

Jure Purgaj¹ and Simona Jevšnik^{2,3}

¹University for Teacher Education Vienna, Grenzackerstraße 18, AT-1100 Vienna

²INLAS d. o. o., Intellectual Property and Counseling d. o. o., Grajski trg 3, SI-3210 Slovenske Konjice

³University of Maribor, Faculty of Mechanical Engineering, Institute of Engineering Materials and Design, Smetanova 17, SI-2000 Maribor

Designing the Myth: Pattern Language to Assist with the Designing of Garments at the Drawing Stage

Oblikovanje mita: jezikovni vzorci kot pomoč pri oblikovanju oblačil v fazi risanja

Original Scientific Article/Izvirni znanstveni članek

Received/Prispelo 09-2015 • Accepted/Sprejeto 12-2015

Abstract

This article presents and introduces a new approach for researching into fashion, textile and clothing design. Following Christopher Alexander's understanding of a pattern language the aim is to present and propose a pattern language which assists with the visualisations and designs of garments that use narrative, non-visual forms as forms of inspiration. To visualise the descriptions of the Slovenian mythological creatures, a *guided method* for designing the garments was developed, based on fashion design practice and different proposed mythological patterns. Furthermore, the design components during the drawing process were defined and analysed. The above-mentioned type of research is important in order to better understand the phases in the design process during drawing. On the basis of the gained results it can be concluded that the proposed pattern language and the guided method have great potential for creating new interdisciplinary knowledge. This developed method for visualising garments' forms was tested on Slovenian mythological creatures but it could be used with any written texts. Moreover the method can also be used for educational purposes and further research into fashion design processes because it provides a classified environment that can be easily observed, analysed, and discussed.

Keywords: fashion design practice, visualisations, mythology, pattern language, narrative inspiration

Izvleček

Članek uvaja nov pristop k raziskovanju mode, oblikovanja tekstilij in oblačil. Raziskava sledi razumevanju Christopherja Alexandra o jezikovnih vzorcih in uvaja jezikovne vzorce, ki omogočajo vizualizacijo in oblikovanje oblačil v primerih, ko je oblikovalsko izhodišče pripovedna in nevizualna oblika inspiracije. Za vizualizacijo opisov slovenskih mitoloških bitij je bila razvita vodena metoda, ki temelji na oblikovalskem procesu in različnih mitoloških vzorcih. V članku so opredeljeni in analizirani procesi, ki se pojavijo v fazi risanja. Predstavljena raziskava osvetljuje razumevanje procesov pri oblikovanju oblačil v fazi načrtovanja risbe. Na podlagi pridobljenih rezultatov je mogoče sklepati, da imajo predlagani jezikovni vzorci in vodena metoda velik potencial za ustvarjanje novih interdisciplinarnih znanj. Razvita metoda je bila testirana na slovenskih mitoloških bitjih, vendar je lahko uporabljena pri vseh virih, ki temeljijo na pripovedni, nevizualni obliki. Prav tako se lahko predstavljena metoda uporablja za izobraževalne namene in nove raziskave v modnem oblikovanju, saj zagotavlja standardizirano okolje, katerega je mogoče opazovati in analizirati.

Ključne besede: procesi v modnem oblikovanju, vizualizacije, mitologija, jezikovni vzorci, narativna inspiracija

Corresponding author/ Korespondenčni avtor:
D.Sc. Jure Purgaj
E-mail: jure.purgaj@phwien.ac.at

Tekstilec, 2016, letn. 59(1), str. 4-14
DOI: 10.14502/Tekstilec2016.59.4-14

1 Introduction

Definitions in design are focused on processes that are oriented towards particular goals, problem solving and the improvements of existing situations [1]. The design knowledge lies, according to Cross, in the designers themselves, in the design process and in the designed objects. Methods of how designers work, how they come up with ideas, how they design individual objects are processes that include design knowledge [2]. In the year 1993 Christopher Frayling published an article with the title *Research in Art and Design*, where he described three different approaches on research into, through, and for art and design. *Research into art and design* is according to Frayling a type of research which is orientated towards “historical research, aesthetic or perceptual research and research into a variety of theoretical perspectives on art and design” [3]. *Research through art and design* is according to Frayling a type of research that is orientated towards “material research, development of the work, and active research” [3]. *Research for art and design* is according to Frayling a type of research which is orientated towards “artefact research and the knowledge that lies in the artefacts that is visual and not verbal” [3]. The concepts of research in, for and through design were later addressed by, among others, Alain Findeli [4] and Wolfgang Jonas [5].

Due to the fact that mythological narratives are mostly widespread in a non-object form and that specific garments may only be compared and analysed if they have a material form [6], the decision was made to visualise them so that they could be analysed in future research to find out what aspects may be considered to be unique. With this kind of research the ideas of Zimmerman [7] are promoted, that designers should do what they do best, i.e. observe the world and design, and thus visualise knowledge which contributes to the development of the discipline of design.

