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Published in:
Arts

Published: 01/01/2018

Document Version
Publisher's PDF, also known as Version of record

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Please cite the original version:
Salolainen, M., Leppisaari, A.-M., & Niinimäki, K. (2018). Transforming Fashion Expression through Textile Thinking. *Arts*, 8(3).

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Article

Transforming Fashion Expression through Textile Thinking

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Received: 20 November 2018; Accepted: 21 December 2018; Published: 24 December 2018



Abstract: The focus of this research is on the experiences of a new fashion pedagogy linked to textile studios at Aalto University, School of Arts, Design and Architecture, in Espoo, Finland. Rich practice-based research and skilled use of materials and textile techniques are elements of transforming fashion design implemented through studio-based pedagogy. Effective learning is constructed by adding tacit and haptic knowledge of textiles into fashion expression. Furthermore, while textile design combines elements from aesthetic creativity with technical skills, this knowledge, textile thinking, can form a new grounding for fashion design. Through reflective learning, practically oriented and theoretical knowledge can be combined, and hands-on studio pedagogy has established the platform for this type of learning. Fashion students' textile studies extend to woven fabrics and jacquards as well as knits, embroideries, prints, and other finishing techniques and aim to teach them about industrial manufacturing and provide them with an understanding of industrial processes and requirements. This research observes this transformation process of fashion expression through textile thinking based on observations, teachers' reflections, and student interviews. Further, the learning outcomes have been reflected against the transformation of the curriculum to provide understanding for this development process.

Keywords: textile; textile techniques; fashion pedagogy; fashion design, textile thinking

1. Introduction

Fashion expression is constantly evolving towards new directions. This research is especially interested to study fashion expression and its connection to textile design. [Townsend and Goulding \(2011, p. 303\)](#) define three approaches to the dialogue between garments and textiles: 'Textile-led', 'garment-led' or 'simultaneous'. They state that 'textile-led' is commonly used to describe 'garments that are designed to accommodate the characteristics of a particular textile', while 'garment-led' describes designs where the garment shape drives the design process and fabric selection. 'Simultaneous' in turn refers to a process where both are considered and designed at the same time. Essentially, combining fashion and textile design is all about dialogue and different approaches may be mixed within collections or even within garments. As in industry, professional designers often have to select the fabric months ahead of designing the garments due to the order and delivery cycles, and thus, it also makes sense to simulate this kind of textile-led approach in education.

The synergy of textiles and garments is an integral part of fashion design. It is essential for fashion designers to have a profound understanding of how textile materials and structures affect the form and function of the garment, as well as haptic knowledge obtained from hands-on experiences with fabrics. In textile-led fashion, the design of garments and collections is approached through textile thinking. The process starts by designing the fabrics, with their characteristics further influencing the garment shapes as well as providing an important inspiration for the overall look of the collection.

Engagement in creating textiles provides an asset in enforcing the designer's fashion aesthetics and expression towards new material understanding.

Based on our experience, we argue that this hands-on studio pedagogy enables new understanding to emerge in the context of fashion design. Students rediscover the connection to textile culture, which has been lost because these days, fabrics are manufactured out of their sight in large production units and often overseas. This insight into textile aesthetics, materials, and techniques serves as a basis for constructing new knowledge. Therefore, this research focuses on the question of how fashion expression can be transformed through a new pedagogy of textile thinking.

2. Grounding Textile Thinking

[Pajaczkowska \(2016\)](#) points out that textile thinking can be defined to mean different embodied material relationships, which can be approached through different ways of textile making. She grounds this thought to the viewpoint that 'knowledge arrives to the mind through the body' (*ibid.*, p. 79). According to her, hand-eye coordination, tool-making, and social learning are key elements in the textile thinking learning process. Based on these, she defines nine types of textile thinking. These are felting, spinning, stitching, knotting/knitting, weaving, plaiting, draping, cutting, and styling. The last one, styling, is close to fashion thinking, which according to Pajaczkowska is a further iteration of textile thinking. She further argues that if 'the textile toolbox' comprising these nine types of textile thinking is accepted, it will provide a new epistemic ground in the arts to understand that 'the knowledge of practitioners can illuminate the abstractions of historians and theorists' (*ibid.*, p. 92) and as a result, textiles and textile knowledge in general can take on greater importance, not only as an applied research field (as currently understood), but also as a field having a theoretical weight and grounding of its own.

