

¹⁴C DATING COMPARED TO ART HISTORICAL DATING OF ROMAN AND COPTIC TEXTILES FROM EGYPT

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ABSTRACT. A representative selection of Roman and Coptic textiles is used to compare the radiocarbon dating results with the chronology proposed by art historians. In some cases, the comparison was made on individual objects, but in other cases, groups of stylistically and/or technologically related textiles were compared. In the case of the latter, the interquartile range was calculated. The results of this comparison show that some individual samples and groups are dated older than expected, while for another group the opposite is the case. One group was matching well with the presumed period as a whole, but not on the basis of the individual pieces. The analyses showed the necessity of ¹⁴C dating to obtain a more accurate dating of Coptic textiles.

INTRODUCTION

The Coptic period (or Byzantine period) is a 400-yr span of Egyptian Christian culture, starting from the division of the Roman Empire in AD 395 to the defeat of the Byzantine Empire by the Muslim invasion in AD 641. The word “copt” itself referred to native Egyptians, as opposed to the Greek or Arab invaders and is derived from the Arab word “Qibt” (Egyptian), related to the Greek word “Aigyptos.” Although the Muslim defeat of Byzantium introduced Islam as well as Arabic as a dominant influence, Egyptian Coptic culture has persevered to the present.

Some art historians tend to rely upon a chronology for Coptic textiles based on stylistic features and are skeptical of the reliability of radiocarbon analysis, much in the same way that some Egyptologists dismiss ¹⁴C data (van der Plicht and Bruins 2001). That chronology is primarily based on a comparison of stylistic features with other media, such as paintings, sculptures, mosaics, and architectural features (De Moor et al., forthcoming). More recently, technological studies on weaving techniques (De Jonghe and Verhecken-Lammens 1993) and dye analyses have been added (Wouters 1993) as chronological tools.

It has often been said that the apparent lack of precision of ¹⁴C analysis has contributed to this skepticism, but this is not entirely true. In 1958, du Bourguet had a Coptic tunic ¹⁴C dated, resulting in a ¹⁴C date of AD 610 ± 150. This result was rejected, not on the grounds that the result was not precise enough, but because he believed, on stylistic grounds, that the result should have been younger than the 10th to 11th century AD (du Bourguet 1958).

The idea that textiles can be dated accurately and precisely on stylistic and technical grounds has less merit than for other media. Contrary to paintings and sculptures, textiles—even in historical periods—seem less influenced by technical and artistic changes. Some methods and weaving techniques stay in use for quite some time (Van Strydonck and De Jonghe 1995). Furthermore, most Roman and Coptic textiles from Egypt were not found during well-controlled archaeological excavations, but derive from unscientific excavations and grave robberies and lack all contextual dating evidence. Finally, except for some Abbasid and Fatimid textiles, the year of manufacture is never found on Coptic textiles. As a result, art historians tend to date textiles to only within a range of 1–2 centuries.

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A first attempt by our group to compare both dating methods was performed about 10 yr ago. Unfortunately, the data set was too small for the variety of textiles dated so that it was impossible to draw definite conclusions, but in some cases, an important discrepancy between both methods had already been revealed (Van Strydonck et al. 1993).

MATERIALS AND TECHNIQUES

Pretreatment

Textiles are considered to be appropriate material for dating because the ^{14}C content of the sample reflects only 1 growth season, and the difference between the age of the raw material and the time of manufacturing of the fabric is minimal. Since the textiles come from a dry and relatively isolated context with only minimal contact with the environment, most are very well preserved. From a ^{14}C point of view, it is more likely that a material will be contaminated during its handling, archiving, and conservation attempts (environmental oils and dirt, reweaving with modern fibers, glues, cleaning), from trading activities or museum storage. Thus, it is important to consider these possible contaminants when selecting and pretreating a textile.

During sampling, deteriorated and restored parts of the textiles were avoided. The chemical pretreatment depended on the nature of the textile fibers. Textiles made of plant fibers were bleached during successive washes in a hot 1M KOH solution and a NaClO_2 solution [2.7g + 3.7 mL HCl (37%) / 100 mL H_2O]. Textiles made of animal fibers were treated ultrasonically in a 0.2% Tinoventine solution. After the treatment, the samples were repeatedly washed in demineralized water.