This paper presents and discuss the newly-developed guided method and the mythological patterns for fashion design, which have proved to be more suitable for visualising of the descriptions of garments from any narrative form. The presented method was developed within the doctoral thesis entitled “Design and Visualisation of Garments Worn by Mythological Slovenian Creatures” [8]. This investigated research type is important for analysing the

transmission of non-picture-based inspiration into designed objects and thus to gain a better understanding about the design processes. Furthermore, this research can also show how and what students are designing during drawing the garments and to gain a clearer, deeper insight into the designed components that form the garments’ silhouettes.

Moreover, in this research paper, the theoretical framework, suggestions and methods from the following fields were used: Slovenian mythology, architecture and fashion design.

The theoretical framework of the research is presented initially. Next, the design process at the drawing stage is discussed. After that, the formation and development of mythological patterns and the guided method are presented. The patterns that have been developed, proposed and tested in this research article were the first attempt and a starting point towards building a pattern language for fashion design. In addition, a design case is presented in which the proposed method was tested. The article ends with conclusions and proposals for future research.

1.1 Descriptions of garments in Slovenian mythology

Slovenian mythology represents a form of a unique cultural tradition that a designer can use as starting points in the creation of a wide range of products. Many researchers are and have researched Slovenian mythology but the research focuses primarily on the importance and formation of myths. The word myth originates from the Greek word *mythos* and stands for a text, wording for a story [9]. Researchers such as Anzur [10], Kropej [9] and Smitek [11] have researched the Slovenian mythology to define its origins and meaning. They researched it to obtain a better understanding of a specific tradition but not as a source towards design artefacts. The Slovenian mythological tradition offers a unique cultural heritage that can be used as an inspiration for forming an individual design language that can help to promote a design language that can be understood as specific to a certain region.

Descriptions of garments worn by mythological creatures are used to determine their social status and characters. Bad, negative or evil creatures are always dressed in old, torn and black garments. In contrast good, positive and helpful creatures are always dressed in white and clean garments [8].

Radenkovic notes, that mythological creatures are appearing in human form but the role of worn garments is different to the role when these garments are worn by humans [12]. The garments worn by mythological creatures are not used to protect a creature from weather conditions or to hide sexual attributes as it is when they are worn by humans. Garments are used as indicators for creatures' natures [8].

The garments worn by Slovenian mythological creatures open up a new dimension in the research of Slovenian mythology and additional insights which have a positive impact on the understanding of the importance of clothing as a system of communication [13], which can have an arbitrary shape.

1.2 Alexander's approach to patterns and the pattern language

The field of fashion, clothing and textile design is part of the discipline of design, but must be addressed by interdisciplinary means [14].

In the language that is used in fashion design, the term *pattern* refers to a particular artistic or technical component. When Alexander talks about patterns and pattern languages, he is not talking about artistic or technical components, but instead, about patterns that can be considered as the best examples to solve a recognized problem [15]. The use of the pattern language was and still is extremely controversial in the world of architecture [16-18] but in the world of Human-Computer Interaction and software engineering, patterns are often used and accepted as producers of good design solutions [19-22]. At the present time they are even used to inform and improve firefighting practice [23]. Until 2015, no one has ever published patterns or a pattern language for fashion design.

In 1977, Alexander promoted and presented an alternative to established ideas in architecture, building and planning [24]. The idea that was introduced should be seen as a new philosophical framework in design [18] and not only as a new design method. Alexander researched the interaction between people, artifacts, and the world. Patterns and pattern languages present methods that can help to solve complex problems in architecture and design.

Each of Alexander's patterns consists of a number, name, abstract, example, sketch, description of the problem that the pattern addresses, description of the use of a pattern, and an explanation as to why

such a solution is suitable, and describes the situation in which this pattern can be used [24]. Each one has to reveal the relationship between the context and forces that occur within a specific field [25]. A pattern can be used only if it contains two empirical requirements: Firstly, it has to have the ability to address the problem as a conflict between forces within a given context, and secondly, it has to suggest solutions that do not produce new conflicts within a given situation [25]. According to Alexander, the feelings of humans are the most important aspects to be considered at the stage of proving if a pattern is suitable for use or not.

If combined, patterns can form a *Pattern language* which should provide abstract solutions that solve problems within a specific context [26, 27]. The structure of a pattern language is formed by single, non-isolated patterns. Each has to be part of a smaller and larger pattern at the same time. The patterns have to support each other and contain results that form a whole. Each has to be seen as the centre of a network that forms a pattern language. The links between the patterns are as important as the patterns themselves [25]. Each one, as for example pattern number 189, the dressing room, not only addresses the dressing room but also provides suggestions and solutions that the designer should consider when designing a house. His 253 patterns form the pattern language.

1.3 Patterns for the visualisations of the descriptions of garments

For the visualisation of garment descriptions, the method proposed by Alexander [15, 24, 25] was redesigned, and adapted in a way that can be used to solve problems which arise in the phase of drawing during a fashion design project. In this phase, the designer designs five components that define the finished garment: He/she designs the silhouette (S), proportions (P), garment forms (O), material (M) and accessories (D) [28]. While designing the silhouette, the designer also designs the shape of the body or the shape of the dress. While designing the proportions, the designer designs the proportions between different garments in a silhouette or between the silhouette and the body. While designing the garments, the designer designs the actual clothes that will build the finished silhouette. While designing the material, the designer defines the material that will be used in the finished garment. While design-

ing the accessories, the designer decides either to design accessories which will be sewn into the garment, such as pockets, sleeves and scarves, or to design accessories that will be produced separately, like shoes or bags. The five phases (S, P, O, M, and D) that occur during drawing were used to determine five main categories in the presented pattern language.

