Stella Spantidaki

Textile Production in Classical Attica

A brief PhD Thesis Summary

Abstract
This study examined textile production in Attica with an interdisciplinary method, which combined information from the written sources, iconography, textile production tools and textile remains, in order to establish the most complete image possible of the textile activity in the Classical period. These sources inform us of an elaborate textile production and a division of labour in this domain. The Greeks have inherited a great textile tradition and technical knowledge, which, combined with their familiarity of the natural environment, allowed them to choose between various raw materials, production and embellishment techniques in order to achieve the desired result. Differences in the quality of the raw materials, production and embellishment techniques indicate that a great variety of textiles of different qualities were produced in order to respond to the needs of all social classes.

Key words: *Archaeological textiles, textile production, household, workshop, embellishment, classical Greece*

Textile production holds a major place in ancient societies. Its study informs us about both the significance of textiles and the people involved in their manufacture and distribution. The aim of my PhD thesis was, through the study of this activity, to enhance one of the most dynamic aspects of the classical Greek society and to contribute to its better understanding. This subject was particularly interesting for two reasons: firstly, the study of textile production is a rather recent development in Greece due to the rarity of archaeological textile remains until the last decade; secondly, this activity required a combination of great manual and cognitive skills.

Apart from a few textile discoveries in the mid-20th century, such as the textile from Eleusina, we did not know about other extant textiles in Greece until recently. In fact, the Mediterranean climate of Greece is not favourable for the conservation of organic materials. Fortunately, since 2000, the excavations for the underground construction in Athens have brought to light several textile fragments dated to the Classical period. At the same time, archaeologists began to "discover" extant textiles in storage rooms of museums of Attica. Today, there is a corpus of 26 textile fragments from Attica and several pieces from other regions of Greece that date to the Classical period (overview in Spantidaki and Moulherat 2012, 198-199). The mode of conservation most commonly observed is mineralisation as a result of contact with corroded metals. Until recently, studies of mineralised textiles were limited to their technical characteristics (i.e. weaving techniques), due to the lack of an appropriate method for the identification of raw materials. Fortunately, the multiplication of textile discoveries in Greece has coincided with the development of a methodology appropriate for the analysis of mineralised textiles, at the Centre de Recherche et de Restauration des Musées de France (C2RMF). This method combines the use of optical and SEM microscopy and allows the identification of the fibre, irrespective of the mode of conservation of the textile. So the researchers have at their disposal, for the first time, a new corpus of textiles and a method of analysis suitable for their most common conservation form

Fig. 1. Hard twisted threads on the textile 3 from Koropi (Photo: ARTEXT).

Fig. 2. Traces of supplemental weft on the textile 3 from Koropi (Photo: ARTEXT).

(Moulhérat 2005, 13). The creation of the Centre for Research and Conservation of Archaeological Textiles (ARTEXT) in 2002 in Athens launched the study of Greek extant textiles with this new method. Being a member of ARTEXT, I participated in the analysis of numerous fragments and personally studied the latest discoveries.

My aim in my PhD thesis was to create a clearer image of textile manufacture and distribution during the Classical period. I used an interdisciplinary methodology, combining information from the fields of archaeology, biology, art history and classics. The project structure encompassed two main research strands: Textile manufacture techniques and organisation of textile production.

Textile production in ancient Greece has been traditionally connected with women and the space of the household, the *oikos*. Written sources provide abundant evidence of free and enslaved women being responsible for the family clothes and household textiles. The space used for weaving was called *histeōn*, or *histōn* (Menander, Samia 234-235). Activities undertaken in the household included spinning, weaving, washing and dyeing. Women often reached a high level of skill, demonstrated by the fact that the peplos, a special dress offered every year to Athena Polias during the Little Panathenaia procession in Athens, was produced by young girls of aristocratic families (Brulé 1987, 83).

Archaeological evidence from the city of Athens provides a lot of information about ancient household production, in comparison to other Greek cities. However, archaeological evidence for textile workshops in Attica is scarce. Only one building has been interpreted as a spinning or weaving workshop, building Z in Kerameikos, dated to the middle of the 4th century BC, where a group of 153 loom weights has been discovered (Knigge 1980, 263). A fullonica or dyer's workshop was probably located in the east of the town at the end of the 4th century BC (Sanidas 2013, 105). Classical texts mention existing textile workshops situated either in or near the private household, or entirely separated from it, in the Agora

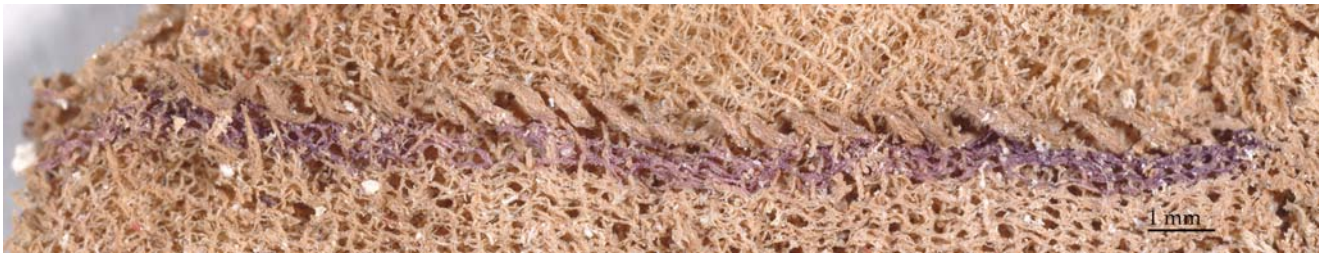

Fig. 3. Detail of the starting border of the textile from Kalyvia decorated with a purple stripe created with seven purple weft threads (Photo: ARTEXT).

