
IN FASHION DESIGN**

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ABSTRACT

Of a Dissertation for the award of educational and scientific degree "DOCTOR"

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The dissertation contains: introduction, six chapters, conclusion, reference to the contributions and applicability of the results, bibliography and has a total volume of 230 pages and includes a total of 96 figures containing images, tables and drawings supporting the theoretical study.

The dissertation was discussed and proposed for defense by the Board of the Department of Design at the Meeting..... and is directed for defense by the Board of the Master Faculty, New Bulgarian University, Sofia.

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CONTENTS

INTRODUCTION

- Relevance of the topic
- Terminological apparatus
- Object and subject of the study
- Main research thesis
- Aims and objectives
- Methodology
- Contributions

1. CHAPTER I - FASHION COLLECTION - DESIGN PROCESS

1.1 Defining the term "fashion collection"

1.1.1 Haute couture

1.1.2 Confection / prêt-a-porter

1.1.2.1 Pre-season collections

1.1.2.2 Capsule collection

1.1.2.3 Conceptual collection

1.1.2.4 Wearable Art - Artwear

1.2 Target, price class selection, design - process planning, fashion calendar

1.3 Stages in the realization of a fashion collection

1.3.1 Researching for inspiration for a fashion collection and formulating a theme

1.3.2 Research on materials, new trends in textiles and technologies in production

1.3.3 Design research, making of a moodboard and collection planning

1.3.4 Creative process and the role of patternmaking

1.3.5 Preparation for production

1.4 Conclusions

2. CHAPTER II - THE FLAT PATTERN IN FASHION DESIGN

2.1 The necessity of creating a database of basic blocks with corresponding anthropometric measurements

2.2 Function

3. CHAPTER III – DRAPING/ MOULAGE

- 3.1 Essence of the term "draping"
- 3.2 Tools for creating patterns/clothes using the draping technique
- 3.3 The professional dress form and fashion design
- 3.4 Draping in fashion design
 - 3.4.1 Preparation of the dress form
 - 3.4.2 Create basic cuts using the draping method
 - 3.4.2.1 Bodice foundation
 - 3.4.2.2 Skirt foundation
 - 3.4.2.3 Trousers foundation
- 3.5 Creative draping - Creating design models through different techniques of draping
- 3.6 Conclusions

4. CHAPTER IV - FROM IDEA TO CLOTHING CONSTRUCTION - CREATIVE PROCESS

The construction in the stages of the creative process, according to the individual approach to turning the idea into a product

- 4.1 Fashion sketch
- 4.2 Construction / pattern
- 4.3 Shape
- 4.4 Stereotypical silhouette
- 4.5 Draping
- 4.6 Experiments and paper draping
- 4.7 Fabric
- 4.8 Trial and error
- 4.9 Mix of techniques
- 4.10 Conclusions

5. CHAPTER V - POPULAR PATTERNMAKING SYSTEMS - COMPARISON

- 5.1 *ESMOD* patternmaking system
- 5.2 *M. Müller & Sohn* patternmaking system
- 5.3 Drafting a basic bodice on both systems with minimum ease allowances
- 5.4 Measurements required to create bodice by both methods
- 5.5 Comparison of the obtained basic dimensions after drawing the bodices

5.6 Comparison of sewn bodices and adjustments suggestion

5.6.1 *MÜLLER* bodice

5.6.2 *ESMOD* bodice

5.7 Conclusions

5.7.1 *MÜLLER* bodice

5.7.2 *ESMOD* bodice

5.8 Development of a method for drafting a bodice based on the advantages of both systems

6. CHAPTER VI - EVOLUTION OF CONSTRUCTION

A practical-creative development that demonstrate the evolution of the construction / pattern in a capsule fashion collection of 8 garments

Conclusions

Contributions of the thesis

Bibliography

GENERAL CHARACTERISTICS OF THE DISSERTATION

- **RELEVANCE OF THE TOPIC**

Fashion as a cultural phenomenon, by definition, refers to the current trends and styles in clothing, accessories and other fashion elements that make up a person's attire that emerge, evolve and change over time. It is a reflection of pop-cultural influences, individual and collective taste and perceptions of beauty and style in a particular time period and social environment. Fashion is subject to continuous change, renewal and evolution, which accelerates in proportion to the growth of people's consumer behaviour. If in the past we could consider fashion styles and trends in periods spanning centuries, in the 20th century in decades, today the life cycle of some trends is reduced to a few months. Fashion is thus constantly changing, and *in the course of changing fashion trends, each fashion is relativized and reactualized. This constant movement ensures the "life cycle" of fashion and is a condition for its permanent vitality* (Blazheva, 2005, p. 19).

The functional use of clothing is primarily perceived to be protective, and this is the basis for characterizing it as a 'product'. However, a person's desire to express themselves through clothing, to demonstrate cultural and social belonging through their appearance and to look beautiful upgrades its function from 'simple' to 'complex'. It becomes a *communication apparatus that provides basic information about age, gender, ethnicity, social status, religious, ideological and cultural affiliation* (Dvoretzka, 2013). This contributes to the need for diversity to meet the practical needs of the user as well as the aesthetic and social needs for identity formation and communication on a social and cultural level. This complexity in the application of clothing also gives it an aesthetic function, and the *aesthetic function of fashion is associated with its definition as a type of art* (Blazheva, 2005, p. 21).

If fashion garments are the product of art, then fashion design is art itself - the art of combining design, construction, aesthetics and beauty into a fashion product. Of course, speaking of fashion design, we cannot define it solely as an art form, as it is the foundation upon which one of the world's largest industries is built. The role of the fashion designer is key in the fashion industry. It encompasses a much wider range of skills and knowledge than is necessary for the creative process itself. It is a set of multiple processes whose ultimate aim is to create, present and put on a market a fashion product. The designer needs to be aware of everything that is going on globally, both in the fashion business and culturally and socially, as everything can be a factor in

trends emerging. Fashion trends are dictated mainly by the "street", by consumers, by events. The designer must be able to read the changes and attitudes of consumers, their needs and "translate them into the language of design" in his developments. *A good designer has the ability to integrate, interpret and conceptualize solutions* (Manasieva, 2012, p. 92). Fashion design is a multidisciplinary process that integrates aspects such as conceptualization, fashion illustration, patternmaking and draping, technological knowledge and skills, styling and presentation. It is a *methodical sequence of activities regulating the designer's work on a specific design task* (Peneva-Sotirova, 2012, p. 110). Conceptualization is the definition of the designer's idea, whose inspiration is influenced by various sources, such as art, history, nature, personal experiences, pop-cultural and social phenomena. Designers use fashion illustration as a tool to visualize their abstract idea. In this context, we can define it as a *detailed graphic image that provides maximum visual information about one of the physical reflections of fashion* (Gerginov, 2018, p. 266), which serves as a tool for transforming the idea into a real design. In order to transform this idea from a two-dimensional visualization into a three-dimensional product, it must also have its physical structure, and that is its **construction**. Often it is perceived as a secondary feature, as usually the primary perception of a garment is formed by its colour and shape. Colour evokes primary associations and emotions and contributes to the formation of the initial impression of the product. The overall silhouette, shape and details of a garment are the next details the human eye perceives, but the connection between form and construction is rarely considered. The construction is the foundation of the garment, carrying both technical and design characteristics. It forms the overall perception of the garment from the shape and volumes, the design elements and details, to the beautiful fit on the body. When we talk about creating a fashion product, we cannot distinguish between patternmaking, and design. Patternmaking can be **both the three-dimensional manifestation of design and a tool of generating design**. There is no specific sequence in the creative process. It is individual to each designer. This is where the role of patternmaking and draping comes in. If a basic order perception is *research - idea/conceptualization - sketching - patternmaking/ draping - prototype*, the construction/ patternmaking appears as a secondary process, but the patternmaking and draping can be a tool used in generating the idea and shaping the direction of the design. Each designer's creative approach is based on his or her personal preferences, technical skills, and moment-to-moment attitude. It is important for the designer to develop their patternmaking skills for better understanding how a garment idea transforms from a two-dimensional concept to a three-

dimensional object, to know body shapes and understand how the elements of the pattern relate to the body. Ignorance of patternmaking contributes to the impoverishment of design, even of the designer's imagination. If they cannot think three-dimensionally and has underdeveloped technical and technological skills, the design is basically a flat image, reduced only to color, fabric, and simple geometric shape. Such a design can be defined as *flat*, since it originates from two-dimensional thinking and a two-dimensional idea. In this case, the designer relies on a pattern maker to interpret his idea and turn it into a cut. If the designer does not understand the elements of the garment and presents a rather abstract idea of a silhouette, the skill of the pattern maker actually contributes to the materialization of the design. This is also where questions like *Who is the designer of the garment? Does the designer need to have patternmaking and draping skills? Is creativity enough?* Ignorance of the components of a garment put a limit on playing with shapes and volumes and applying unconventional construction solutions that would make the design unique. The garment cut should flatter the body, creating an aesthetic sense of balance and harmony. It can emphasize the figure qualities, and by playing with proportions, such as shifting the position of the waist, adding volume in the shoulders, adding pockets and other details, conceal body flaws and achieve impressive silhouettes. Mastering patternmaking and draping takes a lot of practice and dedication, *but construction is the foundation of garment and fashion design. It is crucial that designers know and understand the technical aspects in creating a three-dimensional garment from a two-dimensional cut to form a beautiful shape on a moving human body* (Fisher, 2009, p. 7). Thus, designers learn to apply new interesting and challenging approaches in creating patterns. From the perspective of a designer, patternmaker and educator, I would answer the questions above:

- *The designer is the one who create the overall concept of the product look, which includes shape, color, pattern, fabric.*
- *The designer must be proficient in the principles of patternmaking and have flat patternmaking and draping skills in aid of creating exciting unique designs.*
- *Creativity is key for the designer and it is what distinguish them from patternmaker, but unsupported by technical skills, it will not be materialized to its full potential.*

- **TERMINOLOGICAL APPARATUS**

Draping / moulage

Draping or moulage is a technique for creating patterns and finished garments by draping fabric on a professional dress form. The designs are created by manipulating, folding, refracting and cutting the fabric directly on the mannequin to create the desired design. The technique allows designers to experiment with the fabric and explore its features and how it moves on the body. This technique is a preferred method for creating garments with creative designs and complex constructions that would be difficult to develop through classical flat-pattern drafting method. The technique is also used as an alternative method to create basic blocks. In haute couture, draping is a primary method of creating patterns.