2 Experimental part

The research was divided in three parts. In the first part patterns were developed using Alexanders approach to a pattern language [25]. In the second part those patterns were tested during a workshop which took place at the Faculty of Natural Sciences and Engineering, University of Ljubljana, by fashion design students in their final year. In the last (third) part of the test the selection of a non-picture based inspiration, the design components during the drawing process and the components that form the garments silhouette were analysed.

For the needs of this research, patterns were developed with the help of Slovenian mythological stories but the method may be applied to any narrative form. The patterns were developed for the visualization of Pehtra, a Slovenian mythological creature. She was chosen because her garments were described 18 times in the researched stories. To define the patterns, more than 2400 written texts were researched. 14 stories that contained descriptions of the garments worn by Pehtra such as a dress, skirt, or blouse and a garment variation, such as a dark dress, long skirt, or wide black dress were found. Those descriptions served as the starting point for developing the mythological patterns and each of the 18 patterns was developed in the same way. For example, the sentence describes Pehtra as: "She was a giantess wearing a long, bright dress that reached down to the floor" [29]. This example was used to define five different patterns as presented below. The example provide information about one garment type and four garment variations that may be linked to four categories. The first is the pattern *giant* which was linked to the category *silhouette*. The second is the pattern *long* and the third is the pattern *down to the floor*. Those two patterns were linked to the category *proportions*. The fourth pattern *dress* was linked to the category *garments*. The fifth pattern *bright* was linked to the category *material*.

2.1 Single Pattern for the Visualisation of Pehtra's Written Garments

According to the findings of garment descriptions worn by Pehtra, 18 different patterns were developed. Each of the 18 patterns consists of 8 sets, which ensure its integrity and relevance for solving identified problems. Due to the magnitude of the problem, only one developed pattern, i.e. *Giant – S(p)#1*, is presented.

Set 1: Name of the Pattern

Description: In the first pattern set, the pattern's name is determined, which consists of 2 parts: The first describes a variation or type of garment, while the second forms the pattern's acronym. S stands for the category Silhouette, (p) stands for the name of the creature Pehtra and the number stands for a specific variation in a single category.

Example: Giant – S(p)#1

Set 2: Summary of the Story

Description: In the second pattern set, the story in which a certain garment type or a garment variation was mentioned is summarised.

Example: The story with the title "Our Father Meets Pehtra" talks about a man who liked to take short-cuts. During one of his trips, he encountered the giantess. Upon seeing her, he was paralyzed with fear. Once he could move again, he saw her walking down the hill [29].

Set 3: Example

Description: In the third pattern set, the part in which a certain garment type or variation was mentioned is quoted.

Example: "She was a giantess wearing a long, bright dress that reached down to the floor" [29].

Set 4: Context

Description: In the fourth pattern set, the garments characteristics are placed in a setting and described with the help of empirical facts.

Example: The word "giant" provides information about the volume of a certain body or garment. The volume in fashion is being used to describe the dimensions of a particular garment but is not as precise as the length or the width [6]. When defining the volume of a garment, one should consider the relationship between both extremes: the giant and the tiny (polar opposites). Those two extremes do not provide an absolute state but should be seen as a temporary

position of a certain volume. This means that the volume cannot be giant and small at the same time [6]. Regardless of whether only one variant is mentioned (giant), it is necessary to determine the relationship between giant and normal, and normal and tiny because it is necessary to set the rules of a system over the rules of a language [6]. The word “normal” describes a particular established rule, which is in accordance with established standards [30].

Set 5: Problem

Description: In the fifth pattern set, the problem that the pattern addresses is defined.

Example: Define the relationships between giant, normal and small.

Set 6: Forces

Description: In the sixth pattern set, all known information about a certain problem that a pattern addresses is recaptured. Further attention is drawn to the problems faced by the designer during the design process. In addition, the symbolic meaning of each visualised garment type or garment variant is mentioned.

Example: The volume of a body can represent a starting point in a design process. The designer has to decide whether to follow the volume of the body or to totally ignore it. Garments with giant volumes emphasise authority and personality, while clothes with a small volume highlight eroticism [31].

Set 7: Solution

Description: In the seventh pattern set, the proposed solution for the addressed problem is described.

Example: Design a silhouette according to the defined volume of the giant.

Set 8: Sketch

Description: In the eighth pattern set, a proposal for a solution is sketched (Fig. 1), and thus it may be discovered whether the solution is relevant. Each pattern becomes relevant only at the point where one can draw it [24].

Example:



Figure 1: Sketch of the presented pattern

2.2 Designing a pattern language

The *guided method* was developed to connect single patterns into a pattern language. This (Fig. 2) presents a newly-developed method which is based on a guided design process that was developed to assist in the designing of garments that use any narrative form for inspiration. The method consists of two parts: The first, called “the design process”, defines the importance of the individual phase in the process of drawing the garment and consists of the following phases: Design of silhouettes, design of proportions, design of clothes, design of accessories, and design of material. Each user decides which phase in the design process is the more important one to him/her [1], and which one is the least important [5]. The defined value scale defines the process of how the garment will be drawn (In this case the more important phase is “Design of Silhouettes” and the least important is “Design of Accessories”). This means that the user will first draw the silhouette of the garment and, in the last stage, its accessories. The second part, called “Mythological Patterns”, defines the sets that form the garment’s silhouette and the variants that form its silhouette. The variants that form the silhouette are based on the results obtained from the researched literature.

