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THE YOUNG LADY IN PINK  
NEW LIGHT ON THE LIFE AND  
AFTERLIFE OF AN ANCIENT PORTRAIT

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**Abstract:** A Roman-Egyptian mummy portrait of a young woman in a pink tunic is part of the Allard Pierson collection in Amsterdam. The portrait is well-known and a key piece of the collection, but has received little scholarly attention so far. The life and the afterlife of the portrait are therefore poorly understood. The authors approach the portrait from different perspectives: its provenance and acquisition, the artist's materials and techniques, the dating conventions surrounding mummy portraits and their cultural context. The authors advocate for this in-depth multidisciplinary approach primarily because it spotlights specific areas in mummy portraits (in this case, the pearl earrings) where iconography, materials and techniques and ancient socio-economic developments converge. Provenance research proved important not only for securing the object's bona fide acquisition, but also for tracing its second-life biography. These converging perspectives effectively cast light on research areas where more work remains desirable. In lieu of secure documentation of the archaeological findspot (which is the case with most mummy portraits) this approach is a powerful tool to nonetheless compose histories that help to understand the meaning of mummy portraits in the past and in the present and provide a durable framework for future research.

**Keywords:** mummy portrait; funerary practices; panel painting; antiquity; archaeology; Egypt; Roman Empire; provenance research; collection

history; technical analysis; imaging; technical art history; art history; jewelry; cultural diversity

## Introduction

During the first century of the common era, the age-old funerary tradition of mummification – dating back to the third millennium before the common era in Egypt – was visually transformed by the addition of poignantly lifelike portraits painted on wooden panels or linen shrouds (cf. Corcoran 1995; Doxiadis 1995; Borg 1996; Walker *et al.* 1997; Riggs 2006; Spier, Potts and Cole 2018, 241–243, no. 145 [SEC]; Barr *et al.* 2019). Enclosed within the mummy wrappings, these portraits covered the head of the mummified remains of the deceased only in the case of burials of the wealthiest inhabitants of Roman Egypt. As they were first uncovered in the late 1880s in the Fayum Oasis (some 80 km to the south of modern Cairo), they are commonly known as Fayum mummy portraits. They have, however, been found subsequently at other Egyptian sites, such as Memphis (mod. Saqqara) and Thebes (mod. Deir el-Bahari), Panopolis (mod. Achmim), and particularly Antinopolis (mod. Sheikh ‘Ibada). Some two-thirds of the surviving specimens, however, lack secure provenience information. Also, even after almost one and a half century of research, the material and technical aspects of mummy portraits are still not fully understood. Nonetheless, the large-scale initiative of the J. Paul Getty Museum’s *Ancient Panel Paintings: Examination, Analysis, and Research* (APPEAR) project has provided an impetus for fresh scholarly attention to the subject (Roberts 2018).<sup>1</sup>

One such Roman-Egyptian mummy portrait forms part of the archaeological collection of the Allard Pierson (Pl. 1) (APM inv. no. 14.232; Parlasca 1966, 100, n. 60; Parlasca 1969–2003, I: 88, pl. 37, IV: pl. 12, no. 228; Jurriaans-Helle and van Haarlem 1998, 37, no. 23; Moormann 1999; Hupperetz *et al.* 2014; van Daal and van Oppen 2019). For the history of the Allard Pierson collection, see: Barr *et al.* 2019, 94.). This funerary portrait, which we will here call the Young Lady in Pink, is painted on a wooden panel which was inserted into the wrappings of a young woman’s mummified remains. The Allard Pierson is an active APPEAR participant and hosted the second APPEAR conference in October 2022 (cf. Svoboda and Cartwright 2020). Therefore, it was particularly relevant for the museum to better understand the material and technical aspects of its mummy portraits. This motivated a technical examination of the Young Lady in Pink. During the preliminary stages of this examination, the realization grew that little about this portrait’s life

<sup>1</sup> [http://www.getty.edu/museum/research/appear\\_project](http://www.getty.edu/museum/research/appear_project); [www.appeardatabase.org](http://www.appeardatabase.org) (inaccessible to the general public).

and afterlife had been subject to scholarly attention. It is a core piece of the Allard Pierson collection, and it has been featured in numerous exhibitions as well as Klaus Parlasca's monumental mummy portrait catalogue.

