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Introduction of the Project

MUSEOEUROPE 2019

Mirjana Koren, PhD, Director of the Maribor Regional Museum

The international symposium MUSEOEUROPE 2019 is related to our new viewing storage of fashion clothing and accessories. Its opening marked the importance of the Collection of Clothing Culture at the Maribor Regional Museum, which consists of more than 10,000 items and is the biggest in Slovenia. It certainly represents a historical treasure, a centre of knowledge, a source of study and could be a huge inspiration for new ideas.

Textile, the culture of clothing, and fashion play an important role as part of the visual and material culture within the cultural history. As a visible expression of identity, they communicate social, cultural, economic, and aesthetic values of every individual. They present us with technological development as well as a certain level of society's sensitivity.

From its industrial beginnings, the textile industry has been characterised by the difficult working conditions of women and children. We cannot come to terms with the fact that in the 21st century an industry, which every two weeks offers us more beautiful, more attractive and more interesting pieces of clothing, is still employing children. The International Labour Organisation estimates that "170 million are engaged in child labour, with many making textiles, and garments that satisfy the demand of the consumers in Europe, the U.S., and beyond." I regret that none of the referees addressed this issue. However, I am looking forward to those who have considered eco-friendly textile materials and their treatment processes.

The symposium involved 29 researchers from six countries: France, Poland, Austria, Croatia, Serbia, and Slovenia. They came from different universities, museums, and research institutes. The institutions involved are as follows: Universalmuseum Joanneum, Austria; Faculty of Textile Technology, University of Zagreb, Croatia; Faculty of Natural Sciences and Engineering, Ljubljana, Slovenia; Faculty of Design, Associated Member of the University of Primorska, Slovenia; Faculty of Mechanical Engineering, University of Maribor, Slovenia; Faculty of Material Technologies and Textile Design, Lodz University of Technology, Poland; Faculty of Arts, University of Ljubljana, Slovenia; Reasearch Centre of the Slovenian Academy of Sciences and Arts, Ljubljana, Slovenia; National Museum Zadar, Croatia; High School of Fine Arts and Design, Zadar, Croatia; School of Fine Arts, Split, Croatia; Artis Center, Belgrade, Serbia; National Center for Stage Costume Moulins, France; and Maribor Regional Museum, Slovenia.

The symposium was organised by the Maribor Regional Museum under the auspices of ICOM Europe.

The papers in the proceedings were evaluated by an international team of reviewers, and prepared for publication by the editors Nives Cvikl and Maja Hren Brvar. They all provide an interesting reading.

TEXTILE, THE CULTURE OF CLOTHING AND FASHION

Maja Hren Brvar, Nives Cvikl, Maribor Regional Museum

Textile art is a fundamental human activity that symbolically expresses what is valuable in any culture. Textiles represent an important segment of material culture and have always played a major part in the social, economic, technological, aesthetic and religious areas of different communities. They serve the daily needs of people, but can also differentiate individuals and groups of individuals by social class, gender, occupation and position in society.

The culture of clothing is also strongly intertwined with social, cultural, economic and political influences. We are talking about everything that belongs to a person's appearance: clothes, headgear, shoes, various fashion accessories, after all, hairstyle and nevertheless, body care.

Throughout history, clothing has changed in a functional, aesthetic, moral and symbolic sense. Clothes also carry an important messages, through clothes we communicate with our surroundings and expressing our mood. It is a kind of nonverbal language with which we create different meanings in our daily lives.

Fashion in general represents latest clothing style, but its purpose can be very different. To someone it represents necessity, to someone it represents life, fashion makes someone more creative, interesting and stronger. Fashion can be art, expression and function. But in general, fashion is about storytelling through clothing. It also represent a cultural influence, backstory or intellectual touchpoint that you can trace back, with a sense of history that embodies a greater purpose that just a garment, which cover bodies.

The Maribor Regional Museum holds a unique collection of the culture of clothing in Slovenia. In the collection, which includes fashion clothing and accessories, uniforms, liturgical clothing and textiles, holds nearly 10.000 objects.

The collection of fashion features noble and bourgeois clothing from the 17th century to the present. The collection contains women's, men's and children's clothing, footwear, headgear and various fashion accessories. The reason for the creation of the special collection of fashion was the material already stored by the museum and the objects that were especially collected during the preparation of the exhibition Three Hundred Years of Fashion in Slovenia in 1965. In 1973, the collection got its permanent exhibition, which was on view until 2004. With the study depot of clothing culture and the new exhibition Open storage of fashion clothing and accessories, the museum remains a unique center for the study of clothing culture in Slovenia. In May 2019, the Collection of Fashion clothes and accessories was presented in a new depot setup, which during the international symposium Museoeurope 2019 includes also an item from the visiting museum. This year, we host The Varaždin city Museum from Croatia.

A special word of thanks goes to the following group of reviewers, who were generously involved in helping to create the collective volume TEXTILE, THE CULTURE OF CLOTHING AND FASHION: Aida Brenko, PhD, from the Etnographic Museum Zagreb, Croatia; Gašper Cerkovnik, PhD, from the Faculty of Arts in Ljubljana, Slovenia; Polona Dobnik Dubrovski, PhD, from the Faculty of Mechanical Engineering in Maribor, Slovenia; Petra Eva Forte Tavčer, PhD, from the Faculty of Natural Sciences and Engineering in Ljubljana, Slovenia; Eva Ilec, PhD, from the Regional Museum Ptuj – Ormož; Jadran Kale, PhD, from the University of Zadar, Croatia; Bojan Knific, PhD, from Museum of Tržič, Slovenia; Janja Korun, PhD, from Academy of Theatre, radio, film and television in Ljubljana, Slovenia; Deja Muck, PhD, from the Faculty of Natural Sciences and Engineering in Ljubljana, Slovenia; Žarko Paić, PhD, from the Faculty of Textile Technology Zagreb, Croatia; Marija Počivavšek, PhD, from the Museum of recent history Celje, Slovenia; Tadeja Primožič, PhD, from the Faculty of Arts in Ljubljana, Slovenia; Katarina Radisavljević, PhD, from the Museum of Vojvodina, Serbia; Andrej Skrbinek, PhD, from the Faculty of Mechanical Engineering in Maribor, Slovenia; Sonja Šterman, PhD, from the Faculty of Mechanical Engineering in Maribor, Slovenia; Ljubinka Teržan, PhD, from the Faculty of Arts in Ljubljana, Slovenia; Bojana Vončina, PhD, from the Faculty of Mechanical Engineering in Maribor, Slovenia, Barbara Simončič, PhD, from the Faculty of Natural Sciences and Engineering in Ljubljana, Slovenia.

Twentynine authors from six countries presented their research findings and analyses under four headings: The role and meaning of the culture of clothing and fashion, Textiles and technology, Tradition and crafts and Textile, the culture of clothing and fashion in museum setups and educational programs. The papers gathered in the collective volume of the Museoeurope 2019 are presented in the same order in which they were delivered at the symposium.

The introductory lecture to the symposium was given by Anja Hellmuth Kramberger, research fellow of the Universalmuseum Joanneum Graz and assistant professor at Faculty of Arts at University of Ljubljana. With the title *From Assyria to Hallstatt – tracing influences in fashion through garments and textile patterns in the first half of the 1st Millennium BC* it presented the long – distance exchange and spread of influences in fashion during the first millennium BC, based on iconographic comparisons of depictions of garments as well as rare finds of fabrics.

The first group of lectures under the title *The role and meaning of the culture of clothing and fashion* focuses on historical reviews and influence of fashion and dressing culture on politics, culture and everyday life. In her article *Contributions to fashion history – the term Croato in the 16th century*, Katarina Nina Simončič, Associate Professor at Faculty of Textile Technology University of Zagreb, analyses the specific term croato, which reached peak popularity in the 17th century, during the Thirty Years´War, when Croatian soldiers distinguished themselves from other soldiers by wearing scarves around their necks. The French named these scarves Cravatte after Croats.

In her contribution *Computer aided fabrics patterning*, Živa Zupin, Assistant Professor at Faculty of Natural Sciences and Engineering at University of Ljubljana writes about the break in the history of sampling of woven fabrics, which occurred with the invention of jacquard mechanism, which enabled to control each warp separately. Modern computer technology simplified the production of jacquard fabrics with special systems, which allow fast pattern design.

Tanja Devetak, Associate Professor of Faculty of Design, associated member of University of Primorska, Slovenia, in her article with the title *Building fashioneasta: The Slovene clothing industry after 1945*, focused on the Slovene fashion industry, developed after 1945 upon the tradition of clothing and textile production between the two world wars, especially from craft and manufacturing workshops.

The second part of the symposium, entitled *Textiles and technology*, is dedicated to different textile materials, structures and new eco - friendly and recycled materials. Helena Gabrijelčič Tomc, Associate Professor, Tanja Nuša Kočevar, Assistant Professor, Anja Škerjanc, MSc student and Matej Pivar, PhD student and Assistant, all from Faculty of Natural Sciences at University of Ljubljana, opened this section with their article *Study of clothing using the example of 3D interpretation of Plečnik´s monument dedicated to military commander Jan Žižka*. They presented the example of a non-realized monument, which included an analysis of the available clothing references and techniques of cloth simulations, 3D modelling and digital sculpting.

Petra Krpan, Assistant from the Faculty of Textile Technology at University of Zagreb describes in her contribution *Fashion´s textile revolution: Iris van Herpen´s 3D objects*, contemporary fashion designer Iris van Herpen, to whom technology is not an afterthought but central to her approach and vision in design, which pushed boundaries of textile thinking in fashion.

In her article *Eco-friendly nano-encapsulated wool textile materials*, Silva Kreševič Vraz, Senior Lecturer from Faculty of Mechanical Engineering at University of Maribor, describes the results of wool fabric with presence of cedar oil applied to textile materials, which represents the problem of textile substrate treatment for insecticidal action.

Bojana Vončina, Lecturer from Institute of Engineering Materials and Design at University of Maribor, with her colleagues Julija Volmajer Valh, Associate Professor, Simona Vajnhandl, Assistant Professor, Lidija Škodič, Researcher, Alenka Majcen le Marechal, Professor and Aleksandra Lobnik, Professor in their article entitled *Recycling of Textile Materials*, described that considering textiles, which are nearly 100% recycable, the industry overlooks the potential to sustain closed life cycles and environmental-fiendly manufacturing.

The section is concluded by Małgorzata Matusiak, Scientist from the faculty of Material Technologies and Textile Design at Lodz University of Technology. Her article *The unique structure and properties of seersucker*

woven fabrics talks about analyse of the geometrical structure of seersucker woven fabric, especially their surface geometry as well as the chosen utility and aesthetic properties influencing the performance and appearance of the investigated fabrics and clothing made of them.

The third thematic section *Tradition and crafts* contains articles on the role and importance of the folk costume, folklore, history and daily dressing culture. The section was opened by Peter Mikša, Assistant Professor from Faculty of Arts at University of Ljubljana and Matija Zorn, Research Advisor from Research Centre of the Slovenian Academy of Sciences and Arts in Ljubljana. In their article *Clothes, footwear and other gear used by visitors to the mountains in Slovenia in the 19th and first half of 20th century*, they presented the main characteristics of mountaineering gear, foootwear and clothes used in the 19th and first half of the 20th century in Slovenia.

Jasenka Lulić Štorić, Senior Curator from National Museum Zadar, focused her research on Pag lace as one of the symbols of the cultural identity of the town of Pag and četverokuka embroidery as a symbol of the Dinaric area of northern Dalmatia. The article is entitled *The importance of the artistry of making Pag lace and četverokuka embroidery*.

In their contribution *Traditional elements of zalistavac in contemporary jewellery design*, Kate Prskalo, Teacher, Sandra Bačič, Teacher Adviser at High School of Fine Arts & Design from Zadar, and Suzana Škojo, Teacher Adviser at School of Fine Arts from Split, presented the results of teaching outside the classroom carried out in the museum and shaping new knowledge-based familiarity with the ethnographic artefacts that make part of a permanent exhibition and are a foundation of its contemporary roles.

This section is concluded with article *Socialist commission shops and the retail with used clothing* by Mateja Habinc, Associate Professor at Faculty of Arts from University of Ljubljana. Her article outlines the functioning of Slovene and Slovak examples of commission shops of the Association of the Military War Invalids of Slovenia and the (Czecho-)Slovak stores Klenoty and Bazar.

The first paper of the fourth thematic section *Textile, culture of clothing and fashion in Museum setups and educational programs* by Maja Hren Brvar, curator from Maribor Regional Museum with her article *Museum Fashion Month*, presents the museum project Museum Fashion Month, which with the help of museum objects from the largest Collection of culture of clothing in Slovenia, looks back on the past with the parallels in the present. The project includes contemporary fashion exhibitions, professional consultations, fashion shows and permanent cooperation with individuals and students of fashion design, who study historical clothing and build creativity through design and textile materials.

Nives Cvikl, curator at Maribor Regional Museum, Slovenia, in her article *Talis advertising T-shirts in the ethnological collection of the Maribor Regional Museum*, examines the attitude of costumers and Talis' employees towards the Talis company with the advertising T-Shirts, which represents only a small segment of marketing but perhaps most personal contact with the costumer.

The contribution by Irena Porekar Kacafura, Conservation-Restoration Councillor at Maribor Regional Museum gives a concise overview of the *History of preventive conservation in the collection of clothing and clothing accessories at the Maribor Regional Museum*.

Petra Vlad, Curator of Drawings at the National center for stage costume Moulins, France, in her article *The sources of scene costume: some examples of Romeo and Juliet ballet performances in France in the 20th and 21th centuries*, focuses on stage costumes as a source of fascination for art historians and museum curators. An analysis of some representations of Shakespeare's Romeo and Juliet supports the idea of interdependence between the arts, which points to a larger theoretical difficulty in classifying stage costume as an art object.

The last contribution by Stefan Žarić, Professional Associate at Artis Center in Belgrade talks about Serbian museology, that has recently started to follow the global trends of exhibiting fashion. In his article *Breaking the canon: towards fashion museology in Serbia*, he initiate the establishment of fashion museology by analysing the state of fashion and its studies within Serbian university curricula, academic publishing and museums.

FROM ASSYRIA TO HALLSTATT - TRACING INFLUENCES IN FASHION THROUGH GARMENTS AND TEXTILE PATTERNS IN THE FIRST HALF OF THE 1ST MILLENNIUM BC*

Anja Hellmuth Kramberger, PhD, Archaeologist, Research fellow, Universalmuseum Joanneum, Abteilung Archäologie und Münzkabinett, Eggenberger Allee 90, 8020 Graz, anja.hellmuth-kramberger@museum-joanneum.at / Assistant Professor, Faculty of Arts, University of Ljubljana, Department of Archaeology, Zavetiška 5, 1000 Ljubljana, Anja.Hellmuth-Kramberger@ff.uni-lj.si

Original scientific article (1.01)

ABSTRACT

In the late 10th and early 9th century BC there appears for the first time a striking type of splendid robe on depictions in Assyria, decorated with a woven quadrat- or cassette-pattern. In the course of the following 200 years, such a decorated garment became a characteristic attribute in the Assyrian Empire, worn by the king, divine beings or other members of the palace court. Similar decorated garments can be found in the 8th-6th century BC in Asia Minor, Greece and even the Alpine region with the Hallstatt cultural area. This paper discusses, based on iconographic comparisons of depictions of garments as well as rare finds of fabrics, the long-distance exchange and spread of influences in fashion during the first millennium BC.

KEYWORDS

ornamented textiles, splendid robes, Iron Age, Assyria, Urartu, Greece, Hallstatt

Clothing and textiles are among those materials that have been preserved in the archaeological record only under particularly favourable conditions. For example, in the salt mines of Hallstatt in the Salzkammergut in Upper Austria,[1] in the so-called ice kurgans of Siberia[2] or in the Pharaonic tombs of Egypt.[3] Under specific conditions, such as extreme cold or drought, other organic materials can also be preserved, such as wood, wickerwork and skins, leather, etc.

Regardless of these rather rare finds of artefacts, we sometimes have for certain time periods and regions very detailed knowledge of garments and textiles, based on depictions. These include various object groups such as reliefs and statues, ivory carvings, ornamented bronze plates and above all representations on vessels made of ceramic and bronze. As far as written sources are available, these also contain descriptions of textile production, the textile trade, but also regarding the meaning of certain textiles as royal gifts and tribute,[4] or as part of mythological narratives – if we think for example of Penelope, the wife of Ulysses. It is known that Penelope wove cloth during the day, the threads of which she dissolved again at night to put off the waiting suitors during the odyssey of her husband.[5]

In modern times, fashion in many parts of the world undergoing rapid change and cultural exchange is part of our globalized society. However, long-distance trade and cultural exchange are also abundantly witnessed by prehistoric societies, for example, when we think of trading spondylus,[6] obsidian,[7] metals or amber,[8] to name just a few. Remarkably, in the first half of the first millennium BC, the Iron Age, we can also identify cultural exchange on the basis of certain garments or textiles from which clothes were made. The observations are

*Translation: Anja Hellmuth Kramberger

[1] GRÖMER, K. 2016, p. 176, p. 177, fig. 99.

[2] E.g. ČUGUNOV, V., PARZINGER, H., NAGLER, A. 2010.

[3] Compare also BARBER, E. J. W. 1991.

[4] BOEHMER, R. M. 1973, p. 156.

[5] See The Odyssey of Homer, poem 19, pp. 130-155.

[6] E.g. KUKOČ, S. 2013 with further with references.

[7] E.g. BALKAN-ATLI, N., CAUVIN, M.-C. 2007 with further references.

[8] E.g. CAUSEY, F. 2011; PALAVESTRA, A. et al. (ed.) 2009.

based on iconographic comparisons, taking into account various groups of objects, namely reliefs, parts of furniture, ivory carvings and representations on vessels. This article is intended to provide an overview of the different groups of objects and their context, as well as to investigate by which group of persons these garments were worn and what meaning they had.[9]

The first researcher into special, splendid robes in the 8th century BC in Western Asia, or "Prunkgewänder" in German, was R. M. Boehmer.[10] The starting point of his investigations were the Phrygian fibulae, which were known outside of their actual distribution area in Central Anatolia from sites in western Asia Minor, the Aegean and on the Greek mainland. With reference to an earlier study by Jantzen,[11] it was reasonable to assume that these fibulae did not come individually to the named areas, but together with garments intended as consecrations.[12] A key role in the identification of such "Phrygian robes" is played by a relief from Ivriz in southern Asia Minor, which dates back to the late 8th century BC.[13] According to the hieroglyph-Hittite inscription, this relief shows the king of Tyrana named Warpalawas. Over a long shirt Warpalawas wears a cloak, which is held together by a fibula, which corresponds to the type of Phrygian fibulae.[14] The shirt-like robe under the cloak is relevant here. It is decorated all over with a quadrat or square pattern (with a point in the centre of each quadrat), the hem ends with a row of swastikas and fringes, and a belt can be seen around the waist. The earliest evidence for textiles with such a, probably woven, quadrat or square pattern with a central point dates to the late 10th and 9th century BC and can be found on Assyrian and Babylonian cylinder seals.[15] Also worth mentioning is a stele from Tell Ashera on the middle Euphrates in today's Syria, which shows the weather god Adad and is dated in the time of Tukulti-Ninurta II, thus in the early 9th century BC[16] (fig. 1A). A larger number of ivory pyxides from the south-eastern palace of Nimrud-Kalhu in present-day Iraq, dating back to the 10th-9th centuries BC, likewise shows figures – enthroned persons or rulers, but also priests with offerings next to a deity[17] and even palace staff (musicians)[18] – with garments made of woven fabrics with similar patterns[19] (fig. 1B). However, these are rhombus or a rhombus-shaped grid patterns.[20] The rhombuses are sometimes formed like a "cassette-ornament", which, in contrast to a simple quadrat-ornament, two or more quadrats or rhombuses intersecting. The clothing items themselves are, as in the case of the aforementioned relief representation of Ivriz, belted shirt-like garments, sometimes in combination with a coat.[21] Apart from the representations on cylinder seals, reliefs and items of carved ivory from the 10th and 9th century BC, we also encounter robes with the quadrat and rhombus-pattern relatively numerously among the representations of the Assyrian palaces of the 8th century BC. In particular, on reliefs and murals from Til Barsip / Tell Ahmar in Syria and the Central and Southwest Palace of Nimrud-Kalhu (fig. 1C), which date back to the reign of Tiglath-Pileser III[22] (744-727 BC[23]). Shirt-like robes with a woven cassette-pattern, with or without a wrap over the shoulders, are worn by the king himself, as well as by higher officials in the palace.[24] The robes are fringed on the hem, and in the case of the Til Barsip-Tell Ahmar mural, it can be seen that the garment is made of several layers of fabric. The mural painting is also of particular importance insofar as it gives us a clue to the colour scheme of the fabrics. While the cassettes on the garb of Tiglath-Pileser III consist of alternating white

[9] The present article is based on the preliminary results of a larger study, which deals with the themed garments and is conducted in cooperation with Prof. Emer. Dr. R. M. Boehmer (Bayreuth) by the author.
[10] BOEHMER, R. M. 1973.
[11] JANTZEN, U. 1962.
[12] For Anatolian fibulae, see also e.g.: CANER, E. 1983.
[13] BOEHMER, R. M. 1973, p. 150-152, p. 153 fig. 3; ORTHMANN, W. 1985, plate XLIII.
[14] The depicted fibula was identified by Boehmer as a fibula of type XII 9α with double-needle and decorated splint. BOEHMER, R.M. 1973, p. 151; vgl. MUSCARELLA, O. W. 1967.
[15] BOEHMER, R. M. 1973, p. 159, 158 fig. 14a-b. - Compare: LAJARD, F. 1847, plate 31,7 and plate 71,6.
[16] Ibid. – Compare ORTHMANN, W. 1971, p. 130, plate 5a.
[17] E.g. WICKE, D. 2008, p. 296-297, plate 54-55.
[18] Ibid, p. 297, plate 56.
[19] WICKE, D. 2008, pp. 296-298, plate 54-56.57c, p. 300, plate 59, p. 302, plate 62, p. 303, plate 63d, p. 306, plate 64e.
[20] Compare BOEHMER, R. M. 1973, p. 156, p. 157 fig. 13a-b. – Among the thousands of ivory fragments from Nimrud there is a distinction between pieces from Assyrian, Syrian and Phoenician workshops, which cannot be discussed in the context of this article. The diamond pattern, however, seems to be characteristic for the Syrian region or even being invented here. BOEHMER, R. M. 1973, p. 163.
[21] E.g. BOEHMER, R. M. 1973, p. 157 fig. 13a; WICKE, D. 2008, p. 298, plate 57c.
[22] The Assyrian king Tiglath-Pileser III was an opponent of Warpalawas, the king of Tyrana. BOEHMER, R. M. 1973, p. 159.
[23] After NISSEN, H. J. 1999, p. 249.
[24] BOEHMER, R. M. 1973, p. 160, 160 fig. 16, p. 161 fig. 17-19; ORTHMANN, W. 1985, plate XX.

and red squares, the spaces between them and the fringes on the hem are blue.[25] The blue spaces between the cassettes are additionally filled with rows of small white-red dots. In addition to the quadrat-pattern with cassettes, there are also other variants of fabrics which show quadrats filled with different motifs in a checkerboard pattern. One examples is the ivory panels from the central palace of Nimrud-Kalhu, which depict the king, Tiglath-Pileser III and the Crown Prince, as well as several dignitaries and the royal bodyguards.[26] The quadrat patterns appear on the panels in different variations, such as a full-coverage cassette-pattern,[27] checkerboard pattern with cassettes and central dot,[28] checkerboard pattern with central circle and four dots,[29] checkerboard pattern with four dots and unfilled squares,[30] as well as quadrats with a central circle.[31] Another variant, which appears towards the end of the 8th century during the reign of Sargon II (721-705 BC[32]) is a quadrat pattern in which the quadrats are filled with rosettes or little towers like a checkerboard.[33] Worthy of note is the depiction of a robe with quadrat-pattern with rosettes, carved on ivory fragments, from Ziwiye in Iran, which represent parts of a statuette.[34] Again, we find an indication of the colour of the garment: the quadrats and the fringes on the hem are alternately designed with light blue and light grey paste.

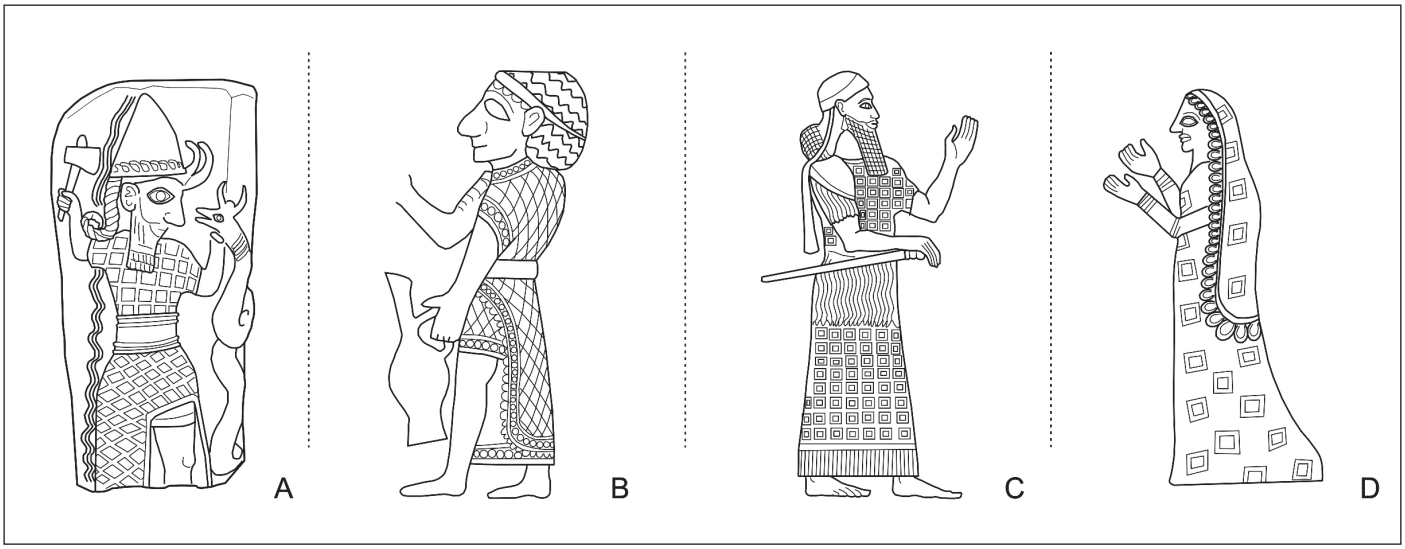

Image 1: Depictions of robes with quadrat and rhombus patterns in Western Asia (schematic drawings by the author after A – Tell Ashera, Syria, relief, stone, early 9th century BC, after ORTHMANN, W. 1971, plate 5a; B – Nimrud, Iraq, carved ivory, 9th century BC, after WICKE, D. 2008, plate 54-55; C – Nimrud, Iraq, relief, stone, early 9th century BC, after BOEHMER, R. M. 1973, fig. 19; D - Rusahinili-Toprakkale, Turkey, gold, 7th century BC, after ORTHMANN, W. 1985, no. 392c).

In the Kingdom of Urartu, bordering Assyria, we also find representations of garments decorated with a quadrat- or cassette-pattern. As Boehmer has pointed out, the Urartian fabric samples thereby show their own style, whose Assyrian influence is nevertheless clearly visible.[35] First of all, we are also here dealing with long shirt-like garments that were girded around the waist and the hem could be decorated with fringes. The quadrat or cassette-pattern, however, does not appear as a full-covering decoration, but it goes about rather loosely distributed, individual quadrats (fig. 1D). These can either be designed in the form of a cassette or have a central circle or a rosette. Quadrats with rosettes are found, for example, on the robe of a bronze god figure from Rusahinili-Toprakkale,[36] located in present-day Turkey, which forms part of a bronze throne.[37]

[25] Compare also BOEHMER, R. M. 1973, p. 160-163.
[26] HERRMANN, G., LAIDLAW, S. 2009, p. 107, fig. 42, plates 125-129.
[27] Ibid., plate 128 right depiction.
[28] Ibid., plate 128 left depiction.
[29] Ibid., plate 127 lower ones and 129.
[30] Ibid., plate 125 right depiction.
[31] Ibid., plate 126 lower left one.
[32] After NISSEN, H. J. 1999, p. 249.
[33] BOEHMER, R. M. 1973, p. 164, p. 163 fig. 21.
[34] Ibid., p. 164, p. 162 fig. 22.
[35] BOEHMER, R. M. 1973, p. 164, p. 165 fig. 23.
[36] Ibid., p. 165 fig. 23. ORTHMANN, W. 1985, p. 460, No. 385.
[37] SEIDL, U. 2004, pp. 61-64, pp. 62-63 fig. 25.

A decoration with loosely scattered cassettes is known from a bronze statuette of a god from Teišebai-Kamir Blur in today's Armenia, found in the corridor of "Room 5",[38] or on a bronze statuette of a woman whose veil is decorated with cassettes.[39] An identical garment with a veil is worn by two women, one sitting on a throne, on a gold medallion found in Rusahinili-Toprakkale[40] (Image 1D). The depictions are mainly from the reign of the Urartian ruler Rusa II, thus dating back to the first half of the 7th century BC.[41] The motif of an enthroned ruler or goddess with a servant or priestess, wearing robes and veils with a cassette-pattern, can also be found on a bronze votive plate from a putative Urartian temple at Giyimli, southeast of Lake Van in today´s Turkey.[42] Among the votive plates from Giyimli are ones that depict standing winged deities, men and women, all wearing a long shirt-like garment with a cassette-pattern.[43]

Overall, it becomes clear that we can identify the origin of the woven quadrat- and cassette-pattern in the late 10th/early 9th century BC in Assyria, from where it spread in the course of the 8th-7th century BC to northeastern and central Anatolia.[44] From the end of the 8th century BC onwards, as Boehmer has shown, fabrics and probably splendid robes (including fibulae) spread from Phrygia to Greece as consecration gifts.[45] The design of quadrat-patterned fabrics was rapidly integrated into the domestic Greek textile industry. There are numerous representations of garments made of textiles with woven quadrat- and net-like rhombus-patterns of the 7th-6th centuries BC. We know them, for example, from Melian vase paintings,[46] relief-amphorae,[47] black-figure vase painting[48] (fig. 2A), ivory carvings[49] and embellished bronze armour from Olympia[50] (fig. 2B). The original Assyrian quadrat- and cassette-pattern as well as the rhombus-pattern were extended by new variants: for example, quadrats filled with four cubes with a central point,[51] squares with a diagonal cross and angles[52] or rhombuses with a central dot or circle[53] (fig. 2B). Who was wearing such decorated robes in Greece? As we have seen before, the quadrat-patterned fabrics of Western Asia appear primarily on robes of the ruling elite, high officials and palace personnel, presumably the priesthood and also divine entities. The Greek depictions are now mainly about gods / goddesses and heroes of mythological narratives, such as Artemis,[54] Perseus,[55] Helena[56] or Kassandra,[57] although it must be noted that these were particularly popular motifs in vase painting.

[38] Ibid., p. 130 fig. 96b.
[39] Ibid., p. 128-129, plate 38a-c.
[40] ORTHMANN, W. 1985, p. 464, No. 392c.
[41] SEIDL, U. 2004, p. 198 fig. 155. – Regarding the reign of Rusa II see NISSEN, H. J. 1999, p. 250. SEIDL, U. 2004, p. 208.
[42] CANER, E. 1998, p. 106, plate 73 No. 412.
[43] Ibid., p. 34, plate 22 No. 156, p. 76, plate 54 No. 338, p. 82, plate 57 No. 352, p. 89, plate 61 No. 373, p. 107-108, plate 73 No. 413, p. 125, plate 85 No. 491, p. 131, plate 90 No. 529.
[44] BOEHMER, R. M. 1973, p. 166.
[45] Ibid., p. 166.
[46] BOEHMER, R. M. 1973, p. 169 fig. 30a-b. SCHEFOLD, K. 1993, p. 61 fig. 39, p. 114 fig. 99, p. 156 fig. 161.
[47] BOEHMER, R. M. 1973, p. 168 fig. 26. SCHEFOLD, K. 1993, p. 51 fig. 24, p. 77 fig. 60, p. 150 fig. 152.
[48] SCHEFOLD, K. 1993, p. 212 fig. 219, p. 218 fig. 228, p. 228 fig. 238, p. 229 fig. 240, p. 294 fig. 316, pp. 296-297 fig. 318a-b.
[49] SCHEFOLD, K. 1993, p. 58 fig. 34, p. 129 fig. 121, p. 266 fig. 286.
[50] E.g. SCHEFOLD, K. 1993, p. 63 fig. 42.
[51] Ibid., p. 156 fig. 161.
[52] Ibid., p. 212 fig. 219, p. 255 fig. 274, p. 325 fig. 364, p. 326 fig. 365.
[53] Ibid., p. 51 fig. 24. BOEHMER, R. M. 1973, p. 168 fig. 26.
[54] SCHEFOLD, K. 1993, p. 326 fig. 365.
[55] Ibid., p. 77 fig. 60.
[56] Ibid., p. 150 fig. 152.
[57] Ibid., p. 332 fig. 376.

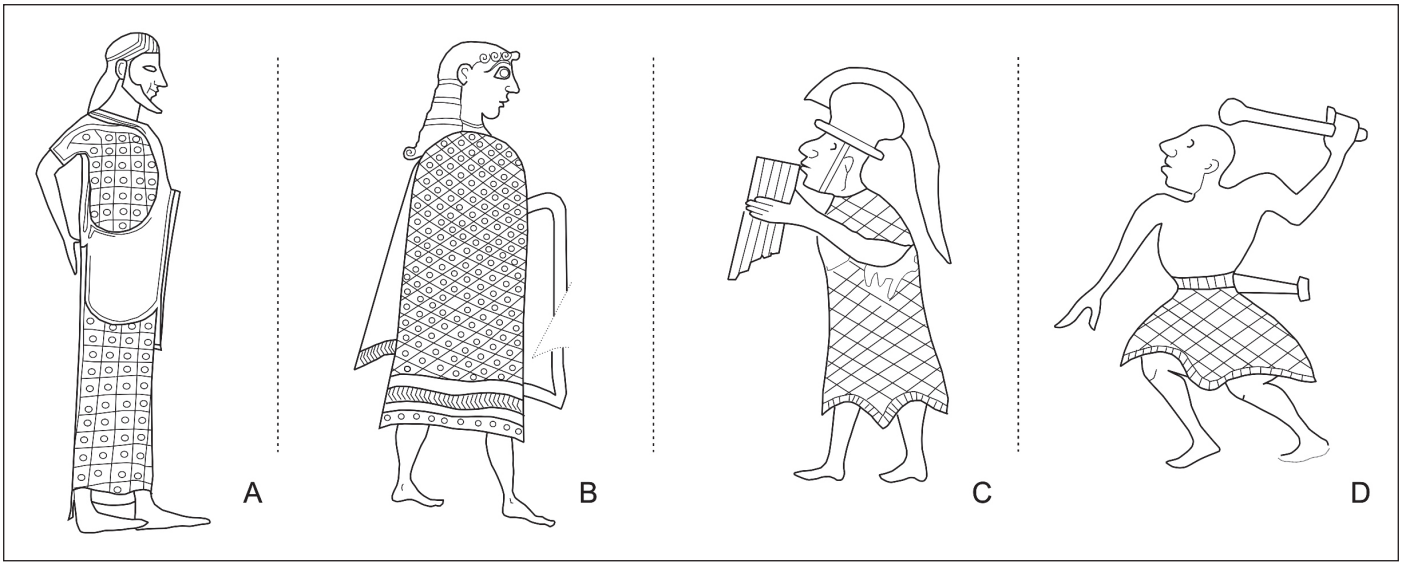

Image 2: Depictions of robes with quadrat and rhombus patterns in Greece and the Alpine region (schematic drawings by the author after A – Metropolitan Museum of Art, painted vase, after SCHEFOLD, K. 1993, fig. 316 left; B – Olympia, Greece, bronze armour, 7th century BC, after SCHEFOLD, K. 1993, fig. 42; C-D – Welzelach, Austria, situla, 6th-5th century BC, after LIPPERT, A. 1972, plate 27).

Garments made of fabrics with woven quadrat- or rhombus-patterns are also known from the Central European Hallstatt cultural region. Particularly interesting in this context are finds of preserved textiles. Remains of fabrics and decorated braids have survived in the Late Hallstatt princely burial of Eberdingen-Hochdorf from the 6th century BC in south-western Germany.[58] One piece is a tablet woven textile of dark blue and white threads which shows a quadrat-pattern (fig. 3). The checked dark and bright quadrats were each decorated in the middle with a rhombus with a swastika.[59] This design is therefore clearly reminiscent of the quadrat patterns on garments from the older Assyrian and Greek representations. Both from the princely grave of Hochdorf, as well as from the salt mines of Hallstatt and Hallein in Austria finds of fabrics with check patterns have been preserved.[60] These involve colourful fabrics with colour contrasts of light and dark threads, for example in a combination of blue-red or yellow-blue. Representations of presumed check patterns or net-like rhomboid patterns can be found in the East Hallstatt circle depicted on some ceramic vessels with a conical neck and, above all, in situla art.[61] On the ceramic vessels, such as a vessel with conical neck from the Hungarian Sopron-Várhely,[62] there are usually representations of women in dresses made from a fabric with a net-like rhombus-pattern.[63] The vessel shows a stylized female figure with a spindle – in fact, a scene that shows textile production! On the bronze situlas (scenic decorated bronze buckets) we find such textiles in the form of dresses and veils of women,[64] and the depicted men regularly wear long shirt-like robes, capes or short skirts with a net-like rhombus-pattern[65] (fig. 2C-D). The illustrations are reminiscent of the images of fabrics with net-like rhombuses from Greece,[66] as well as of the much older depictions of the ivory pyxides from Nimrud.[67]

[58] BANCK-BURGESS, J. 1999.

[59] A series of swastika can also be found, as noted above, as an ornament on the hem of the robe on the relief from Ivriz in Asia Minor. Compare BOEHMER, R. M. 1973, pp. 150-152, 153 fig. 3. ORTHMANN, W. 1985, plate XLIII.

[60] Compare e.g. BIEL 1985, plate 10b. GRÖMER, K. 2016, p. 176, p. 177 fig. 99. – Textiles were produced from plant fibre like flax or hemp and from animal fibre like sheep´s wool or hair from other domestic and wild animals. GRÖMER, K. 2016, pp. 42-62.

[61] Compare GRÖMER, K. 2016, pp. 395-403, p. 399 fig. 221.

[62] EIBNER-PERSY, A. 1980, plate 16-17.

[63] A colour contrast is indicated by the rhombuses being alternately hatched and unshaded.

[64] E.g. SITULENKUNST 1962, plate 13.18, plate 14.17, plate 58. TURK, P. 2005, p. 30 fig. 39-40, p. 40 fig. 59 left, p. 62 fig. 93 left.

[65] E.g. SITULENKUNST 1962, plate 14.17, plate 40.45, plate 50.54, plate 52.54, plate 54.57, plate 58. TURK, P. 2005, p. 34 fig. 50, p. 38 fig. 56, p. 40 fig. 59, p. 62 fig. 93, p. 70 fig. 105.

[66] Compare e.g. BOEHMER, R. M. 1973, p. 168 fig. 26.

[67] WICKE, D. 2008, pp. 296-297, plate. 54-56.

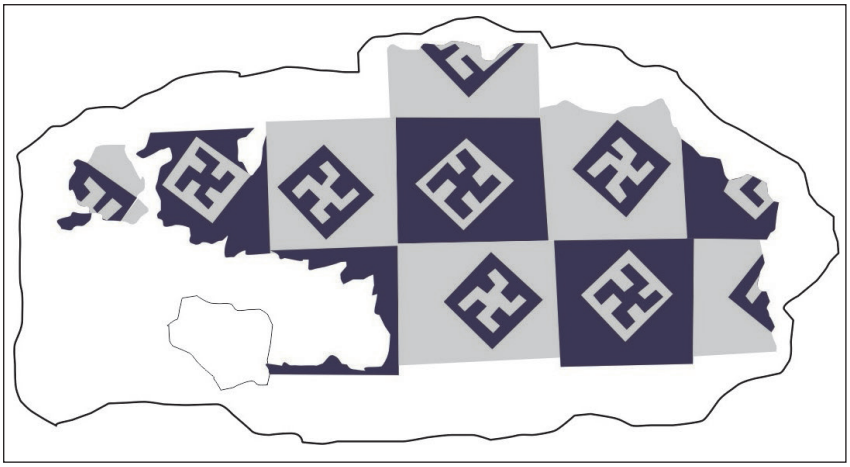

Image 3: Textile from the princely grave of Eberdingen-Hochdorf, Southwest Germany, Late Hallstatt period. Schematic drawing by the author after BANCK, J. 1996, p. 47.

CONCLUSION

In the late 10th and early 9th century BC there appears for the first time a striking type of robe in the Assyrian Empire: made from a fabric which is richly ornamented with a woven quadrat- or cassette-pattern. In the course of the following 200 years, such a decorated garment becomes in the Assyrian Empire the characteristic attribute of the ruler, divine beings or high-ranking palace officials. In a somewhat modified form, we also know such decorated garments from the kingdom of Urartu, which was adjacent to Assyria. Remarkably, here, in addition to winged gods, women, priestesses and goddesses also wore such robes with a cassette-decoration. Around 700 BC, the motif or this type of garment also reached Greece via Asia Minor. And here too, the robe with a cassette- and rhombus-pattern appears in a slightly different context: usually worn by heroes and gods. Finally, a rhombus- or check pattern can be identified in the eastern Alpine region of the East Hallstatt circle, in the situla art as well as in the form of rare textile finds. In the latter, quadrat-and rhombus-patterns are proven. Thus over several centuries we can trace a special form of robe decoration or fabric-design which appeared over a wide area, namely from Western Asia to the Eastern Alps. The comparisons testify to the long-distance exchange – in the sense of a material as well as knowledge exchange – which existed in the first millennium BC. Furthermore, such decorated garments, splendid robes, represented primarily a special attribute of rulers, gods and mythical figures. Their origin, however, lies in Assyria.

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OD ASIRIJE DO HALŠTATA - MODNI VPLIVI V OBLAČILIH IN VZORCIH TKANIN IZ PRVE POLOVICE 1. TISOČLETJA PR. N. ŠT.

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Izvirni znanstveni članek (1.01)

IZVLEČEK

Konec 10. in v začetku 9. stoletja pr. n. št. se na upodobitvah iz Asirije prvič pojavi presenetljiva vrsta razkošnih oblek, okrašenih s tkanim kvadratnim ali kasetnim vzorcem. V naslednjih 200 letih je tako okrašeno oblačilo v asirskem cesarstvu postalo značilno oblačilo kraljev, božanskih bitij ali drugih predstavnikov palače. Podobno okrašena oblačila najdemo v 8.–6. stoletju pr. n. št. tudi v Mali Aziji, Grčiji in celo v alpskem prostoru pri pripadnikih halštatskega kulturnega kroga. Prispevek na podlagi ikonografskih primerjav upodobitev oblačil in redkih najdb tkanin obravnava izmenjavo in širjenje modnih vplivov v prvem tisočletju pr. n. št.

KLJUČNE BESEDE

okrašene tkanine, razkošne obleke, železna doba, Asirija, Urartu, Grčija, halštat

POVZETEK

Najdbe posebnih surovin, kot so obsidian, kovine ali jantar, omogočajo, da sledimo mreži izmenjav v prazgodovini. Mreža vključuje tudi organske snovi in izdelke iz organskih snovi, ki se danes ohranjajo le pod posebnimi pogoji, kot sta ekstremni mraz ali suša. Sem sodijo na primer predmeti iz lesa, pletarski izdelki, usnje ali tkanine in oblačila. Posebej zanimivo je vprašanje izmenjave tkanin in oblačil ter izmenjave znanj s področja tekstilne proizvodnje in vplivov pri oblikovanju tkanin in oblačil. S pomočjo upodobitev, ki jih najdemo na reliefih in kipih, rezbarijah iz slonovine, okrasnih bronastih ploščah in še posebej na keramičnih in bronastih posodah, vemo zelo veliko o oblačilih in tkaninah iz določenih časovnih obdobij in regij. Tudi pisni viri, v kolikor so na voljo, običajno vsebujejo opise izdelave tkanin in trgovine s tekstilom. Dodatno perspektivo predstavlja vloga tkanin in posebnih oblačil v mitoloških pripovedih oziroma njihov pomen kot daritve kralju, votivni darovi v svetiščih ali kot čaščenje. V prvi polovici prvega tisočletja pr. n. št., v železni dobi, lahko širitev posebnih vrst tekstilnih vzorcev, ki so se v Asiriji pojavljali v poznem 10. in v začetku 9. stoletja pr. n. št., razumemo kot atribut vladarja, božanskih bitij ali visokih uradnikov palače. V nekaj stoletjih, od 8. do 6. stoletja pr. n. št., se je takšno oblikovanje uveljavilo in nenehno širilo z novimi različicami, in sicer na področjih Male Azije in Grčije ter vse do alpskih pokrajin in halštatske kulture.

CONTRIBUTIONS TO FASHION HISTORY – THE TERM *CROATO* IN THE 16TH CENTURY*

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ABSTRACT

A large number of historical books from the late 16th century focused on presenting specific and diverse clothing styles with regard to the country of origin. The terms for clothing styles and items were often designed as derivatives of respective demonyms. I shall analyze the specific term *croato*, following its traces in the archival records of Dalmatia, Venice and a small number of graphic presentations. The goal is to raise questions on the expression of national identity through fashion codes and to give some new guidelines for further research into the Croatian contribution to Western fashion in the late 16th century.

KEYWORDS

croato, 16th century, fashion, Dalmatia, Cesare Vecellio, Ferdinando Bertelli, fur

The etymology of fashion terms often provides interesting insights into historical ways of dressing and everyday customs. For example, garment and textile manufacture in 16th century Croatia made distinct contributions to the European cultural heritage. These influences can be traced thanks to popular fashion terminology in the Renaissance period noted in archival records. The Renaissance spirit deeply permeated Europe, inspiring cultural, scientific and technological developments along with changes in dress habits. The late 16th century witnessed a large number of publications dedicated to fashion which featured visuals and verbal descriptions of garments, fabrics, patterns and accessories as well as their associations with the wearer's moral values. The increased interest in Croatian territory arose from the fact that it was the frontier between Christian Europe and the Ottoman Empire, especially after 1519 when Leon X labeled the region *antemurale Christianitatis* (Bulwark of Christendom).[1] Fashion publications at the end of the 16th century refer to Croats as *Sclavone (Schivaone), Dalmato* and *Croato*. These demonyms also became the foundation for terms referring to textiles, garments and clothing styles that originated on the then Croatian territories. In this context, an important source is a dictionary of Venetian fashion terminology from the turn of the 15th to the 16th century.[2] The works of domestic authors whose research is focused on material culture in fashion are also indispensable. These include the writings of Marijana Gušić and Lovorka Čoralić, who systematically researched Venetian archival records, as well as other authors whose work focused on the historical archives of Zadar, Split and Dubrovnik.[3]

This article is focused on one particular term – *croato*, which reached peak popularity in the 17th century.[4] During the Thirty Years' War (1618-1648), Croatian soldiers (French *Croates*, Viennese dialect *Krawat*, *Kroate*, German *Krabat/e/, Krobot*: a disobedient child), the regiments of Louis XIV in the battle against the German army distinguished themselves from other soldiers by wearing scarves around their necks. The French named these scarves *Cravatte* after Croats.[5] However, some historians note that the term can be traced in earlier sources, such as the works of the French poet Eustache Deschamps (1340-1407) and Cesare Vecellio in the 16th century.[6] Without identifying the source, they allege that Eustache Deschamps's poem contains the line: "fasten the cravat around his neck" (French *faites restraindre sa cravat*). But a detailed analysis of the poet's oeuvre does not confirm these

*Translation: Antonia Treselj

[1] ŠANJEK, F. 1996, p. 86.

[2] VITALI, A. 1992.

[3] Marijana Gušić, Lovorka Čoralić, Ivna Anzulović, Nevenka Bezić-Božanić, Zdenka Janeković Römer, Florence Sabine Fabijanec, Vladimir Huzjak.

[4] HUZJAN, V. 2008, pp. 103-121.

[5] KRAVATA, Hrvatska enciklopedija. URL: http://www.enciklopedija.hr/natuknica.aspx?id=33809 (quoted 9. 12. 2018).

[6] LOSCHEK, I. 1993, p. 298. FINK, T., YONG, M. 1999, p. 34. LENIUS, O. 2010, p. 93. FOCALE. URL: https://en.wikipedia.org/wiki/Focale (quoted 10. 1. 2019).

claims; this line cannot be found, but there is a similar one: "facts restrain all affairs" (French *faictes restraindre tout estat*).[7] Furthermore, certain authors claim that the term cravata was first used by Cesare Vecellio in his book *"De gli habiti antichi, et moderni di diverse parti del mondo"* (1590) in the visual presentation of a Roman soldier. This visual is followed by a short description of the attire and a particular accessory *"una specia di cravata"*. However, it seems that the sources have been misinterpreted and misquoted in this case as well. The first edition of Cesare Vecellio's book from 1590[8] does not feature the word cravat and does not contain visuals of the Roman soldier referred to by various authors. Similarly, the 17thcentury edition of Vecellio's book (1664) does not include either visuals or verbal descriptions of the aforementioned Roman soldier.[9] The image of the Roman soldier *"Soldato D Infanteria"* (French *"Soldat Fantassin"*) followed by a short description of the uniform and weaponry in French and Italian first appears in the reprint of Vecellio's book from 1859. This was a Parisian edition titled *Costumes anciens et modernes: habiti antichi et moderni di tutto il mundo* by the author Ambroise Firmin-Didot (1790-1876), which features basic descriptions of attires and the mention of wearing *una specie di cravata chiamata sudarium o mappa*[10] (Image 1). The inclusion of the verbal description of the Roman soldier in this Parisian edition reflects the massive enthusiasm for Antiquity (Neoclassicism), characteristic of the first half of the 19th century. In this edition, the clothes in the visuals truly match historical facts. Namely, Roman soldiers wore red scarves named *focale*, which distinguished them from other military units they encountered. It can be assumed that this custom influenced the Croatian clothing, especially in Roman provinces on the territory of present-day Croatia. Red *focale* scarves became a part of everyday fashion and the custom remained even after the fall of the Roman Empire. The revitalization of the scarf in the context of a fashion trend occurred in the 17th century, when the scarf became an identification code of Croatian mercenaries fighting for the French against Germany. The king was highly impressed by their bravery and wished to identify with these soldiers by taking the red scarf *cravatta* from the battlefield back to the court as a souvenir and a new fashion trend.


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SOLDATO D' INFANTERIA.

L' Habito del soldato romano consisteva in una tunichetta senza maniche, la quale non giungeva oltre la metà delle cosce: si allacciava sul dinanzi et lasciava scorgere le forme del corpo. Questo vestito fu dapprima del colore della lana, poscia di color rosso. Il *sagulum gregale* o calzoni corti et stretti alla gamba erano di pelle. Aveva intorno al collo una specie di cravatta chiamata *sudarium* ò *mappa*, la quale annodavasi sul petto. La calzatura altro non era che una suola sostenuta da corregge che si legavano intorno alla gamba. L' elmo, lo scudo et una corta spada compivano l' armatura del soldato d' infanteria.

SOLDAT FANTASSIN.

L'Habillement du soldat romain consistait en une sorte de jaquette sans manches, qui ne descendait qu'à moitié du corps, se laçait par le devant et dessinait la forme du corps. Ce vêtement, qui d'abord n'avait que la couleur de la laine, fut ensuite teint en rouge. Le *sagulum gregale*, ou pantalon court et collant, était en peau. Autour du cou une sorte de cravate, nommée *sudarium* ou *mappa*, se nouait sur la poitrine. La chaussure consistait en une semelle attachée à des courroies qui se liaient autour de la jambe. Le casque, le bouclier et une courte épée complétaient le costume du soldat fantassin.

Image 1: Ambroise Firmin-Didot: *Soldato D Infanteria* (French *Soldat Fantassin*), black and white woodcut, 1859, in: FIRMIN-DIDOT, A., 1859, *Costumes anciens et modernes: habiti antichi et moderni di tutto il mundo*, Typographie de Firmin Didot, Paris, number 10, 1895.

[7] DESCHAMPS, E. 1878-1903, Oeuvres˝complètes de Eustache Deschamps. 7 / publiées d'après le manuscrit de la Bibliothèque nationale par lemarquis de Queux de Saint-Hilaire et Gaston Raynaud, Paris, 1878-1903, p. 225 (view 228). URL: https://gallica.bnf.fr/ark:/12148/bpt6k5132p/f1.planchecontact (quoted 30. 3. 2019).

[8] VECELLIO, C. 1590, De gli habiti antichi, e moderni di diverse parti del mondo libri due, 1590. URL: https://gallica.bnf.fr/ark:/12148/btv1b8446755d.r=Vecellio?rk=21459;2 (quoted 15. 1. 2019). The later edition, of 1598, in an effort to address a broader, international audience, included text in Latin. Vecellio tried to show up-to-date fashions all over the world, even in America.

[9] VECELLIO, C. 1664, Habiti Antichi, ouero, Raccolta di figvre delineate dal granTitiano, e da Cesare Vecellio suo fratello, diligentemente intagliate, conforme alle nationi del mondo : libro vtilissimo a pittori, dissegnatori, scultori, architetti& ad ognicurioso, e peregrino ingegno,1664. URL: https://gallica.bnf.fr/ark:/12148/btv1b8446756t.r=Vecellio?rk=42918;4 (quoted 12. 2. 2019).

[10] FIRMIN-DIDOT, A. 1859, C*ostumes anciens et modernes : habiti antichiet moderni di tuttoilmundo*, Typographie de Firmin Didot, Paris, number 10. URL: https://www.siamcostumes.com/cutters_guides/pdf/costumes-anciense-veceuoft.pdf (quoted 11. 11. 2018).

In order to shed light on the meaning of the term croato in the 16th century, I will refer to the archival research conducted by Ivna Anzulović (1992) in Dalmatia.[11] Anzulović indicated the importance of revisiting the semantics of fashion terminology with high regard to the period of their origin. These archival records will be compared with graphic portrayals of Croats from the 16th century. However, it is essential to define the territorial borders of the 16th-century Croatia and the use of the term Croato as a toponym beforehand.

The first mention of the name Croat dates back to 852 AD and the Charter of Duke Trpimir. In the 10th century, the name Croat was limited to the territory of Lika, Bosnia to the river Pliva and around Zadar, whereas its use is extended as of the 15th century to the territories towards the rivers Kupa and Sava, and finally further to the north (the territory previously referred to as *Slovinje*). Historical sources indicate that the name was used for Slavic peoples on other territories as well (White Croats, White Croatia in northern Czechia and southern Poland until the 11th century), while certain local and other derivatives of the demonym Croat suggest that Croatian groups lived in other territories alongside other peoples (in Styria and Carinthia in present-day Slovenia and Austria, further in Slovakia, Serbia, Macedonia and Zeta).[12] The territorial division of Croatian kings towards the end of the 16th century resulted in territories under Venetian rule (Venetian Istria, Venetian Dalmatia and Venetian Albania), the sovereign Republic of Ragusa, Northern Croatia (then in Personal Union with the Kingdom of Hungary and as of 1526 within the Habsburg Monarchy), Bosnia and the territory of *Schiavonia* – which might have referred to Dalmatian and Istrian hinterlands, as well as central and northern Croatian territories. The author Girolama Ruscelli published a chart of Croatian territory titled *Tavola Nuova Di Schiavonia* (1561) with the toponym Croatia, while the term *Crabaten* appears on the chart by Augustin Hirschvogel, *Sclavonia oder Windisch Marck, Bossen, Crabaten*, etc. (1588).[13] The territory of the 16th-century Croatia was subjected to intensive attacks by the Ottomans under the rule of Suleiman II, whereas other territories of the present-day Croatia were active parts of Eastern and Western trade routes (both caravan and maritime), despite suffering the consequences of the ongoing war.[14] Both wars and trade played a part in shaping the specific Croatian fashion culture, which assimilated the elements from the Eastern, Western and indigenous population, as well as the cultural heritage of Roman and early Medieval civilization. Lavish Italian fabrics intended for privileged social classes arrived in Zadar, Split and Dubrovnik via trade routes. This also helped foster production in Dalmatian cities. Light fabrics (cotton weft and linen warp)[15] used for simple garments resembling Oriental tunics and simple women's dresses free from stiff corsets named *schiavonetto*[16] were a distinguishable Croatian product. The term Croatian style – *alla schiavonesco, alla dalmato* referred to simple cut, sparsely decorated garments made of inexpensive fabrics, which were particularly popular during the implementation of laws against luxury (*Sumptuary Laws*). Typical Croatian garments in the second half of the 16th century also included a jacket or cloak *croato*, a type of cap lined with fur,[17] *hrvatka* (a specific cap shape), *oplećak, opleće* (shirt),[18] *ghelero* (Turkish *yelek*) and *kotiga* (skirt lined with lambskin). This simple clothing style was a reflection of the territorial and political instability of the period and the most significant contribution of the Croatian fashion culture to wider European heritage of the 16th century.

The portrayal of a Croat titled "Sclahonico" by Ferdinando Bertelli from 1569[19] features a cloak, jacket,[20] shirt, knee-length trousers, socks, a cap and footwear (Image 2). This attire is distinguished from attires shown in analogous Venetian portraits through simple garment cuts and prominent fur linings. Precisely this fur-lined cloak in the visual "Sclahonico" might be the *Croatian style* cloak or *croato* as mentioned in Zadar archival

[11] ANZULOVIĆ, I. 1992, p. 100.
[12] RANA POVIJEST HRVATA, Wikiwand. URL: http://www.wikiwand.com/hr/Rana_povijest_Hrvata (quoted 19. 2. 2019).
[13] FARIČIĆ, J. 2007, pp. 148-179.
[14] BRAUDEL, F. 1997.
[15] FABIJANEC, S. F. 2003, pp. 93-131.
[16] SIMONČIČ, K. N. 2018, pp. 55-75.
[17] ANZULOVIĆ, I. 1992, pp. 100-101.
[18] *…duas suas oplechios….*(1536.)....ANZULOVIĆ, I. 1990, pp. 114-115.
[19] BERTELLI, F. 1569, Omniumferé gentium nostrae aetatis habitus, nunquam ante hac aeditiview, Ferdinando Bertelli Aeneis Typis Excudebat, Venetis, 1569, view 12, page 9. URL: https://gallica.bnf.fr/ark:/12148/btv1b7100003c/f1.planchecontact (quoted 12. 2. 2019).
[20] In Dalmatia different terms were in use depending on the dimension and clothing form:*.....un sachetto picholo, un sachetto conte gumanata, un tabbaro (tabarro), un zuppon...* RAUKAR, T., PETRICIOLI, I., ŠVELEC, F., PETRIČIĆ, Š. 1987, note 31, p. 300.

records from the 16th and 17th centuries.[21] According to these records, the name croata referred to dresses (*vestura, gonella*),[22] jackets and capes, and all garments lined with fox or lambskin.[23] These garments could be sleeved or sleeveless (with detachable sleeves) adorned with golden buttons. Gušić mentions *kotiga*, a round full-circle skirt carefully sewn from thin lambskin with a fur lining. The exterior of the skirt *kotiga* was made of white lambskin, with fine thread trimming at the bottom. It could be worn both as underwear or a type of a fur-lined shirtdress worn during winter months.[24] Anzulović (1992) finds the word *crovata* in the will of Šimun Locatelli from 1600, where it designates a jacket lined with fox fur. However, it could have been made in different fabrics and colors. Garments which can be associated with the term *crovato* are earliest mentioned in 1570, in the inventory of Sladoje Milanović, captain of the Croatian cavalry in Zadar, whose wife Marta was the daughter of the noble Duke Vincet Sudić of Poljica. This couple dressed in Croatian style. Since he was a captain of Croatian cavalry, his uniform and weaponry were different from those of Venetian soldiers: *"(...) una vesta di panno rosso fodrato di uolpe alla crouata."* It should be noted that this source defines *crovata* as a garment made of wool cloth or other finer materials with indispensable lambskin or fox fur lining, commonly worn by members of higher social classes.

Image 2: Ferdinando Bertelli, Sclahonico, black and white woodcut, 1569, in: *Omnium feré gentium nostrae aetatis habitus, nunquam ante hac aeditiview*, Ferdinando Bertelli Aeneis Typis Excudebat, Venetis, 1569, page 9.

[21] ANZULOVIĆ, I. 2001, p. 100 (note 41), p. 138. ANZULOVIĆ, I. 2007, pp. 213-235.
[22] In the 15th century, besides the term *gonella* (for dress) common was the term *vestura* for clothes padded with fox fur.
[23] ČORALIĆ, L. 2003, pp. 137-151.
[24] GUŠIĆ, M. 1984, p. 102.

The visuals in Ferdinando Bertelli's book (1569) provide an important source for a deeper understanding of dress culture on Croatian territory. Sleeves are often slit to make openings for arms and hands, while the rest of the fabric hangs at the sides. However, a simple cape with slit sleeves and fur trimmings is also common in the portraits by Venetian painters (Titian, Tintoretto, Paolo Veronese, Lorenzo Lotto), only that the capes in their paintings, unlike those worn by the Croats, are lined with precious fur like squirrel, sable, stoat, pine martens, beaver, rabbit, least weasel, fox, lynx and bear.[25] These types of precious fur were common linings in the cloaks named *kazake* and *dolame* worn by the Turks.

Image 3: Author of the text: Cesare Vecellio, Author of the image: Cristoforo Guerra or Titian, black and white woodcut, 1590, in: Cesare Vecellio, *De gli habiti antichi, e moderni di diverse parti del mondo libri due,* Damian Zenaro, Venetis, 1590, number 741.

In his 1590 book *De gli habiti antichi, et moderni di diverse parti del mondo*, Cesare Vecellio includes images of three women and four men wearing typical attires on the Croatian territory. Particularly interesting is the portrayal of a Croat titled *"Crovatto"* (Image 3), shown wearing a long cloak with a shorter front.[26] Veccelio notices another distinctive feature in Croatian clothing:

[25] BOUCHER, F. 1987, p. 214. The cheaper skins of lamb, sheep, goat, and wolf were generally set aside for the common people.
[26] Imago of *Croato* (view 741-742) in book by Cesare Vecellio with the text…*De gli habiti antichi, et moderni di diverse parti del mondo" and imago of Capo di Evscocchi* (view 751-752) …*La lor veste e conforme a quella delli Schiauoni, lunga di detro, a corta davanti…* VECELLIO, C. 1590. URL: https://gallica.bnf.fr/ark:/12148/btv1b8446755d.r=Vecellio?rk=21459;2 (quoted 15. 1. 2019).

…Gli Habiti loro sono per il freddo foderati di pelli di Volpe, di Lupo, o d'altri animali gentili, come di Martori, simili… In translation: …their dresses in winter months are lined with fox and wolf fur, or those of other animals such as pine martens and the like...