Basic block

The basic block is a basic garment pattern that contains no design elements, only the basic fit/silhouette of the garment as well as basic constructive lines such as bust, waist and hip line. The basic block can be for garments that fit snugly on the body - a corsage (the basis for a ladies' shoulder piece), straight trousers, a straight skirt, as well as for items with looser silhouettes and outerwear - a blazer, jacket, coat, etc. Every basic block can also be used to create other basic blocks with different silhouettes and ease allowance. Basic blocks are not used for direct cutting and sewing of garments, but they are basic patterns from which design patterns are created by adding elements such as pockets, collars, chaps, pleats, etc. and shifting or transforming darts in new cuts, changing their position and adding new volumes.

Cut/ pattern

A cut is a two-dimensional pattern of the elements of a garment from which a three-dimensional item is cut and sewn. The difference with basic blocks is that a pattern is a drawing of a designer model created from basic block or moulage, which is ready to be used for cutting. The basic block can also be a cut, but with added modifications to make it fit well on the body and additional elements to make the item wearable.

Construction

Construction is the physical three-dimensional manifestation of the design. The totality of the elements of a garment forms its construction. Construction refers to the cut/ pattern, silhouette, volume, and additional materials that make up the entire three-dimensional structure of the

garment. In conclusion we can name the construction the physical carrier of the design, without excluding it as an element of it.

Flat basic blocks drafting

Flat basic blocks drafting is a classic method of drafting basic garment foundations that are used as a template for design patterns. There are various patternmaking methods which use body measurements and mathematical formulas to build the correct proportions of the construction. Each system has its own calculations and principles of drafting. Also, the body measures used may vary by system.

Flat patternmaking

Flat patternmaking is the next step to create a design model after flat foundation. It is the process of modifying the basic block by cutting, unfolding, adding volume, elements such as chokes, pleats, flats, changing proportions and volumes, shifting darts, transform them into new design cuts and any other changes that are necessary to turn it into a cut that matches the designer's idea.

Design Process

The design process is a sequence of actions that accompany the overall developing of a fashion collection. It encompasses all stages from the emerging of the idea for the collection to its final realization and distribution. The stages of the design process include target identification, collection planning, research, observation, trend and material research, creative process, pre-production, production and launch of the collection.

Creative process

The creative process is a stage of the design process. It only refers to the actual realization of the collection. The creative process encompasses the conceptualization of the collection, research and analysis of the theme, gathering inspiration, design of the models, which is done through different creative approaches, creation of cuts, testing of the cuts and making of prototypes (first run of the model), finalization of the collection and presentation - styling concept, video and photo shoot, fashion show.

Silhouette

The silhouette is the contour line of the overall shape that represents the volume and proportions of the garment. The perception of the silhouette is reduced to simplified geometric shapes that compositionally make up the overall form of the garment. It is common to associate the basic silhouette shapes with the Latin letters A, X, Y, H and O, as well as geometric shapes - circle, square, triangle, ellipse, trapezoid. In the fashion industry, however, a specific 'fashion vocabulary' naturally forms over time, changing trends and the influence of various pop cultural phenomena, naming different types of garments that are so distinctive that they can be defined as a stereotypical silhouette. Different silhouettes can be defined by proportional factors such as length, width, fit, as well as specific parts of the garment that make up the identity of that garment - the *bouffant* sleeve, *palazzo* pants, *boyfriend jeans*, *Charleston* pants, *A-line silhouette*, *mermaid* dress, *tulip* skirt, *trench coat*, etc. The origins of their names can vary from primary geometric shapes, associations with letters, and associations with objects, natural forms, activities, and locations.

- **OBJECT AND SUBJECT OF THE STUDY**

Object of study: construction in all its forms and applications

The subject of the research: the involvement of patternmaking and draping in the design process and the different creative approaches.

- **MAIN RESEARCH THESIS**

The construction is not only the physical "carrier" of the design idea, but is an integral part of the design. Knowledge of the elements that make up the overall structure of a garment and a professional patternmaking and draping skills adds more creativity, helps generate more and better ideas and contributes to the creation of beautiful, unique, exciting designs with a perfect fit on the figure.

- **AIMS AND OBJECTIVES**

The aim of this dissertation is to examine all applications of patternmaking and draping in design and creative process. To prove that they play an important role on the look, design and good fit of the garment, which refers to the quality and commercial success of the designer product. To

show that they are key participants in the technical process but are also instrument for the creative process. In the largest sense, the aim is to demonstrate that **the construction is part of the design**.

Achieving these goals is accomplished by setting several basic tasks:

- Tracing the design process and marking the stages in which patternmaking and draping take part;
- To consider the various applications of flat patternmaking - the need to create a data of basic blocks with an established size chart, the application of basic blocks, making of design patterns;
- Establish the application of draping and examine the various draping methods;
- Through visual examples to examine the involvement of patternmaking and draping in different creative approaches;
- Examine two popular patternmaking systems, compare them and propose a new approach to drafting a basic block for ladies' corsage that combines their advantages and eliminates their disadvantages;
- To show visually how the construction participates in the evolution of the collection by tracing the evolution of the construction;

- **METHODOLOGY**

- Study of various literary and online sources - books, textbooks, scientific publications, journalistic articles on fashion, which deal partially or largely with the problem under study.
- The methods of work in the field of the problem under consideration of different organizations, fashion brands, independent designers and fashion design platforms are studied and analyzed.
- An analysis and comparison been made in several of the aspects of the problem considered, based on data, texts and images as well as on practical trials of patternmaking techniques from established patternmaking systems.
- From the information obtained by the methods listed so far, deduction and induction are made based on the data and results obtained.

To a very large extent, the research is based on years of professional experience as a designer and patternmaker, during which I have devoted a great deal of time to studying, analyzing and experimenting with the principles of patternmaking and draping. I have actively applied the knowledge and skills I have gained in my work and many of the conclusions applied in this thesis were made prior to its realization, and are a prerequisite for the choice of this particular topic.

Teaching practice has also given me further opportunity to analyze the creative approaches and attitudes to patternmaking and draping of trainee designers. Thanks to it, I was able to confirm the identified problem of their neglect in a design context.

INTRODUCTION

The introduction sets out the main research thesis, which considers construction as a component of the design and a tool for generating ideas. The relevance of the topic is discussed and a rationale for its selection is provided. The aims and objectives of the research work, the object and subject of the research and methodology are stated. Basic terms used in the thesis are clarified.

CHAPTER I

FASHION COLLECTION - DESIGN PROCESS

Talking about patternmaking and draping in the making of a fashion collection, their role, significance and applicability, there is no way to take them out of the context of the entire design process. That is why the first chapter looks specifically at the steps of building a fashion collection from the emerging of the idea to its implementation in production. As this is not the main focus of the research, an in-depth analysis of all steps of the design-process is not provided, but rather an analytical overview that points out the main stages and the involvement of patternmaking and draping in the developing of a fashion collection.

1.1 Defining the term "fashion collection"

Considering the stages in the design process, it is also necessary to first clarify what the definition of a *fashion collection* is, what its intended purpose is and the message it conveys.

According to the purpose of fashion collections, types of garments can be divided into two groups - *conceptual/ avant-garde* and *functional*.

Types of fashion collections:

Haute couture

Confection - prêt-à-porter

Traditionally, brands produce two main *seasonal collections* - spring/summer and autumn/winter - and two *pre-season collections* - autumn pre-season (pre-fall) and holiday pre-season (pre-spring, cruise or resort) to meet all their customers' needs.

Capsule collection

Capsule collections can be *festive*, for a *special occasion/activity* and more. Anything that can bring attention to the brand is a reason to create a capsule collection.

Conceptual collection

Conceptual fashion collections can be seen as a form of art that is guided by an abstract idea and aims to convey a message or philosophy in the form of a garment. Neli Miteva (2021, pp. 10-11), artistic director of conceptual design platform Ivan Asen 22, defines conceptual fashion as "*fashion with position, social content and meaning*" where "*the matter is the message*" and "*the form is the experiment*"

Wearable Art - Artwear - Wearable *art* is another segment in fashion that combines the characteristics of both functional and conceptual clothing. This category includes garments that are created with the initial idea that they will be worn, but because of the complexity of their manufacture or the particularity in the visual distinctiveness of the piece, have the value of a work of art.

1.2 Target, price class selection, design process planning, fashion calendar

Before starting work on the creation of a fashion collection, one should always consider the target group (target) for which it is intended. Since it is not possible for a collection to satisfy the tastes and needs of all consumers, it is important to define the target, not just before starting to develop it, but when the idea for the brand is conceived.

After thorough market research and competitive analysis, designers (companies) can determine the area in which they will position themselves. Fashion is part of a lifestyle, so knowing

your customers is key to the success of the collection - *Who are they? What are their needs? What do they do for work? What age are they? How do they entertain themselves? What are their lives, habits, etc.* By understanding the needs of your consumers, you can strategically formulate a collection, from colors and silhouettes to production and market distribution (Faerm, 2012, p 17). The 'muse' of the collection - the ideal for inspiration - can be a specific person or a collective image of the target group representatives. The designer needs to be able to imagine this personality in certain life situations in order to be able to understand their needs and create a collection that reflects and fits into a lifestyle in which they would like to participate.

The choice of price range is determined by the lifestyle and income of the consumers the collection/brand is aimed at. In general, price classes can be divided into two segments - Haute Couture/Couturier and Confectionery, with the latter category consisting of several market tiers:

Planning for the spring-summer collection starts in February and ends in March-April of the following year, which means that work on the collections for the two seasons overlaps.

This cycle starts almost two years earlier than the marketing of the collections. Before brands start developing the collections, textile and other material manufacturers start developing the new products:

1.3 Stages in the realization of a fashion collection

1.3.1 Inspiration research for a fashion collection and formulating a theme

The study is a fundamental stage in the design process. Through it, the designer gathers the necessary information, inspiration and creative direction for the development of the collection. Although the fashion collection emerges as a result of the creative process, it is significantly influenced by various factors such as the *zeitgeist, trends, individuality, exclusivity and quality, artistic manifestation, analysis and implementation* of all of them in the design (Buxbaum, 2009, p. 81). The success of a fashion collection is determined by how much the designer captures the zeitgeist and reflects it in the design. Exploring different areas of interest and gathering references provides many creative opportunities and channels the imagination towards conceptualizing ideas and formulating a theme for the collection. The choice of a theme must meet two very important criteria - firstly it must be relevant to the audience the collection

is aimed at and secondly it must provoke the designer's creativity in the best way. The designer must be able to draw out the strongest highlights and create a beautiful and memorable story, but must always keep in mind that *no matter what the inspiration that generates the idea, in the end it is the clothes that will be appreciated* (Seivewright, 2007, p. 13).