The goal of our article is not to be exhaustive, but to shine a new light on a well-known mummy portrait. By this, we mean that our article is the result of a desire to disseminate what we currently know about the portrait, where the unavoidable knowledge gaps lie and where future research challenges lie. The structure of the article reflects this. First, we trace the Young Lady in Pink from the museum back to what we believe to be its origin. Then, by means of a material-technical examination of the portrait we attempt to trace the ancient workshop where it was produced. We then present the portrait in a chronological and scholarly light by addressing the thorny issue of dating conventions. Finally, we present the Young Lady in Pink in the light of broader socio-economic developments in the Mediterranean society where it was produced.

As is the case of most of the surviving thousand-odd examples, the history of this panel cannot be fully traced back to its origin. Based on its shape and provenance we suggest that it derives from the Fayum, with the cemetery of Crocodilopolis (mod. Hawara) as the most likely site. After describing the portrait, we will examine its acquisition history and analyze the artist's materials and technique. This discussion will also occasion some further thoughts about the chronology and the (art) historical context of funerary portraits in general and this example in particular.

Painted on a greenish-grey background, the strikingly naturalistic panel portrait of a wealthy young woman, perhaps in her mid-twenties, is shown with her head turned slightly to the viewer's right – thus foreshortening the right side of her face and hiding her right ear except for the pearl pendant.<sup>2</sup> Light falls on the more exposed right side of her face, adding a lively glimmer to her brown eyes, which have long lashes. Loss of paint reveals an originally smaller sized left eye, leaving the impression of doubling, particularly discernable in the outer corner of the eye.<sup>3</sup> Over her eyes both brows curve elegantly, the left more sinuously than the arching right brow. Her cheekbones are set high above her flat cheeks, of which the right one has a rouge blush. The absence of wrinkles or bags under her eyes add to her youthful appearance. Her nose has a narrow ridge, a small round tip and barely flaring nostrils. A delicately dimpled philtrum is marked over her mouth, which has red lips that curve in a slight smile. She has a round chin with a little sagging flesh of her double chin.

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<sup>2</sup> For the reader's convenience, 'left' and 'right' refer to the viewer's perspective.

<sup>3</sup> The correction of the eye was misinterpreted as a restoration by Parlasca 1969–2003, I: 88.

Her curly black hair is neatly coiffed in a roll parted in the middle, framing her forehead and partially covering the ears. Behind the roll the hair is parted transversely and bound together at the back of her head probably into a bun. She wears large pearl pendants in her ears (a larger drop-shaped pearl hanging from a golden bar on a smaller round pearl in the earlobes). On her slender neck she wears a luxurious necklace of alternating white pearls and emeralds. She is dressed in a distinct pink tunic with fairly narrow black stripes, for which the technical (and somewhat misleading) term is *clavi* (King 1996; Jørgensen 2011; Rooijackers 2016). It is noteworthy that she does not wear a *himation* (mantle) over her *chitōn* (tunic). Considering the low average life expectancy in Roman Egypt (*ca.* 40 for men and even less for women), albeit higher for members of the wealthier classes, she nevertheless appears to have passed away at an early age (Bagnall and Frier 1994, 75–110; Parlasca 1969–2003, I: 88).

The upper corners of the thin wooden panel have been cut at oblique angles to facilitate the encasing within the wrappings of the woman's mummified remains. The bottom tenth was never painted, as it would be covered by the mummy's wrappings. The panel is damaged by over a dozen vertical cracks, especially a large split running through the left eye and another to the right side of the head. In several places the surface of the paint is worn (such as to the left of the neck and below the tunic's neckline), revealing the grains of the wood underneath. On the long edges of the panel the wrappings have left impressions, with ample traces of bitumen used for gluing them to the panel on the left.

### Provenance and Acquisition

The Young Lady in Pink first came to Amsterdam in 1998 as a permanent loan from the Gemeentemuseum (Municipal Museum, now Art Museum), The Hague, and has been more recently transferred through deaccession to the collection of the Allard Pierson (GMDH, The Hague, inv. no. OKAnt 2008 (reg. no. OHO-1952-0002)) The Gemeentemuseum had purchased the portrait at the Parisian art market in 1952 from the estate of Arthur Sambon (1867–1947), a French antiquarian, ancient art historian and numismatist (Sambon 1932, pl. 13). Sambon, in turn, had bought the portrait at a Sotheby's auction in London in 1922 from the MacGregor collection (Sotheby 1922, 81, lot 632). Farther back it cannot be traced with certainty. As this brief sketch indicates, however, that the panel portrait has what art dealers like to call an “impeccable provenance”, descending from the collections of connoisseurs. This “impeccable provenance” nevertheless cannot hide the loss of the archaeological context of its provenience.

Sambon was born into a long line of Neapolitan antique dealers, experts and numismatists dating back to the 18<sup>th</sup> century (Lombardi 2015).

