

## 1 Introduction

This Element introduces the reader to the rich world of textiles made, traded, and exchanged across Eurasia from late antiquity to the late Middle Ages. With its geographical span reaching from Europe across the Middle East and Central Asia into China, the volume presents a wide range of textiles that were made for many uses, both sacred and secular, as dress and furnishings, for elite and ordinary owners. We do not assume any previous knowledge of textiles on the part of readers. Rather, we present a general introduction for those who find late antique and medieval textiles interesting, compelling, and beautiful, but may have found themselves intimidated by the myriad technical details of specialist publications written by and for textile historians. While all three of us have written and engaged with such academic work, we have written and imagined this study with the premise that textiles should and can be an approachable, ubiquitous medium for scholars, students, and the general public. Drawing from a multidisciplinary perspective, we encourage readers to explore further in a more specialized Bibliography included at the end of the Element. Readers will find full-color photographs in the online and e-book version of this Element.

The scope of this Element is defined, on the one hand, by our combined set of expertise and, on the other hand, by what materials have been photographed and published, particularly those made accessible online. This latter aspect has become pressing as we were researching and writing this Element during the global Covid-19 pandemic beginning in spring 2020, and had limited access to library resources or museum objects, apart from what all three of us had in hand from earlier projects or could access digitally. These challenges continued as libraries began to reopen, and travel remains difficult as we complete this Element in December 2021 and revise it in September 2022. Furthermore, we acknowledge that textiles have been produced around the globe for nearly as long as humans have needed clothing, and that neither the geographical nor chronological scope of this volume provides a fully global history of textiles. That task would require a much longer publication, and a team of close to ten authors. Hopefully, additional Elements exploring textiles in Southeast Asia, sub-Saharan Africa, the Americas, and Oceania can be added to the series in the future.

We focus on textiles made in major centers in the Byzantine Empire, the Islamic world, and China. These regions were producing textiles at a large scale early on, ranging from linen tunics and shrouds to silk fabrics interwoven with gold and silver. For much of the period under investigation, Europe was on the receiving end of transregional textile trade: luxury textiles produced elsewhere were imported, coveted for court dress and ecclesiastical use. The latter explains

why many Byzantine, Islamic, Central Asian, and Chinese textiles have been preserved in European churches. Used for liturgical garments and as wrappings for saints' relics, and carefully tucked away in shrines, many such textiles were preserved for centuries.

Our Element starts with a general discussion of materials and techniques used to produce textiles, a recognition that this approach has long dominated scholarship on these materials. We then move on to consider the organization of the textile industry and questions about trade. Sections on the functions of textiles focus on dress and furnishing textiles, as well as the appearance of imported textiles in Europe. Lastly, our section on the textile aesthetics connects fabrics to their broader visual and material contexts. Overall, we present an easily accessible introduction to the history of textiles in medieval Eurasia that includes production, trade, and function alongside the various roles that fabrics played in people's lives.

Attention to both sociohistorical context and technical details are a central aspect of the Element. In addition to a separate section on technical and material aspects, these topics will also be explained alongside objects' functions and meanings. We contend that materials and technique — from sourcing fibers to spinning, dyeing, weaving, and finally sewing — is a crucial aspect of textile history. Yet readers find those discussions often most intimidating, and students tend to shy away from purely technical discussions, unless they have worked with textiles themselves. Integrating technical aspects with the overall discussion of each example, therefore, will allow readers to engage with these perhaps daunting aspects together with more familiar terrain, such as how garments were worn or how textiles were used to furnish rooms.

The discussion of different fibers — cotton, linen, silk, wool — also introduces patterns of agricultural production and trade as at times, raw materials rather than finished textiles were moved between regions. For instance, silk produced in Northern Iran was imported to the Ottoman Empire at least until the early sixteenth century. Dyestuffs could be sourced from locally available plants and animals, or had to be imported across wide-reaching trade networks. Precious textiles were gifts from rulers to courtiers and allies alike. Large-scale professional workshops produced fabrics, but so did women who worked at home or in groups, both for domestic use and to sell at a smaller scale. Thus, textiles carry not only the histories of their users and wearers but also of their makers, and offer insights in the gender and class dynamics of the premodern period.