1.3.2 Materials research, new textile trends and production technologies

The study on materials and new technologies is the first step of the research for the design of the collection. It is also directly linked to the study of trends, as these also determine what fabrics will be preferred by customers. In this context, companies such as WGSN (World global style network) that research and predict trends are vital to the fashion business, which depends on their ability to extract macro trends and currents and provide information from what textiles to buy to where to open new stores. *Fashion analysts anticipate future trends in colors, fabrics, silhouettes, accessories, and cosmetics by analyzing global cultural currents, changes in economics, technology, and consumer behavior* (Kiper, 2014, p. 14).

Textile exhibitions are another very large and more accessible source of information where designers or their correspondents can meet many manufacturers, attend seminars, select fabrics on the spot for future collections and learn about the latest innovations in textiles and manufacturing.

1.3.3 Research for design and create inspirational collage and collection plan

The collection design study can be carried out in two directions:

External inspirations (extrospection):

External inspirations are those that come from sources outside the designer's mind, such as the environment, culture and pop culture, art, literature, history, street fashion, researching "finds" from second-hand shops, museums, travel, exploring different cultures and their traditional garments, and even sourcing unique textiles and decorative elements for the garments. Design can also be inspired by forms in architecture, nature and sculpture.

Inner inspiration (introspection):

In this approach the designer draws on his own knowledge and skills, inspiration and intuition. Challenging his creativity with different approaches - sketching, three-dimensional

experimentation, deconstruction and reconstruction, moulage, experimentation with paper, fabric manipulation and others - the designer motivates the generation of ideas that come from his inner world and emotions.

Gathering all the information from all the research, the designer can create a moodboard to guide him in the realization of the design patterns. To create a balanced and harmonious collection, it is very important that the designer has a clear direction of work and a preliminary plan of the collection. It is a planning of the number and types as well as balancing between basics (60-70%), seasonal trends (20-30%) and statement pieces (10-20%) garments in the collection.

1.3.4 Creative process and the role of construction

The creative process is the stage in which the garments in the collection are developed. Referring to the research done and guided by the main theme of the collection, the designer uses different techniques to generate ideas for the design of the garments in the collection. There is no prescriptive approach to the creative process - each designer draws on their own inspiration and uses their strengths to create a design. The different approaches are discussed in detail with specific examples in Chapter IV.

1.3.5 Preparation for production

The final step in developing a fashion collection before it goes into production is to create the technical documentation that the production team needs to implement it. In order to be adapted for production, the cuts must go through a process of digitization, gradation and the creation of cuts of additional elements such as samples, lining, taping and reinforcing materials. The cut of each pattern must also be accompanied by technical documentation that includes a technical sketch detailing the design elements, a list of all basic and supporting materials, construction specifications, dimensional data and information on dimensions, information on all additional materials such as labels, zippers, buttons, branded labels, and folding and packaging.

1.4 Conclusions

The review shows how complex the process of planning and creating a fashion collection is. In big brands there are departments that deal with some of the stages such as research and planning, marketing, as well as patternmaking departments that work on the cuts. The designer's role is to have knowledge of each stage, in addition to the creation of the collection, in order to successfully communicate with all departments, understand the information they receive and successfully implement the set goals and parameters into the collections.

CHAPTER II

THE FLAT CUT IN FASHION DESIGN

Flat patternmaking is often seen as a technical part of the production process, although they have a key involvement in the creative process, generating the idea, transforming it and turning it into a fashion product. Patternmaking can be defined as the process of turning a design idea into a two-dimensional drawing from which a three-dimensional garment is cut and assembled (Matthews-Fairbanks, 2018). This process is carried out by using what are known as *basic block* to model design patterns with the model-specific proportions, lines, and design elements.

2.1 The need to create a database of basic blocks subject to established anthropometric data

When creating a new brand, it is essential, once the target group is defined, to create a base of basic cuts that are subordinate to uniform anthropometric data. Different organizations undertake large-scale population measurement campaigns and thus, by averaging the data obtained, the values serve to create a standard for growth-size tables in the areas where the respective survey is being conducted. However, these campaigns are very complex and costly to conduct, and are therefore done over very large periods of time (Nedyalkova-Popova 2016), which calls into question their relevance. This also necessitates the need for brands to dedicate time and resources to do their own research for their personal growth scorecard.

There are several reasons why brands need to have their own size standard:

- 1) Different articles in the same size should not have different proportions. It would be confusing and frustrating for customers if there were a discrepancy in the measurements of two (or more) different items of the same size.
- 2) Bearing in mind the above argument, if a brand does not have its own production but works with several manufacturers, it would not be appropriate to rely on the measurement data of different manufacturers. It is correct for the company to provide its own on which the prototypes and subsequently the manufactured models can be developed.
- 3) Customers are not in the habit of looking at the detailed growth-size charts of the brands they buy, and very often they don't know their own sizing data and how to properly measure themselves. They are mostly guided by the standardized measurements for the regions they live in- numbers or letters (e.g. 36, 38, 40, S, M, L, etc.). Therefore, it matters a lot how brands define their sizes. They should be close to the ones widely used by competing brands in similar markets.
- 4) The established size chart is used when developing basic blocks for different types of garments such as blouses, jackets, trousers, coats, etc. This ensures that different items in a given size will fit the same figure.

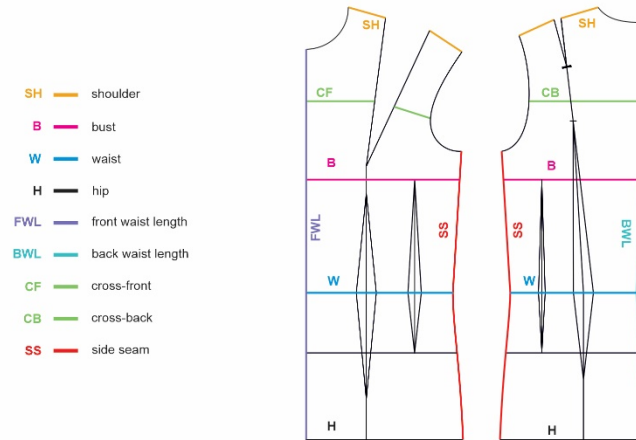
2.2 Function

Having a pre-established base of basic designs makes the design and manufacturing process much easier, as having them reduces the time and cost of developing new models significantly. When a brand is working with individual clients, it is also a great help to have these blocks graded in size, further facilitating and speeding up the development of the design pattern cut. The variations of basic cuts can be many in number. Basic block contains technical information such as dimensions, silhouette, season, name of the item, straight thread and any other information specific to the particular pattern.

When creating a patterned cut from the basic block, it is important that the original cut contains the basic lines, even if they are shifted and fragmented. Even so, they are necessary in adapting the cut for production and give information about the article. More complex patterns differ significantly from the basic block, and sometimes even take on an abstract appearance. In this case, baselines, as well as accurately labeled straight threads, scrolls, centers, marking which piece

is being sewn with which, will give guidance to the modelers involved in this stage. An example of a basic corsage block and a modelled cut of a women's top is shown in *Fig. 1*. It is clearly visible how the cut of the design differs from the basic block.

CONSTRUCTIVE LINES IN A LADIES BODICE BLOCK



CONSTRUCTIVE LINES IN A LADIES DESIGNER TOP BASED ON A LADIES BODICE BLOCK

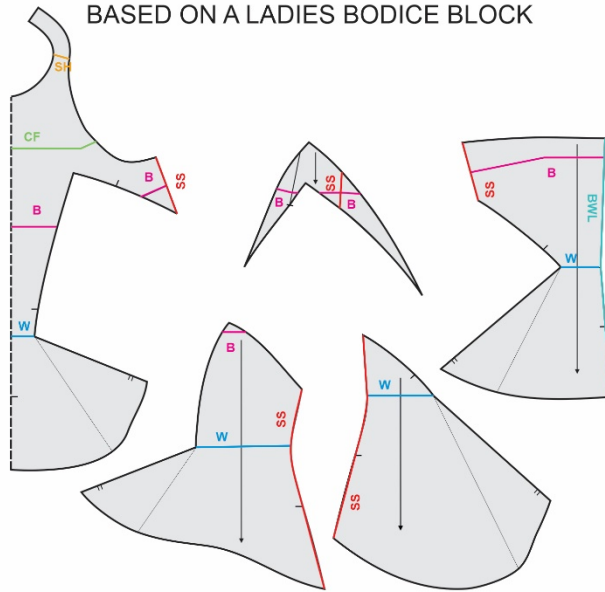


Fig. 1

2.3 Conclusions

Good basic block is the foundation of a good end product. It is naive to believe that the design of the product alone is essential to its success with consumers. There are many factors that

determine whether a garment will appeal, but the most important to the customer is comfort and how it fits on the body. Poor basic block creates many problems in the next stages, and solving them leads to wasted time and increased product development costs (Gehlar, 2008).

Establishing a standard for dimensional data and a proprietary growth-dimensional table is essential, both in the manufacturing process, reducing production and logistics costs for returned purchases, and for the customer experience.

The richer the assortment of basic blocks, the easier and more economical it is to create cuts of new models.

CHAPTER III

DRAPING / MOULAGE

3.1 Essence of the term "DRAPING"

Draping, or *moulage*¹, is a technique used to create three-dimensional patterns by draping fabric onto a tailoring mannequin or person. This technique allows complex shapes to be created, proportions and silhouette to be balanced, and fit to be refined to perfection. By mastering this technique, designers gain the freedom to unleash their creativity and materialize even their most complex ideas into designer garments. The pattern is a direct reflection of the designer's emotions, personality and technical skills combined with the qualities of the chosen material (Atilgan, 2023, p. 6). Draping is also applied as an alternative method to create variations of basic blocks of all major types of garments.

The Moulage technique is applicable in the initial phase of training, as it helps students become familiar with the body shape and the basic elements of the constructions. In this way, they are first introduced to the fabric's behavior on the body, learn to manipulate them and create interesting shapes and volumes. Some academics, including Ana Broega from the University of Minho in Portugal and Zeynep Kaya from Selcuk University in Turkey, believe that *the return of the traditional technique of draping is in fact the innovative move in the future of fashion design*. Very often the genius of a design is in its simplicity. Designing garments with unique designs with

¹ from Fr. moulage - modelling, moulding

few seams, high quality and high aesthetic value will reduce production time and cost, increase profits and increase the satisfaction of consumers and people involved in the production process (Anicet, Cunha, Broega, 2008 , Kaya, Çağdaş, 2014).