He published treatises mostly about ancient Italian numismatics (at times co-authored with his father-in-law, Édouard Warneck), essays about sculpture and painting of various periods (especially Antiquity, the Middle Ages, and the Renaissance), books about Late Antiquity textiles and early-Christian texts (with Pierpont Morgan), and a magazine entitled *Musée: Revue d'Art Mensuelle* (1904–1925). Moreover, for the Galerie Sambon, he wrote a catalogue for an exhibition of mediaeval religious art and another about sculpture and painting from the 1<sup>st</sup>–5<sup>th</sup> centuries, which both included discussions of the portrait of our Young Lady in Pink (Sambon 1930, 179, n. 684*bis*; Sambon 1932, pl. 13). He was additionally associated as an expert with auction houses in Paris, such as the Galerie Georges Petit, and became president of the French Chamber of Art Experts in the 1930s.

After Arthur Sambon's death, his son Alfred took over the Galerie Sambon, and put the collection up for sale at several auctions in Paris, whereby it dispersed to various museums and private collections across the globe. The Metropolitan Museum of Art in New York, for instance, lists about thirty items from the Sambon collection, including an impressive bronze Roman portrait head traditionally attributed to Marcus Agrippa (MMA acc. no. 14.130.2; Sambon 1914, no. 71; Zanker 2016, 113, 128–130, no. 40), a marble Byzantine female head (MMA acc. no. 47.100.52; Sambon 1931, pl. 30; Zanker 2016, 193, 238–239, no. 92), as well as the *Madonna and Child with Saints Philip and Agnes* by the early Italian Renaissance painter Donato de' Bardi (MMA acc. no. 37.163.1–3; Baetjer 1995, 99). It was at one of the auctions of the Sambon collection in Paris in 1952 that the Gemeentemuseum acquired the mummy portrait for their painting collection.

As indicated above, Sambon, for his part, had purchased the portrait at the Sotheby's auction of the MacGregor collection. Rev. William MacGregor (1848–1937) was vicar of St. Editha's Church in Tamworth, Staffordshire, England (Brown 1999; Rogers 2010; Hardwick 2011; Bierbrier 2012, 347). He had joined the newly founded Egypt Exploration Fund around 1885 and assisted Édouard Naville during excavations in Memphis and elsewhere. As vice-president of the Liverpool Institute of Archaeology, MacGregor also sponsored excavations by Sir W. M. Flinders Petrie at various sites. Through his family wealth he was able to purchase a vast collection of Egyptian antiquities. His collection of "Aegyptiaca" was rivalled perhaps only by that of Von Bissing. For unknown reasons he put more than 8,000 of these artefacts up for auction in London. Through Constant W. Lunsingh Scheurleer, the Allard Pierson Museum eventually acquired ten objects from the MacGregor collection (Pl. 2: 1) (APM inv. nos. 1983–1989, 3397 and 7592; Wallis 1898, pl. 26, fig. 2; Sotheby 1922, no. 159; Allard Pierson Museum 1937, nos. 859, 882 and 1637; Hupperetz *et al.* 2014, 78; van Oppen 2017, 16, fig. 3). The Metropolitan Museum of

Arts, for its part, lists over seventy objects from the MacGregor collection, including a fragmentary alabaster head attributed to Khafre (Chephren) (MMA acc. no. 26.7.1392; Sotheby 1992, lot 255; Hayes 1953, 65, fig. 42; O'Neill *et al.* 1999, no. 60), a wooden statuette of a woman dated to the New Kingdom (MMA acc. no. 1972.118.37 (unpub.); Sotheby 1922, lot 606), and a unique faience Osirian crown dated to the Saïte period (MMA acc. no. 41.2.9; Wallis 1898, pl. 18).

If MacGregor obtained the Young Lady in Pink through his acquaintance with Petrie, it derives from Hawara. The oblique angles at which the panel has been cut are a common feature of mummy portraits from the Fayum, and less so, for instance, than of those from Antinopolis. While they have historically been associated with a cluster of sites in the Fayum Oasis, particularly the cemetery of Philadelphia (near mod. Rubayat) and Crocodilopolis (the necropolis of Arsinoe; mod. Hawara), mummy portraits have been excavated elsewhere along the Nile Valley, especially in Antinopolis (mod. Sheikh 'Ibada) as well as near the ancient capitals Memphis (mod. Saqqara) and Thebes (incl. mod. Deir el-Medina and Deir el-Bahari), as far south as Syene (mod. Aswan), at Hermopolis (mod. Ashmunein) and Panopolis (mod. Achmim) in Middle Egypt, and at Antiphræ (mod. Marina el-Alamein) on the northeastern coast; but not in the Graeco-Roman capital Alexandria.