Archival records and graphic content testify to Croatian influences through the features of lambskin and fox fur linings in Venetian clothing. Fur was a commodity in high demand on Western markets throughout the 15th and 16th centuries. High-quality pine marten, wolf and bear fur arrived in Dalmatia and Venice from Bosnia via trade routes. The 16th century saw an increasing number of furriers in Dalmatian towns, who made cloaks lined with wolf, fox, squirrel (*le pellicie di scoiattolo*), beaver, rabbit or lambskin. The valleys of the rivers Neretva and Cetina of that period were turned into beaver farms, accounting for most production of fur later processed in Dalmatian towns or shipped further to Venice and the rest of Italy.[27] Especially valuable was lamb's wool, i.e. fleece obtained by shearing of lambs aged six to eight months. These fibres are particularly soft due to the natural narrowing at the fibre ends. The use of fur in Dubrovnik clothing was especially interesting. The archival records give evidence of the frequent use of cloaks lined with bear or wolf skin by noblemen and more affluent commoners, while simple fur vests were typically worn by more underprivileged commoners. According to Alebić, Dubrovnik market offered a wide assortment of leathers and furs, where lambskin, rabbit and fox fur were among the most popular.[28] Their extensive use is purported by visuals showing a fur-lined cloak and fur neck ornaments, such as in the graphics of a Dubrovnik merchant by the author Nicolas de Nicolay (Mercanet Ragusei, 1567), further in Jost Ammann's *Marchand de Raguse a Constantinople*, 1577 and in the portrayals of a Ragusan letter carrier (Nicolas de Nicolay's *Fante de Raguse, ou porteur de lettres*, 1567, Jost Ammann's *Courier de Raguse allant a Constantinople pour les Ambassadeurs ou Envoyes*, 1577 and Pietro Bertelli's *Tabellarisu Ragousanus*, 1594). However, unlike the cloak in the image of a Croat by Ferdinando Bertelli, the sleeves are not slit over the entire length and can be separated at mid-upper arm, and the cut is clearly designated with fur trimmings. Since the intent of these publications from the late 16th century was to the show distinctive features of dressin particular regions, it can be assumed that all the images show a cloak lined with lamb or fox fur - *croato*, only in different variants.

Renaissance dress was distinctly marked by lavish fabrics, precious raw materials, colours and different garments along with many prohibitions of the aforementioned. *Sumptuary Laws* were enforced in several decades of the 16th century in order to control and 'discipline' society, promote the moral value of modesty and finally, to stimulate local economies and prevent inflation. The use of precious furs was forbidden at intervals, when only more modest varieties of lambskin, sheepskin and fox fur were allowed in garment linings and decorations. Skin and fur production was an important part of the local economy, making them a common accessory in everyday clothing. In the archival records from the 16th century, the term croata encompasses cloaks, skirts and jackets lined with lambskin or fox fur, and the visuals in fashion publications support these sources. The term *croato* originated based on observations of particularities in Croatian clothing style by foreigners, travellers, notaries and merchants. Their legacy allows us to analyze the term *croato* as a minor contribution of Croatian culture to the Mediterranean heritage of the 16th century from a historical distance.

CONCLUSION

The second half of the 16th century witnesses a significant rise in editions of the costume books. The focal points of these books are various clothing styles, countries of origin of various garments, social hierarchy and a historical review of original clothing fashions. The first editions of these books contain depictions of garments and the countries of their origin; in late 16th century editions, these depictions are accompanied by textual descriptions of garments and accessories, which contain information about raw materials, colours and ornamentation on the fabrics, as well as the description of the wearer's physical and character traits. This article presents stages in research of a particular garment (*croato*) worn by Croatians throughout the 16th century. The term *croato* became the basis of etymological derivation for multiple meanings in use on Venetian territory and beyond. The starting points of the analysis were archival records and depictions published in two costume books by Ferdinando Bertelli (1569) and Cesare Vecellio (1590). The pictorial analysis of the Croatian garment is compared to its descriptions in Latin and Italian, as well as in the Dalmatian and Venetian

[27] ŠUNJIĆ, M. 1996, p. 323.

[28] ALEBIĆ, T. 2015, Društveni, ekonomski, vjerski i kulturni odnosi u dubrovačkim kolonijama u Bosni u 15. stoljeću, Doctoralthesis, 2015, p. 247. URL: https://dr.nsk.hr/en/islandora/object/dsos%253A22 (quoted 20. 2. 2019).

archival records. The article draws further attention to the difficulties in attempts to define the exact meaning of the fashion term in question, semantic changes to the term in the second half of the 16th century, and its adjustment to the Italian market.

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PRISPEVKI K MODNI ZGODOVINI – IZRAZ *CROATO* V 16. STOLETJU

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Izvirni znanstveni članek (1.01)

IZVLEČEK

Mnogo zgodovinskih knjig s konca 16. stoletja je glede na državo izvora prikazovalo specifične in raznovrstne sloge oblačenja. Izrazi za sloge oblačenja in modne izdelke so pogosto nastali kot izpeljanke določenih demonimov. V prispevku bomo analizirali specifičen izraz *croato* in iskali njegove sledi v arhivskih gradivih Dalmacije, Benetk in v majhnem številu grafičnih upodobitev. Naš cilj je, da preizprašamo izražanje nacionalne identitete skozi modne kode in podamo nove smernice za nadaljnje raziskovanje hrvaškega prispevka k zahodni modni kulturi konec 16. stoletja.

KLJUČNE BESEDE

croato, 16. stoletje, moda, Dalmacija, Cesare Vecellio, Ferdinando Bertelli, krzno

POVZETEK

Druga polovica 16. stoletja izpričuje znatno povečanje objav tako imenovanih kostumskih knjig, ki so se osredotočale na različne sloge oblačenja, države izvora različnih oblačil, družbeno hierarhijo in zgodovinski pregled predhodne oblačilne mode. Prve izdaje teh knjig zaobjemajo upodobitve oblačil in države njihovega izvora; v izdajah ob koncu 16. stoletja so te upodobitve opremljene z besedilnimi opisi oblačil in dodatkov, ki vsebujejo informacije o surovinah, barvah in okraskih na tkaninah, pa tudi opis fizičnih in osebnostnih lastnosti uporabnika. Članek predstavlja faze raziskovanja posameznega oblačila (*croato*), ki so ga Hrvati nosili v 16. stoletju. Prav izraz *croato* služi kot osnova etimološke izpeljave za več pomenov, ki so bili v uporabi na beneškem ozemlju in širše. Izhodišče analize so predstavljali arhivski zapisi in upodobitve v dveh kostumskih knjigah Ferdinanda Bertellija (1569) in Cesareja Vecellia (1590) kot osnovne smernice slikovne analize hrvaškega oblačila v primerjavi z njegovimi opisi v latinskem in italijanskem jeziku ter v dalmatinskem in beneškem arhivskem gradivu. Članek mdr. opozarja tudi na težave pri opredelitvi natančnega pomena obravnavanega modnega izraza, na semantične spremembe pojma v drugi polovici 16. stoletja in na njegovo prilagajanje italijanskemu trgu.

COMPUTER AIDED FABRICS PATTERNING *

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ABSTRACT

Weaving is probably as old as human civilization. At first, the loom was very simple, although very complex weave patterns were produced. Three kinds of loom were used; horizontal loom, vertical loom, and warp-weighted loom. Weaving on handloom continued as a craft and domestic art. Great progress towards faster weaving was made with the invention of the first mechanical loom and flying shuttle in the 18th century. The break in the history of sampling of woven fabrics occurred with the invention of jacquard mechanism, which enabled to control each warp separately. Despite the great invention, the preparation and manufacture of jacquard fabrics were time-consuming and expensive. Modern computer technology simplified the production of jacquard fabrics with CAD/CAM systems, which allow fast pattern design.

KEYWORDS

historical development of weaving, woven fabrics, shuttle loom, shuttleless loom, flying shuttle, jacquard mechanism, CAD/CAM

INTRODUCTION

Weaving is probably as old as human civilization. One of the necessities of humans is to cover their bodies to protect themselves from outside elements and appear more 'civilized' to the eye. Other reasons for the development of different clothing styles throughout history are social status, religious requirements, etc., while clothing trends also depend on geographic location.

The fundamental principles of weaving have remained unchanged for centuries. Woven fabrics are made by crossing yarns over and under at right angles to one another. In comparison to other knitted and nonwoven fabrics, woven fabrics have many advantages, such as the stability and resistance to deformation by compression and tensile stress.[1]

Woven fabric manufacturing technology has varied historically depending on needs and time. In the present paper, the development of weaving technology and fabric patterning over time will be presented.

There are three periods of major innovation in the production of textile yarns and fabrics. In prehistoric and early historic times, the means of weaving had been developed in many places over thousands of years. This period can be said to end with two developments that reached Europe in the 13th and 14th centuries, despite being invented much earlier: the spinning wheel from Asia and the horizontal loom from the Near East. For the following 500 years, there were only minor further developments in the field.

The second period was concentrated between 1589 and 1830. In 1589, William Lee invented his knitting machine, the stocking frame, which was a complicated mechanism. In 1733, John Kay invented the flying shuttle—a simple and surprisingly late development. However, Lee's stocking frame and Kay's shuttle were both still powered by human effort and directly controlled by human actions. It was the work of Hargreaves, Arkwright, Crompton, Roberts, and others that transformed textile production by introducing automatic machines, which were powered by horse, water, or steam.

The third great period of change in textile machinery occurred in the period from 1950 to 1985. The inventions from the time have had four outcomes:

*Translation: Živa Zupin

[1] ADANUR, S. 2001, p. 2.

- some are now entirely or partly incorporated into the mainstream industry, albeit improved from the earliest versions;
- some remain to be used in niche applications;
- some came into commercial use, but have disappeared;
- some never made it past the laboratory.

The motivation behind these new innovations was the desire to speed up the production of woven fabrics.[2]

PREHISTORIC AND EARLY HISTORIC TIMES

Fabrics have always been the most widely used textiles. According to historical and archaeological sources, the earliest evidence of weaving dates from Neolithic times.[3]

Historical findings suggest that Egyptians made woven fabrics some 6.000 years ago. Chinese made fine fabrics from silk over 4.000 years ago. It is believed that the handloom was invented many times in different civilizations.[4]

As the historical records show, the weavers were organized in associations led by a weaving master already in the antique age. Archaeologists have not discovered the remains of the loom, since they were made from wood. Only depictions on pottery and elsewhere have been available. It can be assumed that three kinds of loom were used; horizontal loom, warp-weighted loom, and vertical loom.[5]

The earliest evidence of the use of the loom (4400 BCE) is a representation of a horizontal two-bar loom pictured on a pottery dish found in Egypt. The warp is stretched between two bars or beams, pegged to the ground at each of the four corners. Lease rods are used to separate the warp yarns, forming a shed and aiding the hands in keeping the yarns separated and in order. Lease rods were found in some form on every later type of improved loom. Before lease rods were added, it would have been necessary for the weaver to separate warp thread with fingers to create the shed through which the weft yarn was passed. The heddle rod rests on top of the warps. To produce a plain weave, alternate warp yarns are tied to the rod, and when it is raised, the shed is formed quickly and accurately.

The warp-weighted loom consists of a crossbar supported by two vertical posts. The warp threads hang from the crossbar and are held taut by weights of clay, ceramic, or chalk tied to their free ends. Loom weights have been found at archaeological sites dating from 3000 BCE, but this type of loom may have originated even earlier.

Vertical looms were undoubtedly invented in Syria or Palestine and began to be used in Egypt in the 18th dynasty (1567–1320 BCE). They coincide with the appearance of more intricate textile patterns. Vertical looms are accessible from both sides and make it easier to produce demanding patterns. In the vertical two-bar loom the ends of the warp yarns are attached to a second crossbar, thus combining features of both the horizontal two-bar and the warp-weighted looms.

The heddle rods and shed sticks are used in a similar way on all three types of looms described above. These very early looms have been used through the ages in many cultures.[6]

LOOMS IN THE MIDDLE AGES

The earliest European pictorial record of the horizontal frame loom with a treadle dates from the 13th century, when it appears in a highly developed form, almost certainly introduced from the East. This two-bar loom was mounted in a frame; to this was connected a treadle operated by the feet, moving the heddles, an improvement of the heddle rod or cord controls now mounted between bars and called a shaft. The advantages of this type of loom were many.

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[2] HEARLE, J. W. S. 2013, pp. 87–99.
[3] KOVAČEVIĆ, S. 2008, p. 344.
[4] ADANUR, S. 2001, p. 2.
[5] PAJAGIČ BREGAR, G., BIZJAK, M. 2015, pp. 181–182.
[6] ENCYCLOPEDIA BRITANNICA. URL:https://www.britannica.com/topic/textile (quoted 3. 7. 2019). PAJAGIČ BREGAR, G., BIZJAK, M. 2015, pp. 181–182.

First, in the two-bar loom, though more than two heddle rods could be used, the number of groupings of warp threads was limited. Although highly complex patterns could be woven, it was not practical to do so in producing any but very small quantities of cloth. The shaft loom allowed as many as 24 shafts to be set up easily, enabling the weaver to produce comparatively intricate patterns.

Second, the weaver's sword or comb formerly used to beat the weft into place was replaced by the batten, supported in a heavy wooden frame from the main frame of the loom; its weight and free-swinging motion improved the beating-in action and made it easier.

Third, use of the foot treadle freed both hands to throw the shuttle and swing the batten. The loom remained virtually unchanged for many centuries thereafter.

Mechanization of the weaving process began in the 18th century. Prior to developments in automation, one weaver was needed to operate one loom, and an assistant was necessary if a complex pattern was being woven. A few developments were made prior to 1700, but none of significance or permanent influence. One of the problems that inventors faced was violent opposition from textile workers who resented any innovations that would speed an individual's production capacity and therefore reduce the numbers of weavers needed. Improvements in the speed of weaving during the 18th century were given impetus by the invention of spinning machinery for the production of yarn necessary for weaving. Until mechanical spinning came into use, the output of three to four spinners was necessary to keep one weaver fully employed. Acceptance of advances in loom technology was also aided by continuing improvements in spinning and cloth finishing technologies.[7] Weaving on handloom continued as a craft and domestic art.

THE MOST IMPORTANT INVENTIONS IN WEAVING MACHINERY

FLYING SHUTTLE

The first significant move toward automated weaving occurred when John Kay invented the flying shuttle in 1733, which enabled weft to be inserted more rapidly, and this led to a shortage of yarn. Kay's shuttle was hand operated and although it made possible considerable increases in productivity, it also enabled even greater advances as soon as power could be applied to the loom.[8] The flying shuttle allowed a single weaver to weave much wider fabrics and it could be mechanized, allowing for automatic machine looms.

In order to understand the importance of this invention, it is useful to review the action of weaving prior to it. In a typical frame loom, the operator sits with the newly woven cloth before him or her. Using treadles or some other mechanism, the heddles are raised and lowered to open the shed in the warp threads. The operator must then reach forward, holding the shuttle in one hand, and pass it through the shed; the shuttle carries a bobbin for the weft. The shuttle must then be caught in the other hand, the shed closed, and the beater pulled forward to push the weft into place. This action (called a 'pick') requires a lot of bending forward over the fabric; more importantly, however, the coordination between the throwing and catching of the shuttle requires more than one operator if the width of the fabric exceeds that which can be reasonably reached across (typically 150 cm or less).

The shuttle itself is only a component in a new system attached to the loom as part of the beater. A board called the 'race' runs along the front of the beater, from side to side, forming a track on which the shuttle runs. At each end of the race, there is a box which catches the shuttle at the end of its journey, and which contains a mechanism for propelling the shuttle on its return trip. The shuttle itself has some subtle differences from the older form. The ends of the shuttle are bullet-shaped and metal-capped, and the shuttle generally has rollers to reduce friction. The weft thread is made to exit from the end rather than the side, and the thread is stored on a 'pirn' (a long, conical, one-ended, non-turning bobbin) to allow it to feed more easily. Finally, the flying shuttle is generally somewhat heavier, so as to have sufficient momentum to carry it all the way through the shed.

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[7] ENCYCLOPEDIA OF CLOTHING AND FASHION. URL:https://www.encyclopedia.com (quoted 3. 7. 2019).
[8] LORD, P. R., MOHAMED, M. H. 1999, pp. 5–7.

Image 1: John Key's flying shuttle (Photo: Živa Zupin).

In manual operation, a cord runs to each box from a handle held by the operator. To start the pick, the shed is opened as before; however, instead of throwing the shuttle, the operator jerks the cord for the box containing the shuttle. This causes the mechanism in the box to shoot the shuttle along the race to the other box; then the shed is closed and the beater is used to complete the pick as before. The operator does not need to touch the shuttle until it needs to be reloaded, so fabrics of great width can be woven; but more importantly, the movements needed are greatly reduced.

Even more important was the fact that this mechanism could be automated and powered. All the operator needed to do was to monitor the machine for failures and keep it supplied with pirns of weft thread, a job that was simplified with the invention of the Northrop Loom, which reloaded the shuttle automatically. Kay's son developed a modification that allowed the use of an array of different shuttles.

The increase in production due to the flying shuttle exceeded the capacity of the spinning industry of the day, and prompted development of powered spinning machines, beginning with the spinning jenny and the water frame, and culminating in the spinning mule, which could produce strong, fine thread in the quantities needed. These innovations transformed the textile industry.

The flying shuttle dominated commercial weaving through the middle of the 20th century. By that time, other systems began to supplant it. The heavy shuttle was noisy and energy-inefficient (since the energy used to throw it was largely lost in the catching); also, its inertia limited the speed of the loom. Projectile and rapier looms eliminated the need to take the bobbin/pirn of thread through the shed, while later, air- and water-jet looms reduced the weight of moving parts further. Flying shuttle looms are still used for some purposes, and old models remain in use.[9]

POWER LOOM

The next very important invention for the textile industry was the power loom, invented by clergyman named Edmund Cartwright in 1785. The power loom could be operated from a single point. There was an obvious need for power beyond the resources of a single man. Fortunately, steam power was already becoming available. James Watt had begun making steam engines in 1776. A great deal of Watt's success stemmed from the availability of suitable iron in sufficient quality and quantity.

By the early 1800s looms were made of cast iron and were driven by steam power.[10] Power loom also required stronger warp yarn, resulting in developing first sizing machine in 1803. By 1821 there were over 5.000 looms in operation in England. In just over ten years from that date, the number had increased to some 100.000 and the basic loom had almost developed to the machine we know today.[11]

MECHANISMS FOR WEFT INSERTION DEVELOPED IN THE 20TH CENTURY

In the 20th century, the looms were improved further, including warp tying machines and warp drawing-in machines. After the end of the World War II, the modern textile industry began to emerge. The invention of

[9] FLYING SHUTTLE. URL: https://www.fiddlebase.com/shuttles-bobbins/flying-shuttle/ (quoted 5. 7. 2019).
[10] LORD, P. R., MOHAMED, M. H. 1992, p. 5.
[11] LORD, P. R., MOHAMED, M. H. 1992, pp. 5–7.

synthetic fabrics changed the scope of textile industry drastically. Shuttleless looms appeared in the mid-20th century and employed various systems: projectile, rapier, and jets of water or air.

PROJECTILE WEAVING MACHINE

In 1930, a German engineer named Rudolf Rossmann developed the first prototype of the projectile weaving machine. In 1953, the first commercial projectile weaving machines were shipped.

Rossmann was the original inventor of the Swiss company Sulzer (now Sulzer-Ruti), which produces weaving machine with a projectile, and remaines the dominant manufacturer of gripper looms till today.[12] In a gripper loom, yarn from a large package at the side of the weaving machine is captured by a 'bullet', which is shot across the loom.[13]

With the shuttle looms, when a shuttle goes back and forth across a loom it makes a neat selvedge where it reversers at the edge of the fabric. With the shuttleless looms, each length of weft is independent and cut off at the edges of the material. For some uses, this does not matter, but ingenious ways, such as tucking in the cut ends, have been developed for use where a good selvedge is needed.[14]

FLUID PROJECTION

Production of rapier and air-jet weaving machines started in 1972 and 1975, respectively.[15] With these machines, the weight of a gripper can be dispensed with. Yarn can be caught in a fluid stream and carried across the loom. J. C. Brooks took out a patent in 1914 for an air-jet loom and demonstrated the principle on an old silk loom in 1927. However, it was not until the 1950s that the Swedish Maxbo loom was produced and became the first weaving machine to reach 400 picks per minute. Maxbo did not succeed in the market. Commercial success came first with the Elitex machine from Czechoslovakia. Early air-jet machines like the Elitex had a single nozzle at the side of the machine to project the weft. The width of fabric that could be woven was severely limited. Production of air-jet looms has now spread to many manufacturers and inventive ways have been found to insert booster jets to carry the weft on through the tunnel between the warp threads.

Water jets can shoot yarn over longer lengths, and their use in weaving machines was pioneered in the 1950s when Czechoslovak research institutes were very active. They are now made by several manufacturers, but are not as popular as the air-jet looms. Their use is limited to continuous filament yarns, because staple fibre yarns pick up too much water.[16]

RAPIER LOOMS

The rapier loom has the oldest history as the concept appears in a patent of 1678, while the modern rapier loom was launched in 1963 by Dornier of Germany.[17]

Narrow fabric weaving has long been shuttleless. On a 'needle loom', the weft yarn is caught by a needle on a lever arm and carried the short distance across the warp. During the shuttleless revolution, this principle was adapted for wide looms with the weft carried across by long rapiers. There are two types; Rigid rapiers are as long as the width of the weaving machine and stick out to the side of the machine. Flexible rapiers, which are thin metal strips, are coiled up close to the machine, thus making the machine more compact. In both systems, the rapier captures the weft yarn and carries it across the warp to the other side of the weaving machine.

MULTI-PHASE WEAVING

Another way of speeding up the process is multi-phase weaving in which successive lengths of weft follow one another across or around the loom. The shed is thereby transformed into a wave of openings.

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[12] ADANUR, S. 2001, p. 2. VINCET, J. J. 1980, p. 48. HEARLE, J. W. S. 2013, pp. 87–99.
[13] LORD, P. R., MOHAMED, M. H. 1992, pp. 5–7.
[14] HEARLE, J. W. S. 2013, pp. 87–99.
[15] Ibid., pp. 87–99.
[16] Ibid.
[17] ENCYCLOPEDIA OF CLOTHING AND FASHION. URL:https://www.encyclopedia.com (quoted 3. 7. 2019).

At ITMA 1995, Sulzer showed the M8300 advanced linear multi-phase machine, which used grippers to transmit the waves of weft. Nowadays, all the novelties of the weaving machinery are presented at world textile exhibitions such as ITMA in Europe.

Rigid rapiers led in 1975, but had declined in 1991, when flexible rapiers and air-jet machines led. Both projectile and water-jet looms declined between 1975 and 1991.[18]

PATTERNING OF WOVEN FABRICS

The production and speed of weaving is influenced by the weft insertion, whereas the patterning is influenced by the shed formation. Every weaving machine provides a control device for each warp yarns. There are four systems used to provide manipulation to the yarns:

- crank shedding,
- cam shedding,
- dobby shedding,
- jacquard shedding.

Crank, cam, and dobby mechanisms control the harnesses, jacquard mechanism provides control of individual warp systems. Each shedding mechanism can be mounted on any weaving machine. Dobby and jacquard systems can be mechanical or electronic.[19]

Crank and cam shedding motions were always an integral part of weaving machine for weaving plain weave construction fabrics. With dobby shedding mechanisms the patterns with up to 24 shafts can be designed. With jacquard mechanism the weave pattern design is unlimited.[20]

PATTERNING OF DOBBY FABRICS

Patterning of dobby fabrics is limited by the number of shafts, but nonetheless, many different patterns can be made. Patterning of fabrics woven from identically or differently coloured threads can be carried out in three ways: by using one weave or different weave structures (structural patterning), by using different colours of yarns, and by using structure and different colours of yarns at the same time.

Structural patterning

Woven fabrics can be made with only one weave and the same colour of warp and weft threads such as sheets, or they can be made with different weaves (structural patterning). Structural patterning uses different weaves and produces discreet visual effects on the fabrics. The features of weaves should not differ considerably. Greater differences in the features of weaves lead to various degrees of warp and weft crimp, which affects the manufacture and the properties of woven fabrics. For the structural pattering of woven fabrics warp and weft effects of weave, such as twill or sateen and their variants are usually used.[21]

Colour patterned fabrics

Colour patterned fabrics can be produced by various methods: patterning with warping and weaving patterns with the same structure through the fabrics, patterning with different structure (weaves) with the warp and weft yarns in different colours, and patterning with combining structure (weave) and the warping and weaving patterns—rayé patterns.

Patterning with warping and weaving patterns with the same structure through the fabrics is the oldest method of designing woven fabrics. The weave is the same through the fabrics, usually it is plain weave, but warping and weaving patterns are changing. The patterns obtained in this way are:

- lengthwise striped pattern if warping pattern consists of differently coloured threads;
- cross-striped if the weaving pattern consists of differently coloured threads; and
- checked if both patterns consist of differently coloured threads.

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[18] HEARLE, J. W. S. 2013, pp. 87–99.
[19] ADANUR, S. 2001, p. 129.
[20] ORMEROD, A., SONDHELM, W. S. 1995, p. 272.
[21] ZUPIN, Ž., PENDIĆ, A., DIMITROVSKI, K. 2010, pp. 33–49.

The basic principle of patterning with different structure (weaves) with the warp and weft yarns in different colours is changing the weave pattern in particular segments of fabrics, while the warping and the weaving pattern are in one, but different, colour. With this kind of patterning, lengthwise striped, cross-striped, checked, and figured patterns can be produced. Usually, a combination of warp and weft effect of weave is used for reversible weaves, e.g. broken twill. Herringbone pattern is a typical representative of a lengthwise pattern.

Patterning with combining structure (weave) and the warping and weaving patterns—rayé patterns, is one of the oldest, most researched, and most widely used methods of multicolour patterning. The basic principle is agglomeration of individual interlacing points with a predominating thread of the same colour into groups, following the arrangement defined by weave and the colour sequence of the warp and weft threads, which produces spotty, striped, checked, or figured multicolour patterns.[22]

JACQUARD SHEDDING

The automation of patterned fabric production began in the beginning of the 19th century with the invention by Joseph Marie Jacquard (1804). Before the 1800s, weaving was a repetitive and mechanical process: plenty of time and skill were required in order to produce the embellished textiles. Complex patterns had to be set up in advance on a loom and required an assistant to operate, but the jacquard attachment allowed one weaver to control the shuttle and the pattern mechanism alone. Jacquard mechanism is one of the most important technological advancements in history and enables the control of the lifting of the warp yarns that create the fabric's pattern.

The jacquard mechanism was based on a system of cards, needles, and hooks. The cards were made of cardboard into which holes could be easily punched in order to create the design; the hooks and needles used followed the holes in the cardboard, passing through these holes and inserting the thread to create the pattern. Punched cards controlled the lift of the warp pattern yarns and a design could be changed very quickly by changing the punch cards that correspond to a particular pattern. The more intricate the design was, the more cards were arranged one after the other in the loom. Thanks to the system on which it was based, the loom allowed to create highly complex designs and patterns, in which new colours could be used and marvellous patterns developed.

Jacquard's invention not only revolutionized the textile industry but was also of fundamental importance for more general technological advances. The jacquard loom not only cut back on the amount of human labour, but also allowed for patterns to now be stored on cards and to be utilized over and over again to achieve the same product. The jacquard loom allowed to save patterns on cards that could be archived and re-used, cutting on time, labour, and costs. The system followed a mathematical algorithm, and holds many similarities with computers: both machines work by storing and organising information. This basic system remains in use in the early twenty-first century.[23]

Nowadays jacquard mechanisms can be mechanical or electronic, with single or double lift mechanisms; the new machines are all double lift. Mechanical jacquard mechanisms have between 800 to 1.200 harness cords. Recently, more modern jacquards utilize electronic systems for input of the harness lifting and lowering patterns. Modern jacquard heads are generally equipped to handle over 1.200 harness cords with patterns repeating on about 9.000 picks, and multiple heads can be employed over a single weaving machine to increase the weave pattern capability.[24]

MANUAL PREPARATION OF JACQUARD FABRICS

The preparation of jacquard pattern required a great amount of exceptional skill and knowledge. It needed a lot of manual drawing from sketches to the weave pattern drawing and card-cutting instructions. The preparation of jacquard pattern comprised pre-preparation according to fabrics pattern, drawing the pattern, and card-cutting.

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[22] DIMITROVSKI, K. 2004, pp. 39–57.

[23] NEW WEAVES: The Invention of the Jacquard Loom. The technology that changed the way to weave European. Fashion Heritage Assiciation. URL: https://fashionheritage.eu/new-weaves-the-invention-of-the-jacquard-loom/ (quoted 23. 8. 2019). KOVAČEVIĆ, S., SCHWARZ, I. 2015, p. 100.

[24] ENCYCLOPEDIA OF CLOTHING AND FASHION. URL: https://www.encyclopedia.com (quoted 3. 7. 2019).

Pre-preparation according to fabrics pattern:
All the effects in the fabrics had to be drawn. Every effect in the fabrics meant one weave. The pattern in the fabrics was created by the combination of weave and colour of yarns. All the effects were firstly woven provisionally.

Drawing:
After the provisional weaving of the effect, follows the drawing of the woven pattern. The designer drew the pattern in natural size in different colour variations. According to the complexity of the pattern, it took 3–4 mounts to draw the pattern. Besides the pattern, the designer prepared all the specifications for producing the woven fabrics (relating to the machine, material, warp and weft density, warp and weft pattern, and more). After testing different colour effects/weaves with the provisional samples, the final jacquard woven structure was developed through various stages of drawing.

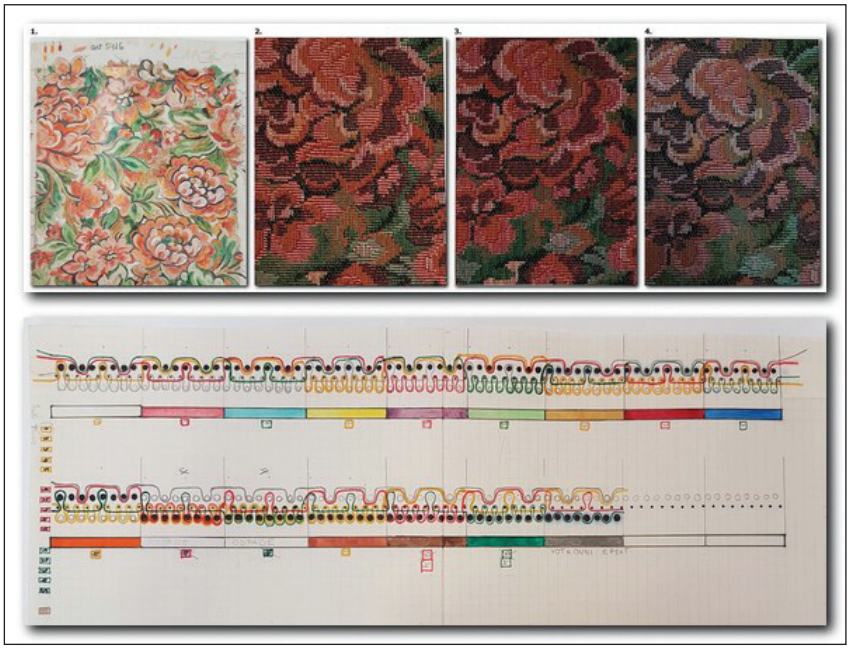

Image 2: The drawing of the pattern (1), fabrics made in various colour combinations (1, 2, 3), and the diagram of the interlacing of the yarns in the fabric (bottom) (Photo: Živa Zupin).

Card-cutting:
The card maker received the weave pattern and the punching instructions. Depending on the size of the pattern and therefore the number of cards and the difficulty of manufacturing the cards, approximately four mounts were needed to produce a card suitable for production.[25]

PATTERNING WITH COMPUTER AIDED DESIGN
The cardboard cards or paper tape, which were the program carriers for mechanical jacquard machines, have been replaced by magnetic tapes suitable for electronic machines. The data required for shed formation is processed by one of the available programming systems, which provides CAD and the processing of all weave and data patterns.[26]

With the development of computer-aided design and manufacture (CAD/CAM), the design of jacquard woven fabrics shortened drastically and the preparation of the card is no longer needed. All the new electronic jacquards are controlled and managed with CAM and allow simple transfer of the pattern formed on the CAD system. Contemporary CAD systems for weaving enable fast creation of jacquard patterns, the construction of woven structures, and the preparation of simulations in various colours, densities, and other settings.

CAD/CAM became available in the early 1980s, and were widely used since the 1990s with the cheapening of computer hardware equipment. The design process of jacquard woven fabrics that previously took weeks or months has thus been drastically shortened. Computer generated design samples can also replace actual woven samples and can therefore be produced almost immediately and transmitted electronically to any point on the globe. This technology has also enabled designers to become partners in the manufacturing process,

[25] ISTENIČ, S., BIZJAK, M. 2016, pp. 246–248.
[26] ORMEROD, A., SONDHELM, W. S. 1995, p. 273.

as changes can be introduced digitally without the cost of loom set-up and production time. Computers can also monitor the weaving process itself and can detect and automatically correct numerous mistakes.[27] Currently, designers have the possibility of working with systems where designs created on a computer screen are transferred directly to the controls of a computerized loom with the corresponding technology.

The use of CAD system has many advantages, such as the speed and ease of designing a pattern, repetition of designs, database of drawing aids, better visualization of drawings, quick design analysis, increased accuracy, lower production cost, and less errors during production.

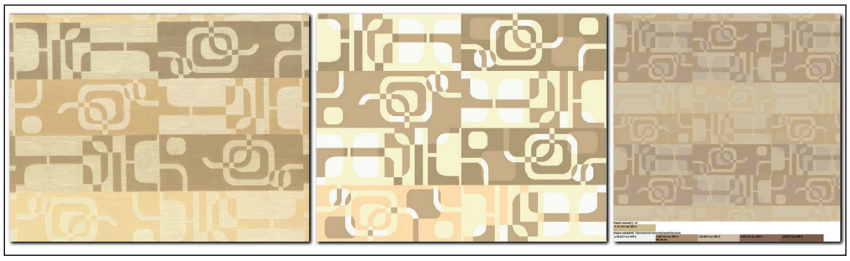

Image 3: Photography, pattern, and the simulation of woven fabrics created by CAD software Arahne (Photo: Živa Zupin).

With the help of CAD systems designers are able to design different patterns and repetitions of patterns, create yarns, different structures and weaves, and create face and back fabric simulations in different colour combinations.[28]

Image 3 presents images of a woven fabric, a fabric pattern created with ArahPaint, and a simulation of the woven fabric created with ArahWeave CAD software that was developed by Slovenian company Arahne. In the field of the production of weaving CAD systems, the Slovenian company Arahne is one of the companies that successfully promote and produce their products in Europe and beyond.

THE FUTURE OF WEAVING

Weaving has been around for thousands of years, and 230 years ago it was inaugurated to the factory system. Weaving is an increasingly demanding process. Economical manufacturing of woven fabrics is becoming more and more important. As a result, high performance and flexible electronic systems are being used in weaving. Multiprocessors are used to control, monitor, and communicate functions. Electronics increased the processing speed, flexibility, and reliability of weaving machines over the years. Control systems are equipped with production statistics, efficiency calculation, and various other counters. Fabrics parameters, patterns, colours, and control functions can be entered at the communications panel available on the machines. The pattern can also be entered with a computer or a memory card.

Woven fabrics have many advantages compared to other types of fabric. The principle of interlacing yarns to make a woven fabric have not changed since the beginning of this industry. There have, however, been dramatic changes especially in the last half century in the equipment used for weaving.

The speed of weaving has thereby increased dramatically in the last decades of the 20th century and in the beginning of the 21st century. As a result, the productivity of the machines has been increased. The existing shuttle looms in the world will be replaced with shuttleless looms. It is expected that the machine speed and filling insertion rates of single-phase projectile, air-jet, and flexible rapiers will also increase. However, it is reasonable to state that there may not be much room for speed improvements in the single phase machine due to physical limitations.[29] Computer systems and computer-aided design will also play a large part in weaving preparation and pattern design.[30]

[27] ENCYCLOPEDIA OF CLOTHING AND FASHION. URL:https://www.encyclopedia.com (quoted 3. 7. 2019).
[28] SINCLAIR, R. 2015, p. 280.
[29] ADANUR, S. 2001, pp. 399–400.
[30] SINCLAIR, R. 2015, p. 248.

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RAČUNALNIŠKO PODPRTO VZORČENJE TKANIN

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Strokovni članek (1.04)

IZVLEČEK

Tkanje je staro toliko kot človeška civilizacija. Prve statve so bile zelo preproste, kljub temu pa so na njih izdelovali zelo zahtevne vzorčne tkanine. Poznali so horizontalne in vertikalne statve in statve z utežmi. Tkalstvo na ročnih statvah se je nadaljevalo kot obrt. Velik korak k hitrejšemu tkanju sta v 18. stoletju pomenila izum prvih mehanskih statev in izum letečega čolnička. V zgodovini vzorčenja tkanin je bil prelomen izum žakarskega stroja, ki je omogočil izbiro dviga posameznih osnovnih niti. Kljub velikemu izumu sta bili priprava in izdelava žakarskih tkanin zamudni in dragi. Sodobna računalniška tehnologija je izdelavo žakarskih tkanin zelo poenostavila z uporabo sistemov CAD/CAM za tkanje, ki omogočajo hitro oblikovanje vzorcev.

KLJUČNE BESEDE

zgodovinski razvoj tkanja, tkanine, čolnične statve, brezčolnične statve, leteči čolniček, žakarske statve, CAD/CAM

POVZETEK

Osnovni princip tkanja je stoletja ostal nespremenjen. Tkanine so narejene s prepletanjem osnovnih in votkovnih niti pod pravim kotom. V primerjavi s pletivi in netkanimi tekstilijami imajo tkanine veliko prednosti, imajo dobro dimenzijsko stabilnost in so dokaj odporne na deformacije (stisljivost, natezne lastnosti). Večje izume na področju izdelave tekstilij, predvsem tkanin, lahko časovno razdelimo v tri obdobja. Prvo obdobje je prazgodovina, stari vek in srednji vek; to obdobje se je v Evropi končalo z uporabo kolovrata in horizontalnih statev, ki so jih pripeljali iz Azije in Bližnjega vzhoda. Naslednjih 500 let se tkanje ni bistveno spreminjalo. Drugo obdobje se je začelo z izumom letečega čolnička, ki ga je leta 1733 izumil John Kay, in se nadaljevalo z razvojem prvih mehanskih statev, ki jih je leta 1785 izumil Edmund Cartwright. Tretje obdobje je obdobje velikih sprememb v tekstilni industriji, trajalo pa je od leta 1950 do leta 1985. V 20. stoletju je šel razvoj statev v smeri hitrejšega vnašanja votka in s tem hitrejšega tkanja. Leta 1930 je Rudolf Rossman patentiral prve statve s projektilom. Uporabljati so jih začeli leta 1950, ko jih je za komercialno rabo izdelala švicarska tovarna Sultzer. Kasneje so začeli izdelovati še statve, ki so votek vnašale s pomočjo zračnega in vodnega curka. V šestdesetih letih prejšnjega stoletja je tovarna Dornier izdelala statve z rapirji. Način vnašanja votka vpliva na hitrost statev, način tvorbe zeva pa na vzorčenje tkanin. Poznamo podložke in ekscentre, listovke in žakare. S podložkami in ekscentri izdelujemo zelo enostavne tkanine, večinoma v vezavi platno, z listovko pa lahko tkemo vezave z do 24 listi. Z uporabo žakarskega mehanizma za dviganje zeva sta raport in vzorec tkanine praktično neomejena, saj se dviguje vsaka posamezna nit osnove. Žakarski mehanizem je v letih med 1801 in 1806 izumil francoski tkalec Joseph-Marie Jacquard. Mehanizem je deloval na principu luknjanja kart ter igel in platin. Igle in platine so sledile luknjicam na kartah, kar je vplivalo na dvigovanje niti osnove. Princip delovanja žakarskega mehanizma so uporabili tudi pri drugih tehnologijah, saj je podoben kot pri delovanju računalnikov. Priprava vzorcev za žakarske tkanine in izdelava kart sta bili zelo zahtevni in dolgotrajni vse do razvoja računalniških sistemov CAD/CAM za vzorčenje tkanin v osemdesetih in devetdesetih letih prejšnjega stoletja. Z uporabo računalniških sistemov je izdelava tkanin postala hitrejša, manj zamudna in natančnejša. Danes gre razvoj tkanin v smeri izboljšanja hitrosti tkanja in izdelave različnih konstrukcij tkanin za različne namene uporabe.

BUILDING FASHIONEASTA:[1] THE SLOVENE CLOTHING INDUSTRY AFTER 1945*

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Review article (1.02)

ABSTRACT

The Slovene fashion industry developed after 1945 upon the tradition of clothing and textile production between the two world wars, especially from craft and manufacturing workshops. The paper explores and focuses on the nature of the relationship that the fashion industry, fashion magazines, professional fashion associations and fashion fairs had in establishing fashion values in everyday Slovene life. The fashion companies that have been researched are Rašica, Almira, Industrija usnja Vrhnika, Labod, Ideal and Mura, selected according to their impact on Slovene fashion design. Slovene fashion is reviewed in the context of the impact of politics, culture and social development on their establishment in the building of the socialist identity of *fashioneasta*.

KEYWORDS

Slovene fashion, clothing industry, fashion magazines, fashion associations, *fashioneasta*

THE CLOTHING INDUSTRY AFTER 1945

After World War 2, the clothing industry in Slovenia became the industry with the highest number of employees. It developed from the tradition of clothing and textile production between the two wars, mainly from craft and manufacturing workshops that were dispersed across the entire territory of Slovenia. For the survey of the clothing industry in post-war Slovenia, companies were selected according to the influence they had on the professional development of fashion design in Slovenia and the development of society, and for the number of important professional awards that they won, including some international ones. The six brands selected are geographically dispersed throughout the country, with a greater emphasis on central Slovenia and the Gorenjska region. The brands are Ideal (Nova Gorica), Almira (Radovljica), Rašica (Ljubljana-Gameljne), Industrija usnja Vrhnika (Vrhnika), Labod (Novo mesto) and Mura (Murska Sobota).

After World War 2, the Slovene textile and clothing industry was in a very poor state, in terms of equipment, machines and personnel. Systematic professional development was required for the subsequent development into a more fashionable and profitable business. First the textile industry and later the clothing industry began to develop. In this context, the establishment of the Administration for the Textile Industry of the People's Republic of Slovenia within the Ministry of Industry and Mining of the first Slovene post-war government is important. At the end of 1946, the administration was renamed as the General Directorate for the Textile Industry of the People's Republic of Slovenia. The value and importance of the textile clothing industry in this period is confirmed by the fact that it covered from one third to two-thirds of the total budget of Slovenia.[2]

The new social circumstances in which people moved from rural areas to urban areas also dictated a different style of dress. In 1947, a central management approach was adopted and the majority of nationalized clothing and textile industry were combined according to their similar production orientation. In the 1950s the proportion of industrial manufactured clothes in industrialized countries was between 75% and 95% of the total consumption of clothing, but in Slovenia, only 30%.[3] In 1951, directorates and central management were abolished when the Law on Corporate Governance by Work Organizations was adopted. The trade in textile goods was freed from control and there was a growing investment in the development of industry in order to increase the proportion of standardized industry manufactured clothing as opposed to custom-made

*Translation: Tanja Devetak

[1] *Fashioneasta* is a new form of *fashionista* devoted to following a unique type of trends introduced by local fashion designers in Slovenia.

[2] DEBEVC, J. 2001, p. 19

[3] BLATNIK BLAGOTINŠEK, S. 2014, p. 117

clothing. An important turning point for the development of the textile clothing industry was the year 1954, when the new economic regulations came into force and the central planning system, by which the management of companies gained greater autonomy, was abandoned.[4] Factories could thus invest in development, first in technological progress and later in fashion design. Until the early 1960s they mainly invested in the development of equipment, the development of technological processes, the expansion of production and the modernization of work organization. In the second half of the 1960s, companies began to give more emphasis to the importance of fashion design and its impact on the development of brands and their social visibility. Numerous creative professionals were employed (most of them were graduate architects and artists, since a college of fashion design had not yet been established in Slovenia) and in some companies establish the first design departments (e.g. in IUV – Industrija usnja Vrhnika). At the same time, prêt-a-porter collections began to be established in Europe, while in Slovenia in the 1960s, due to the different social circumstances, standardized ready-made clothing began to develop strongly. An important milestone for the flourishing of ready-made clothing companies was in 1959 when the complete standardization process for heavy, lightweight and lightweight ready-made clothes was completed.[5] By the early 1960s, textile factories predominated, knitwear factories were slowly developing, and ready-made clothing factories were expanding. During this time, textile-clothing companies invested in the development of technology, the purchase of new equipment, began to introduce fashion design into the production process and included marketing in sales processes. In the late 1970s there were 67 large companies in the Slovene textile and clothing industry that employed 15.2% of employees in industry; 28% of staff were in clothing and 20% in the knitting industry, of which 85% were women.[6] At the same time the industry had a surplus and gradually began to focus on exporting and on developing marketing. In the 1970s all the companies regularly participated in important domestic fashion fairs (in Ljubljana, Belgrade, Sarajevo, Zagreb and Skopje) and received the highest awards for their producers. There was a gap between collections for trade fairs and collections offered by traders; some companies participated in fashion fairs with collections that were specially designed (Almira), and some of them showed regular collections (Mura and Labod). Being present at the well-recognized domestic fashion fairs at the time meant recognition within society in general, but especially within the social political elite. Due to serial production (most companies produce small series of 100 to 400 pieces per model), integrated distribution and promotion of their work, the clothing industry was becoming the forerunner of the emerging Slovene fashion industry.

Companies that had already developed fashion design departments were less subject to production for others and consequently lower revenue. The independence of Slovenia and the reduced domestic market represented a problem for most clothing companies, so that at the turn of the 21st century the textile clothing industry employed about as many people as before World War I.[7]

The significance of the systematic work in the textile clothing industry for its continuous development and, consequently, the development of the fashion system, can be seen from the expert categorization of the priority areas covered by the Slovene (republic) Committee of the Society of Engineers and Textile Technicians:[8]

- quality labelling: rules and orders for issuing a quality label to products;
- education and training: training in the workplace, complementary education, cooperation with textile educational institutions, obligatory internships, introduction of school personnel into work processes;
- professional terminology;
- professional press: issued the Standardization Guide and the Textile Manual;
- preparation of a new statute.

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[4] In 1951, directorates and central management have been abolished and the trade with textile goods has been liberalized. DEBEVC, J. 2001. Thus, there was a growing investment in the development of enterprises, in order to increase the proportion of standardized clothing. The year 1954 represented an important turning point for the development of the clothing industry: new commercial regulations entered into force and the central planning system has been abandoned, leading the management of companies to gain greater autonomy.

[5] BLATNIK BLAGOTINŠEK, S. 2014, p. 117

[6] LAZAREVIĆ, Ž. 2014, p. 31

[7] LAZAREVIČ, Ž. 2014, p. 33.

[8] DEBEVC, J. 2001, p. 83.

Apart from the latter, the various committees were involved in various vertical and horizontal segments of the fashion system, for which only the professional association could deal with problems and provide expert estimates for further development and also have an important impact on the society.

In Slovenia, a special form of fashion user in a socialist environment was developed – *fashioneasta*, which was based on the social order and fashion that was for all social strata, but was in fact primarily for the political elite. The elites uncompromisingly followed the fashion trends that the best Slovene fashion designers pursued in their award-winning collections, which were not blind copies of the Western understanding of fashion. They were a reflection of a different cultural environment and social circumstances in which the Slovene fashion of the time emerged. In that sense a different Slovene fashion aesthetic developed. The designers were following global fashion trends but delivered in their collections their own visual language that was a product of an authentic local regional cultural influence and value. A new form of user – *fashionista* developed, combining a unique form of tracking local fashion trends. The latter were a synergetic product of a global fashion and a socialist social context of the so-called East. A new user, specific for Slovenia was created – *fashioneasta*.

The clothing industry in Slovenia ensured staff training and education in order to have various profiles of professions that they needed for their development. In addition, they participated as co-founders of professional vocational colleges and were active in establishing professional associations that systematically took care of the development of fashion as a profession. From the late 1960s onwards fashion designers regularly visited important professional fashion events and fashion trade fairs abroad in order to get acquainted with current fashion trends.

All companies faced serious economic problems already as early as the 1980s, but the real problems arose in the early 1990s with the change of the social system and the dissolution of Yugoslavia. Most companies underwent a change of ownership through denationalisation, which in no way helped their economic recovery. In spite of various financial interventions by the government, results in the industry did not improve, so most companies declared bankruptcy or went into liquidation between 2004-2014. In the early 1990s, the first independent fashion designers began to appear, making their own fashion brands (Cliché / Jelena Pirkmajer, Studio Draž / Urška in Tomaž Draž, Oktober, Barbara Plavec etc.). Most produce unique collections (up to 5 pieces per model) and over the years, most have produced sample collections and custom-made clothing. Only Jelena Pirkmajer / Cliché still makes collections and does not do custom design. If the fashion industry started to develop in Slovenia from the need to reduce customized clothing, it returned to its roots within a few decades.

The general understanding of fashion design at that time is shown by a statement of a professor at the Department of Contemporary Clothing, Faculty of Applied Arts, Belgrade (the higher education institution for fashion design that was some time the only one in Yugoslavia), Andjelka Slijepčević, who said in the interview in the fashion magazine *Maneken* in 1984/85:[9] "The reason that this profession (fashion design, author's note) is not recognized in our factories is also that many involved in the process of fashion design within companies think that they can create or copy it by themselves, without special effort. Every day they dress themselves, believing that they do it well, that they have good taste and therefore already know about the business." The developing Slovene fashion system was certainly the result of the synergistic effect of the work of other segments of the developing fashion system – fashion print media, fashion fairs, educational institutions and professional associations.

IMPACT OF THE PRINTED MEDIA

Fashion media and professional institutions do not define fashion solely in the context of its visual parameters, but help to create it within society in the relationship between the production, distribution and complexity of fashion design. The fashion media mediate between production and consumption. They articulate the relationship between fashion's aesthetic and social-economic parameters.[10] Fashion media provide information on social meaning and cultural symbolism related to fashion, and these are still more important than the physical characteristics of clothing.[11] Fashion is a change that includes the meaning of imitation and

[9] *Maneken*, autumn/winter 1984-1985, Marija Kranjc, Kako postati modni kreator?, p. 15.
[10] ENTWISTLE, J. 2000, p. 221.
[11] JAWDAR, L. 2014, p. 5.

distinction. We shape information about our identities by dressing ourselves. Such messages, which can be variable and constant, can be very clear and direct, or even obscure and ambiguous. The fashion media play an important role in this process, as they are not only the transmitters or mediators of these messages, but also the active creators of the messages themselves in the context of the formation of cultural parameters within society. In the review of Slovene fashion media and their influence on the establishing of fashion in Slovenia, we will concentrate on printed magazines, which significantly influenced the process of the creation of Slovene fashion. Fashion journalism is (was) underdeveloped and mainly focuses (focused) on styling of images and less on fashion journalistic work.

The importance of clothing from the original message created by the designer can begin to differ greatly from the message that begins to accept the clothing in the process of the transition to social and public space. The garment acquires its "own life" regardless of the intent of the creator of the clothing – the designer. With clothing we express our own identity, the types of relationships with others and the types of situations in which we are involved.[12]

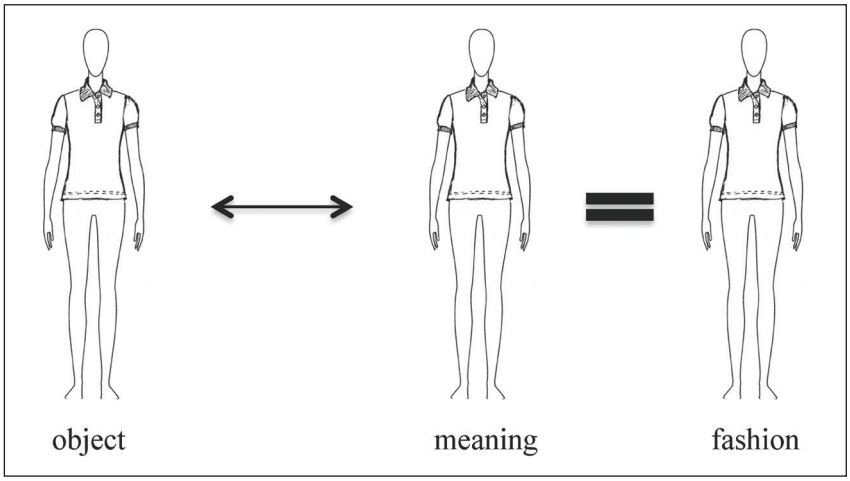

Image 1: Fashion formation through the media (Image: Tanja Devetak).

According to McRobbie,[13] fashion stories in magazines fall into five types:
1. profile of the designer (brand) or interview with the designer (brand),
2. collection report,
3. cover or distribution of fashion,
4. user-oriented function (e.g. ten best purchases, etc.),
5. the image of a single garment.

In the examined Slovene fashion print media (*Maneken*, *Ars Vivendi* and *Modna Jana*), similar fashion stories are intermixed, but it should be emphasized that they do not usually include reports or critiques of collections and, even to a lesser extent, interviews or designer profiles. The proportion of individual types of fashion stories in fashion magazines in a single publication depends on the editorial policy, the period of publication of the magazine and the financial capabilities of each magazine. In general, covers, user-oriented functions and the image of a single garment appear.

In the first fashion print magazine *Maneken*, the influence of fashion editors on the formation of distinctive fashion aesthetics was not perceived. Later, in the late 1990s, fashion editors in Slovene fashion magazines took on the role of fashion "patrons" and fashion curators. In the case of Slovene fashion, fashion editors thus became the custodians of certain fashion designers or fashion styles that they promoted. McRobbie[14] sees the cause of such a situation in fashion journalism and in fashion itself, in the confinement and conservatism of the fashion system, its cultural intolerance (which is in fact contradictory, given that fashion is generated only from the constant change and absorption of different influences) and self-regulatory instinct. Fashion journalism, she believes, does not have the objectivity and impartiality characteristic of journalism covering other content.

[12] DAMHORST, M. L. 2005, p. 67.
[13] MCROBBIE, A. 1998, p. 166.
[14] MCROBBIE, A. 1998, p. 168.

The purpose and message created by the designer when creating clothing are irrelevant, since the message according to the semiotic model is formed or is the result of negotiations between active participants in the fashion process.[15] In the triangle designer - media - user, the message is created in the media / user relationship rather than the designer / user one. In the postmodern understanding of fashion, a message is also formed in the designer / media relationship, but not in the form of clothing, but rather the self-promotion or self-creation of a fashion designer. As McRobbie[16] says: "Self-creation is a condition in fashion culture."

The survey covers only the print media that after World War II had the largest and most continuous influence on the formation of Slovene fashion. The magazines *Maneken*, *Ars Vivendi* and *Modna Jana* were not licensed magazines, meaning they did not enter a franchise agreement. *Maneken* was a magazine that first covered only fashion in its content. In the main, it only published image material (usually a single garment) – photographs and fashion illustrations. The latter had more of a function of presenting fashion trends within Slovene clothing industry. Initially, the magazine significantly influenced the promotion of the clothing industry in Slovenia with the promotion of clothes by *Almira*, *Rašica*, *Angora*, *Gorenjska oblačila*, *Mura*, *Labod*, *Industrija usnja Vrhnika* and others. In addition, they continually informed readers about fashion trends in the fashion capitals of Paris and Rome. With the slow decline of the magazine Maneken, a new, important lifestyle magazine emerged, which significantly includes fashion – *Ars Vivendi*. It started to promote independent fashion designers without their own studios or shops. It promoted fashion as a creative activity and not only as a business, with an emphasis on subcultural fashion. When *Ars Vivendi* began designing its own collections (Pro Ars Vivendi), the Slovene clothing industry begins to appear more frequently. *Modna Jana* is the first fashion magazine (and also the last) to recognize the importance and possible impact of Slovene fashion on society. At the beginning, it gave equal coverage to independent fashion designers and the clothing industry. It recognized the empty space in Slovenia on fashion promotion and so it produced professional fashion shows as an important segment in the formation of *fashioneasta*.

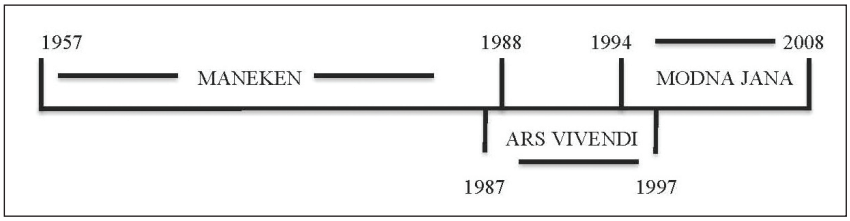

Image 2: Timeline of the Slovene fashion magazines (Image: Tanja Devetak).

The first Slovene (also Yugoslav) fashion magazine was *Maneken*, which was first published by the Ljubljana Exhibition and Convention Centre (*Gospodarsko razstavišče*) in 1957 as a supplement to the *Progress* newspaper. Later in 1959, it was taken over by the Centre for Contemporary Clothing and Equipment (*Center za sodobno oblačenje in opremo*). The last two issues of *Maneken* were published by *Paralele*, which took over the Centre for Contemporary Clothing and Equipment (which went bankrupt in 1987) in January 1988. At first, the magazine was published in both Slovene and Serbo-Croatian languages, as two different editions, but later, from March 1966 onwards, they were united in a single edition. At that time, the magazine also expanded, with a single issue of 40 pages and a double one of 48 pages. Every year, *Maneken* was published ten times a year, twice as two double issues in March/May and July/August. The first issues were published in a run of 5000, printed on 16 pages, but in the ten years of publication, the magazine reached 30,000 copies. In 1967 *Maneken* had 16 pages of colour photos in a single edition. The last issue appeared in September 1988 (autumn 1988/89 issue). As the introduction to the first issue of *Maneken* stated, it would offer "domestic and foreign fashion reports, original photos and sketches of models, templates, tips and ideas". It would also include "new textile items, fashion accessories and ready-to-wear of our factories." The introduction added: "*Maneken* will fill the existing gap in the fashion field and this will help non-professionals, professionals, craftsmen, fashion companies and even factories."

[15] BERNARD, M. 1996, p. 73.
[16] MCROBBIE, A. 1998, p. 79.

Image 3: Cover of the first edition of *Maneken*, January 1957; *Maneken* cover January 1971 (centre); cover spring summer 1981 (Photo: Tanja Devetak).

Maneken played an important role in the development of Slovene fashion print media, although in the early decades its published content was mainly visual material. It played its most important role in the late 1950s, when the Slovene clothing industry was only at the beginning of its development, and thus with the printed media it gained visibility, recognition and promotion in the society. *Maneken* as an important fashion media of the time continuously moved barriers in understanding Slovene fashion as an integral part of society in the 1980s, when Maja Poljšak became the editor.

In 1987 there was an important milestone in the formation of Slovene fashion print media with the emergence of the magazine *AV - Ars Vivendi*. It covered various life-style design disciplines, including fashion. In its original title (the first four editions - March 1987, June 1987, September 1987 and December 1987), the cover explicitly stated what was dealt with in the following order: fashion, design, photography, interior, architecture, painting, travel, texts and news. It defined fashion as part of a culture, a creative activity that influences how society develops (the social space). The *Ars Vivendi* magazine influenced the development and positioning of Slovene fashion, fashion design and fashion consciousness in Slovene society. Until then, fashion had predominantly been dealt with from the point of view of material practice (the clothing industry). With the incidence of *Ars Vivendi*, it turned into theoretical and professional analysis by creating content that professionally evaluated fashion design achievements (also) as an art practice. The magazine featured the model of fashion journalism which was established in the 1920s by *Vogue* – fashion as art and fashion as a consumer luxury for middle class women. We look at the world of fashion as a world of fantasies and images.[17] The chosen name *Ars Vivendi* – Art of Life indicates that the magazine had recognized fashion design and fashion as one of the creative forms that define and shape our lifestyle. Fashion design rises from the level of clothing production and exclusive commercial effect. *Ars Vivendi* evaluates fashion as a homogeneous whole and does not expose specific features within Slovene fashion. In their publications, freelance fashion designers begin to appear. *Ars Vivendi* does not distinguish between freelance fashion designers, fashion designs and the clothing industry. Characteristic of the first issues of *Ars Vivendi* is that the texts on fashion were written by writers and critics for whom fashion was not the primary field of expertise, such as Zdravko Duša, Tadej Zupančič, Brane Kovič and Evgen Bavčar, who were highly valued critics in their respective fields of culture, regarded in society as "high culture". Relationships and divides between popular culture and "high" culture began to break down in fashion. The social structure of society was not an indicator or criterion for determining the parameter of excellence of fashion practice. *Ars Vivendi* promotes Slovene fashion designers and understands fashion as artistic articulation and not only as a market economy oriented activity. For this reason it offers presentations of freelance fashion designers and art fashion projects, rather than the clothing industry.

Modna Jana began to appear in September 1994 (until 2008). To mark the launch of the first issue a fashion show was produced, which was an announcement of the editorial board's concept in the following years. They would become the leading force in shaping the core of Slovene fashion (clothing industry and freelance design studios) and its public presentation. If *Ars Vivendi* explicitly mentioned the various creative activities within which the fashion is equally represented, then *Modna Jana* was a magazine whose title defined the content to be covered – fashion (*Modna*). Initially, fashion was the basic content of the magazine, and after the early years, with the new millennium, it added other content: first beauty and cosmetics, and later home, food, and travel. In general, *Modna Jana* at the beginning mainly covered fashion, but later adds accompanying

[17] MCROBBIE, A. 1998, pp. 162-163.

content dealing with the body (the assumption of clothing and one of the wearer's cultural parameters of clothing) and enriched it with lifestyle content.

The general framework of Slovene fashion magazines may not really differ greatly from each other, but the attitude towards fashion design and the influence of formation fashion in Slovenia in comparison between *Maneken, Ars Vivendi* and *Modna Jana* is very different. All three are generally committed to Slovene fashion design, *Modna Jana* to freelance designers and the fashion industry, *Ars Vivendi* to more freelance fashion designers, *Maneken* only to the clothing industry. However, *Modna Jana* promoted Slovene fashion design as a whole more firmly and systematically, and thus decisively intervened in the formation of fashion design and fashion in Slovenia in the second half of the 1990s. *Modna Jana* was an important platform in the early years of publishing, which enabled the emergence of fashion in Slovenia due to the constant revealing of new names of independent fashion designers, and support in the promotion of the fashion industry (clothing industry and small freelance studios) in Slovenia.

LJUBLJANA FASHION FAIR

The Slovene Committee of the Textile Industry Association was the initiator of the Professional Exhibition of Textile with International Participation, which first took place in the spring of 1956 at the Exhibition and Convention Centre in Ljubljana. The commission was made up of representatives of the Slovene Committee of the Textile Industry Association, the Chamber of Commerce and Industry of Slovenia, the Society of Engineers and Textile Industry of Slovenia (DITTS) and the Exhibition and Convention Centre. The development of the clothing industry was significantly influenced by the appearance of the Ljubljana Fashion Fair in 1956, which continued to operate annually until 1999 (with the exception of twice a year between 1992-1993). The exhibition had a commercial, technical and fashion character, followed by consultations and lectures. From the first organized event, catalogues were published in Slovene and Serbo-Croatian language, and in some years translations were added in German, French, Italian and English.