Graphitization and Measurement

Graphite was prepared using routine analysis (Van Strydonck and van der Borg 1990–1991) and measured by accelerator mass spectrometry (AMS) at the Van de Graaff Laboratory, Utrecht (UtC) and the Leibniz Labor für Altersbestimmung und Isotopenforschung, Kiel (KIA).

Comparison

The nature of the date ranges obtained by ^{14}C is different from the ranges proposed by art historical criteria. For ^{14}C , the estimation of the true age is given by a probability distribution and this is not so for an art historical interpretation. On the other hand, the proposed art historical date range implies that there is a belief that the manufacturing dates of related fabrics are not equally distributed over the proposed range, but that there exists an introduction phase, a blooming period, and a period of decline. So as a working hypothesis, we adopted a normal distribution for the art historical estimation of the date, whereby the range is considered to be the $2\text{-}\sigma$ range and the middle of the range is the median. The difference between a single ^{14}C date and the art historical date was then calculated by OxCal. This is a different approach than in a previous study (Van Strydonck 1995).

In the case of a group of related samples, we calculated the interquartile range and the 95% probability from the summed probability of all dates.

RESULTS AND DISCUSSION

The textiles used in these study come from 2 collections: the Katoen Natie (Antwerp, Belgium) and the Louvre (département des antiquités égyptiennes, Paris, France).

First Group: Roman Textiles

Socks

Table 1 Roman sock.

Sample	Lab code	¹⁴ C age (BP)	Calibrated age (68.2%)	Calibrated age (95.4%)	Art historical date	Difference
721-01	UtC-8799	1830 ± 50	AD 90 (0.9%) AD 100 AD 120 (67.3%) AD 250	AD 70 (95.4%) AD 340	4th–6th century AD	370 (68.2%) 150 460 (95.4%) 50



Figure 1 A roman sock from Egypt (Katoen Natie DM 721-01)

These socks, “knitted” in wool with only 1 needle, are usually dated to the 4th–6th century AD. This slow technique was later replaced by the much faster true knitting. The Royal Ontario Museum in Toronto has 11 socks made with the single-needle knitting technique and stylistically dated to the 4th–5th century AD (Burnham 1972). The Victoria and Albert Museum in London has 4 similar socks dated in the same period based on archaeological grounds (Kendrick 1921). The Museo Egizio in Firenze has 1 child’s sock (inv. 12917) and a pair of larger socks (inv. 12920), both dated to the 4th–6th century AD (Del Francia Barocas 1998). There is 1 sock in the Städtischen Museum, which Simeonstift Trier dated to the Coptic period (Nauerth 1989). One similar sock is kept in the Royal Museum of Art and History in Brussels. This sock has been published 3 times and is dated to the 4th–5th century AD (Bruwier 1997; Lafontaine-Dosogne 1988; Rassart and Debergh 1988). One other sock from the Musée des Tissu de Lyon is dated to the Roman or Coptic period.

Silk Samite

Table 2 Silk Samite.

Sample	Lab code	¹⁴ C age (BP)	Calibrated age (68.2%)	Calibrated age (95.4%)	Art historical date	Difference
C269	KIA-11237	1730 ± 25	AD 250 (60.6%) AD 350 AD 360 (7.6%) AD 390	AD 240 (95.4%) AD 390	4th–6th century AD	220 (68.2%) 50 290 (95.4%) 0

The sample is a fragment from a silk weft-faced compound textile in 2 colors. A fragment from the same textile is in the Kerr collection and dated to the 4th–5th century AD (King and King 1990). One other fragment from the same textile is in the Royal Scottish Museum and dated to the 6th century AD (Bourriau 1977). Two other fragments from the same textile are in the Newark Museum (USA) and dated to the 6th to early 7th century AD (Auth 1978).



Figure 2 Silk samite from Egypt (Katoen Natie 795 / C269)

Two Roman Textiles Showing a Similar Printing Technique



Figure 3 Example of a Roman textile showing a particular printing technique (Katoen Natie 377 / DM200R)

Table 3 Two Roman textiles with similar printing techniques.