Fig. 2 www.cos.com

3.2 Necessary tools to create cuts/clothes using the draping technique

The tools used in practice again vary according to the preferences of the designer or patternmaker who develops the cuts. This section discusses the mandatory and most commonly used, such as the tailor's dummy, test fabric, scissors, specialized tailoring and drafting tools.

3.3 The tailoring mannequin and fashion design

The professional tailoring mannequin is one of the basic and most important tools that fashion designers and modelers use to create models. Choosing a quality professional mannequin is very important for a good final result - it must have real human proportions that match the height-size chart the brand/designer uses. The mannequins serve both the designers in the creative process and the model designers when developing the cuts. They are made in real human proportions in standardized and individual. They are used to create models through draping, experimentation with materials, an assistant in the designer's creative explorations, and to check cuts by trying prototypes on.

3.4 Draping in fashion design

This section looks at all the applications of volume draping in fashion design. It serves designers and patternmakers in several ways, which can basically be divided into two categories - creating basic blocks and creating design patterns - cut or finished garments.

One application of the draping technique is to create *basic blocks* for all garment groups. These blocks are identical in function to the bases created by flat patternmaking.

3.5 Creative draping - Creating design models through different moulage techniques

There are several basic steps in the application of draping in fashion design. Each requires specific skills and approaches to creating the patterns and requires time and practice to master the technique. After analyzing numerous works by international, Bulgarian designers and students, as well as referring to our own practice, a total of 13 categories have been selected, with the aim of giving an overview of all the techniques applicable in draping:

- **Contouring**

This technique can be applied as an alternative to flat patternmaking. It can be used to make pieces with a classic close-fitting silhouette, but with alternative cuts and shrinkage positions. This method is very easy to learn and saves a lot of time. The method consists of "tracing" the design onto the tailor's mannequin using draping tape or fabric strips, and then draping the elements of the cut one by one from the fabric. Marks, straight threads and all the technical information needed to create a paper or digital cut are marked on all the details.



Fig. 3

- **Cascade draperies**

This technique requires specific fabrics that have flexibility and lightness, fall and move freely. The fabrics can snap, wrap over the body, envelop it or move freely around it. The technique allows imperfections to be concealed and figure advantages to be emphasized. In both cases, the fabrics should "flatter" the body, creating a feeling of lightness, movement, airiness and grace. If this technique is first applied with a test material, its qualities must be very close to those of the original fabric. To make the draperies beautiful and airy, the ancient direction of the fabric is used.



Fig. 4

- **Pleats, chips and salts**

This technique requires a lot of precision, an accurate hand, time and patience. Basically, it consists of using the fabric to form different sized chokes, pleats or solei². The variations here are many and, depending on the design, the approaches vary:

- large pleats and chips

- small chunks, pleats and solitaires - this technique requires very skillful work with the materials and takes considerable time; it needs a ready-made garment construction, such as a corset or other lighter structure, on

which harmonious and even chunks, in some cases even very fine ones, are very precisely arranged and sewn by hand. The stitches can take different shapes, curves, be placed on small details or very large areas of the garment;



Fig. 5

- **Sets**

Kits are another option of fabric manipulation, creating beautiful drapery and structure. In addition to structuring, they are also used to create volumes and play with proportions. This technique can also be used to accentuate the figure and gently fall draperies to flatter the body, but can also create new silhouettes and deconstructive shapes. The sets can be applied in several ways in search of different effects:

² From French *Soleil* - sun. In fashion design, the term is used to refer to a way of refracting or gathering the fabric to mimic the sun's rays.

- When used, light, "flowing" fabrics give the garment an airy and light feel, the fabrics "flow" over the body and move with it.
- When the aim is to create large volumes, patties with less flexibility are used, which are not necessarily dense, but their physical properties allow to form voluminous structured shapes.



Fig. 6

- **Ribbons, interweaves**

This is another very complex technique that requires precision, hand control and patience. This method most often uses fan strips of flexible fabric, which can be ready-made or pieced by carefully re-arranging them over a ready-made construction, weaving them together, enveloping the construction and forming beautiful shapes and textures on the garment. By strategically positioning the strips and skillfully interweaving and arranging them in interesting shapes, a sculptural effect and beautifully body-hugging elements are achieved.



Fig. 7

- **Twisting, tying, ribbons**

This technique allows for freer work with the fabrics and using the designer's intuition and ease of hand. Here, designers have more freedom to work with panache and seek solutions for beautiful volumes. The particularity of this technique is that it uses the effect that occurs when fabrics are twisted around themselves, around the body or intertwined two or more pieces of fabric. They can be tied in knots or interesting ribbons of various volumes. These volumes can be reinforced with an additional structure of bunting, padding or tulle to add a more 'dramatic' effect.



Fig. 8

- **BIAS CUT - Cutting on a beam**

Madeleine Vionnet is considered the pioneer of this technique, who in the 1920`s began to use the diagonal section of fabrics to create lightweight, sculptural garments that poured over the body (Martin, Koda, 1995, p. 50). This technique exploits the flexibility of the fabric in the bias and the envelopment of the body is achieved without the need to use complex constructive elements, cuts and constrictions. The beauty is in the simplicity of the design, the ease of the silhouette and how the fabrics accentuate and flatter the figure without complex construction and corsets.



Fig. 9

- **Deconstruction**

In patternmaking and draping, deconstruction is an approach that "dissects" the construction, breaks the rules, and breaks the proportions into elements and reimagines them in unconventional ways. The designer is freed from technique norms and has complete freedom to reach the limit of creativity, encouraging the courage to experiment. Asymmetry is on a "pedestal", raw seams are allowed, unconventional materials can add value to the design, proportions can be exaggerated, even with a grotesque-ironic character that we find in the garments of one of the founders of deconstructivism in fashion - Martin Margiela (Savova, 2017, p. 41). Deconstruction also possesses the other extreme - garments with harmonious minimalist design and simple construction. A wonderful example of this is given to us by designer Isha Doshi in her book *Creating with shapes* (Doshi, 2017), in which she shows how simple geometric shapes can be used to create garments that leave an impression of purity, elegance and seem to have been effortlessly created, with simple construction with few seams, but with exceptional design with a timeless modernity, freed from the norms of classic clothing.

- **Geometric shapes**



Fig. 10

The use of geometric shapes is more of an approach and aesthetic than a type of technique in draping, but still requires a specific way of working with the fabrics to achieve a geometric structure to the design pattern. Here the characteristic silhouettes are created by elements with geometric shapes, the folds of the fabrics and creating an almost architectural look of the piece.



Fig. 11

- **Origami**

This technique is borrowed from the Japanese art of paper folding, which is used to create various three-dimensional figures and shapes. In this case, fabric is used instead of paper to create beautiful, exciting, precise three-dimensional shapes that make up a detail of a garment or an entire garment. As with paper, the *origami* technique offers very simple and very complex shapes. For the latter, a very good spatial awareness is required, on which the ability to understand three-dimensional objects in space depends. This quality is key to the complexity and even genius in the application of the *origami* technique in fashion design.



Fig. 12

- **Cloche elements**

This is a technique which again has the use of a fan at the base of the fabric. Here, however, it is used not to construct a garment that envelops the body, but to make various sized flounces, to incorporate cloche wedges into the construction to give volume, structure and multi-layeres to the piece. Cloche elements can also be used to create entire details such as sleeves, skirts or multi-layered garments. The difference with vintage garments is that while they seek simplicity, elegance, a rounder silhouette with a beautiful fit on the body, this technique is more about large volumes, drama and using large amounts of fabric to create striking designs.



Fig. 13

- **Organic forms**

This is a technique where the fabric is modelled into shapes and structures that closely resemble natural organic forms. This technique is a type of fabric manipulation rather than a method of creating a cut, but again it is developed with a moulage technique and in most cases works directly with the base fabric. It can also use and incorporate non-traditional materials, use a ready-made structure on which to sew the shapes, deform and deconstruct the silhouette and create beautiful relief symmetrical and asymmetrical shapes.



Fig. 14

- **Classical draping on straight thread**

Despite the name of this technique, it should by no means be perceived that it creates garments with classic silhouettes, volumes and proportions. On the contrary, this technique can be used to create very complex garments that resemble sculptures and with a great deal of architectural flair, play with volumes, great depth of structures and alternative readings of classic elements of clothing. It has been called "classical" because the technique starts from the principle of following the straight thread of the fabric, but by no means seeks to break it. It is perhaps the most exciting technique and one that requires impeccable mastery, an exceptional understanding of garment construction and how a garment fits the body perfectly. It demonstrates the full potential of the designer/ patternmaker, how well they understand construction, how skillfully they handle and interpret constrictions and classical constructive elements. This technique can be described as the most complex: if in some of the techniques listed above a good result is sometimes the



Fig. 15

"fruit" of chance, the result of experiment and it is possible for even a beginner, a designer in training to create a beautiful design without much experience and technical skills, in this technique there is nothing accidental and everything is the result of a lot of experience, knowledge, skill and talent.

3.6 Conclusions

Draping is a technique that provides many creative opportunities for designers. It can be applied at various stages in fashion design, both in the creation of basic blocks and as an effective design tool. Different techniques also have varying degrees of difficulty. Beginner designers can learn through this technique as well as take their first steps in creating designs. Perfect mastery of all methods opens up countless possibilities for creativity, builds confidence in one's own abilities and helps to realize unique and innovative solutions.

This technique should not be perceived as "easy" and neglect the need for practice to master it well. Although good design is sometimes the result of chance, draping should not be a 'lifeline' and used as a substitute for technical skills by designers who lack the patience and effort to master patternmaking and draping techniques. The "can't" always comes through.

CHAPTER I V

FROM IDEA TO PATTERN- A CREATIVE PROCESS

The patternmaking in the stages of the creative process, according to the individual approach to turning the idea into a product

This chapter discusses the construction (cut) as a constituent element of the design product and the stages of the creative process in which it emerges according to the individual creative approach of the designer. The aim of the research is to prove the importance of the construction, not only as a "carrier" of the design idea, but also as a constituent part of the design.

There is no strictly defined approach to creating a fashion collection. The order in which designs are developed depends entirely on the type of brand (large, medium, small, independent designer, student), the emotion of the designer and the purpose of the collection. Also, cuts can be created in two ways depending on the individual designer's preferences, the specifics of the particular pattern or the brand's established methods:

- Flat patternmaking
- Draping

Different creative approaches can lead to a variety of ideas. Sometimes different approaches from classical sketching of patterns yield better results for ideas about shapes and textures. Experiments stimulate creativity and solutions are reached that would not have been possible without them. Sometimes a combination of different techniques leads to the best results. The approach chosen also depends on when in the stages of the creative process the cut appears.

