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## **Functional Analysis of Garments in 18<sup>th</sup> Century Burials from St. Michael's Crypt in Vienna, Austria**

### **Introduction**

Crypt research is some specific aspect of archaeological research. Similar to research on prehistoric and historic cemeteries we work with artefact analysis, anthropology, and written sources to get socio-historical information about the people buried. Material analysis, typology and others tell us about the material culture involved to understand burial customs. Textile material from crypts belong to specific artefact groups. Due to certain circumstances, the environmental conditions in crypts often favour the preservation even of organic material. Such, we have many details that are lost on other cemeteries. In good cases we have complete garments, such as in our case study St. Michael's crypt.

There are different research approaches that can be applied to garments found in crypts. Mainly these are aspects of conservation and preparation, followed by studies in costume history (Bravermanová 2010; Hofmann 2010; Ströbl 2013). Another point of view are questions about the functionality (e.g. Lipkin et al. 2015; Vedeler 2010: 255). This includes the interpretation of the costume such as if they are “normal” daily life (or festive) garments or specific funeral costumes.

In this paper, the functionality of the garments found in the coffins is in focus, but also it is our aim to gain information for archaeological textile research in general. The comparison with textiles from crypts is an essential research approach for the understanding of textile remnants from contemporary cemeteries with earth

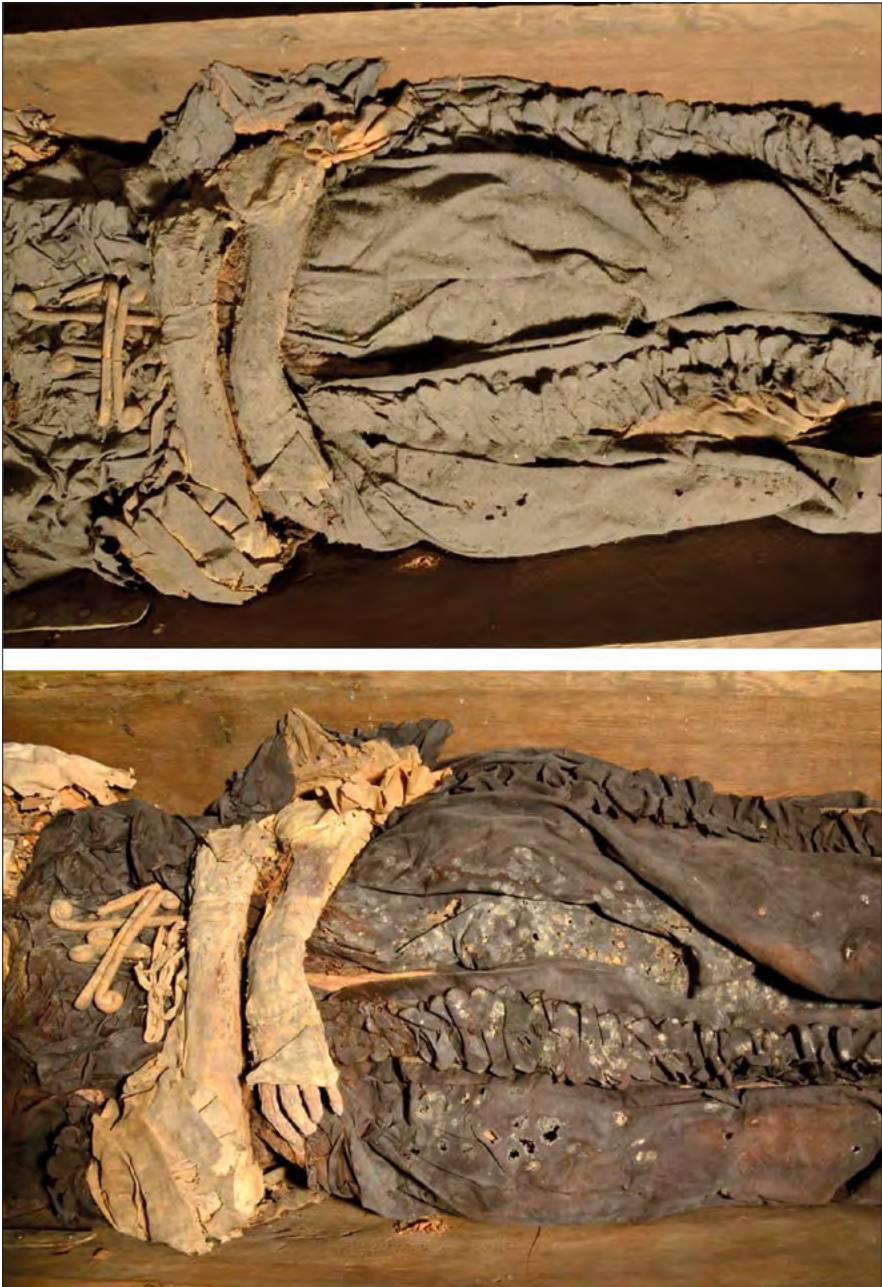
burials, because organic material obtained from soil burials in Central Europe usually are only fragmented. Such, the inventories from crypts give a glimpse into what is lost in unfavourable conditions. Nevertheless, there is also research needed about what inventories are special in crypts, what we do not have from contemporary cemeteries with earth graves. This especially can be seen in durable materials like metal artefacts that survive both in crypts and earth burials. For our contemporary comparison material from earth graves in this contribution examples from Stephens cathedral in Vienna and St. Pölten Domplatz, both Austria, are discussed (Klammer et al. 2018; *Verstorben, begraben...* 2019; Grömer et al. 2019).