Sample	Lab code	¹⁴ C age (BP)	Calibrated age (68.2%)	Calibrated age (95.4%)	Art historical date	Difference
DM201R	UtC-9693	1700 ± 35	AD 260 (12.8%) AD 280 AD 320 (55.4%) AD 410	AD 250 (95.4%) AD 430	4th–5th cen. AD	120 (68.2%) 0 200 (95.4%) 10
DM200R	UtC-4858	1695 ± 40	AD 260 (11.9%) AD 280 AD 320 (56.3%) AD 410	AD 250 (95.4%) AD 430	5th –7th cen. AD	340 (68.2%) 60 450 (95.4%) 0

DM201R consists of a linen fragment from a shawl or a curtain. The sample was dyed with 2 shades of indigo. A similar piece is kept in the Museum of Cluny and dated on art historical grounds to the 4th–5th century AD (Lorquin 1992). DM200R is a linen fragment printed using the same technique as DM201R. The motif (not the colors nor the pattern) can be compared with that on 2 wooden panels from the monastery of Baouît (Rutschowskaya 1992). The proposed date is 6th–7th century. The motif was also found on a ceiling in Abou Girgeh dated to the 5th–6th century AD (Leclercq 1924).

Second Group: Roman and Coptic textiles

Twelve Stylistically Related Monochrome Purple (Indigo & Madder) Textiles

The results of this group of textiles are represented in Table 4 and Figure 4. Examples of this type of fabric are given in Figures 5, 6, and 7.

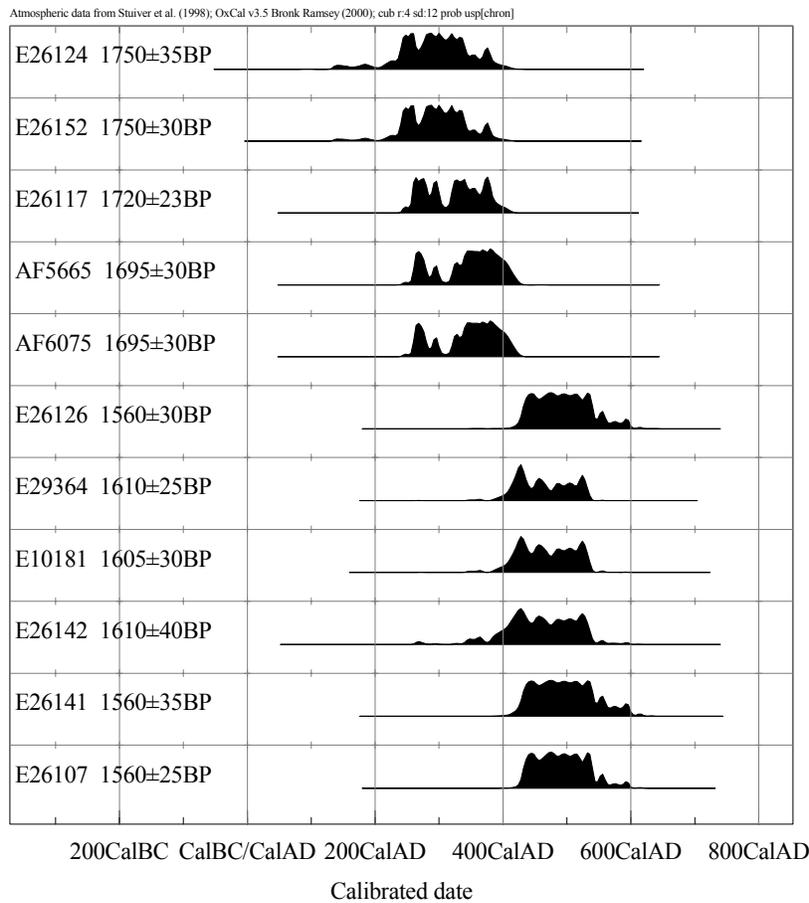


Figure 4 Results from the second group



Figure 5 Monochrome purple textile E26117 (star)