4.1 Fashion sketch

Most often, designers prefer to start the design process by sketching the entire collection in advance. This process takes place individually for each designer:

- **multiple** sketches
- **preliminary collection plan**
- **a good idea** - in this case, designers start from an initial idea that they consider *good* and from there the evolution of the whole collection begins.

4.2 Construction/ cut

Products with an emphasis in construction very often have a more unconventional interpretation of classic elements in clothing. Very often this approach is used when looking for new shapes and volumes, different interpretations of classic silhouettes and attractive design construction details.

With this approach, the design process can begin by having the designer sketch out the ideas for the entire collection and then begin work on the constructions. In this way, he has complete clarity of his idea from the beginning of the collection development. Sometimes it starts by creating the first model, and the rest of the collection elements are unfolded as derivatives of it. Elements from the first construction are used, evolved into new patterns and together form the entire collection.

4.3 Form, volume

Shape as a starting point can have many sources. A designer may be inspired by a natural form, a form in architecture, a specific physical object, a quick creative sketch, a form achieved through experimentation with fabric and other materials, and many others. The choice of methodological approach depends on the specific design and how clear the designer is about it overall.

4.4 Stereotypical silhouette

When the design is influenced by a familiar garment silhouette, it is more logical to start from a creative sketch. The idea for the silhouette already exists and it should be translated into a design pattern. When using a familiar silhouette, in most cases the brand/designer has already developed patterns with a similar construction and has cuts that could easily be transformed into the new pattern. This silhouette could be a previously used pattern, a silhouette inspired by the past (historical suit, 60's, 70's, Christian Dior's "New look", etc.). Therefore, the more practical way is to start with a creative and even technical sketch and proceed to develop the cut.

4.5 Draping

Draping is the method that gives the designer unlimited possibilities to realize his creative idea. Many designers generate their ideas by working directly on the torso or need to experiment with the patterns to become familiar with their qualities:

- Sketching an **abstract** idea
- Design idea generated entirely with **moulage** on a tailoring mannequin
- Experiment with **specific experiments and moulage with paper**

Experimentation with paper can also be of great help to designers in developing an idea. This of course depends on the desired outcome, the material they have chosen to use for the design and the volume they want to achieve.

- **Verification** of a cut created by patternmaking

- **Creating a paper cut** entirely on a tailoring mannequin

4.6 Platt

In some case the fabric is the main inspiration for the piece. It can be chosen for its composition, colour, texture, print or its uniqueness (there is no other one). The design should be appropriate to the characteristics of the fabric. Starting with the fabric, the designer can continue the creative process in almost any of the ways listed above.

- **creative sketch**
- **draping**
- **patternmaking**
- **existing pattern - new fabric**

4.7 Trial and mistake

Not every experiment leads to a satisfactory result. It happens that a designer has an idea that they think is good, but in the process of developing the model it turns out to be not so successful or impossible to realize in a form satisfactory to the designer. In this case, the designer finds himself in a situation where he has to decide whether to abandon the development or to try to "save" it by changing the direction of experimental search. Thus, the failed development may yield another good idea that turns out to be successful.

- Failure to cut
- Failure in volumetric modeling of a model
- Failed prototype from original fabric
- Inability to recreate the idea the way the designer wants;

4.8 Mix of techniques

Different creative approaches give different perspectives in the evolution of the idea. Mixing techniques leads to new ideas and smarter design solutions. Their combination can be both from a practical point of view to save time and from a creative point of view as an idea generator.

- **patternmaking** + moulage
- **fabric treatment** + cutting
- **quick sketch** + **moulage experiment** + **final sketch** + **cut**
- **quick sketch** + **experiment with paper**
- **print design** + cut

In the dissertation, each of the listed approaches is supported with examples from the personal or practice of other Bulgarian and international designers.

Example: mix technique - print design + experiment with paper

The featured example (fig. 16) is from Alexander McQueen's Spring-Summer 2023 collection. Its development began with a paper print, which is present in the collection in several varieties. Initially, an experiment was made with the paper, which provided guidelines for the construction of the piece. The second stage of development sees a multilayered development of the design and its study on a live model. The last picture shows the model in its final form.



Fig. 16 Alexander McQueen Spring 2023³

³ Photo 1 and 2 - <https://www.instagram.com/p/CrNkDk1vmmM/>

Image 3 - <https://www.vogue.com/fashion-shows/spring-2023-ready-to-wear/alexander-mcqueen/slideshow/collection#5>

4.9 Conclusions

All these experimental techniques are tools of creative inquiry and provocation for idea generation. Experimenting with non-traditional methods of visualizing a design idea encourages creativity and removes the constraints on the imagination. In this context, it can even be assumed that sketching a finished design model with defined details should be avoided at the beginning of the creative process, as this deprives the designer of the opportunities for idea generation that experimental approaches provide (Rabiller, Réveill  , 2009 p. 55). The designer's skills in working with the pattern of the garments are key to a good final result. What distinguishes a good designer from a not-so-good designer is precisely his or her good knowledge and mastery of all aspects of the creative process. Construction is an integral part of the garment and knowing its constituent elements, how it is built, how it is modelled, how it is transformed, allows the designer to 'play' with proportions and create distinctive designs. These skills aid the designer's imagination and conversely, ignorance of them hinders design thought and impoverishes ideas. In some more specific cases, such as most of those listed above, it is impossible for idea development to take place without the active participation of the designer in the technical process, as the idea emerges and develops in the process of creating a design - at this stage of development we speak of *creative patternmaking* (Fisher, 2009). In these cases, if the designer is not an active participant, but only presents an abstract idea without knowledge of how to implement it and what the elements of the design are, the question arises *who is actually the creator of this design?*

CHAPTER V

POPULAR PATTERNMAKING SYSTEMS - COMPARISON

To create the cut of a garment according to a given design, the modelers use an already finished basic blocks as a starting point. Achieving a good end result with fewer samples and adjustments to the cut, and therefore in less time, depends very much on this base being perfectly constructed. My personal experience as a designer and pattern maker for my own brand has confronted me with

the difficulties of creating the best possible base and choosing which patternmaking system (SC) and size chart to work with. This is the reason why I started an in-depth study of the different patternmaking systems.

In this study, I provide a detailed analysis and comparison of two of the most popular systems, *M. Müller & Sohn* (*Müller* for short) and *ESMOD*. I have opted for these systems as they consider body proportions and shapes in detail, the designs are complex and, although more complicated to plot than most methods I have analyzed, this makes them more accurate, fit the body better and are a better basis for developing new models. The purpose of this study is to identify the advantages and disadvantages of the two methods, and to provide suggestions for adjustments to the drafting process that will improve the method and make it easier for modelers. In particular, I investigate the drafting of a base for a women's outerwear - corsage.

Measurement chart								
Measurements		Evolution In mm	Length in cm					
			34	36	38	40	42	44
			XXS	XS	S	M	L	XL
1	H Height		168	168	168	168	168	168
2	B Bust circumference	4	80	84	88	92	96	100
3	W Waist Circumference	4	60	64	68	72	76	80
4	H Hip Circumference	4	86	90	94	98	102	106
5	Sh (8 cm. below waist) Small hip circumference	4	77	81	85	89	93	97
6	AL Armhole lenht	0.4	19	19.4	19.8	20.2	20.6	21
7	BWL Back waist length	0.5	40	40.5	41	41.5	42	42.5
8	B II Bust length II (shoulder-bust)	0.5	26	26.5	27	27.5	28	28.5
9	FWL II Front waist length II (shoulder-waist)	0.75	42.5	43.25	44	44.75	45.5	46.25
10	SS (waist-armhole) Upper side seam length	0.25	21	21.25	21.5	21.75	22	22.25
11	HL Length to hips	0.5	62	62.5	63	63.5	64	64.5
12	CF2 ½ Cross-front 2 (across bust)	1	16	17	18	19	20	21
13	CF ½ Cross-front (above bust)	0.25	16	16.25	16.5	16.75	17	17.25
14	CB ½ Cross-back	0.25	17	17.25	17.5	17.75	18	18.25
15	BD ½ Bust distance	0.25	8.75	9	9.25	9.5	9.75	10
16	N ½ Neck Circumference	0.5	17	17.5	18	18.5	19	19.5
17	NW ½ Neck width	0.2	6	6.2	6.4	6.6	6.8	7
18	SL Shoulder length	0.4	11.2		12	12.4	12.8	13.2
19	ArC Armhole circumference	1	37.5	38.5	39.5	40.5	41.5	42.5
20	A Arm length	0.3	59.4	59.7	60	60.3	60.6	60.9
21	Bc Biceps circumference	1	24	25	26	27	28	29
22	Wr Wrist circumference	0.25	15.5	15.75	16	16.25	16.5	16.75
23	El Length to elbow	0.3	34.4	34.7	35	35.3	35.6	35.9
24	HH Hip Height (Waist-Hips)	0	22	22	22	22	22	22
25	CrD Crotch Depth	0.5	25.5	26	26.5	27	27.5	28
26	CrL Crotch length	2	56	58	60	62	64	66
27	KnL Knee length (waist-knee)	1	56	57	58	59	60	61
28	TSs Trousers Side seam length	1	104	105	105	106	106	107

Fig. 17

For the layout of the corsets of both systems, a size-chart table adapted by the author was used, with dimensions corresponding to French standards, but also containing all the measurements necessary for the drafting of both patternmaking system, as well as adapted dimensions for the Müller system and the author's adapted design for a women's corset in section 5.7 (Fig. 17). The

table is referenced to one of the ESMOD system, some of the measures are borrowed from the size-chart developed by the French company *DP Studio*, and other measures are calculated and adapted by the author.

5.1 "ESMOD" patternmaking system

The system is based on the creation of basic cuts to serve as the basis for creating all garments in a woman's wardrobe (Gonnet, Lipton, Loue-Milanese, & Wargnier, 2013). The philosophy of this method is that for each basic wardrobe item, basic blocks are created that serve as a template to be augmented or modelled to produce new basic blocks for different items and silhouettes. The measurements used are mostly measured or from a growth-size table, and the formula calculations are mostly for their proportional distribution.

Advantages:

The system offers a very practical approach to creating a variety of basic cuts, with an emphasis on working with a good foundation already in place without adding for freedom. The magnification principles are very useful for modelers and, with a good understanding, give unlimited possibilities for modification and creation of multiple varieties of basic cuts with different freedom adds. The biggest advantage of this method is the time saving.