### Case study: St. Michael's crypt

The church of St Michael's was built in the second decade of 13<sup>th</sup> century. In early times a cemetery was located around the church. In 1508 it was closed by the Habsburgian emperor Maximilian I. In consequence the crypt chambers were built successively, to satisfy the needs for burial places (Fig. 1). First there were small separate crypt chambers for noble families. From 1668 on huge crypt chambers were built underneath the main nave and the transept. Following crypts are mentioned in funeral documents of the parish St. Michael: Herrengruft, Spanische Gruft, Pfarrgruft, Vesperbildgruft, Engelsgruft and Maria Candia Gruft. The latter mentioned in 1731 is important for our study, for there are located most of the mummified burials wearing well preserved garments. According to the funeral protocols, the crypt has been used between 1560 and 1784 by the local nobility of the city center in Vienna (*Die Michaelergruft in Wien...* 2005: 117; Youtube Michaelergruft; Homepage Michaelergruft). In 1783 – one year before the final closure of the crypt of St. Michael's – funerals were forbidden in the center of Vienna by decree of the Austrian emperor Joseph II.



Fig. 1. Vienna, St. Michael's crypt (© Pfarre St. Michael).



**Fig. 2.** St. Michael's crypt: coffin 83 before and after cleaning treatment (after Gengler 2018).

Still, around 250 coffins (among them 33 metal coffins, the others are wooden coffins) are kept at the crypt *Die Michaelergruft in Wien...* 2005: 31). The inventory of a number of coffins has been preserved due to favorable environmental condition. Such, it offers the possibility to study specific details about the funeral customs of the 17<sup>th</sup> and 18<sup>th</sup> century in Central Europe. Selected burials dating to the 18<sup>th</sup> century from the Michaelergruft serve as case studies for developing new theoretical and methodological approaches in investigating the textiles and garments found in the coffins.

Modern investigation of the inventories of St. Michael's crypt started in 2004 due to a weevil infestation (*Penthartrum huttonii*) caused by drastic climate change in the Michaelergruft. An attempt was made to stabilize the climate by installing an air conditioning system and reopening the air shafts, which originally led to the natural mummification of many dead people and were walled up in the beginning of the 20<sup>th</sup> century.