The textiles we present have survived to us today thanks to a variety of circumstances, including as grave goods and relic wrappings. It is therefore impossible to discuss medieval textiles without also acknowledging the ways in which these textiles came to light. Often, they were cut up by dealers who

wished to render fragments more aesthetically pleasing (Thomas 2009 on Byzantine textiles; Blessing 2022 for Islamic textiles in this context). Many were transferred to various museums in the nineteenth century, where they were catalogued according to perceived cultural origins without much regard for the often confounding overlap in styles, structures, materials, and the rich evidence for their widespread movement through trade. The loss of contextual information following these interventions creates ongoing challenges to our research. It also helps explain why so much scholarship has for so long focused on attributing textiles to places of production rather than considering their uses and reuses in the medieval period. In this sense, studying medieval textiles today necessitates a discussion of collecting practices, and the ways in which textile preservation and restoration have developed over the last century, a theme that will also carry through this Element.

Even within archaeological contexts, a further challenge is that textiles are rarely preserved in situ, and if so, have often deteriorated significantly, for instance when they were used in funerary contexts. Because such textiles undergo chemical changes, no amount of restoration can return them to their original states (Harris 2019). This is for instance the case for late antique and medieval textiles found in burials of Christians and Muslims in Egypt (Sokoly 1997). When such textiles entered museum collections in the nineteenth and early twentieth centuries, they were cut apart and even at times washed to remove the remnants of the human bodies they were buried with (McWilliams and Sokoly 2022).

What is more difficult to understand within archaeological contexts is how people used textiles and interacted with them in their daily lives. New approaches in sensory archaeology aim at reconstructing such experiences in which textiles are seen as sensory objects to which humans react with several senses at once (Harris 2019). To better comprehend this, consider a piece of clothing that you are wearing. You feel its weight and texture on your skin, you hear its sounds when you move, you see its color and the sheen of its fibers, and you smell the lingering scent of laundry detergent. And yet, it is these very sensory properties of textiles that break down over time, especially if buried in the ground. Furthermore, textiles can also change sensory interactions with the objects and bodies they wrap. Humans' interactions with textiles, and their reactions to them, change over time and are also culturally conditioned (Harris 2019). Therefore, we should not presume that our contemporary reaction to a textile is identical to that of the individual(s) who used it in the past. In the present day, we often view textiles as simply utilitarian, to the point of barely registering the large role they play in our daily lives. Just looking around one's dining room, one might see placemats on the table, a child's toys on the floor, coats, tote bags, and umbrellas hanging on

hooks in the hallway. One might become aware of the clothing that one is wearing. These objects might register more clearly as textiles while writing a text such as the one in hand. On another day, one might not think much about these items. By and large, these textiles are ones of daily use that serve to protect our bodies, or to carry and cover practical objects such as books and tables, and that we take for granted as being present in our households. Such functions are of course also part of historical uses of textiles, and we will include, for instance, clothing and furnishing textiles to the extent that they have survived. At the same time, there are multiple symbolic uses of textiles, from canopies over royal thrones to wrappings for relics, that will also be addressed.

## 2 Materials and Techniques

Studies on materials and techniques have long dominated scholarship on medieval textiles, often serving as a baseline for further investigation (Colburn 2012; De Moor et al. 2015; Krody 2019; Kuhn and Zhao 2012; Mackie 2015). Since scholars often had little contextual information to go on, focusing on textiles' technical details offered important evidence for attribution and dating of works. Interest in materials and techniques also grew from a particular branch of art historical scholarship concerned with craft and decorative arts and its intersection with the development of the European textile industry in the modern era (Fulghum 2001–02; Thomas 2009; Walker 2012). For example, major collections of textiles in European collections, such as the Victoria and Albert Museum in London, were built to inspire contemporary textile producers to study the structures and materials of medieval textiles as inspiration for modern ones (Calament 2005; Hoskins 2004).

Vocabulary and terminology are hotly debated in ancient and medieval textile scholarship. Although the Centre International d'Etudes des Textiles Anciens (CIETA) is widely recognized as the standard-bearer for defining and translating textile terms in a variety of European languages, there are in reality no objective standards for describing often related yet distinctive aspects in the structural qualities, raw materials, and manufacture of fabrics (Burnham 1980; CIETA 2006; Phipps 2011). Furthermore, it is useful upfront to define what we mean by “material” and “technique,” as these terms have specific resonances in textile scholarship. “Materials” encompass the raw resources for threads, such as fibers and dyes. Fibers like **linen** (flax) and **cotton**, for example, are sourced from plants and their physical properties resulted in absorbent threads excellent for lightweight fabrics (Lamm 1937). Animal hair, such as **wool**, is crisper, denser, and absorbs dyes well, making this material excellent for colorful, heavy, and warm weavings. The cocoons of silkworms are spun from single