Although the exact provenience of this portrait has been irrevocably lost, and it is unclear when precisely the portrait left Egypt for England, consideration of the portrait's known owners allows us to reconstruct the portrait's partial post-deposit history presented above (Barr 2020). Research into the provenance of artefacts is not only important for establishing their bona fide acquisition. It also illustrates the second-life biography of objects: in this case, a specimen that passed through the hands of discriminating connoisseurs before entering the collection of, first, an art museum, and then, an archaeological museum (Barr *et al.* 2019, 98–99).

It is this archaeological museum that made it possible to subject the portrait to technical examination, the subject matter of the following section. The afterlife of the Young Lady in Pink and similar objects intersects precisely here, between its collecting history and the analysis of the ancient painter's materials and techniques. Since the results allow us to view the portrait with fresh knowledge, the scientific examination is a new chapter in the portrait's afterlife; but at the same time, it takes us back to the workshop of the ancient painter.

## Materials and Techniques

The technical examination of the Young Lady in Pink was performed at the laboratories of the Rijksmuseum Atelier between June 2018 and April 2019 as part of the Technical Art History Master of Science program at the University of Amsterdam (van Daal 2019; van Daal and van Oppen 2019). The objective of the examination was to gain a better understanding of the materials and the artistic techniques used to create the portrait. This should provide a material-technical perspective for its contextualization within the corpus of mummy portraits. Like the majority of the Roman-Egyptian mummy portraits, the Young Lady in Pink had not undergone any prior technical analysis.

It was the explicit wish of the curators at the Allard Pierson that the technical examination would be performed without taking samples. This means that the panel could only be studied visually, as well as by means of imaging and spectroscopic techniques that do not rely on taking samples. The information gathered in this manner has proven invaluable for a better understanding of the portrait. It should nonetheless be stressed that sampling techniques are indispensable for the identification of materials and techniques in cultural heritage objects. Consequently, information such as the exact nature of specific pigments in the portrait could not be obtained by methods employed here. As such, the analytical results presented in this article are approximative. They highlight the possibilities for future research rather than providing any definitive answers.

Taking the above into account, it was not possible to sample the panel's wood to determine the species. Like the majority of Roman-Egyptian mummy portraits (nearly 75%), however, the panel is likely made of European linden or lime wood (*Tilia* sp.). Its thickness (ca. 1.5 mm), pale yellowish-brown color, and its fine and straight grain are in accordance with this presumption (Cartwright, Spaabæk and Svoboda 2011, 51–53, 56, table 2; *infra* n. 67). Linden or limewood had to be imported from southeastern Europe (i.e., the Balkan peninsula), as the wood is not native to Egypt. Unlike the wood of trees that are native to Egypt (such as fig or palm), linden allows the production of thin panels which are easy to finish, with a high resistance against deformation and splitting. The flexibility of these thin panels could only have been facilitated by a certain degree of moisture remaining in the wood. After centuries in the notoriously dry burial conditions in Egypt this moisture would have evaporated, causing the panel to become increasingly rigid over time. The slight curvature of the panel would have caused stress-

points along the wood grain, eventually causing the pattern of splitting as described above.

According to the usual practice of Roman-Egyptian panel paintings, the portrait is painted along the longitudinal axis of the wood grain. This minimalizes the distortions in the face due to the inevitable warping and splitting of the panel (Spaabæk 2012, 67–68). This particular choice on the ancient painters' part suggests that they were aware of the effects of the dry Egyptian climate on mummy portraits. Although it cannot be proven, retaining a proper appearance long after they had been finished seems to have been integral to the production process of mummy portraits. As stated above, the upper corners of the panel are angled, which is a common feature (ca. 50% of the examples in the APPEAR database [as of January 2021]). To this can be added, however, that four subcategories can be discerned among angled panels (Pl. 2: 2).<sup>4</sup> Of the particular subtype with slanted upper corners (at ca. 45° each cutting approximately a third of the panel's upper edge) most derive from Philadelphia and Crocodilopolis (Spaabæk 2012, 67). This may provide a general notion about the original burial site of the portrait. On the other hand, over half of the mummy portraits with a clear provenience come from these two sites in the Fayum – mostly via Petrie and Graf. Therefore, even though it provides a further possibility of contextualizing the portrait, the observation about the angled corners may not be meaningful.