In addition, 50 coffins were restored. The conservation treatments were carried out from 2009 to 2013 in seven batches (Fankl 2014). After provisional relocation of the coffin contents, endangered objects were temporarily removed from the crypt, and the coffins were roughly cleaned and conditioned for 3 weeks on workshop climate. In general the wooden parts had to be consolidated with synthetic resin. A mayor problem were the powdering paint layers on the coffins. They had to be consolidated and cleaned afterwards to keep the pigments in place. After conservations treatment, the bodies with their garments and burial gifts were returned to their original, conserved coffins. As some of the coffins still are on display and open for the public in the crypt, some last cleaning treatments (Fig. 2) of the textiles have been carried out in 2018/2019 (Gengler 2018).

In the course of conservation, 50 coffins were documented in detail: The preservation of fibers is unusual, since silk is very good, linen is moderate and wool is not preserved (Ullermann 2005). As a result, women's burial garments made of silk have been preserved. Some men's garments like suit coats (Justaucorps) and breeches, which were made of wool, did not survive and sometimes can only be seen due to the silk lining material of the garments. Remnants of patterned silk velvet could only be found in the metal coffins the aristocratic tombs. The more or less complete garments found in the coffins of St. Michael's crypt correspond essentially to the fashion of the middle, or second half of the 18<sup>th</sup> century (before 1784).

In addition to funerary clothing, numerous grave goods of religious content were found (Mais 1954), e.g. rosaries and/or hand crosses are present in almost each coffin. These could be made of cheap material especially for the funeral (hand crosses made of wax cords), as well as made of precious materials such as elaborate hand crosses made of wood with mother of pearl inlays or rosaries from jet and

semi-precious stones. In addition, pilgrimage plaques mainly on rosaries, prints of images of grace and objects that indicated affiliation to brotherhoods, such as scapulars or brotherhood belts. Further there were several funeral crowns made of rosemary, ornated with flowers of silk and metal. Finally, medically intended objects were found in the coffins, such as applied lead labels and so called *Fontanellenbleche* (Häck, Nehrlich 2016).

### Research on the functionality of the garments – criteria

In the following paper, criteria (Fig. 3) are discussed which enable to distinguish between “functional garments” worn also in daily life, “adapted garments” (daily life clothing that has been re-sewn, cut or altered to be used as garment for the dead), and “funeral costumes” that have been deliberately made. For the definition of those criteria, few excellently preserved coffins have been selected, as explained on 3 case studies. The application of those categories to more coffin inventories is aimed for future research.

Searching for criteria that can be a hint for “functional garments” relies on different aspects which tell that those garments also might have been used as wearable costumes in daily life. This includes questions like: Are the buttons and button tapes on garments (e.g. Justaucorps, vests, women’s garments) functional? Can they be closed at the front in a functional way, or are they sewn up and purely as a decor? How is the overall execution of the garments, are there any typical characteristics for everyday clothing as we know them from garments stored in costume collections (see e.g. Baumgarten, Watson 1999; Bönsch 2001; Houze 2015).

Technical characteristics of the garments like characteristic linings, junctions, seams, facings, trimmings are also of interest. For women’s gear it has to be examined, if there are functional elements like hooks, eyelets, buttons in the area between chest and hip.

“Funeral costumes” can be determined that the garment clearly could not be worn by a living person, as determined by the criteria for functional garments. Usually those garments are not worn in a correct manner such as daily life garments (e.g. Bönsch 2001), as corresponding dress openings are missing or cannot be opened. The sewn-on garment openings and missing closures are found on vests, Justaucorps, or women’s garments that are usually closed in the front part. The garments are usually just “laid over” the corpse, but hands in sleeves (see also e.g. Lipkin et al. 2015; fig. 20.2). It is some “fake” clothing, having an optically correct image of contemporary typical garments (Hofmann 2010: 33–34).



### Functional garments

- Buttons and button tape are functional
- Technical characteristics of the garments: characteristic linings, junctions, seams, facings, trimmings
- Women's gear: are there functional elements like hooks, eyelets, buttons in the area between chest and hip?