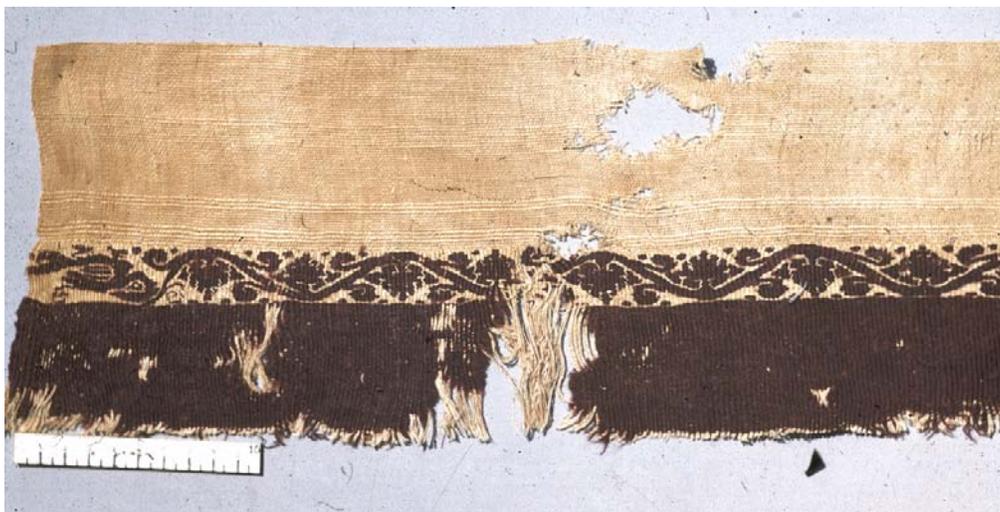


Figure 6 Monochrome purple textile E26126

This group forms a large part of the so-called “Coptic textiles” from Roman and Byzantine Egypt. It contains monochromatic tapestries, decorations for tunics or shawls woven on linen tabbies¹,

¹For technical terms such as tabby, looped weft, fringe, sprang, etc., see *Fabrics: A Vocabulary of Technical Terms, English, French, Italian, Spanish*. Centre international d’Etude des textiles anciens, 34, rue de la Charité, Lyon, France.

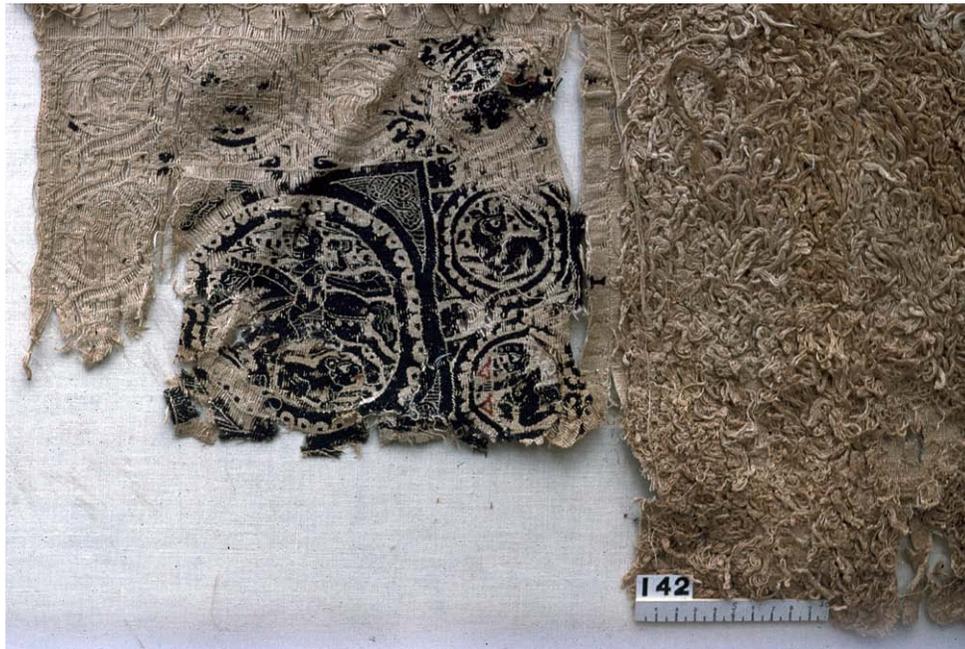


Figure 7 Monochrome purple textile E26142 (horseman)

Table 4 Stylistically related monochrome purple textiles.