The information is synthesized to the extent of knowing the main aspects in the drafting process, without overloading with a lot of information, which in turn lead to confusion.

Disadvantages:

The suggested modifications for non-standard shapes are very basic and do not cover the wide range of problems that modelers may encounter when creating a cut for an individual customer. The system is mainly focused on working with standard sizes and therefore individual solutions are almost missing.

5.2 Patternmaking system "M. MÜLLER & SOHN"

The system offers a very wide variety of basic cuts for all types of garments and figures (Stiegler, Krolopp, David, Schober, 2008, Siegler, 2012, 2015). The measurements it works with can be taken from a height-size table, but can also be calculated with proportional formulas that require several basic measurements. Some of the auxiliary dimensions can be measured, while for

others the system recommends to calculate them, as an error is possible if the patternmaker is not experienced.

Advantages:

The system offers a wide variety of developments that can serve modelers if their preferred approach is to construct separate bases for each type of garment and silhouette. It provides a lot of information about body characteristics and how they relate to the pattern, how pattern can be modified for a better fit to the figure or greater comfort. The system also provides many examples with modeling of designer items, which would be of great help to novice modelers when looking for ideas for structurally complex items. There is almost no basic silhouette or common designer manipulation that has not been developed in the system.

The proportional formulas offered by the system for calculating auxiliary dimensions using the basic dimensions are very useful when creating a structure for an individual customer and standard dimensions from a size-chart cannot be used.

Disadvantages:

The wide variety of basic builds can be confusing to novice modelers and is not at all times necessary. Many of the bases are pretty much identical to construct and the differences are mostly in the freedom additions. In this case, many of these may not be studied separately, but emphasis should be placed on a good understanding of the application of the freedom adders. In this way, not only basic cuts but also existing designs can be adapted to individual sizes or changes made to silhouettes much more quickly and easily.

In the study below, I prove that the formulas for calculating dimensions give very good results when the figure has standard proportions. However, when the proportions deviate from the standards the personal judgment of the modeler is of great importance. The probability of a discrepancy is very high when the patternmaker has no experience.

5.3 Drafting the basic block of the bodice on both systems with minimum ease allowances

The study is carried out in the following stages:

- Drawing the base by both methods in 36 p-p according to European standard;

- Measurement of obtained dimensions in important constructive lines of the finished blocks - (chest circumference, waist, hips, etc.) and comparison of similarities and differences;
- Analysis of the design principles of the two methods;
- Determine the degree of difficulty of the development;
- Sewing a prototype of the two cuts and testing the experiments on a tailoring mannequin in 36 p-r according to the European standard, corresponding to the sizes with which the designs were developed;
- Analysis of the result of the blocks already tested in material;

5.4 Comparison of the obtained basic dimensions after drawing the bases

The comparison of the two bases has been done on several parameters:

- Balance of heights
- Front to back width ratio
- Comparison of front and back details of the two systems
- Comparison of width, height and slope of armhole curves
- Measure all the dimensions obtained in both basic blocks and compare with the size-chart

5.5 Comparison of sewn prototypes and suggestion for adjustments

5.5.1 MÜLLER corsage

In the photographs of Fig. 18 we see the bodice in its original form, cut and sewn according to the basic cut of the Müller system. It is noticeable that the bodice does not fit well on the figure and there are quite a few problems that need to be corrected.



Fig. 18

Front:

- 1) a very high neck curve - in the center front it should come down by about 1 cm.
- 2) the bust line is higher than the torso line
- 3) the waist does not fit snugly on the body - this discrepancy was already noticeable when measuring the cuts described in Table 1 (+2.2 cm for $\frac{1}{2}$ of the waist circumference)
- 4) the hip line also goes up slightly, mostly noticeable towards the side seams
- 5) excess in the sleeve curve

Back:

- 1) the back visibly rides up, the middle seam does not fit along the back and forms a large, hump-like volume;
- 2) the slope of the shoulders is too great and this is the reason for the overall lift of the bodice and the misalignment of the bust, waist and hip lines;
- 3) A large looseness in the hips is also noted, again the discrepancy was found in the cut measurements and described in Table 1 (+1.5 cm for $\frac{1}{2}$ of the hip circumference);

Profile:

- 1) the excess in the sleeve curve is even more visible;
- 2) the sleeve curve is shifted forward;

- 3) the shoulder seam is offset by about 2 cm towards the front, relative to the shoulder line of the mannequin;
- 4) the side seam is moved towards the front by 2.5 cm at the sleeve curve and 2 cm at the waist and hip lines;

Findings from primary analysis:

- 1) the slope of the shoulder is too great and causes the entire bodice to pull upwards, causing the bust, waist and hip lines to diverge, most visibly towards the side seams;
- 2) no deficiency of length in front and back, only a disturbance of balance from the shoulder;
- 3) proportionally, the back is overall wider than the front and therefore the side seam is visually shifted towards the front; this has also been previously established by examining the cuts (fig. 7); the shifting of the seam does not affect the fit of the garment on the body, the problem is only aesthetic - from this point of view I would prefer to make an adjustment and shift it back;

The necessary adjustments are described in detail in the thesis. Fig. 19 shows how they appear plotted on the drawing, and Fig. 20 compares the original and corrected bases.

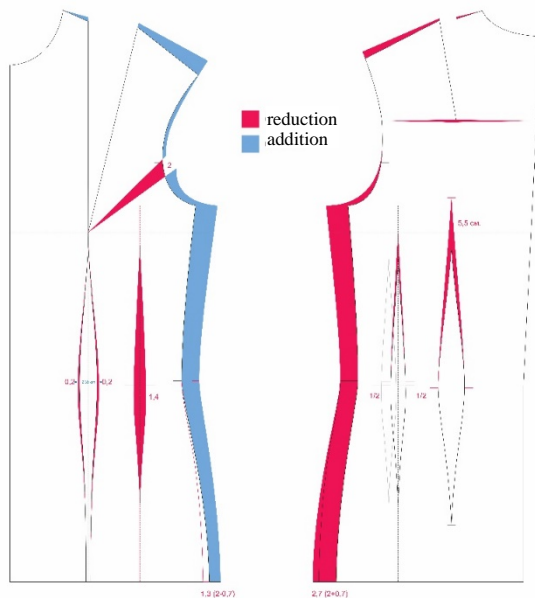


Fig. 19

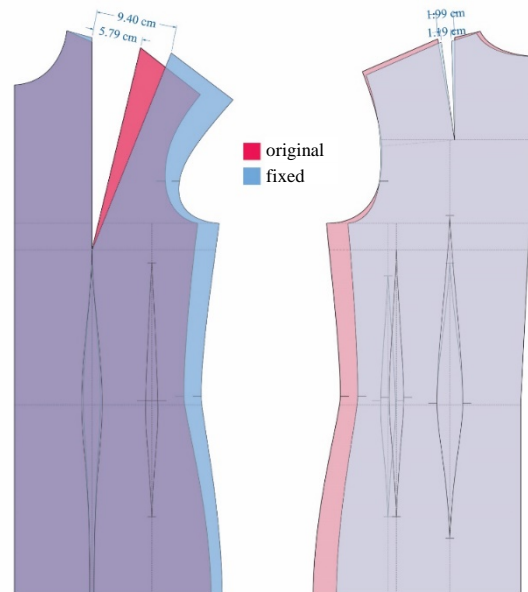


Fig. 20

5.5.2 ESMOD corsage

In the photographs of Fig. 21 we see the bodice in its original form, cut and sewn according to the basic ESMOD cut.



Fig. 21

At first glance, the corsage fits almost perfectly. Small flaws are noticeable on closer inspection of the prototype:

Front:

- 1) the neck curve is deeper than that of the mannequin, but this cannot be regarded as a general problem, as the mannequin is marked with the curve snugly along the neck; such a garment would be very uncomfortable when worn; in order to follow the mannequin's measurements absolutely exactly, the center front could be raised by 0.5 cm; I will omit this correction in this case, as I do not find it necessary;
- 2) slight excess of length in the sleeve curve;

Back:

- 1) the neck curve is raised by about 0.3-0.4 cm. from that of the manikin;

Profile:

- 1) the sleeve curve is shifted forward;
- 2) the waistline at the side seam is about 0,5 m lower than the torso, but the prototype still fits perfectly; a small adjustment can be made to improve the fit in the back;

Findings from primary analysis:

- 1) the overall look of the bodice is very good and the fit is almost perfect;
- 2) the disadvantages are minimal and easy to correct;
- 3) the biggest problem is the shape of the sleeve curve and here, as in the Müller system, the instructions for drawing it are not good enough;

The necessary adjustments are described in detail in the thesis. Fig. 22 shows how they appear plotted on the drawing, and Fig. 23 compares the original and corrected bases.