The exhibition with international participation was later developed as Ljubljana Fashion Fair, which played an important role in formation of Slovene fashion and its impact within society. Understanding the importance of fashion as an important industry is evidenced by the fact that the fair catalogues of the 1950s contain lists of diplomatic representations abroad (economic diplomacy), foreign diplomatic representations in the state, lists of representatives (with their full names listed) of the Federal Chamber of Foreign Trade abroad and a list of the professional chambers in Ljubljana (Chamber of Commerce and Industry, Chamber of Trades and Crafts, Bar Association, Trade Chamber, Chamber of Commerce and Industry of the Federal Republic of Yugoslavia and the Chamber of Agriculture and Forestry). The importance of fashion within society explains the text by Hajrudin Djukovič in catalogue MODA 59 for the Ljubljana Fashion Fair in 1959. This problematizes the gap between global fashion trends and the creation of the country’s own fashion identity, which is subject to the specifications of each society: "A nation’s way of dressing is determined by a long sequence of historical and other factors. For example, taste is not a genetic characteristic, but a result of components that are rooted in its way of life, in its customs and habits, in its social composition, in its mentality. That is why taste is shaped and changed simultaneously with the changes of the components that are formed from. The aesthetics of dressing should start with a broad-based systematic, prudent and long-term campaign for the development and cultivation of contemporary local national taste."

In later fairs, freelance fashion designers and brands also presented their designs at the fair. The fashion brand Oktober was recognized and awarded in 1991 for their overall fair presentation. The Ljubljana Fashion Fair was thus an important platform for Slovene fashion to present its products. At the same time, the award-winning products at the fair represented promotion and a guarantee that the products would sell better. Some companies presented specially designed collections, some of them with a regular production programme. The fair brought together various aspects of the fashion system. In addition to the clothing industry, educational institutions, fashion media were also present at the fair, professional associations and institutions such as the Centre for the Advancement of Household and Clothing, DMOMS – The Association of Fashion Designers and Modellers of Slovenia, and Slovene Fashion Association, which organized fashion show.

PROFESSIONAL ASSOCIATIONS

The Centre for Contemporary Clothing and Equipment was founded by the Slovene textile and clothing industry in 1959 within the Chamber of Commerce of Slovenia. It worked as an expert association, that in addition to publishing the fashion magazine Maneken, organized professional education for traders and was responsible for awarding professional prizes at the Ljubljana Fashion Fair between 1959 and 1972. They also organized for clients a number of fashion shows of various clothing and textile factories and clients, such as Textiles, graduate college (20. 10. 1979) or VA-MI Varaždin, Croatia. At some fashion shows, collections were signed under the collective authorship of the Centre for Contemporary Clothing and Equipment. Together with the Chamber of Commerce and Industry of Slovenia, they organized twice a year meetings where Slovene fashion designers gathered.

In the changing social context, the intention of combining expertise and connection with common interests appeared in the clothing industry. The Association of Fashion Designers and Modellers of Slovenia (DMOMS) was founded on 8 February 1999. The association's mission was to show fashion trends through presentations of collections and to educate traders who recognized them as an important segment in the distribution and formation of fashion awareness in society. For the first time, the Association of Fashion Designers and Modellers of Slovenia was introduced to the public at the Ljubljana Fashion Fair in 1999, where it had its own showroom, presenting fashion trends that were announced by members of the association. Later, they started to organize independent joint fashion shows. Fashion shows were organized once a year and were supposed to fill the gap of the missing fashion fair. Fashion shows were events that attracted a lot of media attention and so fashion gained public respect as a profession and economically efficient industry.

CONCLUSION

Fashion is made and not born.[18] There is a need for more support for the creation of fashion or what is fashionable. Fashion fosters a sense of identity and requires a certain amount of imagination to create it.[19] The Slovene clothing industry was seen as the material production of clothing and was part of the political system. The material production of clothing determined the general framework of social life. The process of the creation of Slovene fashion as a synergy of material practice and social process, began in the 1970s with the strong positioning of Slovene fashion identity – *fashioneasta*.

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[18] KAISER, S. 2012, p. 52.
[19] Ibid., p. 52.

FORMIRANJE *FASHIONEASTA*:[20] SLOVENSKA OBLAČILNA INDUSTRIJA PO LETU 1945

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Pregledni znanstveni članek (1.02)

IZVLEČEK

Slovenska modna industrija se je po letu 1945 razvila na tradiciji tekstilne proizvodnje med obema svetovnima vojnama, predvsem na obrtniških in proizvodnih delavnicah. V prispevku raziskujemo in v središče postavljamo naravo odnosa, ki so ga modna industrija, modne revije, profesionalna modna združenja in modni sejmi postavili kot modno vrednoto v vsakdanjem življenju. Raziskali smo modne blagovne znamke Rašica, Almira, Industrija usnja Vrhnika, Labod, Ideal in Mura. Izbrane blagovne znamke smo pregledali v kontekstu vpliva politike, kulture in družbenega razvoja ter njihovega vpliva na vzpostavitev izgradnje socialistične identitete *fashioneasta*.

KLJUČNE BESEDE

slovenska moda, oblačilna industrija, tiskane modne revije, modna združenja, *fashioneasta*

POVZETEK

Sodobna slovenska moda se je razvila na temeljih oblačilne industrije, ki je vzniknila po drugi svetovni vojni iz obstoječih manufaktur. Te so bile podržavljene ali pa so jih lastniki "prostovoljno" podarili državi. V prvih letih je bila oblačilna industrija zelo slabo razvita in prve zametke konkretnejših premikov v razvoju je zaslediti v poznih 60. letih 20. stoletja. Zanimivo je, da je bila oblačilna industrija takrat razpršena po celotnem območju Slovenije. V podjetjih so začeli dosledno zaposlovati oblikovalce, v nekaterih so v 70. letih 20. stoletja razvili tudi oblikovalske centre. S svojimi kolekcijami so redno sodelovali na modnih sejmih v Jugoslaviji; najpomembnejša sta bila Moda v svetu v Beogradu in Ljubljanski modni sejem. Na teh sejmih so raziskane blagovne znamke redno prejemale najvišje nagrade. Sodelovale so pri ustanovitvi pomembnih strokovnih združenj in izobraževalnih ustanov. Ljubljanski modni sejem je bil temelj, na katerem so se prepletali različni vidiki modnega sistema. Vplival je na strokovni razvoj panoge, poleg tega pa je bil pomembno vpet v družbeno okolje. V nagrajevanju kolekcij na sejmu je vrsto let sodeloval tudi Center za sodobno oblačenje in opremo. Center je bil stičišče kreativnega naboja, oblikovanega okoli različnih projektov, ki jih je organiziral. Eden pomembnejših je zagotovo tudi izdajanje prvega modnega časopisa Maneken, ki je pomenil prepoznavnost IN umeščenost slovenske oblačilne industrije v družbi. V 80. letih 20. stoletja so se pojavili tudi drugi modni mediji, kot sta Ars Vivendi in Modna Jana. Slednja je vplivala na položaj slovenske mode v družbi, predvsem z vódenimi modnimi dogodki, ki so združevali različne sloje družbe. Vzpostavila se je relacija avtonomne slovenske modne identitete, ki je temeljila na specifiki družbe in njeni sestavi, na navadah in običajih in zgodovinskih temeljih. Nastala je slovenska različica *fashioneasta*.

[20] *Fashioneasta* (izpeljanka iz amer. besede z ital. končnico) je nova različica izraza *fashionista* in pomeni spremljanje edinstvenih trendov, ki so jih domači modni oblikovalci predstavili v Sloveniji.

STUDY OF CLOTHING USING THE EXAMPLE OF 3D INTERPRETATION OF PLEČNIK'S MONUMENT DEDICATED TO MILITARY COMMANDER JAN ŽIŽKA*

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Professional article (1.04)

ABSTRACT
The 3D interpretation of historical military uniforms is presented using the example of a non-realized monument by the Slovene architect Jože Plečnik. The plans for the monument (hand drawn sketches, an architectural plan and a wooden scale model) were dedicated to Jan Žižka, a famous Czech army leader and the monument was presumably meant to be located in Prague. The study examines the possibilities of extracting information about uniforms from the sculptural references, analysis of the available clothing references of the Hussite leader, soldiers and monks, and the techniques of cloth simulations, 3D modelling and digital sculpting. 3D interpretative approaches were applied considering Plečnik's style and the styles of his contemporaries and sculptors that collaborated with the architect. The results of the study were reproduced as a 3D printed version of the monument exhibited at the exhibition "Plečnik and the Sacred" in Plečnik House in Ljubljana.

KEYWORDS
Jože Plečnik, military uniform, Hussite soldier, military commander, 3D interpretation

3D TECHNOLOGIES AND TEXTILE CULTURAL HERITAGE

3D technology solutions are workflows, tools, techniques and methodologies that usually include 3D digitalisation (acquisition), i.e. 3D scanning and photogrammetry and 3D reconstructive, representative and interpretative approaches such as 3D printing and 3D computer generated (computing) models and visualisations. From a wider perspective, 3D technologies also interface with interactive systems, web platforms, user interfaces, animations and computer (dynamic) simulations and extended reality (virtual reality – VR, augmented reality – AR, mixed reality – MR).

3D technologies pose many challenges to researchers and academics. The challenges are both technical and informational, and are mostly in the fields of virtual data acquisition, geometric description, organisation of data and metadata, data archives for further research and analysis, presentation and display of cultural heritage, 3D object implementation of interactivity, data interchangeability and transfer from virtual to physical and vice versa.

The implementation of 3D technologies in cultural heritage (CH) has many advantages, so they often attract

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the attention of researchers and professionals. Some of the positive aspects of their use are that they are accurate, non-invasive, reliable, go hand in hand with sustainability, their implementation usually results in more attractive and interactive solutions, and they augment user experience.[1]

3D technologies are also frequently used in the field of textile cultural heritage, yet the techniques and methodologies are not as specialised as they are, for instance, in building and monument heritage. Textiles and clothes are often studied and analysed contextually with the figures' role and meaning, and not separately as unique source of information. This is probably also a reason why approaches concerning textiles and clothes used in computer sciences (dynamic simulations, physically based renderings of cloths, cloth appearance modelling) are not so often applied in CH solutions and there are not many references in this field.

3D scanning is an analysis data technique that enable acquisition of the geometry (shape, morphology, relief) and appearance (texture, colour) data of real-world objects and environments. In textile cultural heritage 3D scanning is used mainly for smaller artefacts, accessories and for studies of textile and cloth details. A result of the process is a high definition mesh with a high level of detail (LOD) that is, also due to complex retopology (complexity of mesh corrections), hard to apply to further work in 3D CG (computer graphic), i.e. simulations and animation. Consequently, this technology is not so popular as photogrammetry and its usability is limited. The challenges are even more difficult to solve when airy and porous textile structures are 3D scanned and analysed. Here, a technology is challenged particularly by the accuracy of the calculation of the empty spaces between textile parts.[2]

In studies of CH, photogrammetry is a frequently used technology that enables measurements from many photos taken from different angles and sides of the analysed objects. The process is accurate in calculating the positions of the surface points (representing 3D object) from image formats and pixel values (intensity, color). In addition to its frequent use in the documentation and analysis phases of buildings (exteriors, interiors), sculptures and monuments, this methodology is also commonly used in textile heritage. It is used for representation of textiles and clothes and their details, as presented by Angheluta and others.[3] Photogrammetry is also used for 3D digitalisation of entire museum collections,[4] which enable on-line animations and interactions with textile CH objects and clothes, and also 3D visualisations of models with and without textures and maps.

With the effectiveness of 3D printed objects and artefacts, CH benefits from new possibilities of presentation, interpretation, accessibility and metric studies. For museum and gallery purposes exact digital or physical replicas can be produced. Digital reproductions allow adaptation of the informative values and semantic complexity of the objects to users' needs and capabilities of experiencing CH objects (users with special needs). There are two main challenges in the use of 3D printing in cultural heritage, i.e. creation and preparation of digital models so that they are useful for printing and compliance of the 3D printed copy (replica) with the original.[5] The technologies that enable the preparation of 3D models, i.e. inputs for the 3D printing, are mainly 3D scanning and photogrammetry, but we should not overlook solutions where the textile objects are computationally modelled.[6]

Nevertheless, the advantage of 3D technologies lies particularly in the interchangeability between the digital and physical forms. For this reason, extended realities (XR) are entering the CH domain, bringing completely new experiences. These solutions pose many challenges to researchers, especially in equipment perfor-

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[1] IOANNIDES, M., QUARK, E. 2014, p. 142.
[2] GABRIJELČIČ TOMC, H., PIVAR, M., KOČEVAR, T. N. 2016, p. 8.
[3] ANGHELUTA, L., RADVAN, R. 2017, p. 801.
[4] SANTA CRUZ MUSEUM OF ART AND HISTORY, 2015, SketchFab. URL: https://blog.sketchfab.com/3d-scanning-a-museum-fashion-collection/ (quoted 8. 4. 2019). EUROPEANA, 2017, Europeana Blog, SketchFab. URL: http://blog.europeana.eu/2017/01/exploring-3d-on-europeana-with-sketchfab/ (quoted 8. 4. 2019).
[5] BALLETTI, C., BALLARIN, M., GUERRA, F. 2017, pp. 172-182. BALLARIN, M., BALLETTI, C., VERNIER, P. 2018, Replicas in Cultural Heritage: 3D Printing and the Museum Experience, in: The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, Ed. XLII-2, pp. 55-62.
[6] O'NEAL, B. 2016, Jerusalem: Second Year Design Student Creates 3D Printed Lace for Historical Dress. URL: https://3dprint.com/154900/jerusalem-design-3d-printed-lace/ (quoted 7. 4. 2019).

mance, motion capture methodologies, real time cloth dynamics, accuracy of presentation and real-time rendering that are with all the developments in the field certainly of a temporary nature.[7]

AIM OF THE RESEARCH

A review of the literature revealed that 3D technologies are prospering in CH documentation, presentation and interpretation. Their accuracy, flexibility, accessibility and sustainability are already high, but in the field of textile CH there are still open research questions in the detailed modelling of textiles and clothes[8] and representation of the creator's style, especially when the references are not accessible, or they have been spoiled and are informatively ineffective.[9]

The proposal for the 3D reproduction of Žižka's monument was launched by Plečnik House in Ljubljana, which exhibited it at the exhibition Plečnik and the Sacred (October 2018-January 2019). Jan Žižka was a famous Czech army leader, whose monument was planned to be constructed in Prague, but was never realised, presumably due to certain nationalistic standpoints of the Czech committee for the Žižka monument competition (1913).[10] The architect Plečnik drew many sketches for the monument and with his colleagues constructed a wooden scale model, but the documentation is limited to only one non-detailed photo that presents the monument from the left side. The features of the monument can be according to their shape, topology and level of details divided in two groups: 1. architecture of the monument, i.e. chalice-like stage geometric part and 2. eight human figues and one animal (horse).

During the creative development process of the 3D reconstruction, six phases were defined and performed: 1. analysis of the documentation, 2. interpretation with 3D modelling, 3. 3D printing, 4. assembling and finishing, 5. exhibition and promotion, and 6. evaluation. The working phases for the sculptural elements of the reconstruction are presented in Image 1.

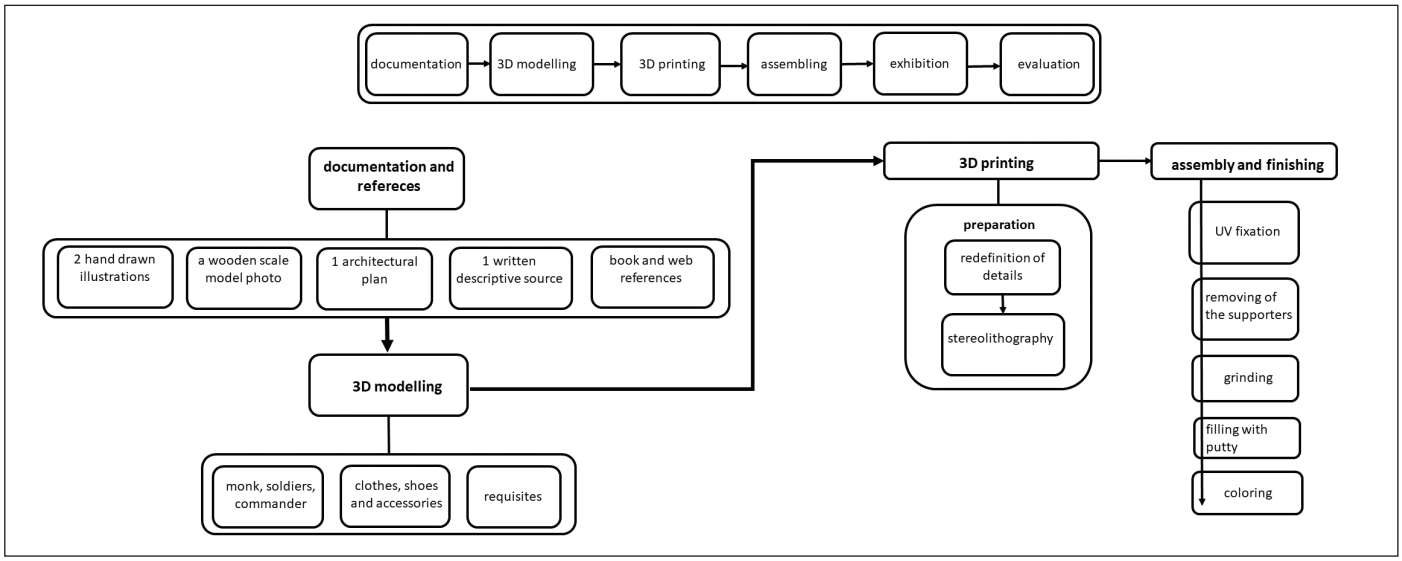

Image 1: Documentation, 3D modelling, 3D printing and assembly and finishing of sculptural elements (Authors: Tanja Nuša Kočevar, Anja Škerjanc, Matej Pivar, Helena Gabrijelčič Tomc).

[7] EGGS, A., PAPAGIANNAKIS, G., MAGNENAT-THALMANN, N. 2006, An Interactive Mixed Reality Framework for Virtual Humans, 5th International Conference on Cyberworlds 2006, International Conference on Cyberworlds (CW 2006), Lausanne, Switzerland. MAGNENAT-THALMANN, N., PAPAGIANNAKIS, G. 2006, Virtual Worlds and Augmented Reality in Cultural Heritage Applications, Virtual Worlds and Augmented Reality in Cultural Heritage Applications. URL: http://citeseerx.ist.psu.edu/viewdoc/download?-doi=10.1.1.106.9743&rep=rep1&type=pdf (quoted 6. 4. 2019). PAPAGIANNAKIS, G., FONI, A., MAGNENAT-THALMANN, N. 2003, Real-time recreated ceremonies in VR restituted cultural heritage sites. URL: http://cipa.icomos.org/wp-content/uploads/2018/11/Papagiannakis-e.a.-Real-time-recreated-ceremonies-in-VR-restituted-cultural-heritage-sites.pdf (quoted 6. 4. 2019).

[8] CYBULSKA, M. 2012, To see the unseen, Computer graphics in visualisation and reconstruction of archaeological and historical textiles, Computer Graphics, Nobuhiko Mukai, IntechOpen. URL:https://www.intechopen.com/books/computer-graphics/to-see-the-unseen-computer-graphics-in-visualisation-and-reconstruction-of-archaeological-and-histor (quoted 6. 4. 2019).

[9] KOČEVAR, T. N., ŠKERJANC, A., POROK, A., JURCA, T., PIVAR, M., GABRIJELČIČ TOMC, H. 2018, pp. 389-395.

[10] BERGLUND, B. 2017, p. 280.

3D MODELLING

Firstly, automatic modelling approaches with image processing methods were tested. This technique provided poor results, due to the insufficient accuracy of the references. Therefore, manual modelling was used, which was precise and detail oriented. Different approaches were used in modelling of the sculptural part of the monument. The figures were designed in MakeHuman and then exported to Blender in which further modelling and simulation of clothing was carried out.

SOLDIER

The body of the soldier was imported to Blender and put in a suitable pose for outfit modelling. Various mesh modelling techniques and fabric simulations were used. The most appropriate way to model the clothing was to model the upper part (shirt) and the lower part (skirt) of the outfit separately. This way gave better results because different fabric simulations can be used for different pieces of clothing.

The shirt and the skirt were pinned to the waist of the soldier's body and defined as cloth with the material characteristics of rubber. The rubber setting provided the best results in the simulation, in terms of looking for the most natural fit of clothing on the body. Simulation with the best results was confirmed and the final touches were carried out with digital sculpting.

The belt was added for visual separation of the upper and lower parts of the outfit covering the passage between the skirt and the shirt. The 3D model of the belt was found online and customized to suit the model of the soldier.

Modelling of the soldier's shoes started with the design of the soles, which were made by cube transformation. The upper (leather) part of the boot was made from the mesh of the soldier's leg. That was done by copying the mesh of the leg and making a new object which was then adjusted. The leather textile simulation on the shoe was carried out with pinned vertices on the bottom of the shoe, which remained in place during the simulation. After confirming the simulation, some corrections had to be made with digital sculpting. The whole shoe (upper and sole) was copied and moved to position of the other foot, and then mirrored over the X-axis.

After a detailed examination of the references, it was found that the soldier had a sort of hood under the helmet. At first it looked like the hood was part of the shirt, but it was found later that it is a special cover or overcoat with a hood, that extends half-circularly to the chest and upper back. Modelling of the overcoat was based on shirt's mesh, which had already been shaped around the body. The upper part of the mesh from the shirt was copied and a new object was created, which was transformed to shape the overcoat. The final shape and style of the entire overcoat was achieved with digital sculpting.

MONK

The figure of the monk was also imported from MakeHuman into Blender for clothing modelling. It was found that a lot of corrections to the clothing mesh are needed if the mesh is copied from the body model. That would take plenty of time and manual modelling. That is why a decision was made to find the model of the robe online. The robe was placed on the monk and adjusted to the correct size. The monk and his robe were placed in a final pose, in which the monk holds a chalice.

Some experiments with different basic shapes of the robe and various simulation settings were made on the robe. The best result was used and improved to the final look. The basic shape of the finished robe was rearranged before the simulation. It was completely narrowed down to adapt better to the body and the wrinkles smoothed with digital sculpting. The robe determined the cotton textile properties. According to previous experiments, the decision was made to pin a vertex group around the waist. The simulation of the textile on the robe was confirmed and the robe was corrected with digital sculpting, so the larger wrinkles were smoothed and some smaller ones were added.

Modelling was continued with the hood on the monk's robe. Two experiments were done. The wrong approach was picked at first, so there was no satisfactory result. The second proved to be better, so it was also made to the final model. In the second attempt, the vertex from the back of the collar were copied and separated into a new object, followed by extruding and adjusting. The opposite pairs of points on the top of the extruded object

were then merged, thus creating a "seam on the hood" and getting a nice mesh of hoods. The hood was then adjusted according to the shape of the head, followed by determination of the cloth's thickness and cotton properties for simulation. After the simulation, the hood dropped nicely on the shoulders and retained a fairly natural look. Afterwards, wrinkles were smoothed and gradually shaped with a digital sculpting method.

The twisted rope belt with which the monk's robe was tied at the waist was modelled. Three circles were added to the scene, and then rotated, so that the circles were seen from the side view. The circles were positioned to intersected each other. Two were in the same plane, and the third was below them. The circles were joined, rotation was confirmed and the origin point was set to the middle of the model. Then a curve was added, expanded and the origin point of the curve was moved to the starting point of the curve. The "screw" modifier and "curve" modifier were defined to the circle object, with the help of which a rope was created. The "screw" modifier determined the appearance of the rope and determined the route by which the rope was wrapped. The curve was wound around the monk's robe waist, and the rope formed along the curve.

JAN ŽIŽKA

Žižka's body was imported to Blender and put in a pose on horseback. Various mesh modelling and fabric simulation techniques were used to model the soldier's outfit. Special attention was paid to the interaction of clothing with the horse's body.

The shirt was pinned at the waist and the collar of Žižka's body and defined as cloth with the material characteristics of cotton. Cloth simulation was then performed and confirmed. Final touches were made with digital sculpting. The skirt was modelled in Žižka's riding position. Experiments were carried out with different basic shapes of the skirt and various simulation settings. Experiments have shown that the optimum way to model the contact between the skirt and horse body is by adjusting the vertices of the skirt manually. The most natural looking result was achieved and improved to its final appearance. The skirt was pinned to Žižka's waist and defined as cloth with the material characteristics of rubber.

A 3D model of Žižka's coat was made from the mesh of his shirt. That was done by copying the mesh of the shirt and making a new object, which was then adjusted.

Žižka's hat was made with the transformation of simple geometric objects. Modelling of the hat began with the design of the upper part, which was made by sphere transformation. The furry part of the hat was made from a cube. The effect of fur was achieved by digital sculpting with added texture.

Žižka's eye patch was made by cube transformation and final shape was also achieved with digital sculpting. The shoes and the belt were copied from the soldier model, placed on Žižka's model and adjusted to the correct size. In Image 2 3D models of the soldier, Jan Žižka and the monk are presented.

Image 2: 3D models of the soldier, Jan Žižka and the monk (Authors of the reconstruction: Tanja Nuša Kočevar, Anja Škerjanc, Matej Pivar, Helena Gabrijelčič Tomc).

3D PRINTING

The size of figures was adjusted according to the dimensions of the whole monument. All the model's modifiers were applied and the number of polygons was reduced for printing. All the model's objects (body, clothes) were joined and normals were recalculated when it was needed.

The figures were aligned so that their lower surfaces lie on plane Z = 0, which represents the build platform of 3D printer. Finally, the origin point was placed in the middle of each model. The prepared model was then exported to STL file for 3D printing.

STL files were imported into the PreForm program, which is intended for preparation of 3D printing models. The figures were printed using 3D printer Form2 (with photopolymer White V4 and layer thickness 0.1 mm). Support structures were added to the model and it was ready for printing.

Stereolithography is widely used for printing of figures. It is a technology based on the photopolymerization process. Around 337 ml of liquid photopolymer was used for the printing. The printing time of the figures was approximately 27 hours.

Stereolithography requires post-processing. Printed figures were carefully removed from the build platform and the remains of the photopolymer were fused in two solvent baths (90 % IPA). After bathing, models had to be irradiated with an UV light source for complete polymerization. Supporting structures were then removed. Items were then sanded under water for support residue removal. The figures were thoroughly washed, dried and dyed with an acrylic multifunctional white matte colour in spray form. In Image 3 3D printed interpretation of the sculptures are presented.

Image 3: 3D printed interpretation of the sculptures (Authors of the reconstruction: Tanja Nuša Kočevar, Anja Škerjanc, Matej Pivar, Helena Gabrijelčič Tomc).

With the aim of the correct clothing interpretation in a 3D printed scale model of Plečnik monument, clothes of Hussite soldiers, monks and especially the outfit of commander Jan Žižka were studied. Many visual and written references were examined, illustrations being the most important. Clothes were studied mainly as final silhouettes, where it was established that most important feature for the modelling process was the layering of textile with various draping properties. The outlines of the outfits are not as complex as the intricacy of soft textures created by drapes. Therefore, cloth simulation technique was always completed with sculpting method what resulted in correctly modelled sculptures that were beautifully interpreted in 3D printed objects.

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ŠTUDIJA OBLAČIL NA PRIMERU 3D INTERPRETACIJE PLEČNIKOVEGA SPOMENIKA, POSVEČENEGA VOJSKOVODJI JANU ŽIŽKI

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Strokovni članek (1.04)

IZVLEČEK
V raziskavi je predstavljena 3D interpretacija historičnih uniform na primeru nerealiziranega spomenika slovenskega arhitekta Jožeta Plečnika. Načrti monumenta (ročne skice, arhitekturni načrt in lesena maketa) so bili namenjeni za spomenik Janu Žižki, znanemu češkemu vojskovodji. Spomenik naj bi bil postavljen v Pragi. V raziskavi ocenjujemo možnosti izločanja informacij o uniformah iz skulpturnega dela referenc ter analiziramo reference oblačil husitskega vodje, vojakov in meniha. Poleg tega so v prispevku predstavljeni simuliranje oblačil, 3D modeliranje in digitalno kiparjenje. Uporabljen je bil 3D interpretativni pristop, ki je upošteval Plečnikov slog in slog Plečnikovih sodobnikov, ki so sodelovali z arhitektom. Rezultati raziskave so bile 3D tiskane interpretacije oblačil kiparskega dela spomenika, ki so bile razstavljene na razstavi "Plečnik in sveto" v Plečnikovi hiši v Ljubljani.

KLJUČNE BESEDE
Jože Plečnik, vojaška uniforma, husitski vojaki, vojskovodja, 3D interpretacija

POVZETEK
V prispevku je predstavljen del raziskovalnega projekta, katerega namen je bila 3D rekonstrukcija nerealiziranega spomenika arhitekta Jožeta Plečnika, ki ga je avtor posvetil češkemu vojskovodji Janu Žižki. Pobuda za raziskavo je prišla iz Plečnikove hiše v Ljubljani, z željo obogatiti razstavo "Plečnik in sveto" (razstava je v Plečnikovi hiši trajala od oktobra 2018 do konca januarja 2019). Izziv rekonstrukcije je bil dokumentacijski del, saj so bili na voljo le nekateri nekonsistentni ročni načrti spomenika (verzije z različnimi tipi figur, dimenzijami ipd.), arhitekturni načrt (ki se ni ujemal z ročnimi skicami), ena pisna referenca (knjiga s kratkim opisom ozadja načrta spomenika) ter nedetajlna in slaba kontrastna fotografija lesene makete, na podlagi katere naj bi avtor predvidel izdelavo spomenika. Prva faza celotnega projekta je bilo določanje obsega rekonstrukcije in delovnih faz, v katere so bili zajeti študij dokumentacije in spletnih referenc (referenčne slike husitskih vojakov, vojskovodje Jana Žižke in menihov tistega časa), 3D modeliranje, 3D tiskanje, poobdelava, razstava in evalvacija rezultatov. Kiparski del raziskave je vključeval osem figur (vojskovodjo, meniha in šest vojakov), konja, na katerem sedi vojskovodja, ter oblačilni in obutveni del (uniforme, kape, ogrinjala, hlače, čevlje) in rekvizite, tj. meče, ščite, čelade, kelih, prevezo za oči. Oblačila figur so bila rekonstruirana z opazovalnimi študijami lesene makete, na kateri so bile sicer vidne le silhuete in mestoma nekatera razmerja, ter z analizo in študijem spletnega in knjižnega slikovnega gradiva vojakov, vojskovodij in menihov tistega časa. Plečnikov slog je bil v rekonstrukcijo vključen po opazovanju referenc Plečnikovih kipov in spomenikov, pa tudi z deli njegovih sodobnikov, s katerimi je arhitekt sodeloval. Delo s 3D tehnologijami je potekalo interpretativno, saj sta procesa 3D modeliranja in digitalnega kiparjenja sočasno vključevala značilnosti referenc Plačnikovega sloga ter detajlov in lastnosti oblačil in rekvizitov, ki so jih izražale spletne in knjižne reference. Rezultat raziskave so 3D tiskani modeli, ki skupaj z arhitekturnim delom spomenika izražajo avtorjev slog, poleg tega pa same razkrivajo tudi detajlne značilnosti uniform in oblačil husitske vojske.

FASHION'S TEXTILE REVOLUTION: IRIS VAN HERPEN'S 3D OBJECTS*

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Professional article (1.04)

ABSTRACT

For contemporary fashion designer Iris van Herpen, technology is not an afterthought but central to her approach and vision. Her experimental designs have pushed the boundaries of textile thinking in fashion. The Dutch couturier, who is renowned for her extraordinary 3D printed dresses, focuses on the transformative power of technology. By experimenting and innovating, Van Herpen not only pushes the boundaries of fabric and craftsmanship but also the boundaries of couture. Such an emphasis on the material and process is crucial for her dress-object making. It is precise, carried out with the meticulous rigour of aesthetically motivated scientists, but there is a warmth there, a naturalness as seen in her shows such as *Ludi Naturae* from 2018.

KEYWORDS

fashion, textile, Iris Van Herpen, 3-D print

SUMMARY

Technology and fashion design have always been closely connected but in the last ten years, the visibility of technology within contemporary fashion has increased. A few experimental designers use 3-D printing as an integral part of a fashion object, but Dutch designer Iris Van Herpen uses technology as an artistic tool in creating couture fashion. New textiles, silhouettes and architectural wear are now becoming more visible in couture fashion, something that was unimaginable before. 3-D print has brought new opportunities and has created a new way of understanding fashion objects. The term fashion object is to be taken in the context of Van Herpen's work since her designs, mainly constructed in layers of various 3-D textiles, represent a new research field within fashion design and theory. Textile material constructed in this technology becomes a key element of the body, enhancing the movement of the fabric, as well as new body contours. The fabric becomes a new skin and technology helps the fabric to adapt to the body. 3-D print creates a unique body experience and produces a new fashion object. Various technologies in textile and fashion design serve to enhance the performance of the body and to create a new bodily experience. Our garments now interact in various ways: they communicate, transform, conduct energy and light, and the body becomes their communication device – an extension of the body, in an anthropological sense. The methodological approach used in this paper is connected to the phenomenological framework of Maurice Merleau-Ponty and his theory of embodied practice. We now have the ability to interact through all the senses with the environment on a different level. Smart textiles join these phenomena by using our senses as a way of gathering new information on both the subject and the body. This paper will represent how has the textile revolution changed fashion design and couture and, more importantly, how the artificial material becomes an essential part of the body object. It will represent not only Van Herpen's work but also that of Studio Orta and Kosuke Tsumura in terms of Refugee Wear as architectural wear and how it is applicable in today's society. Contemporary fashion is now perceived as a new language of the Western fashion system. Van Herpen's work thus represents how technology can be used, not only as a process tool for producing complex designs but also as an artistic too. Technology in textiles presents new questions on technology and fashion, and undoubtedly needs to be taken into consideration in the context of new media and the socio-cultural sphere where fashion perpetuates its magic.

THE TRANSFORMATIVE POWER OF DRESS: 3-D PRINT AND NEW SILHOUETTES

Innovations in textiles and the fashion industry are more spectacular than ever. New textile making process radically changed contemporary fashion design and its image after the 1990s, but more importantly, they

*Translation: Vesna Klanac

shifted old patterns and silhouettes present in fashion prior to the new technological wave to a new fluid and artistic level. 3-D objects, very present in the work of contemporary Dutch fashion designer Iris Van Herpen, known for fusing technology and fashion, have pushed the boundaries of both fabric and craftsmanship but more importantly created a new bodily experience and image. Van Herpen's work unites digital technology and artisanal craftsmanship, something not often seen in couture fashion. Innovations and experiments in textile and fashion are visible in Van Herpen's work in terms of transforming the nature of both fabric and body image. What makes Van Herpen's work so special and "out of the box", is the effortless representation of the naturalness of the material but also the performative aspects of her work with technology. The designer has worked with techniques like injection moulding and laser cutting on maze-like structures, 3-D printing and intricate architectural handwork on various clothing garments such as dresses, jackets, trousers, skirts and blouses, giving them dynamic shapes and surfaces that echo the body's movement. Movement is crucial to Van Herpen, as seen in her earlier work Magnetic Motion from 2015. It included translucent dresses, made from laser-cut acrylic mesh, which hovered around the wearer's body in a quavering evocation of a force field.[1] The textile Van Herpen uses becomes one with the skin, and extension of the body itself.

Although 3D print appeared in fashion design in the early 1980s, there are not many designers who use this specific and now everyday technology. The aim of this paper is not just to highlight how innovative technologies have changed our understanding of couture in fashion but to showcase Van Herpen's work and the work of Studio Orta and Kosuke Tsumura in comparison. I will also present how Van Herpen's designs differ from other couture designers. Her approach to couture changed the role of technology in fashion, not vice versa. Nevertheless, thanks to technology, 3-D architectural wear is possible to produce and wear. As noted earlier, Van Herpen's focus is on the material and the movement of the body. In her earlier work from 2011, Van Herpen, together with architect Isaïe Bloch and 3-D print company Materialise, designed five architectural pieces.[2] She created a Skeleton dress from sinuous shapes made of acrylic sheets that writhe around the wearer, evoking his/her mental state. The collection represented, for the first time, five architectural looks. Particularly for this collection, she worked with the architect Isaïe Bloch making 3D prints, which were then mixed with fabric materials producing this startling result.[3] The essence of Iris Van Herpen's work relies upon her need to highlight the contradiction between beauty and regeneration. It makes her unique in expressing human individuality and creating new body volume. The 3-D Skeleton dress appears very similar in design to Elsa Schiaparelli's Skeleton Dress from 1938.[4] What Schiaparelli wisely understood is how dress is supposed to feel like a second skin. She used black silk and quilting technique to make enormous bones. The design was stitched in outline through two layers of fabric, then cotton wadding inserted through the back to bring the design into relief on the front. New silhouettes were introduced, as seen on Schiaparelli's example long before 3-D was invented and they serve as an excellent example of experimental couture wear before contemporary fashion emerged. This new silhouette created new body movement and new interdisciplinary body practices in contemporary fashion. Her approach in textiles changed the boundaries of couture and fashion, and thus radically changed the body image.

ARCHITECTURAL WEAR: STUDIO ORTA'S REFUGEE WEAR PROJECT AND TSUMURA'S FINAL HOME

The bodily experience is often neglected as the fact that we do have a relationship with our garments. In the era of fast fashion and non-emotional attachment to things, the garment is often lost and signified as merchandise. Although he does not explore fashion per se in his writings, Maurice Merleau-Ponty and his phenomenological approach created a new framework for understanding bodily experience as well as its "corporeal" nature.[5] In fashion, we engage with the world and the term "body" in a philosophical sense, and it is crucial to explore it if we want to fully comprehend the link between body and dress in new technological

[1] HORWATH, D. 2014, Iris van Herpen uses 3D printing and magnets to form Spring Summer 2015 fashion collection, Deezen Magazine on the Web, 1. 10. 2014, p. 1. URL: https://www.dezeen.com/2014/10/01/iris-van-herpen-magnetic-motion-spring-summer-2015-fashion-collection-3d-printing-magnets/ (quoted on 15. 5. 2019).

[2] CAMPANINI, C. 2016, Iris van Herpen: Fashion Meets Architecture, Abitare Magazine on the Web, 13. 1. 2016. URL: http://www.abitare.it/en/design-en/visual-design-en/2016/01/13/iris-van-herpen-moda-sposa-larchitettura/ (quoted 15. 5. 2019).

[3] GECZY A., KARAMINAS, V. 2018, p. 15.

[4] FRIEDMAN, V. 2017, Distorting Reality at Iris Van Herpen and Schiaparelli at Couture Fashion Week, New York Times on the Web, 23. 1. 2017. URL: https://www.nytimes.com/2017/01/23/fashion/couture-spring-2017-schiaparelli-iris-van-herpen.html (quoted 15. 5. 2019).

[5] MERLEAU-PONTY, M. 1962, p. 5.

environments. Merleau-Ponty developed his theory of embodied experience and emphasized how the mind is situated in the body and it is through our corporeal schemas that we come to know the world. His phenomenology provides us with the theoretical tools with which to address fashion not only as an aesthetic or symbolic form but rather as a haptic experience, as Llewellyn Negrin carefully examines.[6] This is why the relation between fashion, body and technology is so interesting to explore. Fashion cannot thus be considered as merchandise or garments, rather the contrary, together with the body (which does not exist apart from us) particular garments produce certain modes of bodily demeanour. Put into a fashion couture context, this new demeanour creates new performance practices and thus changes what a garment, linked with the body, represents. That is why the aim of this research is to explore contemporary fashion which highlights the bodily experience, especially in couture and fashion for survival.

For Lucy Orta, clothes are not external attributes or strangers to the nature of the wearer, they express his or her essence and reality and they develop critical and engaged art.[7] Her project Refuge Wear openly manifests man's procedures of space definition, that is to say, how we produce our spatial condition, but also the work serves as a warning, an alarm bell.[8] To inhabit a space is to assimilate it to a *body*. Habitent,[9] also one of Studio Orta's projects, being a necessary element of an individual's need for minimum personal space, allows the wearer to isolate himself from the world and create a place of reflection and meditation; a closed, four-dimensional universe. It is similar to a mountain refuge, that is to say, a temporary shelter providing basic comfort where he can stop off before continuing on his way. Studio Orta's sculptural shelter clothing objects incorporate arm and hood appendages, or pockets that contain both functional and symbolic objects. Their ergonomic forms allow for a minimum vital body space and they employ cutting-edge design innovations such as telescopic carbon armatures that raise the fabric above the chest to eliminate the effects of claustrophobia.

Refuge Wear can help rebuild an inner strength and represents a safe environment, but more importantly, Orta utilized the street in an investigative manner, questioning public space and architecture.[10] The artist developed the Refuge Wear series in conjunction with certain homeless people whose paths she had followed over a number of years. The aim of the Refuge Wear is to serve as objects of meditation, made more poignant as some of the homeless have since succeeded in reintegrating into society. Without the usage of technology and new textile making process, these kinds of experimental projects would not be possible. What is significant in Orta's work, apart from experimenting with textiles, is sheltering the body and creating new architectural wear. This change of fashion's form now seems to appear as a ground/breaking field within fashion theory, linked with body design, technology, architecture and product design.

Another good example is the label Final Home, in terms of architectural wear and 3D print. In 1994 Kosuke Tsumura created his label Final Home[11] for a transparent nylon coat with up to 44 multifunction zip pockets conceived as a final home in the case of natural, or man-made disaster. For example, to protect against the cold, the wearer can stuff newspapers into the pockets, or they can equip it with survival rations and a medical kit. Or even, with soft toys which can be used to comfort the wearer's children so they will not be scared during a natural disaster.

Tsumura was motivated to rethink his attitude to fashion by the growing number of homeless living in Tokyo. As the name of his label suggests, clothing is to Tsumura the architecture of the body. Early prototypes of what was to become the Final Home coat, the piece around which the brand was built and which is still being produced in the early twenty-first century, were created between 1991 and 1992. The original coat was inspired by the practicality of hunting jackets and army attire and their sheltering quality in extreme situations. It is made of nylon, a durable fabric that is easy to wash and features forty-two pockets that can be used to carry goods or can be filled with newspaper to ensure warmth during the winter.

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[6] NEGRIN, L. 2016, p. 115.
[7] PINTO, R., BOURRIAUD, N., DAMIANOVIC, M. 2003, p. 8.
[8] Ibid, p. 9.
[9] ORTA, L., MILLER, M., QUINN, B., SMITH, C. 2003, p. 42.
[10] PINTO, R., BOURRIAUD, N., DAMIANOVIC, M., ORTA, L. 2003, p. 14.
[11] 'Final Home' is a garment designed by Tsumura in 1994 and it represents a forty-four pocket parka that can store medicine, food and tools. The main idea is that a coat can represent a mobile home.

What makes Van Herpen's work similar to Studio Orta's or Tsumura's is the grand architectural silhouette, creating thus a new approach to the body. All three examples serve as an interesting field yet to be explored, but there are differences in their approach. While Lucy Orta and Tsumura give a different interpretation of technology in fashion, Van Herpen's focus is artisanal couture. Artisanal Haute Couture[12] in Van Herpen's interpretation now serves as a new approach in fashion. She uses technology in textiles to produce wearable fashion and thus creates a new bodily surface and experience, as seen in her 2018 couture fashion show Ludi Naturae,[13] where there is no difference between the skin and the material. With Ludi Naturae, Iris Van Herpen examines the natural and manmade landscapes of our world from a bird's-eye view, tracing the laws of entropy. She explores the earth's skin and the hybrid forms within it. This project is closely connected to Van Herpen's earlier work and represents a fusion of artificial and organic forms. Inspired by metabolic, environment-sensitive and semi-alive materials, Van Herpen translated her ideas about the future into a highly complex and diverse collection that combined diligent craftsmanship and high tech, implying a future of fashion that takes on quite unimaginable shapes that are partly alive. Croatian designer Jadranka Hlupić Dujmušić is also known for the work with 3-D printing and creating experimental and organic forms. In her recent work, from 2018, Dujmušić showcased a series of 3-D printed jewellery, unique pieces with a complex geometry.[14]

Image 1: 3-D printed jewellery by Croatian fashion designer Jadranka Hlupić Dujmušić represent new organic forms, Zagreb, Croatia, 2018 (Photo: Tomislav Marić).

[12] Artisanal Haute Couture is a term used to describe Van Herpen's work and it represents the connection between high fashion, art and technologyin her collections.

[13] *Ludi Naturae* is a collection designed by Van Herpen which represents manmade and natural landscapes. With this couture collection, Van Herpen introduced new techniques and filmed the entire process of designing the garments.

[14] Oral source: Hlupić Dujmušić Jadranka, Zagreb, 20. 3. 2018.

FASHIONABLE TECHNOLOGY AND THE BODY

This paper argues that within the category of "fashionable technology", fashion gains new meaning and the body can be re-performed in various forms. The term "fashionable technology" was coined by Sabine Seymour in 2000 and it refers to designed garments with functional technology.[15] Fashion in contemporary culture can no longer be perceived as only an image (the semiotics of fashion) or only a process. Instead, these two hypotheses interconnect within the form of fashion performance and this new way of displaying fashion's form, but always under the influence of technology. This complex field of fashion and performance and their strong impact on body-image and body-process is crucial if we want to understand the chaos of contemporary fashion and its constant re-enactment. Fashion cannot be addressed as an aesthetic or symbolic form but rather as an experience. There is a lack of research in this category fashionable technology in couture since Van Herpen is the first designer whose work is mainly connected to 3-D printing and new garment construction. Creating a new bodily experience in new time/space categories as well as a new understanding of the body is what makes contemporary fashion eclectic and experimental.

Not many scholars have written about this particular phenomenon of technology and fashion. The aim of this paper is to present the possibilities of constant transformations of contemporary fashion as a way of representing the body in fashion through the altered role of new media, performing arts and new fashion forms, as seen in Van Herpen's work. Contemporary fashion appears as the reinterpretation and re-performance in all its most noted actualizations. The body in fashion is nowadays at the centre of the performing action because fashion, especially after the 1990s, represents the intersection of various art, media and performative forms. Tsumura again understands the symbiotic relationship between fashion and architecture in his temple intervention which he then transfers into mobile clothing.[16] Fashion has long had a symbiotic relationship with art, although fashion's acknowledgement as an art form has been the subject of heated debate. Moreover, there are many examples in fashion from the 1990s, which also provide similar answers regarding body design and body movement.

Another example is the fall/winter 2017 collection by the audacious American designer Rick Owens. The collection employs sculpture, performance and fashion to explore conceptual and kinetic possibilities. Underneath those soft sculptures, the models wore floor-length slit dresses in silk. The graphic feel of the collection was heightened by the outstanding headgear, towering and geometric metallic structures that were almost comically covered with sweatshirt sleeves, in one instance emulating rabbit ears.[17]

The body, however, can no longer be understood merely as a function or a structure of immediate human action in a pre-set world, but more as an autonomous event in a network of image representation. Thus, fashion refers to the visual construction of the body as an event and in this way displays an irreducible lifestyle phenomenon in the spectacle of today's society.

What we aim to connect is the term *event* within the term fashion body in the context of fashion performance. The exploration of fashion is of crucial value as it presents an intersection between all and various types of artistic representation. Fashion has the ability to interconnect dance, acting, acrobatics, kinetics and represents a new kind of bodily and artistic form. In the field of fashion theory, it is crucial to establish the necessary interdisciplinary relationship between the field and the notion of contemporary fashion that emerged after the 1980s, new media and technology as new opportunities for the development of the fashion process, and events and their significant influence on the understanding of fashion and fashion theories after the postmodern as the new visual semiotics. In the research and scientific sense, this paper highlights the thesis that contemporary fashion cannot survive without the media influencing the body and fashion object, and at the same time changes the logic of acting in the virtual world by fashion-image appearing on the display of the media screen as the new image, but also in the performative sense as the fashion-body. Contemporary fashion appears as the reinterpretation and re-performance of the "event". The body in fashion now has an unusual role, because fashion, especially after the 1990s, represents the intersection of various new media and performative forms, and the paper will represents why there is a necessary correlation of the domains.

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[15] SEYMOUR, S. 2008, p. 9.

[16] JOHUNG, J. 2013, p. 29.

[17] GABOUÉ, S. 2017, Living sculptures: Rick Owens Fall 2017, March 2017. URL: http://www.hintmag.com/rick-owens-fall-2017--march-02-2017-1605-fashion (quoted 15. 5. 2019).

More precisely, the question we need to answer is why technology and media now combine the terms fashion and body into the fashion body? Identification of the language of fashion as well as the sign system of fashion is of great importance in this research, as we explore the attempt to create a new identity construction, to address gender/sex problems within fashion, as well as the transition from a class-social model to visual semiotics in postmodern theories of fashion. This paper presents the thesis of the ambiguity of fashion: on the one hand fashion as visual semiotics, and on the other as the body in the process under the influence of technology in textiles.

Fashion in semiotics appears as a text whose layers have different levels of meaning, while in performing in the virtual world fashion appears as the body in an event. The "event" is now crucial as a place for the new interpretations of fashion. 3-D printing is now visible in fashion, but also in performing arts. Experimental Croatian designer Jadranka Hlupić Dujmušić was the first to work in fashion design with 3-D printing in Croatia. In 2016, together with Dr. Darko Gojanović, she designed a 3-D dress (Image 2) for a theatre play and continues to experiment with 3-D printed materials in order to explore the connection between body and dress. Her aim is to connect the body and new technologies in fashion and textile design.[18]

Image 2: Jadranka Hlupić Dujmušić's 3-D printed dress represents a new approach in fashion design, Zagreb, Croatia, 2018 (Photo: Tomislav Marić).

[18] Oral Source: Hlupić Dujmušić Jadranka, Zagreb, 15. 11. 2016.

CONCLUSION: FASHION AS AN EMBODIED PRACTICE IN 3D ARCHITECTURAL OBJECTS

We live in a media-saturated environment where images constantly surround us. There has been great emphasis on the construction of the body as a visual form, or simply a text. Fashion has long been perceived as a pure visual spectacle, and that is all true. Nevertheless, this does not capture the fleshly nature of fashion, the way we experience dress through our bodies in space and time. Fashion as an embodied practice is recent in contemporary fashion theory, and Merleau-Ponty's recognition of the fundamentally embodied nature of existence gives us insight into the analysis of the corporeal aspects of dress.

It has become clear that the body is not merely a surface with various levels of meaning. Merleau-Ponty's phenomenology provides us with the theoretical tools to place fashion as an embodied practice but more importantly, it reminds us that there is a body and its "meaning" beyond pure visual spectacle. This is why architectural wear and 3-D print have a great impact on fashion but also it presents a great value in this research field. As noted earlier, there is a lack of research on the concept of Iris Van Herpen's work in contemporary fashion studies and yet it represents a significant area for scholars as this specific "wear" does not belong to merely clothing or fashion per se. It represents an intersection of both clothing and fashion design, architectural textile concepts applied in clothing construction, technology and couture, but mostly a new fashion performance in a clearly defined time and space.

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TEKSTILNA REVOLUCIJA V MODI: TRIDIMENZIONALNI OBJEKTI IRIS VAN HERPEN

mag. Petra Krpan, Fakulteta za tekstilno tehnologijo, Univerza v Zagrebu, Hrvaška

Strokovni članek (1.04)

IZVLEČEK

Za sodobno modno kreatorko Iris van Herpen tehnologija ni postranska stvar, saj v njenem pristopu in vizijah igra osrednjo vlogo. Njeni eksperimentalni dizajni premikajo meje tekstilne mode. Nizozemska modna oblikovalka, ki je znana po svojih izjemnih oblekah, natisnjenih v tehniki 3D, se posveča preobrazbeni moči tehnologije. Z eksperimentiranjem in inovacijami van Herpnova ne premika le meja tkanine in izdelave, temveč tudi meje visoke mode. Tovrsten poudarek na materialu in postopku je ključen za izdelavo njenih oblačil-objektov, ki so natančni in izdelani z dosledno strogostjo estetsko motiviranih znanstvenikov. A vendarle v njih najdemo tudi toplino, pristnost, ki smo ji priča na revijah, kot je Ludi Naturae iz leta 2018.

KLJUČNE BESEDE

moda, tekstil, Iris van Herpen, tridimenzionalni tisk

POVZETEK

Tehnologija in modno oblikovanje sta bila vedno tesno povezana, vendar pa se je v zadnjem desetletju prepoznavnost tehnologije v sodobni modi povečala. Nekateri eksperimentalni modni oblikovalci se tiskanja v tehniki 3D poslužujejo kot nepogrešljivega dela modnega objekta, nizozemska oblikovalka Iris van Herpen pa pri ustvarjanju visoke mode tehnologijo uporablja kot umetniško orodje. V visoki modi se vse pogosteje pojavljajo nove tkanine, silhuete in arhitekturna oblačila, kar je bilo včasih nepredstavljivo. Tridimenzionalni tisk je prinesel nove priložnosti in ustvaril nov način razumevanja modnih objektov. Izraz *modni objekt* moramo razumeti v kontekstu dela van Herpnove, saj njeni dizajni, v glavnem izdelani v plasteh različnega tridimenzionalnega tekstila, predstavljajo novo raziskovalno področje modnega oblikovanja in teorije. Tekstilni material, narejen s pomočjo te tehnologije, postane ključni element telesa, ki izboljša gibanje tkanine in ustvarja nove obrise telesa. Tkanina postane nova koža, tehnologija pa ji pomaga, da se telesu bolje prilagodi. Tridimenzionalni tisk ustvari edinstveno telesno izkušnjo in nov modni objekt. Različne tehnologije na področju tekstila in modnega oblikovanja služijo izboljšanju performativnosti telesa in ustvarjajo novo telesno izkušnjo. Tako naša oblačila na različne načine vzajemno učinkujejo: komunicirajo, preoblikujejo, prenašajo energijo in svetlobo, telo pa postane njihovo komunikacijsko sredstvo – podaljšek telesa v antropološkem smislu. V prispevku je metodološki pristop povezan s fenomenološkim modelom Mauricea Merleau-Pontyja in njegovo teorijo utelešene prakse. Sedaj smo z vsemi čutili sposobni interakcije z okoljem na drugačni ravni. Pametni tekstil se ob uporabi naših čutov kot načinom zbiranja novih informacij o subjektu in telesu spoji s tovrstnimi pojavi. Prispevek obravnava vprašanja, kako je tekstilna revolucija spremenila modno oblikovanje in visoko modo in, kar je še pomembneje, kako umetni material postaja nepogrešljiv del telesa-objekta. V njem ni predstavljeno le delo van Herpnove, temveč tudi delo Studia Orta in Kosukeja Tsumure na temo Oblačil za begunce v smislu arhitekturnih oblačil in njihove uporabne vrednosti v današnji družbi. Danes sodobno modo dojemamo kot nov jezik zahodne modne industrije. V današnji modni panogi je moda neločljivo povezana s tehnologijo in mediji. Delo van Herpnove tako predstavlja način uporabe tehnologije, ne le kot orodja za izdelavo zahtevnih dizajnov, temveč tudi kot umetniško orodje. Tehnologija v tekstilu zastavlja nova vprašanja o tehnologiji in modi, zato jo moramo v okviru novih medijev in družbenokulturne sfere, kjer moda ohranja svojo čarobnost, nedvomno upoštevati.

ECO-FRIENDLY NANO-ENCAPSULATED WOOL TEXTILE MATERIALS*

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Short scientific article (1.03)

ABSTRACT

Cyclodextrins can act as host molecules which are able to form complexes with various small molecules. Such complexes can be formed in solutions or in solid state and when cyclodextrins are anchored to the textile surfaces. In the presented research work, wool fabric was grafted with β-CD by using BTCA as a polyfunctional reagent. To reduce the grafting curing temperature, which could damage the wool fabric if too high, CA in combination with ADHP were used as catalysts. The presence of cedar oil applied to textile materials was determined by the ATR FT-IR spectroscopy and by estimation of add-on of β-CD with the gravimetric approach. Finally, the reduction of moth damage after being exposed to the wool treated with the separate treatment formulation i.e. β-CD, cedar oil, and β-CD in combination with the cedar oil was assessed visually after different time periods. The results show that wool treated with β-CD in combination with cedar oil shows significantly prolonged moth repellent properties compared to the wool treated with cedar oil only.

KEYWORDS

β-cyclodextrine, host-guest system, cedar oil, wool textile material, moths

INTRODUCTION

Insect repellent is a substance usually applied to skin, clothing, or other surfaces which discourages insects from landing or climbing onto those surfaces. Synthetic repellents, such as paradichlorobenzene (PDCB), tend to be more effective than 'natural' repellents, but are usually toxic. However, some plant-based repellents are comparable to synthetic and in some cases – depending on the type – even better. Cedar oil is often used for its aromatic properties, especially in aromatherapy. It is also used as an insect repellent. In general, essential oil repellents tend to be short-lived in their effectiveness due to their volatile nature. There is an interesting supramolecular chemistry which involves some intermolecular interactions where covalent bonds are not established between the interacting species: i.e., molecules, ions or radicals, as is the case in the presented example regarding wool treatment with CDs. So, capsulation is considered a possible way to assure time-prolonged evaporation of essential oils from textile material, which was the idea of the presented research work. The majority of these interactions are of the host-guest type. Among all potential hosts, cyclodextrins (CDs) seem to be the most important.[1] These are semi-natural products that are obtained from renewable natural materials, starch, or by a relatively simple enzymatic conversion. Thousands of tons are produced per year by environmentally friendly technologies with an acceptable price. CDs can form inclusion complexes with various small molecules. This "molecular capsulation" is already widely utilized in many industrial products, technologies, and analytical methods. In general, CDs are non-toxic, but any possible toxic effect is of secondary character and can be eliminated by selecting the appropriate CD type, derivative or mode of application meaning that CDs can be consumed by people as ingredients of drugs, foods, or cosmetics.

Cyclodextrins have a ring structure (Image 1), which allows them to act as hosts and form inclusion complexes with various small molecules. Such complexes can be formed in a solution, or in a solid state. When CDs are applied to a textile surface they can act as permanent or temporary hosts to small molecules. According to the activity of capsulated small molecules certain desirable functionality of the textile, such as fragrance

*Translation: Silva Krešević Vraz

[1] Chemical Reviews, 1998, 97, Jozsef Szejtli, Introduction and General Overview of Cyclodextrin Chemistry, pp. 1743-1753. Journal of Fiber Bioengineering and Informatics, 2014, 7, Wenguo Wu, Shibin Weang, Yuangang Liu, Aizheng Chen, Preparation of Paclitaxel loaded Alginate – chitosan Complex Microcapsules, pp. 153-163.

release or antimicrobial activity, can be performed.[2] CDs can be applied to the surface of potential textile substrate by using e.g. conventional pad-dry procedure, but there is always the concern as to whether it is anchored sufficiently to the surface. For this purpose, polycarboxylic acids are useful, to be used as formaldehyde-free crosslinkers.

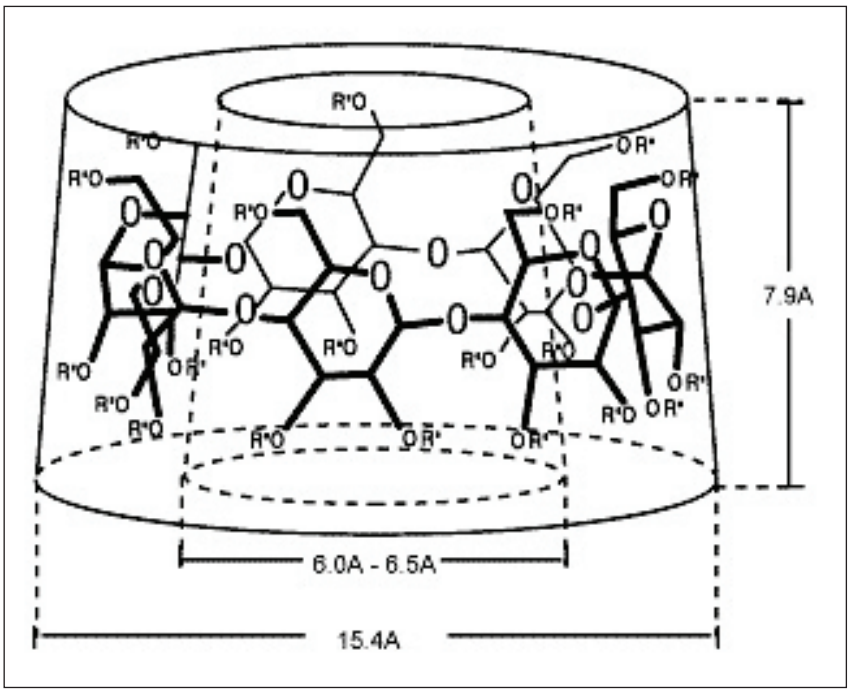

Image 1: Structure of β-cyclodextrin.[3]

POLYCARBOXYLIC ACIDS

Polycarboxylic acids such as 1, 2, 3, 4 butanetetracarboxlic acid (BTCA) are well known non-formaldehyde crosslinking reagents for the durable press finishing of cellulose materials. BTCA has four carboxylic acidic groups, which can react with various hydroxyl groups of cellulose, thus forming stable ester bonds. Esterification of hydroxyl groups can occur with heat alone, or it can be accelerated by the presence of catalysts that are usually salts of weak acids. In this way the curing temperature can be reduced from 200 °C to 160 °C[4] which is an interesting fact if considered that this method is also appropriate for the treatment of wool, or wool mixed with polyethyleneterephthalate fibres (PET) to graft a selected substance onto such surfaces where esterification is not possible. Due to the fact that PES is a synthetic fibre-forming polymer, a temperature of 160 °C seems to be too high to treat it.[5] This has also been noted within my previous research, therefore by inclusion of β-cyclodextrin with the system with the BTCA, supported by appropriate catalysts, it was possible to achieve a satisfactory result of crosslinking by using a significantly lower temperature of curing (app 115 °C).[6] For this purpose the use of cyanamide (CA) with ammonium dihydrogen phosphate (ADHP) in combination with BTCA seems to be excellent combination to achieve successful

[2] Chemical Reviews, 1998, 97, Jozsef Szejtli, Introduction and General Overview of Cyclodextrin Chemistry, pp. 1743-1753. Journal of Fiber Bioengineering and Informatics, 2014, 7, Wenguo Wu, Shibin Weang, Yuangang Liu, Aizheng Chen, Preparation of Paclitaxel loaded Alginate – chitosan Complex Microcapsules, pp. 153-163. J.Incl. Phenom Macrocycl Chem, 2001, 40, Hans-Jurgen Buschmann, Dierk Knittel, Eckhard Schollmeyer, New textile applications of cyclodextrins, pp. 169-172. Textil Praxis Int 1990, 45, Hans-Jurgen Buschmann, Dierk Knittel, Eckhard Schollmeyer, Cyclodextrine als Egalisier Hilfsmittel fur Polyester-HT-Farbungen, pp. 376-378. Journal of Applied Polymer 2005, 96, Bojana Vončina, Alenka Majcen Le Marechal, Grafting of cotton with β-cyclodextrin via poly (carboxylic acid), pp. 1323-1328. URL: http://www.wacker.com/cms/appL/mdm_images/R64_IV-1_-76990195_8956.jpg (quoted 20. 4. 2009).

[3] Chemical Reviews, 1998, 97, Jozsef Szejtli, Introduction and General Overview of Cyclodextrin Chemistry, pp. 1743-1753.