X-ray fluorescence spectroscopy (XRF) provided the groundwork for an indication of the nature and distribution of inorganic pigments in the portrait.<sup>5</sup> XRF yields information about the chemical elements present in a measurement spot. Therefore, though valuable, it serves as an indication rather than identification tool for pigments. Furthermore, XRF is primarily relevant with regard to inorganic pigments, which are often composed of relatively heavy elements. Organic pigments, on the other hand, are usually composed of relatively light elements. The resulting emphasis on inorganic pigments is because XRF is unfit for detecting elements with a lower atomic number than that of sodium ( $Z = 11$ ). Two types of XRF have been used in this research: areas of the size of a few micrometers were subjected

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<sup>4</sup> Apart from the fact that the panel shape is not always identified correctly, the Getty APPEAR database does not differentiate the four subtypes of angled corners.

<sup>5</sup> Inorganic pigments have a mineral origin and are typically insoluble in water. Organic pigments are typically prepared by extracting a water-soluble dye from an animal or plant source. The pigment, better known as the lake pigment, is made by letting this dye settle on a colorless, inorganic substrate like alum or gypsum.

to point measurements ( $\mu$ XRF) and macroscale XRF mapping (MA-XRF) was employed to study the entire surface of the panel. The former helps to identify mixtures of elements and thus pigments, and the latter shows the distribution of individual elements over the surface of the portrait (cf. van Daal 2019, 114–132).

The  $\mu$ XRF revealed calcium peaks in eight areas spread over the surface of the portrait. This could be taken, tentatively, as an indication for the presence of a calcium-based ground layer. Alternatively, it might mean that the painter added a calcium-based filler to their pigments. In this context it is noteworthy that calcium was barely or not detectable in the upper paint layers of the left earring and the right eye (van Daal 2019, 115). This strengthens the former suggestion. Furthermore, the MA-XRF results indicate calcium across the entire surface of the painting. Since these overlap with the emission lines of sulfur, the current hypothesis is that the portrait has a calcium-based ground layer, which might well be calcium sulfate (gypsum,  $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ ).<sup>6</sup> Peaks for lead and iron indicate that the painter mainly used lead-white and iron-rich earth pigments for the incarnate. This is in accordance with the findings in scholarly literature (Salvant *et al.* 2017, 5, table 1b).

A notable difference in the use of pigments compared with the Girl with the Golden Wreath, a mummy portrait also in the collection of the Allard Pierson Museum, is the presence of arsenic in the yellow of the Young Lady's left earring (Barr *et al.* 2019; van Daal 2019, 126–128).<sup>7</sup> The presence of arsenic suggests that the artist used a yellow arsenic sulfide to depict the golden part of her jewelry. This could be either the mineral orpiment or pararealgar ( $\text{As}_2\text{S}_3$  and  $\beta\text{-As}_4\text{S}_4$ , respectively), the orange-yellow alteration product that forms when the orange-red mineral realgar ( $\alpha\text{-As}_4\text{S}_4$ ) is exposed to light for an extended amount of time. In the MA-XRF imaging, a particularly strong signal for sulfur overlaps with the areas where arsenic is concentrated. This supports the assumption that a yellow arsenic sulfide was used in the portrait (van Daal 2019, 130, 132). The MA-XRF maps suggest

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<sup>6</sup> On the other hand, it should be noted that these results may be skewed by the strong calcium signal emitted by the modern secondary support of the portrait. Yet, sulfur does not appear to be present in the modern secondary support, so the possibility of an ancient ground layer based on calcium sulfate cannot be fully discounted. Further research, ideally involving the taking of a cross-section to analyze the layer build-up, is necessary before any conclusions on this matter can be drawn.

<sup>7</sup> The golden earring in the portrait of the Girl was painted with a yellow iron-based pigment.

that the artist also used an arsenic sulfide mixed with blue to create the green stones of the Young Lady's necklace (van Daal 2019, 132, fig. 3.9; Roberts 2020).

The XRF did not yield elemental data that could explain the nature of the blue. The yellow arsenic-based pigment thus might have been mixed with an organic blue. It is still possible that the artist used a small amount – too small for the XRF to detect – of an inorganic blue, such as the copper-based Egyptian blue (Thiboutot 2020; Bradley *et al.* 2020). Unfortunately, the size of the modern secondary support hindered visible induced luminescence (VIL) analysis of the necklace area due to the object size limits of the setup that was used. VIL is an effective indicator for the presence of Egyptian blue in an object on account of the pigment's luminescence in the near-infrared region (Chiari 2017). VIL analysis of the Young Lady in Pink suggests that Egyptian blue is present throughout the incarnate (van Daal 2019, 17 fig. 19). If so, the XRF could not detect this either. Interestingly, X-ray diffraction spectroscopy (XRD) analysis was not able to replicate these VIL results. The XRD measurement of a highlight in the right eye detected only lead white, though the VIL results indicated Egyptian blue there. An explanation for this phenomenon is that Egyptian blue is indeed present in the portrait, but in quantities too low for the XRF to detect and processed in a way that alters the pigment's crystalline structure, which hinders its detection by XRD (van Daal 2019, 45–47, 145–152). If this hypothesis is correct, it would mean that the painter of the Young Lady in Pink used Egyptian blue to modify the tone of the white paint in the uppermost layers of the incarnate. However, without paint samples or comparable results from other mummy portraits it remains impossible to corroborate this. The value of this analysis first and foremost lies in the way it sheds new light on the type of questions that one may ask about the Young Lady in Pink with the aid of scientific analysis.