Textile thinking is learned through studio pedagogy, where theory and practice are creatively combined. Hands-on studio pedagogy combines reflective and experiential knowledge with deep material and tacit knowledge. [Schön \(1983\)](#) talks about the reflective practice as a reflective conversation with materials that creates experiential knowledge where knowledge is situated in actions. [Igoe \(2010\)](#) argues that creative practitioners, like persons who design and make textiles, possess not only personal knowledge but even collective knowledge, which is a specific blend of tacit and theoretical knowledge. [Kane and Philpott \(2013\)](#), based on [Igoe \(2010\)](#), highlight that this type of knowledge, textile thinking, 'has the capacity to originate new material and material systems, as well as to express and enhance the potential sensory pleasure of existing materials.' [Polanyi \(1966\)](#) presents the term 'tacit knowledge', which is understood as undeclarative practically-oriented knowledge which is close to experiential knowledge ([Groth 2017](#)).

Deep design skills, the role of the body, and haptic sensorial experiences together lay the grounding for hands-on studio pedagogy. As [Polanyi \(1966, p. 15\)](#) points out, 'our body is the ultimate instrument of all our external knowledge, whether intellectual or practical.' As [Pallasmaa \(2009, p. 116\)](#) highlights, 'our entire bodily constitutions and senses think in the fundamental sense of identifying and processing information about our situation in the world, and mediating sensible behavioural responses.' [Kane and Philpott \(2013\)](#) highlight the comprehensiveness of textile thinking with the following quote: 'Through the constant handling of 'stuff' of textiles and the repetition of the gestures of making, the practitioner's senses work together to build a comprehensive embodied understanding of both materials and process. Practice leads to mastery and eventually to the development of a whole body comprehension or tacit knowledge that is carried unconsciously within the practitioner but informs the activity of making.' Furthermore, [Ingold \(2013\)](#) argues that practice-based learning happens through actions where an intrinsic understanding of phenomena can emerge. This is evident in textile studios where hands-on learning through actions, experiences, and experimentation takes place in a social reflective setting; this aspect is discussed in greater depth in the Findings section.

3. Methods

This research applies methods from participant observation and applied ethnography. Here, the researchers are the actors in the studied phenomena (Flick 2014). The main data consist of pedagogical observations and teachers' group reflections during the curriculum transformation process in the years 2007–2017. Part of the data has been generated by further observing the learning process of students, collecting, and analyzing students' feedback during past years. Following the principles of participant observation and applied ethnography (Flick 2014), the data also consist of discussions, and even interviews of students to understand these learning phenomena from their point of view. Moreover, collecting and analyzing students' learning outcomes (textile designs and fashion collections) have been the way to create understanding of the effect of this pedagogical approach. As Schensul et al. (1999, p. 91) describe, participant observation is the process of 'learning through exposure to or involvement in the day-to-day or routine activities of participants in the researcher setting.' Descriptive analysis of the data has been used to form the themes of this study.

The paper is constructed through the following steps. It first presents the curriculum development in fashion BA studies at Aalto University. This process of including textile studies in fashion pedagogy is grounded in the 2007 curriculum. The Background and Openings sections describe the increase in textile knowledge through curriculum development until the year 2017. Here, the curriculum and study program descriptions have formed part of the data. This curriculum development process is the basis for transforming fashion pedagogy and fashion expression through textile thinking.

Secondly, the process of intensive textile learning is described through a course description. A representative case of a student's work is then examined to add to this knowledge: Maria Korkeila's BA collection (Korkeila 2016a, 2016b) represents excellence in textile-driven fashion and this new, emerging textile thinking in a fashion context. Thereafter, this knowledge and pedagogical experiences are reflected and interpreted in the theoretical context of practice-based studio pedagogy, hands-on learning, and experiential knowledge construction in a section on learning textile thinking.

Research ethics in this study include the following aspects. Students have given their consent to the use of their learning diaries and design works as part of this research. Materials which are publicly available (e.g., curriculums, BA final works, exhibition catalogue) have been used as a part of the data. Other materials for this study are collected from the University (e.g., course feedback) with the permission of the university. Researchers in this study have had different roles at Aalto University; one is a lecturer in textile design (subjective role), one is a professor in 3D surface design, especially textile structures (subjective role), and one is a design researcher (objective role). All writers work at Aalto University, which has also been the context of this research.