Sample	Lab code	¹⁴ C age (BP)	Calibrated age (68.2%)	Calibrated age (95.4%)	Art historical date	Difference
E26124	KIA-14833	1750 ± 35	AD 240 (17.5%) AD 265 AD 270 (50.7%) AD 345	AD 170 (1.4%) AD 200 AD 210 (94.0%) AD 410	5th cen. AD	210 (68.2%) 90 270 (95.4%) 30
E26152	KIA-14842	1750 ± 30	AD 240 (16.9%) AD 265 AD 275 (51.3%) AD 340	AD 210 (95.4%) AD 400	3rd–4th cen. AD	80 (68.2%) 0 150 (95.4%) –10
E26117a	KIA-14839	1720 ± 35	AD 250 (28.0%) AD 300	AD 240 (95.4%) AD 400	3rd–4th cen. AD	65 (68.2%) 0
E26117b	KIA-15217	1720 ± 30 mean: 1720 ± 23	AD 320 (40.2%) AD 390			120 (95.4%) –10
AF5665	KIA-14835	1695 ± 30	AD 260 (11.8%) AD 280 AD 330 (56.4%) AD 410	AD 250 (95.4%) AD 420	3rd–4th cen. AD	60 (68.2%) –5 120 (95.4%) –10
AF6075	KIA-14837	1695 ± 30	AD 260 (11.8%) AD 280 AD 330 (56.4%) AD 410	AD 250 (95.4%) AD 420	7th cen. AD	370 (68.2%) 230 420 (95.4%) 210
E26126	KIA-14838	1560 ± 30	AD 435 (12.7%) AD 455 AD 460 (55.5%) AD 540	AD 420 (95.4%) AD 600	7th cen. AD	210 (68.2%) 105 250 (95.4%) 50
E29364	KIA-15209	1610 ± 25	AD 410 (39.8%) AD 470 AD 480 (28.4%) AD 540	AD 400 (95.4%) AD 540	—	—
E10181	KIA-14836	1605 ± 30	AD 410 (33.3%) AD 470 AD 480 (34.9%) AD 540	AD 390 (95.4%) AD 540	7th cen. AD	240 (68.2%) 120 290 (95.4%) 80
E26142	KIA-14843	1610 ± 40	AD 410 (35.9%) AD 470 AD 480 (32.3%) AD 540	AD 340 (95.4%) AD 560	6th cen. AD	150 (68.2%) 30 200 (95.4%) –10
E26141	KIA-18962	1560 ± 35	AD 430 (68.2%) AD 540	AD 420 (95.4%) AD 600	6th cen. AD	105 (68.2%) 15 140 (95.4%) –10
E26107	KIA-18963	1560 ± 25	AD 435 (12.4%) AD 455 AD 460 (48.4%) AD 520 AD 525 (7.4%) AD 540	AD 420 (95.4%) AD 570	6th cen. AD	110 (68.2%) 20 140 (95.4%) –10

which sometimes present looped wefts. The color is obtained by woolen wefts dyed with a mixture of madder and indigo, providing various shades of purple, violet, dark blue, etc. This “purple” color contrasts with the white natural linen. Tiny details are designed with a flying shuttle of undyed linen thread.

Five of these textiles (E26124, E26152, AF6075, AF5665, and E26117—accepting that E26117a and b are from the same fabric) form a distinct group within these monochrome textiles. The combination of these 5 dates gives an interquartile range from AD 270–355 and a 95% probability range from AD 220–395.

Du Bourguet (1964) dated three of them to the 3rd–4th century AD, one a century later, and another 3 centuries later.

The dating of E26117a and b (2 fragments with a very similar motif) is the same, supporting the hypothesis that they originally belonged to the same fabric. The proposed date of this star-shaped tapestry, based on its style, was quite ambiguous: it was first published as mid-4th to mid-5th century (du Bourguet 1959). The author compared this piece to a textile found in context with a coin dated AD 340 and to a Syrian mosaic dated around AD 450. Five yr later, du Bourguet (1964) dated the same textile to the 3rd–4th century. He did not explain his change of view. In the same catalog (under reference 66, B6), another textile with the same motif was placed in the 5th century.

Despite a divergence of dating based on their style, the interlaced pattern of the star E26117 and the twin stripes AF6075 (du Bourguet 1964: 121, D6) are very similar to motifs found together on a textile in the Victoria and Albert Museum, London (Kendrick 1920). A circle surrounds the star on the London piece, but the design is the same as on the one in the Louvre. A similar ¹⁴C date for both samples was, therefore, expected.

The next 6 samples also form a coherent series. The combination of these 6 gives an interquartile range of AD 435–505 and a 95% probability range of AD 390–560.

E29364 presents the same style and technique as the star-shaped decoration on E26117, the shawl roundels (medallions) E26124 and AF5665. However, they do not show the same ¹⁴C dating.

The same remark fits the vine scrolls E26152 and E26126 (see Figure 6: E26126). There are slight stylistic differences between them. E26126 has a little less elegant design and a bird is added to the vegetal scroll. Nevertheless, the presence of this bird does not mean anything in terms of dating, as it appears as well on the Victoria and Albert Museum band cited previously as a 3rd–4th century AD piece (Kendrick 1920).