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[6] Journal of Applied Polymer Science, 2009, 113, Bojana Vončina, Vera Vivod, Wen-Tung Chen, Surface modification of PET fibers with the use of β-cyclodextrin, pp. 3891-3895. Revista de inventica: Romanian journal for creativity in engineering and technology, 2007, vol. 11, nr. 56, Bojana Vončina, Vera Vivod, Silva Kreševič Vraz, Maja Zupanc, Darja Jaušovec, Wen-Tung Chen, Molecular encapsulation of textiles, pp. 87-93.

treatment efficiency/crosslinking.[7] This is also confirmed by other literature sources[8] where nanocapsules of (β-CD molecules) and microcapsules (ethyl cellulose microcapsules) were linked to hydroxyl groups of cotton cellulose by using BTCA, confirming the permanent linking of used compounds to cellulose through the formation of stable ester bonds.

Starting from this, the current research comprises the method of beta-cyclodextrin (β-CD) grafting onto wool fabric by using the polyfunctional reagent 1, 2, 3, 4-buthanetertacarboxylic acid (BTCA). With the aim reducing the grafting curing temperature, cyanamide (CA) and ammonium dihydrogen phosphate (ADHP) were used as catalysts. Wool fabric treated with β-CD by using BTCA as a crosslinker was further treated with cedar oil, which is known for being a natural insect repellent.[9] Cedar oil, which can be used as an environmentally-friendly moth repellent reagent, together with the β-CD that is attached to the textile substrate, forms a complex from which the cedar oil can be slowly released. Wool containing β-CD after being subsequently treated with cedar oil showed prolonged insect resistance compared to those textile materials made of wool that were treated solely with cedar oil.

EXPERIMENT

TEXTILE MATERIAL

100 % wool fabric, plain weave, fabric weight of 196.90 g/m^2, producer MERINKA d.o.o., Tovarna volnenih tkanin Maribor, Slovenia.

CHEMICALS

The chemicals used are as follows: b-cyclodextrin (β-CD), 1 ,2 ,3 ,4-butanetertacarboxylic acid (BTCA), Cyanamid (CA), Ammonium dihydrogen phosphate (ADHP) and 1-metyl-etyl-tetradekanoat were of analytical grade, supplied by Aldrich. A commercial product of cedar oil (Producer: Egorov Vladimir, Tomsk, Russia) was used.

FABRIC TREATMENT

Wool fabric samples were treated with β-CD and BTCA, to reduce the curing temperature the CA was used; ADHP was added as a proton donor. Concentrations in treated baths varied (Table 1); from the preliminary studies (not shown in this paper) the optimum results were obtained when textile materials were immersed in treating baths containing 8 % of β-CD , 6 % of BTCA, 5 % of CA, 1% of ADHP (pH of bath was 2.3); the wet pick-up was 100 %; all impregnated textile substrates were pre-dried at 100 °C for 10 minutes. Thermofixation was carried out at 115 °C for 3 min. The weight gain of the finished fabrics was measured to yield the efficiency of the treatment according to standard test method DIN 53814. The washing of textile materials was preceded at 40 °C by standard test method ISO 105-C10:2008. Table 1 shows the details about the concentrations of β-CD, BTCA and catalysts (CA, ADHP) within the finishing baths.

Conc. of β-CD/%	Conc. of BTCA/%	Conc. of CA/%	Conc. of ADHP/%
8	2	5	1
8	4	5	1
8	6	5	1
8	8	5	1
8	10	5	1

Table 1: Concentrations of β-CD, BTCA, catalyst (CA and ADHP) within finishing baths.

[7] Textile Research Journal, 1999, 69, Estelle L. Gillingham, David M. Lewis, Bojana Vončina, An FTIR Study of Anhydride Formation on Heating Butane Tetracarboxylic Acid in the Presence of Various Catalysts, p. 949. Roxana Badulescu, Vera Vivod, Darja Jaušovec, Bojana Vončina, Grafting of ethylcellulose microcapsules onto cotton fibres, Carbohydrate Polymers, 2008, 71, pp. 85-91.

[8] Journal of Applied Polymer, 2005, 96,Bojana Vončina, Alenka Majcen Le Marechal, Grafting of cotton with β-cyclodextrin via poly (carboxylic acid) pp. 1323-1328. Textile Research Journal, 1993, 63, Charles Q. Yang, Effect of pH on Nonformaldehyde Durable Press Finishing of Cotton Fabric: FT-IR Spectroscopy Study: Part I: Ester Crosslinking, pp. 420-430. Roxana Badulescu, Vera Vivod, Darja Jaušovec, Bojana Vončina, Grafting of ethylcellulose microcapsules onto cotton fibres, Carbohydrate Polymers, 2008, 71, pp. 85-91.

[9] Journal of Medical Entomology, 2005, 42, Nicholas A. Panella, Marc Dolan, Joseph J. Karchesy, Yeping Xiong,Use of Novel Compounds for Pest Control: Insecticidal and Acaricidal Activity of Essential Oil Components from Heartwood of Alaska Yellow Cedar, pp. 352- 358.

The bonding of β-CD to textile materials by using BTCA was proved by using ATR FT-IR spectroscopy.[10]

β-CD treated wool fabric and untreated wool fabric were further treated with cedar oil. For this purpose, the textile substrates were immersed in a mixture of cedar oil and 1-methyl-ethyl-tetradecanoat in a weight ratio of 1:1 and stirred at room temperature. After 8 hours of stirring, the textile materials were dried at room temperature. The presence of cedar oil on textile materials was determined by using ATR IR spectroscopy.

Spectroscopy was carried out using a Perkin-Elmer Fourier Transform infrared (FTIR) spectrophotometer with a Golden Gate attenuated total reflection (ATR) attachment with a diamante crystal. Resolutions of all spectra was 4 cm^{-1} and 100 scans were collected for each measurement.

The resistance of wool to moth larvae[11] was determined following in-vivo observation. Wool samples treated with β-CD and after-treated with cedar oil were exposed to 4 moth larvae. The control specimens were wool samples treated with cedar oil, and untreated wool samples. The natural environment was simulated; each of three specimens (2.5 g of β-CD/cedar oil treated wool, cedar oil treated wool and untreated wool) were inserted into glass jars and kept in a dark place, at ambient temperature and humidity for 56 days. A visual assessment regarding damage and larval condition was carried out.

RESULTS AND DISCUSSION

GRAVIMETRICAL METHOD

A mass gain of 9 % was obtained when wool textile material was treated with a β-CD/BTCA system using thermos-fixation method (treating bath: 8 % β-CD , 6 % BTCA, 5 % CA, 1 % ADHP). When lower concentrations of BTCA as a binder were used the mass gain after the treatments was less than 9 %. A different trend is seen with concentrations higher than 6 % of BTCA within treatment bath where the mass gain did not change significantly. So it is anticipated that the optimal concentration of BTCA that should be used within the finishing bath is 6 %. As reported,[12] supramolecular assembly was formed between β-CD and BTCA and such assembly was physically anchored simultaneously to the textile substrate surface. Image 2 schematically presents the assembly of nanocapsules linked via ester bonds of BTCA.

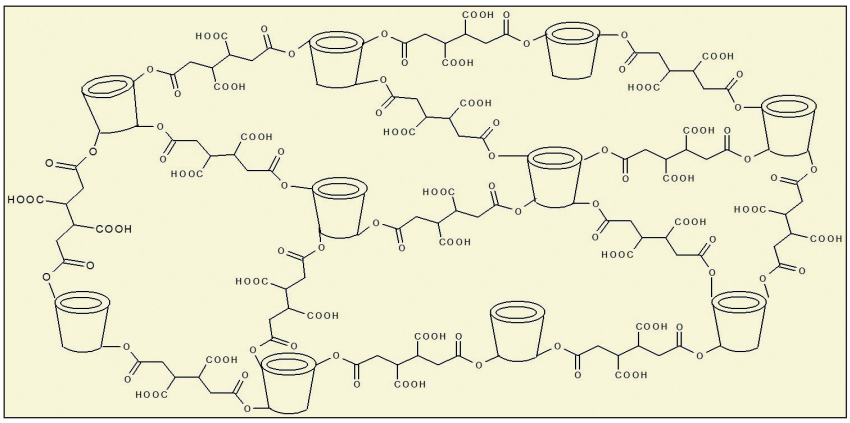

Image 2: Supramolecular assembly between β-CD and BTCA.[13]

FURTHER TREATMENT OF WOOL WITH CEDAR OIL

Wool fabrics treated with nanocapsules were further treated with cedar oil. The presence of cedar oil on wool textile substrate treated with cedar oil and on wool textile substrate containing a supramolecular assembly of β-CD/ BTCA and cedar oil was determined by ATR IR spectroscopy. Image 3 presents ATR IR spectra of wool fabric treated with β-CD, wool fabric treated with β-CD and after-treated with cedar oil, wool fabric treated with cedar oil and untreated wool fabric.

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[10] Journal of Applied Polymer, 2005, 96, Bojana Vončina, Alenka Majcen Le Marechal, Grafting of cotton with β-cyclodextrin via poly (carboxylic acid), pp. 1323-1328. Textile Research Journal, 1999, 69, Estelle L. Gillingham, David M. Lewis, Bojana Vončina, An FTIR Study of Anhydride Formation on Heating Butane Tetracarboxylic Acid in the Presence of Various Catalysts, p. 949.

[11] URL: http://www.bioteh.si/catalog/datoteke/t-molji-20070809144808.pdf (quoted 7. 7. 2016).

[12] Revista de inventica: romanian journal for creativity in engineering and technology, 2007, vol. 11, nr. 56, Vončina, Bojana, Vivod, Vera, Kreševič Vraz, Silva, Zupanc, Maja, Jaušovec, Darja, Chen, Wen-Tung. Molecular encapsulation of textiles, pp. 87-93.

[13] URL: http://www.bioteh.si/catalog/datoteke/t-molji-20070809144808.pdf (quoted 7. 7. 2016).

In the spectra of fibres treated with β-CD and after-treated with cedar oil, it is possible to see a peak at 1736 cm^{-1} which could be contributed to the C=O bond of α- and γ-atlantone. These atlantones are two major components of cedar oil. The same peak appears in the spectra of pure cedar oil placed on textile substrate. Similarly, peaks around 2924 cm^{-1} appear in the spectrum of fibres treated with β-CD subsequently treated with cedar oil, and in the spectrum of textile substrate treated with pure cedar oil only; this peak could be contributed to the CH groups of components that are part of cedar oil. By comparing the spectrum of cedar oil placed on textile substrate where characteristic peaks at 1736 cm^{-1} and around 2924 cm^{-1} appear with the spectrum of wool fibres treated with nanocapsules and after-treated with cedar oil, it can be concluded that cedar oil is actually presented in the case of treated textile material.

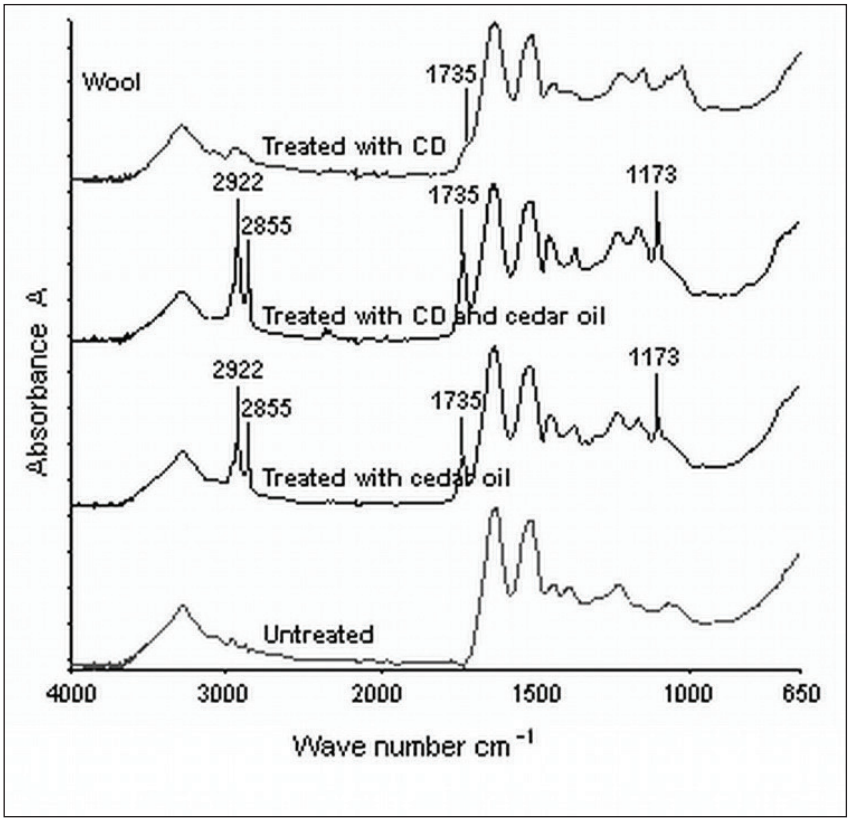

Image 3: ATR FTIR spectra of β-CD treated wool fabric, wool treated with β-CD and after-treated with cedar oil, wool fabric treated with cedar oil only, and the spectrum of untreated wool fabric (Image: Silva Krešević Vraz).

With ATR FT-IR spectroscopy it is not possible to determine if cedar oil is deposited on textile materials, or if there is also a complex formation between β-CD bonded to wool fibres and the cedar oil molecule. Thus subsequently, an experiment where wool substrates were exposed to moth larvae was performed.

DETERMINATION OF RESISTANCE TO INSECTS (MOTHS)

Each test specimen was examined and any visible damage of textile materials was detected; the larval conditions were reviewed.

time	Crude wool fabric treated with cedar oil	Woollen fabric treated with β-CD / BTCA and cedar oil	Raw woollen cloth (pure)
after 24 hours	Adult mothers and larvae have survived; there is no damage to the samples	**Adult mothers and larvae survived; there is no damage to the samples**	Adult mothers and larvae survived; there is no damage to the samples
after 48 hours	Adult mothers and larvae inactive; there is no damage to the samples	**Adult mothers and larvae inactive; there is no damage to the samples**	Adult mothers and larvae live; damage to the samples detected
after 72 hours	Adult mothers and larvae have died; there is no damage to the samples	**Adult mothers and larvae have died; there is no damage to the samples**	Adult mothers and larvae live; the damage is more noticeable on the samples
	Adding new moths and larvae	**Adding new moths and larvae**	**/**
by 7 days	Adult moths and larvae are active; damage to the samples detected	**The activity of adult moths and larvae is reduced; there is no damage to the samples**	Adult mothers and larvae live; on the samples damage is clearly visible
by 14 days	Adult mothers and larvae respond, there is damage to the samples	**Adult mothers and larvae have died; there is no damage to the samples**	Adult mothers and larvae live; the damage to the samples is higher
by 56 days	The activity of adult mothers reduced, larvae respond poorly but are alive; damage to samples is more noticeable	**larvae are dead; there are no new injuries on the samples**	Adult mothers and larvae live, new larvae appeared; there are visible holes on the samples

Table 2: Estimation of damages of wool and larval conditions according to time of the exposure.

No visible damage was visible to the naked eye when β-CD/cedar oil treated wool was exposed to a moth colony for 2 months. In control (wool samples treated with cedar oil only) no damage was observed for the first few days, the larvae even died after a few days, as in the experiment where larvae were exposed to β-CD/cedar oil treated wool. After new larvae were added to the wool textile, the β-CD/cedar oil treated wool was still active, but in control samples cedar oil had evaporated and the wool cloth was no longer protected. In contrast, when cedar oil was encapsulated into the β-CD cavity, evaporation was hindered and resistance to insect pest activities regarding cedar oil remained. According to the longer resistance activities to moths (2 months if compared to the control, where the resistance lasted 3 days only) it could be presumed that molecules of cedar oil form complexes with β-CD cavities. The mechanism of prolonged insect resistance is the evaporation hindrance of cedar oil.

CONCLUSION

The presented research deals with wool treated with nanocapsules. The molecules of BTCA crosslinked hydroxyl groups of β-cyclodextrins by forming a network which is simultaneously and physically anchored to the surface of the textile substrate. Wool fibres treated in such way were after-treated with cedar oil. The presence of cedar oil on textile materials was determined by using ATR IR spectroscopy. When β-cyclodextrin treated textile materials were treated with cedar oil, the prolonged insect repellent effect of cedar oil was observed, so we could conclude that cedar oil was encapsulated into β-cyclodextrin cavity which hinders the evaporation of the oil. The main driving force for complex formation is the release of enthalpy-rich water molecules from the cavity. Water molecules are displaced by more hydrophobic guest, cedar oil molecules.

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OKOLJU PRIJAZNI NANOENKAPSULIRANI VOLNENI TEKSTILNI MATERIALI

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Kratek znanstveni članek (1.03)

IZVLEČEK

Ciklodekstrini lahko delujejo kot gostiteljske molekule, ki so sposobne tvoriti komplekse z različnimi majhnimi molekulami. Takšne kompleksne spojine lahko nastanejo v raztopinah ali trdnem stanju in v primeru, da se ciklodekstrini vežejo na tekstilne površine. V predstavljeni raziskavi smo volnene tkanine ob uporabi polifunkcionalnega reagenta BTCA plemenitili z β-ciklodekstrinom. Da bi ob plemenitenju znižali temperaturo postopka, ki bi lahko poškodovala volneno tkanino, če bi bila previsoka, smo kot katalizatorje uporabili CA v kombinaciji z ADHP. Prisotnost cedrovega olja, ki je bilo uporabljeno na tekstilnih materialih, je bila določena z ATR FT-IR spektroskopijo, količino β-CD pa smo določili z gravimetrično metodo. V različnih časovnih obdobjih smo opazili manjšo prisotnost moljev po tem, ko smo volno ločeno obdelali s pripravkom β-ciklodekstrin in s cedrovim oljem ter z β-ciklodekstrinom v kombinaciji s cedrovim oljem. Rezultati so pokazali, da je volna po obdelavi z β-ciklodekstrinom v kombinaciji s cedrovim oljem dlje časa odporna na molje v primerjavi z volno, ki smo jo obdelali le s cedrovim oljem.

KLJUČNE BESEDE

β-ciklodekstrin, sistem gostitelj-gost, cedrovo olje, volneni tekstil, molji

POVZETEK

Predstavljena je problematika obdelave tekstilnih substratov za doseganje insekticidnega delovanja. Namen raziskave je obdelava volnenih tekstilnih substratov z β-ciklodekstrinom in naknadna obdelava z okolju prijaznim insekticidnim reagentom – eteričnim cedrovim oljem za zatiranje moljev. Doslej uporabljani insekticidni reagenti v tekstilstvu so za okolje neprimerni, saj pridejo v neposredni stik s kožo oziroma v stik z živalmi in otroki, če insekticidno obdelan tekstilni material uporabimo za izdelavo preprog ali oblazinjenega pohištva. Postopki neformaldehidnega plemenitenja z uporabo polifunkcionalnega reagenta BTCA so bili izvedeni z uporabo konvencionalnega fiksiranja in mikrovalov v tekstilstvu.

Uporabljene so bile naslednje analizne metode: za določitev količine nanosa ß-ciklodekstrina/BTCA na tekstilni substrat je bila uporabljena gravimetrična metoda, za določitev prisotnosti funkcionalnih skupin pa sta bili uporabljeni ATR FT-IR in ramanska spektroskopija. Vsi vzorci z β-ciklodekstrinom/BTCA, sistemom obdelanih tekstilnih substratov, so bili naknadno obdelani še z eteričnim cedrovim oljem, ki ima insekticidno delovanje. Tvorba kompleksa β-ciklodekstrin/cedrovo olje je bila določena s pomočjo ATR FT-IR in ramansko spektroskopijo. Eterično cedrovo olje in β-ciklodekstrin skupaj tvorita kompleks, ki je vezan na tekstilni substratni kompleks, s katerega se olje počasi kontrolirano sprošča. Najboljše rezultate smo dobili pri obdelavi volnenih tekstilnih substratov z mikrovalovi. Naknadno je bil izveden eksperiment, pri katerem so bili volneni substrati izpostavljeni ličinkam moljev 56 dni.

Pripravljeni so bili naravni, okolju, ljudem, predvsem pa otrokom in živalim prijazni tekstilni substrati z insekticidnim delovanjem.

RECYCLING OF TEXTILE MATERIALS*

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Professional article (1.04)

ABSTRACT
The drive to implement the principles of the circular economy involves preventing the disposal of raw materials through re-use and regeneration. One area where the circular economy can be put into practice is the textile and clothing industry. Considering that textiles are nearly 100% recyclable, the industry has but overlooks the potential to sustain closed life cycles and environmental-friendly manufacturing. Based on perceived needs for research in the field, the paper examines features of textiles, including recycling and re-use of raw materials.

KEYWORDS
textile waste, recycling, chemical depolymerisation, circular economy

INTRODUCTION

In recent years, textile production and consumption have risen drastically due to global population growth and improvements in living standards. The sector plays an important role in the European manufacturing industry by employing 1.7 million people and generating a turnover of 171.1 billion euros.[1]

On the other hand, Europeans discard 5.8 million tonnes of textiles annually.[2] Textiles are nearly 100% recyclable.[3] The amount of textile waste generated in the EU 27 is estimated at nearly 14.2 Mt[4] per annum but only 32% of this waste stream is exploited:

- two thirds of collected textile waste are recycled (reused as second hand clothes, non-wearable clothes recycled into low value materials for insulation);
- one third is incinerated (predominant method in many countries) due to a good energy yield (20 GJ/t) but releases carbon dioxide for energy recovery. Moreover, incineration generates dioxins and POPs (persistent organic pollutants) which originate from pollutants contained in textile (cleaning/filtering waste or heavy metals from dyes).

*Translation: Bojana Vončina
[1] Euratex, 2016, The European Apparel and Textile Confederation, Annual Report 2016. URL: http://euratex.eu/fileadmin/user_upload/documents/Library/Annual_Report/Euratex-annual-report-2016-LR.pdf (quoted 5. 2. 2019).
[2] ZACUNE, J. 2013.
[3] WANG, Y. 2006.
[4] MORLEY, N. J., BARTLETT, C., MCGILL, I. 2009.

The textile recycling process could therefore be considered as an effective method for reducing the production of virgin materials and minimising environmental impact, i.e. use of water, energy and chemicals in the textile production chain, as well as in reducing the amount of textile waste.

Governments are increasingly focusing on commercial waste and producer responsibility in order to meet higher recycling/reuse/prevention targets. The European Directive 2008/98/EC[5] sets out the basic concepts and definitions related to waste management. It lays down basic waste management principles and requires that waste be managed without endangering human health and harming the environment, and in particular without risk to water, air, soil, plants or animals, without causing a nuisance through noise or odours, and without adversely affecting the countryside or places of special interest.

The waste legislation and policy of the EU Member States shall apply as a priority the following waste management hierarchy:

The Directive introduces the "polluter pays" principle and "extended producer responsibility". It incorporates provisions on hazardous waste and waste oils and includes two new recycling and recovery targets to be achieved by 2020: 50 % mass of waste materials from households and other origins similar to households needs to be prepared for re-use and recycling. There are several driving factors for textile recycling, including the pressures towards sustainable development and green growth in European countries. The reduction of textile waste can lead to significant reductions of environmental impacts as the textile industry produces large quantities CO_2 emissions. Carbon footprint modelling (recycling of process waste in the whole supply chain, change consumer behaviour and recycling of end-of-life materials) is a significant area of carbon footprint reduction. Secondly, textiles require indirect inputs such as water (200 litres to a kg of synthetic fibres and 8000 litres to a kg of cotton), energy (100 litres of petrol to produce one kg of fibre) and land. An American or European consumer requires around 600 m^2 of land a head to satisfy their annual fibre needs. Cotton requires irrigation, takes water away from human consumption and involves a high use of pesticides; it also contributes to the pollution and salinisation of soil.

More than 60 million tons of textiles annually are sent to landfills or burned. Thirdly, because of the fragmentation of globalisation of supply chains, a reduction of the environmental impact of production and disposal is much harder to organize than for the more concentrated steel, plastic or paper industries. With appropriate waste management, it is possible to mitigate its impact on the environment, on public health and reduce the economic impacts. The complexity and variability of post-consumer textile waste poses enormous challenges for recycling. Once the re-wearable or re-usable products are separated from the waste stream, a significant volume of very complex, heterogeneous material remains for which technically efficient and economically sound revalorisation options beyond incineration are currently lacking. Textile materials for recycling can be classified as either pre-consumer or post-consumer. Pre-consumer waste is material that comes out of manufacturing as scrap (such as trimmings from textile production, defective aluminium cans, etc.) and do not reach the consumer. Post-consumer waste is material which has been consumed and of which the life cycle (at least the first life cycle) is finished.

In general, the post-consumer textile waste can be recycled by 3 main methods:
- defibreing/shredding/pulling/carding into fibres,
- thermo-mechanical recycling,
- chemical recycling.

DEFIBERING/CARDING

Defibering/carding is carried out by breaking down fabric to fibre through cutting, shredding, carding, and other mechanical processes. The fibre is then re-engineered into value-added products. These products include stuffing, automotive components, carpet underlays, building materials such as insulation and roofing felt, and low-end blankets. The majority of this category consists of unusable garments that are stained, torn,

[5] European Commission, 2018a, Textiles and clothing industries. URL: https://ec.europa.eu/growth/sectors/fashion/textiles-clothing_it (quoted March 2018). European Commission, 2018b. Textiles and clothing in the EU. URL:https://ec.europa.eu/growth/sectors/fashion/textiles-clothing/eu_en (quoted 14. 1. 2019).

or otherwise unusable. Textile materials, which are defibered, are mainly thermosets (cotton, wool) and their blends with thermoplasts such as polyester and nylon. The main objective of carding is to separate small tufts into individual fibres, to begin the process of parallelisation and to deliver the fibres in the form of a web. The principle of carding is the mechanical action in which the fibres are held by one surface while the other surface combs the fibres causing individual fibre separation. This process represents an economic and environmental saving of valuable fibre that would otherwise be lost to landfill or incinerated.

THERMO-MECHANICAL RECYCLING (PLASTIC EXTRUSION)

Thermo-mechanical recycling is re-melting the sorted waste of thermoplastic. This method is mainly used for bottle-to-fibre technologies, where sorted and cleaned PET bottles are re-extruded into products for non-food application, to textile fibres and thin films. Several barriers appear if we want to use thermo-mechanical recycling for textile recycling. Recycled polymers need to be sorted according to their chemical compositions, according to colour, additives etc. These demands are very difficult to satisfy because of the wide range of textile materials in waste, such as: cotton, viscose, wool, polyester, polyamides. These materials may be in pure form, but mainly they are in blends. Further textile materials and textile waste are of various colours and processes of decolorisation are specific for each type of textile. During textile processes, different additives are added to the fibres (plasticizers, flame retardants, antimicrobial reagents, some clay minerals etc.) to improve the wearability and durability of textile materials.

CHEMICAL RECYCLING

Chemical recycling (also called feedstock or tertiary recycling) allows the recovery of more value products from plastic wastes than incineration. Chemical recycling may be defined as "the production of chemical products of value from waste polymeric materials by economically feasible processes". This definition, which requires the recovery of products of value, excludes from chemical recycling both biodegradation and combustion, and limits chemical recycling to those processes that are also economically feasible. The products of chemical recycling are easily reintroduced into the production cycle, without any problems of market saturation; another benefit is that the crude products resulting from chemical breakdown can be used without further purification.

The easiest to depolymerise are condensation-type resins (polyester (PET), polyamide (PA), polycarbonate (PC), polyurethanes (PU), etc.). The bonding of molecules in these materials is such that, if appropriate heat and pressure are applied in the presence of a reactive chemical agent, they break into shorter chains in relatively controllable ways. Technologies for the breakdown of such polymers, mainly PET (hydrolysis, glycolysis, methanolysis, aminolysis, etc.) are already proven, and are viewed as relatively cost-effective. The products recovered from these chemical processes can be either monomers, with a degree of purity suitable for repolymerisation, or a mixture of oligomers with reactive end groups. Depolymerisation of addition-type polymers (PO, styrenics, acrylates, etc.) is of great interest for monomer recovery by precisely unzipping the bonds. This requires an appropriate choice of reaction conditions and catalysts. When the unzipping of monomers from the polymer chain occurs at a rate lower than transfer reactions of the active sites, a complex mixture of products, from low to medium molecular weight, are formed. In general, it is not economically viable to derive well-defined chemical products directly from this mixture, which instead can be used either as a fuel or reintroduced into petroleum processing.

THE RESYNTEX PROJECT

RESYNTEX has 20 project partners from across 10 different EU member states. Partners include industrial associations, businesses, SMEs and research institutes. Working together, the group creates an effective model for the whole value chain.

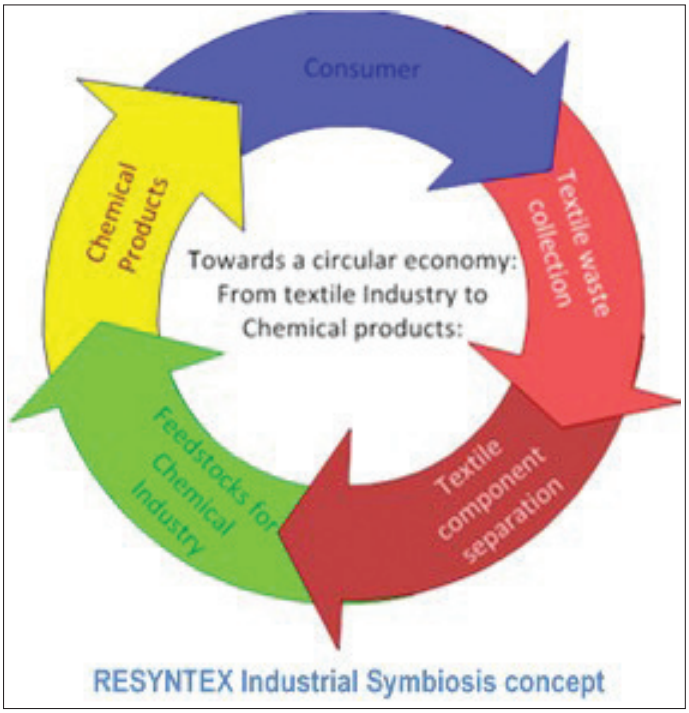

Image 1: Schematic presentation of the circular economy in the Reysntex project (Image: Bojana Vončina).

The main objective of WP4, where the University of Maribor is currently mostly involved, is optimisation of a physicochemical recovery/transformation process via depolymerisation of textile waste. One of the main scope and goal of our part of the work within the project is chemical depolymerisation of PET material after sequential protein and cellulose removal. Relevant issues in our study were the influence of impurities on PET depolymerisation, yield, efficiency and purity; and the impact of other organic and inorganic waste on chemical transformation.

EXPERIMENTAL

Scope and goal: Total chemical depolymerisation of PET or PA material after sequential protein and cellulose removal.

Image 2: Laboratory scale high pressure, high temperature reactor (Photo: Lidija Škodič).

Relevant issues:

- influence of impurities on PAs and PET depolymerisation, yield, efficiency and purity; impact of other organic and inorganic waste on chemical transformation;
- optimisation of production of added value feedstock for chemical industry in a pilot plant.

Image 3: Pilot high pressure and high temperature plant (Photo: Lidija Škodič).

RESULTS AND DISCUSSION

POLYAMIDE RECOVERY WITH THE PRODUCTION OF PA OLIGOMERS

Chemical depolymerisation of PA6 was performed – promising results were obtained (liquid fractions which precipitate after few hours were obtained) by high temperature and high pressure hydrolysis with high excess of water. By ^{1}H NMR it was proved that mainly PA6 dimers were produced. With less harsh conditions, several water non-soluble oligomers were produced.

POLYESTER RECOVERY AND PRODUCTION OF PET MONOMERS

Testing of PET depolymerisation efficiency according to experimental conditions P, T and t and PET type (high and low viscosity type), with and without the present of catalyst was carried out. The degree of chemical depolymerisation of virgin PET polymers was preliminary determined gravimetrically, by carboxylic group number, FTIR spectroscopy and DSC.

After depolymerisation of PET textile materials 95 % of monomer (terephthalic acid) was obtained (proved by ^{1}H NMR).

ACKNOWLEDGEMENTS

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Strokovni članek (1.04)

IZVLEČEK
Prizadevanja za izvajanje načel krožnega gospodarstva morajo s ponovno uporabo in regeneracijo preprečiti odstranjevanje surovin. Področje, kjer je krožno gospodarstvo mogoče uresničiti, je prav gotovo tekstilna in oblačilna industrija. Glede na to, da se tekstil lahko reciklira skoraj stoodstotno, industrija sicer ohranja vzdrževanje zaprtih življenjskih ciklov in okolju prijazne proizvodnje, hkrati pa tudi spregleda njun očitni potencial. Na podlagi zaznanih potreb po raziskavah na tem področju prispevek obravnava značilnosti tekstilij, vključno z recikliranjem in ponovno uporabo surovin.

KLJUČNE BESEDE
tekstilni odpadki, recikliranje, kemijska depolimerizacija, krožno gospodarstvo

POVZETEK
Pomemben prispevek naše raziskave k področju kemijskega recikliranja tekstilnih odpadnih materialov je kemijska depolimerizacija PET tekstilnih materialov. S pomočjo alkalne hidrolize smo pripravili čistejši produkt, tereftalno kislino. Ugotovili smo še, da nečistoče v PET vlaknih ter nezadostno odstranjevanje bombažnih in proteinskih vlaken v predhodnih postopkih recikliranja zelo vplivajo na učinkovitost hidrolize in čistost produkta.

THE UNIQUE STRUCTURE AND PROPERTIES OF SEERSUCKER WOVEN FABRICS*

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Professional article (1.04)

ABSTRACT

Seersucker woven fabrics are characterized by the presence of a three-dimensional (3D) wavy (puckered) effect created by puckered and flat strips occurring in the warp direction. Seersucker woven fabrics create an unconventional 3D woven structure which can influence the properties of the fabrics.

The aim of the paper is to analyse the geometrical structure of these fabrics, especially their surface geometry as well as the chosen utility and aesthetic properties influencing the performance and appearance of the investigated fabrics and clothing made of them.

KEYWORDS

seersucker woven fabrics, structure, surface topography, appearance

SUMMARY

The aim of work was to analyse the surface topography of seersucker woven fabrics as well as the influence of the topography on the chosen utility properties of fabrics.

Three variants of cotton woven fabrics were the objects of the investigations. The fabric variants differ from each other in the range of the repetition of the seersucker effect. The surface topography of the fabrics was assessed using a MicroSPy® Profile profilometer. The data from the profilometer were processed using Mark III software. Among different parameters available in applied software the S_a, S_q, V_{vv} and V_{vc} were chosen to compare the seersucker woven fabrics being investigated.

The fabrics were also measured in terms of their thermal insulation properties and drapeability. These properties are very important from the point of view of utility and the physiological comfort of usage of clothing made of seersucker woven fabrics. The thermal insulation properties were measured using an Alambeta device. The drapeability was assessed by means of Drape Tester.

On the basis of the results, the relationships between the parameters characterising the surface topography of the seersucker woven fabrics and their thermal insulation properties and ability to draping were discussed.

INTRODUCTION

Generally, woven fabrics are considered as flat, 2D (2-dimensional) textile materials. It is due to the fact that their thickness is very small in comparison to their other dimensions – length and width – and are thus neglected. However, there are some kinds of woven fabrics which can be classified as 3-dimensional (3D) materials. Among them are seersucker woven fabrics, which create a unique 3D woven structure. Such a 3D structure is usually created on the loom by an application of two warps of different tension.[1] A typical seersucker structure is characterized by an occurrence of puckered strips in thewarp direction. The word "seersucker" came into English from Persian, and originates from the words: "Sheer" and "Shakar". Their meaning is: "milk and sugar", probably from the similarity of smooth and rough strips along the fabric to the smooth texture of milk and the lumpy texture of sugar.[2]

*Translation: Małgorzata Matusiak

[1] Gandhi, K. 2012, p. 142. Matusiak, M., Frącczak, Ł. 2015, p. 166.

[2] The American Heritage Dictionary of the English Language: Fifth Edition, 2015. URL:https://ahdictionary.com (quoted 2. 3. 2016).

To make seersucker woven fabric, two loom beams are necessary: one beam carries warp yarns for the flat (basic) strips; the other carries warp yarns for the puckered strips. During weaving, adjustments are made to make the puckered stripe warp yarns feed forward faster than the flat stripe warp yarns. This results in different tension of warp yarns and following it a localized buckling of the fabric in the areas of the fast-feeding yarns.[3] This makes the pucker in the wrinkled strips in the warp direction.

The seersucker structure is called a "slack-tension weave." When the fabric is woven, the differences in tension cause the finished fabric to wrinkle, giving a traditional "puckered" look of fabrics.[4] Due to the use of two beams, the typical seersucker woven fabrics cannot be manufactured on conventional looms with a single warp beam.

The upper warp creates the puckered strips on the fabric surface, whereas the bottom warp creates the flat (base) strips. It gives a design effect.

The structure of the seersucker woven fabrics influences their properties and appearance. The surface topography and surface properties of the fabrics are particularly influenced by the seersucker effect. An investigation by Matusiak and Frącczak confirmed that the repeat of the seersucker effect and width of the puckered strips are crucial from the point of view of the fabric's appearance, surface friction, mechanical and thermal properties.[5]

MATERIALS AND METHODS

Seersucker woven fabrics made of cotton were the objects of investigation. The fabrics were manufactured on the basis of the same warp sets made of 20 tex x 2 cotton yarn. The same yarn was applied as a weft. The fabrics differ in the range of the repeat of the seersucker effect. They were designed in such a way to obtain the puckered and flat strips in the warp direction of predetermined width of both puckered and flat strips.

Three variants of seersucker effect pattern were applied:

- variant 1 (MM1) – width of puckered and flat strips appropriately: 5 mm and 8 mm,
- variant 2 (MM2) – width of puckered and flat strips appropriately: 9 mm and 18 mm,
- variant 3 (MM3) – width of puckered and flat strips appropriately: 11 mm and 41 mm.

The investigated fabrics are presented in Image 1.

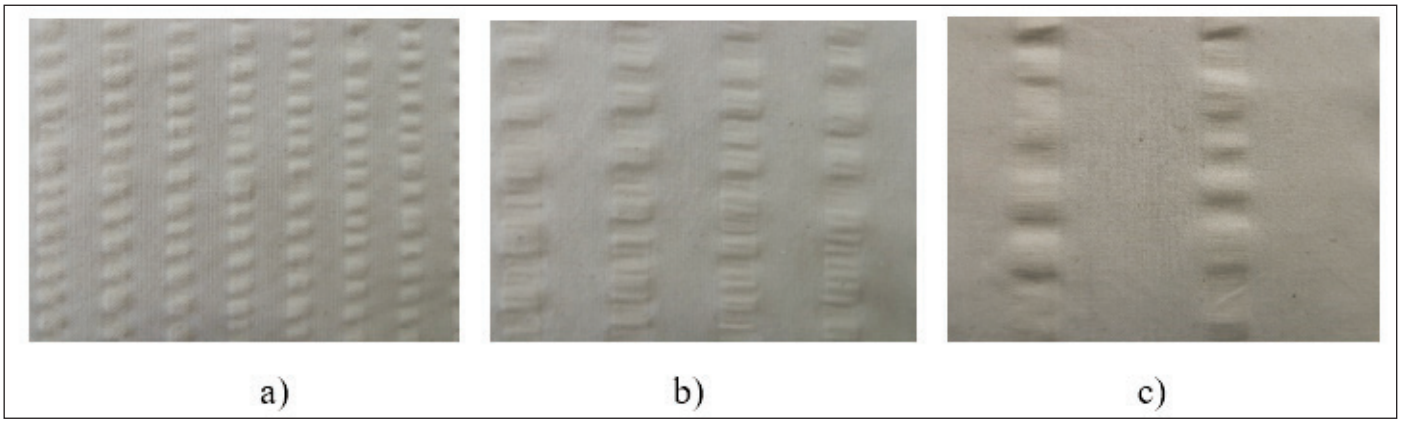

Image 1: Pictures of the investigated seersucker woven fabrics: a) variant MM1, b) variant MM2, c) variant MM3.

[3] Kyame, G. J., Lofton, J. T., Cool and Carefree Cotton Seersucker. URL: http://naldc.nal.usda.gov/download/IND43895201/PDF (quoted 10. 4. 2019).
[4] Matusiak, M., Frącczak, Ł. 2018, p. 81.
[5] Matusiak, M., Frącczak Ł. 2018, p. 81. Matusiak, M., Zieliński J., Kwiatkowska, M. 2019, p. 58.

The basic properties of the investigated fabrics are presented in Table 1.

Parameter	Unit	Value		
		Variant MM1	Variant MM2	Variant MM3
Weave – warp I	-	plain		
Weave – warp II	-	rib 2/2		
Warp density	cm-1	12.7	12.6	11.4
Weft density	cm-1	11.4	11.5	11.4
Mass per square metre	g m-2	212.9	207.8	192.8
Take up – warp I	%	8.3	6.0	5.2
Take up – warp II	%	49.8	48.8	49.7
Take up - weft	%	7.1	6.4	9.2

Table 1: Basic structural properties of the investigated fabrics.

In order to assess the surface topography of the investigated fabrics a MicroSpy® Profile was used. It is an optical measuring tool for the precise measurement of surface topographies. MicroSpy® works as an optical profilometer (2D) as well as an imaging measuring instrument (3D) by means of a scanning process or a direct imaging field-of-view sensor.[6] The FRT CWL sensor used in the MicroSpy® Profile is based on a patented method which makes use of the chromatic aberration (in principle the wavelength-dependent refractive index) of optical lenses.

For each fabric variants 5 specimens were measured. In order to assess the full repeat of the seersucker pattern the area of measurement was 48 mm x 48 mm. Next, the average values of each parameter were calculated.

The results from the profilometer were analysed using Mark III software. It is the standard analysis software for all 2D- and 3D-data. Line profiles and 3D imaging data can be plotted and analysed. The software also offers various displays of the measuring data, e.g. top view or 3D surfaces rotated in space in any direction.[7]

The basic properties of the surface topography of the investigated fabrics were determined according to DIN ISO 25178 standard. They included the height and volume function parameters:

- S_a – arithmetic mean of the absolute of the ordinate values within a definition area. It is a height parameter. This parameter is the extension of R_a (arithmetical mean height of a line) to a surface. It expresses, as an absolute value, the difference in height of each point compared to the arithmetical mean of the surface. This parameter is used generally to evaluate surface roughness.
- S_q – root mean square value of the ordinate values within a definition area. It is equivalent to the standard deviation of heights. It is also classified as a height parameter. Some researchers consider that the S_q parameter expresses the surface roughness better than the S_a parameter.
- V_{vv} – dale void volume at p material ratio. This parameter represents the void volume of dale at areal material ratio $p\%$. It can also be used to quantify the magnitude of the core surface, reduced peaks, and reduced valleys based on volume parameters.
- V_{vc} – core void volume. It expresses the difference in void volume between p and q material ratio. This parameter represents the difference between the void volume at areal material ratio $p\%$ and the void volume at areal material ratio $q\%$. It can also be used to quantify the magnitude of the core surface, reduced peaks, and reduced valleys based on volume parameters.

The volume parameters are determined from the material ratio curve. To use the volume parameters, it is necessary to specify the areal material ratio values that divide the reduced peaks and reduced valleys from the core surface. By default, usually 10% and 80% are used.

[6] Operating Manual FRT MicroSpy® Profile, 2016.
[7] FRT Manual Mark III. 2018.

The seersucker woven fabrics analysed were measured in the range of their chosen properties: thermal insulation and drapeability.

Thermal insulation properties were determined using an Alambeta device. It is a computer controlled device for measuring the basic static and dynamic thermal characteristics of textiles.[8] This method belongs to the so-called 'plate methods', the acting principle of which relies on the convection of heat emitted by the hot upper plate in one direction through the sample being examined to the cold bottom plate adjoining to it.

By means of this device, besides the classical stationary fabrics' thermal properties such as thermal resistance and thermal conductivity, we can also assess transient thermal characteristics such as thermal diffusivity and thermal absorptivity.[9] The instrument directly measures the stationary heat flow density (by measuring the electric power at the known area of the plates), the temperature difference between the upper and bottom fabric surface, and the fabric's thickness.

By means of the Alambeta the following thermal insulation properties of fabrics can be determined:
- thermal conductivity,
- thermal diffusivity,
- thermal absorptivity,
- thermal resistance,
- the ratio of the maximal and steady heat flow,
- stationary heat flow,
- fabric thickness.

Thermal conductivity λ represents the amount of heat which passes through one unit of length in one unit of time and creates a difference in temperatures of 1 K. With increasing temperature, the thermal conductivity decreases. Thermal conductivity is expressed by the following formula:

$$\lambda = \frac{Q}{A \cdot \frac{\Delta t}{h}} \qquad [W\ m^{-1}\ K^{-1}] \qquad (1)$$

where:
λ - thermal conductivity,
Q - heat transmitted,
A - area,
Δt - the temperature gradient,
h - sample thickness.

Thermal absorptivity *b* is the only parameter characterizing warm-cool feeling and represents the amount of heat which passes at a temperature difference of 1 K through one unit of area in one unit of time as a result of heat accumulation in a volume unit. We feel as cooler the material whose capacity of absorption is higher (higher b).

The thermal absorptivity is expressed by the following formula:

$$b = \sqrt{\lambda \cdot \rho \cdot c} \qquad [W\ m^{-2}\ s^{½}\ K^{-1}] \qquad (2)$$

where:
b - thermal absorptivity,
λ - thermal conductivity,
c - specific heat capacity,
ρ –material density.

[8] Hes, L. 1990, p. 679.
[9] Matusiak, M. 2006, p. 98.

Thermal resistance r expresses the difference of the temperature across a unit area of the material of unit thickness when a unit of heat energy flows through it in unit time. The lower thermal conductivity the higher thermal resistance.

Thermal resistance is defined by the following formula:

$$r=\frac{h}{\lambda} \qquad [W^{-1}\ K\ m^2] \qquad (3)$$

where:
r – thermal resistance,
h - sample thickness,
λ – thermal conductivity.

Thermal diffusivity a reflects the capacity of the material to settle the differences in temperature. The higher is the value, the more quickly the material settles the temperature differences (in a non-stationary process).

It is defined by the equation:

$$r=\frac{\lambda}{\rho.c} \qquad [m^2s^{-1}] \qquad (4)$$

where:
a - thermal diffusion,
λ - thermal conductivity,
ρ - material density,
c - specific heat capacity.

For each fabric variant 10 repetitions of the measurement were performed. Measurement was carried out in standard climatic conditions.

The drapeability of the fabrics was also measured. The drape is one of the parameters characterizing the appearance of textile products.[10] It is particularly important for clothing items because it influences the aesthetic effect of the clothing, in particular its fit to the user's body. The drapeabilty also plays a significant role in the case of decorative textile products such as curtains, tablecloths and bedspreads. Drapeability is defined as the ability of fabrics to create folds under the influence of gravity in the conditions favourable for fold creation.[11] Physically, the drapeability is an effect of interaction between the fabric mass and its stiffness.

Measurement of the drapeability of fabrics was done using the Drape Tester. In the applied method a drape coefficient K is expressed as a percentage and can be in the range from 0% to 100%. For very flexible products the drape coefficient K is close to 100%, whereas for very stiff products it is close to 0%.

RESULTS AND DISCUSSION

Examples of the scans of the measured fabric variants are presented in Image 2. First the row data have to be filtered in order to eliminate noise using the Mark III D software, where there are different options of data filtration available in the Mark III D software.

[10] Matusiak, M. 2017, p. 76.
[11] Szmelter, W. 1973, p. 265.

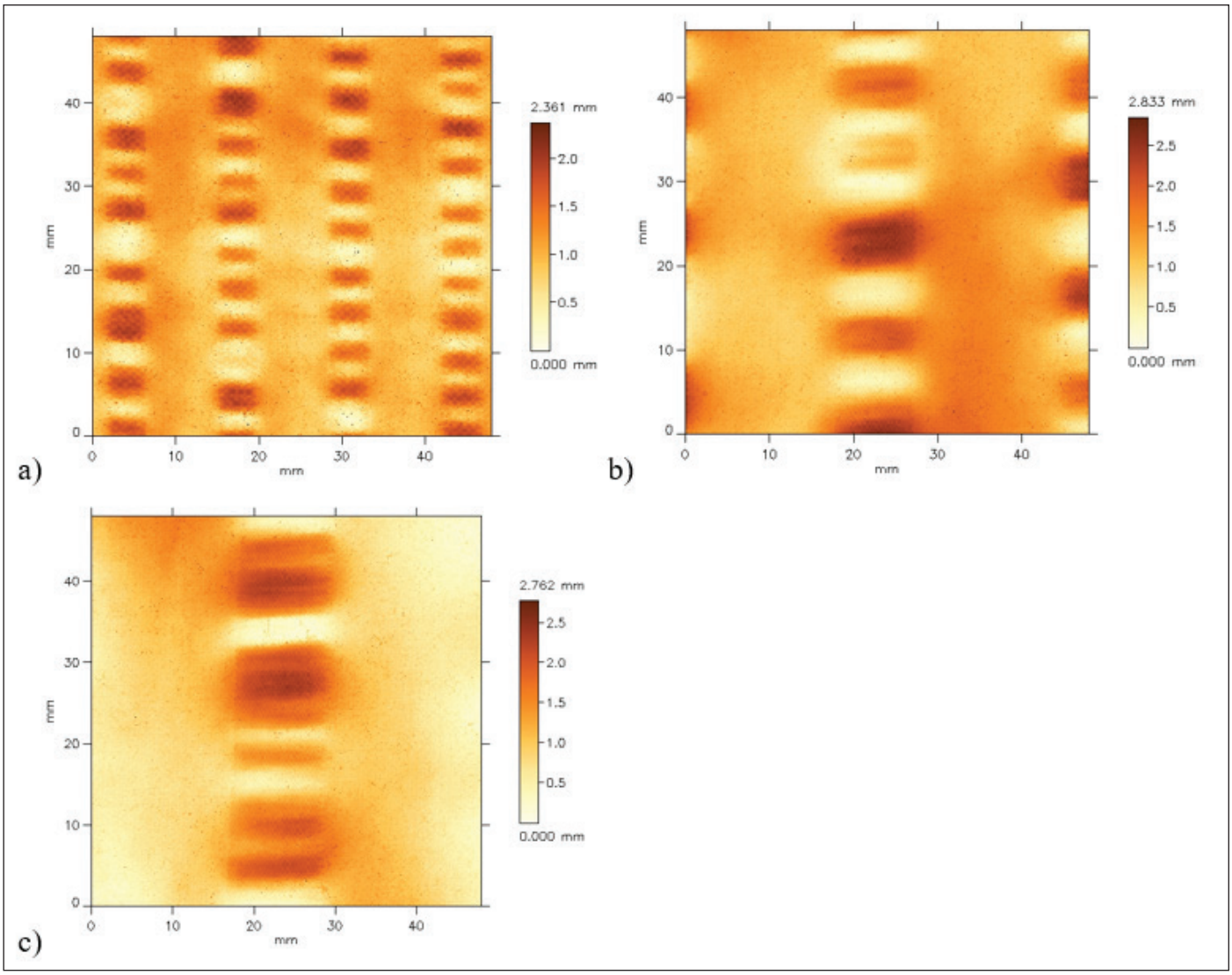

Image 2: Pictures of the investigated fabrics from the MicroSpy® Profile profilometer: a) variant MM1, b) variant MM2, c) variant MM3.

Values of the parameters characterising the surface topography form the Micropy® Profile profilometer are presented in Table 2.

Parameter	Unit	MM1	MM2	MM3
S_a	mm	0.0184	0.0150	0.0122
S_q	mm	0.0404	0.0428	0.0292
V_{vv}	mm3/mm2	5.3508	4.5708	3.0406
V_{vc}	mm3/mm2	24.3516	15.309	13.5062

Table 2: Results from the profilometer.

On the basis of the results from the profilometer we can state that the parameters are different for different patterns of the seersucker effect. In the MM1 fabric variant the distance between the puckered strips is the lowest. In the same way the share of the puckered area in the total area of the fabric is the biggest in comparison to the MM2 and MM3 variants. Simultaneously, the MM1 fabric variant is characterized by the highest value of the Sa, Vvv and Vvc parameters. On the other hand, in the MM3 variant the distance between the puckered strips is the lowest and in the same way the share of the puckered strips in the total area of fabric is the lowest. The MM3 fabric variant is characterized by the lowest value of the Sa, Vvv and Vvc parameters. Presented results (Table 2) suggest that the parameters from the profilometer: Sa, Vvv and Vvc reflect the surface topography of the seersucker woven fabrics. The value of the Sa, Vvv and Vvc parameters in particular are connected with the share of the puckered strips in the total area of the seersucker fabrics.

In the case of the Sq parameter no clear tendency was observed. It should be mentioned here that Table 2 shows the results of the first test with usage of the MicroSpy® Profile profilometer. The number of the samples measured is too low to perform statistical analysis of the results. The measurements are ongoing. It is predicted that further investigations will facilitate assessment of the parameters from the profilometer (presented in the paper and many others available in the applied software) from the point of view of their usefulness for a parameterisation of the surface topography of the seersucker woven fabrics.

Image 3 presents the exemplary profiles of the seersucker woven fabric – the MM1 variant. Image 3 a presents a placement of the profiles whereas Image 3 b presents the shape of the profiles: blue, red and green profiles are placed on the puckered surface, the black profile is created on the flat surface.

Using the profile function it is possible to compare the profiles of the fabrics in different places. It is also possible to determine the profile parameters according to appropriate standards.

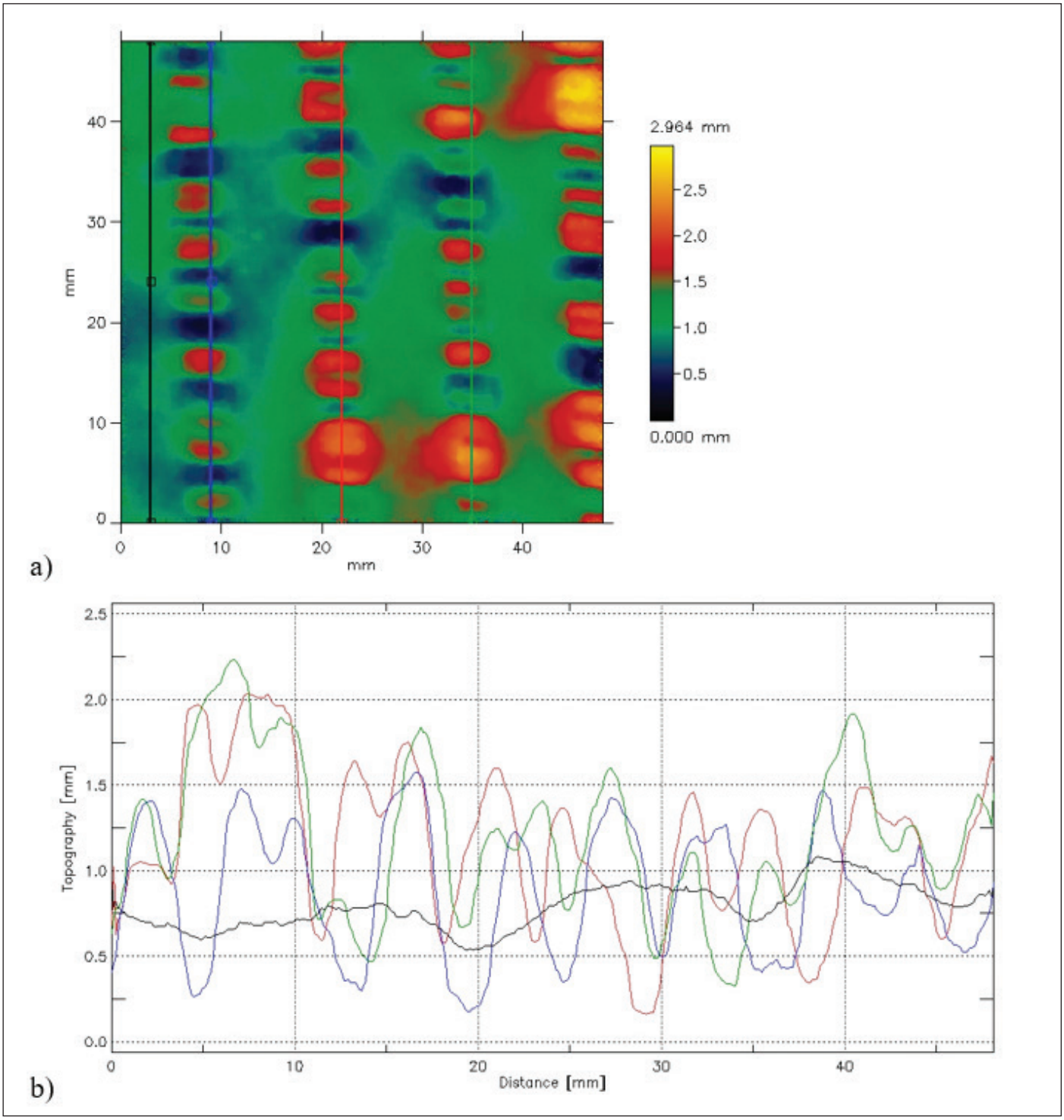

Image 3: Exemplary profiles of the seersucker woven fabric – the MM1 variant: a) placement of the profiles, b) profiles: red, green and blue – represent the puckered strips, black – represents the flat strip.

Another option available in the program is the ability to create histograms presenting the z- value (height) distribution. From the histograms for the MM1, MM2 and MM3 fabric variants it is clearly seen that the height distribution is different for the investigated fabrics. In the case of the MM1 variant the most frequent height is 0.9 mm (15.49%), for the MM2 it is – 1.0 mm (13.72%) and for the MM3 it is 0.7 mm (10.40%).

The seersucker woven fabrics analysed were measured in the range of their chosen properties: thermal insulation and drapeability.
The results from the Alambeta are presented in Table 3. The standard deviation values are given in brackets.

Sample	λ	a	b	r	h
-	$W\ m^{-1}K^{-1}\ 10^{-3}$	$m^2s^{-1}\ 10^{-6}$	$Wm^{-2}\ s^{1/2}\ K^{-1}$	$W^{-1}\ Km^2\ 10^{-3}$	mm
MM1	36.69 (0.77)	0.1605 (0.0257)	92.28 (6.90)	48.62 (4.12)	1.78 (0.163)
MM2	34.90 (1.49)	0.1102 (0.0177)	106.07 (9.93)	46.01 (1.73)	1.60 (0.076)
MM3	34.19 (2.34)	0.1074 (0.0158)	105.51 (14.02)	42.12 (3.28)	1.43 (0.071)

Table 3: Result of measurement by means of the Alambeta.

On the basis of the results it was stated that the fabrics being investigated differ between each other in the range of their thermal insulation properties.

Because the fabrics were manufactured from the same kind of yarn and in the same weave, the repeat of the seersucker effect can be considered as the only factor causing the differences in their thermal insulation properties. Statistical analysis using the one-way ANOVA confirmed that the influence of the seersucker pattern on the thermal insulation properties of the fabrics is statistically significant at the probability level $p = 0.05$.

We can also observe the relationships between the thermal insulation properties and surface topography parameters determined using the MicroSpy® Profile profilometer. For instance, the higher the S_a parameter, the higher the thermal resistance. However, due to the low number of profilometer measurements it is too early to perform a statistical analysis of the results from the Alambeta and profilometer. It will be done in the future on the basis of a much bigger number of samples measured by means of the profilometer. Having more results, it will be possible to find clear and statistically significant relationships between the parameters characterizing the surface topography of the seersucker woven fabrics and their thermal insulation properties.

All measured seersucker fabrics are characterized by low values of the drape coefficient *K*:
- MM1 – 10.55%,
- MM2 – 13.16%,
- MM3 – 15.01%.

As can be seen, the pattern of the seersucker effect influences the draping ability of fabrics. The best drapeability was found for the MM1 variant, i.e. the variant of the highest share of the flat area in total area of fabric. The relationship between the drapeability of the fabrics and parameters characterizing the surface topography was also identified. The higher value of the surface parameters: S_a, V_{vv} and V_{vc} the lower value of the drape coefficient.

CONCLUSION

Seersucker woven fabrics are characterized by a 3D structure. On the fabric surface, flat and puckered strips occur, usually in the warp direction. The surface topography influences the properties of the fabrics. There is a relationship between the values of examined surface topography parameters such as S_a, V_{vv} and V_{vc} and the thermal insulation properties of the fabrics. The drapeability of the seersucker woven fabrics also depends on the repeat of the seersucker effect. In the same way the drapeability can be connected to the

surface parameters of the seersucker woven fabrics. The presented results created the starting point for further investigations and the research is continuing.

ACKNOWLEDGEMENT
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EDINSTVENA STRUKTURA IN LASTNOSTI KREP TKANINE

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Strokovni članek (1.04)

IZVLEČEK

Za krep tkanine je zaradi nagubanih in ploskih trakov, ki potekajo v smeri osnove, značilen tridimenzionalni (3D), valovit (zgrbančen) učinek. Krep tkanine ustvarijo neobičajno 3D strukturo tkanja, ki lahko vpliva na lastnosti tkanine.

Cilj predstavljenega dela je analiza geometrijske strukture krep tkanin, predvsem geometrije njihovih površin ter izbranih uporabnih in estetskih lastnosti, ki vplivajo na funkcionalnost in videz raziskanih tkanin in iz njih izdelanih oblačil.

KLJUČNE BESEDE

krep tkanine, struktura, topografija površine, videz

POVZETEK

Cilj raziskave je bila analiza topografije površin krep tkanin ter vpliv topografije na izbrane uporabne lastnosti tkanin.

Predmet raziskave so bile tri različice bombažnih tkanin, ki se med seboj razlikujejo v ponovljivosti učinka nagubanosti. Topografijo površin tkanin smo ocenili s profilometrom MicroSPy® Profile. Podatke iz profilometra smo obdelali s programsko opremo Mark III. Med različnimi parametri, ki so bili na voljo v uporabljeni programski opremi, smo za primerjavo raziskanih krep tkanin izbrali parametre S_a, S_q, V_{vv} in V_{vc}.

Pri tkaninah smo izmerili tudi njihove toplotnoizolacijske lastnosti in stopnjo nagubanosti (drapiranja). Omenjene lastnosti so zelo pomembne z vidika uporabnosti in telesnega udobja ob nošenju oblačil iz krep tkanin. Toplotnoizolacijske lastnosti smo merili z napravo Alambeta. Stopnjo nagubanosti smo ocenili s pomočjo naprave Drape Tester.

Na podlagi rezultatov smo ugotavljali razmerja med parametri, ki označujejo topografijo površine krep tkanin, in njihovimi toplotnoizolacijskimi lastnostmi ter sposobnostjo gubanja.

CLOTHES, FOOTWEAR AND OTHER GEAR USED BY VISITORS TO THE MOUNTAINS IN SLOVENIA IN THE 19TH AND FIRST HALF OF 20TH CENTURY*

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Review article (1.02)

ABSTRACT
The article presents the main characteristics of mountaineering gear, footwear and clothes used in the 19th and first half of the 20th century in Slovenia. The development can be roughly divided into two periods – the period before specialized gear, clothes and footwear, and the period of specialized mountaineering gear, clothes and footwear. The first period mostly coincides with the time when only individuals went to the mountains and mountaineering was not yet organized. The second period is characterized by the emergence of specialized mountaineering gear, clothes and footwear; due to mass visits to the mountains, it gave rise to a special industry.