Orpiment was used as a yellow pigment in Egypt from the second millennium BCE onwards (Lee and Quirke 2000, 115–116). There is also evidence that in Egypt (para)realgar was used as a pigment for a long time (Lee and Quirke 2000, 113–116). Many of the pigments used in ancient Egypt were either sourced locally or produced artificially. This was not the case for arsenic sulfides, deposits of which are associated mainly with (former) areas of volcanic activity and hot springs (Eastaugh 2008, 291). As far as is currently known there are no sources of arsenic sulfides in Egypt, which would have necessitated their import (Bryan 2010, 990). Evidence for the trade in orpiment in the Graeco-Roman period is found in the *Periplus of the Erythraean Sea*. This anonymous Greek text from the mid-first

century CE describes the maritime trade from the Roman ports, eastwards via the Red Sea to the coasts of India. The *Periplus* mentions orpiment and realgar among the substances imported and traded in the settlements along the western coast of India (Perip. Rubr. 56; Schoff 1912, 44–45; Casson 1989, 81, 85, 221; see: Strabo Geogr. 15.2.14; Pliny Nat. Hist. 34.178; Vitruv. Archit. 7.7.5). Though the *Periplus* does not provide information about the trade in arsenic sulfides in Egypt, it does prove that these pigments were still known, traded and valued in the ancient world around the time that mummy portraits were made. Sources of orpiment and (para)realgar near Egypt were, for example, available in the Tarsus Mountains of Asia Minor. These sources were indeed heavily exploited to the point that it left visible traces in the landscape (Casson 1989, 208, 221).

As foreign products, arsenic sulfides would have been valuable commodities in ancient Egypt, so they were often mixed with cheap and widely available yellow ochres (iron oxides). Interestingly, iron was not detected in the areas containing arsenic during the XRF analysis. This suggests that the imported pigment was used pure in depicting the Young Lady's jewelry. The (art) historical context section of this paper discusses this as a form of conspicuous consumption that emphasised the high socio-economic position of the portrayed. The artist used valuable pigments to paint tiny details of what would have been expensive jewels in real life, even though other yellow pigments such as jarosite were locally available (Pl. 2: 3). This is a key example of how modern analytical methods help to cast a new light on the meaning and value that the Young Lady in Pink originally held.

Due to the inability to take samples during the examination, the pink colorant in the Young Lady's tunic could not be identified. Under ultraviolet light, the pink areas of the portrait emit a pinkish-orange fluorescence that is characteristic of red lake pigments (Pl. 3: 1). Dyer's madder (*Rubia tinctorum*) was the most commonly used material for red lakes in antiquity (Delaney *et al.* 2017, 8). Madder precipitated on a calcium-based substrate, and later mixed with lead white, has also been identified on other mummy portraits (Miliani *et al.* 2010, 705–707; Newman and Gates 2020). At the time of analysis, the only available method for the identification of madder in the Young Lady in Pink involved sampling. The MA-XRF nonetheless generated valuable knowledge with regard to the most distinctive color in this portrait. The red colorant that the pink is based on cannot have an iron-based source, as the XRF does not indicate the presence of iron in the tunic. There are also no heavy-element signals to suggest another

inorganic source for the pink. A red lake pigment is therefore the most likely source. The XRF signals for calcium and sulfur are particularly strong in the tunic and these signals overlap perfectly in that area (van Daal 2019, 130, 132). Consequently, it might well be that the artist used an organic red, precipitated on calcium sulfate (gypsum), as the main colorant in the Young Lady's tunic.

Comparing the MA-XRF maps and the fluorescence of the pink under ultraviolet light reveals another interesting aspect of the painting technique: the artist also used an organic red in combination with calcium sulfate to create the Young Lady's blush, in lieu of a red variety of the iron-based pigments that are present throughout the incarnate. Hematite, which is iron-based, was one of those locally available inorganic red pigments (Pl. 2: 3) (Van Daal 2019, 128–130, 132). A relatively strong signal for calcium and sulfur indeed corresponds to the rosy areas of the Young Lady's face.