Fig. 4. Detail of red colour traces on the textile 2 from Koropi (Photo: ARTEXT).

and other parts of the city. The workshops could also act as shops for the products made there. A very large number of skilled men and women, very often slaves, but also liberated slaves and freemen, appear to have worked in workshops in the Athenian Agora under the supervision of a master weaver, *hyphantis*. The information about the organisation of these workshops is not always clear; it seems, however, that Athenian citizens could own a workshop and employ a large number of workers, each one of them working at a specific stage of the chain of production. During the classical period we note frequent references to fullers' workshops in Athens, often at the edge of the Agora, and texts of the 4th century BC also mention dyers' workshops. In written sources, we note the clear division of labour concerning textile production. The classical texts mention a high number of specific occupations related to textile production, as terms designating textile workshops and selling places (Spantidaki 2009, 80-83; Sanidas 2013, 220).

The textile fragments of this study have all been discovered in funerary contexts, specifically in cremation urns. Hence, they are not characteristic of the whole textile production of the 5th and 4th centuries BC, but constitute a specific sample related to funerary rites of this period. Their study has allowed the identification of a specific type of textiles used in this context, which present great uniformity in their technical characteristics (raw material, weave, thread count and thickness). This image is in contrast to the information derived from the written and iconographic sources, which mention the use of a large variety of textiles in the daily life of the population. Despite their uniformity, certain fragments present differences in quality, which attest to the existence of textiles of different value. This funerary textile corpus, however small and specific, helps us get an idea of textile production during the Classical period. The combination of information from textile analysis with that provided by other extant sources allows us to draw an image of textile activity in this period.

The new methods of study and analysis of the extant textiles have allowed the identification of new manufacturing techniques used in the Classical period. One of them is the technique of the characteristic crimped textiles known from vase paintings and sculptures. This effect, called crepe, is created by the use of very hard twisted threads with a crimped aspect. Such threads have been identified in several classical textile remains, especially the textiles from Glyphada, Koropi, Marathon and the hemp fragment from Trachones (Fig. 1). This technique resulted in the fabrics with a unique appearance simply by increasing the twist of the threads during spinning, and without the need to change the weave of the cloth. It could be combined with other techniques, such as pleating, dyeing or open weave, in order to achieve more variable results.

The study of the archaeological evidence indicates that the final appearance of a Greek textile did not depend as much on the weaving technique, which was always plain weave or tabby, as on the large variety of embellishment techniques used. The term embellishment is used to describe all the different procedures undertaken in order to improve a textile's appearance. These techniques can be divided into two categories: the first includes the decorative techniques used during and after the weaving, while the second refers to the special treatments of the whole or parts of the cloth before and during spinning and during and after weaving. One notices that, while always keeping the same weave, ancient Greeks were able to choose between known embellishment techniques in order to create unique products.

This study also demonstrated the existence of a great variety of decorative techniques used in this period. Today we have evidence for the use of embroidery for example on the textile 1 from Koropi (Spantidaki and Moulherat 2012, 193, fig. 7.16), supplementary weft techniques (textiles from Eleusina, Glyphada and textiles 2 and 3 from Koropi; Fig. 2) and dyeing (textiles from Kalyvia, Koropi, Maroussi and Kerameikos; Fig. 3). Each technique could result in very different decorative patterns; using, for example, the techniques of supplementary weft, one could create either small repetitive patterns, or very complex decorations. In the same way, several techniques could be employed for the creation of the same pattern and achieve a similar aesthetic result. Using, for example, the techniques of

supplementary weft, embroidery, reserve dyeing and painting, one could achieve very similar results. Thus, it is rather difficult to associate a specific pattern with a particular decorative technique, apart from the crepe textiles.
Concerning colour decoration, there is archaeological evidence for the use of natural dyes, in particular purple dye, in textiles from Kalyvia, Maroussi and Kerameikos. The dye analysis of the first two fabrics has shown that they were dyed with real murex purple dye (Spantidaki and Moulherat 2012, 195). As for the fragments from Kerameikos, there is no information about a dye analysis (Margariti et al. 2011, 525). The textile 2 from Koropi conserves traces of a painted pattern in black and another in red colour (Fig. 4). We can be sure that it is painted, because the colour has not penetrated into the fibres, but has remained on the surface of the cloth. Finally, a hot wax dyeing technique is mentioned in written sources as used by foreign people, and samples of resist-dyed textiles have been discovered near the Greek colony of Panticipaeum (nowadays Kertch, located in southern Ukraine). Kurgan 4 at Seven Brothers, dated to the mid-5th century BC, yielded a piece of resist-dyed wool tabby (Barber 1991, 206; Gleba and Krupa 2012, 413, fig. 20.14). In Kurgan 6 at the same site, dated to the early 4th century BC, a large wool sarcophagus cover was also resist-dyed (Gerziger 1975, 51; Barber 1991, 206-209, fig. 7.11 and 16.15). Both textiles were decorated with friezes illustrating Greek mythological scenes; the names of the depicted gods and heroes were written in Greek.