4. Background: Renewing the Curriculum

Seamless integration of textile design education into fashion studies requires fundamental changes in the curriculum structure. Further, the development of efficient practice-led textile courses linked to fashion collection design projects is essential for incorporating comprehensive textile contents into a full fashion curriculum. The new pedagogy guides students to engage in thinking and storytelling through textiles, and inspires creative expression, experimentation, and exploration with materials—different fibers, yarns, and structures—while learning the technical skill set essential for the field of textile design.

This section describes the transformation process of the Fashion BA study curriculum at Aalto University, School of Arts, Design and Architecture (Aalto ARTS) during the past ten years. The starting point was a separate Fashion and Clothing Design BA major and Textile Art and Design BA major. Intensive curriculum development started in 2007 when a knits and knitwear course was added into the Fashion and Clothing Design BA, which so far had only offered printed fabrics textile studies, and a new progressive pedagogy was introduced in woven fabric studies in the Textile Art and Design BA. The next step was taken in 2009 when advanced textile courses across all textile studios were offered as minor studies to Fashion BA students.

In 2014, the Design Department of Aalto ARTS went through a thorough curriculum development process, and new BA and MA programs were launched. Textile design studies were integrated into the Fashion BA and Design BA curriculum and Fashion and Collection Design MA (since 2017: Fashion, Clothing and Textile Design MA), while the separate Textile BA and MA study programs were discontinued. Currently, both the new Fashion BA and Design BA programs offer the possibility for personal study paths with textile design studies in a major role. Fashion BA is a shared platform for fashion and textiles, while the textile studies in the Design BA have a focus on products and product design.

The need for this renewal has a grounding in the intrinsic views of teachers and professors at Aalto University. They had seen the fashion students' interest towards textiles and further there was a need to overcome silos. The goal has been to create new and more expressive fashion design at Aalto University to differentiate the students' skill set from other fashion schools. At first, the curriculum in the new Fashion BA program was constructed to enable the students to learn the basics in both areas (fashion and textiles) and subsequently choose to make either a clothing or textile collection as their final project. Students, however, preferred final BA projects that combine both areas, textiles and fashion, and often the projects exemplify textile-led fashion design. Subsequently, structural changes were made and currently, the Fashion BA study contents enable in-depth studies in both textiles and fashion with 20–46 ETCS textile design contents. This development can be described to have happened from the grassroots perspective, with teachers and students in dialogue with each other and combining their interests.

5. Openings: Integrating Textile Thinking into Fashion Studies

As described in the previous section, fashion BA students' curriculum at Aalto ARTS comprises extensive studies in textile design. All fashion design students learn the basics in woven, knitted, and printed textile design, and have an opportunity to deepen their knowledge during several advanced courses, where experimentation with different textile techniques is encouraged. Through this hands-on approach, students gain haptic knowledge, an understanding grasped through the sense of touch. Textile courses are integrated into the project-driven learning-by-doing process of designing a fashion collection, which includes fashion courses, such as pattern making and clothing design.

At Aalto ARTS, first-year BA Fashion students learn the basics in fashion design, pattern making, presentation skills, and textile and fashion technology. Creative off-studio experimentation with textile materials is included in the assignments. The in-depth textile path begins in the second BA year with a series of hands-on courses in the woven fabrics studio, knits and knitwear studio, and printing, dyeing and finishing studio (Figure 1). Each studio course has specific technique-related learning goals.

The visual research method is a storytelling tool used in fashion design to gain information and inspiration and act as a means of communication. Typically, several ideas and topics are merged to create novel combinations. This visual research-led design process plays an elementary role in the integration of textile design studies into fashion design. It facilitates meaningful integration of the concept by driving the student's design process in all the textile studio courses as well as in the pattern making, garment and collection design courses.