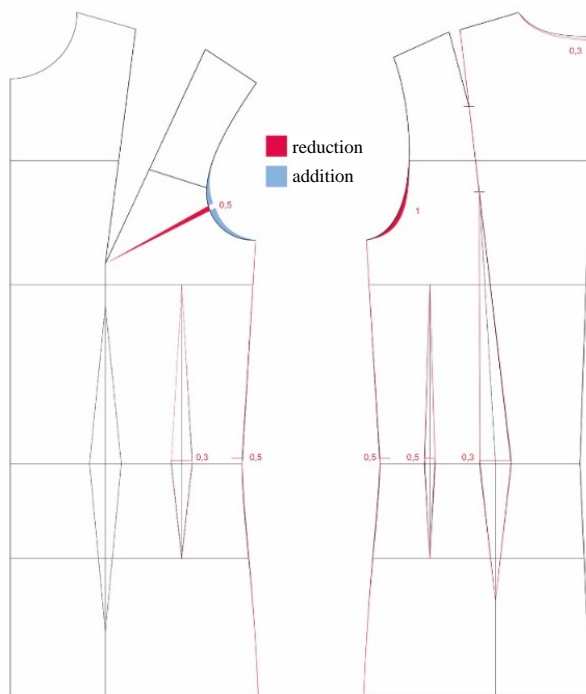


Fig. 22

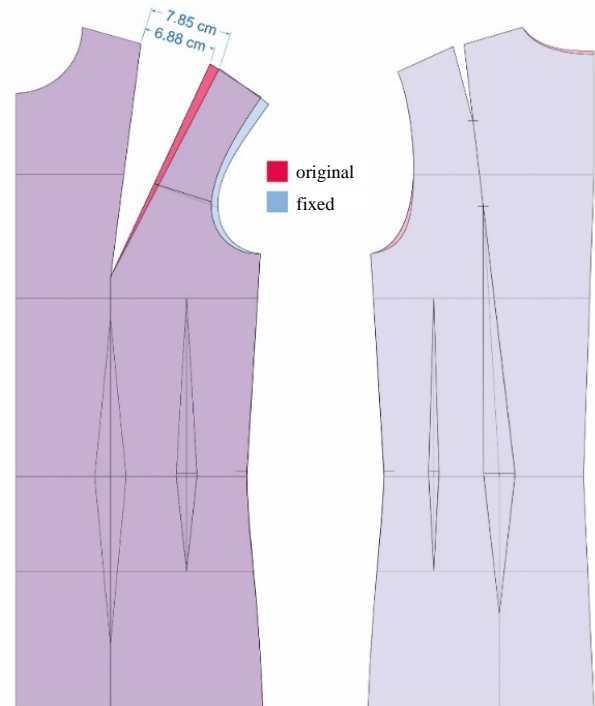


Fig. 23

5.6 Conclusions

5.6.1 MÜLLER corsage

Although no ease allowances for waist and hip are provided in advance, somehow, they are included when drafting the basic block, and it's not particularly clear how, especially if you're a beginner in patternmaking and haven't been able to analyze the system. The shoulder slope is the biggest problem in the prototype, as it spoils the overall geometry of the piece. The system is proportioned to have the back wider than the front and this shifts the side seam forward. This is only a visual problem, but aesthetically, it would be better if it matched the midline of the body profile. The shape of the sleeve curve created against the directions in the system is not very good, and the modeler needs to have experience and know the problems of the system to build it the right way.

5.6.2 *ESMOD* corsage

When comparing the prototypes, the advantage of the *ESMOD* system is strongly pronounced. Problems with the design are minimal, with the only one I report as more serious being in the shape of the sleeve curve. Drafting is much easier for novice patternmaker as there are many fixed rules, rather than relying on complex formulae and calculations, and the individual judgement of the patternmaker. Possibilities for mistake are minimized.

5.7 Development of a corsage base drawing method based on the advantages of both systems

The author's development of a basic block drafting method is included in the thesis. It is largely based on the patternmaking method of the *ESMOD* system, but also borrows elements from the Müller system.

The need to create one has re-emerged as a result of personal experience in the field of patternmaking and the constant drive to improve and perfect basic blocks.

- 1) *ESMOD*'s construction in its original form is nearly perfect when developing tight-fitting models, but when ease allowance is added for looser silhouettes, some issues begin to emerge that require adjustments.
- 2) In teaching practice, I have to conform to the standards of teaching imposed and, in order to avoid confusion among students, I developed a variation of the Müller method using the same measurements and a similar drafting order, but retaining the proportional principles suggested by the *ESMOD* system. This variation gives a quite satisfactory result, except for the slope of the arms. There again, a slight correction has to be made after the base has been built. However, after this adjustment, the base proved to be quite successful and has been successfully applied in my design practice.
- 3) The final development that I have worked out is also to eliminate the problem in the design that manifests itself in the slope of the shoulders.

Borrowings from both systems:

Müller:

- Back line - in the ESMOD system, the starting point (7th cervical vertebra) and the top of the hips are in the same vertical and there is a 1 cm rise in the waist. In the Müller the sag is 2 cm and the line continues vertically to the hips. Thus, with an increase in warp, the midline seam retains a nice line; with the ESMOD system, the seam starts to stick out; even with a large curve in the spine or a bulging buttock, my experience shows that it is better to balance the difference in the curves rather than in the midline seam;

- The under-bust hem - in the ESMOD system it ends above the hips, while here it is extended to the hem; besides a nicer line, this is also a necessity when the construction is tailored for a figure with a large bust;

- Bust height measured vertically from the shoulder;

ESMOD:

- Balance of widths - the study in the previous points proves that the principle used by the system gives a very good result, namely that the waist and hips on the front are 2 cm. larger than those on the back, and the bust 3-3.5 cm.

- Neck curve drafting, shoulder flexion and sleeve curve inclination;

- Length of front through midline of body

- Shrink position - the large back shrink is offered in 2 variations, ESMOD's is well suited for extended jacket and coat bases and Müller's for basic cuts or drafting new variations;

- Abdominal line - the construction can be done without it, it is not very clear how to measure it and a ready-made size from a table is used, but it helps to determine the depth of small contractions;

What is NOT retained by both systems:

M - Müller

E - ESMOD

Underarm width and shoulder line (M) - this measure complicates the drafting unnecessarily and can rather be used as a reference for checking. It is more important that the

novice pattern designer understand exactly how the width and depth of the armhole relate to the balance of the piece, when to change them and how.

Length of front measured from shoulder (M) - the length of the front measured through the center of the body (from collarbone to waist) gives a very good result when constructing the neck curve and shoulder slope, so this measure is excluded from the drafting method; however, it is very important, and in my work I recommend that it is also measured to check the length obtained in the construction; it is also necessary when the construction is modified for an individual figure;

The method for calculating and distributing the size of contractions (M) - very confusing for inexperienced patternmakers and unclear end result; the balance of the distribution is also not good;

Side seam curve (M) - over-emphasizes the hips and is unsuitable for most figures; it is always better to have more balanced fit;

Bust height measured diagonally from the collarbone (E) - the possibility of measurement error is very large;

Mid back seam line (E) - suitable for narrow bases only; when adding increases for freedom, the seam starts to stick out;

LADIES BODICE BLOCK WITHOUT EASE ALLOWANCE

Based on the exploration of the corresponding basic blocks
developed by the two patternmaking systems *Müller* and
ESMOD

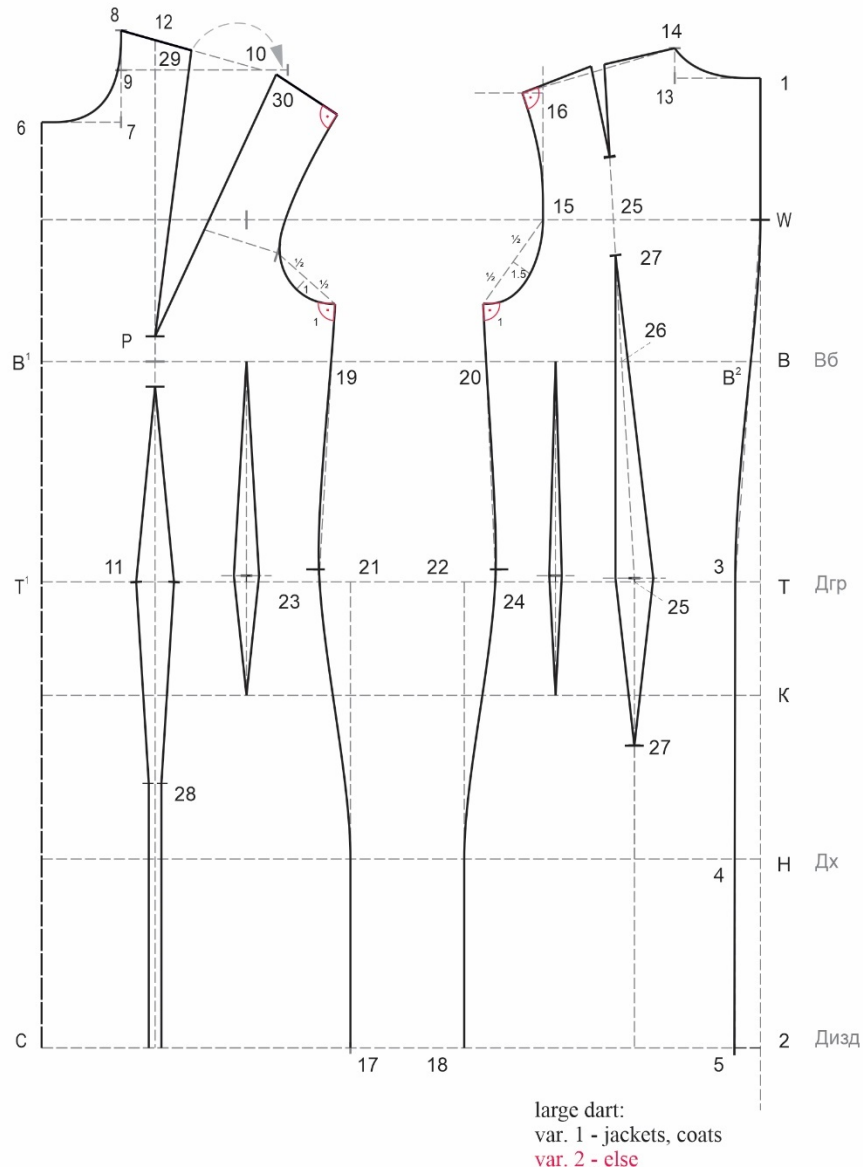


Fig. 24



Fig. 25

CHAPTER VI

EVOLUTION OF CONSTRUCTION

A practical-creative development that traces the evolution of construction in a capsule fashion collection of 8 garments

In this chapter, the evolution of the construction in a capsule collection of 8 garments is vividly traced. It is shown visually how elements from one construction are used and evolve into

the next design. This demonstrates visually how construction is involved in design and proves how a good idea can become the basis for creating an entire collection.