The Guided Method			
I. The Design Process		II. Mythological Patterns	
Importance of the individual phase	Phases in the design process at the stage of drawing	Categories that form the garment's silhouette	Variants of sets that form the garments silhouette
1.	Design of silhouette (S)	Silhouette	Big Giant
2.	Design of proportions (P)	Proportions	Long Until the floor Very long
3.	Design of clothes (O)	Clothes	Dress Skirt Shirt
4.	Design of material (M)	Material	Black Wool
5.	Design of accessories (D)	Accessories	Shoes

Figure 2: The developed guided method used in the presented research

2.3 Design Components during the drawing process

The designer defines during the drawing process of the garments, the garment's silhouette and its proportions, the clothing variants, the material, and the accessories. Barthes [6] understanding of variants and types of garments was used for accurate observation and analyses of the individual components that define the silhouette. Barthes describes the silhouette as a variant of the volume, the proportions as a variant of the fit, the clothing as a variant of different clothes, the material as a variant of materials and the accessories as a variant of different accessories [6]. The five components that form a garment's silhouette were used to form the categories in the proposed pattern language.

The Silhouette

The drawn silhouette may be defined as the silhouette of a garment or that of a body. "A silhouette of a garment defines its outer side" [32]. The words "giant", "small body", "long legs", "big head" and "large" describe variants of volume. Descriptions such as "small body", "long legs" and "big head" clearly describe the volume of the body, while the words "giant" and "large" do not give accurate information if they are describing the silhouette of the garment or that of the body. The volume of the body represents a starting point in designing clothes. The designer decides whether he/she will follow the volume of the body or if the given volume will be completely ignored. "Garments the volumes of which are giant underline authority and personality, while clothes with a small volume emphasise eroticism" [31]. Further more, the silhouette may be symmetrical or asymmetrical with regard to its horizontal or vertical cross-section. Words such as "giant", "huge" and "small" provide information about the length and depth of a silhouette, although this information is imprecisely defined. In contrast, words such as "long" and "short" provide only descriptions of length [6].

Proportions

Proportions provide information about relationships which may represent a relationship between clothing and the body, one between garments and space, or one between the garments themselves. Words such as "long" or "down to the floor" describe a variant of length, which is always in relation to the object which it defines. "Length" is the more accurate and more widely-used variant, which is determined by the fact that the lower and upper body are not symmetric" [6]. Irrespective of whether only one variant

is mentioned, it is always necessary to specify the relationships between all the possible states. Through that all the possibilities offered by the regulations of information may be taken into account. The length of a proportion is a condition with a start and an end-point. Changing the length of a proportion allows an unlimited number of variants for each garment. According to Barthes, it is the length of an element that is in a relationship with space [6]. The designer determines the space of a body rather than the space in which a garment will be represented [6].

Garments

The word "dress" represents a variant of a garment. "Clothes may be knitted, narrowly tailored or made out of structured forms" [33]. Textsite.info defines a dress as "women's outdoor clothing with sleeves that cover the upper and the lower parts of the body. A dress is the basic item in a woman's wardrobe. Typically it consists of a skirt and a corset with sleeves and a collar. It can also be sleeveless and collarless" [32]. The number of parts building the dress determines the dress's variants. "One-piece dresses accentuate innocence, youthfulness, and spontaneity, while a two-piece dress suggests a duality between good and evil. This duality derives from Greek mythology. A woman is only divine from the head to the waist, and demonic from the waist down" [34]. While the woman's dress may be one-piece, men's clothes are mostly presented as a three-piece unit that consists of trousers, a shirt and a jacket [6].

Material

Material is "surface formation" [32], which may be distinguished according to its fibres, mode of binding, colour or thermal properties. Words such as "golden", "bright", "ripped" or "black" describe the variants of material. Individual words provide information about its properties. Words like "gold", "bright" and "black" provide information about the visual appearance of a material and not its fiber composition, mode of binding or thermal properties. All these words propose the subjective perception of a situation; so it is necessary to identify and to take into consideration the relationships between the states. Irrespective of whether only one variant is mentioned, it is always necessary to specify the relationship between all possible states. The word "ripped" provides information about the state of a material and represents a polar opposite to the whole material [6].

Accessories

Accessories represent the largest group of variants because they include all the parts that can contribute

to the change of a garment's silhouette. Words such as "axe", "handle", "basket", "sleeve" and "handkerchief" represent different kinds of accessories. The most important accessories are "a hat, cap, scarf, head-scarf, handkerchief, gloves and stockings" [32]. Accessories may directly affect the silhouette of a garment, i.e. in the way that the accessory represents an addition to the silhouette and is fixed directly or indirectly, and in the way that the accessory is simply added to the garment's silhouette. The group of accessories that directly affect the garment's silhouette include the sleeve, which can be one or more-paced. The group of accessories that affect the garment's silhouette indirectly include the axe, handle, basket and handkerchief. These are designed independently and are added later to the garment's silhouette [6].