The student's own project-related visual research is carried through all the studios, hence keeping the design process in line. Through hands-on experimentation and material exploration in the textile studios, the students process their visual research, gather tactile inspiration, reflect and develop their project further, thinking with the hand—through making. As a result, instead of being merely a platform to learn about textile design practices and manufacturing techniques, the textile courses have a significant role in the fashion studies. The students undertake fundamental visual and material research during the textile collection courses, implement their ideas, and tell stories through materials, structures, patterns, and colors. Consequently, the garment and fashion design process deepens, leading to fashion collections that display skills in a wide variety of qualities and techniques.

During the second year of the BA, fashion students design and fabricate a fashion collection in groups of two to three students. After profound visual research, the design process continues with the textile studio courses, where the students develop materials depicting different aspects of their joint collection. Subsequently, the best results from each studio course are combined to fit the final look, thereby complementing the students' individual skillsets.

From hands-on experiments and learning the basics of textile design, students are able to advance to computer-aided design and collaborations with textile mills in their third study year. During this final year of the BA, several elective courses are offered, in which fashion students can deepen their skills in combining textile techniques and finishing processes. Many of the fashion students at Aalto University design and realize woven, knitted, printed, and manipulated fabrics for their collections and the rich, textile-driven approach has become a trademark of the university.

Learning path in Textile Design for BA Fashion students

2nd year BA



3rd year BA

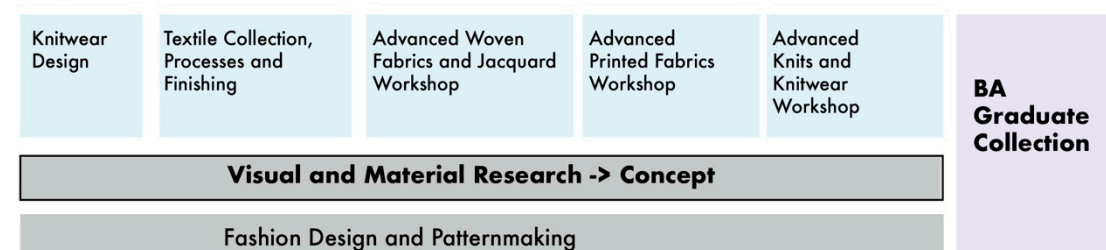


Figure 1. Learning path in Textile Design for BA Fashion students. The chart illustrates the compulsory courses in grey and elective courses in light blue. The courses in fashion design and patternmaking have been simplified to one block for the purpose of this chart (created by author).

6. Shorter Courses for Intensive Learning: Case Printed Fabrics, Dyeing, and Textile Technology

The foundation for the Aalto ARTS fashion student's knowledge in textile design comprises intensive studio courses introducing the basics of textile design and techniques. One example of these foundation courses is the five-credit course 'Printed Fabrics, Dyeing, and Textile Technology'. During this four-week course, students learn the basics of these areas and how to integrate them into their own ongoing fashion design work. The new pedagogical approach introduces the techniques and textile technology through storytelling, and the same visual research concept that the students develop through fashion design courses is used to guide the whole learning process. The students learn how to express concepts and tell stories through the use of different textile techniques, colors, patterns, and materials.

During the 'Printed Fabrics, Dyeing, and Textile Technology' course, fashion students learn about different dyeing and printing processes for cellulosic and protein fibers and how to design and expose printing screens. The practice-based design process also builds knowledge in textile technology studies. Students learn about different chemicals and recipes used in printing and dyeing processes, as well as

the use of different equipment, safety aspects, and textile testing related to dyed and printed products. Hands-on experimentation improves their understanding of fiber properties and their behavior in different processes. Peer learning is promoted during the course, and the students complete many of the tasks, such as mixing different printing pastes and steaming the printed fabrics with an industrial steamer, in small groups where they can learn together. Joint tutoring sessions and critiques are also held to support reflective learning and to provide peer support.

The process of deep learning is fostered by the course task of designing a collection of 10 swatches, which the students can use as material research for their fashion collection. Using the concept each student has developed through visual research helps them to design a collection of printed and dyed fabrics and motivates the students to learn. The process is also related to the professional practice, where the collection design process starts with a concept and is influenced by the chosen materials (Figure 2).