KEYWORDS
mountaineering, mountaineering gear, mountaineering footwear, mountaineering clothes, Alps

INTRODUCTION[1]
Mountaineering is a "sporting activity which involves walking in the mountains along trodden, marked and unmarked, secured and unsecured trails, through pathless areas, climbing, and skiing".[2] The history of mountaineering in Slovenia can be roughly divided into five periods: the period up until about the 17th century, when mountains were primarily a "source of income" for the locals who carried out various activities there; the Age of Enlightenment (roughly 17th-18th century), when intellectuals started "discovering" the mountains, mostly for aesthetic and research purposes; the period of not organized mountaineering (late 18th to the first half of the 19th century), when the mountains started to become a place to spend free time; the period of organized mountaineering (from the second half of the 19th century to the mid-20th century); and the period of mass mountaineering (from around the mid-20th century onwards).[3]

Ever since the first visits to mountainous areas, be it for hunting, grazing, flight, military or exploratory hiking, visitors have been using footwear, clothes and gear that made walking and moving around in the mountains easier. The footwear, clothes and gear had to be adapted to the difficult natural conditions, mainly to the cold, wind, snow and humidity. Today, the most "famous" prehistoric visitor to the mountains is *Ötzi*, "the Iceman", named after the Ötztal Alps where he was found; he crossed the Giogodi Tisa/Tisenjoch pass in the valley of Val Senales/Schnalstal in Southern Tyrol more than 5,300 years ago.[4] His footwear was made of several layers. The inner structure was woven with a rope mesh made from lime bast and the mesh was lined with grass, which provided good insulation. Because the outer part of the shoe was made from deer leather, the shoe was not waterproof, and the inner layer of grass had to be replaced. The rope mesh and the leather were both sewn onto the sole, which was lined with fur on the inside. *Ötzi* tied the entire shoe to his leg with bast. He wore leather trousers and a jacket, both lined with warm animal hides; he wore a bearskin cap on his head and his gloves were made from sheepskin.[5] Such

*Translation: Furocat d.o.o.

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[2] Planinski terminološki slovar, 2002, p. 58.

[3] JANŠA ZORN, O. 2004. ZORN, M. 2005. MIKŠA, P., AJLEC, K. 2011. MIKŠA, P., ZORN, M. 2016.

[4] HANSEN, P. H. 2013, p. 297.

[5] ÖTZI THE ICEMAN. URL: http://www.iceman.it (quoted 29. 4. 2019).

finds show that people have been adapting their clothes, footwear and gear to the special natural conditions in the mountains for thousands of years.

HIKING CLOTHES, FOOTWEAR AND MOUNTAINEERING GEAR UP TO THE LATE 19TH CENTURY

Until the early 19th century, the motives for visiting the mountains generally differed from those that drew people to the mountains in the late 19th and in the 20th century. People did not (yet) view the mountains as a place of relaxation, sporting activities or an area to be protected;[6] but rather mostly went there for economic and research reasons. The mountains also inspired a certain amount of awe.[7] Until the 19th century, Slovene mountains were mostly frequented by loggers, hunters and shepherds.[8] Visitors with different motives were rarer; one example is the intellectuals who journeyed to the mountains in the 17th and 18th centuries with help from the locals. In Slovenia they were mostly natural scientists.[9]

FOOTWEAR

From today's perspective, the footwear of the people frequenting the mountains was simple. They wore everyday footwear, mostly wooden clogs. The oldest clogs were made from a single piece of wood. Newer clogs (Image 2A) had a sole made from ash wood, while the top part was made from plaited thin strips of larch. Such clogs had nails on the soles and 10 centimetres long grooves that made walking easier.[10] The first to mention their usage in Slovenia was Janez Vajkard Valvasor in the second half of the 17th century.[11]

Such footwear was not suitable for the rocky terrain frequented by natural scientists, much less for those who wished to ascend to the tallest peaks up steep stony slopes. Much more suitable for such ascents were boots with a high shaft that folded down under the knee. Back then, boots "with flaps" were a common piece of footwear in Slovene provinces.[12] Such boots were depicted by Valvasor[13] and can also be seen in the first depiction of Mount Triglav in the work *Oryctographia Carniolica* by Baltazar Hacquet from the second half of the 18th century (Image 1B).[14] In it, we can see two types of footwear: boots with flaps on a man representing a gentlemen or town dweller, and clogs on a shepherd.

In his descriptions, Hacquet also gives instructions on how to move around in the mountains: "The only thing one needs on one's feet are short boots, made from quality leather; the thicker the soles, the better; the shaft has to be made from soft and thick English leather, so that in warm areas, where one might step on a snake at any moment, the snake cannot pierce the leather that easily."[15]

[6] DOBRAVEC, J. 2003, pp. 131-133.
[7] REŽEK, B. 1959, pp. 13-18.
[8] DERŽAJ, M. 2003, p. 19.
[9] MIKŠA, P., AJLEC, K. 2011, pp. 11-20. MIKŠA, P., ZORN, M. 2016, pp. 110-114.
[10] REŽEK, B. 1959, pp. 11-15.
[11] VALVASOR, J. V. (1689) 2009-2013, II., VI., p. 279.
[12] STANONIK, M. 1971, p. 129.
[13] VALVASOR, J. V. (1689) 2009-2013, I., II., p. 111.
[14] HACQUET, B. 1778.
[15] HACQUET, B. 1925, p. 128. This text was written in German in the second half of the 18th century.

Image 1:
A) Mountain wear in the middle of the 19th century (author: Marko Pernhart).[16]
B) Mountain wear in the second half of the 18th century.[17]
C) Traditional herdsman's clothing from the Velika planina mountain pasture (Photo: Miro Štebe).
D) Clothing of a mountain guide in the late 19th century.[18]

Such footwear – of shepherds and other visitors to the mountains – can be traced until the second half of the 19th century. Tall boots with flaps are clearly shown in several depictions of Mount Triglav by the realist landscape painter Marko Pernhart from the mid-19th century (Image 1A). However, his paintings of mountainous landscapes also show mountaineers wearing stiff, over-the-ankle boots.

CLOTHES

In those days, the clothes of visitors to the mountains did not differ much from the clothes of valley dwellers. This too can be seen in the Hacquet's depiction of Triglav (Image 1B). On the left side of the depiction stands a short man wearing a frock coat; next to him, on the right, is a shepherd wearing a broad-brimmed hat, a raincoat made from lime bast, clogs with a heel stiffener, and holding a staff. The coat made from strips of lime bast dates back to prehistoric times (*Ötzi*). On the Velika planina mountain pasture above Kamnik it was still in use after World War II (Image 1C). It was made from young lime bark, which was cut into strips, soaked in liquid manure for a few days, then rinsed with running water and separated into thinner layers. The strips were strung onto a neck cord. In the rain, the strips stuck together, and water did not soak through, but in warm dry weather it was quite hot under the coat.[19]

Hacquet also gave the first advice about clothes when visiting mountains: "The only covering the head needs is a leather cap that can be folded down in the front and back as a guard. […] Considering that we only hike in the mountains on hot days and perspire constantly, the most appropriate protection is a white

[16] GMJ – Slovenian Alpine Museum Photo Archive.
[17] HACQUET, B. 1778.
[18] GMJ – Slovenian Alpine Museum Photo Archive, archival fond Osebni portreti.
[19] MIKŠA, P., AJLEC, K. 2011.

headscarf wrapped around the head so that its two ends hang down over the back of the neck; the wind will move them, cooling us down. The best option is to leave the neck bare. A waistcoat and chamois leather trousers, which have to be loose-fitting at the knees, will serve us well. The jacket must be short, crease-free, with wide lapels and four pockets; two pockets on the outer side and two on the inside, at chest height. In one inner pocket, you put a writing pad with paper for your drawings and a wallet, and in the other a double-barrelled gun. In the outer pockets you put a pair of short English binoculars, the kind military officers use, a small compass and the like. A pocket watch is required; you keep it in the waistcoat pocket in a way that prevents it from slipping out in any position; you also need a magnifying glass ... You must not forget leather gloves, as they are very useful when climbing cliffs, because you often have to use your hands. You also must not set out without a short coat, made from quality cloth, not only to protect you from the rain and snow, but also from the severe cold; at great altitudes, such a piece of clothing will be your only blanket and bed."[20]

GEAR

Even though when mentioning the "gear" needed to visit the mountains, Hacquet points out that a horse is required for this activity – "a six- to seven-year-old horse, which should be a white horse or at least a grey one" – we will focus instead on the most "standard" gear of visitors to the mountains. One standard piece is a long, light hiking staff, equipped with a basket at the bottom and a curved hook at the top, so the hiker could grab hold of a branch or crack in the rock. The hikers also carried a longer rope for walking on glaciers, and for protection and help when climbing. Crampons were commonly used.[21]

HIKING CLOTHES, FOOTWEAR AND MOUNTAINEERING GEAR IN THE EARLY 20TH CENTURY

Organized mountaineering activities emerged in parallel with an increase in sporting and emotional/adventure motives for visiting the mountains. In 1857 in London, the first mountaineering organization in the world was founded – the Alpine Club. From 1874 onwards, a branch of the German and Austrian *Alpine Club* operated in Carniola, as the first of its kind in Slovenia; in 1893, the *Slovensko planinsko društvo* (Slovenian Mountaineering Society) was founded.[22] As visits to the elevated regions increased, the need arose for footwear, clothes and gear that would be more suitable for walking in the high mountain ranges.

FOOTWEAR

At the end of the 19th century, people in the Slovene provinces started using shoes that gave their name to contemporary mountaineering shoes – *gojzarji* (*Goiserer*) (Image 2D). They were made by Austrian shoemakers and could be ordered by post. Their innovative feature was that the sole was sewn onto the upper part of the shoe – twice, in fact.[23] They cost about 5 florins, which was cheaper than the similar shoes called *kvedrovci* (Image 2B) which were the most common back then; at the same time, the local shoemakers were advertising the making of *kvedrovci* at a price of 6-8 florins.[24] According to the inhabitants of Bad Goisern, the new mountaineering shoe invented by Franz Neubacher (he is believed to had made the first pair in 1875)[25] was promoted by the imperial court itself. Emperor Franz Joseph had hunting grounds in Salzkammergut and allegedly expressed a wish for new shoes. The nobles who took part in the hunt then spread the news of his new shoes.[26]

[20] HACQUET, B. 1931, p. 87.
[21] WESTER, J. 1954, p. 52, 54.
[22] STROJIN, T. 2003, pp. 56-57. MIKŠA, P., AJLEC, K. 2011.
[23] CORTESE, D. 2003a, p. 95.
[24] ŠKODIČ, D. 2016, p. 52.
[25] Ibid., p. 52.
[26] CORTESE, D. 2003b, pp. 51-52. KONOVŠEK, T., MIKŠA, P., ZORN, M. 2018.

Image 2:
A) Clogs from the mid-19th Century.[27]
B-D) Mountain footwear in the late 19th century (B: *kvedrovec*; C: mountain shoe with nails; D: *gojzar*).[28]
E) Winter mountain wear in the early 20th century.[29]

In the early 20th century, the following was written about mountaineering footwear:[30] "In the mountains we need shoes with straps. […] They must be made from strong cow leather or Russia leather, so that stones and water cannot harm them. The soles must be sewn on, preferably with the stitches visible. If you do not like visible stitches, then at least make sure that the sole has the so-called *čoba*, i.e. a border around one centimetre wide. This will protect the shoe against damage during the countless times it comes in contact with sharp stones. The leather above the heel (heel stiffener) should be in one piece. […] A single piece of leather, the kind used to make the soles, usually suffices. The tongue should be made from soft leather and sewn on both sides. Tie the shoe with round leather straps (*stógljaji*). The shaft, i.e. the upper part of the shoe at the ankles, should be close-fitting, so its ends do not touch even when tying the shoe tightly. […] It is also very useful if the edge of the shafts is lined with a soft, thick cloth that clings to the shin. The shoe should reach slightly above the ankle, roughly to where the shin is the thinnest. […] Only after you have a bit worn-out in the shoes and they have adapted to your foot, have the third sole sewn on or nailed in, and then have the shoes ironshod. The best nails to use are domed tacks. By all means, the heel should be nailed with them. They are also good for the sole. However, for ordinary hikes, it is enough if the *čoba* of the sole contains the usual tacks with textured heads. […] Only the heel part should also be ironshod at the inner edge, so it is not compacted too quickly and merged with the sole. […] For the shoes to stay waterproof and soft, you must grease them well. Almost any balm will do, from the finest patented paste to the common homemade lard."

Although socks belong to clothing, we will nevertheless mention them in the context of shoes with the quote below. The same source as above had this to say about their importance:[31] "The same as the shoes, the socks are also of great importance to a mountaineer. The best ones are made from home-sheared wool. The thicker they are, the better they fit. Since we only wear shorts in the mountains, we need only long socks. Such socks take up too much space if you take several pairs with you. That is why a smart mountaineer puts on short socks and gaiters, which have a strap at the end, so they stay in the boots. One pair of gaiters will last for a long time, because they do not get dirty as quickly as socks. The gaiters should be long enough to be pulled over the knee if need be, e.g. in cold weather. Fasten them under the knee with an elastic suspender. If you know that you are in store for a long hike across soft snow, supply yourself with woollen bandages for wrapping the leg, including the shoe, from the ankle to the knee."

[27] GMJ – Slovenian Alpine Museum Photo Archive.
[28] GMJ – Slovenian Alpine Museum Photo Archive, B: inventar no. P-140, C: inventar no. P-333, D: inventar no. P-332.
[29] GMJ – Slovenian Alpine Museum Photo Archive, TMZ Archive, box 7, section 12, no. 5.
[30] Planinski vestnik, vol. 14, no. 6-7, 1908, Hribolazčeva oprava in hrana, p. 99.
[31] Ibid., p. 100.

In those days, Slovenian mountaineers wore brown or dark green knee-high socks, whereas the German mountaineers wore only white knee-high socks. Before World War I, national affiliation and the national "battle for the mountains" between the Slovenes and Germans was also demonstrated through clothes.[32] In this regard, the mischievous Slovene secondary school students from Maribor spattered the snow-white knee-high socks of the German mountaineers with black ink.[33]

They usually wore shorter socks over the knee-high socks; in warm weather they folded the knee-high socks down over the mountaineering shoes.[34]

CLOTHES

Before World War I, the clothes of visitors to the mountains were simple and did not yet differ significantly from the clothes of valley dwellers; some even resembled the Sunday clothes – in other words, they were more formal (Images 3A and 3B). A mountaineering shirt was usually made from linen or cotton. The most popular pattern was chequered. It was practical if the shirt had long sleeves which could be folded up over the elbows in case of heat and nice weather. Mountaineering trousers or "knickerbockers" were fastened with a belt or buckle at the knees and were at first worn only by men. In the beginning, women wore skirts, which they later replaced with more comfortable culottes or wider trousers. Of course, they had to make sure they were dressed decently. The replacement of skirts with trousers as part of the practical hiking/climbing attire took place at the turn of the century, ending the period of women's "crinolines in the mountains".[35]

Image 3:
A) Mountain wear at the end of the 19th Century.[36]
B) Festive mountain clothes in 1899 at the opening of a new mountain hut.[37]
C) Climbing wear in the 1930s.[38]

[32] MIKŠA, P., ZORN, M. 2018.
[33] RUSJAN, G. 2004, p. 47.
[34] Ibid., p. 48.
[35] SMERKE, Z. 1989, p. 27.
[36] GMJ – Slovenian Alpine Museum Photo Archive, archival fond Skupinski portreti, subsection Piparji.
[37] GMJ – Slovenian Alpine Museum Photo Archive, TMZ Archive, box 7, section 20, no. 9.
[38] GMJ – Slovenian Alpine Museum Photo Archive, archival fond Skupinski portreti.

In the case of shorts or "knickerbockers", special mention must be made of the material from which they were made; prior to World War II, only German-speaking mountaineers wore the chamois leather trousers. Nationally conscious Slovene mountaineers did not wear them, because they were a German national symbol.[39] Nevertheless, shorts were frequently worn, even for hiking in the snow. The following was written about them: "They should reach slightly over the knees; however, it is best if they can also be folded up above the knee. When climbing or in deep snow, they are fastened under the knee. Most hikers wear wide belts to tighten their trousers. Some also wear braces. Both have an upside and a downside. If you wear a belt, your trousers tend to slide down; braces hold them up better, but they quickly get wet when you perspire. Apart from the regular two pockets, the trousers should have another pocket at the back. It can be used for things that would bother you if placed in the side pocket. All pockets must have flaps that can be buttoned up."[40]

The mountaineering pullover was very popular if made from wool and in red. The waistcoat had to have a special sturdy pocket for keeping money in. It was recommended that the jacket could be buttoned all the way up. The collar had to be wide enough to reach the ears if the hiker pulled it up. It was recommended that the jacket had as many pockets with flaps as it had room for. The following was written on the topic: "If you want to test if the pockets close well, do the following: fill them with all the knick-knacks you intend to put in them, then turn the jacket upside down and shake it; if nothing falls out of the pockets, then the flaps hold. To be safe, sew a few extra buttons on the inside of the jacket."[41]

At first, mountaineers carried everything they needed in bags and only later in rucksacks (Image 1D), which soon became an indispensable piece of equipment for every mountaineer. In the beginning, they were green and quite plain; they had small pockets on the front and closed with a drawstring or a leather belt at the top.

The most common headgear, on which they liked to pin mountaineering badges, was a hat or a mountaineering cap. The former was already practically indispensable among mountaineers before World War I. Later, certain mountaineers preferred woollen caps, which were sometimes adorned with a long tail or tassel.

GEAR

For ascending peaks, a long ice axe with a wooden shaft (handle), simple crampons (Image 2E) with six or eight spikes fastened to ironshod mountaineering boots (*gojzarji*), and a hemp rope were used. In the first decades of the 20th century, climbing shoes (Image 3C) with felt soles for climbing were already in use. Prior to that, climbing shoes with soles woven from a thin rope or even from quilted jute or sackcloth were used.[42] The soles made from felt wore out very quickly[43] and had to be replaced after three or four climbs.

Until the mid-20th century, hemp ropes were used for climbing. They became steady companions of mountain guides as early as around 1862. After 1880, they were already used by a large majority of hikers, who traversed glaciers or climbed on rock and ice.[44] In Slovenia, the first use of rope for climbing coincides with its first use elsewhere in the Alps. Hemp ropes were either braided or twisted. Braided hemp ropes were very supple, but less firm than the twisted hemp ropes, which tended to kink.

In the early 20th century, snowshoes were used when visiting the mountains in the winter, but they began to be replaced by skis even before World War I.[45]

[39] RUSJAN, G. 2004, p. 47.
[40] Planinski vestnik, vol. 14, no. 6-7, 1908, Hribolazčeva oprava in hrana, pp. 100-101.
[41] Ibid., p. 101.
[42] POTOČNIK, M. 1992, p. 21.
[43] MUCK, P. 2010, p. 27.
[44] MLAČ, B. 2003, p. 219.
[45] BRILEJ, A. 1952, p. 42.

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OBLAČILA, OBUTEV IN DRUGA OPREMA OBISKOVALCEV GORA NA SLOVENSKEM V 19. IN PRVI POLOVICI 20. STOLETJA

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Pregledni znanstveni članek (1.02)

IZVLEČEK
V članku so predstavljene glavne značilnosti gorniške opreme, obutve in oblačil, ki se je v 19. in prvi polovici 20. stoletja uporabljala na Slovenskem. Razvoj se v grobem deli na dve obdobji: obdobje pred specializirano opremo, oblačili in obutvijo ter obdobje specializirane gorniške opreme, oblačil in obutve. Prvo obdobje v glavnem sovpada s časom, ko so v gore zahajali posamezniki in gorništvo še ni bilo organizirano. Za drugo obdobje pa je značilno, da se pojavijo posebna gorniška oprema, oblačila in obutev, ki zaradi množičnosti obiska gora "postavi na noge" tudi posebno vejo industrije.

KLJUČNE BESEDE
gorništvo, gorniška oprema, gorniška obutev, gorniška oblačila, Alpe

POVZETEK
Že od prvih obiskov gorskega sveta, naj so bili razlog lov, paša, beg, vojaški ali raziskovalni pohodi, so obiskovalci gorskega sveta uporabljali opremo, ki naj bi jim hojo in gibanje v gorah olajšala. Oprema je morala biti prilagojena težjim naravnim razmeram, predvsem mrazu, vetru, snegu in vlagi. Danes je "najslavnejši" prazgodovinski obiskovalec gora *Ötzi*, "ledeni mož", ki je pred več kot 5300 leti prečkal prelaz Giogo di Tisa/ Tisenjoch na Južnem Tirolskem. Prazgodovinske najdbe kažejo, da so oblačila, obutev in oprema že več tisoč let prilagojena posebnim naravnim razmeram v gorskem svetu.

Do začetka 19. stoletja so bili motivi za obiskovanje gora po večini drugačni od tistih kasneje. Gora (še) niso dojemali kot prostor za oddih ali športno udejstvovanje, pač pa predvsem kot območje gospodarskega izkoriščanja. Obutev posameznikov, ki so zahajali v gore, je bila tedaj preprosta. Nosili so vsakdanja obuvala, predvsem lesene cokle. Najstarejše so bile narejene scela iz enega kosa lesa. Kasnejše so bile sestavljene iz podplata iz jesenovega lesa, zgornji del pa je bil iz prepletenih macesnovih viter. Na Slovenskem je njihovo uporabo prvi omenil Janez Vajkard Valvasor v drugi polovici 17. stoletja. Takšna obutev pa ni bila primerna za skalnat teren. Za takšne poti so bili primernejši škornji z visoko golenico, ki se zavihava pod kolenom. Tovrstno obuvalo zasledimo upodobljeno pri Valvasorju, pa tudi približno stoletje kasneje pri Baltazarju Hacquetu.

Tudi oblačila obiskovalcev gora se takrat niso bistveno razlikovala od tistih v dolini. Na podlagi Hacquetovega dela vemo, da so konec 18. stoletja premožnejši nosili meščansko suknjo, pastirji pa plašč iz lipovega ličja.

Ob koncu 19. stoletja so v slovenskih deželah začeli uporabljati čevlje, ki so dali ime sodobnim gorniškim čevljem – *gojzarji*. Izdelovali so jih avstrijski čevljarji, njihova novost pa je bila v tem, da so podplat na zgornji del čevlja prišili, in to dvakrat.

Oblačila obiskovalcev gora so bila pred prvo svetovno vojno preprosta in se še vedno niso bistveno razlikovala od tistih v dolini, bila so lahko celo bolj podobna nedeljskim – torej bolj svečana. Planinska srajca je bila običajno platnena oziroma bombažna. Planinske hlače (pumparice) so se pri hlačnicah zapenjale s pasom ali zaponko in so bile sprva domena moških. Ženske so v začetku nosile krila, kasneje pa so jih zamenjale z udobnejšimi hlačnimi krili ali širšimi hlačami.

Sprva so planinci vse potrebno nosili v torbah, šele kasneje v nahrbtnikih in ti so kmalu postali nepogrešljiva oprema vsakega planinca. Na začetku so bili zelene barve in dokaj enostavni. Značilen je bil tudi klobuk, na katerega so pripenjali planinske značke.

Za pristope na zasnežene vrhove so že v 19. stoletju uporabljali dolg cepin z lesenim ratiščem. Že v prvih desetletjih 20. stoletja so za plezanje uporabljali plezalne copate s podplati iz klobučevine.

Vse do sredine 20. stoletja so za plezanje uporabljali konopljene vrvi. Na začetku 20. stoletja so za obisk gora v zimskem času uporabljali krplje, še pred prvo svetovno vojno pa so jih začele zamenjevati smuči.

THE IMPORTANCE OF THE ARTISTRY OF MAKING PAG LACE AND *ČETVEROKUKA* EMBROIDERY*

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ABSTRACT

Pag lace is one of the symbols of the cultural identity of the town of Pag, while *četverokuka* embroidery is a symbol of the Dinaric area of northern Dalmatia. They represent an important part of women's handicrafts and a dominant ornamentation on the folk costume. The artistry of making Pag lace and decorative *četverokuka* embroidery are protected as intangible cultural heritage of the Republic of Croatia. The knowledge of these skills signifies their continuous safeguarding in their original form, as well as their present day application on clothing or as decoration on textiles.

KEYWORDS

Pag lace, *četverokuka* embroidery, intangible cultural heritage, northern Dalmatia, Adriatic area, Dinaric area

SUMMARY

Embroidery and lace are basic decorations on clothes. They are an important part of the collection of folk costumes preserved at the Ethnological department of the National Museum Zadar, but there are also some preserved as separate items, apart from folk costumes. They date from the mid-nineteenth to the mid-twentieth century. Workshops in which the making of Pag lace and the artistry of *četverokuka* ("four-limbed pattern") embroidery are taught, are of great importance in passing them down and preserving them. In this way heritage ceases to be an unknown distant phenomenon, a part of the past one respects, but does not take part in; on the contrary, it becomes an active part of contemporary life. By mastering the artistry of Pag lace and *četverokuka* embroidery today, we can approach the world of women who were in those days no doubt illiterate, who passed down this artistry patiently, generously and lovingly from generation to generation. It is only by entering their world that we begin to understand and appreciate it, communicating with it. The ethnological department of the National Museum Zadar preserves the original samples of Pag lace and *četverokuka* embroidery as an important part of our cultural heritage, although they also inspire our own response to that part of our heritage that has to be recognized in new work. In today's globalised world, such local knowledge conveys the feeling of belonging to a smaller cultural community, which an individual can best identify with in order to gradually adopt, appreciate and select foreign values as well – rooted in one's own cultural environment, while spreading branches towards the global society.

Image 1: Manual for *četverokuka* embroidery, Narodni muzej Zadar, 2017.

*Translation: Sabina Kaštelančić

LACE AND EMBROIDERY AS RECOGNIZED FOLK ART

The folk costume is the most prominent symbol of the cultural identity of a particular area, and women's identity is particularly connected to clothes and decoration of clothes.[1] Through textile handicraft, a woman expresses both her artistry and taste. This artistry is very often particularly evident in trimming the folk costume. The ornamentation on the folk costume is a collective expression of an environment, but individual skill is equally evident. It is specifically expressed in traditional celebratory costumes, connected to holidays and festive occasions, when a better financial status can be emphasized or a particular ritual relation conveyed, such as that of a wedding ceremony. Embroidery and lace are basic decorations on clothes. They are an important part of the collection of folk costumes preserved at the ethnological department of the National Museum Zadar, but there are also some of them preserved as separate items, apart from folk costumes. They date from the mid-nineteenth to the mid-twentieth century. The major part of these artefacts was collected in the 1950s and 1960s, when most of the folk costumes were also collected, as they had become redundant in clothing inventories of the inhabitants at a time when they embraced modern urban clothing. In the more distant, past embroidery and lace were considered part of women's everyday handicraft, thus no great importance was attached to them. This attitude was exploited by merchants, who purchased these handiworks at very low prices and transferred them abroad. However, there were some members of higher social classes who noticed the value of this handicraft and tried to make the people that created it aware of its importance. For example, *Don* Frane Bulić, acting as supervisor of state schools in the district of Zadar and Benkovac from 1880 to 1881, organized exhibitions of Pag lace and folk costumes. Another name worth mentioning is the imperial and royal official Harry von Pausiner, whose collection contained fifty richly embroidered scarves from the Zadar hinterland. His appreciation of the ornamentation on these scarves was best proved by applying these scarf motifs to works of decorative art. Among the admirers of Dalmatian folk art, the Austrian noblewoman Natalie Bruck-Auffenberg was held in high regard for pointing out the value and economic importance of Dalmatian folk art, which prompted the founding of the Society for the Promotion of the Lace Industry in Dalmatia in the early 20th century. Apart from promoting the handicraft of lace-making, the society also promoted other branches of folk art.

The interest that the Dalmatian folk art aroused in a certain part of high society is also evident in a number of exhibitions of the Dalmatian lace, where Pag lace was also shown, held at the Imperial Royal Austrian Museum of Art and Industry in Vienna in 1905 and in London (*Imperial Austrian Exhibition) the following year. Besides arousing the interest of many wealthy individuals, this art caught the attention of fashion houses that were inspired by it. Natalie Bruck-Auffenberg noticed the early Renaissance technique of the prime *reticella* lace on two women's blouses that she come across by chance in an Austrian museum. This is one of the basic shapes of prime Pag lace, attached to a background, thus causing its geometrical pattern. Women of the island of Pag referred to this handiwork in *reticella* as *Pag teg*. It is part of the trimming on the front part of a women's blouse and on the edges of the headgear, a scarf called a *pokrivaca*. Pag needlepoint lace belongs to the so-called sewed lace that is developed from whitework (cutwork), i.e. a sewed interwoven pattern. Upon her arrival on the island of Pag in 1905, Bruck-Auffenberg made the population aware of the beauty of the Pag lace and in 1907 encouraged the founding of a lace school.

In 1910, following the initiative of another admirer of Dalmatian folk art, the archduchess Maria Josepha of Austria's, a course in lacemaking was opened in Obrovac, attended by fifteen girls, instructed by teacher Marija Galčić, who utilized the Pag lacemaking model. In his welcoming speech the mayor pointed out the possible benefit of such an institution. However, another distinguished admirer of Dalmatian folk art should be mentioned, who recognizing its economic value: Kamilo Tončić Sorinjski, the founder of the craft school in Split in 1906/1907. He also founded a course in lacemaking and folk embroidery in 1906 and a course in weaving in 1910. The same year marks the founding of the Ethnographic Museum in Split. As this was a period when artefacts of folk handiwork were present in large numbers in the field, it was possible to systematically organize the collecting of materials for this museum. The lace school in Pag was also operating at that time and then continuously until World War II. The school remained closed during the war, to resume working only as late as 1994, prompted by the Society of Croatian Intellectual Women and supported by the Ministry of Education and Sports and the county administration. A one-year course in lacemaking was organized. A very special part in promoting

[1] Thus the complex of customs within a patriarchal society symbolizes the cultural definition of the female sphere, including the sexual, familial, economic, ritual and political dimensions, alongside that of value systems. SUPEK, O. 1983, p. 41.

Pag lace has been played by the "Frane Budak" Society of Pag Seamstresses, founded in 1997, which has been further developing the activity of learning how to sew Pag lace, organizing a gallery of the Pag lace, organizing exhibitions in Croatia and abroad individually or in collaboration with the Ethnographic Museum Zagreb, while also organizing an international lace festival together with the Town of Pag and the Tourist Community of Pag for the last ten years. Their aim is the founding of a lace museum in Pag.

EMBROIDERY IN THE ADRIATIC AND DINARIC AREAS OF NORTHERN DALMATIA

Polychrome embroidery is a characteristic of the Gothic period and the whiteness of lace of the Renaissance. In the folk costume of the Adriatic part of northern Dalmatia it was mostly silk thread embroidery, while woollen thread prevailed in the Dinaric part. The attitude towards embroidery differs between the Adriatic part (from the islands of Olib, Silba and Premuda in the west to Vrgada in the east) and the Dinaric part (the Podgorje of Velebit, Ravni kotari and Bukovica) of northern Dalmatia. The abundance of embroidery characteristic of the Dinaric area can be contrasted with its much lesser extent in the Adriatic area. Nevertheless, multi-coloured silk thread embroidery on the front of women's blouses should be pointed out. For instance, a women's blouse from Pakoštane from the second half of the 19th century is kept at the ethnological department of the National Museum Zadar, richly embroidered on the front in silk thread embroidery, while both sleeves are also wholly covered in embroidery. The colour red is dominant here, as it is associated with wedding garments, which is confirmed by field data by ethnologists Olga Oštrić and Jasenka Lulić Štorić from the second half of the 20th century. The rich silk thread embroidery and the prevalence of red as the colour of blood, life, strength and youth, which has an apotropaic meaning, bear witness to a better social status of the person this blouse belonged to. Blouses with similar patterns to this could also be found on the islands of Ugljan, Pašman, Dugi otok, those of the Šibenik archipelago and along the coast.

Apart from women's linen blouses from Adriatic folk costume, embroidery has also been preserved on the headgear, where there are lace parts, on applications on the front, known as *zalistavci*, on the skirt worn with the blouse, and on the footwear, the *nazupci*. In the Adriatic area, multi-coloured silk thread embroidery appears on women's white blouses trimmed with lace, which was in fact adopted very early as a Renaissance influence in the Adriatic environment, being under a more direct influence of European style epochs, while the Dinaric hinterland retained the polychromatic patterns until the 20th century. In the Adriatic area of northern Dalmatia lace is quite prominent. There is the well-known *Novigrad stitch* (from Novigrad near Zadar) and the famous Pag lace, which has long gone beyond its local importance.

PAG LACE

The older fashion of Pag lace application was on the headgear of girls and women, the *pokrivace*, and on blouses, and was an example of preserving the Renaissance taste, together with the skirt and blouse. The ethnological department of the National Museum Zadar keeps a smaller number of *pokrivace* and women's blouses. The *pokrivaca* is a long, narrow scarf, trimmed at the edges with sewed Pag lace and bobbin lace. Bobbin lace is otherwise characteristic of the Pannonian region, made by the decorative intertwining of threads on the edges of the cloth. It also appears on textile artefacts in Dalmatia.

Sewed lace, known as *Pag teg*, alongside the à jour stitch (*ložica*) and "granulating" (*zrnčanje*) can be admired on women's blouses. The collar or *kolarin* and the edges of the sleeves are trimmed, and the front part is especially richly adorned. On the *kolarin* geometrical or geometrical-herbal motifs are applied: diagonal crosses, squares with a four-petalled rosette on four triangle-shaped *mendulices*, while a zigzag pattern of narrow rectangles and ringlets appears on the edges of the sleeves. The most richly adorned part is the front part of the blouse. The ornamentation is as follows: stripes of ringlets, known as *štrangula*, a zigzag of narrow rectangles, an array of stylized rosettes with four pointed and four rounded leaves or petals (inverted *rožeta sa listacićima*) and a double hoop (*dupli kolumbarić*). Geometrical motifs appear in a variety of different types: alternating *pogacice, ročelice, mendulice, kolumbarići, listacići, sunašca, dintel* and *zupcići*.

EMBROIDERY

In the Dinaric area there is an abundance of embroidery applied on linen, thick cloth and woollen cloth. When observing the embroidery on the folk costume of the Dinaric area of northern Dalmatia, what catches the eye is the embroidery on the woollen cloth, which trims the edge of a linen skirt with a blouse, *vuštan*, or

on the skirt of the same kind, but made of thick cloth, the so-called *carza*, which could also be worn with long sleeves (*modrina*, *aljina*, *bilača*, *bjeljača*) or the woollen cloth was otherwise applied on parts of the women's or men's folk costumes. Such embroidered decoration on woollen cloth is called *građa*.

The *četverokuka* motif appears in a range of different types. The meaning of this pattern is not preserved – it is passed down traditionally, obviously as a decorative motif. As this embroidered decoration on the woollen cloth, the *građa*, appears to a great extent on folk costumes, it also becomes a very distinctive symbol of cultural identity of the Dinaric area of northern Dalmatia, for which reason it has been recognized as intangible cultural heritage of the Republic of Croatia. Pag lace became intangible cultural heritage of the Republic of Croatia in 2004, proposed by the Ethnographic Museum in Zagreb, while that of the artistry of making the decorative *četverokuka* embroidery was proposed by the ethnological department of the National Museum Zadar in 2012. Pag lace has been inscribed on the UNESCO list of intangible cultural heritage since 2009. The status of the intangible cultural heritage means that the artistry of making that cultural heritage is safeguarded. This is why an active knowledge of this artistry is essential in keeping the status of a particular cultural heritage.

WORKSHOPS IN *ČETVEROKUKA* EMBROIDERY

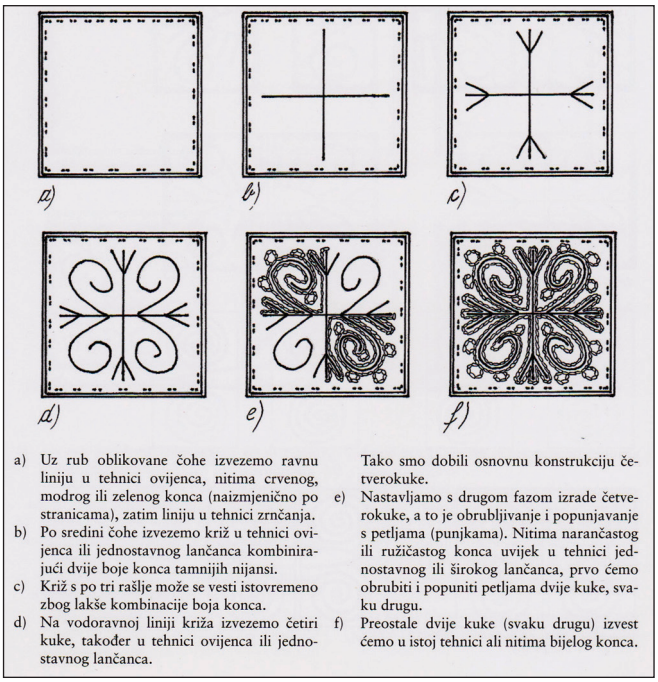
At the beginning of the 21st century, the ethnological department of the National Museum Zadar initiated workshops in *četverokuka* embroidery. Thanks to the excellent workshop leader, Marija Vrkić Žuvanić, several girls, primary school pupils, completed the *četverokuka* embroidery course after a year (90 minutes per week), discovering the beauty of this artistry. Persuaded by their teacher to attend, they were somewhat reluctant in the beginning, but pleasant company and a relaxing working atmosphere erased their unwillingness. They made juta bags with their initials, embroidered in the *četverokuka* pattern. Their work was shown at the exhibition Embroidery and Lace of Northern Dalmatia. This workshop inspired thoughts about a school of textile handicraft within the ethnological department, but it was not pursued due to the lack of space.

After that first workshop for children, workshops in *četverokuka* embroidery were held occasionally until 2012, when it was recognized as intangible cultural heritage. Since then, the workshops have been held once or twice annually, usually for thirty hours. The participants first master drawing the *četverokuka* pattern on squared paper, then they embroider on panama linen, and only then do they proceed to embroider on woollen cloth, with no previous drawing, of course.

In 2010, following a proposal by the ethnological department, Marija Vrkić Žuvanić prepared a manual on *četverokuka* embroidery, which presents all the phases in detail, with illustrations and descriptions of the different garments where the *četverokuka* motif was applied on woollen cloth. The garments come mostly from the ethnological department of the National Museum Zadar collections, but there are also some examples from other museums (Šibenik Town Museum, Ethnographic Museum Split and Ethnographic Museum Zagreb). Marija Vrkić Žuvanić was the leader of the workshop until her very last days; she was succeeded by Nada Šarlija, one of her very first students. In 2017 the ethnological department prepared a shortened version of this manual, containing illustrations and photographs of different types of *četverokuka* embroidery. Through this version, the making of *četverokuka* embroidery is more accessible to a wider range of interested readers.

The workshop on *četverokuka* embroidery was attended by people with various profiles, but for the past few years it has become a mandatory course for students of grades 11 and 12 (grades 3 and 4 in the Croatian secondary school system) of the School of Decorative Arts and Design Zadar, for the clothes and textile designer programme. Some of the teachers from this school had previously completed the *četverokuka* embroidery workshop. A workshop for students also takes place at the ethnological department; the leader is Nada Šarlija, in the presence of one of the teachers, who takes active part in the workshop.

The workshop on *četverokuka* embroidery was also completed by some male members of folklore societies, which is a novelty of a kind, as embroidery has been mostly considered women's handiwork. Their attending this workshop clearly indicates that the awareness of the importance of *četverokuka* embroidery as an essential part of their cultural heritage helped them overcome their patriarchal thinking.



a) Uz rub oblikovane čohe izvezemo ravnu liniju u tehnici ovijenca, nitima crvenog, modrog ili zelenog konca (naizmjenično po stranicama), zatim liniju u tehnici zrnčanja.
b) Po sredini čohe izvezemo križ u tehnici ovijenca ili jednostavnog lančanca kombinirajući dvije boje konca tamnijih nijansi.
c) Križ s po tri rašlje može se vesti istovremeno zbog lakše kombinacije boja konca.
d) Na vodoravnoj liniji križa izvezemo četiri kuke, također u tehnici ovijenca ili jednostavnog lančanca.
Tako smo dobili osnovnu konstrukciju četverokuke.
e) Nastavljamo s drugom fazom izrade četverokuke, a to je obrubljivanje i popunjavanje s petljama (punjkama). Nitima narančastog ili ružičastog konca uvijek u tehnici jednostavnog ili širokog lančanca, prvo ćemo obrubiti i popuniti petljama dvije kuke, svaku drugu.
f) Preostale dvije kuke (svaku drugu) izvest ćemo u istoj tehnici ali nitima bijelog konca.

Image 2: Page from the manual on *četverokuka* embroidery, Narodni muzej Zadar, 2017.

WORKSHOP FOR PAG LACE SEWING

In 2019, during the ETHNO-DAYS of the Zadar county, for the first time, the ethnological department of the National Museum Zadar organized a 30-hour workshop for Pag lace sewing, attended by twelve women. The workshop leader, Neda Oros, prepared a detailed description of the sewing procedure, illustrated with a drawing that each participant had as a reminder. In this way the participants could rely on both the instructions by their two leaders (Neda Oros and Katica Vidolin, also a member of the "Frane Budak" Society of Pag Seamstresses), and the drawing and text, which helped them greatly in their work. All the participants enjoyed making their doilies, feeling especially thrilled at the moment they could release their doily from the additional threads by which it was attached to the pillow during the sewing procedure. This first workshop in the sewing of Pag lace showed that there is a lot of interest in mastering this artistry, which is why the ethnological department is planning to organize such a workshop each year.

Image 3: Pag lace workshop in the ethnological department (Photo: Jasenka Lulić Štorič).

CONCLUSION

Workshops at which the sewing of Pag lace and the artistry of *četverokuka* embroidery are taught are of great importance in passing on these skills and preserving them. In this way heritage ceases to be an unknown distant phenomenon, a part of the past one respects but does not take part in, but becomes instead an active part of contemporary life. By mastering the artistry of Pag lace and *četverokuka* embroidery today, we can approach the world of women who were in those days no doubt illiterate, who passed down this artistry patiently, generously and lovingly from generation to generation. It is only by entering their world that we begin to understand and appreciate it, communicating with it. The ethnological department of the National Museum Zadar preserves the original samples of Pag lace and *četverokuka* embroidery as important part of our cultural heritage, although they also inspire our own response to that part of our heritage that has to be recognized in new work. In today's globalised world, such local knowledge conveys the feeling of belong-

ing to a smaller cultural community, which an individual can best identify with in order to gradually adopt, appreciate and select foreign values as well – rooted in one's own cultural environment, while spreading branches towards the global society.

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POMEN POZNAVANJA UMETNOSTI IZDELAVE PAŠKE ČIPKE IN *ČETVEROKUKE*

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Strokovni članek (1.04)

IZVLEČEK

Paška čipka je eden od simbolov kulturne identitete mesta Paga, medtem ko je *četverokuka* okrasna vezenina, ki izhaja iz dinarske pokrajine severne Dalmacije. Obe predstavljata pomemben del ženske obrti in prevladujoči okras na ljudski noši. Umetnost izdelave paške čipke in dekorativne *četverokuke* je zaščitena kot nesnovna kulturna dediščina Republike Hrvaške. Poznavanje teh spretnosti zagotavlja njihovo nadaljnjo zaščito v izvirni obliki ter njihovo današnjo rabo na oblačilih ali kot okras na tkaninah.

KLJUČNE BESEDE

paška čipka, vezenina *četverokuka*, nesnovna kulturna dediščina, severna Dalmacija, Jadransko morje, dinarska pokrajina

POVZETEK

Vezenine in čipke sodijo med osnovne okraske na oblačilih. So pomemben del zbirke narodnih noš, ki jih hrani Etnološki oddelek Narodnega muzeja Zadar, nekatere tudi kot samostojne eksponate, ločene od narodnih noš. Segajo v obdobje od sredine 19. do sredine 20. stoletja.

Delavnice, na katerih poučujejo šivanje paške čipke in umetnost izdelovanja okrasne vezenine *četverokuke*, so zelo pomembne za prenašanje in ohranjanje tega izročila. Na ta način dediščina ni le neznan oddaljen pojav, del spoštovanja vredne preteklosti, temveč postane aktivni del sodobnega življenja. Z obvladovanjem umetnosti izdelovanja paške čipke in *četverokuke* danes vstopamo v svet žena, ki so to umetnost kljub nepismenosti potrpežljivo, velikodušno in ljubeče prenašale iz roda v rod. Šele ko vstopimo v njihov svet, ga začenjamo razumeti, ceniti in komunicirati z njim. Etnološki oddelek Narodnega muzeja Zadar izvirne primerke paške čipke in *četverokuke* hrani kot pomemben del hrvaške kulturne dediščine. Hkrati ti primerki navdihujejo naš odnos do tistega dela dediščine, ki ga moramo prepoznati v novih kreacijah. V današnji globalni družbi takšno lokalno znanje daje občutek pripadnosti določeni manjši kulturni skupnosti, s katero se lahko posameznik najbolje poistoveti tako, da postopoma prevzema, ceni in izbere tudi tuje vrednote, ki sicer koreninijo v lastnem kulturnem okolju, a postajajo vse bolj prepoznavne tudi globalno.

TRADITIONAL ELEMENTS OF *ZALISTAVAC* IN CONTEMPORARY JEWELLERY DESIGN*

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SUMMARY
Zalistavac appears in the Adriatic part of North Dalmatia as an independent decorative object on a woman's bust. Because of its geometrical structure and symmetry, it represents a good starting point for fashion design. By studying and researching the function and the construction of the *zalistavac* and use of its elements, new and unique solutions and purposes have been created, as shown in the example of the results achieved in a project activity designing a souvenir necklace collection in a collaboration between the High School of Fine Arts & Design Zadar and the Ethnographic Department of the National Museum Zadar.

KEYWORDS
geometry, mosaic, ornament, contemporary classroom practice, embroidery

INTRODUCTION

Today, fashion and art, as well as teaching processes, are developing according to the integration patterns of various traditional constructions, dynamic contemporary practices and cultural globalization trends. Under the influence of different curricular reforms and changes in teaching paradigms, a whole spectrum of pedagogical methods become relevant when aiming at educational achievements that are based on new learning approaches and acquiring the necessary competences or skills for the 21st century. Innovation and creativity of teaching strategies are characterized by the democratization of the teaching space and the establishment of cooperative relationships with an intention of developing entrepreneurial skills in students and the formative evaluation of their activities.

This paper presents the results of teaching outside the classroom carried out in the museum and shaping new knowledge-based familiarity with the ethnographic artefacts that make part of a permanent exhibition and are a foundation of its contemporary roles. It is a participatory, interdisciplinary and thematic platform of contemporary debate.[1] The head of the Ethnology Department of the Zadar National Museum, Jasenka Lulić Štorić, sees an increased interest in the traditional heritage, not only due to the search for cultural identity, but also in the development of ecological consciousness.[2] Ethnographic material thus becomes worthy of research and integration into new content. Through the interpolation of traditional elements in the teaching process and contemporary fashion design, the need for preservation of the rich traditional heritage is emphasized.

The history of clothing was marked by many fashion collections of world-renowned designers who distinctively cited elements of national or international traditional costumes. Clothing and fashion items often represent elements and symbols of identity; they help transfer local cultural values and also serve as nonverbal communication tools.

The *zalistavac* as an independent ornamental decorative object is located on the bosom of the woman's dress with a blouse (*oplećak*), called *fuštan*. It belongs to the folk costume of the Adriatic part of Northern Dalmatia

*Translation: Branka Zubić
[1] KOLVESHI, Ž. 2017, Željka Kolveshi, Muzeji i Inovacije/tradicija vis a suvremenost, Zbornik radova 3. kongresa hrvatskih muzealaca, 2017, p. 336. URL: url:http//hrmud.hr/zbornik/zbornik%203kongresa%20mizealaca.pdf (quoted 22. 2. 2019).
[2] LULIĆ-ŠTURIĆ, J., OŠTRIĆ, O., VOJNOVIĆ-TRAŽIVUK, B. 2005, p. 9.

and is fixed to the lower part of the neckline with a pin, *badača*, which has a round filigree head.[3] Because of its ornamental, symmetric, geometric and mosaic structures and symbolic function, it represents an abundant source of inspiration for various curricular and extracurricular activities on the subject of research and application of ethnic elements of local cultural heritage in creating fashion products with unique value.

The problem of succession and innovation in the field of fashion design and creating of a fashion product conforming to the demands and needs of the modern consumer society is taken into account in the examples of making a necklace for souvenir purposes.

ZALISTAVAC – TEXTILE MOSAIC

The *zalistavac* is an independent decorative object found on the front of the garment that serves as bust decoration and in the Croatian language the form can be found under different terminology, including: *naprsnica, plastron, primetača, prsnica, peturina* and *zalistavac*. The common feature of the objects is the placement position, while the shape, style, fabrication and decoration techniques differ.

Elements of folk costumes were originally made from materials produced in the local environment, by the shape, colour and art of decoration; apart from features of local and regional affiliation, they also offer an insight into the familial, social, marital status and identity of an individual. In this paper, the emphasis is on the *zalistavac*, a decorative element worn on the bosom of the folk costume of the Northern Dalmatian region, decorated with vivid coloured textile applications stitched with metal or cotton thread, which by its composition resembles elements of Gothic architecture. The origin of the *zalistavac* and its appearance as a decorative object has not yet been sufficiently investigated. The *plastron* as an element in dressing in these areas is influenced directly by the Italian and the German styles at the turn of the Gothic into the Renaissance period. Taking into account the function and aesthetic components of the design and time of appearance, it is evident that it was successfully incorporated into the traditional dress. Following various written, artistic and photographic sources, we were able to identify it from the beginning of the 20th century. The Venetian writer and painter Cesare Vecellio showed as early as 1590, in his overview collection of costumes from around the world, a painting of a woman from the island of Cres with an ornamented chest decoration in a semi-circular shape similar to the *zalistavac*. The same drawing is also found in later editions.[4] As part of the woman's clothing inventory of the Zadar area, we find it in the testament of Mrs. Jerka Pušić from Kožino from 1659.[5] Archaeological research during the renovation of the medieval church of St. Kata in Novigrad revealed in one grave among jewellery and clothing an ornamental needle with a filigree head with woollen dark blue cloth threads. Historian Ivna Anzulović suggests that the pin was most likely used to fasten the *zalistavac* to the bosom.[6]

In the book *Viaggio in Dalmazia* written by the Italian abbot Albert Fortis published in 1774, the zalistavac is clearly shown in one of the drawings by Angelo Donati, who followed him on his journey. Subsequent editing of the drawing was done in the technique of copper engraving, and it was entrusted to Jakov Leonardi, who signed the printed edition. In his travelogue Fortis notices differences in the dress of the population from the Zadar islands, the coastline and its hinterland.[7]

The *zalistavac*, as an element of the folk costume of Zadar and its surroundings, was also recorded in paintings by Vicenzo Poiret, Roberto Focosi, L. Kleinmond and Zoe Barelli Vranski-Alačević.

[3] LULIĆ-ŠTURIĆ, J., OŠTRIĆ, O., VOJNOVIĆ-TRAŽIVUK B. 2005, p. 90.
[4] VECELLIO, C. 1664, Cesare Vecellio, Habiti antichi, 1664, p. 343. Venetia, Combi & LaNoù. URL: https://archive.org/details/habitiantichi00vece/page/342 (quoted 25. 2. 2019).
[5] ANZULOVIĆ, I. 1998, p. 309.
[6] ANZULOVIĆ, I. 2016, p. 192.
[7] FORTIS, A. 1984, pp. 8, 17.

Image 1: Roberto Focosi, Island Woman near Zadar, 1st half of the 19th century, lithograph with chalk, coloured, 276 x 197 mm, from the collection of the Croatian Museum of History, Zagreb, HPM/PMH 19086.[8]

According to the Dictionary of Croatian Language, which was prepared in 1901 by Franjo Iveković and Ivan Broz, the *zalistavac* is a "woven piece of fabric decorated with all kinds of ornaments, beads and shells that women, especially girls, wear on their chests on the islands around Zadar".[9] Don Vladislav Cvitanović describing the summer festive dress on the island of Iž notes: "If the wedding was in the summer time, then the *fuštan* (skirt) was from homemade white flaxen cloth, on the bottom it had a red ribbon hem (*skrlet*) and a *jaketa* (*haljetak*) from pan woollen light fabric – that was dark blue or black, and *zalistavac* instead of a bustiere (*bušt*)".[10] The word *zalistavac* was also used in fashion terminology for *plastron*, a chest decoration in *Pariška moda* (Parisian Fashion), the first illustrated fashion magazine in the Croatian language, around 1895.[11] In a proposal of reconstruction of a woman's costume of a Senjski Uskok from 1600, Marijana Gušić places the *zalistavac* on the bosom as an ornamental addition, similar to the one worn by women in central Dalmatia until the First World War.[12] According to Jasenka Lulić Štorić, the *zalistavac* covers the lower part of the shirt, it is usually made from *čoha* (thick, soft woollen fabric), which can be directly embroidered, or parts of multi-coloured textile (linen, cloths or *čoha*) are sewn onto it.[13] In her work on the Adriatic type of folk cos-

[8] CARRARA, F. 1848, p. 8.
[9] IVEKOVIĆ, F., BROZ, I. 1901, p. 789.
[10] CVITANOVIĆ, V. 1964, Vladislav Cvitanović, Nekadnji svadbeni običaji na otoku Ižu, Zbornik za narodni život i običaje, knj. 42 (1964), p. 55. URL: http://dizbi.hazu.hr/object/view/9AZRcV5l7A (quoted 18. 3. 2019).
[11] PARIŠKA MODA, 1895, Pariška moda, List za žensku i dječju odjeću i za ženski ručni rad, year's issue 1, 1895, vol. 4, p. 31. URL: http://dnc.nsk.hr/DataServices/ImageView.aspx?id=cbd972bc-df67-4e0d-af45-02f18ac2b336 (quoted 20. 3. 2019).
[12] GUŠIĆ, M. 1984, p. 92.
[13] LULIĆ-ŠTORIĆ, J. 2003, p. 15.

tume, Olga Oštrić gives a picturesque description of the *zalistavac*: a semi-circular ornament made of pieces of multi-coloured woollen fabric (*čoha*) or other fabrics sewn with a metallic (*srmeno*) thread and decorated with a metallic ribbon.[14] Marija Vrkić Žuvanić (2009), as an external associate of the Ethnology Department of the Zadar National Museum, published a handbook on the *zalistavac* in which she characterized it as a textile mosaic because of its decorative structure.[15]

AESTHETIC AND MORAL PRINCIPLES IN THE DESIGN OF THE *ZALISTAVAC*

The research on the *zalistavac* is based on the material preserved in the ethnological collection of the Zadar National Museum, and samples originated from Pašman, Novigrad and Pakoštane. The *zalistavac* as an independent decoration on clothing, worn on a costume with an *oplećak* blouse shows the obvious insight of a part of the local population into changes and innovations in shape, stylistic features and fashion characteristic of higher society, including in urban areas, in the transition period from the Gothic into the Renaissance.

The ethical dimension of the function of this decorative item can be implied from the subsequent emergence of prohibitions in clothing regulated by the law to prevent over-flamboyance. The girls and ladies of that time had to stop wearing deep necklines on their dresses. To do so, they often borrowed elements from higher social classes and translated them to the everyday folk culture of dressing. It thus followed a path from fashionable style to the traditional one.

Throughout the history of clothing, the development of decorative objects, textiles and clothes had their utilitarian and symbolic functions. They also contained distinctive codes that carried ethnic, social and sociological messages. The comprehension of hidden symbolic meaning through decorative elements, colours, and textile materials was only available to certain groups. For these reasons, we can observe the clothing-systems and the decoration of the body as the foundation of cultural communication. The importance of their preservation is accumulated in traditional skills and aesthetic forms in order to create new stylistic values.

AESTHETIC PRINCIPLES IN THE DESIGN OF THE *ZALISTAVAC*

Observing the aesthetic structure through the relationship of vibrant colours and geometric shapes bordered with the line of metallic or cotton thread, leaves us with the impression of perseverance, dedication and makes us think about the committed work of the creator of the zalistavac design. The *zalistavac* as an artefact of traditional cultural heritage, through its aesthetic value expressed in visual elements, accentuated archaic geometric ornamentation, symmetry, mosaic-like playfulness, and harmony of all parts of the composition, evokes in the observer emotion, satisfaction and optimism. No matter what the path of the creation of the *zalistavac* from the idea to its realization and function, it involves the presence of thoughtful ritual activity and mystique.

The mystical context of going through visual experience seems to have been found partly in the decorative late Gothic portrait of Zadar in paintings of Konrad von Grünemberg.

A decorative mosaic is made through the application technique involving flat ornamental design with patterns of colourful fabrics. The most common geometric shapes used in the design of the *zalistavac* are rhombus, circle, semi-circle, triangle, rectangle, trapezium, as well as tear, heart and petal shapes. The mosaic is symmetrical, the shapes are mirrored on the other side of the central axis and are decorated with *srma* (gold and silver thread). The base is monochrome, most often red, black, green or blue and the dimensions of the *zalistavac* are 28 x 26 cm.[16]

[14] LULIĆ-ŠTORIĆ, J., OŠTRIĆ, O., VOJNOVIĆ-TRAŽIVUK, B. 2005, p. 67.
[15] ŽUVANIĆ-VRKIĆ, M. 2009, p. 11.
[16] ŽUVANIĆ-VRKIĆ, M. 2009, pp. 11, 35.

Image 2: *Zalistavac*, Pašman Island, circa 1840, NMZ EO-96 (Photo: Željka Tomaš).

The preserved samples show the use of individually sewn glass pearls and cowrie shells whose role is to emphasize the decorative value; in ancient times they also had a ritualistic character.

We arrive at the construction scheme of the mosaic and its geometric components by reducing the colour image of the *zalistvac*, where in the foreground in some parts of the samples is the rosette material on which rests a Glagolitic letter.[17]

Personal stylistic expression through the use of artistic elements has yielded unique compositions. The *srima* or cotton tread within the composition has an informative and communicative role, forming a contour line and using it to emphasize the focus point. The *zalistavac* itself is a surface that is accentuated on its semi-circular part with an edge line that makes it a closed and defined figure. Geometric forms within the mosaic, even though playful and on the very margins of abstractness, give a feeling of order. The complementary scheme offers us a perfectly balanced contrast.

The colour as a dominant sensory characteristic, if applied solely by the intuition of innate talent, results in a balanced and eye-catching textile item with a mosaic of colour elements, most of it dominated by a warm-cold contrast. The rhythm of the forms present in the upper part of the *zalistavac* emphasizes the importance of the entire visual system.

With inspiration, inherited skill, acquired knowledge on the meaning of the symbols, the harmonious combination of the colours, symmetry and the compositional unity of selected elements, our young island girl from near Zadar has fulfilled subjective and romantic needs, and above all the need of fulfilling a vow. The reward for the effort of this skilful mosaic artist in textile is personal artistic expression on the bust of the dress with an *oplećak* blouse.

SPIRITUAL MESSAGE OF THE MOZAIC GEOMETRIC ORNAMENTATION

Ornamentation, as the oldest form of graphic activity since Neolithic culture, carries symbolic and magical meaning and semantic function. By studying and understanding the semantic code of textile patterns, it is possible to understand the language of the ornamentation itself. Meaning of geometrical style lived alongside various cult rituals and customs that survived until the beginning of the 20th century, and it became the spiritual basis for the development of abstract art. Through coded and rich decoration and the colour of garments the power of the aspirations for fertility and prosperity were increased, and above all protection from evil forces. Ornamental tendencies in textiles have followed man throughout his life, from birth to death.

The symbolic meaning in folk art lived through the system of rhythmically arranged elements as a means of expression through design forms, their combinations and the position of decorated objects. Geometrical

[17] ČUNČIĆ, M. 2008, Marica Čunčić, Grafički sustav Kijevskih listića, Zagreb, 2008, pp. 1-2. URL: https://bib.irb.hr/datoteka/371267.Graficki_sustav_Kijevskih_listica.pdf (quoted 24. 3. 2019).

ornamentation could also be called the first script of certain ethnic groups, used to record ancient ideological values. The first written traces were found on the bones of dead animals, body and rocks, used objects, and later on textiles, thanks to the embroidery and weaving. Written codes are witnesses of the close relationship between man and nature. Mythological-religious symbols as well as costume itself have experienced transformations, and their spiritual messages are still the subject of research, explication and interpretation.

A view of the structure and a reading of the motif of the *zalistavac* leads us to the conclusion of the presence of distant spiritual origins on which, after various migratory movements, the ethnic, religious, regional, material and aesthetic symbol of identity is subsequently grounded. The most common and the most vibrant ornamental representation is the form of a rhombus, the symbol of fertility that emphasized the importance of the reproductive system. It is often located in the centre of the ornament, and a series of rhombuses is most often placed horizontally on the very upper edge of the *zalistavac*. They are often connected by a wavy line, the symbol of water, or a horizontal one that represents the earth. The points between them are symbols of seeds and grains. The main motif is a circle that represents the sun, the course of life and eternity, and the point in the centre is the centre of the universe. In contrast to the circle, a rectangle is a sign of the Earth and earthly life. The triangle represents three elements: air, water and fire, as well as man, woman and child. The wheel as a sign of divine power and the symbol of the Sun represents birth, life and immortality. We can thus assume that the symbol of fertility has survived in such a way that a symbolic message was carried in walk-through time and space, on women's clothing.

The use of various geometric and plant forms on clothing is still present in the Indo-European nomadic style, and its expression is perceived in Slavic cultural traditions. The archaic embroidered and woven geometric patterns of functional, decorative and utilitarian values survived thanks to folk devotion and by quietly entering through mutual contacts of people. They represent the spiritual idea of the birth and survival of the world.

The position of the *zalistavac* emphasizes the very place that keeps the world alive by its function and domination. Its shape resembles a half of the sun's wheel, and through the geometric symbols in different colours it represents the energy matrix. The described motifs symbolize the pursuit of the love of men and women, of successors, of the family's unity, of its well-being and protection from the troubles. Though they are all made in a similar pattern and colour scheme and with similar shapes, each one is a personalized votive story painted in textile mosaic and known only to the creator. This area requires more extensive research; otherwise, by accepting global interpretations of the widespread and unequivocal aesthetic structures and functions of usable objects, by neglecting the symbolic meanings and the votive facts, we would accept the suppression of the most valuable, spiritual legacy of our ancestors and of ourselves.

ZALISTAVAC – A TEXTILE MOSAIC IN JEWELLERY

The traditional culture and its preserved forms are re-emerging today; special attention is paid to their artistic, aesthetic and creative potential. This part of the work represents a way of encouraging active and lasting relationships towards the protection of traditional heritage by using contemporary teaching approaches in a museum atmosphere through projects and teachings outside the classroom. The artistic potential of traditional culture is reflected in the enrichment of contemporary art practice and its integration into the formation of new values. The museum is most often the place where the first encounter with the original reality of this tradition as well as art happens. It is a companion in creating new conditions of learning and teaching as well as development of critical thinking in pupils. This organizational system provides the possibility of searching for evidence, evidence itself, connection of facts, answers to clear and unclear questions, challenges and traces to further research.

Past analysis of the shape and the visual components of the symbolic significance of the *zalistavac* as an independent chest decorative element is the basis of this part of the work, e.g. its application and reproduction of indigenous art expression in the form of contemporary jewellery.