### Adapted garments

- „Reduction“ of a garment wearable during lifetime, to be able to put it on a dead body
- Detaching of bulky elements, omitting of bulky under garments such as multi-layered skirts
- Cutting the garment in the back area



### Funeral costumes

- „Fake“-garments with design elements characteristic for certain time periods, only laid onto the body
- Sewn-on garment openings, missing closures on garments such as vest, Justaucorps, or women's garments that are usually closed in the front part

**Fig. 3.** Criteria for the functional interpretation of costumes found in graves (image: K. Grömer).

We have to differentiate a further category “adapted garments”, that lies between the functional garments and funeral costumes. Sometimes a garment wearable during lifetime is “reduced” to be able to put it on a corpse in a coffin. In some cases, bulky elements are detached and bulky under garments are omitted such as multi-layered skirts. One criterium is also that the garment might be cut in the back area to put it on a corpse.

Further criteria that have to be kept in mind are e.g. if the shoes are worn or not – which is recognizable by the soles. Also ribbons and decorative elements are of interest: are the same kind of ribbons used for the decoration of shoes, clothes, bonnets, coffin decoration etc. this could be an indication that a matching ensemble has been made. If we have for example unused shoes with matching ribbons to the garment and maybe also to coffin decoration, and also more hints for deviations from wearable clothing, this might be a funeral costume.

## Research on the functionality of the garments – Examples St. Michael's crypt

Example for a “functional garment”

Coffin 88 (Fig. 4)

Mummified man buried in 1769 (Mais, 1954: 258; Gengler 2018). Male corpse lying on wood chips. The man is fully clothed with the time-typical costume. All relevant parts of an mid-18<sup>th</sup> century costume can be identified: suit coat, shirt, scarf, knee breeches, silk stockings with knitted patterns and buckled shoes, including a wig. So far, a waist coat could not be determined.

The suit coat is made of a woolen fabric. As mentioned before, wool is completely degenerated in that crypt, therefore the top fabric is gone but the design of the dress can be perfectly distinguished by the remaining silk lining. For the same reason the wig was found without hair.

It is a type of a garment ensemble without any perceptible alterations similar to contemporary pictorial sources and ensembles kept in costume collections. In this case, no specially made funeral garment wear was used, but a costume wearable in daily life.

Example for an “adapted garment”

Coffin 83 (Fig. 5)

Female corpse lying on wood chips, buried around 1755 (Fankl 2012: chap. 2.1; Gengler 2018). The gown made of silk tabby looks functional (design of the upper body part, pleats at the bottom of the skirt, which provide room for cross-oval Panniers) to be functional for a wearable dress. This is also underlined by the functional underdress, the bonnet, the leather gloves and the shoes. However, the upper dress is cut open at the back and laid on the body and clothes parts such as pouches/puffs and petticoats are missing (see for 18<sup>th</sup> century undergarments Baumgarten, Watson 1999: 29–38, 69–71).

The whole ensemble looks like parts of a functional wearable garment ensemble, modified to funeral wear; rich or bulky parts omitted, the dress was cut back to be able to put it on the corpse. It is clear that bulky elements like hoop petticoat skirts had to be removed simply to fit physically into the coffin.

Example for a “funeral costume”

Coffin 147 (Fig. 6)

Woman buried around 1760. The 40–50 years old woman is bedded on wood chips, dressed with a light silk gown. The torso area with the stomacher of the bodice is



**Fig. 4.** St. Michael's crypt: overview to coffin 88, "functional garments" (photograph by C. Gengler).



**Fig. 5.** St. Michael's crypt: overview to coffin 83, "adapted garments" (photograph by C. Gengler).





**Fig. 6.** St. Michael's crypt: overview to coffin 147, "funeral costume" (photograph by K. Grömer).

not closed by hemming or eyelets and held in place, but it is assembled by means of copper needles. Also under garments such as chemise and petticoats are missing, in the upper body area also no corset/*Schnürleib* etc. available (because of lack of accessibility). It looks like a funeral costume that imitates the appearance of a time-typical garment with robing and trimmed stomacher. The dress made of light silk tabby is ornated with undulating ruffles of punched ribbons.

In this case, no reshaped everyday or festive costume was used, but a deliberately made garment, with certain design features.