threads that produce innately strong, smooth, and lustrous fibers, properties uniquely admired in **silk** weaving (sericulture). Threads are prepared in a variety of manners depending on the desired quality of the cloth. Yarns can be twisted clockwise or counterclockwise to produce spun thread, sometimes referred to as **S- or Z-twist** depending on the direction of the spin. The tightness of the spin and the thickness of the fiber can be manipulated to create fuzzy, loose, thick threads or tightly spun, thin ones. Weavers can introduce additional reinforcement and create thicker threads by twisting single threads together to create **plied threads**.

Much research into medieval textile dyes is the result of individual case studies that have not been fully synthesized to reflect this rapidly developing field of research (Cardon 2007; Kirby 2014). Both finished textiles and individual threads could be left undyed or prepared in a range of colors through various chemical processes. Scientific analyses can identify **dyes**, **mordants**, and other chemical preparations used to create the range of colors we see in medieval textiles today. **Dyestuffs** like woad, weld, madder, and indigo, for example, were derived from plants; lac and cochineal were sourced from insect shells; and murex from mollusk shells (Balfour-Paul 1997; Donkin 1977; Susmann 2020; Wertz et al. 2022; Wouters 1995). These dyes could be mixed and prepared with various mordants, such as alum, to produce a range of color tonalities. Threads were sometimes enhanced with precious metals, as well: gold leaf could be applied with resin or glue on top finished fabrics, while silver and gold were sometimes flattened into wires and wrapped around threads and woven into the fabric's structure (Figure 1).

Today, scientific analyses are the only reliable way to identify the colors of medieval fabrics. Sophisticated medieval weavers mixed pigments and mordants in varying degrees, sometimes to produce what visually appears to be the same color with different chemical properties. Some pigments decay over time, so that the present-day visual appearance does often not reflect what textiles



**Figure 1** Neck ornament found in Egypt. Late antique period, third–fourth century (?). Medium/technique: Wool, linen, and gold-wrapped silk thread slit tapestry. Dimensions: Overall – 56.9 × 15.8 cm (22 3/8 × 6 1/4 in.). Museum of Fine Arts, Boston, Charles Potter Kling Fund, accession number 46.401.

Photograph © 2023 Museum of Fine Arts, Boston.

would have looked like originally (Houghteling 2020). This is why dye analysis is crucial, and can advance our knowledge about dating textiles, together with radiocarbon (C-14) dating (Cabrera Lafuente 2020).

“Technique” is best understood as the weaving process; the finished fabric is the result of a weaving technique, or sometimes multiple techniques. A textile’s structure is evidence of technique, but it is not necessarily the technique itself, a point central to Irene Emery’s essential encyclopedia of weave structures (Emery 2009). Though the weave structures Emery describes in her book appear in textiles from around the world and across time, the techniques that produced those structures were culturally specific. One might find the exact same plain-weave structure in textiles from Peru and from Egypt produced at the same time, for example, but the processes behind those structures — the technique — may have been different. The distinction is important when discussing textiles produced in different geographic locales that may have been the result of culturally and period-specific techniques.

Still, in much scholarship on medieval textiles, “technique” and structure are often described interchangeably, because the fabrics themselves are often all that remain to tell us today about their processes of production. **Warps** are threads that support the fabric’s structure and define its overall size and proportions. **Wefts** are the threads that run over the warp, filling in these spaces and creating a surface-facing pattern. **Plain weave** (sometimes called **tabby weave**) represents the most easily recognizable structure: a one-to-one relationship of a warp and weft resembling a grid (Figure 2). **Pile weave** such as velvet featured looped tufts of weft (sometimes warp) pulled through a plain-weave ground, producing a densely cushioned, plush fabric. Such loops could be spliced, producing a cut pile; conversely, weavers could insert and tie individual threads in the plain-weave ground, resulting in a knotted pile. These techniques provided additional heft, stiffness, and weight that made such fabrics suitable for floor coverings and bedding (Figure 3). **Felt**, in contrast, was not woven, but was rather created by condensing or pressing wet fibers together to produce the fabric’s structure. The finished edges of a textile, the **selvedges**, provide an important diagnostic to understand the dimensions of pieces in fragmentary condition today.