Zalistavac – A Textile Mosaic in Jewellery is a multi-annual project and since 2016 every new generation of pupils endows the public with original solutions of the mosaic necklaces. The purpose of the results in the project's first year was to produce souvenirs for contestants, mentors and participants of the state competi-

tion in the Textile and Leather Education Sector entitled "Clothing, Footwear and Leather Accessories 2016". After planning the activities, the project teaching started with a previously scheduled professional lecture in the museum with the aim of achieving one of the predetermined results of the class entitled Creating Clothing and Accessories, including the final task in which the student explains the importance of local art heritage. To link different insights as starting points for creative work and artistic expression, a correlation with other school subjects was made, such as History of Clothing, History of Fine Arts, Drawing and Painting, Textile Materials and Shaping of Flat Textile Products.

3rd grade students of the departments Textile Designer and Clothing Designer of the Zadar School of Applied Arts and Design, accompanied by their teachers (Kate Prskalo, Sandra Bačić), visited the National Museum Zadar where they, under the expert guidance of Mr. Sc. Jasenka Lulić-Štorić, CEO of the Ethnological Department, visited the collection with the original examples and got first-hand experience into the features, elements and characteristics of the folk costumes from Zadar and its surroundings. There was a lecture about the *zalistavac*, the unique decorative element of the Zadar legacy; its age, fabrication, textile composition and meaning. The students also participated in the discussion on elements and characteristics of the displayed artefacts, their aesthetic components and the importance of preserving traditional heritage. In the final part of the discussion, they proposed ways of their interpretation in the design of clothing, textiles and fashion accessories with the aim of promoting the local cultural heritage.

The students were then divided into groups of 5, with each group being assigned different materials with the task of photographing decorative elements, visual art form, colour charts, analysis of the producing techniques and suggestions for fashion interpretation on the subject of Tradition in Modernity as a Promoter of Cultural Heritage. After the activities were completed, representatives of the groups presented the results.

The students used recorded materials for new activities: creation of an inspiration collage, research and creation of fashion ideas for jewellery design in the shape of souvenirs with the aim of linking traditional cultural practices to contemporary consumer culture.

The students were guided by the findings of the previous headings of this paper, particularly the inspection of the *zalistavac* material form, research processes, elaboration and objectification. The curriculum designed activities of jewellery design on the subject allowed the students their perception, artistic expression and creative freedom.

The students used geometric shapes and ancestral symbols to create individual mosaics with coded messages of good wishes for the use in souvenirs by using felt and other fabrics, technical application and binding multi-coloured threading as an addition to their art expression.

Image 3: Individual works of students, jewellery inspired by the traditional elements of the *zalistavac*, 2017 (Photo: Kate Prskalo).

Traditional cloth was replaced by felt, and the shape itself was reduced to serve a new purpose, a unique form of jewellery that continues to play the role of a decorative part on the female bust. The colour palette chosen by the students has been enhanced and the forms have been minimized, fully revealing a modern artistic approach.

On May 30, 2017, the exhibition *Zalistavac* – A Textile Mosaic in Jewellery was presented at the souvenir shop of the Rector's Palace in Zadar. The exhibition was held within the framework of the Ethnic Days in cooperation with the School of Applied Arts and Design and the Ethnographic Department of the Zadar National Museum. It had an extraordinary media response and attracted considerable public interest. During the exhibition period, jewellery workshops were also held.

CONCLUSION

The project *Zalistavac* – A Textile Mosaic in Jewellery aimed to design a souvenir based on traditional heritage. The preserved ornamental design of an independent decorative object of the traditional textile cultural heritage has been modernized in the form of a new design according to the demands of contemporary fashion design.

In order for the project to be realized successfully the subject of examination was the study of the geometric ornament and its aesthetic and spiritual principles of design along with the methods of research: analysis, planning, modelling and design.

The basic task of the project was to demonstrate the possibilities of extracting ideas from tradition without distorting the original concept. In this way, all the extraordinary women of the past who made their first *zalistavac*, and carried it proudly, were honoured.

This project has created contemporary designed jewellery with the aim of bringing local cultural heritage closer to the masses. It uses the same spiritual interpretation of aesthetic principles and visual elements as the main component of the *zalistavac*, and in this way the poetic images of our ancestors have been brought up to date.

The results and insights on this decorative ornamental object could also be used in further research and activities to integrate both this and other elements of traditional costumes in the design of various contemporary fashion products.

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TRADICIONALNI ELEMENTI *ZALISTAVCA* V SODOBNEM OBLIKOVANJU NAKITA

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Strokovni članek (1.04)

IZVLEČEK
Zalistavac se v jadranskem delu severne Dalmacije pojavlja kot samostojen dekorativni predmet na ženskem poprsju. Njegova geometrijska struktura in simetrija nudita dobro izhodišče za modno oblikovanje. S proučevanjem in raziskovanjem funkcije in sestave *zalistavca* ter uporabe njegovih elementov so nastale nove, edinstvene rešitve in nameni uporabe, kot prikazujejo izidi projekta oblikovanja spominske zbirke ogrlic v sodelovanju Srednje šole za uporabno umetnost in oblikovanje v Zadru in Etnološkega oddelka zadarskega Narodnega muzeja.

KLJUČNE BESEDE
geometrija, mozaik, okras, sodobna šolska praksa, vezenina

POVZETEK
Projekt *Zalistavac*, tekstilni mozaik v nakitu, je bil namenjen oblikovanju spominka, ki temelji na tradicionalni dediščini. Ohranjeno okrasno formacijo samostojnega dekorativnega predmeta tradicionalne tekstilne kulturne dediščine smo v skladu z zahtevami sodobnega modnega oblikovanja posodobili v novo podobo.

Za uspešno izvedbo projekta je kot predmet študije služil geometrični okras, njegova estetska in duhovna načela oblikovanja ter metode raziskovanja: analiza, projektna zasnova, modeliranje in oblikovanje.

Osnovna naloga projekta je bila prikazati možnosti za črpanje idej iz tradicije, ne da bi pri tem posegali v prvotni namen. Na ta način smo počastili vse izjemne ženske, ki so v preteklosti izdelale svoj prvi *zalistavac* in ga ponosno nosile.

Da bi približali lokalno kulturno dediščino, smo s projektom ustvarili sodobno oblikovan nakit. Pri tem smo se poslužili enake duhovne interpretacije estetskih načel in vizualnih elementov, kot pritičejo osnovnim komponentam *zalistavca*, in na ta način posodobili poetične podobe naših prednikov.

Rezultati projekta in spoznanja o tem dekorativnem objektu bi lahko bili predmet nadaljnjih raziskav in dejavnosti, s čimer bi ta in druge elemente tradicionalnih noš vključili v sodobno oblikovanje različnih modnih izdelkov.

SOCIALIST COMMISSION SHOPS AND THE RETAIL WITH USED CLOTHING*

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Original scientific article (1.01)

ABSTRACT

Acknowledging mostly normative and written sources, the article outlines the functioning of Slovene and Slovak examples of commission shops. It describes the commission shops of the Association of the Military War Invalids of Slovenia and the (Czecho-)Slovak stores *Klenoty* and *Bazar*. It notes that in times of economic shortages after 1945 such shops represented one of the few legal means of supplying the population with second-hand clothing while their functioning was ideologically encouraged as well as systematically managed. While (Czecho-)Slovak shops existed until the end of the 1980s, in Slovenia or Yugoslavia these shops eventually transformed and sold primarily luxury goods.

KEYWORDS

used clothing, commission shops, socialism, Slovenia, Slovakia

I sit on a bus approaching my temporary home, having a USB stick in my bag with the most precious material gathered during my stay in Bratislava. After unsuccessful research in the libraries I visited the Museum of Trade, located deep in the outskirts of the city, with offices furnished, in my impression, as the socialist ones were decades ago. Young or a bit less young employees of the museum readily and for as long as I desired helped me search through the material, scanned it immediately and explained it to me as much as they were able to. It was an "everything is manageable" approach while we haven't bothered to translate everything into nowadays common English, "since Slovene and Slovak after all are not so different, if we only want to, we can (as we have decades ago) understand each other." Equipped with my research treasure I therefore move away from the outskirts and margins of the city and museums, where—at least in my impression—time passes differently and this obviously has its strong benefits. Approaching the city centre, I'm struck by the uniqueness of the experience while one remark about the material a Museum's employee was scanning strongly echoes in my mind: nevertheless how the concurrent politics and therefore the archived documents tried to present and justify these shops, how the personnel tried to arrange, decorate and tidy them, Klenoty and Bazar shops were firstly and most of all an expression of deep poverty. Regardless of all the ways, how discursively, ideologically, hygienically … this poverty was supposed to be at least less obvious, it was always there. Omnipresent. Klenoty or Bazar shops were experienced through people's basic and pure needs and limitations, through their basic and pure feelings, which were constructing people's own truths and world-makings.[1] But how come does this particular employee's remark echo so strongly inside me? Exactly today, when my personal and pure truth is that finding this research treasure that justifies my whole stay in Bratislava acts as a kind of a parallel universe. Nevertheless, how important this research experience and treasure are today, they are emotionally incomparable to an experience which made me feel exposed to the bones and which triggered all of my deepest emotions of fear, disgust and shame. Which lifted up all the carpets and caused all the explanations and rationalisations to lose their power. Basically and cruelly. Revealing feelings as a headstone of all my attitudes and relations. It seems my feelings overlapped with the employees' impressions and images related to Klenoty and Bazar shops, which signal poverty, shame, disgust, marginality and from the standpoint of the lived experiences a survival strategy. However, these impressions and images are retrospective, imbued with contemporaneity. I wonder if they would correspond with the concurrent roles such shops had for the people, with concurrent attitudes towards them and concurrent emotions related to them.

*Translation: Mateja Habinc

[1] For an explanation of the concept see van de PORT, M. 2016, p. 167.

With this personal reflection from a research diary as an introduction to the article, I wish to sketch its basic topics, structure as well as limitations.[2] A couple of years ago my research interest, based on my lived experience of the second-hand clothing retail, started.[3] I concentrated on proving the falseness of the popular perception of a non-existing historical background of the second-hand clothing retail in Slovenia, which was followed by an interest in the specific type of second-hand shops known during the socialist decades, the commission shops.[4] At first I became interested in their relationship with foreign- or hard-currency shops, which are perceived as a specific type of the socialist retail, stemming from the socialist economies of shortage[5] and contributing to the socialist modernisation.[6] Hard-currency shops are defined as one of the forms of socialist consumption, as the internal, state-run black markets of the Eastern Bloc or as state governed ways of their monopolization. Desired, luxury and also Western goods were namely sold in such shops while at first only foreigners and citizens working abroad or their relatives were usually allowed to spend their foreign currency (or special coupons) there.[7] I wondered if they were anyhow related to the commission shops or if these represented another, specific type of shops known during the socialist years in various countries. In the present article, I am therefore trying to prove something as well as offer the readers at least some food for thought:[8] using literature and (archival, periodical as well as oral) primary sources, I am presenting what up until now I managed to find out about the commission shops in the socialist countries during the post-Second World War years, with a focus on Slovenia and Slovakia.[9] I try to reconstruct their role in providing people with clothing, shoes and accessories, and compare their role with the role some other historically known types of second-hand shops had or still have today. Nonetheless, the main limitation of such sketching is that I use (almost) no (concurrent) testimonies, impressions, experiences and attitudes of their consumers. Food for thought about the concurrent role of the commission shops is therefore offered mostly through retrograde ascribing and subjective interpretations, which, whether committing it or not—as the existential and phenomenological anthropology suggests—is also the case when we research the contemporaneity.[10]

In presenting the material and offering some food for thought about the commission shops I decided not to focus on the "modernising" aspects of the socialist consumption, but on the contrary, on those at least scientifically less explored strategies and tactics[11] of managing socialist poverty and shortages. There has already been some research on hard-currency shops, luxury and desired goods, which are often perceived as signs of (socialist) modernisation.[12] Besides that the research into various tactics of outsmarting the socialist

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[2] I am aiming for an "alternative organisation of textual representations, one which arguably suffers less from the academic imperative to 'distort reality into clarity'" (cf. van de PORT, M. 2016, p. 170). I find it important to "make our readers aware of the emotional undercurrents that accompany the eternal struggle to make a-story-to-live-by out of a world" (Ibid., p. 187). I'm also doubting "a separation between the 'material' brought from the field and its 'interpretation'" is wholly possible and am therefore inclined to essayistic accounts which generate an alternative kind of transparency—one which allows the reader to be the witness to an argument in the making. van de PORT, M. 2017, pp. 296, 298.

[3] HABINC, M. 2016. HABINC, M. 2018.

[4] HABINC, M. 2017. HABINC, M. 2019.

[5] Shortage is relative, culturally and historically dependent phenomenon, when associated with socialist societies, however, it is commonly perceived as either a social anomaly or as a crucial social glue connecting people while at the same time turning them against the state (CROWLEY, D., REID, S. E. 2010, pp. 15, 22). Nevertheless, perceiving socialist consumption in the context of the economies of shortage for some researchers it is one of a few dead ends of the anthropology of (post)socialism. See, for example THELEN, T. 2011.

[6] Both, Western as well as native researches, link socialist consumption with the (specific) modernization processes (BREN, P., NEUBURGER, M. 2012, p. 5). Luxury turning into ordinary and available is similarly often perceived as a sign of any society's modernisation, while in the socialist societies it was commonly associated with hard-currency shops. CROWLEY, D., REID, S. E. 2010, p. 23. MERKEL, I. 2010, p. 55.

[7] Ideologically but not also economically, such resale was in conflict with socialism, but if the state wanted to participate in a foreign trade, it somehow had to (legally) obtain foreign currency. BREN, P., NEUBERGER, M. 2012, p. 6.

[8] van de PORT, M. 2017, p. 298.

[9] Researching the situation in Slovenia I have checked post-Second World War address books, the holdings of the Historical Archive of Ljubljana and the Main Board of the Slovenian Association of the Military War Invalids (1945–1962) kept at the Archives of the Republic of Slovenia. I have checked all the issues of *Invalidski vestnik* [Gazette of the War Invalids] published between 1946 and 1954 as well as the issues published in 1962. In the National Museum of Contemporary History in Ljubljana I have examined the photographic material while I have also discussed the functioning of the post-Second World War commission shops with a few interlocutors. As already mentioned in the excerpt from the research diary, I found the majority of material related to Slovakia (photographs and documents) in the Bratislava's Museum of Trade.

[10] JACKSON, M. 2013, pp. 24–81.

[11] de CERTEAU, M. 1984, p. XIX.

[12] CROWLEY, D., REID, S. E. 2010; see footnote no. 16.

system, with smuggling being one of them,[13] is also very common.[14] On the other hand, I came across much less literature on the everyday legal provision of ordinary goods, among them clothing and footwear, bought through official retail channels. I therefore see the article as focusing on one type of shops, the commission shops, and thus as contributing to the knowledge about the diversity of the types of retail in the socialist countries, especially in Slovenia and (Czecho-)Slovakia. Still, it presents mostly the official, state-governed perception and role of such shops, and brings to light yet unexposed information,[15] which for the time being will hopefully satisfy at least some scientific curiosity and encourage its further blossoming.

BITS AND PIECES ABOUT COMMISSION SHOPS

As I have already mentioned in the introduction, a couple of brief entries about commission shops as a specific type of shops, different from the hard-currency shops, which I have found in the literature attracted my attention. Bartlett for example mentions that Western luxury goods were acquired in the Eastern markets in various manners, either through illegal black markets or in chains of various state-run shops supported by the regime, with the hard-currency shops being one of them.[16] In her opinion the existence of all such shops proves that the socialist states tried to control the inflow of Western goods as well as make earnings from their sale. Nevertheless, their offer could not satisfy the demands. In Moscow, for example, a chain of stores *Komok*[17] existed that was selling used as well as new Western goods.[18] *Komok* acquired goods from foreigners or Soviet diplomats, who bought them abroad and then sold them to the store for profit. According to Bryson it was also common for the people of the Soviet Union to sell goods which they considered needles, or which they simply did not like and were unsatisfied with. Since the state was afraid of the black market, it tried to regulate it also by establishing state-run commission shops. Such shops took 7 percent provision[19] and mostly sold clothing, furniture and books.[20] When defining various types of Polish socialist markets (legal, semi-legal, illegal) Kochanowsky also writes about the network of state-managed *komis* shops. For a price not higher than in regular shops they sold second-hand goods such as clothing, books, furniture, etc. redeemed from individuals, mostly Polish tourists. Such shops were one of a few traces of a market behaviour, there it was still possible, for example, to negotiate about the price while unsold garments were put on sale. However, *komis* shops mostly selling (legally) imported products and luxury goods (for example clothing, video tapes, cars etc.) were very rare and their effect on market as a whole was negligible.[21] Customers of such shops also had to present themselves with their IDs which is why more discreet and less formal channels of distribution soon appeared,[22] for example private and illegal *komis* shops, mostly selling merchandise of Westerners visiting Poland.[23]

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[13] For Yugoslavia and Slovenia see for example PROŠIĆ DVORNIĆ, M. 1990, REPE, B. 1998 and LUTHAR, B. 2006 who were among the first focusing on the tactical consumption practices. See also HYDER PATTERSON, P. 2011.

[14] Nevertheless Thelen for example perceives it as the second dead end of the anthropological research on post-socialism. THELEN, T. 2011.

[15] The material I found about (Czecho-)Slovak commission shops is presented for the first time and therefore also more in detail in this article while Slovene commission shops were already analysed in more detail elsewhere. HABINC, M. 2017. HABINC, M. 2019.

[16] The chain of state-run hard-currency shops Torgsin, which was supposed to finance industry, was established in the Soviet Union already in the 1930s. In the 1950s similar shops appeared in the Soviet Union (*Beriozka*), Czecho-Slovakia (*Tuzex*) and Bulgaria (*Corecom*), at the beginning of the 1960s *Intershop* was opened in Eastern Germany, while in the 1970s and 1980s the Polish *Pewex*, the Romanian *Comturist* and the Hungarian *Interturist* operated. See BREN, P. 2012, p. 34. GUENTCHEVA, R. 2009. IVANOVA, A. 2013. KERR, J. L. 1977. TOMKOVÁ, J. 2015. ZATLIN, J. R. 2007 and 2007a.

[17] Names of such stores (*Komis, Komisiona, Komok*) show their connection to historically and nowadays known type of second-hand retail, consignment stores which also sell goods for provision. BARTLETT, D. 2010, p. 299. The relationship among commission and consignment shops will be further elaborated in the following lines.

[18] BARTLETT, D. 2010, p. 267.

[19] Another type of commission shops paid off the seller immediately but sold goods for a much higher provision. Taxed flea markets providing immediate earnings existed as well. BRYSON, P. J. 2015.

[20] BRYSON, P. J. 2015.

[21] KOCHANOWSKY, J. 2017, pp. 17–18.

[22] A critical insight into the situation of Polish *komis* shops asserts merchants were employed there on average for two years while criminality was supposedly the highest among individuals supplying the shops with (foreign) goods. KOZICKI, S. 1960.

[23] KOZICKI, S. 1960, p. 176.

Image 1: A preserved signage of a *komis* shop probably from the 1960s in Gliwice, Upper Silesia, Poland, April 2019 (Photo: Jerzy Kochanowski).

Bartlett mentions Hungary also had its *BAV* company, The Company of Commission Stores, which also sold smuggled and desired Western goods.[24] In the German Democratic Republic already in 1948, when a system of fixed prices still existed, a chain of *HO* shops providing citizens with a limited amount of imported Western goods, mostly high fashion, was also established. At a very inflated price goods could be bought there for a GDR mark but in 1961 a chain of shops *Exquisit* replaced such *HO* shops while in 1966 a chain of shops *Delikat* selling luxury food was also established.[25]

COMMISSION SHOPS IN THE FIRST DECADES OF THE POST-SECOND WORLD WAR SLOVENIA

I have already written comprehensively about the commission shops (*Komisija, Komision, Posrednik*) in the first decades of the post-Second World War Slovenia elsewhere.[26] But to reflect upon the situation briefly—when comparing them with some other types of historically known second-hand retail, what binds them all together is a general description of the second-hand trade as (some) customers' "first option, but only a second choice".[27] In the past as well as today many people namely buy second-hand garments because they can afford them while they would not choose them if they would have other option. To apply this to the post-Second World War situation in Slovenia—until the 1960s it was very hard to obtain basic living goods, including clothing. Slovene commission shops managed by the Association of the Military War Invalids therefore offered a (legal) possibility to (sell as well as) buy clothing and became part of a general, massive supply. They existed from the late 40s and, according to oral sources, up until the 60s of the previous century. They were located in bigger Slovenian towns, however not in the Primorska region: there were commission shops (*Komisija* or later *Posrednik*) in Ljubljana, Maribor, Celje,

[24] BARTLETT, D. 2010, p. 266.
[25] MERKEL, I. 2010, pp. 55, 61, 63–64.
[26] HABINC, M. 2017.
[27] BARDHI, F., ARNOULD, E. J. 2005, p. 230.

Murska Sobota and for a couple of months also in Trbovlje. They sold various used or even new but damaged merchandise, which due to the (quality) regulations could not be offered in other stores: from technical wares and accessories, furniture and musical instruments to clothing, footwear and accessories which they bought from individuals or various companies.[28] These shops were relevant and important for the masses and were located in the very city centres and therefore symbolically as well as spatially understood as central categories.[29] As trading with used merchandise became stately governed and controlled, the commission shops of the first post-war years offered a wide range of used, as well as damaged basic living goods. At the same time, by taking care of the allowances for the disabled and their families, these shops contributed to the consolidation of the social status of one of the groups credited for the gained liberation, the new state and its socio-political order.

Image 2: Commission sale at Stari trg, Ljubljana, 15 December 1959 (Photo: Marjan Ciglič, National Museum of Contemporary History).

During the late and more developed Yugoslav socialism, as the literature further describes, commission shops (having the same name, *Komision*, *Posrednik*) were offering new, desired and smuggled luxury goods.[30] When, as a consequence of the modernising process, the choice was no longer led only by necessity and the necessity of choice regained its value, commission shops obviously needed to transform. How this happened and how both roles of the commission shops—as the suppliers of basic and of luxury goods—intertwined, still needs to be investigated. Nevertheless, as the sources and literature prove, in the post-Second World War Yugoslavia the commission shops had at least a dual role:[31] in the first (two) post-war decades at least in Slovenia they mostly sold used, damaged and common merchandise, while later, equally classified shops, with the same name and similarly as the hard-currency shops, sold mostly new, desired, Western items.

COMMISSION SHOPS IN (CZECHO-)SLOVAKIA

State-managed economic organisation *Klenoty* was established by the Czecho-Slovak Ministry of Trade on 24th March 1969. On the level of retail trade as well as in the wholesale[32] it mediated in the commission sales of (junk) jewellery, watches, antiques, used goods (also used machines, devices and their parts, motor vehicles and their parts),[33] artistic items, souvenirs, household goods, exotic/Oriental goods, handicraft items

[28] HABINC, M. 2017.
[29] STRASSER, S. 1999, p. 6.
[30] STUDEN PETROVIĆ, M. 2010. PANIĆ, A. 2014.
[31] HABINC, M. 2019.
[32] *Klenoty* wholesale was a partner of the retail companies *Jednota* and *Prior*. It supplied them with selected watches, jewellery and various Czecho-Slovak merchandise, while 30 percent of the goods *Klenoty* delivered were foreign. KLENOTY 40.
[33] Used goods were defined as still serving their purpose in spite of having already been bought and used in the past. A part of them was also a "merchandise, temporarily kept at various organisations (customs, financial department of national committees) as well as merchandise, obtained due to customers' complaints". REKLAMAČNÝ.

and carpets, pieces or parts of gold, precious materials and diamonds, as well as parts of other goods.[34] It also took care of the repair of watches, clocks and jewellery, of making copies of antiques, and of mediating in a (package) sale.[35] It bought garments from individuals or Czecho-Slovak as well as foreign (socialist or not) companies. *Klenoty* supplied itself also with the obsolete merchandise of Czecho-Slovak retail organisations, with garments bought at auctions, from cleaners and from insolvent or liquidated companies.[36]

Klenoty succeeded a company *Chronor*, which was established in 1949[37] and had 64 shops in the whole of Slovakia.[38] Already after two years of its existence, the number of *Chronor* shops (including the shops with repairs and the separate repair shops) grew—in 1951 there were altogether 36 *Chronor* shops throughout Slovakia, 55 shops with repairs and 22 separate repair shops, all in all 113 units of *Chronor*, 68 percent of which were the shops with repairs and the separate repair shops (SEZNAM).[39] In 1953 the company was already renamed into *Obchod klenotami, hodinami a starožitnostami, národni podnik* [The Retail with Jewellery, Watches and Antiques] and (at least in the Bratislava area) it oriented itself also towards selling antique and merchandise gained at auctions.[40]

In 1989, when the 40th anniversary of *Klenoty* was celebrated, there were 318 shops "offering not only classical goods and jewellery but also attractive goods in the shops *Starožitnosti* [Antique] and in the shops *Orient* a romantic scent of foreign countries".[41] At the same time as a part of *Klenoty* there were 17 *Autobazar* shops in Slovakia, selling 5,000 vehicles. "By mediating in a commission sale *Klenoty* offers interesting audio, video or computer technique" while "generally the shops *Bazar* selling used or cheaper goods were very well visited".[42] According to a decree of the Ministry of Finance, state shops named *Bazar* existed at least since 22nd December 1955, while at least since 1957 they could be opened in towns where at least two employees could be hired.[43] Elsewhere they could operate in mixed sales shops with their merchandise separated from the other merchandise. From the individuals older than 18 years (however not related to the employees) and from the domestic or foreign organisations, with which written agreements were signed, they bought and sold used merchandise.[44] It was taken into possession in the shops or at the customers' homes if they were not able to transport the goods to the shops themselves.[45] (*Bazar* shops were not supposed to sell goods

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[34] Parts of objects or incomplete objects were defined as new but with flaws (in how they were made, in their material, functioning, proper handling, storing etc.) while still serving their purpose. REKLAMAČNÝ.

[35] There were various types of *Klenoty* shops known (however, the source does not mention when): where only watches, clocks and jewellery were sold (however, where it was possible, their repair was also offered), where only watches and clocks were sold (and if possible repaired), where only jewellery was sold, where only antiques were sold and where only repairs of watches, clocks and jewellery were offered. ORGANIZAČNY PORIADOK, p. 4. VÝVOJ, pp. 1–2.

[36] ORGANIZAČNY PORIADOK, pp. 32–33.

[37] After the nationalisation in 1948 in 1950 there were 31 state companies under the supervision of the Ministry of the Inner Commerce. One of them was a company *Chronor*, established at the initiative of the Ministry in the second half of the 1949. Its management was in Prague, while the wholesale was governed from Prague, Brno and Bratislava. In 1951 the main units of the company were established: there were the main office, seven retail trade companies and three for the wholesale. Only in Slovakia there were two main retail trade shops in Bratislava and Košice and one wholesale company in Bratislava, which supplied shops in Bratislava, Nitra, Banska Bystrica, Žilina, Košice and Prešov, each of them having two or three branches on various locations. VÝVOJ, p. 1.

[38] In the area of Western Slovakia there were 16 shops (and/or repair shops) in the district of Bratislava, in the area of central Slovakia there were 13 shops in the Nitra district, 10 in the district of Banska Bystrica and 8 in the district of Žilina, while in the area of East Slovakia in the Košice district there were 13 shops and 4 shops in the Prešov district. SOZNAM, KLENOTY 40.

[39] In the Bratislava area there were 12 *Chronor* shops, 16 shops with repairs, 6 repair shops. In the area of Nitra there were 5 shops, 12 shops with repairs, 5 repair shops. In the area of Banska Bystrica there were 4 shops, 11 shops with repairs, 4 repair shops. In the area of Žilina there were 5 shops, 8 shops with repairs and 4 repair shops, while in the area of Košice there were 10 shops, 8 shops with repairs and 3 repair shops. SEZNAM.

[40] In the Bratislava area there were 25 shops (with repairs), 9 repair shops, 7 shops selling antiques (2 in Bratislava, one in Banska Bystrica, Žilna, Košice, Prešov and Nitra) and 1 auction shop. In the same year in the area of Nitra there were 16 shops (with repairs) and 7 repair shops, while in the Banska Bystrica area there were 15 shops (with repairs) and 5 repair shops. OBCHOD, KLENOTY 40.

[41] KLENOTY 40.

[42] KLENOTY 40.

[43] VNITŘNÍ, pp. 372, 380.

[44] Except for shooting products, ammunition, uniforms, copy machines, and objects the sale of which was forbidden by special laws. For example stamps, books, musical objects, chemicals, remedies, sanitary or medical equipment, health hazardous objects, food material, automobiles, tractors and the equipment related to them, motorcycles, electric material, machines, artistic objects, paintings, antiques, objects made from precious materials, antique Oriental carpets, silver goods, religious objects, non-taxed objects, etc. VNITŘNÍ, pp. 372–373.

[45] VNITŘNÍ, pp. 372, 374, 384.

which could be bought elsewhere while for a lower price they could also sell defected or outdated merchandise, merchandise of a worse quality or made of left-overs or waste, objects gained at auctions, from prisons or from the shop *Obchod klenoty, hodinami a starožitnostmi*[46]. The price of goods sold to *Bazar* shops was not supposed to be higher than 75 percent of the price of similar merchandise in other shops. On the other hand, the highest price of an object *Bazar* shop was selling could not be higher than 90 percent of the (new) object's (market) price, while 16 percent of the set price was tax.[47] The organisations which sold merchandise through *Bazar* shops received the money by a transfer from the Ministry of Finance, while individuals could collect it in three days after the purchase at the post office or, if so agreed, personally at the shop.[48] The following conditions of the commission sale had to be, in order not to be violated, publicly presented in each *Bazar* shop: "Ask for an invoice when making a purchase". "We do not accept complaints". "Preferential sale, reserving a merchandise and making a deposit is forbidden".[49] "We only accept cleaned, washed, chemically treated and repaired items".[50]

Image 3: The interior of the *Bazar* shop in Michalovce, Slovakia, 1984 (Muzeum obchodu Bratislava, folder no.: SOC 074-73-81, photography no. 10-903).

A COMPARISON: SIMILARITIES AND DIFFERENCES BETWEEN SLOVENE AND SLOVAK COMMISSION SHOPS

The conditions of a commission sale in *Bazar* shops asserted what should be avoided: selling dirty and damaged, useless second-hand garments as well as various informal (and/or illegal) ways of obtaining a merchandise (black-market sale and various social skills related to personal profiteering). Nevertheless, if conditions of a sale needed to be publicly presented, they obviously related to existing practices and tried to prevent them: in Slovenia as well as in Slovakia at least in the 1950s the shortages namely caused that information was highly valued. As one of my interlocutors said: "It was important to know and to have information".[51] Employees of commission shops were therefore tempted to abuse their position—for example for buying off merchandise for their own benefits, selling their own merchandise, hiding or passing on information about the merchandise etc., while some sources also report about their criminal acts.[52] In Slovakia it was similarly important to have access to the information about the goods offered in *Bazar* shops while their employees were forbidden to use it for any personal benefits. However, after signing a special agreement in *Bazar* shops it was nevertheless possible to make a reservation for an object an individual desired.[53]

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[46] The merchandise which was repaired or cleaned by the *Obchod klenoty, hodinami a starožitnostmi* but was not collected on time. VNITŘNÍ, pp. 383–384.

[47] If an object was not sold in three months, the shop could lower its price for 30 percent, if it was not sold in another three months, it could be sold at a highest price offered. VNITŘNÍ, pp. 375, 379, 385.

[48] VNITŘNÍ, p. 375.

[49] However, as already shown, exceptions to this were possible.

[50] VNITŘNÍ, p. 378.

[51] Orožim Anton, Društvo vojnih invalidov Ljubljana, 9 December 2016.

[52] HABINC, M. 2017.

[53] Not directly to its owner but to the *Bazar's* salesman one had to pay a deposit for such a merchandise and it had to be "at least 100 KČS but no more than 200 KČS". This was however only allowed for the objects of "a higher price (piano, furniture, refrigerator)". VNITŘNÍ, p. 375.

If the specific position of employees was one of the similarities between *Komisija*/*Posrednik* and *Klenoty*/*Bazar*, there were also some other similarities as well as certain differences among the commission shops known in Slovenia and Slovakia. In both countries the state-managed sale of used as well as damaged goods existed since the first post-Second World War years. During the years of (the biggest) shortages, the buying and selling of various merchandise from citizens and companies as well as from foreigners and foreign firms or organizations was a part of massive consumption.[54] In Slovakia the scope of merchandise broadened in time (from mostly jewellery, watches, clocks to antiques and other used items) while in Slovenia commission shops selling various second-hand garments, mostly clothing, footwear, furniture, technical, musical and household items, existed at least until the end of the 1960s. In the following decades of the socialist Yugoslavia they were more comparable to hard-currency shops, offering mostly desired, luxury and Western goods.[55] In Slovakia, where *Klenoty* and *Bazar* shops existed throughout the 1980s, in time they specialised according to the merchandise they were selling (or/and repairing)—they specialised into shops offering mostly jewellery, watches and clocks; into shops offering exotic/Oriental garments; into *Bazar* shops, offering used everyday merchandise; and into *Autobazar* shops selling used vehicles etc.

But nevertheless the changes in the development of the variety of goods the Slovene and Slovak commission shops were selling was astonishing. One could find there not only used or damaged, home-made or imported, desired goods, goods sold by individuals and companies, goods cherished because of their exoticism or modernity, but also goods which were temporarily kept by the customs or various state institutions. As already Vlasek emphasised: it was possible to find goods at places or institutions where this was hard to imagine—used cars for example in a company which by its name implied a sale of jewellery (*Klenoty*).[56] According to him this illustrates how the information about the supply was dispersed while I am adding that first of all this is an illustration about the importance of the information.

Besides the variety of merchandise sold in the commission shops either in (the first two post-war decades) Slovenia or Slovakia, what also binds Slovene *Komisija*/*Posrednik* and Slovak *Klenoty*, *Bazar* and similar shops is they all signal how important reuse was in both countries. In the times of economic shortages, non-massive production and consumption (which, however, lasted differently in Slovenia and Slovakia) was important not only on the everyday, practical or even tactical level of "people getting along".[57] Commission shops were supposed to alleviate the consequences of shortages while at the same time they were a clear example of proving that both states had a systemic and ideologically governed attitude towards used garments and their reuse. Nevertheless, (Western) literature usually portrays socialism as wasteful and creating a lot of rubbish, but as already Gille noted, this image is incoherent with her memories and practices of saving and collecting waste in socialist Hungary.[58] Similarly in Slovenia, for example, where private ownership and businesses were after 1945 perceived as exploitative, private antique or commission shops which existed already before the Second World War were mostly nationalised. Since 1947 in Ljubljana at least much of their merchandise was handed

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[54] Commission shops can be therefore hardly compared to the (contemporary or historically known) consignment stores. The latter were and still are mostly selling well-preserved clothes used for a season or two while their retailers have to sustain very good relationships with the clients who therefore continuously bring only quality merchandise to the store thereby ensuring its sale. HAN, J. 2013, p. 6. HABINC, M. 2016. HABINC, M. 2019.

[55] In Slovenia a commission shop *Posrednik* merged with a company *Dom* in 1979, which sold handicraft items throughout Yugoslavia since 1946 and since 1949 specialised in export. (PLENC, V. 2014, p. 268, p. 270. BOGATAJ, J. 1986, p. [15]. On the other hand, fashionable, mainly smuggled Western goods (among them clothes as well) were obtained in Serbian commission shops *Komisioni* already since the 1950s. STUDEN PETROVIĆ, M. 2010, p. 529. Many individuals bought their first jeans, Allstar sneakers, nylons, etc. there, while at the same time they redeemed antiques, paintings or valuables from once wealthier members of the bourgeoisie, thus helping them to survive in a new economically and ideologically adverse post-war situation. KOMISION, in: Leksikon Yu-mitologije. URL: http://www.leksikon-yu mitologije.net/komision/ (quoted 10. 6. 2019). Since the 1950s such "shops with seized and smuggled goods from abroad", twenty-five of them in Belgrade and another twenty-five in Zagreb, where they were called *Posrednik* and were still widespread even in the 1980s. PANIĆ, A. 2014, pp. 64–65. They offered also garments of the developing Yugoslav fashion industry which copied its Western counterpart. KOMISION, in: Leksikon Yu-mitologje. URL: http://www.leksikon-yu mitologije.net/komision/ (quoted 10. 6. 2019). HABINC, M. 2017. HABINC, M. 2019.

[56] VLASEK, V. 1993, p. 214.

[57] For example "the field of socialist fashion" was based on "tactical imitation, especially when using cheap materials and homemade sewing is considered". Due to the "socialist economic ethos" in Slovenia people massively continued to remake clothes by themselves at least until the 1970s and 80s. PUŠNIK, M. 2014, p. 173.

[58] GILLE, Z. 2007, p. 3.

over to the newly established enterprises of the Association of the Military War Invalids, which took over the retail with used goods due to ideological reasons:[59] "'What about the antique?' many would ask and shrug with their shoulders. But precisely because of such a service of the disability organization many socially weaker individuals are protected from the speculative exploitation of a man by another man" (1948). During the times of non-massive production and consumption (Czecho-)Slovak[60] *Klenoty* were also supposed to contribute to the modernisation of the society by contributing to the extent and popularisation of once elite items, for example jewellery and watches, which were with the repairs and reuse becoming more common and widespread. As the excerpt from the leaflet celebrating the 40th anniversary of the company for example emphasised: since in the pre-socialist past only the richest used jewellery while watches were perceived almost as a relic handed down the generations, at first the entire traffic of *Chronor* and the company *Obchod klenotami, hodinami a starožitnostami* was around 100 million KČS. However, at the end of the 80s *Klenoty* bought off for more than 380 million KČS of jewellery each year. Jewellery was sold by grams and the shops provided more than a few dozens of kilograms of it or half a million pieces of earrings, bracelets, etc. each year. *Klenoty* also sold annually more than 100.000 pieces of watches produced either in Czecho-Slovakia or outside the country (mostly in the Soviet Union).[61] It is not negligible that already the Museum of Trade in Bratislava was according to its employees founded as an archive of the Czecho-Slovak Ministry of Industry.[62] It was intended to document the success of socialist retail and industry in order to prove their economic improvements and systemic benefits, which also explains why nowadays the photographs of *Bazar* shops are much rarer than of *Klenoty* or other shops, why mostly technical wares and the knowledge of repairing watches and clocks were photographed, why the tidiness of the shops or of the display windows was often exposed. Reuse as well as ordering and tidying the chaos (of waste) seemed systemically important—were they all a proof of caring for the massive supply, of using what was available and thereby underlining the contrast with (wasteful, careless) capitalism? At least on a normative and ideological level I can imagine all this was a justification of the existence of either *Chronor*, *Obchod klenoty, hodinami a starožitnostmi*, *Klenoty*, *Bazar* or even *Komisija* and *Posrednik*.

Returning to the essayistic begging of the article much more cannot be said about the reception of such ideas. A part of the complexity of the types of retail as well as consumerism fostered by the socialist economies of shortage,[63] as the material proved, were also the commission shops. As described, they had basic common grounds, but they varied in time and place, and various types of commission shops were differently accepted by the consumers. If for example in the 80s of the previous century (Czecho-)Slovak *Bazar* shops were "very well visited",[64] Žídek on the other hand perceived *Orient* shops as an example of the socialist overemployment. While they had very few or even no customers, the number of their employees according to him did not decline.[65] In any case this is just a starting point, bits and pieces to depart from towards further, more extensive research about the reception of the commission shops not only in Slovenia and Slovakia but in other countries as well. Nevertheless, I can still reflect one more time on a note echoing so strongly after my visit of the Museum of Trade in Bratislava: *Klenoty and Bazar shops first and most of all were an expression of a deep poverty … signalling poverty, shame, disgust, marginality and from the standpoint of the lived experiences a survival strategy.* Yes, this was a momentary personal generalisation, not acknowledging all the differences related to the variety of the commission shops and their customers. It nevertheless reflected what the employee perceived as a general feeling related to the whole category of the commission sale: it was an option, but to what extent was it also a first choice not originating in a material, existential or social need but in some other purpose that people could for example be more proud of and thrilled about?

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[59] HABINC, M. 2017.

[60] During the fifth five-year plan of Czecho-Slovakia, at the beginning of which there were still shortages, life standard rose and according to Sučanský this could be noticed also in the quality, fashionability and aesthetics of clothing and textiles. In the mid-70s, when fashion started to change rapidly, this was harder to follow similarly as it was hard to provide enough pillows, underwear, pyjamas, coats and innovative goods. SUČANSKÝ, A. 1976, pp. 205–206. On modernisation and the reception of fashionable novelties in Slovakia see OPÁLENÁ, J. 2009 and TOMKOVÁ, S. 2015.

[61] Already a name of a company (*Klenoty* – jewellery) possibly made an intentional link with the pre-socialist past: according to my personal communication with Zuzana Šidlíková, author of the book on the history of fashion in Slovakia (ŠIDLÍKOVÁ, Z. 2017), *Klenoty* could be associated with a prominent Slovak pre-Second World War jewellery producer, *Jablonecká bižuéria*, which can be, for example, compared with *Swarovski*. Elite products were supposed to become widespread and available to everybody.

[62] Storing mainly local and regional material while the material that was perceived as nationally important was kept in Prague.

[63] BREN, P., NEUBURGER M. 2012, p. 5.

[64] KLENOTY 40.

[65] ŽÍDEK, L. 2019.

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SOCIALISTIČNE KOMISIJSKE TRGOVINE IN PRODAJA RABLJENIH OBLAČIL

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Izvirni znanstveni članek (1.01)

IZVLEČEK

V članku je predvsem na primeru Slovenije in Slovaške, zlasti upoštevajoč normativne in pisne vire, orisano delovanje komisijskih trgovin Zveze vojaških vojnih invalidov Slovenije in (češko)slovaških trgovin *Klenoty* in *Bazar*. Ugotavljamo, da so v času ekonomskega pomanjkanja po letu 1945 te trgovine pomenile enega redkih legalnih načinov oskrbe prebivalstva tudi z rabljenimi oblačili ter da je bilo njihovo delovanje ideološko spodbujano in sistemsko upravljano. (Češko)slovaške trgovine so obstale vse do konca 80. let prejšnjega stoletja, na Slovenskem oziroma v Jugoslaviji pa so se sčasoma preoblikovale in usmerile predvsem v prodajo luksuznih dobrin.

KLJUČNE BESEDE

rabljena oblačila, komisijske trgovine, socializem, Slovenija, Slovaška

POVZETEK

V članku so predvsem na primeru slovenskega in slovaškega gradiva predstavljene komisijske trgovine kot vrsta trgovin z rabljenim blagom; tako se osredotočamo na enega od doslej manj obravnavanih načinov legalnega vsakdanjega oskrbovanja z dobrinami v obdobjih njihovega pomanjkanja. Članek temelji na pisnih virih, zato so predstavljeni predvsem normativni vidiki vloge teh trgovin v socializmu, v spoznanjih o njihovi sprejetosti in pomenu za ljudi pa so retrogradno upoštevani predvsem izkušnje in vtisi. Po uvodni predstavitvi metodologije, strukture in omejitev raziskave so v besedilu nanizani drobci gradiva o teh trgovinah v različnih socialističnih državah, v nadaljevanju pa se osredotočimo na komisijske trgovine Združenja vojaških vojnih invalidov Slovenije v prvih desetletjih po drugi svetovni vojni in na delovanje nekaterih komisijskih trgovin, znanih od prvih povojnih let do konca 80. let 20. stoletja na (Češko)Slovaškem. V Sloveniji so prodajalne rabljenih vsakdanjih dobrin sprva delovale le v večjih slovenskih mestih in so bile med drugim pomembne zaradi utrjevanja družbenega statusa vojnih invalidov. Njihova vloga pa se je v Sloveniji in Jugoslaviji med drugim tudi zaradi modernizacije in socialističnega potrošništva sčasoma preoblikovala, saj so postajale predvsem prodajalne zaželenih zahodnih dobrin. Prodaja rabljenih dobrin je bila podobno sistemsko uravnavana tudi na Slovaškem, kjer je vse od prvih let po drugi svetovni vojni obstajalo več vrst komisijskih trgovin, ki so se sčasoma specializirale: v prodajo (in/ali popravilo) ur in nakita, prodajo "eksotičnega" blaga, rabljenih oblačil in drugih vsakdanjih predmetov, rabljenih avtomobilov in podobno. Ne glede na razlike v organiziranosti in razvoju komisijskih trgovin v obeh državah je bilo vsem skupno, da so bile v obdobjih ekonomskega pomanjkanja ključne predvsem informacije o ponujanem blagu in s tem odnosi z njegovimi prodajalci. Prav tako so komisijske trgovine obeh držav trgovale s presenetljivo raznolikim blagom, saj ni šlo le za rabljene in poškodovane stvari, ampak denimo tudi za zaseženе predmete. Sploh v desetletjih velikega pomanjkanja je bila družbeno izjemno pomembna tudi ponovna uporaba oziroma popravilo rabljenih predmetov, ki ni bilo le ekonomsko upravičljivo, ampak je imelo tudi ideološke namene – da denimo nekoč elitni predmeti postanejo dostopni množicam.

MUSEUM FASHION MONTH*

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Professional article (1.04)

ABSTRACT

The project Museum Fashion Month has been organized by the Maribor Regional Museum since 2013. It is traditionally based on the presentation and popularization of museum objects from collections of clothing culture, which comprises about 10.000 objects and represents the unique and largest collection of its kind in the country. Within the project, we are presenting museum objects by pointing out the importance of the culture of clothing of the past and setting parallels with contemporary fashion trends. Through temporary museum and guest exhibitions, we organize professional consultations, fashion gatherings, fashion shows, and permanent collaboration with individuals and students of fashion design, who draw inspiration from the past to create new ideas in the future. With the project we are creating an important role in the field of clothing culture, which plays a significant role of visual art within the cultural history.

KEYWORDS

fashion, museum, museum collection, culture of clothing, textile

INTRODUCTION

The Maribor Regional Museum holds collections of fashion, uniforms, liturgical garments and textiles of other uses. They have an important and unique place in the Slovenian museum space, and above all, they offer many different interpretations of the material. The reason for creating collections of clothing culture were objects, which were already stored in the museum, as well as others, that were specially collected for two occasional exhibitions, prepared in the museum under the direction of dr. Sergej Vrišer: Three Hundred Years of Fashion in Slovenia in 1965. The exhibition marked a major shift towards the systematic study of fashion and culture of clothing in the Museum. This was a beginning of a brand new chapter, new insights and interests emerged in the field of clothing culture in Slovenia.

In 1973, a permanent exhibition of a collection of clothing was set up with four exhibition spaces and necessary storages. In this way, the collection was also able to progress through the careful collection policy of dr. Andreja Vrišer. Over the years, several occasional exhibitions of various fashion and textile themes took place. In 2004, the renovation of the castle began, the permanent setting withdrew from the venue, and occasional thematic exhibitions continued.[1]

The idea for the project Museum Fashion Month was created with the desire for recognition and popularization of the objects from collections of the culture of clothing, which has not yet been presented to the public, in cooperation with different individuals and institutions, with parallels between the past and the present.

With the new, modern storages, the new permanent exhibition Open storage of fashion clothes and accessories and the Museum Fashion Month project, the Maribor Regional Museum remains the centre of study of culture of clothing in Slovenia, which communicates with a wider audience, with institutions and individuals, including students of design and textile study programmes, who learn historical clothing and draw inspiration for contemporary creativity.

FASHION IN MUSEUMS

In recent years, fashion has appeared with increasing frequency across museums of art and cultural history. Fashion in museums demonstrates an alternative to new museology – a fashion museology or dress

*Translation: Karina Radoha

[1] PMM, archival fond Vrišer Andreja, razstave 1965 – 2008.

museology – that appeals to broader visitor groups, especially visitors beyond regular museum audiences.[2] Fashion dusts off the museum and makes it inviting, dynamic and attractive.[3] It is a subject that engages non-standard museum-goers, it can become a lens through which our past and present can be told and explored in a much more nuanced way. Fashion in museum goes hand-in-hand with a new, broader reception of what constitutes art, as well as a growing academic interest in fashion studies.[4] The strength of fashion exhibitions is their ability to reach new audiences for the museum, in terms of both age and socioeconomic background, because fashion exhibitions have a unique potential to produce presence within the context of interpreted meaning.[5]

Fashion in museums is a 20th century phenomenon. The historic development of fashion in museums can be viewed through a structure of three different periods of time. The first period was the time before Second World War, the focus was more on dress or costume than on fashion. The second period was from the 1960s to 1990s, when fashion in museums became visible. The third period was from the late 1990s until today. It intensified focus on fashion in museums, the development of new specialized fashion museums, the spread of fashion exhibitions and the spectacular visual shows on the high-profile haute couture fashion shows.[6]

THE CULTURE OF CLOTHING COLLECTION AT THE MARIBOR REGIONAL MUSEUM

The first systematic study of clothing culture in Slovenia was established by Dr Angelos Baš, slovenian ethnologist, who in 1959 completed his doctorate with dissertation of the Culture of clothing in the late Middle Ages and the 16th century in Slovenia.[7] He continued his research of Slovenian clothing culture in 17th, 18th and 19th century. Maribor Regional Museum began systematically collecting historical clothing, like it was allready established in Europe and opened a temporary exhibition in 1965 with the title Three Hundred Years of Fashion in Slovenia, under the direction of Dr Sergej Vrišer, a longtime director of Maribor Regional Museum. The exhibition showed aristocratic and bourgeois fashion from 17th – 19th century in Slovenia.[8] It aroused interest in the field of dress history and attracted many people, who started to donate clothes and other fashion accessories to museum. The collection started to grow rapidly and in 1973 the first permanent exhibition of the collection was set up, with four spaces and 350 museum objects put on display.[9] The collection was also able to progress through the careful collection policy of Dr Andreja Vrišer, its first curator. Under her strategy several occasional exhibitions of various fashion and textile themes took place. She continued with the research of fashion history in Slovenia and completed her PhD degree with the theme Fashion of Biedermeier and Second Rococo Periods in Fine Arts and Photographs in Slovenia.

In 2004, the renovation of the Maribor castle began and the permanent setting withdrew from the venue. Through the years until 2019 the Collection of clothing culture raised to more than 10,000 objects. It consist of the Fashion collection, which represents a central collection of the country's fashion and consist of app. 6,000 items, including aristocratic and bourgeois fashion clothing from the 17th century onwards and also a wide variety of women's, men's and children's clothing, footwear, headgear, various fashion accessories, fashion graphics and newspapers. It also consist of The Collection of uniforms, which includes more than 3,000 military and civilian uniforms. Among the military ones are uniforms and equipment of the Austrian, German and French armies before 1918, uniforms from World War I and II and uniforms from the 1st and 2nd Yugoslavia. Among the civilian uniforms are uniforms of public servants, fire fighters, uniforms used by members of the Sokol gymnastic association, railway, customs and postmen's uniforms, as well as town constables, aviators and other uniformed jobs. The third collection is The liturgical textile collection, which includes artefacts from the 17th to mid 20th century such as liturgical clothes (mass coats), mass garniture as well as different parts of paraments. The collection also includes mass pillows, a ciborium cloak, tablecloths and different types of fabric. The museum also keeps The collection of textiles, which includes different textiles for other uses such as non wearable textiles (home textiles, semi-finished products, patterns, embroidery,…).

[2] RIEGELS MELCHIOR, M. 2011, p. 8.
[3] Ibid., p. 6.
[4] FUKAI, A. 2010, p. 288.
[5] RIEGELS MELCHIOR, M. 2011, p. 8.
[6] Ibid., p. 3.
[7] VRIŠER, S. 1965, p. 3.
[8] Ibid., p. 5.
[9] Ibid., p. 3.

In 2019 the new permanent exhibition was set up in the form of the Open storage of Fashion clothes and accessories. It shows the chronological development of historical clothing, footwear and headgear from the 17th century until today as well as diferrent fashion accessories.

With the modern study storages and new permanent exhibition the Maribor Regional Museum remains the centre of knowledge and study of clothing culture history in Slovenia.

MUSEUM FASHION MONTH AT THE MARIBOR REGIONAL MUSEUM

The project Museum Fashion Month was created in 2013 with the desire for recognition and popularization of the objects from museum collections of the culture of clothing in cooperation with different individuals and institutions. It is designed traditionally and limited to a period of one month, during which several events occur at regular intervals. The project starts on the second week in May and lasts until the end of May. Every year it consists of a temporary exhibition of museum objects put on display on a yearly selected topic, guest exhibitions and various accompanying programmes (professional consultations, discussions with designers, fashion shows etc).

The project has five basic focuses:

- to present museum objects in a new, contemporary way, while at the same time pointing out the importance of history of the culture of clothing and to educate and promote awareness of the importance of that visual art;
- to invite more visitors, especially of younger and middle aged generations and different creators with the quality, attractiveness and media support of the project;
- to open the museum widely and connect it with the city, other institutions, individuals and the local community, to foster creativity and cooperation in a long-term with a professional and trendy approach;
- to enrich museum collections with donations of contemporary designers' products;
- to make the project long-term.

MUSEUM FASHION MONTH 2013

The starting point of the Museum Fashion Month in 2013 was to look at the Slovenian culture of clothing in the past with Slovenian and world contemporary fashion trends.

The starting point was carefully chosen based on the premiere of the project, as we wanted to draw attention to the importance of local / Slovenian clothing culture in the past and to place it on the contemporary stage of creativity and actuality. At the same time, the starting point was related to the General Museum Theme of 2013 (ICOM): Museum (memory & creativity) = social change.

As Tanja Roženbergar, head of the Slovenian Committee of the International Council of Museums pointed out: "At the same time, the theme is imperative for the social activation of museum institutions, with an emphasis on the power and charge of cultural heritage and its opportunities for constructive social change. This theme characterizes contemporary Museums as universal institutions with a positive social impact, encourages active involvement and activation of museum institutions in the society, emphasizes the power and charge of the richness of cultural heritage and its opportunities for constructive social change. The optimistic theme, with its wide range of content and concept options, rounds out the complexity of museum tasks and missions, and calls for community engagement, development and understanding. A theme that gives institutions the volume and relevance."[10]

The selection of museum objects for the temporary exhibition were related to current global trends in the fashion capitals of New York, Milan, Paris and London. The exhibition highlighted the phenomenon of fashion as a constant change, and above all, a return in a new disguise. We spoke clearly about this with the help of clothes from museum collections, which we set aside modern trends and pointed to the origin of individual details in the past. We hosted two occasional student exhibitions. In the first one, historical artworks from the collection of the Maribor Regional Museum became the inspiration for the fashion creations by students of the Department of Design and Textile materials from the Faculty of mechanical engineering at University

[10] Tanja Roženbergar, Head of the Slovenian Committee of the International Council of Museums (ICOM), 2013.

of Maribor. In the second exhibition, the students from the Faculty of Design, Ljubljana, presented the results of their thesis Collar - decoration or function? We hosted the renowned fashion creators Erik Maj Potočnik and Matjaž Plošinjak, who also look at the clothing culture of past centuries (Spanish fashion of 16th century) when designing their clothes. We referred to art as a source for the study of clothing culture, as inspiration to fashion designers in designing collections, and highlighted the phenomenon of clothing, which in modern times can also represent works of art. The next event was dedicated to fashion designer Coco Chanel, who today represents the world's unmatched fashion icon. Before playing the movie Coco Chanel & Igor Stravinsky, we introduced the exhibited objects from the museum collection of fashion, which clearly illustrated the typical fashion of the 1920s, mainly related to Coco Chanel. We organized the fashion show at the Knights Hall of the Maribor Castle, where we hosted established Slovenian fashion designers who presented their fresh collections (Maja Štamol & E2RD, Irena Rojs, Nena Florjančič, Neli Štrukelj, Mojca Celin, Almira Sadar, Alice Bossman and Urša Drofenik). We also hosted a dress culture consultant, Lea Pisani, who presented her new book Dress - What, When, How. The last event was entirely dedicated to young students from the High School of Design Maribor and students of the Faculty of Mechanical Engineering Maribor - Department of Design and Textile Materials, who presented their final fashion products.[11]

Image 1: Museum Fashion Month 2013, Museum Exhibition, May 2013 (Photo: archive Maribor Regional Museum).

MUSEUM FASHION MONTH 2014

The starting point of Museum Fashion Month in 2014 was the anniversary of the beginning of the First World War. The general theme was fashion in the 1920s. The exhibition featured clothing from the museum collection that showed the typical fashion of the 1920s. "RE20" was the temporary exhibition of students of Design and textile materials from the Faculty of Mechanical Engineering at the University of Maribor. We hosted Petra Kancler, Almira Sadar and Aljoša Bagola for the fashion conversations, organized a fashion show of Draž knitwear and Charleston dance night.[12]

MUSEUM FASHION MONTH 2015

The starting point of Fashion Month at the 2015 Museum was the fashion period of the 1950s. After the World War II, marked by scarcity and suffering, there was a period of change. New life required new images, fashion flourished again, and Rock 'n' Roll dictated a rhythm of contrasts.

The whirlwind of the stormy fifties also covered Maribor. The citizents longed for freedom of expression, especially in the field of music and dance and other social events. The first fashion content magazines appeared at the market and young people in Maribor also tried to follow the fashion guidelines dictated by Paris and Milan. A temporary museum exhibition showed typical culture of clothing of the 1950s in Slovenia. We presented contemporary creations by established fashion designer Maja Ferme, who sought her inspiration in the 1950s, in collaboration with Warner Bros. The Interview with guests Maja Ferme, Nina Gazibara and Edward Clug followed. The students presented their look at this vibrant and colourful time, combining their

[11] HREN BRVAR, M. 2013, p. 2-6.
[12] PUNGARTNIK, T. 2014, p. 2-5.

ideas, creativity and imagination in a fashion show and temporary exhibition. Slovenian designer Suzana Rengeo introduced a collection that was enriched by the new E2RD jewellery collection.[13]

MUSEUM FASHION MONTH 2016

The starting point of Museum Fashion Month in 2016 coincided thematically with the OIDFA International Lace Festival in Ljubljana in June 2016. It was a great honour and a privilege for Slovenia, which has a rich and still living tradition of lace making. The decoration and enrichment of fabrics (lace and embroidery) had a special place in cultural history in the past and that was the main theme for the project.

The exhibition featured museum objects that were related to handmade art (lace and embroidery): aristocratic and bourgeois clothing with lace and embroidery applications, liturgical clothing and textiles, fashion accessories, underwear with lace details and other textiles, embroidered school patterns and portraits from the museum collection of fine arts, showing lace and embroidery on portraits. As part of the exhibition, we connected the Slovenian tradition (museum objects) with contemporary trends in fashion capitals (Paris, New York, London, Milan) - well-known and established fashion designers who, in designing their collections, incorporated lace and embroidery into their products. We introduced already established Slovenian artists who are involved in handmade works. They presented their stories of success (Alja Novak Viryent, Bricman - Porcelain Catbriyur, Tina Koder Grajzar, Manca Ahlin and Petja Zorec). We invited students of fashion design to create and present contemporary art products on lace and embroidery in the form of a fashion show and a temporary exhibition. We hosted students from Faculty of Mechanical Engineering from University of Maribor, Faculty of Natural Sciences and Engineering from University of Ljubljana and Faculty of Textile Technology from University Zagreb, Croatia. The special event was entirely dedicated to the Slovenian tradition of lace art; in the form of an occasional exhibition of lace-making products and occasional lace-making workshops. The project ended with a fashion show of underwear in collaboration with the brand Triumph.[14]

MUSEUM FASHION MONTH 2017

The Museum Fashion Month in 2017, under the general title of Fashion and architecture, thematically linked to famous Slovene architect Jože Plečnik and his 60th anniversary of death. We presented the connection between the forms, structures, patterns and other details of clothing fashion with the forms also found in architecture and created a mix of fashion and architecture. Fashion and architecture share similar concepts and theories and are based on the practices of visualisation, they are also similar in structure, form and aesthetics, and both flow harmoniously between art, science and technology. The central part of the project was dedicated to the temporary museum exhibition of the objects from the museum textile collection, which showed lines, geometric shapes, patterns and other details, which are also found in architecture. We hosted three temporary exhibitions from established fashion designers Amila Hrustić from Bosnia and Herzegovina, Petra Bole and Nelizabeta. At the fashion show we represented Neža Pavrič, Tina Gorkič, Nataša Peršuh and NEO Design from Serbia. We hosted Slovenian fashion designer Irena Rojs, who originally blended fashion and architectural elements into wearable futuristic creations with the project "Coats of Plečnik's Chairs". We also hosted Slovenian fashion designer Tanja Devetak, who, at the 150th anniversary of the birth of an architect and urban planner Max Fabiani, presented creations under the name "Fabiani Fashion", reflecting the influences of individual selected architectural and urban designs by Maks Fabiani in Ljubljana. Architectural structures were transferred to textile structures using various techniques of mould modelling and textile pattern formation. We invited students from the High School of Design Maribor, students from the Faculty of Mechanical Engineering Maribor and students from the College of Design of Ljubljana. They explored the connection between architectural designs and clothing culture, and used the results of their knowledge to create products and creations that were featured in a fashion show.[15]

[13] PUNGARTNIK, T. 2015, p. 2-5.
[14] HREN BRVAR, M., PUNGARTNIK, T. 2016, p. 2-8.
[15] HREN BRVAR, M. 2017, p. 2-6.

Image 2: Museum Fashion Month 2017, Leaflet cover, May 2017 (Photo: archive Maribor Regional Museum).

MUSEUM FASHION MONTH 2018

The Museum Fashion Month 2018 commemorated the 100th anniversary of the end of World War I, with the general theme of Uniform and Uniformity, as a reminder of social order, an organization, affiliation, recognition, unity and tradition. The permanent museum exhibition Open storage of uniforms, where we exhibited military and civilian uniforms from the museum collection, we also highlighted the importance and phenomenon of uniformity in the form of psychological, social, historical and symbolic role. We hosted experts in various segments of uniformity (Lea Pisani, Boštjan Marolt, Vesna Vranešič, Sonja Šterman, Branko Rožman, Nataša Dolejši, Marijan Ojsteršek and Simona Porš), students of fashion design from four institutions (High School of Design Maribor, Faculty of Mechanical Engineering, University of Maribor, Faculty of Natural Sciences and Engineering, University of Ljubljana and Faculty of Design, associate member of University of Primorska), who included military uniforms to civil fashion and showed their constant dialogue.[16]

MUSEUM FASHION MONTH 2019

The Museum Fashion Month in 2019 was dedicated to a new permanent museum exhibition Open storage of Fashion clothes and accessories, which we opened in May. The exhibition consist of a silk men's coat called *justaucorps*, a men's tailcoat with silk flower ornament, men's silk waistcoats with high quality embroideries, ladies' bodices, ladies' pompadour handbags, ladies' headdresses, a pair of ladies' shoes, fans, and an ivory scratcher to use under a wig or a corset to relieve itching, have been preserved from the 18th century. Two pairs of heelless women's shoes marking the period of the empire are preserved from the beginning of the 19th century. Women's shoes, handbags and pouches, headdresses, and bodices, a black men's tailcoat as well as men's headgear and accessories, belong to the mid-19th century. The collection has grown since the second half of the 19th century with preserved ladies' dresses of different cuts and fabrics, blouses, corsets, and many fashion accessories, men's wear, headgear, footwear, and other accessories. Items from the 20th century are the most comprehensive. They include women's, men's, and children's clothing, footwear, headgear, and various fashion accessories, and continue to be complemented by contemporary creations.