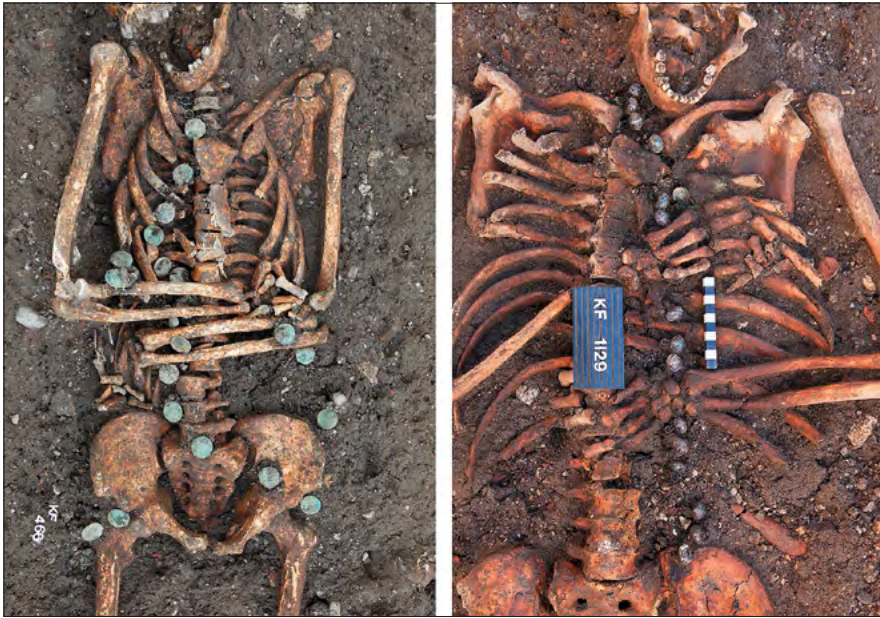
### Conclusions: Research about functionality

The study presented deals with the question of whether the dead person was buried in a clothing that was wearable during life (as an everyday or probably festive clothing), or if it was a custom-made funeral costume. For this purpose, several criteria for the description and functional classification of the garments found in crypts were presented and discussed on the basis of case studies.

These detailed criteria were chosen to provide textile conservators and textile researchers dealing with garments from tombs with a standardized catalogue of descriptions. This might be elaborated by further research.

Due to observations on many other coffins described in the St. Michael's crypt, it can be stated that men are often buried in functional costumes (but in new shoes), while women are laid to rest in an adapted garment or pure funeral costume.

This may also be due to the fact that representative women's gowns of the upper class of the 18<sup>th</sup> century, from the St. Michael's vault, are also very expansive



**Fig. 7.** St. Pölten Cathedral cemetery: earth graves, organic material decayed, buttons still *in situ* (© Stadtarchäologie St. Pölten).

through their under garments (e.g. hoop skirts, multi-layered undershirts) and hardly would find space physically in their entirety in a coffin (compare e.g. Baumgarten, Watson 1999: 69–71).

For future research on the use of functional costume, adapted garments, and funeral costume, it would be desirable to work out chronological and regional tendencies as well as specific differences, for example, between robes found in catholic and protestant tombs in different regions in Europe. This includes observations about functionality of the garments and also the use of color or specific dress accessories (e.g. Bravermanová 2010; Lipkin et al. 2015; Ströbl 2013; Vedeler 2010).

Furthermore, a cross-reference between crypt material and cemeteries around churches is also of interest. Research results from crypts can be useful for understanding archaeological material from the same periods, that have been found in earth graves. It is also worth to be studied if there are differences in the different contexts. For example noble or rich persons in St. Michael's crypt with their proximity to the Habsburg imperial house in comparison with other populations like people buried around St. Stephen's Cathedral in Vienna (Klammer et al. 2018) or more rural people as in St. Pölten in Lower Austria (*Verstorben, begraben...* 2019; Grömer et al. 2019).