2.4 The Design Case: Visualisation of Garment's Worn by Pehtra

The laboratory experiment presented here, as a design case, was carried out during a workshop which took place from 8.11.2012 to 15.11.2012 at the Faculty of Natural and Technical Sciences, University of Ljubljana, in which the students visualised the

garments worn by *Pehtra*, the Slovenian mythological creature. 29 students took part, and 23 successfully completed it. 6 students did not complete the tasks in the given time. The experiment was conducted with textile and fashion design students because they did not have a clear design language at that time, and were therefore able to apply new design methods more easily.

At the beginning each student was given a copy of the developed pattern language (Fig. 3).

First, the students had to decide which category was the more important and which one was the least important one for them. After that, they had to choose 1 variant from each category which, in their opinion was the most suitable for the visualisation of the creature's garment. After that, they had to draw every variant selected on a separate sheet of paper. During the test, the students drew 690 drawings of Pehtra's garment variants. As shown (Fig. 4), the student in this example decided that the more important phase for him is "designing the silhouette", so he started with that stage. The second one was the design of the proportions, the third was the design of the garment, the fourth was the design of the

PEHTRA							
Silhouette #1	GIANT	S(p) #1	SHORT BODY LONG LEGS BIG HEAD	S(p) #2	HIGH	S(p) #3	
Clothes #3	DRESS 1	O(p) #1	DRESS 2	O(p) #2	DRESS 3	O(p) #3	DRESS 4
Material #4	BRIGHT	M(p) #1	RIPPED	M(p) #2	GOLDEN	M(p) #3	BLACK
Proportions #2	LONG	P(p) #1	DOWN TO THE FLOOR	P(p) #2			
Accessories #5	HANDKERCHIEF	D(p) #1	AXE	D(p) #2	HANDLE	D(p) #3	BASKET
	SLEEVE	D(p) #5					

Figure 3: Pattern language for the visualisation of the written garments of Pehtra

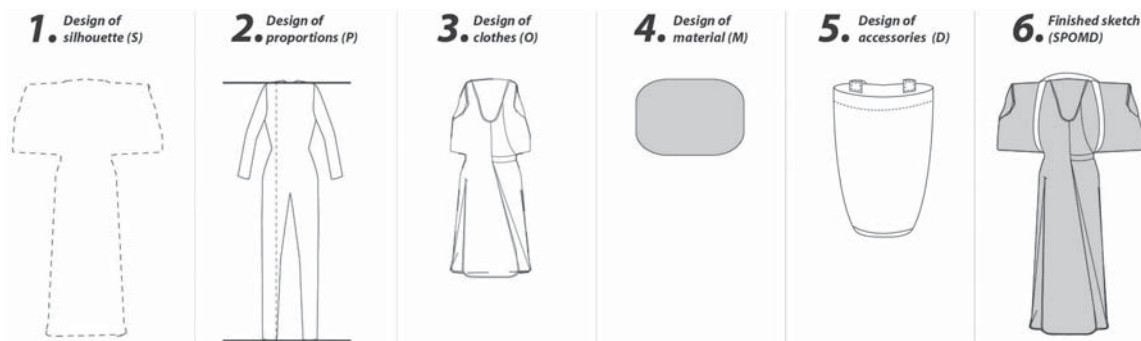


Figure 4: Defined drawing process and visualisations of the selected variants

material and the last one was the design of the accessories. In the sixth phase, the student combined all the design stages to form the finished silhouette.

3 Discussion

After the test, the selection of non-picture based inspiration that was linked to a certain creature, the design components during the drawing process and the components that form the garment silhouette were observed.

3.1 Selection of Non-picture Based Inspiration

The results obtained in the test (Fig. 5) show, that 43% of the students chose the mythological pattern $S(p)\#1$ - Giant from the set of variants that describe the silhouette. In 73.91% they chose the mythological pattern $P(p)\#1$ - Long from the set of variants that describe the proportions. In 34.78% they chose the mythological pattern $O(p)\#2$ - Dress 2 from the set of variants that describe the clothes. In 60.87% they chose the mythological pattern $M(p)\#4$ - Black from the set of variants that describe the material. In 43.48% they chose the mythological pattern $D(p)\#4$ - Sleeve from the set of variants that describe the accessories.