We opened the project with a fashion show of nine established Slovenian fashion designers, who presented their new collections: Tanja Uvera, Tanja Basle, David Bacali, Julia Kaja Hrovat, Sanija Reja Aske, Simona Kogovšek, Barbara Vrbančič, Patricia Pie and Renata Bedene. We hosted five temporary exhibitions of footwear, headgear and handbags by Slovenian designers Mario Herzog, Ana Lazovski, Polona Poklukar, Jasmina Granduč and Teja Jeglich. We organized a professional round table about Fashion - a cultural and communication phenomenon, which was attended by Prof. Dr Breda Luthar, Assoc. prof. Dr Vlado Kotnik and Asst. Dr Alica Grilec. The Project ended with a fashion show of collections of students of the High School of Design Maribor, High School of Design and Photography Ljubljana and students of the Faculty of Mechanical Engineering, University of Maribor, Faculty of Natural Sciences and Engineering, University of Ljubljana and Faculty of Design, associate member of the University of Primorska.[17]

[15] HREN BRVAR, M. 2018, p. 2-5.
[17] HREN BRVAR, M. 2019, p. 2-6.

Image 3: Museum Fashion Month 2019, Fashion show, May 2019 (Photo: archive Maribor Regional Museum).

CONCLUSION

In modern times, a heritage represents a new value of life. The Museum is a temple of inherited knowledge, to people it imparts knowledge of the past, spreads wisdom, nurtures boldness and ultimately restores confidence in the future. The project Museum Fashion Month aims to highlight the mission of the modern Museum to preserve the heritage of the culture of clothing in its original environment. Such objects are an important part of our identity. With the help of the past we are discovering the present in a new way, improving our lives. Through the project, the Museum aims to be socially responsible and engaged in bringing changes in the social environment, fostering youth creativity and awareness of the past. It seeks to raise awareness among people that the museum is intended for them, in order to become a community centre. It wants to welcome young people with unique historical experiences that can become a great inspiration for creativity and contemporary ideas.

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MESEC MODE V MUZEJU

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Strokovni članek (1.04)

IZVLEČEK

Projekt Mesec mode v muzeju organizira Pokrajinski muzej Maribor od leta 2013. Zasnovan je tradicionalno, na predstavitvi in popularizaciji gradiva iz zbirk oblačilne kulture, ki obsega približno 10.000 predmetov in predstavlja edinstveno in največjo tovrstno zbirko v državi. V okviru projekta predstavljamo muzejsko gradivo tako, da opozarjamo na pomen oblačilne kulture preteklosti in postavljamo vzporednice s sodobnimi trendi. Z občasnimi muzejskimi in gostujočimi razstavami, strokovnimi posveti, modnimi druženji, modnimi revijami ter permanentnim sodelovanjem s posamezniki, dijaki in študenti modnega oblikovanja, ki iz preteklosti črpajo navdih za ustvarjanje novih idej v prihodnosti, ustvarjamo z muzejskim projektom pomembne vezi, ki področje oblačilne kulture utrjujejo kot pomemben del vizualne umetnosti v kulturni zgodovini.

KLJUČNE BESEDE

moda, muzej, muzejske zbirke, oblačilna kultura, tekstil

POVZETEK

V Pokrajinskem muzeju Maribor hranimo zbirke mode, uniform, liturgičnih oblačil in tekstila drugih namembnosti, ki štejejo skupaj več kot 10.000 eksponatov. V slovenskem muzejskem prostoru imajo pomembno in edinstveno mesto, predvsem pa ponujajo veliko različnih možnosti interpretacije gradiva. Vzrok za nastanek zbirk oblačilne kulture je bilo gradivo, ki ga je muzej že hranil, ter gradivo, ki je bilo posebej zbrano ob dveh občasnih razstavah, v muzeju pripravljenih pod vodstvom dr. Sergeja Vrišerja (Tristo let mode na Slovenskem leta 1965 in Uniforme v zgodovini leta 1969). Odmevni razstavi sta pomenili pomemben premik k sistematičnemu proučevanju mode. Tako se je začelo novo poglavje, pojavila so se nova spoznanja in zanimanja s področja oblačilne kulture na Slovenskem. Leta 1973 je bila postavljena stalna razstava zbirke oblačil s štirimi razstavnimi prostori in potrebnimi depoji. Tako je lahko zbirka načrtno napredovala tudi zaradi skrbne zbiralne politike dr. Andreje Vrišer. Z leti se je zvrstilo več občasnih razstav različnih in modnih tematik. Leta 2004 se je začela prenova gradu, stalna postavitev se je umaknila s prizorišča, nadaljevale pa so se občasne tematske razstave. Ideja za pripravo projekta Mesec mode v muzeju je nastala v želji po prepoznavnosti in popularizaciji gradiva iz zbirk oblačilne kulture, ki še ni bilo predstavljeno javnosti, v sodelovanju s posamezniki in ustanovami, s pomočjo katerih nastajajo vzporednice med preteklostjo in sodobnostjo.

Z novimi, sodobnimi depoji, ureditvijo oglednega depoja modnih oblačil in dodatkov ter s projektom Mesec mode v muzeju ostaja Pokrajinski muzej Maribor center proučevanja oblačilne kulture na Slovenskem, ki komunicira s širšim občinstvom, z ustanovami in posamezniki, tudi dijaki in študenti, ki v okviru programov oblikovanja in tekstilnih materialov proučujejo historična oblačila in iz njih črpajo navdih za sodobno ustvarjalnost.

TALIS ADVERTISING T-SHIRTS IN THE ETHNOLOGICAL COLLECTION OF MARIBOR REGIONAL MUSEUM*

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ABSTRACT
In this article the advertising of textiles, which represents only a small segment of advertising, examines the attitude of consumers, and Talis' employees towards the Talis company, the former pride of post-war industrial Maribor. Talis was a food processing company with an elaborate and at the time innovative marketing approach that not only promoted the sale of their products but also anchored a positive attitude towards the company among its consumers.

KEYWORDS
advertising T-shirts, Talis, marketing, sales promotion, commitment to the company

SUMMARY
In this article, I focus on the advertising of textiles by the food processing company Talis, which, since it ceased operations in 1997, is today a part of the history of the industrial companies of Maribor. Items from Talis have been gathered in the ethnological collection in the form of a fund at Maribor Regional Museum, of which the advertising of T-shirts represents a small part.

Advertising messages appeared relatively early in human history. Along with the level of technological development which humanity was facing, today advertising technologies have changed. The rise of advertising also spawned its critics. One of the first was Dr. Samuel Johnson, who wrote about over-advertising as early as in 1759. Polish anthropologist Malinowski equated advertising with magic: the product being advertised is given the status of desirable, indispensable, valuable, important, and transfers all of these qualities to the consumer who buys the product.

A brief historical overview of advertising textiles explains the path from the first advertising prints on textiles to the present-day self-evident over-production of T-shirts. The first advertisement, printed on textile by the journalist Jasper Freemont Meek in 1881, was produced for the Cantwell shoe store; the first promotional T-shirts were allegedly made for the 1939 film The Wizard of Oz. The global over-production of T-shirts with advertising prints of characters, logotypes, and advertising slogans has been ongoing since the 1950s. Today, some of the prints belong to the iron repertory of pop culture.

The birth of the company Talis dates back to 1949, when several small, locally dispersed food processing plants merged under the name Maribor Food Industry and in 1956 were renamed Talis. They were mainly engaged in brewing beer, producing spirits, vinegar, and soda. The golden years were recorded in the mid-1970s, when about one thousand people were employed in Talis, selling their products throughout Yugoslavia and in parts of Europe.

Well-grounded and broadly-based advertising also contributed to the high profile and popularity of the Talis products. In the late 1960's and 1970's, the company's advertising approaches were fresh, following in many ways the Western world, introducing colour, knowing how to take advantage of the expansion of mass media; media campaigns were well-considered and courageous. The Ora soft drink campaign was a great selling hit, backed by crafted marketing with the tagline Best Right Now! Many innovations were introduced, such as sweepstakes, in which they gave away various useful items (T-shirts, glasses, ashtrays, bottle openers), all embossed with the company logo. These company and product logo T-shirts were distributed to employees (e.g. chauffeurs) and customers. The positive image of the company grew simultaneously with the increased sales of products. As consumers' desire for Talis products grew, the advertising added an aura of specialty,

*Translation: Ksenija Vidic

exceptionalism, superiority that was passed on to the customers, thus advertisements marked with logotypes were rated higher and higher. If they were practical, all the better. As the informants recall, the purchase of clothing at the time was quite costly, so they welcomed free T-shirts, which they wore in their spare time. From the company's perspective, however, promotional T-shirts were certainly a small but perhaps most personal marketing contact with the consumer, because when a consumer wore a T-shirt with the company logo, he or she became a live advertisement.

REKLAMNE MAJICE TALISA V ETNOLOŠKI ZBIRKI POKRAJINSKEGA MUZEJA MARIBOR

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IZVLEČEK

V članku ugotavljamo, kakšen je bil odnos potrošnikov in talisovcev do podjetja Talis, nekdanjega ponosa povojnega industrijskega Maribora, in kakšno vlogo je imel pri tem reklamni tekstil, ki predstavlja le droben segment oglaševanja. Talis je bilo živilsko podjetje z izdelanim in v tistem času inovativnim marketinškim pristopom, s katerim so ne le pospeševali prodajo svojih izdelkov, pač pa med potrošniki tudi utrjevali pozitiven odnos do podjetja.

KLJUČNE BESEDE

reklamne majice, Talis, marketing, pospeševanje prodaje, pripadnost podjetju

POVZETEK

V prispevku se osredotočam na reklamni tekstil živilskopredelovalnega podjetja Talis, ki sodi danes v zgodovino mariborskih podjetij, saj je leta 1997 prenehalo delovati. Talisove predmete imamo v Pokrajinskem muzeju Maribor zbrane v etnološki zbirki v posebnem fondu, reklamne majice pa predstavljajo njegov manjši del. Oglasna sporočila so se v zgodovini človeštva pojavila relativno zgodaj, s stopnjo tehnološkega razvoja, na kateri je človeštvo, se spreminjajo le tehnologije oglaševanja. Z razmahom oglaševanja so se pojavili tudi njegovi kritiki. Eden prvih je bil dr. Samuel Johnson, ki je že leta 1759 pisal o prekomernem oglaševanju. Poljski antropolog Bronisław Malinowski je oglaševanje enačil z magijo: oglaševani proizvod dobi status želenega, nepogrešljivega, vrednega, pomembnega in vse te lastnosti prenese na potrošnika, ki ta proizvod kupi.

V kratkem zgodovinskem pregledu reklamnega tekstila je razložena pot od prvih reklamnih tiskov na tekstil do danes samoumevne poplave reklamnih majic. Prvo reklamo na tekstil je za trgovino čevljev Cantwell natisnil časnikar Jasper Freemont Meek leta 1881, prve promocijske majice naj bi bile majice za film Čarovnik iz Oza iz leta 1939, globalna poplava majic z reklamnimi potiski likov, logotipov in reklamnih sloganov pa je neusahljiva od petdesetih let 20. stoletja dalje. Nekateri potiski sodijo danes v železni repertoar pop kulture.

Začetki podjetja Talis segajo v leto 1949. Tedaj se je več manjših, lokalno razpršenih obratov živilske stroke združilo pod imenom Živilska industrija Maribor, leta 1956 pa se je podjetje preimenovalo v Talis. Ukvarjali so se predvsem z varjenjem piva ter proizvodnjo žganja, kisa in sode. Zlata leta so bila sredi sedemdesetih let 20. stoletja, ko je bilo v Talisu zaposlenih okoli tisoč ljudi, svoje proizvode pa so prodajali po vsej Jugoslaviji in v delu Evrope.

K veliki prepoznavnosti in priljubljenosti Talisovih proizvodov je pripomoglo tudi premišljeno in široko zasnovano oglaševanje. Oglaševalski pristopi tega podjetja so bili konec šestdesetih in v sedemdesetih letih sveži, v marsičem so sledili zahodnim vzorom, prinašali so barvitost, dobro so znali izkoristiti razmah množičnih medijev, medijske kampanje so bile zastavljene premišljeno, pogumno. Velika prodajna uspešnica, podprta z izdelanim marketingom, je bila brezalkoholna pijača Ora s sloganom Najboljša ta hip! Uvajali so številne novosti, na primer nagradne igre, v katerih so delili različne uporabne predmete (majice, kozarce, pepelnike, odpirače za steklenice), opremljene z logotipom podjetja. Reklamne majice z logotipom podjetja in izdelkov je podjetje delilo zaposlenim (npr. šoferjem) in kupcem. Hkrati s povečano prodajo izdelkov je rasla tudi pozitivna podoba podjetja. Kot je rasla želja potrošnikov po njihovih izdelkih, ki jim je oglaševanje dodalo avro posebnosti, izjemnosti, večvrednosti, ki se je prenašala na kupce, tako so visoko ali pa še više kotirali tudi reklamni predmeti, označeni z logotipi. Če so bili praktični, še toliko bolje. V spominu informatorjev je ostalo, da je bil nakup oblačil v tistem času znaten finančni zalogaj, zato so bili reklamnih majic veseli, saj so jih lahko uporabljali v prostem času. Z vidika podjetja predstavljajo reklamne majice resda majhen, a morda najbolj oseben marketinški stik s potrošnikom, saj s tem ko potrošnik obleče majico z logotipom podjetja, postane – živa reklama.

HISTORY OF PREVENTIVE CONSERVATION IN THE COLLECTION OF CLOTHING AND CLOTHING ACCESSORIES AT THE MARIBOR REGIONAL MUSEUM*

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Review article (1.02)

ABSTRACT

The Maribor Regional Museum began to systematically collect objects for the collection of clothing culture[1] in 1965, following the exhibition Three Hundred Years of Fashion in Slovenia. The museum experts were aware of the importance of proper storage and display of clothes and clothing accessories and took appropriate care of them according to the circumstances. As early as the late 1980s, the collection's holdings were rearranged, and modern, more durable materials were introduced for storage. The collection was transferred to appropriately furnished premises in 2010 and 2011, and the objects were arranged in the following years in accordance with contemporary preventive conservation guidelines.[2] The preservation of delicate textiles in the collection of clothing culture is thus inextricably linked to the suitable preventive conservation processes that have been developed and implemented over the decades at the Maribor Regional Museum.

KEYWORDS

preventive conservation, clothing culture, clothing and clothing accessories, conservation-restoration

INTRODUCTION

In Slovenia, systematic collecting of clothing and the creation of museum collections of clothing culture began relatively late.[3] Among museums, clothing items were mostly collected randomly rather than systematically primarily by historical museums (uniforms), or were included into ethnological collections (folk costumes).[4] For the most part, museum experts began to collect objects of clothing culture as late as in the mid-20th century. Of course, for this reason, it was possible to collect only a modest number of earlier clothing items, among which mostly military clothing and accessories have been preserved in Slovene museums.

THE BEGINNINGS OF THE COLLECTION

The Maribor Regional Museum was among the few museums that kept clothing items (clothing from personal legacies of individuals, military uniforms, and liturgical textile items) and employed a curator who was aware of the importance of the systematic collection and preservation of this type of heritage.[5] Sergej Vrišer prepared the first exhibition Three Hundred Years of Fashion in Slovenia as early as in 1965, which travelled to Ljubljana in 1966. It presented objects from various Slovenian museums, and Vrišer, under the agreement

*Translation: Ksenija Vidic

[1] The name of the collection of clothing culture as we call it today has changed many times in the past. Various titles can be therefore found in the archives: fashion collection, costume collection, collection of military and fashion costumes, clothing collection, and others.

[2] Preventive conservation: all measures and actions aimed at avoiding and minimising future deterioration or loss. They are carried out within the context or on the surroundings of an item, but more often a group of items, whatever their age and condition. These measures and actions are indirect-theydo not interfere with the materials and structures of the items. They do not modify their appearance. TERMINOLOGY TO CHARACTERIZE THE CONSERVATION OF TANGIBLE CULTURAL HERITAGE, ICOM-CC. URL: http://www.icom-cc.org/242/about/terminology-for-conservation/ (quoted 1. 7. 2019).

[3] At the time of the creation of the collection of clothing culture at the Maribor Regional Museum, many collections of clothing and clothing accessories were already known abroad (e.g. at the Victoria and Albert Museum in London, the Neederlands Kostuummuseum in The Hague, and the Musée du Costume in Paris). Also known in the Yugoslavian context were the collections of fashion clothing at the Museum of Arts in Zagreb and the Museum of Applied Art in Belgrade. VRIŠER, S. 1968, p. 91.

[4] VRIŠER, A. 1993, p. 153. In Slovenia, clothing items and accessories were collected on a national level by the National Museum of Slovenia and the Slovene Ethnographic Museum (folk costumes).

[5] Alongside the Maribor Regional Museum, the National Museum of Slovenia also held many items of clothing, while smaller collections were kept by the museums in Celje, Koper, and Ptuj, which, however, did not exhibit these items. VRIŠER, S. 1968, p. 91.

and in cooperation with other Slovenian museums, soon set up a permanent exhibition of the so-called "fashion costumes" in the museum's cultural history department. In 1969 and 1970, he prepared an exhibition titled Uniforms in History in Maribor and Ljubljana, and later included a considerable amount of clothing from this exhibition in the permanent exhibition of the Maribor Regional Museum. According to the agreement between the museums at the time, the collection and study of costumological[6] materials belonged to the Maribor Museum, which gained an "all-Slovenian" character in this field.[7]

THE COLLECTION'S HOLDINGS

The Maribor Regional Museum decided to collect items from both civilian and military clothing culture.[8] The collection's holdings were modest in number at first, but with his systematic field research and collecting, Sergej Vrišer soon changed this circumstance and acquired diverse and meaningful objects for the collection.[9] While setting up the first exhibition in 1965, he wrote in the catalogue: "A special understanding of our work on establishing a permanent costume collection was demonstrated by the Slovene National Theatre in Maribor, which donated a great number of original costumes, especially uniforms, to our museum. Some of them are indeed a rarity even beyond the borders of Slovenia."[10] Other theatres and the national broadcaster acted likewise and donated to the museum the original clothing it had requested. The museum has also acquired many clothing items from the donations of private individuals[11] and by purchases, even though it has often lacked the financial resources, which is why many important clothing items of historical use have landed in the hands of private collectors. Slovenian museums further contributed to the expansion of the collection by permanently donating or lending individual clothing and accessories to the Maribor Museum.[12] As late as in 1976, it was documented that the number of military clothing in the collection of clothing culture was higher than the number of civilian clothes,[13] which has to this day changed in favour of civilian clothes, as the later curator of the collection, Andreja Vrišer, began to intensively collect clothing and clothing accessories from the years following World War II.[14]

Today, the collection consists of objects assembled into several sections: fashion, uniforms, liturgical textiles, theatre and film costumes, and textiles of other uses. The oldest items in the collection are from the second half of the 18th century, a few more derive from the 19th century—among these a lot of development gaps can be seen, and most of them date from the 20th century. Deficiencies in the collected objects can also be observed in the period between the two world wars and in the post-war period. The collection nowadays continues to evolve with contemporary items, which is why it is the fastest growing collection in the Museum and presently contains around 10,000 items.

METHODS OF DISPLAY

In the 1960s, items from the collection of clothing culture were included in the permanent exhibition of the cultural history collection and were exhibited in the so-called "reading room", which was not large enough to display all the collection's holdings, while the museum also had to keep the existing showcases that were not

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[6] Costumological, costume department, collection, etc. were terms introduced at the Maribor Regional Museum by Sergej Vrišer and have been later used by Andreja Vrišer and the younger generation of curators.

[7] VRIŠER, S. 1975, p. 4. Sergej Vrišer broke new grounds in the field of costumology as a profession in Slovenia. Thanks to him, the collection of clothing culture at the Maribor Regional Museum gained national importance. ŽNIDARIČ, M. 2004, p. 207. Later on, individual museums also began collecting clothing, which, for the most part, was not classified according to the criteria of fashion development, but merely illustrated the clothing appearance and habits of a certain territory. Therefore, many museums no longer pointed out the significance of the collection of clothing culture at the Maribor Regional Museum. VRIŠER, A. 1993, p. 154.

[8] Practical experience has shown that civilian uniforms, fashion accessories, footwear, headgear, interior textiles, magazines, prints, etc., were also collected within this formation.

[9] In 1968, there were 16 men's and 18 women's clothes, 12 men's and 19 women's pieces of headgear, 14 pairs of shoes and a number of fashion accessories, such as parasols, women's purses, wallets, ties, etc. VRIŠER, S. 1968, p. 92.

[10] VRIŠER, S. 1965, p. 4.

[11] More than half of the items in the collection of clothing culture have been donated. VRIŠER, A. 1991, p. 8.

[12] "The exhibition Three Hundred Years of Fashion in Slovenia has fulfilled its purpose in entirety; at its conclusion, the museums that lent the material unanimously decided that it should continue as a permanent exhibition about the evolution of fashion at the Maribor Regional Museum." VRIŠER, S. 1968, p. 92.

[13] PMM, archival fond Vrišer Andreja, s. n., Problematika slovenske kostumske zbirke in pedagoško delo s kostumologijo v muzeju, p. 8.

[14] In 1991, the museum kept about 3.000 clothing items and accessories. VRIŠER, A. 1991, p. 3. Between 1992 and 2005, 3.112 objects were added to the collection, an average of 222 items per year. PMM, archival fond Vrišer Andreja, s. n., Akvizicijski zvezek 1992–2005.

suitable for exhibiting this kind of objects.[15] At the same time, Sergej Vrišer wanted to prepare an independent permanent exhibition of the collected material and obtain the appropriate equipment for its presentation. In 1971, the museum purchased the first ten illuminated movable showcases, which were first used in a temporary exhibition on goldsmithery and later exhibited military items.[16]

As the collection expanded due to its successful popularisation by the museum experts, it soon became apparent that larger and modernised rooms would be needed to store and exhibit the growing number of items. The museum adopted a restructuring plan, and in 1973 it succeeded in acquiring funds from the Republican Cultural Community to modernise its premises and equipment as well as conduct related relocations of some collections.[17] In the same year, four newly renovated exhibition rooms dedicated to clothing culture were opened in the eastern wing of the museum. They were equipped with built-in and movable glazed and illuminated showcases, which displayed about 350 items, representing one third of the collected objects. The built-in showcases exhibited clothing on museum mannequins, while the movable showcases featured individual clothing parts, headgear, and various fashion accessories.[18] The pro-forma invoice reveals that they were made of panels, laminated with teak veneer and sprayed with varnish, while special glass was installed in the sliding glass doors.[19]

Even before the opening of the first temporary exhibitions, as well as when preparing the first permanent exhibition, the museum experts wondered whether to use pliable mannequins (in the form of the human body) to display clothing or use models that merely indicated a human figure. Certainly, at the time, the focus was not on the use of appropriate materials for the mannequins, but merely on their aesthetic and functional features.[20] For the exhibition Uniforms in History, they partnered with a manufacturer of shop window mannequins and asked him to produce handless male busts that could be attached to a pole. Furthermore, he was suggested not to make them with plaster, but with papier-mâché or a similar material.[21] For the display of military jackets in the permanent exhibition, they devised a model of a mannequin-bust made of jute, wood, and filled with wood wool. In this way they created the busts for over 60 uniforms.[22]

Already three years after the new permanent exhibition was set up, the museum experts observed that both the built-in and the movable showcases were suitable for this kind of holdings, protecting it from (as they put it) "defects", dust, and visitors' touches. It was estimated that the ceiling lighting in the movable showcases was too strong and could damage sensitive textiles, so it would need to be reduced in the future. They concluded that the room had sufficient ventilation and was otherwise properly dimmed.[23]

Curators were aware of the problem of damage to the textile objects due to excessive or inadequate lighting, which is well illustrated in the records by Andreja Vrišer: "The opinions of experienced experts increasingly tend towards the belief that textiles, after a certain period of exposure to natural or artificial light, should rest for a while."[24]

In order to warn the public about the lack of sufficient exhibition space, the exhibition New Acquisitions of the Costume Collection was organised in 1975. They wanted to extend the permanent exhibition to four additional spaces in the castle, which were occupied by the Regional Archives Maribor, and waited for the

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[15] Večer, 21. 1. 1967, vol. XXXIII, no. 16, Vili Vuk, Muzejska posebnost v Sloveniji, pp. 9–10.
[16] VRIŠER, A. 1976, p. 6.
[17] OMAN, D. 1998, p. 11.
[18] VRIŠER, S. 1975, p. 5.
[19] PMM, archival fond Uprava, s. n., Predračun Kristal Maribor, 19. 9. 1973.
[20] During the years when the first complex permanent exhibition was installed at the museum, there were no museum mannequins made of appropriate materials and available for museum exhibits, nor were there any means to purchase them. They used mostly display window mannequins, or fabricated them themselves from materials available on the market.
[21] PMM, archival fond Vrišer Sergej, s. n., Dopis za Franca Kuharja, 20. 2. 1969.
[22] PMM, archival fond Vrišer Andreja, s. n., Problematika slovenske kostumske zbirke in pedagoško delo s kostumologijo v muzeju, 1976, pp. 11–12.
[23] PMM, archival fond Vrišer Andreja, s. n., Problematika slovenske kostumske zbirke in pedagoško delo s kostumologijo v muzeju, 1976, pp. 11–12.
[24] VRIŠER, A. 1995, p. 172.

Archives to move out of these premises.[25] Even on the occasion of the 1983 exhibition Uniforms in History II, it was stated: "We wanted to show, above all, how many objects we were able to acquire, and at the same time we wanted to draw attention to the spatial restrictions facing our costume collection, which has altogether only four exhibition rooms."[26] The permanent exhibition on clothing culture did not expand until the refurbishment of the castle in 2004, when it was withdrawn.[27] Its display also remained virtually unchanged. In 1984, it was supplemented with a special showcase presenting the summer uniform of Josip Broz Tito[28] and some of the objects in the first two rooms were replaced by fashion clothing of the 1920s and 1930s.[29] Most of the material had thereby been exhibited for over thirty years, which had caused irreparable damage to some items, mainly due to inadequate lighting. The lamps in the showcases were too strong, as they found out shortly after the exhibition was set up, positioned too close to the textiles, and had, of course, no ultraviolet, e.g. shortwave radiation protection. Clothing items (especially those made of silk) became fragile and brittle, the fading of colour was evident, and due to the accelerated oxidation processes, the structural stability of all materials deteriorated. When reviewing the items, a conservator-restorer wrote in 2002: "It would be necessary to replace the lamps in the permanent exhibition of clothing culture with ones that illuminate the textiles with only 50 lux and do not emit short waves of light (UV protective filters), since damages to the textiles due to inadequate lighting are already visible."[30]

Although the items were kept in showcases, dust accumulated over the years, which was particularly evident in the exposed parts of clothing and accessories (shoulder parts, tops of headgear, tops of crinolines, parasols). Each year, the exhibition area was thoroughly ventilated, and in the first years naphthalene balls, later camphor and lavender, were placed into the showcases in order to prevent pest infestation on textile. As late as in 1996, monitoring and control of temperature and relative humidity in the exhibition premises began to be recorded, while the latter was also regulated.[31] There was also no heating at the permanent exhibition premises, so fluctuations in temperature between summer and winter were considerable but not instantaneous.

Due to the extensive and interesting objects in the collection of clothing culture that they failed to present to the public, the museum experts prepared numerous temporary exhibitions that were often also visiting exhibitions.[32] There was no dedicated equipment for the preparation of temporary exhibitions available at the museum in the 1970s. They used equipment and utensils that had been no longer used for permanent exhibitions or made them with little resources and a good amount of ingenuity by themselves. They just wanted to show the public new acquisitions of the clothing culture collection, while occasionally neglecting the appropriate preventive measures during the set up. In 1984, the museum purchased the first prefabricated exhibition equipment (Abstrakta). This has opened up the possibility of organising temporary museum exhibitions and visiting exhibitions more often and more securely.[33]

Sergej Vrišer was aware of the importance of preventive conservation and also educated the public and his colleagues in other museums[34] who were not skilled in handling textile materials. At the 25th anniversary of the collection, he wrote: "Long ago, we have convinced theatres, film and television that the collection cannot be a lending establishment of clothing, whereas for museums, who believe that the lent material only goes from one pair of expert hands to another, it is much more difficult to understand this truth. Unfortunately, even when borrowed between museums, costumes often end up in a completely "non-costume" environment, most often as a complement to an exhibition and, of course, outside the light, the

[25] VRIŠER, S. 1978, p. 2.
[26] VRIŠER, A. 1984–1985, p. 47.
[27] In 1992, the museum staff prepared a renovation plan, which was to be completed by the 100th anniversary of the museum in 2004. A. Vrišer suggested that the collection of clothing culture be moved to a dislocated unit, where both exhibitions and storage as well as conservation-restoration workshops could be organised. PMM, archival fond Uprava, s. n., Zapisnik 19, strokovni kolegij, 28. 10. 1992.
[28] VRIŠER, A. 1984–1985, p. 104.
[29] PMM, archival fond Vrišer Andreja, s. n., Program dela za leto 1995, 2. 9. 1994, p. 2.
[30] PMM, archival fond Konservatorsko-restavratorski oddelek, s. n., Program dela za leto 2003, 22. 10. 2002.
[31] Temperature of 18°C (±2), relative humidity of 55% (±5) and brightness of 50 lux is recommended for the display and storage of textile materials.
[32] At least one temporary exhibition of objects from the collection had to be prepared each year.
[33] VRIŠER, A. 1984–1985, p. 48.
[34] Sergej Vrišer was also a lecturer in museology at the Faculty of Arts in Ljubljana and a member of the committee for professional examination. ŽNIDARIČ, M. 2004, p. 207.

climate, and the generally protective regime designated for historical clothing. It is no novelty that in many museums worldwide they resort to reconstructions, e.g. copies of original costumes, especially where they have as few of them as in our country."[35] However, despite these written records, the collection's most interesting clothes were worn by female and male models at a fashion show marking the anniversary celebration of the collection of clothing culture.[36]

Even though the professionalism of the museum experts was occasionally replaced by the desire to popularise the holdings, the museum carefully measured the time of exhibiting this sensitive material at temporary exhibitions. They were aware of the lack of control over the environmental conditions in the museum and thus the risks to the clothing items. Therefore, in the early 1990s, reconstructions of historical clothing began, and in 1993[37] first such reconstructions were included into the permanent exhibition of residential culture. Later on, several reconstructions that helped to present the clothing culture over a period of history were made in collaboration with the theatre's costume designer and tailoring workshop.[38]

Following the resettlement of the castle café, the museum acquired additional premises, which it refurbished and opened in 1989 as exhibition grounds, where most of the temporary exhibitions in the field of clothing culture were installed. The rooms had smooth and washable stone floors, the walls were repaired and whitewashed, electrical installations (fire safety), heating, and security were arranged, and the exhibition grounds were adequately ventilated. Lighting (lights on ceiling tracks) was inappropriate for exhibiting delicate textile materials and was regulated by partial turning off or dimming. The temperature and relative humidity of the exhibition area began to be controlled after 1997, with dehumidifiers providing partial control of humidity. In the early 1990s, the museum purchased the Syma exhibition equipment, which had rounded edges, was easy to clean and allowed various configurations of both open and closed showcases. Back then as well as today, the exhibition system from 1984 was occasionally also used for temporary exhibitions of the collection's holdings. It is simple and flexible, but the objects cannot be protected from dust, since there are centimetre wide gaps in the structure of the otherwise closed showcases. These exhibition grounds hosted the last clothing culture exhibition in 2007.[39]

Following the removal of the objects from the permanent exhibition and the difficult preparation of temporary exhibitions due to the renovation of the museum, the museum experts continued to present the items from the collection of clothing culture from 2013 to 2017 as part of the project Fashion Month at the Museum, organised by the curator Maja Hren Brvar. Monthly exhibitions have been placed in the renovated premises of the castle or were shown within the newly installed permanent exhibitions of other collections. The exhibited items, mainly clothes on mannequins, were primarily presented on open podiums, while the lighting and climate conditions were adapted to the miscellaneous exhibits (made of different materials). The clothes were appropriately supported (custom-made mannequins, bases) to prevent any tension in the material. All supplementary equipment was made of inert materials, which did not affect the physical stability of the exhibited objects.

The first part of the new permanent exhibition on clothing culture showcasing uniforms was opened in 2018, and the second part, focused on fashion clothing and accessories, in 2019. The equipment and layout plans were drawn up by the museum's conservator-restorer Irena Porekar Kacafura. When designing and realising the exhibition, she adhered to the contemporary conservation and restoration guidelines and, within the given circumstances, forecasted measures and activities to prevent and minimise the deterioration of clothing and clothing accessories.

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[35] Naši razgledi, 21. 12. 1990, vol. XXXIX, no. 24, Sergej Vrišer, Še nikdar kaj jednacega, ob petindvajsetletnici slovenske kostumske zbirke, p. 712.

[36] Večer, 6. 8. 1991, vol. XLVII, no. 180, Metka Barbo, Modno potovanje skozi čas, p. 9.

[37] PMM, Pokrajinski muzej Maribor, archival fond Vrišer Andreja, s. n., Poročilo o opravljenem delu v letu 1993.

[38] The reconstructions were made at the tailoring workshop of the Slovene National Theatre Maribor under costume designer Vlasta Hegedušič who was collaborating with Andreja Vrišer. Večer, supplement Leibnitz Aktuell, 16. 8. 1990, vol. 16, no. XII/90, Helena Grandovec, Mode im Wandel der Zeit, p. 28.

[39] PMM, Pokrajinski muzej Maribor, archival fond Uprava, s. n., Dokumentacija o razstavah.

Image 1: The permanent exhibition of clothing culture, opened in 2018 and 2019 (Photo: Irena Porekar Kacafura).

STORAGE SOLUTIONS

Before and during the making of the collection of clothing culture, the collected objects were mainly stored in the furniture (cabinets, chests of drawers, trunks) that was part of the museum's cultural history collection. Museum experts noted that while storing the material in historic furniture is not harmful, it is outdated, non-transparent, and makes the handling of sensitive objects difficult. Regular care only included the inspection of the stored exhibits and the depositing of the balls of naphthalene among the stored items to prevent potential infestation with pests. As early as 1976, it was noted that there were no means at the time, which would enable the arrangement of modern storage, so the collection would have to settle with the existing situation.[40]

Two spaces for the storage of clothing and clothing accessories were acquired at the permanent exhibition premises in 1979, after the relocation of the Regional Archives Maribor.[41] Due to the lack of funds, the premises were refurbished gradually and the objects were carefully organised throughout the following decade. The items were stored in closed and open wooden archival cabinets, customised for the storage of clothing culture. In the open cabinets, the materials on the shelves were stored freely and in cardboard boxes, and a few cabinets had clothing hangers that were protected from the dust with foil.

As the current storage rooms were too small and too crowded, the arrangement of new storage facilities was planned following the exhibition on the occasion of the collection's 25th anniversary. At the same time, the number of collection items made of more advanced materials, like artificial silk, synthetic fabrics, and plastics, which required different treatment than natural, woollen, linen, and cotton materials, increased, but the separation of these materials was not possible due to spatial restrictions.[42]

With the final relocation of the Regional Archives from the eastern wing of the castle, additional storage rooms began to be arranged in 1991. That year, Andreja Vrišer visited the Wien Museum Fashion Collection, where she familiarised herself with the most appropriate ways storing clothing. She concluded that synthetic materials (PVC bags, plastic hangers, naphthalene) and artificial adhesives are generally avoided everywhere, and that the clothes are protected by wooden or metal cabinets that are open, airy, and veiled with cotton curtains. She also looked at documentation on conservation and restoration work and noted: "Our costume collection does not have such a documentation, but it would be good to think about it."[43]

[40] VRIŠER, A. 1976, p. 14.
[41] The vacant premises of the Regional Archives provided barely enough room for storage. Nedeljski dnevnik, 9. 9. 1979, vol. XVII, no. 246, Janez Švajncer, Nema govorica starih oblačil, p.18.
[42] VRIŠER, A. 1991, p. 7.
[43] PMM, Pokrajinski muzej Maribor, archival fond Vrišer Andreja, s. n., Poročilo o opravljenem delu v letu 1991, 31. 1. 1992, p. 3.

Image 2: Part of the former clothing culture storage (Photo: Irena Porekar Kacafura).

Museum experts redistributed the material in the storage[44] when they procured a large number of cardboard boxes and clothing racks, and set up a convenient workshop for interventions on textile. Cotton curtains were installed in the open cabinets as dust protection. Over the next year, the premises were repainted. During the rearrangement of the storage, it became clear that the premises were being used to the fullest and could not be overburdened with a greater influx of items.[45] Part of the collection, especially liturgical textiles, was therefore still kept in the historic furniture.[46] Spatial limitations made it difficult to inspect the holdings in the cabinets and on the racks, as these were overfilled. There was also a shortage of suitable closed drawers where the most sensitive museum objects from the collection[47] would be kept in a recumbent position, and a lack of work surfaces for inspecting these items. Precisely because of the spatial limitations in the storage, the curator already conducted a careful selection during fieldwork, in particular of the donated material, which was to be included in the collection.

In 1996, conservator-restorer Irena Porekar Kacafura introduced environmental conditions controls to the storage. At first, simple thermo-hygrometers controlled the relative humidity (RH) and the air temperature. Due to the high RH that could cause pests and the spread of mould and microorganisms in the full storage area, some condensing dehumidifiers were purchased to regulate the RH. Some of the plastic bags were replaced with cotton ones, as it was inappropriate for the textiles in the overfilled storage to be protected by foils that prevented air circulation.[48] All the objects were regularly inspected for potential contamination and dusted. Problems were caused by high temperatures (up to 26°C) during the summer months, as the storage rooms were located on the east side of the castle above the paved square. The opposite caused problems in winter, when the temperatures in the unheated rooms dropped even to 6°C.

The floors in the storage area were panelled but were not airtight, nor were the deteriorated windows. There was therefore a high risk of contamination of the collection's holdings with textile pests, which were first suppressed with naphthalene, later with camphor and essential lavender or cedar oil, and in 2001 the museum introduced annual disinsections of the objects.[49]

Besides, there were no fire alarms at the premises of the clothing culture storage, even though the electrical wiring was outdated, which presented a potential fire hazard. The burglary alarm was also located only above the front door to the storage, while the windows were unprotected.

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[44] Arhiv PMM, A. Vrišer, Poročilo o opravljenem delu v letu 1992, 20. 1. 1993.
[45] Ibid.
[46] PMM, archival fond Uprava, s.n., Marija Leskovec, Mesečno poročilo, March 1994.
[47] POREKAR KACAFURA, I. 2012, p. 52.
[48] PMM, archival fond Konservatorsko-restavratorski oddelek, s. n., Poročilo o delu za leto 2002.
[49] Disinsection or fogging with insecticides has been carried out since by the National Laboratory of Health, Environment and Food Maribor.

The only preventive interventions that were carried out on the items in the museum were dusting, cleaning of dirty collected objects and materials (mainly with water or steam), and occasionally also ironing. In cases of major tears, the items were sowed up, but mostly with too thick cotton or synthetic threads. Nevertheless, it must be acknowledged that such interventions have stabilised the textile items and largely prevented the formation of new damage. Inventory numbers were mostly stitched on textile items, while they were written down in black or white ink on fashion accessories; inappropriate labels were found on them as well.[50] From 1998 onwards, several plastic hangers were replaced at the storage with wooden ones, the shoulders of the garments were protected with paper covers, layers of ageing-resistant paper were placed between the items stored in boxes, and care was taken to replace inappropriate protective foils.

In 2000, the museum experts prepared a new study on the renovation of the castle and the relocation of the storage rooms to an external location.[51] The curator prepared inventories of objects, and the conservator-restorer provided the environmental conditions, the necessary storage areas, and the inventory of equipment for the new storage of objects from the collection of clothing culture. This document later formed the basis for drawing up the plans for the new storage premises for the collection of clothing culture in the castle.

In 2004, a partial renovation of the castle and the museum began, requiring the museum to close its permanent exhibitions and move its holdings to the storage. Due to the removal of the objects from the permanent exhibition, even greater accumulation of items was created in the already overfilled storage rooms.

In 2008, architect Darinka More, in collaboration with the museum's conservator-restorer, prepared the project for the equipment of a new storage of clothing culture,[52] for which the museum obtained the funds from the founder in 2010. Premises in the western wing of the castle, which were refurbished and equipped with the necessary infrastructure (fire and burglary alarms, security and general lighting, suitable electrical installations, heating), roller blinds on the windows, and properly regulated climate conditions, were assigned to the storage area.

The storage premises were divided into two parts: an open viewing storage (for study purposes) and a closed storage area, where the majority of the objects are stored. The viewing storage has higher quality equipment. Metal cabinets have toughened glass doors, and some cabinets are built as showcases. The equipment in the closed storage is partly standard-, partly custom-made. All cabinets are on metal legs or plinths.

The storage area contains several types of equipment: railed and fixed cabinets (with fixed or pull-out shelves, hanging rods), shelves, drawers, and hanging nets. All equipment is made of galvanised sheet steel and is varnished with high quality lacquer. The surfaces are smooth (easier to clean), all equipment is made without sharp edges, and the railed cabinets are fitted with dust barriers. Also kept in the storage is the supplementary equipment, such as carpet mounts, ladders, portable lamps, mobile platforms, and hangers.

The objects have been moved to the renovated storage area in the spring of 2011, even though the area was not yet entirely finished. In the following years, the items were being arranged according to sections, while the deteriorated and inappropriate packaging material was being replaced with a more appropriate one. Since the transfer of the objects to the storage, the environmental conditions have also been regularly monitored.

[50] PMM, archival fond Uprava, s. n., Marija Leskovec, Mesečna poročila za leti 1993, 1994.
[51] PMM, archival fond Uprava, s. n., Projektna dokumentacija – prenova gradu, 2000–2001.
[52] PMM, Pokrajinski muzej Maribor, archival fond Uprava, s. n., Dokument identifikacije projekta opreme kostumskega depoja Pokrajinskega muzeja Maribor, izdelovalec Remo d. o. o., April 2008.

Image 3: Part of the new storage of clothing culture (Photo: Irena Porekar Kacafura).

In 2017 and 2018, additional employees were recruited to arrange a large part of the storage area in detail: objects inspection, disinsection, production of supporting stabilizers, replacement of inappropriate packaging, hangers, paper, and protective covers with appropriate ones, new documentation (digitisation) and categorisation of items. Fashion magazines, catalogues, and fashion graphic prints were also properly arranged and stored. The work was led by the conservator-restorer and the curator of the collection. A more detailed analysis of the condition of the objects in the clothing culture storage and a list of recommendations and guidelines for improving preventive conservation regarding the premises and the equipment, the principles of storage, the protective and packaging material, and the environmental conditions in the storage were prepared.[53]

SKILLS AND COMPETENCES OF THE EMPLOYEES

Sergej Vrišer, who taught museology and was familiar with contemporary guidelines for the storage and display of textile materials, translated some chapters on preventive conservation from various German scientific literature available at the museum; these translations were used with great diligence by conservation-restoration technicians in their work. When organising the museum objects, they were able to rely primarily on the knowledge and practical guidance from various domestic and foreign literature.[54] The employees thus acquired the appropriate knowledge, but this did not necessarily mean that it was easy to put this knowledge into practice. Obstacles to financing or the lack of staff time usually got in the way of making or introducing certain changes to storage and exhibitions.

Conservation and restoration technicians who were involved with the storage, arrangement, and display of clothing and clothing accessories worked in all the museum sections and did not specialise in one type of material. The charm of the display of the collection's holdings or their arrangement in the storage often depended on their ingenuity. All interventions on the objects were carried out under the supervision of the curator, first Sergej Vrišer and later Andreja Vrišer. In the early 1990s, the latter, in collaboration with the conservation-restoration technician Marija Leskovec, arranged, with regard to the conditions at the time, exemplary storage rooms for clothing culture.[55]

It was of utmost importance to the curator to organise the collection of clothing culture, especially the storage rooms, in the best possible way, so she has undergone further training in this field. She contacted

[53] POREKAR KACAFURA, I. 2018, pp. 134–136.

[54] Of course, the publications published by the Slovene Society of Museum Experts (today Slovene Museum Society) were of great help to the employees; Nada Sedlar, Head of the Conservation and Restoration Department at the National Museum of Slovenia, actively contributed to their contents. The volumes Klimatizacija v muzeju [Air Conditioning in the Museum], published in 1982, which was a translation and a summary of Kühn's work, and the General Rules for Working in Museums and Galleries of the Socialist Republic of Slovenia from 1983, also provided some clear instructions for the preservation of clothing and textile items.

[55] Today's point of view and our present knowledge, of course, call for a number of critical observations regarding this structuring, but from the perspective at the time when the storage of the clothing culture was arranged, it can be argued that the storage area was one of the best organised in the country.

conservator-restorer Eva Lešnik[56] from the Ptuj Regional Museum to discuss questions about the methods of preserving and exhibiting materials from the clothing culture collection and followed her advice.

The curator regularly visited various museums of clothing abroad and reported on her visits in the annual reports. She also actively participated at professional meetings in Slovenia, which covered the area of her interest, and tried to implement novelties and improvements in the collection of clothing culture at the Maribor Regional Museum. She continually called on the museum's management to recognise the need for a conservator-restorer of the clothing culture collection who would take proper care of its preservation.[57] In fact, the conservation-restoration profession in this field was still under development in Slovenia at the time. In 1995, Irena Porekar, a master of science in chemical technology, was employed at the museum as Head of the Conservation and Restoration Department. For the first time, the care of the preventive conservation of the museum's clothing culture collection was entirely taken over by a conservator-restorer.[58] She introduced recording of documentation on the performed procedures carried out on the objects, as well as the control and regulation of environmental conditions on the exhibition premises and in the storage. Several condensing dehumidifiers were soon purchased by the museum to regulate the relative humidity. She introduced the use of new, inert materials for storing, packaging, and transport. As a protection against textile pests, she introduced regular fogging with insecticides.

Since only a conservation-restoration technician was employed in the conservation-restoration sector next to Porekar to take care of all the collections in the museum, it soon became evident that such a large collection would require a specialised conservator-restorer. For many years, both the curator and the conservator-restorer have suggested to the Ministry of Culture in the annual plans to employ a conservation-restoration technician for textile, which has, however, not been realised. In spite of the extensive and nationally important collection of clothing culture, a professional conservator-restorer for this field has never been employed by the museum.

While not being a textile specialist herself, Porekar has successfully prepared several draft plans for new storage rooms and new permanent exhibitions after participating in various training courses at home and abroad, and in constant cooperation with fellow colleagues in the field of textile conservation and restoration. She has introduced modern methods of preventive conservation to the storage and has been, together with curator Maja Hren Brvar, constantly striving for the successful implementation of the procedures conserving the collection and for the environmental conditions that ensure its stability.

CONCLUSION

Although numerous collections of clothing have been created in Slovenian museums since the 1980s, the significance of the collection of the Maribor Regional Museum should not be diminished. It may no longer be "all-Slovenian", as it was conceived by its founder Sergej Vrišer, but it was the first collection of its kind in Slovenia to have a permanent exhibition, and to keep and preserve the objects, which serious researchers of clothing culture cannot afford to ignore. Even after the latest arrangement of the new storage rooms and permanent exhibition, which was done in accordance with the guidelines of modern museology and the conservation-restoration profession, the collection is of interest to both researchers and students, as well as to the general public. It offers not only a study of the collected material, but also a study of the methods of preventive conservation that have been and are still being developed at the museum.

[56] In 1989, Eva Lešnik, MSc in textile technology, the first university-educated conservator-restorer for textiles, started working at the Ptuj Regional Museum. In 1991, Goja Pajagič Bregar, MA in art history, became an employee of the National Museum of Slovenia, and worked there on the collection of clothing culture as a curator and conservator-restorer. At the Slovene Ethnographic Museum, Ana Motnikar, the first MSc in textile technology employed there, joined the museum in 1998. Oral sources: Eva Lešnik, today Eva Ilec, Ptuj, 24. 5. 2019; Nataša Nemeček, Ljubljana, 24. 5. 2019; Ana Motnikar, Ljubljana, 27. 5. 2019.

[57] PMM, Pokrajinski muzej Maribor, archival fond Vrišer Andreja, s. n., Delovni program za leto 1997, 12. 9. 1996; Delovni program za leto 1998, 24. 8. 1997.

[58] There are no study programmes on the conservation-restoration of tangible heritage in Slovenia.

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ZGODOVINA PREVENTIVNEGA KONSERVIRANJA V ZBIRKI OBLAČIL IN OBLAČILNIH DODATKOV POKRAJINSKEGA MUZEJA MARIBOR

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Pregledni znanstveni članek (1.02)

IZVLEČEK

Pokrajinski muzej Maribor je začel sistematično zbirati gradivo za zbirko oblačilne kulture[59] leta 1965 po razstavi Tristo let mode na Slovenskem. Zaposleni so se zavedali pomena ustreznega hranjenja in razstavljanja oblačil in oblačilnih dodatkov in so zanje razmeram primerno skrbeli. Že konec 80. let je bilo gradivo v zbirki preurejeno in pri tem so bili uporabljeni sodobni, obstojnejši materiali. V primerno opremljene prostore je bila zbirka prenesena v letih 2010 in 2011, gradivo pa je bilo v naslednjih letih urejeno v skladu s sodobnimi smernicami preventivnega konserviranja.[60] Ohranjanje občutljivih tekstilij v zbirki oblačilne kulture je tako neločljivo povezano z ustreznimi postopki preventivnega konserviranja, ki so se več desetletij razvijali in izvajali v Pokrajinskem muzeju Maribor.

KLJUČNE BESEDE

preventivno konserviranje, oblačilna kultura, oblačila in oblačilni dodatki, konservatorstvo-restavratorstvo

POVZETEK

Pokrajinski muzej Maribor je bil med prvimi muzeji v Sloveniji, ki je sistematično začel zbirati predmete oblačilne porabe. Po leta 1965 pripravljeni razstavi Tristo let mode na Slovenskem je postavil stalno razstavo "modnih noš", ki jo je leta 1969, po razstavi Uniforme v zgodovini, še dopolnil. Kasneje so muzealci začeli zbirati tudi sodobne oblačilne predmete, zato se je zbirka hitro povečevala in danes obsega približno 10.000 predmetov.

Leta 1973 so odprli novo stalno razstavo oblačil in oblačilnih dodatkov. Prostori so bili opremljeni z vgrajenimi in premičnimi vitrinami, v katerih so razstavljali okoli 350 predmetov. Že kmalu so želeli stalno razstavo povečati, a jim kljub pripravi več projektov to ni uspelo.

Depo oblačilne kulture so uredili leta 1979 in ga leta 1991 povečali za dodatna prostora. Kmalu se je pokazalo, da so prostori maksimalno izkoriščeni. Primanjkovalo je primernih zaprtih predalnikov, v katerih bi morali hraniti najobčutljivejše muzealije, ter odlagalnih površin za pregled muzealij.

Stalna razstava oblačilne kulture se vse do začetka prenove gradu leta 2004, ko je bila umaknjena, ni širila. Tudi postavitev je ostala praktično nespremenjena. Večina gradiva je bila tako na razstavi prikazana več kot trideset let, kar je na nekaterih predmetih povzročilo nepopravljive poškodbe. Kljub zavedanju, da je treba izvajati ukrepe preventivnega konserviranja, so okoljske razmere v razstavišču začeli beležiti in uravnavati šele leta 1996.

Leta 2010 so uredili nove depoje oblačilne kulture v prenovljenih in sodobno opremljenih prostorih. Dotrajan in neustrezen embalažni in podporni material so zamenjali s sodobnejšim in trajnejšim. V letih 2018 in 2019 so odprli nova dela stalne razstave, pri načrtovanju in izvedbi pa upoštevali sodobne smernice konservatorsko-restavratorske stroke. Opravljena je bila tudi podrobnejša analiza stanja gradiva v zbirki in pripravljen seznam priporočil in ukrepov za izboljšanje preventivnega konserviranja, saj se muzealci zavedajo, da z izvajanjem ustreznih ukrepov zmanjšujejo potrebo po kurativnem konserviranju in restavriranju predmetov.

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[59] Poimenovanje zbirke oblačilne kulture, kot jo imenujemo danes, se je v preteklosti večkrat spreminjalo. V dokumentih lahko zanjo zasledimo različna imena, kot so: modna zbirka, kostumska zbirka, zbirka vojaških in modnih noš, oblačilna zbirka in še kakšno ime bi se našlo.

[60] Preventivno konserviranje: vsi ukrepi in dejavnosti za preprečevanje in čim večje zmanjševanje propadanja in izgube. Izvajajo se v okolju, kjer je predmet ali pogosteje skupina predmetov, ne glede na starost in stanje predmetov. Ti ukrepi in dejavnosti so posredni – ne posegajo v snov in strukturo predmetov in ne spreminjajo njihovega videza. ICOM-CC. URL: http://www.icom-cc.org/242/about/terminology-for-conservation/ (dostop 1. 7. 2019).

SOURCES OF INSPIRATION FOR STAGE COSTUME: SOME EXAMPLES OF ROMEO AND JULIET BALLET PERFORMANCES IN FRANCE IN THE 20TH AND 21ST CENTURIES*

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Professional article (1.04)

ABSTRACT

Stage costumes are a source of fascination for art historians and museum curators. New study departments or entire museums are dedicated to the subject worldwide. But this very recent historical preoccupation still lacks a theoretical background. We shall never read a costume like a painting or a sculpture, and never understand stage costume history with art history methodology. Literature, music, choreography, all contribute to creating what is considered to be a costume designer creation. A simple analysis of some representations of Shakespeare's Romeo and Juliet supports this idea of interdependence between the arts, which points to a larger theoretical difficulty in classifying stage costume as an art object.

KEYWORDS

contemporary dance, stage costume, Romeo and Juliet, Roland Barthes

SUMMARY

Surprisingly Shakespeare's Romeo and Juliet was adapted to music only in the 19th century, and adapted for ballet even later, in the 20th century. The first Romeo and Juliet was created in 1926 for Serge Diaghilev's company de Ballets Russes, set to music by Constant Lambert, with costumes by Max Ernst and Juan Miro. The production was scandalous in many ways and is a lesser known version today and also the most different from the original Shakespeare' text. In 1935 the Kirov ballet in Saint-Petersburg commissions from Serge Prokofiev a ballet on the theme of Romeo and Juliet. This most famous version today was staged for the first time in Czechoslovakia with choreography by Ivo Váňa-Psota. The choreography of Leonid Lavrovsky for the Moscow theatre in 1946 was the most internationally successful in its time and as a consequence declared the official version by Stalin. The many divergences between Prokofiev and the party apparatchiks changed his view of this myth. Prokofiev initially created a short piece with a happy end, but was forced by the censor to change it on to a tragedy, faithful to the original text. The difficulty in reading the original Shakespeare script remains the main concern of every artist trying to give a new interpretation. Composers like Hector Berlioz and Pyotr Ilyich Tchaikovsky have tried to transpose it into music; choreographers like Rudolf Nureyev, Angelin Preljocaj, Maurice Bejart, Mats Ek and Sacha Waltz have also questioned this universal myth. Very popular in the late 20th century and early 21st century, Romeo and Juliet ballets take on new connotations and interpretations due to costume designers. Ezio Frigerio, Enki Bilal, Germinal Casado, Magdalena Aberg and Bernd Herzog all read the script, saw the choreography, listened to the music and created the costumes. Fabrics and colours for the costume, make-up and coiffure, body movements, all contribute in reading Romeo and Juliet as imagined by the choreographer. The art historian must assemble this gigantic puzzle whilst often lacking most of the essential information. For Diaghilev's staging only some pictures and Miro drawings allow us to know something about this interpretation of Romeo and Juliet. In other cases, costumes have survived, have been used and re-used for the theatre by different dancers, or even change during the different representations of the same choreography, such as Enki Bilal's Juliet, which changes costumes three times in ten years. Such a complex element as stage costumes needs for its study new criteria and methodology, different from those used by art historians studying painting or sculpture. Roland Barthes incipit text, important and original in its way, seems insufficient and unclear for such a complex project as the study of the stage costume.

*Translation: Monica Marinescu

INTRODUCTION

When the curtains open, the audience enters a fascinating world where characters acquire new meanings by virtue of costumes and choreography. Guided by the visual cues, the audience is eager to decipher the scenes. Who is Romeo and who is Juliet? Are this man and this woman on the stage meant to be together? Should they be construed as the mythical couple, the eternal lovers of the universal culture? How do we imagine Romeo in the framework of the more recent history and is he the one destined for Juliet? Is this a different Juliet? Where does the story take place? Are the two protagonists in their youth or not quite so young, are they the romantic heroes or the postmodern victims of a globalized culture?

These questions are still legitimate today as they were long before Shakespeare wrote his play in 1597, given that every generation creates its own version of Romeo and Juliet. Their story is one of the myths in the universal culture most frequently revisited by writers, painters, film makers and choreographers, because, despite being so well-known, it can still inspire and convey a wealth of new interpretations. The history of the ballet in the 20th and 21st centuries has some astonishing examples to offer, if one looks only at the French dance stage. By examining the history of this particular ballet we can ascertain that the costume has played a pivotal role in its creation, by enhancing the story and revealing new meanings in connection with the characters and the script. As a factor of visual impact, the stage costume serves as a vehicle for the memory of the show.[1] One rarely remembers a gesture or a dance move without draping it in a costume. The costume is also the only material memory of the show and, by studying it, we may hope to understand the stage practice throughout its history.

NEW TOPICS FOR THE STAGE COSTUME

The stage costume, and specifically the ballet costume, has the particularity of being independent of the text writer or music composer, which means that it is free of any aesthetical pre-determination. This has been one of its main features since the beginning of dance history.[2] In the 19th century, the glorious epoch of the *tutu* and the *pourpoint*, the costume was still considered a simple accessory, not an active element of the show. The popularity of the *tutu* and the *pourpoint*, as well as their adaptability to any performance has introduced them into the collective imagination as symbols of ballet. Our society has represented women's costume through the *tutu* and men's dancewear through the *pourpoint*, ever since. However, this is more of a custom than an aesthetical choice and is not related to fashion trends. On the contrary, these emblematic dance costumes are more frequently seen in performances defined by a conservative interpretation.

In the early 20th century, the *tutu* for ballerinas and the *pourpoint* for male dancers gradually became obsolete. New costume designers, who were frequently painters, started to combine different costume styles in the same performance, envisioning this practice as a new aesthetic attitude. For example, ethnographic, civilian or uniform costumes started to be used on a regular basis on stage, whereas the *tutu* and the *pourpoint* became more like symbols of ballet rather than functional costumes. Due to this new practice, the gap between the visions of the composer, choreographer and costume designer became wider and, as a result, new interpretations emerged. Sometimes, this divergence consisted in changing the original meaning of the composer's work or, conversely, new meanings enriched the dance through innovative images, more profound and subtle. The diversification of the costume's significance has become more obvious in the 21st century, when choreographers began to employ costume designers, making the stage costume a major element of the aesthetics of ballet.[3]

Creative freedom in designing the stage costume is given also by writers or composers. Generally, authors do not impose a typology of the costume for the scenic representations of their literary works. They might suggest or have the tendency to portray their works as contemporary with the historical moment of the action in the play. For example, when performing an ancient drama in the theatre, the dancers will put on costumes inspired from the ancient world; following the same logic, we are used to imagine the characters in Shakespeare's scripts dressed in Victorian Renaissance costumes, which were their contemporaries. Since the beginning of the 20th century, it has been possible to see a Shakespearean production interpreted by

[1] AMBERG, G. 1953, 20th Century Ballet Design, *Everyday Art Quarterly*, no. 26, pp. 4-11. URL: www.jstor.org/stable/4090761 (quoted 17. 7. 2019).
[2] KIRSTEIN, L. 1984.
[3] NOISETTE, P. 2003.

dancers wearing modern costumes, as well as ancient texts performed in Romantic costumes or, which even more interesting, ballet performances were different styles of costumes appear in the same show.

This blend of styles serves the chorographer's need for expression and often gives rise to new personal interpretations of the original score. In our study we will argue this idea by analysing the costumes designed for Romeo and Juliet in Shakespeare's plays and their adaptations for the ballet in the 20th and 21st century, on the French stage. The original music for the ballet Romeo and Juliet, which is our subject matter, includes, in chronological order, the works of Hector Berlioz (1839), Pyotr Ilyich Tchaikovsky (1869), Constant Lambert (1926) and Serge Prokofiev (1935).

FIRST VERSIONS OF PROKOFIEV'S ROMEO AND JULIET

The most popular version nowadays is Prokofiev's Romeo and Juliet, commissioned by the Kirov Theatre in Saint Petersburg in 1935. As it was his first Russian order received after his return from exile, Prokofiev opted for a modern approach and composed a short ballet. He was used to Diaghilev`s Ballets Russes productions, which lasted twenty to forty-five minutes. At the time, this modern approach was criticised by Kirov's dancers, who found the score impossible to dance to, the rhythm being too fast and lacking in poetry. In addition, being used to a more classical dance for a show conceived to last an entire evening, Kirov Theatre demanded that Prokofiev to change the end and create a very classical score for a much longer ballet version which lasted up to two and a half hours.[4] His conflict with the Kirov dance company delayed the first performance in Russia, so this very first Romeo and Juliet adapted for the ballet was staged for the first time in the Czech Republic, in December 1938, at the Brno Theatre. Unfortunately, Prokofiev was not allowed to take part in this successful performance. The ballet was only a partial representation of the original score, involving excerpts taken primarily from the first and the second symphonic suites. This was the first version of Romeo and Juliet adapted for ballet that remains true to Shakespeare's text and it was choreographed by Ivo Váňa-Psota, who took on the part of Romeo, while Juliet was interpreted by Zora Šemberová. The costumes were inspired by the traditional depictions of Romeo who was wearing male tights and a *pourpoint*, whereas Juliet had a long dress with large sleeves. No doubt the simplicity and sobriety of the costumes facilitated the dancer's movements without creating an additional narrative function. This was not the case, however, for the second and the most staged version of Prokofiev's score, faithful to the 1939 version choreographed by Leonid Lavrovsky for Kirov's production. This conservative choreographer living in a reactionary climate was not particularly supportive of Prokofiev`s original happy end of Romeo and Juliet.[5] Commissioned and conceived as a four-act performance with a happy ending, the score was drastically modified by Lavrovsky, so that it became a three-act ballet with a prologue and epilogue. Prokofiev protested in vain: "On numerous occasions I have appealed to the Kirov Theatre to insert a number of corrections relating to the lack of coordination between the choreography and the music, superfluous repetitions, insertions, and so on. For four months nothing has been done and I do not know the state in which the production will reach Moscow. On March the 31st I sent a registered letter to the management with an official request for an enquiry into this matter. But the management has simply not replied."[6] The costume design for Kirov's ballet productions was inspired by the Victorian style, enabling the public to imagine that the play was set in Shakespeare's time. Similarly, for the Bolshoi's ballet representation of 1946, based on choreography by the same Lavrovsky, the lavish costumes and sets displayed an aristocratic source of inspiration, which was bound to have a shocking effect on the Soviet society. However, having received Stalin's approval, this version and these costumes became the official ones, and for this reason, they came to be seen as a bridge between the Eastern and Western cultures, receiving international fame. Indeed, this second Lavrovsky rendition of 1946 has become one of the most staged versions in the history of Romeo and Juliet ballet. Many versions have drawn inspiration from it, such as Rudolf Nureyev's choreography created in 1984 for the Paris Opera, a version inspired also by his own choreography for the London Opera House in 1977. Surprisingly, Nureyev, a political refugee from the Soviet Union, staged in Paris Stalin's official version of the ballet. Visibly inspired both by Lavrovsky's ballet and by Franco Zeffirelli's sets for the 1968 film "Romeo and Juliet", Nureyev created a complete version of the ballet. Moreover, he chose to recreate the long version and to dress his dancers in costumes designed by Ezo

[4] BARRANDON, C. 2013, p. 63.
[5] MORRISON, S. 2007.
[6] Letter of April 30, 1940, quoted in Kravetz, "Prokofiev and Sherman: The First Soviet Production of Romeo and Juliet," p. 20. Three Oranges: The Journal of the Serge Prokofiev Foundation 8, November 2004, pp. 16-21, translation adjusted.