The same 5th–6th century dating applies indeed to the textiles E10181, E26107, and E26141. These linen tunics are decorated with monochromatic woolen tapestries, as the whole group defined for this study. It has to be noted that the shoulder decorations with figures, sewn on E26107, do not belong to the original tunic (Cortopassi 2002). Textiles E26107 and E26141 present more sophisticated motifs: animals running through the scrolls and human beings. For this reason perhaps, art historians dated them later than the purely geometric patterns.

E26142 has linen loops around the decorated part. It also shows the sophisticated composition just mentioned above. Some red dots are added to the monochromatic purple decoration, an imperceptible change towards polychromatic tapestries. ¹⁴C dates this fabric between AD 340 and 560.

The dates show that the monochromatic group has been produced for a long time: geometrical and vegetal patterns from the 3rd–4th century AD were perpetuated in the 5th–6th century or even the 7th century if we take into account the ornamentation of tunic 862/DM42 B from Katoen Natie (KIA-17381: 1385 ± 20 BP). It is noteworthy that this set of 12 textiles can be chronologically divided in 2 very tight groups, separated by the year AD 400.

The Third Group: Coptic Textiles

Series of 12 Woolen Stylistically Related Tunics

Table 5 presents the results from this group of textiles. Figure 8 represents the probability distributions of the single dates. An example of this type of fabric is given in Figure 9.

Table 5 Woolen tunics.

Sample	Lab code	¹⁴ C age (BP)	Calibrated age (68.2%)	Calibrated age (95.4%)
DM113D	UtC-9431	1630 ± 60	AD 340 (4.2%) AD 370 AD 380 (64.0%) AD 540	AD 250 (95.4%) AD 570
DM88B	UtC-9049	1615 ± 40	AD 400 (38.4%) AD 470 AD 480 (29.8%) AD 540	AD 340 (95.4%) AD 550
DM88C	UtC-9051	1590 ± 40	AD 420 (68.2%) AD 540	AD 380 (95.4%) AD 570
DM119D	KIA-10569	1585 ± 30	AD 430 (26.0%) AD 470 AD 480 (42.2%) AD 540	AD 410 (95.4%) AD 560
DM123	UtC-2612	1540 ± 60	AD 430 (68.2%) AD 600	AD 410 (95.4%) AD 650
DM119	UtC-2619	1530 ± 70	AD 430 (68.2%) AD 610	AD 400 (95.4%) AD 660
DM88D	UtC-9050	1485 ± 40	AD 540 (67.1%) AD 620 AD 630 (1.1%) AD 640	AD 430 (95.4%) AD 660
DM88E	KIA-10570	1470 ± 35	AD 560 (68.2%) AD 640	AD 530 (95.4%) AD 660
DM119C	UtC-7253	1450 ± 50	AD 560 (17.8%) AD 590 AD 595 (50.4%) AD 655	AD 460 (1.6%) AD 500 AD 530 (93.8%) AD 680
DM119B	UtC-7240	1420 ± 60	AD 560 (68.2%) AD 670	AD 460 (1.0%) AD 490 AD 530 (92.5%) AD 720
DM88	UtC-9052	1380 ± 40	AD 620 (4.7%) AD 630 AD 635 (63.5%) AD 685	AD 740 (2.0%) AD 770 AD 590 (92.0%) AD 720
DM85	UtC-2620	1350 ± 70	AD 620 (53.3%) AD 730 AD 740 (14.9%) AD 780	AD 740 (3.4%) AD 770 AD 540 (95.4%) AD 870

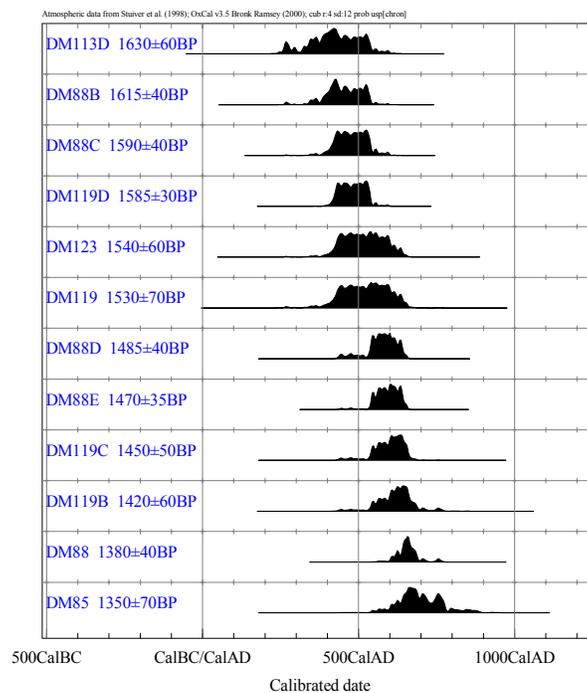


Figure 8 Probability distributions for the single dates



Figure 9 Fragment of a woolen Coptic tunic (Katoen Natie 561 / DM85)