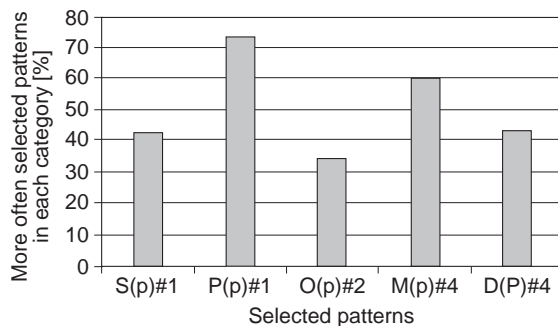


Figure 5: More often selected patterns in each category

3.2 Selection of the design components during the drawing process

The results obtained in the test show that 21.74% of the students chose the combination SPOMD (silhouette (S), proportion (P), clothes (O), material (M) and accessories (D)) to define their drawing process. 8.74% chose the combinations SOMPD, SMOPD, PSOMD, OSMPD, OMSPD and MOPSD, 4.35% chose the combination SPOMD, SPMOD, SMPOD, PSMDO, PMODS and MSOPD. As shown in (Fig. 6), 52.17% defined the phase of designing

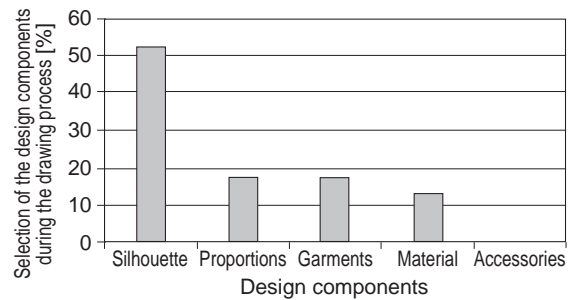


Figure 6: Percentage of the selection of the design components during the drawing process

the silhouettes as the more important phase in the design process while drawing. As second and third they defined the designing of the proportions and the design of the clothes in 17.39% of the cases. In fourth place 13.05% defined the design of the material. None of the students 0%, defined the design of the accessories as the more important one.

3.3 Components that Form the Garment's Silhouette

In the test, 115 sets of drawings (Fig. 7) were collected with 5 components that the students designed and 1 finished drawing, a total of 690 drawings. Each component was analysed separately to define how and what the students were drawing. As shown in (Fig. 6), the student in this example decided to start

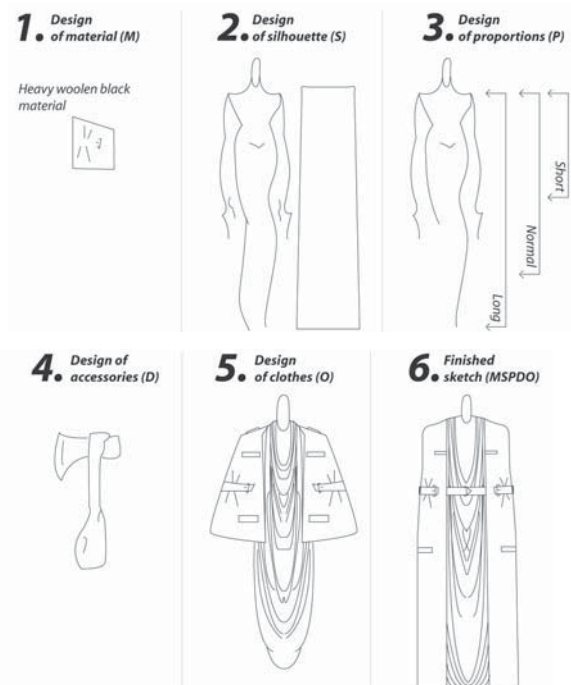


Figure 7: Set of drawings

by designing the material, followed by designing the silhouette, proportions, accessories and clothes.

3.4 Mythological Pattern solutions

The results obtained in the test while analysing the component of the silhouette show that 91.30% of the students used the proposed solutions. While analysing the component of proportions the results showed that 82.60% of the students used the proposed pattern solution. While analysing the components of garments the results showed that 91.30% of the students used the proposed pattern solution. While analysing the component of material the results showed that 69.60% of the students used the proposed pattern solution. While analysing the component of accessories the results showed that 78.26% used the proposed pattern solution. As shown in (Fig. 8) the proposed pattern solutions were used by an average of 82.2%.

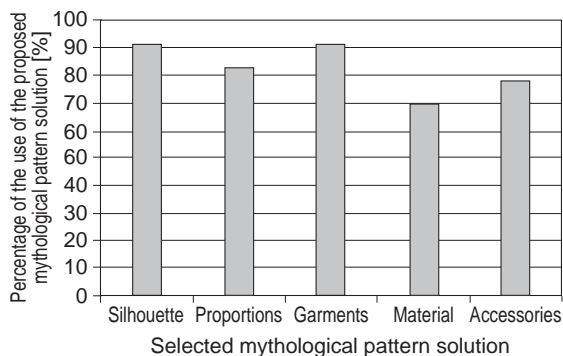


Figure 8: Percentage of the use of the proposed mythological pattern solution

The formation of the silhouette

79.13% of the students used lines, 14.78% used geometrical forms, and 6.09% used the human body to draw the garment's silhouettes. Garment silhouettes created using lines have an organic shape and provide a sense of lightness as opposed to those using geometrical forms, which have a hard, rigid, geometrical shape and provide a sense of stability. Furthermore, it may be concluded that the silhouettes that were not drawn with the help of the human form looked grotesque and theatrical.

The formations of the proportions

100% of the students defined the proportions' start and end points. They always defined only the proportions of the whole garment's silhouette and

never the inner proportions of single garment variants. 73.90% of the students defined the start point for the length of the proportion at the area of the shoulders and the end point near the floor. 26.10% defined different starting points but mainly in the area of the neck or the head. When they defined those start points, the finished garment's silhouette had a hood or a collar.