As an aside, though this does not support the assumption that the artist of the Young Lady used madder, it is interesting that an excavated pottery saucer with a pink pigment is of almost the same hue as the pink tunic of the Young Lady. The saucer was among six pieces dating to the first century CE excavated in 1888 by Petrie at the cemetery of Hawara, all of which contained remains of pigments (Pl. 2: 3) (Petrie 1889, 11, §17; see: Cartwright and Middleton 2008, 63–64, tab. 5; Plin. *Nat. Hist.* 35.29–49; Doxiadis 1995, 98–99; Lee and Quirke 2000, 104–105; Vogelsang-Eastwood 2000, 278–279; Miliani *et al.* 2010, 706–708; Delaney *et al.* 2017, 7–8; Salvant *et al.* 2017, 824–826). Subsequent analysis of these pigments confirmed that the pink consists of madder and gypsum (Cartwright and Middleton 2008, 63). These saucers are an important source for visualizing the color palette that was available in Roman Egypt in the period when mummy portraits were created.

The combination of visual (naked-eye) observation, digital microscopy, infrared reflectography (IRR) and ultraviolet photography has proven to be a fruitful method for a better understanding of the painting techniques that the artist employed (Pl. 3, 4: 1). Through these observations it was possible to establish first of all that the artist indicated the general outlines of the portrait with a dark brown to black pigment. This can be observed with the naked eye, but the infrared reflectogram (Pl. 3: 2) shows it more clearly. The most striking example of this form of compositional planning is visible in the Young Lady's left eye. While at the stage of sketching the outlines, the artist was unsatisfied with the size of this eye and subsequently enlarged

it. Probably due to the conditions of the burial the ancient paint on the left side of the portrait suffered significant abrasion. This caused the ancient underdrawing in the left eye to become visible again (Pl. 3: 3a). The absence of a signal in the MA-XRF maps suggests that the artist used an organic black at this stage of compositional planning. In the upper paint layers such as the irises, pupils and coiffure, the artist used dark, iron-based pigments (Van Daal 2019, 126–128). Interestingly, the artist also used organic black to depict the clavi, instead of the dark, iron-based (inorganic) pigments that were used for the face and hair of the Young Lady.<sup>8</sup>

This phenomenon of an ancient correction resurfacing due to losses in the upper paint layers is known in at least one other mummy portrait, whose current whereabouts are unfortunately unknown (Thompson 1982, 7). That the seemingly double eyelid in the Young Lady's left eye is simply evidence of the artist's dissatisfaction at an early stage and not of ineptitude becomes clear when the right eye is taken into consideration. In a much better state of preservation, the right eye gives a more representative view of what the other eye would have looked like originally; the white of the eye would have covered the underdrawing, rendering it invisible (Pl. 3: 3c). Although it appears unflattering to the modern viewer, the now-exposed alteration to the underdrawing in the Young Lady's eye offers insight into the artist's thought process and as such endues the portrait with an additional layer of depth.

The pearls of the Young Lady's earrings and necklace have been outlined with a dark pigment that also emits no (iron) signal in the MA-XRF maps (Pl. 4: 1).<sup>9</sup> This kind of compositional planning technique provided the painter not only with an indication of the location and size of the pearls but also with the desired effect of shading after the application of lead white. This manner of working seems rather specific and as of yet it has not been reported in other mummy portraits. Compositional planning remains an understudied aspect in mummy portrait scholarship. Yet, studying subtle artisanal habits like the one described here can be of assistance in grouping dispersed portraits together by tracing them back to the same artist's hand or workshop. Hopefully, because of the surge in available documentation and publications ignited by the APPEAR project, it will be possible to better understand the practice of compositional planning in mummy portraits.

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<sup>8</sup> Since the clavi do not emit any signal in the MA-XRF maps, the artist must have used a black pigment based on a material with a low atomic weight. This might have been a carbon black.

<sup>9</sup> This pigment therefore might be an organic black as well.

The paint was applied in a thin layer with subtle brushstrokes, which is evident from the lack of impasto in the portrait.<sup>10</sup> The painter added highlights and shading through quick parallel-hatched strokes of a thin brush or spatula to suggest volume. Finally, the painter applied a rouge blush in a set of thin and skillful brushstrokes on the right cheek, as digital microscopy (Pl. 3: 3b) reveals particularly well. Highlights in the face give the portrait a lively expression – especially on the eyes, the tip of her nose, and above the upper lip, as well as over the left side of her forehead, along the nose and above her chin.