While the students are encouraged to creatively combine different processes and methods in their swatch collections, appropriate information cards for each sample are required. The information cards include all the information about the base fabric, dyes, chemicals, and applied processes and steps that have been used and are needed to produce the sample again. The practice is modelled on the industry and enables the students to later reproduce these samples on a bigger scale for their fashion collections. The information card system has also eliminated the need for any exams, as the students iterate the needed knowledge through the making of the information cards.

A similar pedagogy is in use in all the different textile studio courses: The woven fabrics studio as well as the knits and knitwear studio. As a result, while building a textile archive of samples to use and develop further in their fashion collections, the students learn important technical skills and gain knowledge on textile techniques, structures, materials, and fibers.



Figure 2. Jarno Kettunen and Anna Semi, 2016. Swatches, research, and info cards from the “Printed Fabrics, Dyeing, and Textile Technology” course. Kettunen and Semi worked on the same fashion collection. The research topic was related to the survival of young people in the desert and in harsh conditions. Inspiration was taken from the 1984 movie *Red Dawn* by John Milius, and as a counterweight to the theme of survival, from the delicate ice flower sculptures of Japanese artist Azuma Makoto. Photo credits: Jarno Kettunen, Anna Semi (used by permission).

7. Case: Maria Korkeila BA Collection

Aalto ARTS fashion student Maria Korkeila's award-winning BA menswear graduate collection 'Under Wraps' is a representative example of how textile design studies can transform fashion design. The collection won a special prize sponsored by Schiaparelli at the Hyères International Festival of Fashion and Photography in 2017 (Figures 3 and 4).

The theme of Korkeila's collection is covering and revealing, inspired by the early works of the artist Christo, especially his wrapped magazines, 1970s adult magazines, and hang gliding attire and gear, also from the 1970s. Korkeila (2016b) comments that while the themes might seem separate, in her view, they are aesthetically and most importantly thematically interconnected by representing 'a change in perspective'. The collection features layers of printed, embroidered, knitted, and woven fabrics, which she designed and developed to reflect the topics of her collection. Korkeila (2016a) states that throughout the BA studies, designing textiles and modifying materials had become a very important way for her to process the visual research and concept of the collection. Designing textiles also meant not being restricted to existing materials but being able to create something completely of her own from her starting points. Korkeila (2016b) states that for her, research is not 'changeless inspiration' but a process, which grows and evolves with the work it is intended for, and material development is part of it.

Korkeila developed the material concept for her collection during the "Textile Collection, Processes, and Finishing" course at Aalto ARTS, where she was able to build on the skills already acquired during her second-year textile studies. The course is aimed at third-year BA students to develop textiles for their BA graduate collections. The course is held in all the textile studios, and during the course, the students deepen their skills in woven, knitted, and printed fabrics, but most importantly learn how to combine them, and how to use textile finishing to finalize their samples. After the course, the students are able to use various design and manufacturing processes to implement their ideas in their fashion collections and move on to the advanced workshop courses to produce fabrics in larger quantities.

Korkeila designed or modified almost all the fabrics in her collection, work which mostly took place during the workshop courses. The fabrics of the collection feature fantastically clever references to her visual research, such as the woven jacquards with a transparent layer of lurex yarn on top and a layer featuring a female figure outlined with overtwisted wool yarns on the bottom. The result is a three-dimensional fabric that resembles Christo's plastic wrapped magazine sculptures, one of Korkeila's references. The complex and intriguing combination of techniques and materials in Korkeila's collection illustrates deep skills and understanding of textile design, which can only be gained through extensive studies in the area that the Aalto ARTS textile pedagogy and path enables.



Figure 3. Maria Korkeila 2016, Portfolio with visual research, woven jacquard experiments, and the final collection. Photo credit: Maria Korkeila (used by permission).



Figure 4. Maria Korkeila, BA Collection 2016, Aalto ARTS Näytös16 fashion show, Finalist and Schiparelli special award winner at Festival de Hyères, 2017. Photo credit: Guillaume Roujas (used by permission).

8. Learning Textile Thinking

As the previous examples demonstrate, the ability to learn about textile design can transform fashion design studies in several ways. Deep knowledge of textiles is an integral part of a fashion designer's profession, whichever their design approach might be. It is vital to understand the quality and behavior of textile materials and structures and how those attributes affect the form and the function of the garment. To achieve that, haptic knowledge is essential, and this requires hands-on experience of working with textiles. Furthermore, the ability to design unique textiles allows designers to influence the sensoriaesthetic properties of fabrics, as well as influence the functionality aspects. Designing unique fabrics helps to differentiate the designers' point of view and offers a competitive advantage, enabling the designer to stand out in the highly competitive world of fashion design.