The formation of the garments

54.80% of the students designed a multi-piece dress, while 45.20% designed a single-piece dress. 91.40% designed a symmetrical dress, while 8.70% designed an asymmetrical dress. 90.40% visualised the garment on the human body, while 9.60% visualised it without it.

The formation of the material

100% of the students designed the material but only 15.70% used it on the finished garment drawing. 66.70% of the students who used the designed material on the finished garment used words to visualise the garment.

The formation of the accessories

100% of the students designed the accessories and 70.40% of them used them on the finished garment drawing. 75.10% who used the accessories on the finished garment visualized the accessories on the human body.

The results obtained in the test while analysing the final sketch show that 100% of the students used the defined silhouette, defined proportions and defined variant of the clothing on the finished drawing. Furthermore, the results show that 83.47% of them used the defined accessories on the final drawing and that 14.78% used the defined material on the final drawing.

4 Conclusion

This article presents and opens a new approach in fashion, textile and clothing design research. The proposed *guided method* for researching fashion, textile and clothing design shows great potential for creating new interdisciplinary knowledge and also suggests the use of new methodological approaches, such as mythological patterns and the defined design process in researching fashion design.

With the results obtained in the test it was proved that the design process is reflected at the level of chosen words and at the level of the chosen design components during the drawing process, but it is not reflected in the visualisations of different garments' silhouettes.

Furthermore, it may be concluded that the majority of the students depicted Pehtra's garment silhouette as a huge organic form that is frontally drawn, in two-pieces, symmetrically, black and with the volume of a human body. The proportions were defined from the area of the shoulders down to the floor. In the segment of accessories, the majority drew sleeves.

Furthermore, the students considered the design of the accessories as the least important at the stage of drawing the garment's silhouette, as they never started with this category. The results confirmed that the developed *guided method* is suitable for visualisation of garments that use narrative form as an inspiration and that the guided method allows visualisations that ensure accuracy and relevance of the visualisation because it provides information about the defined clothing inventory.

With the guided method it is possible to transform written descriptions of garments into visualizations in the form of drawings. Through that, the verbal structure of garments can be successfully transformed into the garment's visual structure. To fully fulfill the aims of Barthes [6] and to continue the search for a unique design language, the visual structures of the garments have to be transformed into technical structures and then into iconographic ones. Those three structures would offer starting points for further interdisciplinary research. In addition, the developed method proved to be a great tool which may be used by fashion design students to improve their fashion design practice, and by fashion design educators to help students with their design decisions. The proposed method offers solutions that have been tested and may be understood as best examples. Furthermore, the method proved to be a great tool for analysing the design process and offers a deep insight into it because it provides a standardised environment that may be easily analysed and discussed.

Moreover the development method takes into account the fashion design practice and supports the idea that fashion designers need instructions that will guide them and make them aware of all known

descriptions of garments that may be linked to a specific creature. Through that it was established that the visualised garments do not only contain the interpretations of a certain designer but may be seen as a concrete and correct visualisation of a certain creature's garment.

References

1. FRIEDMAN, Ken. Theory construction in design research: criteria: approaches, and methods. *Design Studies*, 2003, 24(6), 507–522. doi: 10.1016/s0142-694x(03)00039-5.
2. CROSS, Nigel, PICAZZARO, Silvia, DE MORALES, Dijon, ARRUDA, Amilton. Designerly ways of knowing: design discipline versus design science. *Design plus research, Proceedings of the Politecnico di Milano conference*. Milano : Politecnico di Milano, 2000, 43–48.
3. FRAYLING, Christopher. Research in art and design. *Royal College of Art Research Papers*, 1993/4, 1(1), 1–5 [online] [accessed 19. 9. 2014]. Available on World Wide Web: <<http://opensigle.inist.fr/handle/10068/492065>>.
4. FINDELI, Alain. Die Projektgeleitete Forschung. *Erstes Design Forschungssymposium*. Basel : Swissdesignnetwork, 2004, 40–52.
5. JONAS, Wolfgang. Research through DESIGN through research: A cybernetic model of designing design foundations. *Kybernetes*. 2007, 36 (9/10), 1362–1380. doi: 10.1108/ 03684920710827355.
6. BARTHES, Roland. *Die Sprache der Mode*. Frankfurt am Main : Suhrkamp Verlag, 1985.
7. ZIMMERMAN, John, FORLIZZI, Jodi, EVENSON, Shelley. Research through design as a method for interaction design research in HCI. *Proceedings of the SIGCHI conference on Human factors in computing systems – CHI '07*. California, San Jose : ACM Press, 2007, 493–502.
8. PURGAJ, Jure. *Oblikovanje in vizualizacija oblačil slovenskih mitoloških bitij : doktorska disertacija*. Ljubljana : Univerza v Ljubljani, NTF Oddelek za tekstilstvo, 2013.
9. KROPEJ, Monika. *Od ajda do zlatoroga: slovenska bajeslovna bitja*. Ljubljana : Mohorjeva družba, 2008, p. 352.
10. ANŽUR, Matjaž. *Zgodovina slovenske mitologije*. Ljubljana : samozaložba, Valuk, 2012.