The study of the embellishment techniques has given rise to the hypothesis that during the Classical period different techniques were used as substitutes for tapestry and purple dyeing. As these were very expensive and time consuming techniques, the Greeks had found alternatives in order to be able to satisfy the needs and wants of a wider range of social classes. Concerning tapestry, there is no archaeological evidence for its use in Attica during the classical period. However, recent work on experimental archaeology has demonstrated the possibility of creating tapestry on the warp-weighted loom (Ellen Harlizius–Klueck, experiment of tapestry weaving on a reconstructed warp-weighted loom based on a reconstruction of the painting on the ependytes of the «Peplos Kore», done by Vinzenz Brinkmann, 2004. The exeperiment was done at a research project within the exhibition "Gesponnen und Verwoben. Textiles zu Zeiten von Römern und Germanen", in the Clothiers Museum Bramsche, Germany, from 5th June until 25th October 2009 (unpublished); Wikman 1996, 18; Oscarsson 2010, 64-73). Hence techniques such as the supplementary weft, embroidery, reserve dyeing and painting, employed for the creation of decorative scenes, could be interpreted as cheaper and less time-consuming alternatives to tapestry. This is archaeologically illustrated in Kurgan 6 at Kertch, where inside the sarcophagus with resist-dyed textile, pieces of a wool tapestry were also found. The presence of both techniques in the same grave indicates that "the resist dyed clothes were the inexpensive, but elegant, substitute for the time consuming and therefore expensive tapestry clothing" (Perivoliotis 2006, 5). Concerning shellfish purple dyeing, written sources mention a long list of colorants as substitutes for purple dye. We also know that, as the major part of the population did not have the means for dyeing their clothes with real shellfish purple dye, they tried to imitate the purple shades using blue and red dyes produced by other plants and animals (Barber 1991, 229). These "imitations" could satisfy the demands of the Greek consumers with minor expense. This study shows that the Greeks of the Classical period had a great weaving tradition behind them and had acquired a high level of knowledge and skill, which allowed the creation of unique textiles with many different ways and techniques. They were able to choose between raw materials, weaving and embellishment techniques, and combinations of these, in order to achieve the desired result. Subtle changes in the twist of the threads, the choice of a decoration technique, the colour decoration, the density of the fabric or the thickness of the threads, all contributed to the final appearance of the cloth and made it unique. At the same time, textile craft counted among the most significant economic sectors of classical society and the study of the organisation of textile production and consumption offers valuable information about the organisation of the society itself.

Bibliography

Barber, E. J. W. (1991) *Prehistoric Textiles: the development of cloth in the Neolithic and Bronze Age with special reference to the Aegean*, Princeton.

Brulé, P. (1987) *La fille d'Athènes. La religion des filles à Athènes à l'époque classique. Mythes, cultes et société*, Paris.

Gerziger, D. (1975) Eine Decke aus dem sechsten Grab der "Sieben Brüder", *Antike Kunst* 18 (1972), 51-55.

Gleba, M. and Krupa, T. (2012) Ukraine. In M. Gleba and U. Mannering (eds.), *Textiles and Textile Production in Europe from Prehistory to AD 400*, Oxford, 399-425.

Knigge, U. (2005) *Der Bau Z*, München: Deutsches Archäologisches Institut.

Margariti, C., Protopapas, S., Orphanou, V. (2011) Recent analyses of the excavated textile find from Grave 35 HTR73, Kerameikos cemetery, Athens, Greece, *Journal of Archaeological Science* 38, 522-527.

Moulhérat, C. (2005) La minéralisation, *L'Archéologue*, 77, 13.

Perivoliotis, M. C. (2006) Wax Resist Decoration, an ancient Mediterranean Art, *Artciencia* 2, no. 4, 1-15.

Sanidas, G. (2013) La production artisanale en Grèce. Une approche spatiale et topographique à partir des exemples de l'Attique et du Péloponnèse du VII^{e} au I^{er} siècle avant J.-C., Lille: *Collection Archéologie et Histoire de l'art*, no. 33.

Spantidaki, Y. and Moulherat, C. (2012) Greece. In M. Gleba and U. Mannering (eds.), *Textiles and Textile Production in Europe from Prehistory to AD 400,* Oxford, 185-202.

Spantidaki, S. (2009) Specialisation in textiles in Classical Athens, *Arachne* 3, 80-83.

Author: sspantidaki@yahoo.com