Twelve woolen tunics of a particular type, with or without sleeves, were dated. They have clavi, vertical decorated strips next to the neck slit, frequently decorated with very stylized human figures or animals, or with geometric patterns with, for instance, octagons and interlacing (see decoration Katoen Natie 561/DM85). The clavi are nearly always running to the hem (the lower border). From a technological point of view, they form a coherent group. Most of these tunics show weft loops forming fringes at the hem. The neck slit is often carefully strengthened with weft twining and looped warp twining along the selvedge of the neck slit (Verhecken-Lammens 1994).

Some authors date these tunics as late as the 11th or 12th century (a summary of all the proposed dates can be found in De Moor et al., forthcoming). Others date them no older than the 6th–9th century AD.

The interquartile range for this set of textiles goes from AD 450–650, the 95% probability range from AD 350–740. This result shows without any doubt that these tunics do not belong to the 11th or 12th century AD as suggested by some authors. Furthermore, this data set has proven that the geometric patterns and the interlacing, very often seen in late Roman textiles from Egypt (4th century AD) did not disappear from the Coptic iconography during several centuries.

Series of 10 Woolen Caps in Sprang Technique

Table 6 and Figure 10 represent the results from the woolen caps. Figure 11 shows an example of this type of fabric.

Sprang is a plaiting technique realized by the crossing of threads. The dating of these woolen caps has been controversial. There is a general consensus that the caps date between the 4th–6th century AD, although du Bourguet (1964) dated them as late as the 9th century. A summary of all the proposed dates can be found in De Moor et al. (2002). The dates show very well that a 9th century date for this type of fabric must be excluded.

Although the dates form a very coherent series, with an interquartile range of AD 450–650 and a 95% probability range of AD 350–740, there are some technical differences between the individual

Table 6 Caps in sprang technique.

Sample	Lab code	¹⁴ C age (BP)	Calibrated age (68.2%)	Calibrated age (95.4%)
853c	KIA-15206	1615 ± 25	AD 400 (44.7%) AD 470 AD 480 (23.5%) AD 540	AD 390 (95.4%) AD 540
816f	KIA-12709	1580 ± 25	AD 430 (24.6%) AD 470 AD 480 (43.6%) AD 535	AD 420 (95.4%) AD 540
816d	KIA-12707	1545 ± 30	AD 430 (68.2%) AD 560	AD 430 (95.4%) AD 600
816e	KIA-12711	1535 ± 30	AD 430 (68.2%) AD 600	AD 430 (95.4%) AD 610
816a	KIA-12713	1525 ± 35	AD 430 (5.0%) AD 450 AD 460 (8.6%) AD 490 AD 510 (0.8%) AD 520 AD 530 (53.9%) AD 610	AD 430 (95.4%) AD 620
DM138	KIA-12710	1510 ± 25	AD 535 (68.2%) AD 600	AD 430 (95.4%) AD 640
853a	KIA-14327	1500 ± 30	AD 535 (68.2%) AD 605	AD 430 (95.4%) AD 650
816b	KIA-12712	1485 ± 25	AD 540 (68.2%) AD 615	AD 530 (95.4%) AD 640
853b	KIA-14328	1420 ± 25	AD 620 (68.2%) AD 656	AD 595 (95.4%) AD 665
816c	KIA-12708	1400 ± 25	AD 623 (6.6%) AD 628 AD 639 (61.6%) AD 662	AD 600 (95.4%) AD 675