As one of the first results in this regard, the following can be stated: In the St. Michael's cemetery we only found so far textile buttons with wooden cores, while e.g.

in the cemetery at the Cathedral St. Pölten (Fig. 7) many buttons of other material (metal, glass) have been excavated, as well as eyelets, buckles, rivets etc. (Rösel-Mautendorfer 2019). These can then, together with any existing decorative elements made of metal, such as rosettes, decorative buttons, decorative sheets, etc. used by their location on the skeletons for the reconstruction of textile and leather objects help, together with any adhering organic residues. For the interpretation of these reconstructed robes from the earth tombs, this must finally be discussed with the results from the functional analysis of the St. Michael's crypt, which are contemporary and 50 km in distance.

### Acknowledgements

The present study mainly relates to the surveys by Karina Grömer and Michael Ullermann in spring 2018, as well as the observations made by Michael Ullermann in 2004 in the course of a restoration project of the parish of St. Michael, Vienna 1. We would like to thank the parish of St. Michael and P. Erhard Rauch for their valuable support. We would also like to thank Ms. Carine Gengler, who was cleaning some of the coffins (including N 83 and N 88) in the Michaelergruft for valuable information and photos. We are also thankful that Ronald Risý provided us with comparison material from St. Pölten Domplatz.

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## Summary

### Functional Analysis of Garments in 18<sup>th</sup> Century Burials from St. Michael's Crypt in Vienna, Austria

The Michaelergruft in Vienna (St. Michael's crypt), Austria, is located near the imperial palace Vienna and has been used between 1560 and 1784 by the local nobility of the city center in Vienna. The inventory of a large number of coffins has been preserved due to favorite

environmental conditions, it offers the possibility to study specific details about the funeral customs of the 17<sup>th</sup> and 18<sup>th</sup> century in Central Europe. Selected burials dating to the 18<sup>th</sup> century from the Michaelergruft serve as case studies for developing new theoretical and methodological approaches in investigating the textiles and garments found in the coffins.

Garments found in crypts usually are analysed due to costume history, aspects of conservation and preparation. Also textile analysis and modern analytical methods are applied to the material. In discussing the garments from St. Michael's crypt, questions about the interpretation of the costume arise such as if they are "normal" daily life (or festivity) garments or specific funeral costumes. In the following paper criteria are discussed which enable to distinguish between "functional garments" worn also in daily life, "adapted garments" (daily life clothing that has been re-sewn, cut or altered to be used as garment for the dead), and "funeral costumes" that have been deliberately made.

**Keywords:** crypt, clothing, funeral garments, functional analysis, 18<sup>th</sup> century AD, Vienna

## Streszczenie

### Analiza funkcjonalna odzieży z XVIII-wiecznych pochówków z krypty św. Michała w Wiedniu, w Austrii

Michaelergruft (krypta św. Michała) w Wiedniu (Austria) położona jest w pobliżu pałacu cesarskiego i wykorzystywana była w latach 1560–1784 przez miejscową szlachtę z centrum Wiednia. Duża liczba trumien, zachowana ze względu na korzystne warunki otoczenia, daje możliwość przeprowadzenia szczegółowych badań zwyczajów pogrzebowych panujących w Europie Środkowej w XVII i XVIII w. Wybrane pochówki z Michaelergruft datowane na XVIII w. stanowią studia przypadku pozwalające rozwijać nowe podejścia teoretyczne i metodologiczne w zakresie badań tkanin i strojów znajdujących w trumnach.

Odzież z krypt zazwyczaj analizowana jest pod kątem historii kostiumologicznej, stopnia zachowania i przygotowania. Ponadto, materiał poddawany jest analizie z wykorzystaniem nowoczesnych metod. Dyskusja na temat odzieży z krypty św. Michała rodzi pytania o interpretację kostiumów, np. czy są to stroje „normalne”, codzienne (czy odświętne), czy może specjalne stroje pogrzebowe. Niniejszy artykuł omawia kryteria pozwalające odróżnić „stroje funkcjonalne”, noszone na co dzień, od „strojów adaptowanych” (codziennych ubrań, które zostały uszyte ponownie, obcięte lub przerobione, tak by stały się strojem dla zmarłego) oraz „strojów pogrzebowych”, które stworzone zostały w tym właśnie celu.

**Słowa kluczowe:** krypta, odzież, strój pogrzebowy, analiza funkcjonalna, XVIII w., Wiedeń

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