EVOLUTION OF DESIGN

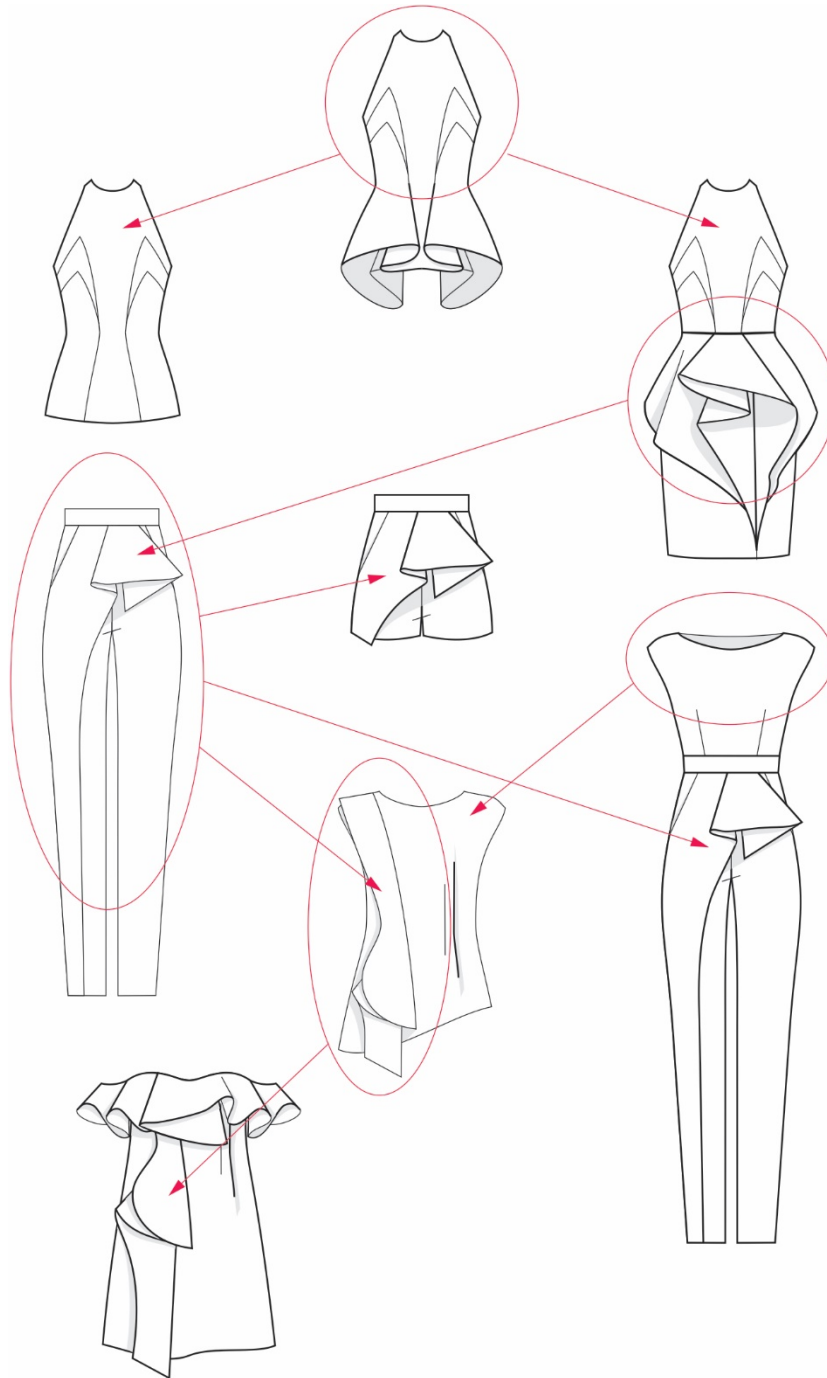


Fig. 26

EVOLUTION OF CONSTRUCTION IN TWO OF THE DESIGNS

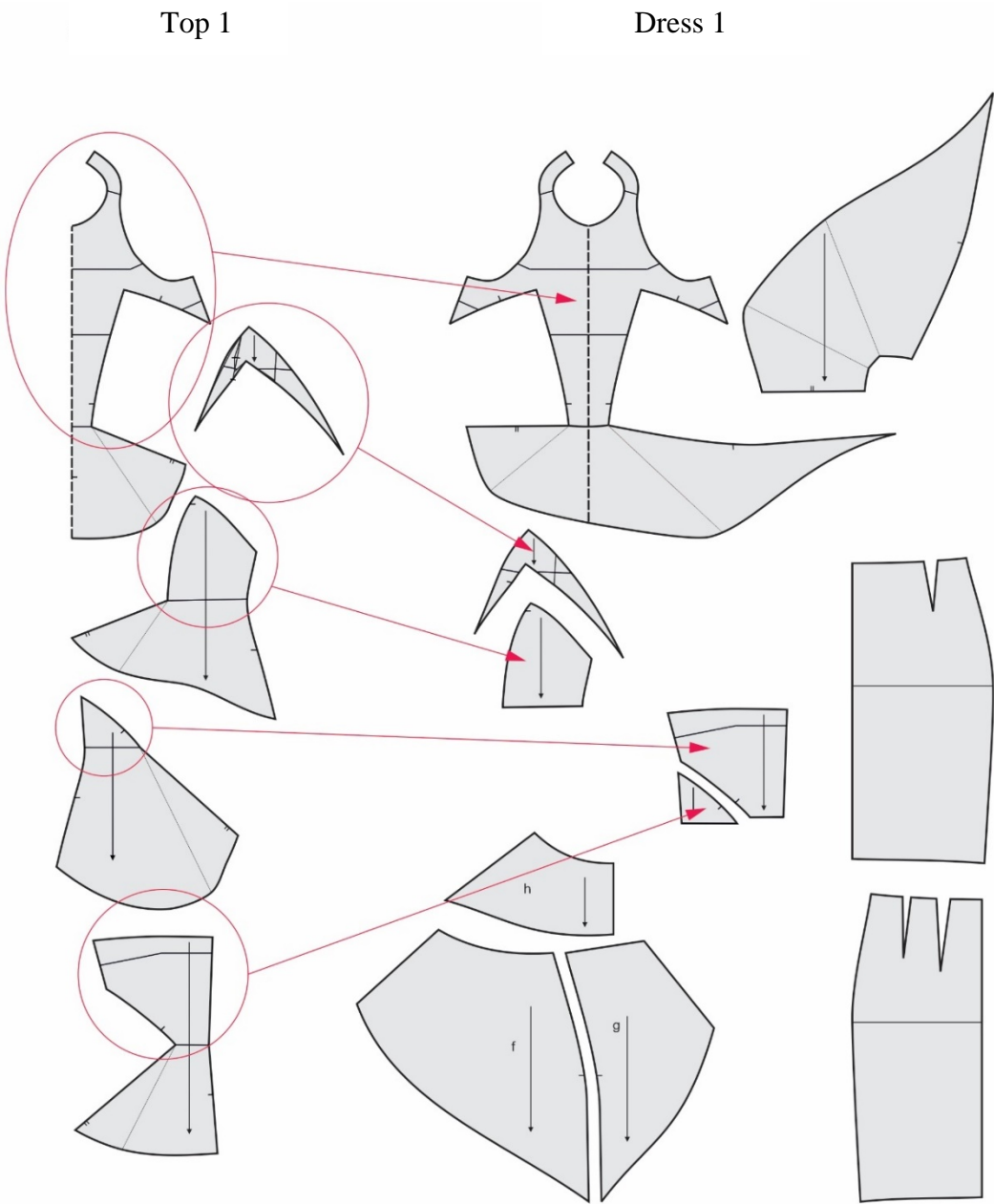


Fig. 27

CONCLUSIONS

The aim of the study was to provide a holistic view of the design process to determine the complex role of patternmaking and draping. Particular attention was paid to the creative process, the different approaches that designers can take and how patternmaking is actively and passively involved in these. Pattern construction was considered both as a technical element and as a tool in the creative process. One of the main aims of the paper was to demonstrate how important it actually is for a designer to have patternmaking skills in order to create distinctive designs and how a lack of technical knowledge decrease creativity and put a limit on the imagination. The dissertation brings to the fore the role of the patternmaker, and that in the creation of a fashion collection, at best the designer performs this function in the stage of developing the first prototypes. The two methods of creating patterns and their different advantages are examined. The need for good, even perfect, basic blocks is pointed out, which is the reason for a very detailed study of two of the most popular patternmaking systems. A new method of developing a basic block for a women's bodice has been developed to combine the best qualities of the two systems and to minimize the opportunities for mistakes. The study also traces the evolution of the design in a fashion collection, which in this case is demonstrated through the evolution of the construction.

The study allows to formulate several main conclusions:

- Good basic block is the foundation of a good finished product. It is the foundation on which the design idea is built and any flaw in the foundation is transferred to the designer cut. Although the design is the first thing to catches the consumer's attention, comfort and fit are key to the buying decision. That's why attention to pattern should be as great as attention to design.
- The role of the patternmaker is key to a good fashion product. A good patternmaker can point out flaws in cuts and suggest solutions. Neglecting the need for a good patternmaker leads to problems in the later stages of the production process, which in turn leads to wasted time, money and poor product quality.
- The construction is not only the carrier of the design idea, it is part of the design.
- Good design is born in the creative process - experimentation provokes the imagination and generates new ideas.

- A better designer is also a patternmaker. Often the design idea is born in working with the pattern. A designer who cannot handle patternmaking is limited by his own ignorance. To put it in its simplest form - you can't imagine what you don't know exists, therefore you can't turn it into a design.
- Learners' underestimation of patternmaking and draping in the learning process leads to their inability to distinguish good from bad quality and to create designs with identity and added value. In this thesis, this design is defined as 'flat' as it is built on a two-dimensional perception of the garment and gives birth to 'flat' ideas - in a direct and figurative aspect. Designers who do not understand construction, have not improved their spatial perception and cannot think three-dimensionally, start from familiar classical silhouettes.
- A designer who does not know and understand the elements of clothing may give vague and rather abstract ideas and rely entirely on the knowledge and skills of the patternmaker to materialize that idea, and in the most dishonorable scenario - steal other people's ideas.
- Knowledge of patternmaking eliminates the limits on designer's imagination and vice versa - ignorance impoverishes ideas.

CONTRIBUTIONS OF THE THESIS

- This is the first theoretical study in Bulgaria focusing on the participation of the patternmaking in the creative process and generating ideas. I cannot claim that there are none worldwide, but my research so far finds none.
- The study provides an extensive analysis of the role of pattern in the fashion business and fashion product creation, explores various aspects of patternmaking and draping, and provides new insights into the complexity of their application.
- For the first time, construction is considered as a component of design and not just as a carrier of the idea.
- The study also traces the evolution of construction in the context of the evolution of design in a fashion collection.
- For the first time, an in-depth comparative analysis of two popular patternmaking systems - *M. Müller & Sohn* and *ESMOD* is made
- The study proposes a new, easier to understand and execute method for drafting a women's

bodice block that does not claim to be original, but is a combination of the advantages of the two studied methods with their disadvantages eliminated.

- The study includes adapted by the author size-chart, with dimensions corresponding to French standards, but also containing all the measurements needed to build both Müller and ESMOD blocks, as well the author's adapted method for developing a women's corsage.
- The research can contribute to rethinking teaching practices in Bulgaria in the direction of encouraging students to master their skills in the field of patternmaking and draping in order to apply them successfully in the creative process.
- Practical application of the research is already taking place in the patternmaking courses at New Bulgarian University, where I have been a lecturer for 7 years. This approach encourages students to experiment with complex methods of patternmaking, to apply draping to their practice and to experiment with different techniques. In this sense, the research can also serve as a methodological basis for creating classes, workshops and masterclasses entirely focused on experimenting with mixed media and complex patternmaking techniques.

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