11. ŠMITEK, Zmagor. *Mitološko izročilo Slovencev: svetinje preteklosti*. Ljubljana : Študentska založba, 2011, p. 428.
12. RADENKOVIČ, Ljubinko. *The appearance of mythological beings*. Ljubljana : Studia Mythologica Slavica. 2009, 12, 153–168.
13. BARNARD, Malcolm. *Fashion as communication*. New York : Routledge, 1996.
14. KAWAMURA, Yuniya. *Doing research in fashion and dress*. New York : Berg, 2011, p. 192.
15. ALEXANDER, Christopher. *Notes on the synthesis of form*. Harvard : Harvard University Press, 1964, p. 224.
16. DOVEY, Kimberly. The pattern language and its enemies. *Design studies*. 1990, **11**(1), 3–9, doi: 10.1016/0142-694x(90)90009-2.
17. SAUNDERS, S. William. A Pattern Language: reviewed. *Harvard Design Magazine*. 2002, **16**, 74–78.
18. BHATT, Ritu. Christopher Alexander's pattern language: an alternative exploration of space making practices. *The Journal of Architecture*. 2010, **15**(6), 711–729, doi:10.1080/13602365.2011.533537.
19. NOBLE, James. Towards a pattern language for object oriented design. *Technology of Object-Oriented Languages*. Melbourne, 1998, 2–13, [online] [accessed 23. 2. 2015]. Available on World Wide Web: <<http://ieeexplore.ieee.org/xpl/login.jsp?tp=&arnumber=750020&url=http%3A%2F%2Fieeexplore.ieee.org%2Fiel4%2F6067%2F16205%2F00750020.pdf%3Farnumber%3D750020>>.
20. FINCHER, Sally. Patterns for HCI and cognitive dimensions: two halves of the same story. *Proceedings of the fourteenth annual workshop of the psychology of programming interest group*, 2. Ed. by L. Baldwin and R. Scoble. London : Brunel University, 2002, 6, 156–172, [online] [accessed 29. 5. 2014]. Available on World Wide Web: <<http://scholar.google.com/scholar?hl=en&btnG=Search&q=intitle:Patterns+for+HCI+and+Cognitive+Dimensions+:+two+halves+of+the+same+story+?#0>>.
21. DEARDEN, Andy, FINLAY, J. Pattern language in HCI: A critical review. *Human-computer interaction*. 2006, **21**(1), 49–102, doi:10.1207/s15327051hci2101_3, [online] [accessed 19. 2. 2015]. Available on World Wide Web: <http://www.tandfonline.com/doi/abs/10.1207/s15327051hci2101_3>.
22. PAUWELS, Stefan. L., HÜBSCHER, Christina, BARGAS-AVILA, Javier A., OPWIS, Klaus. Building an interaction design pattern language: A case study. *Computers in Human Behavior*. 2010, **26**(3), 452–463, doi: 10.1016/j.chb.2009.12.004.
23. DENEFF, Sebastian, OPPERMANN, Reinhard, KEYSON, David V. Designing for social configurations: pattern languages to inform the design of ubiquitous computing. *International Journal of Design*, 2011, **5**(3), 49–65.
24. ALEXANDER, Christopher, ISHIKAWA, Sara, SILVERSTEIN, Murray, JACOBSON, Max, FIKSDAHL-KING, Ingrid, ANGEL, Shlomo. *A Pattern Language*. New York : Oxford University Press, 1977, p. 1171.
25. ALEXANDER, Christopher. *The timeless way of building complete*. New York : Oxford University Press, 1979, p. 552.
26. GAMMA, Erich, HELM, Richard, JOHNSON, Ralph E., VLISSIDES, John. *Design Patterns. Elements of Reusable Object-Oriented Software*. Boston : Addison-Wesley, 1994, p. 416.
27. BUSCHMANN, Frank, MEUNIER, Regine, ROHNERT, Hans, SOMMERLAD, Peter, STAL, Michael. *Pattern-Oriented Software Architecture*. West Sussex : John Wiley & Sons, 1996.
28. PURGAJ, Jure, JEVŠNIK, Simona. Designing the myth: tag clouds – a tool for visualization of garment descriptions in mythological narratives. *Tekstil*, 2012, **61**(7–12), 189–197.
29. PODBREŽNIK VUKMIR, Breda, KOTNIK, Irena, STANONIK, Marija, DOBROVOLJC, Helena, LAMUT, Vera, SEKULIČ FO, Mojca. *Čuden prečudež: folklorne in druge pripovedi iz Kamnika in okolice*. Glasovi. Celje : Mohorjeva družba, 2009.
30. Slovar slovenskega knjižnega jezika [online], [accessed 19.2.105]. Available on the World Wide Web: <<http://bos.zrc-sazu.si/sskj.html/>>.
31. FLÜGEL, Charles John. *The psychology of clothes*. Brooklyn : International Universities Press, 1971.
32. Textsite.info [online], [accessed 19.2.2015]. Available on World Wide Web: <<http://www.textsite.info/>>.
33. MCKELEYEY, Karthryn, MUNSLOW, Janine. *Fashion design: process, inovation & practice*. London : Wiley, 2012, p. 236.
34. HOLLANDER, Anne. *Seeing through clothes*. New York : Wiking Press, 1978, p. 504.