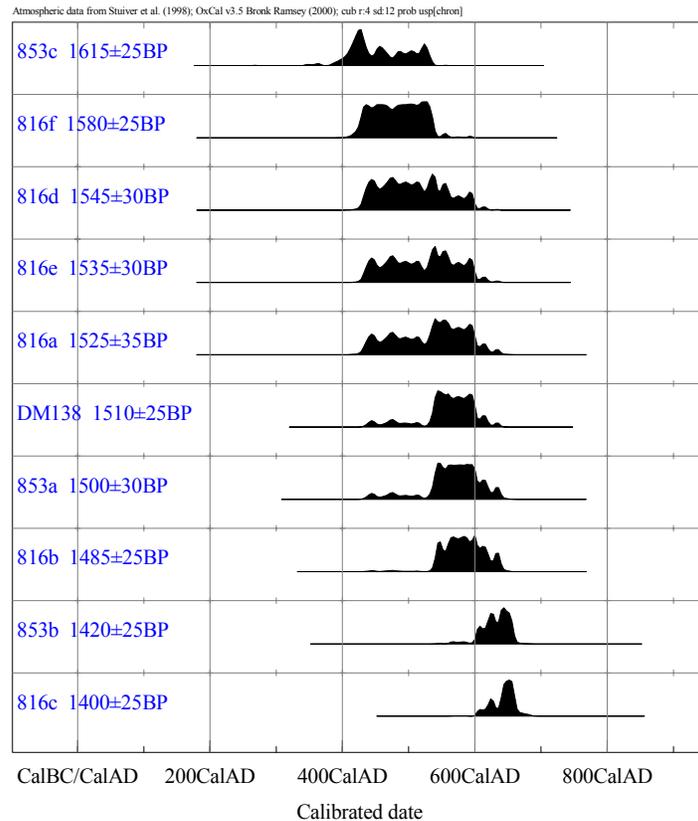


Figure 10 Probability distributions for the woolen caps

caps. In caps 816a and 816f, brocading threads were introduced. Cap 816b was made in an open sprang technique which was not very loose, and it is more related to the linen or linen and wool hair-nets. Cap 853b contains human hair from the buried person. Although caps 853b and c show the same pattern, their dates differ considerably [difference: 230–110 (68.2%), 260–80 (95.4%)].



Figure 11 A woolen cap in sprang technique (Katoen Natie 853b)

Table 7 presents the results from the woolen caps. Figure 12 shows an example of this type of textile.

Table 7 Textiles with silk embroidery of stylized floral motifs (EBERWEIN) and of a Greek cross recrossed at the 4 ends (904 and DM1000).

Sample	Lab code	¹⁴ C age (BP)	Calibrated age (68.2%)	Calibrated age (95.4%)
EBERWEIN	UtC-7250	245 ± 30	AD 1640 (49.8%) AD 1670 AD 1780 (18.4%) AD 1800	AD 1520 (8.9%) AD 1570 AD 1620 (57.1%) AD 1680 AD 1760 (25.3%) AD 1810 AD 1930 (4.2%) AD 1950
904	KIA-20197	215 ± 20	AD 1650 (26.3%) AD 1670 AD 1780 (39.9%) AD 1800 AD 1940 (2.0%) AD 1950	AD 1640 (37.2%) AD 1680 AD 1760 (47.7%) AD 1810 AD 1930 (10.5%) AD 1950
DM1000	KIA-18957	120 ± 30	AD 1680 (19.8%) AD 1740 AD 1800 (40.8%) AD 1890 AD 1910 (7.6%) AD 1930	AD 1670 (32.6%) AD 1770 AD 1800 (62.8%) AD 1960

Textiles with Silk Embroidery, Often of a Greek Cross Re-Crossed at the 4 Ends

These linen tunics or cotton caps are often embroidered with silk floral or stylized floral motifs, sometimes with men or animals or with a large Greek cross re-crossed at the 4 ends.

Although these textiles are usually dated to the late medieval period (du Bourguet 1964), ¹⁴C analysis places them not before the mid-17th century AD.



Figure 12 A cap with a Greek cross re-crossed at the 4 ends (Katoen Natie 896 / DM1000)

CONCLUSIONS

This study has shown that for the assembled groups of textiles, the dating precision for both ¹⁴C and art historical criteria is similar and in the order of 2 centuries. We also found that, with the exception of textiles embroidered in silk, ¹⁴C analysis returned dates that were older than previous assessments based on art historical grounds. This may be due to the fact that while comparison of a textile with other media such as paintings may not provide an accurate historical example of style, ¹⁴C analysis does have the advantage of providing a calendar age range that is based on the quantitative analysis of contemporary isotopic values preserved in the material. We suggest that, rather than being viewed with some suspicion, ¹⁴C dating of textiles can indeed enhance the assessments of art historians.

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