Frigerio, in a very luxurious style. For every sequence of the ballet a different costume was designed, using richly decorated fabrics and very colourful elements. True to his aesthetic and choreographic ideal, Nureyev preferred, in most cases, ballets abundant in drama and moving gestures. In this respect, Romeo and Juliet is one of the best examples of his career. No trace of Prokofiev's happy ending survives in Nureyev's version of Romeo and Juliet and none of Prokofiev's idealistic desire to change the Shakespearean drama for the ballet. In fact, Prokofiev believed that it was not possible to represent death through dance, for it seemed contradictory to him to represent death, the "absolute static form" through dance, the "absolute form of movement". Hence, in Prokofiev's interpretation the two lovers were eventually saved by Friar Laurence. Prokofiev's script contained a certain dissident dimension due to his aim to rewrite one of the most revisited myths of the European culture and adapt it to the new political context. Therefore, reading Shakespeare in an unconventional manner was for Prokofiev a way to express his creative freedom, by taking a well-known script and daring to think about it differently. However, Soviet censorship viewed this approach as an offence to the Western culture and tried to appear consensual, simulating cooperation and mutual respect by being loyal to the original story.

ANGELIN PRELJOCAJ'S ROMEO AND JULIET

At the opposite pole from Prokofiev's censured score, Angelin Preljocaj, the French choreographer, who was originally from Albania, created in 1996 another version of Romeo and Juliet, at the request of the Opera House in Lyon. He employed Enki Bilal, a French comic book creator, born in Serbia, to draw the costumes.[7] The starting point of this innovative choreography was the opposition of social classes under an invisible dictatorship, which was not innocuous, given that the ballet was created by two Eastern artists currently living in Western Europe. If the initial feud in Prokofiev's score was considered by Lavrovsky as a typical Shakespearean family quarrel, in Preljocaj's version an entire society is divided, which is an indirect reference to both the Eastern and the Western society. Preljocaj envisaged the upper and lower classes living in violent opposition and both being deprived of the fundamental right to freedom, that of loving freely. The Capulets, Juliet's rich family symbolising the upper class and the Montagues, the marginal and poor family of Romeo, are both living under a dictatorship of the Image, which impersonates the typical desire of power in every society. The Capulets manage to gain absolute power while Juliet is contesting her own family's ideal and principles. Romeo and his companions are trying to obtain certain freedoms, which is impossible as they are constrained by poverty. Indeed, there is no more tormenting desire than wanting to be someone other than who you are, whilst trying to break free of the society's hierarchies. In Preljocaj's choreography each character is trying to gain more rights and to better express their desires and freedom. The scene takes place in the middle of the ruins of a dislocated city, perhaps Verona or any of the European cities in the East or West and, overseeing them all, police agents are on the watch to ensure order is respected. This time, the stage costumes reveal by themselves the fracture between the two social groups and allow the viewer to read more into Juliet's and Romeo's personalities and way of life. If in Lavrovsky's and Nureyev's ballets the costumes for both Romeo and Juliet were those of young people, alluding to the ideal of innocence and purity, in Preljocaj's vision the mythical couple is an ordinary, contemporary pair. In the balcony and the tomb scenes, dance and costumes retain a certain degree of eroticism, which certainly lacked in Nureyev's choreography, whereas in Lavrovsky's approach it was treated in a more conventional and respectful manner.[8] In contrast to the other versions, Preljocaj's Juliet wears a very sexy outfit in all the dance scenes, not necessarily showing off her body, but highlighting parts of it.[9] For example, the voluminous artificial breasts superposed on her negligee dominate her entire portrait. There is even an obsession for the anatomical cliché of modern beauty apparent in the costumes of Juliet's and her nurse, as designed by Bilal: big breasts and nudity are synonymous with being attractive, desirable. In terms of dancewear, it appears that in this show women are subjected to all the clichés of the contemporary society, whereas men's costumes are more neutral. In Preljocaj's version, Romeo no longer has his *pourpoint* or leg tights, but he wears a poor, ordinary civilian costume in the typical style of the early 1990s, which makes him look more like a member of the local mafia than a romantic hero, as he was imagined by Nureyev.

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[7] BIZON, P.-H. 2015, pp. 52-68.

[8] For an analyse of Rudolf Nurejev, Angelin Preljocaj and Sacha Waltz Romeo and Juliet choreography, see the text by Beatrice Pfister La scène du balcon en ballet: "Roméo et Juliette" du classique au contemporain, colloque-festival Scènes de balcon dans le théâtre européen XVIe-XVIIIe, Montpellier, 23.-25. Novembre 2016. Article published in the journal *Arrêt sur scène/Scene focus.*

[9] DELAHAYE, G., FRESHEL, A. 2003, pp. 16-19.

TCHAIKOVSKY'S ROMEO AND JULIET BY MATS EK

The neoclassical music composed by Prokofiev for Romeo and Juliet is considered too didactic and predictable, hence not free enough for Mats Ek's vivid imagination. Therefore, Ek chose another Russian composer, the more romantic Pyotr Ilyich Tchaikovsky, and adapted his music to a completely new choreography, for the Royal Ballet of Sweden that was touring at the Opera House in Paris in 2013.[10] Among all the versions we have examined, Tchaikovsky's is the shortest, the initial score being composed as a "Fantasy-Overture", a short symphonic poem of twenty minutes that was not designed for ballet. Juliet and Romeo, as Ek decided to name his choreography, was adapted by Anders Hogestedt[11] based on different fragments from Tchaikovsky's famous musical works. The sets and costumes designed by Magdalena Aberg introduce the audience in a timeless narration, in an indefinite empty space, which is often Ek's trademark: a large scene depicting a removable iron curtain as the unique element of scenography. For Mats Ek the ballet is about Juliet, a young woman living in our society, fighting against her family's pressure to marry against her will and principles. In the tragic end, just as in Shakespeare's script, Juliet and Romeo meet and engage in a short love affair, after which they both die. Next, Juliet is forced to marry Paris. Her nurse is a modern, comprehensive and protective woman but utterly powerless before the ambition and determination of Juliet's family. Romeo, who is an orphan, is accompanied by his friends Benvolio and Mercutio, who is gay. The simplicity and sobriety of this ballet performance defined by graceful and highly dynamic gestures is perfectly synchronized with the neutral and elegant costumes. Every time Juliet appears on the stage in the key moments, she wears a different and very simple costume: Juliet is dressed in a short lemon-yellow skirt for her first appearance, next she is adorned with a golden *tutu* decorated with glittering flakes and sequins for her encounter with Romeo at the Capulet's ball. Then, for their love night she wears a symbolic white shirt in fluid silk and for the final tomb scene she wears a simple, sleeveless white tunic. Romeo's costume is simpler, as he wears cotton polo shirt and trousers during the entire show, an undershirt and underpants for the love night scenes with Juliet. This is the latest version of the Shakespearean script performed in France and it seems to be by far the most innovative and the most modern. Mats Ek has drastically changed the perspective of the composition, focusing all eyes on Juliet, a character inspired here not by a feminist point of view, but rather by a more detailed analysis of the complex perception of love in our society: a young woman's feelings, even if she seems to have some experience in the matter, the difference between a nurse's love and a mother's love, the difficulties faced by the homosexuals living in the contemporary society (Mercutio is ironically represented in a black tutu, shirtless and with several tattoos). In Mats Ek's version, costumes follow the narrative structure creating a very harmonious configuration and outlining soberly and clearly the portraits of different characters.

CONTANT LAMBERT'S ROMEO AND JULIET FOR DIAGHILEV'S BALLETS RUSSES

Equally innovative, but in a radically different way is the Romeo and Juliet created for Diaghilev's ballet company for the London Season in 1925 and for the Monte Carlo Season in 1926, following the musical score of Constant Lambert.[12] Musically speaking, this is a less known version of Romeo and Juliet and the one that is most different from the original Shakespeare drama. The action takes place in a ballet studio. Upon entering the room, the leading male dancer and the prima ballerina realise they are late, so they quickly change their clothes and get ready for the class. Their instructor teaches them *pas de deux*, but the pair keeps forgetting the dance moves, making no secret of their affection. In the second act of the performance, the stage has been prepared for a rehearsal of Romeo and Juliet. All the key moments of the Shakespearean play are observed and at the end Juliet dies. The curtain falls and the enthusiastic audience imitates and applauds the principal dancers. The curtains rises, but Romeo and Juliet are not there to receive the adulation. The spectators rush on the stage, searching in vain for the lovers, who, in the meantime, have eloped by aeroplane.[13] The choreography of this ballet was created by Bronislava Nijinskaya and the lead roles were performed by Tamara Karsavina (Juliet) and Serge Lifar (Romeo). At the beginning of the collaboration with Lambert, Diaghilev commissioned from him a musical score without specific guidelines. For this reason, Lambert composed

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[10] Programme de spectacle, Juliette & Romeo, 2014.

[11] Mats Ek and Anders Hogestedt decided to mix in a very harmonious way several excerpts from Tchaikovsky, composing a ballet that lasts ninety minutes: Romeo and Juliet Fantasy-Overture, the First Piano Concert, the Fifth Symphony, the Third Suite, the Capriccio Italien, the Manfred Symphony.

[12] LLOYD, S. 2009, pp. 54-72.

[13] The Musical Times review of June 1st, 1926, described the ending as a 'gay elopement, with a pantomime-charade of flight by motor-bicycle and aeroplane'. In: LLOYD, S. 2009, p. 58.

a score which he named Adam and Eve, but Diaghilev argued that Karsavina was married and too old to be Eve, so he called it Juliet arguing that: "Since Shakespeare used no scenery, neither shall we."[14] For the design of sets and costumes, Lambert chose Christopher Wood, who showed Diaghilev many drawings and sketches. Essentially, the scenography was meant to portray a very minimalist rehearsal class at the Ballets Russes with empty walls and ropes hanging everywhere, plus a balcony at the side for acting the famous love scene. During the preparations for the ballet, Diaghilev, accompanied by Lifar, was invited to a surrealist exhibition in Montmartre, so he spontaneously decided to commission Max Ernst and Juan Miró to draw the curtain and the costumes for the show. The novelty resides not only in his delirious scenario but also in the choice of costumes. Romeo and Juliet appear on the stage in civilian costumes and carrying a suitcase. Juliet has a *tutu* and Romeo an undershirt with plain trousers for the rehearsal scenes. The surprise comes in the elopement scene at the end, when the protagonists wear leather coats and aviator caps and goggles.[15] None of these theatrical elements has survived to the present day, but several drawings by Miró and photos from the performance allow us to imagine this show which sparked a substantial conflict between the authoritarian Diaghilev and the young Constant Lambert. Scandalous in many aspects, due to its script, sets and costumes, this version of Romeo and Juliet ballet was not meant to cause such public uproar, but it nonetheless did so during its creation. Lambert, however, was disappointed because in his script there was no mention of a personality or age for a Juliet, nor a specific costume or scenography, as well as no particular vision about Shakespeare's play. Louis Aragon and André Breton also criticized Miró and Ernst for their strictly financially motivated collaboration with Diaghilev.[16]

ROMANTIC UNIVERSAL LOVE IN HECTOR BERLIOZ'S ROMEO AND JULIET

Hector Berlioz's musical score for Romeo and Juliet, an early creation of his career composed during his stay at the Villa Medici in Rome, is very respectful of Shakespeare's original drama and focuses on the idea of universal love, irrespective of the period, culture and space, proposing an exalted and colourful music, Romantic *par excellence*. Maurice Béjart created a ballet for the Festival of Avignon in 1967 using this piece as musical background, a version centred on the idea of universal sensitive love. The ballet is danced in a paradisiacal Italian garden which has a shell-shaped tray in the middle and Renaissance statues of ancient inspiration at the sides. Starting like a usual rehearsal scene, the ballet has an overture where the characters and the main theme are presented. The scene is introduced by a man and a woman wearing ancient masks, as in the ancient Greek Theatre. The choreographer chooses the dancers in the garden and assigns the parts to each of them. This scene is followed by one where Romeo and Juliet perform the actual dance, to Berlioz's score. The conclusion is envisioned by Béjart in a modern key: love triumphs, dead people come alive and dance, celebrating in the idealistic, pure style of the 1970s the "make love not war" slogan.[17] The colours of the costumes designed by Germinal Casado – fluid muslin for women, leotards and leggings for men – change according to the key moments in the script: the meeting between Romeo and Juliet, the opposition of the two clans, the Capulets and the Montagues, the ball at the Capulets, the balcony and the love scene, the very long and very detailed scene of Juliet's apparent death followed by Romeo's actual death and ending with Juliet's suicide. Concerning Romeo and Juliet, the unique and dominant colour on their costumes is white, some elements being added during the more festive scenes, such as the headpiece for the Capulets ball or for the final love scene.

Deemed as the most universal version of Romeo and Juliet, due to its timeless perspective, the composition of Hector Berlioz was also chosen by Sacha Walz for her ballet created in 2011 for the Opera House in Paris. Faithful to Berlioz's script, Sacha Waltz commissioned Bernd Herzog to draw special costumes adapted to her scenography which included a large mobile tray moving up and down during the various moments of the plot. Another particularity of this ballet is the presence of the choir in the scenes alongside the dancers, so that almost all one hundred performers are on stage. This is by far the most numerous team ever involved in a Romeo and Juliet production. Herzog depicted the two clans very distinctively, observing each time the succession of the narrative moments: "True to the work's intentions, the transformations sustained by the costumes of Romeo and Juliet follow the history of the two lovers into their tragic death. There are two fam-

[14] GRIGORIEV, S. L. 1960, p. 221.
[15] Nikitina, who also played Juliet's part, remembers the confusion of the audience at every new representation, when she and Lifar showed up on the stage in civilian costumes and the suitcase. In: WINGATE, A. 1959, pp. 57-58.
[16] DIAGHILEV, S. 1979, pp. 136-138.
[17] CHRISTOUT, M.-F., BEJART, M. 1988, pp. 72-75.

ilies from radically different cultures. Melting in the global composition, some isolated characters emerge in snippets, relations are created between the abstraction of the sets, the plot, the musical tension and Sacha Waltz's interpretation. Different costume styles have found their inspiration in books of ethnographic costumes. Worn by different members of the two opposite families, the costumes suggest, by association of ideas and stylistic details, [different] social positions, beliefs and conceptions about life. Through minimalist expressions – lines, textures and colours – the costumes also try to highlight the aura of each character. In the same way, the static attitude of the choir reflects the conservative and rigid structures of the two families. In the ball scene, the flamboyant and voluptuous sensuality of the Capulets creates a contrast to the austere and elegant purism of the Montagues. The two lovers discover that the opposition of their families brings them inexorably together. Polarities […]. For the funeral procession, both the dancers and the choir mix with the families, forming a final impressive tableau. The confrontation between the two families, starting with the original feud up to the final reconciliation due to Friar Laurence, constitutes the climax of the work".[18]

ARCHIVING STAGE COSUTMES

Would Shakespeare recognise his heroes in these depictions? One cannot say. Prokofiev and Lambert were far from being satisfied with the scores they had created for the ballet, whereas Berlioz and Tchaikovsky could not even imagine that someday their music would be celebrated on stage through dance. Are we still speaking about the same Romeo and the same Juliet? Not so sure either. The ballet, in contrast to the theatre, is the result of a lot more collaborations and, most of the time, the success of the dance performance is determined by the quality of the collaboration among different parties. The choreographer, the costume designer and the set designer must all agree on their choices concerning the script, the score, the dancers and sometimes the choir. This multitude of creative inputs does not necessarily create the universal or total work of art (*Gesamtkunstwerk*), in the Wagnerian sense, but an artwork in which, as Bertolt Brecht has theorised, the '*Gestus*' must be evident. Reading all these descriptions of different versions of Romeo and Juliet ballet would Roland Barthes maintain his analysis of 'The diseases of the stage costume'.[19] In this study, Barthes describes the three main "diseases" affecting the costume as being the result of an inadequate representation of the original work or of the context of its representation.

Barthes distinguishes tree main diseases: the pathology of the sign, the aesthetic pathology and the veridical paradox. We can reduce all these "diseases" to a simpler and more ancient aesthetical category, the Kitsch. In the light of these three aesthetic categories, the total work of art, the pure style (as for example Antique, Renaissance, Romantic etc.), and the kitsch, the stage costume can be analysed and described, but can it cannot be considered a masterpiece of art.

Maybe Barthes would agree with Prokofiev and consider Lavrovsky's and Nureyev's representations of Romeo and Juliet as strictly decorative, lacking any philosophical vision of the drama. He might also deem Diaghilev's version as a very courageous and authentic one despite Diaghilev's conflict with the music composer and leaving aside the commercial contract with the painters. Barthes might also appreciate Mast Ek's version of the Juliet and Romeo ballet, but none of the costumes used in the performances mentioned above could be considered a work of art. An excellent craft work, a costume adequate to his purpose in a technical sense, an aesthetic colour or an elegant style, etc. are undeniable qualities for a stage costume. However, to become a proper artwork, other conditions must be met: the costume must express individually and by itself an art concept, more accurately called a Weltanschauung, the artist's vision of the world. The stage costume alone, without the music, without the dancer, without the choreography can express very few things. It can provide descriptions of a state of art, of the couture history at a certain point in time, a history of the fabrics (for example progress in dance is also due to the modern fabrics in the textile industry), but will never represent by itself a complete aesthetic idea.

Preserving stage costumes in museums is certainly a step forward in our cultural history, as it fills the gaps in our material knowledge of the arts, but studying exclusively the stage costume cannot reveal by itself complex aesthetic concepts in the way that painting, sculpture or all the arts considered since the Antiquity as

[18] Romeo et Juliett, Ballet de Sacha Waltz, Programme de l'Opera National de Paris, 2011, pp. 62 – 63.
[19] BARTHES, R. 1955.

major can. Nevertheless, more adapted theoretical concepts must be taken into account in the study of the stage costume. Roland Barthes' short text is relevant in many points, but insufficient for covering the need for clarity when analysing the history of stage costumes. The costume and implicitly its history can be analysed only from an anthropological and social perspective, because the costume deals with life due to its being inextricably linked to its owner, whereas painting deals with the core of art and creativity. A theory of stage costume, similar to the theory concerning the analysis of visual narrations in painting [one of the major forms of visual narrative], is more than necessary today, when several institutions worldwide have decide to study and preserve the valuable heritage of stage costumes. Such a theory could be as complex as Aby Warburg's Iconology, but subtler as it deals with the living. When looking at the storage of a costume museum our first instinct is to look for the people who wore the costumes and whose material bodies have disappeared. However, admiring a costume worn by a historical or fictional character is, as Laurent Cota says,[20] like looking at the picture of a person who has passed away, although due to this material testimony we have the opportunity to reconstruct its emotional history.

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VIRI NAVDIHA ZA ODRSKI KOSTUM: NEKAJ PRIMEROV FRANCOSKIH BALETNIH PRODUKCIJ ROMEA IN JULIJE V 20. IN 21. STOLETJU

Petra Vlad, Narodni center za odrske kostume Moulins, Francija

Strokovni članek (1.04)

IZVLEČEK

Odrski kostum predstavlja nov izziv za umetnostne zgodovinarje in muzejske kustose. Temi se posvečajo novi študijski oddelki pa tudi muzeji po vsem svetu. Ta nedavni zgodovinski interes še vedno nima primernega teoretičnega ozadja. Odrskega kostuma nikoli ne bomo brali kot sliko ali kip in zgodovine kostumografije nikoli ne bomo razumeli skozi metodologijo umetnostne zgodovine. Literatura, glasba in koreografija prispevajo k ustvarjanju kostumografske kreacije. Preprosta analiza nekaterih uprizoritev znamenitega Shakespearovega dela Romeo in Julija zagovarja idejo vzajemne odvisnosti različnih umetnosti, ki še dodatno prispeva k večji zmedi v teoretskem razvrščanju scenskega kostuma kot umetniškega predmeta.

KLJUČNE BESEDE

sodobni ples, odrski kostum, Romeo in Julija, Roland Barthes

POVZETEK

Presenetljivo je, da je bilo Shakespearovo gledališko delo Romeo in Julija uglasbeno zelo pozno, šele v 19. stoletju, baletna različica pa je bila ustvarjena še pozneje, v 20. stoletju. Prvi balet Romeo in Julija je nastal leta 1926 za baletni ansambel Ballets Russes Sergeja Djagileva, po glasbi Constanta Lamberta in s kostumi Maxa Ernsta in Juana Mirója. To v mnogih pogledih precej škandalozno delo je danes manj znana različica, ki se je tudi najbolj oddaljila od Shakespearovega izvirnika. Leta 1935 je Sergej Prokofjev ustvaril balet na temo Romea in Julije za Kirovski balet v Sankt Peterburgu, ki je danes najbolj znana različica in je bila prvič uprizorjena na Češkem v koreografiji Iva Váňe-Psote. Koreografija Leonida Lavrovskega za moskovsko gledališče leta 1946 je bila ob svojem času mednarodno najbolj uspešna, Stalin pa jo je posledično razglasil za uradno različico. Številna razhajanja med Prokofjevim in partijskimi birokrati so spremenila njegovo dojemanje tega mita. Prokofjev je sprva ustvaril kratek, srečen glasbeni konec, vendar ga je cenzura prisilila, da glasbo spremeni v tragični konec opusa, ki ustreza izvirnemu besedilu. Prav težavno branje izvirnega Shakespearovega dela ostaja največji izziv vsakega umetnika, ki ga skuša interpretirati na novo. Skladatelja Hector Berlioz in Peter Iljič Čajkovski sta ga poskušala prenesti v glasbo; koreografi Rudolf Nurejev, Angelin Preljocaj, Maurice Bejart, Mats Ek in Sasha Waltz so prav tako preizpraševali ta univerzalni mit.

V poznem 20. stoletju in začetku 21. stoletja je izjemno priljubljeni balet Romeo in Julija ob različnih kostumografih deležen novih konotacij in interpretacij. Ezio Frigerio, Enki Bilal, Germinal Casado, Magdalena Åberg ali Bernd Herzog so vsi prebirali izvirnik, si ogledali koreografijo, poslušali glasbo in ustvarjali kostume. Tkanine in barve za kostum, ličila in pričeske, gibi telesa, vse to prispeva k branju osebnosti Romea in Julije, kot si ju je zamislil koreograf. Zgodovinar umetnosti mora razvozlati to veliko uganko, pri tem pa mu pogosto primanjkuje ključnih informacij. O Djagilovi predstavi je na voljo le nekaj slik in Mirójevih risb, ki le delno razkrivajo njegovo interpretacijo Romea in Julije. V drugih primerih so kostumi preživeli številna obdobja, v gledališču jih uporabljajo različni plesalci ali pa se celo spreminjajo skozi različne interpretacije znotraj iste koreografije kot na primer Julijin kostum Enkija Bilala, ki ga je v desetih letih spremenil trikrat.

Za proučevanje tako kompleksnega elementa, kot je scenski kostum, so potrebna nova merila in metodologije, ki se razlikujejo od tistih, ki jih umetnostni zgodovinarji uporabljajo pri preučevanju slikarskih ali kiparskih del. Kritični esej Rolanda Barthesa, ki je na svoj način pomemben in izviren, se za tako celovito nalogo, kot je preučevanje odrskega kostuma, zdi nezadosten in nejasen.

BREAKING THE CANON: TOWARDS FASHION MUSEOLOGY IN SERBIA*

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Professional article (1.04)

ABSTRACT

Often dominated by the canonization of fine arts, Serbian museology has only recently started to follow the global trends of exhibiting fashion. Since the publication of the first study to position Serbian fashion exhibitions within the frameworks of contemporary (Western) fashion museology,[1] national museums have witnessed a gradual acceptance of fashion museology as a valid discipline, moving from ethnological and anthropological placement of fashion in museums to the present-day fashion museology. By expanding the scope of the study, the author aims to further initiate the establishment of fashion museology by analyzing the state of fashion and its studies within Serbian university curricula, academic publishing, and museums. Special attention will be given to the fashion exhibition Maison Barilli: Belgrade / New York as a catalyst for establishing fashion museology in Serbia.

KEYWORDS

fashion museology, fashion studies, fashion exhibitions, Balkans, Serbia

INTRODUCTION:
THE STATE OF FASHION STUDIES IN THE BALKANS, THE STATE OF THE BALKANS IN FASHION STUDIES

Fashion studies, or as Christopher Breward, one of the leading scholars of fashion globally sees them, the new body of work complementing those specialized studies of aspects of fashion culture that have been completed within the fields of social, cultural, and economic history[2] became an integral part of both academic and museum environments in the 21st century. To paraphrase Breward, fashion studies have been, by acknowledging the concerns of anthropology, psychology, linguistics, sociology, cultural studies, and art history on one and by concentrating on the fashionable western dress on the other side, established as a practice independent from aforementioned disciplines.[3] Fashion museology (alongside fashion history and fashion theory constituting fashion studies) and its subject – fashion curation and fashion exhibitions – can be seen as the desire to divorce the subject (fashion) from its crude economic context, the desire revealed in exhibitions which have deliberately echoed the concerns of academic investigations of fashion.[4] In Fashion and Museums: Theory and Practice, Marie Riegels Melchior distinguishes three periods in the establishment of fashion museology: The first period (1930s – 1960s) is the period of dress museology, when (Western) museums approached the single, tangible object with the focus on dress / costume rather than fashion with the aim to document it and build a collection; the second period (1960s – 1990s) shifted the focus from the single object to the visual impression and narrative of the exhibition; while the third period (1990s – present) marks the time in which fashion museology emerged from fashion studies and sees the rise of the fashion curator and spectacular shows creating unique visitors experiences.[5]

Given the historical circumstances and its geopolitical position, it is quite understandable that Serbia, likes other Balkan and former Yugoslav countries, could not have been a pioneer in fashion studies. The main reason for the Balkans not joining the fashion studies academia until recently is that fashion was initially the

*Translation: Stefan Žarić

[1] Issues in Ethnology and Anthropology, Fashion and Anthropology, 2015, volume 10, number 4, Stefan Žarić, Musealization without Museology: National Museums and Fashion Exhibitions between History, Theory and Practice, pp. 915-924.

[2] BREWARD, C. 2003, p. 9.

[3] Ibid., p. 9.

[4] Ibid., p. 14.

[5] Fashion and Museums: Theory and Practice, 2014, Marie Riegels Melchior, Introduction: Understanding Fashion and Dress Museology, pp. 1-18.

product of Western capitalism, its material culture and aesthetic system, which led to the emergence and establishment of fashion studies as a predominantly Western discipline. The West thus became, as Luz Neira Garcia says in the paper The Centre of the Periphery in Fashion Studies: First Questions, the central place of fashion studies, with everything else becoming the periphery:

"Most studies of fashion in the West emerge from theories that have taken shape and have been formulated in a European and North American context, because these theories have been given an impetus in geographic places where fashion has been endowed with political, economic and social significance – the so-called 'central' places. This means that not only fashion but also the grounds for studying it have always been (and continue to be) extensively reproduced in the regions that are regarded as peripheral to the field."[6]

Having in mind the dominance of patriarchal societal norms in countries of the Balkan region and their dramatically slow transition from monarchist, communist, and socialist regimes towards (neo)liberal democracies, little space was left for Balkan academia to welcome fashion in its system. Socialist regimes established in Eastern European countries after WWII, among other things, copied Soviet clothing practices by denouncing Western fashion as a bourgeois perversion and advocating for the creation of classless socialist clothes adjusted to the working woman.[7] As utilitarian clothing was given priority over the aestheticism of fashion, it is understandable that fashion could not as easily and rapidly become the object of academic and more importantly museological interest as it did in the West – North America and Western Europe.

In former Yugoslav republics, the process of studying fashion theoretically, historically and museologically (in addition to already existing studies of fashion, textile, costume, and clothes design) became more dynamic and inclusive in Slovenia and Croatia upon their accession to the European Union, which led to an increasing number of fashion exhibitions, symposia, and publications. This means that both countries are proving capable of following the mainstream cultural practices of their Western peers, thus justifying their own membership of the bloc. In fact, it could be argued that Croatia is the regional leader in fashion studies, given the several fashion and design related shows and publications it launches annually, alongside the establishment of the Centre for Research of Fashion and Clothing in Zagreb in 2013, and graduate studies in Theory and Culture of Fashion at the Faculty of Textile Technology, University of Zagreb.[8]

The lack of attention given to fashion by academics from the Balkans like art historians and less by anthropologists, whose western counterparts actually influenced the emergence of fashion studies in the West, is not the only reason for fashion being understudied in the region. At the same time, Western fashion academia remained self-centered for many decades and it still isn't showing a notable interest in Balkan fashion history, contemporary fashion design, or fashion exhibitions. This originates in a cemented perception in Western, particularly politics of North America and European Union of the Balkan region as Europe's internal Exotic Other, unable to overcome its conflicts. Because fashion has been considered a European invention, Eurocentrism and exoticism are not separate from fashion dynamics.[9] As this Otherness functions as a constitutive aspect in forming the image of the Self, by equating terms of European Union and Europe all other countries which are not member states of EU are automatically excluded from Europe as well.[10]

In this case, by claiming ownership upon European identity, The Self (European Union) refuses to integrate The Other within its cultural (and any other) identity. As such, The Balkans, Western Balkans in particularly, remain only politically, but not culturally visible on the map of the world. This problematic I further observed while researching contemporary Estonian and Serbian fashion designs and their (in)visibility in the West:

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[6] International Journal of Fashion Studies, Special Issue: The State of Fashion Studies, 2018, volume 5, number 1, Luz Garcia Neira, The Centre of the Periphery in Fashion Studies: First Questions, pp. 95-110.
[7] VELIMIROVIĆ, D. 2008, p. 37.
[8] Croatia's most notable contribution to regional fashion studies is publication Theory and Culture of Fashion (Faculty of Textile Technology University of Zagreb, 2018), which for the first time offered an insight on all aspects of fashion studies: theory, history, and museology, both through theoretical perspectives and case studies. Additionally, one of the world's leading scholars in Socialist and Eastern European fashion, Djurdja Bartlett, is originally from Croatia.
[9] NEIRA GARCIA, L. 2018, p. 96.
[10] Sociological Review, 2018, volume 48, number 3, Dejan Jović, Europe Outside the European Union? New Dilemmas in Defining European Identity, pp. 359-394.

"Fashion academia expanded its scope mostly to those fashions whose cultures the West both positively and negatively affected. Furthermore, this inclusivity could be read as a sort of redemption for historical "misbehavior" of dominant structures towards the oppressed ones. As a response to Black Lives Matter and Beyonce's Lemonade, African cultures came to focus, resulting in the splendor of costumes in Black Panther, celebrating the creative expression of Africa's cultural diversity. Discussions on controversial laws banning different Islamic veils in the West inspired San Francisco's De Young museum to stage Contemporary Muslim Fashions exhibit while the USA's problematic stance on immigration sparked the conversation about South, Central, and Native American fashions respectively. It could be argued that only countries which were historically and in the present moment "trapped" between the East and the West, which is the case with both Estonia and Serbia, are the ones the least visible to the fashion academia."[11]

These in-between, or according to Luz Neira Garcia, peripheral fashion cultures are in the discourse of Eurocentrism sidelined and often totally ignored from histories of fashion.[12] Exhibiting Fashion Symposium, organized in March 2019 by The Fashion Institute of Technology in New York where it took place is the proof of that. Out of twelve presentations, only two were based on non-western phenomena: one about Mexico, and another one about African Diaspora, while the rest were whether about fashion studies as such, or fashion exhibits in the West.[13] What could somewhat justify this lack of inclusiveness, in fashion museology particularly, is the fact that up to this paper nothing was written on relationship between fashion and museums in Serbia in English language,[14] thus disabling Western scholars from being introduced to the subject. Besides political isolationism, the practice of constantly overlooking the "in-between" countries and these countries constantly overlooking fashion could further lead to other troubling discourses, like cultural appropriation. For example, insufficient branding and protection of the Romanian blouse in Romania led to the scandal with fashion house Dior, which copied models of traditional Romanian folk costumes of the Bihor region community without giving the credit (or profit) to Romania. Only as a response to this, Romanian fashion magazine *Beau Monde* decided to launch the campaign *Bihor Couture* joined by the cause *La Blouse Roumaine*, branding the authenticity of Romanian ethnic textiles and folk costumes and their usage in contemporary fashion design. Led by such image of fashion and its studies in the region, or the lack thereof, I aim to further initiate the positioning of fashion studies – predominantly museology - within national academic and museum systems respectively.

Given aforementioned, the idea of this paper will be demonstrated through the problematic of fashion in university curricula, academic publishing, and museum environment. As a potential solution to the problem, through a case study - the exhibit Maison Barilli: Belgrade / New York – which unifies university coursework, publishing, and museums, I will illustrate how fashion museology could potentially be established as an academic discipline in the country.

(WHERE IS) FASHION IN SERBIAN UNIVERSITIES, PUBLICATIONS, AND MUSEUMS?

Positioning of fashion in Serbian museum environment is still principally inseparable from positioning of fashion within the country's academic publishing and university curricula.

Minor production of fashion exhibits, even in the country's only Museum of Applied Art which stages a fashion related exhibits only once in a few years,[15] is connected to the absence of fashion studies in the university curricula and academic publishing. Since the foundation of the Chair of Art History in 1905, further formation of the Department of Art History in 1963, and then the latest revision of the study program conducted in 2014, studies of art history at the Faculty of Philosophy, University of Belgrade, do not offer a single course on

[11] Estonian Art: The Paint Issue, 1/2019, Stefan Žarić, Ones to Watch: Estonia and Serbia's Young Fashion Designers, pp. 76-81.
[12] NEIRA GARCIA, L. 2018, p. 96.
[13] Another example is the mentioned publication, Fashion and Museums: Theory and Practice (Bloomsbury, 2014) edited by Marie Riegels Melchior and Birgitta Svensson, which included papers only by scholars from Northwestern Europe and North America. Fashion Curating: Critical Practice in the Museum and Beyond edited by Annamari Vaska and Hazel Clark (Bloomsbury, 2019) saw the same issue, with 12 out of 13 papers being written by scholars from Northwestern Europe, North America and Australia, and one paper by a Chinese scholar.
[14] In a broader Balkan context, Xenia Politou, the curator at Benaki Museum in Athens realized a notable contribution by writing about Greek fashion museology in English.
[15] The last fashion exhibition held at the Museum was Aleksandar Joksimović curated by Bojana Popović in 2015.

history and theory of fashion, or design and applied arts overall. Interestingly, in 1962 art and costume historian Pavle Vasić who served as a professor both at the Faculty of Philosophy and the Academy (later Faculty) of Applied Arts noted that history of costume utilizes its own methods, classifications, and divisions which often coincide with the periodization in history of art.[16] While at the Faculty of Applied Arts Vasić indeed developed studies of History of Costume, such coursework (despite its potential which could have affirmed a course in history of fashion) did not land in the curricula of art history.[17] Nowadays, even departments of Fashion Design, Textile Design, and Stage Costume at the Faculty of Applied Arts, besides the course Costume Design (former History of Costume conducted by Vasić) and general courses on art and design history, do not offer specialized courses in history and theory of fashion. However, aforementioned study programs do not educate students to become curators, theoreticians, or historians of arts, unlike the program in art history. Except in the cases of a focused paper or thesis research, students of art history are directed to fine arts exclusively. Without professionals educated in fashion history, theory and museology, exhibiting activities of museums are largely dominated by painting related shows which further solidify seemingly unbreakable canonization of fine arts. The academia is the one deciding what is worth of being studied, and what is, upon being studied, worth of being presented through a museum platform.

The only study program offering a theoretical, in this case anthropological perspective on fashion is the program in Ethnology and Anthropology[18] through the course Anthropology of Fashion at doctoral level, conducted by Danijela Velimirović,[19] having its roots in sociocultural approach to fashion. Back in 1980, sociologist of culture Aleksandar Todorović published a book that from the nowadays perspective could be seen as the only fashion studies publication in the 20th century Serbia: Sociology of Fashion. As Todorović stated, as an aspect of culture, fashion has been researched through ethnology, cultural anthropology, and sociology of culture.[20] This explains why anthropology provides the only academically established approach in studying fashion, and why it is not surprising that separate fashion collections in Serbian museums do not exist, as anthropology sees fashion inherent to material and consumerist culture, or as Todorović called it, as a "social fact". The Museum of Applied Art came the closest to the idea(l) of a fashion collection with two of its collections: Textile and Costume, and Contemporary Applied Art and Design, but neither of these is solely focused on fashion.[21] Unlike the Museum of Applied Art, other museums catalog and store their fashion items in collections of material culture, ethnology, cultural history, or applied arts overall.[22] As such, most of local fashion exhibitions in Serbia were actually organized by museums focused on ethnology or such departments within museums. Xenia Politou observed the similar problem in Greece, where for a long time official museum policy gave priority to the preservation of material relics of the ancient world, so the only organizations systematically collecting heirlooms of the comparatively recent past – the Neohellenic material culture – were folklore museums.[23] Today, Peloponnesian Folklore Foundation has the most systematic collection of clothing items (fashion, traditional and theater costume, uniforms, vestments) in Greece. Several major fashion exhibits and events held in Serbia also testify of

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[16] VASIĆ, P. 1974, p. 15.

[17] However, through an insight in Vasić's published lectures it can be concluded that students of art history most certainly acquired the knowledge of costume, and vice versus, as in addition to History of Costume, he taught Painting at the Academy as well.

[18] The first complex academic study in fashion history was conducted at the Department of Ethnology and Anthropology, through the PhD thesis of Mirjana Prošić Dvornić, "Clothing in Belgrade from 1878 to 1915" in 1985. One of the members for the thesis defense commission was Pavle Vasić. The thesis was published in 2006 under the title "Clothing in Belgrade in the 19th and at the Beginning of the 20th Century" bringing a detailed insight on over 500 pages into economic, industrial, and cultural aspects of clothing in Belgrade and the change of styles during the stated period.

[19] In 2008 Velimirović authored the first monograph of a fashion designer in Serbia, "Aleksandar Joksimović: Fashion and Identity," based on her PhD thesis defended at the Department of Ethnology and Anthropology.

[20] PETROVIĆ, A. 1980, p. 7.

[21] Fashion items from both collections are available on Europeana platform. URL: https://www.europeana.eu/portal/en/search?f%5BDATA_PROVIDER%5D%5B%5D=Museum+of+Applied+Art%2C+Belgrade&view=grid (quoted 22. 3. 2019).

[22] Maribor Regional Museum can serve as an example of a good practice to other local and regional museums because it has classified objects of textile provenance into several different collections (Liturgical Textiles, Banners, Fashion, Ethnology, and Uniforms) rather than cataloging them within sub collections of a textile collection. On the other side, Museum of Arts and Crafts in Zagreb still catalogs its fashion objects in Textile Collection, despite them (including pieces by Patou, Balmain, Valentino, Fendi, Moschino) being the most numerous objects in the Collection. The Textile Collection of the Museum of Arts and Crafts is digitized under AthenaPlus Network. URL: http://athena.muo.hr/?object=linked&c2o=16 (quoted 22. 3. 2019).

[23] POLITOU, X. 2010, pp. 29-37, p. 29.

ethnological and anthropological museum valorization of fashion. For example, in 2007 the National Museum of Čačak's Department of Ethnology staged a major fashion exhibit, Fashion Mirrored by the Sixties authored by Snežana Šaponjić Ašanin while the Department of Ethnology at the National Museum Šabac organized the exhibit Fashion of Hats in 2013, authored by Aleksandra Jovanović. In 2011 the annual meeting of ICOM's Costume Committee was held at Belgrade's Ethnographic Museum with the same museum staging the first retrospective exhibit of one fashion designer in Serbia - Mirjana Marić: Fashion and Design - in 2014, authored by the museum's director at the time, Mirjana Menković. Nevertheless, the Museum of Applied Art's activity of first collecting and then exhibiting fashion prior to 2000s was pivotal for other museums to join the cause.

The first fashion exhibit in Serbia - Women's Fashion from the mid 19th Century to 1930s - took place back in 1966 at The MAA. The show was curated by the Museum's first curator of textiles and costume, art historian Dobrila Stojanović whose statement that the exhibit aims to display the material that is hard to acquire as it was often destroyed or not enough appreciated[24] witnesses of pioneering attempts to introduce fashion to Serbian museums. This exhibit was followed by the exhibit Urban Dress in Serbia in the 19th and early 20th Century by the same curator in 1980, while the period in between the two wars was for the first time exhibited in 2000 by Bojana Popović, the Museums Contemporary Applied Art and Design curator, in the exhibit Fashion in Belgrade 1918 – 1941. Even though they didn't elaborate on museological positioning of fashion in accompanying publications, researches by Dobrila Stojanović and Mirjana Prošić Dvornić of the 19th and the beginning of the 20th century clothing in Serbia, and the exhibit by Bojana Popović are the first to in-detail deal with the influences of global fashion to clothing in Serbia.[25]

As such, it could be argued that Serbia has a solid dress museology, which according to Riegels Melchior pertains to the actual material and practice of collecting dress, but not fashion museology which emphasizes the visibility of the museum through the staging of spectacular show, primarily creating unique visitors experiences.[26] Only in the last decade, the first academic and museum impulses towards studying fashion the sense of western established fashion studies have finally emerged, with Serbia seeing its first publications on the subject. In 2010, Marina Kocareva Ranisavljev published Fashion and Clothing: Psychosocial Aspects of Clothing, whereas one year after, Iva Jestratijević published The Study of Fashion: Signs and Meanings of Clothing Praxis. As subtitles of the books indicate, both authors shifted the focus of studying fashion from sociocultural anthropology by offering psychological, communicational, and semiotic reading of fashion, aligning with contemporary tendencies in fashion studies.[27] What Kocareva Ranisavljev and Jestratijević have succeeded in doing is establishing fashion as a credible cultural text within contemporary theories of culture and arts, thus liberating it from the material culture framework. However, neither of the two authors touched upon the relation between fashion and museums. Sensing that fashion studies are still incomplete without at least the basics of approaches to different aspects of fashion, Danijela Velimirović initiated the first thematic publication in fashion studies acknowledging fashion theory, history, and museology respectively. Thematic issue of journal Issues in Ethnology and Anthropology, titled Fashion and Anthropology edited by Velimirović in 2015 has gathered art historians, anthropologists, ethnologists and fashion theoreticians in order to acknowledge the interdisciplinarity and relevance of fashion studies, and more importantly, initiate the discipline in our environment.[28] Despite its name that would suggest that fashion would be interpreted only anthropologically, papers in the publication have in fact provided diverse perspectives, including today's very actual question on role and significance of fashion within museums.[29] On the invite by the editor, I contributed to the publication with the paper Musealization without Museology: National Museums and Fashion Exhibits Between History, Theory, and Practice, which marked

[24] STOJANOVIĆ, D. 1966, p. 1. URL: https://digbibliotekampu.locloudhosting.net/items/show/17 (quoted 22. 3. 2019).
[25] Zbornik Muzeja primenjene umetnosti, 2/2006, Mirjana Menković, Tri izložbe posvećene odevanju i ukrašavanju, pp. 115-119.
[26] RIEGELS MELCHIOR, M. 2014, pp. 1-18.
[27] Interestingly, The Study of Fashion was published under the edition Theory of Contemporary Art, alongside books on well established artistic phenomena like fine arts, theater, and literature, (un)intentionally referring to the publishing of Fashion by Christopher Breward within Oxford History of Art series in 2003, as Breward was the first to author an academic book on fashion.
[28] Etnoantropološki problemi, 2015, volume 10, number 4, Danijela Velimirović, Moda i antropologija, pp. 791-794.
[29] Ibid, p. 791.

the first paper on contemporary fashion museology in Serbia[30] after presenting its tenets as a guest curator of History Written by Fashion exhibit held at the City Museum of Novi Sad in 2015.[31]

Through the paper, I focused on showing that in Serbia there is an increasing practice of organizing fashion exhibitions, but at the same time, there is the lack of academic explanations on why is fashion exhibited and what is its relation to a museum. As such, by juxtaposing local and regional exhibition production to that of renowned Western museums, the paper pointed out to certain aspects of fashion museology well-known in the West, but up to that point not largely incorporated in the Serbian academic discourse.[32] Musealization without Museology hence offered an insight into a concise history of fashion museology and conditions which influenced its emergence in Western societies, as well as an insight in observations on the subject by scholars like Valerie Steele and Judith Clark. Besides the paper proving seminal, as only two years after its publishing another study on fashion museology was published,[33] it has also served as the base for developing my MA thesis and the exhibition project Maison Barilli: Belgrade / New York, which will be presented as a case study of affirmation of fashion museology.

CASE STUDY: MAISON BARILLI: BELGRADE / NEW YORK

The exhibition Maison Barilli: Belgrade / New York was initially organized at the memorial home of Serbian multimedia artist Milena Pavlović Barilli (5. 11. 1909 - 6. 3. 1945), The Gallery of Milena Pavlović Barilli in Požarevac, Serbia, in 2017 (Image 1). Principally, the exhibition was based on my MA thesis, Fashion Illustrations of Milena Pavlović Barilli, defended at the Department of Art History at the Faculty of Philosophy, University of Belgrade.

Image 1: View of the exhibition Maison Barilli: Belgrade / New York, The Gallery of Milena Pavlović Barilli, Požarevac, Serbia, December 2017 (Photo: Draško Vujić).

While Barilli realized quite a complex oeuvre which includes fashion illustration, graphic and product design, painting, poetry, and costume design, Serbian art history was keen to disregard her work in the field of fashion and design as inferior to high forms of art - painting and poetry. The 20th century criticism in Serbia saw a sin-

[30] In 1976, Dobrila Stojanović published the paper Textile and Clothes as Subjects of Collecting and Preserving and their Valorization in Museums: Beginnings of Collecting of Textile Objects on our Grounds with a Reference to Monastery Treasuries which elaborated methods of textile museology in the country for the first time. See: Journal of the Museum of Applied Art 13/2017, Draginja Maskareli, Museum of Applied Art in Belgrade and the Beginnings of Fashion Museology in Serbia: Department of Textile and Costume 1950-1980, pp. 22-29.

[31] The City Museum of Novi Sad organized the first fashion exhibit in Novi Sad: Fashion Legacy of Novi Sad's Citizens in 1989.

[32] In 2008, Mirjana Menković (former director of the Ethnographic Museum in Belgrade) published the article proposing the translation of 15 fashion history books to Serbian language, including books by Valerie Steele, Christopher Breward, Lou Taylor etc. The author stated that these publications are often quoted in the world, but that in Serbia their usage is fragmentary and limited as they are available only in private and not public libraries. See Mirjana Menković, Istorija mode i odevanja: Predlog knjiga za prevod na srpski jezik, in: Muzeji, volume 1, pp. 173-185.

[33] Journal of the Museum of Applied Art 13/2017, Draginja Maskareli, Museum of Applied Art in Belgrade and the Beginnings of Fashion Museology in Serbia: Department of Textile and Costume 1950 -1980, pp. 22-29.

gle paper which elaborated on Barilli's design works[34] while all the other publications, including the first monograph on the artist, Milena Pavlović Barilli – Life and Work (1966), authored by one of the biggest authorities of Serbian art history, Miodrag B. Protić, took a negative stance towards it, or in most of the cases, completely ignored it. At the same time, most exhibitions about Barilli showcased her paintings exclusively. Such positioning of the artist led to her canonization as a painter and poet, making her fashion related works invisible both to academic and museum scenes. In the last decade, parallel with the affirmation of gender studies and fashion studies in the country, first interdisciplinary readings of Barilli's art and life by the national art history emerged, which resulted in thus far the most complex publication on the artist in 2010, New Meanings of Milena Pavlović Barilli. Out of three volumes the monograph is consisting of, the second volume, titled Pro Futuro, is solely devoted to Bailli's work in fashion, costume, and graphic design. However, the artist is still in most of the cases interpreted as a painter, which is why, through the MA thesis research, I aimed to further position fashion both within and beyond her oeuvre: within by showing that fashion and fine arts were inseparable in her artistic expression, and beyond by analyzing correlations between her fashion works and the production of western fashion cultures – design, illustration, photography – in the first half of the 20th century.

The research for Maison Barilli: Belgrade / New York started off by chronologically mapping the artist's fashion illustrations, as art history thus far structured the periodization of her work based on dominant stylistic changes in her paintings and places where she created them: Belgrade and Munich phase, Rome / Metaphysical period, Parisian / Surrealist phase, and American phase. Such periodization, initiated by Protić and followed by many other scholars[35] acknowledged her fashion works in the American period only, often describing them as "commercial" and done out of "financial necessity" while the previous periods have been valued in terms of the tradition of European painting. On the other side, the artist did create fashion illustrations throughout all phases, not just during the American. In fact, Belgrade and Munich phases are completely dominated by fashion illustrations, as Barilli created her first painting only before leaving Munich in 1927, meaning that for the first half of her life she produced fashion illustrations, and then fashion illustrations and paintings respectively. However, as soon as she incorporated painting in her repertoire, the Belgrade period, in which she created fashion illustrations only, was joined to Munich period. In accordance with that, further phases of her work have been foreshadowed by painting as well.

Interestingly, the first painting the artist created was not a self-portrait, or a portrait of a family member, ruler, historical figure etc., but a portrait of a Hollywood celebrity icon, Rudolph Valentino. More importantly, Barilli represented him in a costume of his role in the movie The Sheik, accentuating the power of costume in the process of (self)imagining and creating an artwork. Using the highest technique of fine arts – oil on canvas – for the first time, she did not present a self-portrait, portrait of a family member, friend, or a ruler, landscaper, still life, nor a religious subject, but fashion and popular culture. This portrait was the only oil on canvas presented at the exhibition Maison Barilli: Belgrade / New York, alongside fashion illustrations and Barilli's own fashion items. Since Valentino's portrait, elements of fashion remained omnipresent in her paintings. As such, even Barilli's canonization as a painter (if we are to disregard her fashion illustrations as a "lower" cultural product) could help us foster the narrative of establishing fashion history and fashion museology within the studies of art history coming back to Vasić's idea that methods of art and costume histories often coincide.[36]

For this reason, the exhibit was named Maison Barilli: Belgrade / New York, emphasizing the fashion potential of the artist, as *maison* is a noun used for fashion houses. Home of Pavlović and Casa Barilli are two terms often used in reference to the artist's ancestry – a traditional Serbian household dominated by her mother's good manners, and a poetic, musical environment of her Italian father's family. Maison Barilli aimed to disrupt these narratives, and through a platform of a fashion exhibition offer a new reading of Milena Pavlović Barilli's life and work which was, from the starting point in Belgrade, to the end of her career in New York City marked by fashion. More importantly, the complete project was awarded with The Pavle Beljanski Memorial Collection Award for the Best Thesis in Art History – recognition established with the aim to foster graduates

[34] The paper titled Milena Pavlović Barilli: Life and Work in New York 1939 – 1945 was published by the first researcher of Barilli's American period and her fashion illustrations, ballet costumes, and graphic design works, Olga Bataveljić, in 1979.
[35] This includes Lazar Trifunović's Serbian Painting 1900 – 1950 (1973), Olivera Janković's Milena Pavlović Barilli (2001), Žana Gvozdenović's Milena Pavlović Barilli: The Keys to Dreams (2010).
[36] VASIĆ, P. 1974, p. 15.

of art history to develop innovative readings of national artistic phenomena. As such, the exhibit was, after its premiere in Požarevac, organized at The Pavle Beljanski Memorial Collection in Novi Sad, Serbia, in 2018. Maison Barilli: Belgrade / New York thus became the first fashion related exhibition in the history of the institution, renowned for its modernist painting collection.

For this occasion, the thesis was modified into an accompanying publication, One Study of High Fashion and High Art, whose purpose was to bridge the difference between high / elite and low / popular creative practices on the example of Barilli's fashion illustrations, as visitors of the Collection were not used to seeing fashion related content in its space. Both the exhibition and the publication conveyed the idea that fashion can rightfully be placed in a museum setting often reserved for high culture only. In that sense, the exhibition has served as a positive catalyst for the implementation of fashion museology through traditionally conceptualized art museum and a canonized art historical figure like Milena Pavlović Barilli.[37] As the project Maison Barilli: Belgrade / New York through a university thesis and in collaboration with two renowned national art museums, The Gallery of Milena Pavlović Barilli and The Pavle Beljanski Memorial Colletion, the audience was more likely to acknowledge fashion as a high culture phenomenon which deserves its museology. Official statistics on numbers of visitors presented by The Collection's PR Department and the data extracted from the institution's Facebook page for the period of June 14th 2018 to December 30th 2018, we can observe how interest in a fashion exhibition operated in relation to other (painting focused) exhibitions at The Collection which took place in the indicated timeframe. As statistic show, 3116 guests visited The Mediterranean exhibition, 2534 Masion Barilli: Belgrade / New York, and 1552 Milan Konjović. While The Mediterranean scored the most visitors taking into the account the summer tourist and festival season, Masion Barilli: Belgrade / New York was the exhibition with which the audience interacted the most through social media.

The first chart shows like reacts to the announcement of exhibits through the concept of a cover image on The Collection's Facebook page (Image 2). The cover image for the exhibition The Mediterranean organized at the museum prior to Maison Barilli: Belgrade / New York had 16 like reacts only, while Maison Barilli had 172. More importantly, the eponymous exhibit of a Serbian expressionist painter Milan Konjović organized

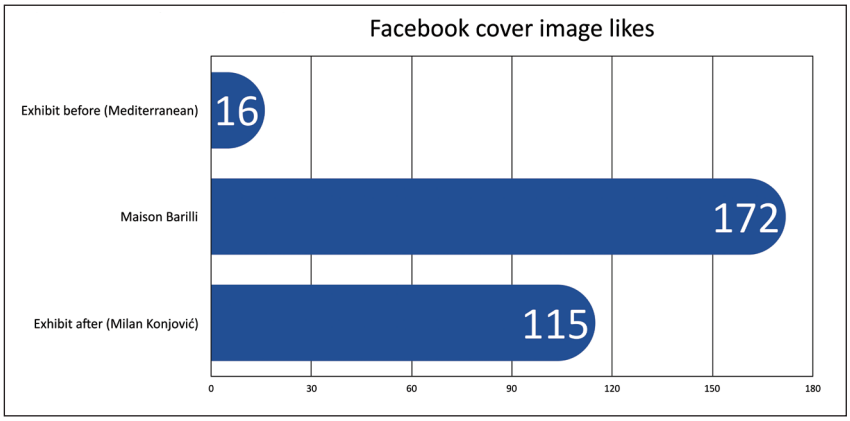

Image 2: Facebook cover image like reacts on The Pavle Beljanski Memorial Collection Facebook page for exhibitions The Mediterranean, Maison Barilli: Belgrade / New York, and Milan Konjović for the period from June 14th to December 30th 2018.

after the fashion exhibition still had less like reacts than Maison Barilli (115) but in relation to The Mediterranean significantly more. The second chart shows responses of Facebook users to invitations for the openings of all three exhibitions, following the same pattern (Image 3). The exhibition before had the least, the fashion exhibition the most, while again the exhibition after had less responses than the fashion exhibition and more than the first exhibition. Additionally, media platforms that otherwise do not necessarily write about museum events, like fashion magazines, reported on Masion Barilli: Belgrade / New York, which could be seen as one of the reasons for increased social media engagements with the exhibition. Fashion, according to Riegels Melchior, makes the museum newsworthy, both in general publications and specialized fashion media such as magazines, blogs, and other social media platforms.[38] As such, presented charts suggest that the audience expressed a significant interest in an exhibition of fashion and that such exhibition can act as a catalyst for engaging the audience and media with a museum. As Riegels Melchior concluded, the strength of fashion

[37] In Serbian contemporary culture, fashion is often misperceived only as a status symbol of national pop stars copying western trends whereas the exhibition pointed out to artistic and heritage aspects of fashion.
[38] RIEGELS MELCHIOR, M. 2014, pp. 1-18.

in museum is its public engagement; it heightens the appeal of the museum and thereby it gives it access to new audiences, both in terms of age and socioeconomic background.[39]

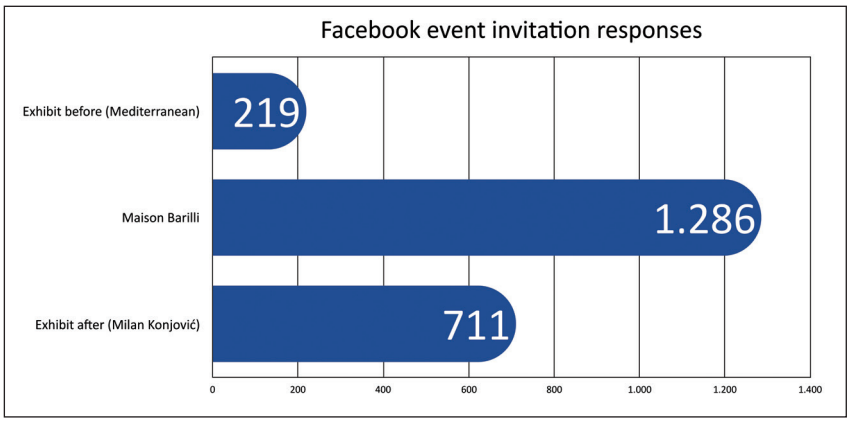

Image 3: Facebook event invitation responses on The Pavle Beljanski Memorial Collection Facebook page for exhibits Mediterranean, Maison Barilli: Belgrade / New York, and Milan Konjović for the period from June 14th to December 30th 2018.

Such pattern also speaks of the increasing awareness of fashion in museums, which does not resonate any more with students, academics or curators interested in its museological potential, but with demands of the audience too. Activities of worldly renowned fashion collections, like The Met's Costume Institute and The V&A's fashion collection brought unprecedented records to institutions they are part of. The Met Gala and the V&A's annual fashion shows are drawing more and more attention of global media, professionals, and audiences respectively. Serbia certainly has phenomena who could help us, in terms of fashion exhibitions, to join the cause – Bernat Klein, Roksanda Ilinčić, and Ana Ljubinković to name a few. Only through joint efforts of evaluating fashion through university curricula, academic publishing, and museum presentations the solidified fine arts narratives and their museum canonization in national academic and museum institutions could be broken. Thus far biggest exhibit on Yugoslav architecture has been organized by the MoMA, and not by museums of any former Yugoslav republics. The question is: who will be the first to organize a blockbuster show about Roksanda Ilinčić: London or Belgrade?

SUMMARY

Having in mind the dominance of patriarchal societal norms in countries of the Balkan region and their dramatically slow transition from monarchist, communist, and socialist ideologies towards (neo)liberal democracies, little space was left for the academia in the Balkans to welcome fashion in its system. However, it is not solely the fault of academics of Balkan countries for fashion history, theory, and museology being undervalued and understudied in the region. Western (North American and Western European) fashion academia as the world's leader in fashion studies as well shows the lack of interest in Balkan fashions, which originates in a cemented perception in Western, particularly politics of North America and European Union of the Balkan region as Europe's internal Exotic Other, unable to overcome its conflicts. What could somewhat justify this lack of inclusiveness, in fashion museology in particularly, is the fact that up to this paper nothing was written on relationship between fashion and museums in Serbia in English language, thus disabling Western scholars from being introduced to the subject. Led by such image of fashion and its studies in the region and more narrowly in Serbia, or the lack thereof, the paper aims to further initiate the positioning of fashion museology within national academic and museum systems respectively. Given aforementioned, the idea of the paper is demonstrated through the problematic, or rather the absence or a minor presence of fashion in Serbian university curricula, academic publishing, and museum environment. As a potential solution to the problem, through a case study - the exhibition Maison Barilli: Belgrade / New York – which unifies university coursework, publishing, and museums, the paper illustrates how fashion museology could potentially be established as an academic discipline in the country, by using a canonized art historical figure and a traditional fine arts collection as its platform.

[39] RIEGELS MELCHIOR, M. 2014, pp. 1-18.

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RUŠENJE KANONA: UVELJAVITEV MUZEOLOGIJE MODE V SRBIJI

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Strokovni članek (1.04)

IZVLEČEK

Srbska muzeologija, ki je pogosto pod vplivom kanonizacije likovne umetnosti, je šele v zadnjem času začela slediti svetovnim trendom razstavljanja mode. Od objave prve študije o umestitvi srbskih modnih eksponatov v sodobno (zahodno) muzeologijo mode, Muzealizacija brez muzeologije: narodni muzeji in razstave mode med zgodovino, teorijo in prakso, nacionalni muzeji doživljajo postopno sprejemanje muzeologije mode kot uveljavljene discipline, ki se giblje od etnološke in antropološke umestitve mode v muzeje do današnje muzeologije mode. Avtor želi nadalje s širitvijo obsega raziskav analizirati stanje mode in njenega preučevanja v univerzitetnih učnih načrtih, akademskem založništvu in muzejih. Posebna pozornost je namenjena modni razstavi Maison Barilli: Beograd / New York kot katalizatorju za uveljavitev muzeologije mode v Srbiji.

KLJUČNE BESEDE

muzeologija mode, študij mode, modni eksponati, Balkan, Srbija

POVZETEK

Ob upoštevanju prevlade patriarhalnih družbenih norm v državah Balkana in njihovega dramatično počasnega prehoda iz monarhističnih, komunističnih in socialističnih ideologij v smeri (neo)liberalnih demokracij je akademskim krogom na Balkanu ostalo kaj malo prostora (in pripravljenosti) za obravnavo mode znotraj svojega sistema.

Da je moda, bodisi lokalno bodisi globalno, v regiji tako podcenjena in neraziskana, pa ni zgolj krivda balkanskih akademikov. Tudi globalni (severnoameriški in zahodnoevropski) modni akademiki ne kažejo zanimanja za balkansko zgodovino mode, kar izvira iz okostenelega dojemanja zahodne politike, zlasti v ZDA in Evropski uniji, da je balkanska regija tisti Eksotični Drugi znotraj Evrope, ki ne zmore preseči svojih sporov. Kar bi lahko upravičilo to pomanjkanje vključenosti Zahoda, še posebej v muzeologijo mode, je dejstvo, da do izida tega članka v angleškem jeziku ni bilo napisanega ničesar o odnosu med modo in muzeji v Srbiji, kar je zahodnim znanstvenikom onemogočilo, da bi se seznanili s to tematiko. Na podlagi takšne podobe o modi in njenih raziskavah v regiji oziroma pomanjkanju le-teh je prispevek namenjen nadaljnjemu pozicioniranju in še pomembneje neodvisnosti modnih raziskav – predvsem muzeoloških – znotraj nacionalnega akademskega in muzejskega prostora. Kot smo že omenili, je cilj prispevka predstaviti problematiko oziroma odsotnost ali okrnjeno prisotnost mode v srbskih univerzitetnih učnih načrtih, akademskem založništvu in muzejskem okolju. Članek na podlagi študije primera – razstave Maison Barilli: Beograd / New York, ki združuje univerzitetno študijsko delo, založništvo in muzeje – prikazuje, kako bi lahko muzeologijo mode vzpostavili kot uveljavljeno disciplino, ob tem pa kanonizirano umetnostnozgodovinsko figuro in tradicionalno zbirko likovne umetnosti uporabili kot njeni platformi.

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