Our examples show that building experiential and experimental knowledge through hands-on studio pedagogy led by a strong design concept comprised the key learning elements for new fashion expression. As earlier explained, hand-eye coordination and learning through bodily experiences and further through technical and creative experimentation can create unique practice-based learning linking to creative expression in textiles and in fashion. Textile thinking is learned through studio pedagogy that creatively combines theory and practice. Hands-on studio pedagogy combines reflective and experiential knowledge with deep material knowledge. These form a basis for fashion expression: The form, the style, the aesthetics, the fashion message.

Collective knowledge is also present through discussions with senior-level practitioners (teachers) and in peer-to-peer discussions. Additionally, the student engages in reflective discussions with her/himself and between the design concept and the making, the material, and the textile techniques. This sharing is an important part of learning textile thinking. As [Igoe \(2010\)](#) argues, 'both a personal and collective tacit understanding of a specific blend of knowledge' are needed in studio-based pedagogy.

A strong design concept leads this experimentation and also knowledge building. As [Kane and Philpott \(2013\)](#) state, 'hand-making and craftsmanship are key processes used by textile practitioners to develop understanding of both materiality and concept.' As [Norman \(1993\)](#) explains, experiential knowledge links to our sensorial system, but we need to deepen the learning with reflective cognition (linking the experiment to earlier gained design knowledge and design skills) to end up with new knowledge, new learning. A strong design concept guides the experiments and reflective reasoning occurs while comparing textile options for design concepts. As [Norman \(1993, p. 25\)](#) points out,

‘reflective cognition is conceptually driven’ and this principle can be applied in the studio pedagogy, meaning that all creative experiments are guided by and evaluated with the design concept. This said, textile thinking can be defined to mean a combination of deep haptic knowledge of materials and structures, knowledge of visual elements and textile aesthetics, and furthermore, understanding of textile techniques. This understanding of textile thinking is the core of reflective learning, where bodily aspects (e.g., physical actions in weaving, touching, and feeling materials) deepen the design understanding and create aesthetics that is not only visual but deeply material and even technical. This way of integrating textile thinking, its knowledge, and values into fashion in an experiential and reflective manner transforms fashion towards new aesthetics, which appreciates materials (Niinimäki 2013) and their special attributes, textile techniques and visual and material aesthetics. This can be described to mean new textile-led fashion expression.

9. Discussion

The fashion sector in general is exclusive, safeguarding its aesthetics, design quality, and design methods. University-level fashion programs are generally not open to accepting students from other design disciplines. The same attitude can be seen in the fashion business, where companies safeguard their brand value through creating their own design language. A spirit of openness, collaboration, brave experimentation, and sharing has defined textile design education at Aalto University. Hence, textile thinking has been a driver of renewing fashion knowledge and fashion skills. Effective learning results have been achieved through adding tacit and haptic knowledge into experiential pedagogy. New textile-led fashion design has emerged as a result of reflective learning combining practically oriented and theoretical knowledge. Hands-on studio pedagogy has been the key to creating a combination of practically oriented and solid theoretical knowledge. Through this approach, new textile understanding has emerged in the context of fashion design. This new understanding of textile materials and techniques not only provides a basis for constructing new knowledge for design elements in fashion design but also enables to understand the system behind the textile industry. This new knowledge can transform both fashion aesthetics and values behind fashion towards rediscovering material appreciation and further renewing fashion expression.

Author Contributions: Conceptualization, M.S.; Methodology, K.N.; Validation, M.S., A.-M.L. and K.N.; Formal Analysis, M.S., A.-M.L. and K.N.; Investigation, M.S., A.-M.L. and K.N.; Resources, M.S. and A.-M.L.; Writing—Original Draft Preparation, M.S., A.-M.L. and K.N.; Writing—Review & Editing, K.N.; Visualization, M.S. and A.-M.L.; Project Administration, K.N.

Funding: This research received no external funding.

Conflicts of Interest: The authors declare no conflict of interest.

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