**Tapestry weave** builds on the basic relationship of warp and weft by playing with the density of the threads to create fields of color and patterns in the fabric’s structure, akin to blotches of paint on the surface of a canvas (Figure 4 and Figure 5). Although in popular usage today, the term connotes large-format furnishing hangings in this technique (like the Unicorn Tapestries)<sup>1</sup>; in reality, tapestry was used for all types of textiles, especially in the

<sup>1</sup> [www.metmuseum.org/art/collection/search/467642](http://www.metmuseum.org/art/collection/search/467642).





**Figure 2** Weft-faced plain weave, after Irene Emery. Photograph by Pam Kaplan, © The George Washington University Museum and The Textile Museum.



**Figure 3** Carpet fragment with mosaic floor pattern, said to be from Egypt, Antinoöpolis. Fourth–fifth century. Medium/technique: Wool (warp, weft and pile); symmetrically knotted pile. Dimensions: Rug – L. 102 cm (40 3/16 in.) × W. 117 cm (46 1 1/6 in.). Metropolitan Museum of Art, New York, Rogers Fund, 1931, accession number: 31.2.1.  
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**Figure 4** Tapestry weave, after Irene Emery. Photograph by Pam Kaplan,  
© The George Washington University Museum and  
The Textile Museum.



**Figure 5** Fragment of a hanging or cover with head and duck in jeweled lattice  
from Egypt. First-third of fifth century. Dimensions: H. (warp) 33.0 cm ×  
W. (weft) 22.0 cm (13 × 8 11/16 in.). Medium/technique: Tapestry weave in  
polychrome wool. © Byzantine Collection, Dumbarton Oaks Research Library  
and Collection, Washington, DC, BZ. 1946.16.





**Figure 6** Textile fragment, fifth century, attributed to Egypt. Medium: Wool, linen; plain weave, weft-loop weave. Dimensions: Max. H. 165 cm (64 15/16 in.) × max. W. 128.4 cm (50 9/16 in.). Metropolitan Museum of Art, New York, Gift of George F. Baker, 1890, accession number: 90.5.808. Open access CC0.

late antique period, including dress textiles. The combination of plain weave, tapestry weave, and sometimes even weft-loop pile was also common, as one sees often in weavings from late antique Egypt (Figure 6). Plain weave was useful when one needed to create a large-format utilitarian garment or hanging, because the resulting fabric was lightweight and used relatively little thread; denser-woven tapestry areas were better for decorative details and to create heft (Colburn 2019).

Plain weave and tapestry are categorized as simple weave structures in that they are essentially variations on the basic arrangement of warp and weft. Over the course of the Middle Ages, however, increasingly advanced looms resulted in ever more sophisticated structures, known as **complex** or **compound weaves** (Mackie 2015: 469–470). Scholars continue to debate the techniques used to make these structurally sophisticated weavings and the locations of their production across Eurasia. Silks are perhaps the best and most studied of medieval compound weaves (Galliker 2015b; Kuhn and Zhao 2012; Muthesius 1997; Thomas 2012). While plain weave and tapestry weave could be completed on a relatively simple loom with patterns introduced by hand, compound silk fabrics

were woven on a drawloom, a large, mechanized weaving machine that introduced repetition into the weaving process (Muthesius 1997: 19–27; Zhao et al. 2019). In the earliest examples, patterns were programmed into the loom, which then repeated and mirrored these patterns across a run of fabric, with the resulting basic structure, sometimes called **samite** (weft-faced compound twill), creating a front and back of the textile in reversed colors (Figure 7). The number of colors used and the size of the individual repeat unit reflected the complexity of the loom used for the weaving; silks with large-format medallions and multiple colors were among the most technologically advanced artistic products of the Middle Ages. Silk technology originated in China before spreading to Central Asia and into Byzantium; by the sixth century, silk production was common in the Mediterranean basin with production centers in Egypt and the Levant.



**Figure 7** “Hero and lion” silk. Constantinople? Egypt? Syria? Seventh–ninth century. Dimensions: H. 94.2 × W. 38.4 cm (37 1/16 × 15 1/8 in.). Technique/material: Weft-faced compound twill (samite) in polychrome silk. © Byzantine Collection, Dumbarton Oaks Research Library and Collection, Washington, DC, BZ.1934.1.