In-situ fiber-optic reflectance spectroscopy (FORS) of the portrait revealed that its binding medium is wax-based. This is most likely beeswax, considering how widespread its use in other mummy portraits is (Sutherland *et al.* 2020; Mazurek *et al.* 2019; Mazurek 2020; Spaabæk and Mazurek 2020). The handling properties of pure molten beeswax prohibit such a decidedly controlled painting technique and relative lack of impasto in a portrait. The painting technique of the Young Lady in Pink thus rather points to a paint based on dissolved or emulsified beeswax, known as the cold-encaustic technique (Cuní *et al.* 2012, 659–660; Mazurek *et al.* 2019). No crater formation associated with saponified beeswax (wax mixed with soap) could be detected in this portrait, however (Cuní *et al.* 2012, 667–668). Any conclusive remarks about the binding medium of this portrait nonetheless necessitate sampling. Although this distinctive modelling reveals the artist's hand or the workshop, there is as yet insufficient comparable data on painting technique available for matching the Young Lady in Pink with other Roman-Egyptian mummy portraits. A sizable and accessible collection of analytical data and detail photographs of other mummy portraits would make it possible to integrate this portrait into the current body of knowledge about the materials and techniques of mummy portraits. It is hoped that eventually the Getty APPEAR database will provide sufficient information for drawing comparisons among the corpus of portraits by encouraging international collaboration and sharing the results of technical examinations. The proceedings of the 2022 APPEAR conference in Amsterdam will indubitably mark a significant contribution to attaining this goal.

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<sup>10</sup> A lack of impasto in comparison to other mummy portraits, such as the one discussed in Barr *et al.* 2019.

## Methods of Dating

The Roman-Egyptian mummy portraits, the world's oldest surviving examples of non-fresco portrait paintings, are now generally dated between the early first to the mid-third century of the common era (*ca.* 25–250 CE) (Petrie 1889, esp. 17–19; Petrie 1911, es. 12; Ebers 1893, esp. 33–48; Edgar 1905*a*; Drerup 1933; Borg 1996, 19–26 (general), 27–66 (female portraits) and (67–84 (male portraits))). Klaus Parlasca, however, has contended that the practice continued into the fourth century (Ebers 1893, 48–53; Thompson 1982, 10; Parlasca in Doxiades 1995, 229–233). Various methods for narrowing down the dating of specific portraits may be attempted, though none thus far has pointed toward an absolute chronology. The only date that may seem like a certain *terminus ante quem* for the production of mummy portraits is 392 CE, when emperor Theodosius I issued an edict outlawing mummification practices. However, the recent radiocarbon ( $C^{14}$ ) analysis of a painted mummy shroud by Dal Fovo *et al.* emphasizes how absolute dating methods may further complicate the chronological discussion of mummy portraits; according to radiocarbon evidence, the production date of this shroud lies between the first quarter of the fifth and the end of the sixth centuries CE (Dal Fovo *et al.* 2021, 10–11). A panel portrait of a man in the J. Paul Getty Museum (79.AP.142) offers a similar puzzle; radiocarbon analysis of the wood yielded a dating range from 196 to 55 BCE for the panel (Gehad *et al.* 2022, 248–249). Though there is still no consensus on whether mummy portraits were produced up until the late fourth century CE, this early dating is at odds with the generally accepted notion of mummy portraits as products of the Roman era. This is not to say that radiocarbon dating results are unequivocally problematic. Corcoran (1995) discusses an example where the radiocarbon dating of a mummy portrait lines up with its late Antonine dating on stylistic grounds (Corcoran 1995, 14). The inability to sample the Young Lady in Pink for radiocarbon testing leaves an open question for future research. In any case, these results will provide the foundation for reexamining the underlying argumentation for dating the stylistic features of the Young Lady in Pink to one period or another.

However, if studied in isolation, stylistic elements are notoriously subjective in dating any ancient artefact – especially when the attempt leads to periodization into “early”, “middle”, and “late” phases, of which the first is defined by the birth of a new artistic style, the second is considered its pinnacle, and the third is interpreted as a supposed artistic decline. In the case of mummy portraits, stylistic differences may just as well be due to regional trends, workshops, expenses or other factors not yet (fully) understood – alongside chronology.

Secure archaeological contexts from controlled excavations tend to provide clear indications for dating the uncovered objects. The recent work of Gehad *et al.* (2022) underlines this; a series of excavations at the necropolis of Philadelphia unearthed a group of three mummy portrait fragments and a complete portrait. The systematic and scientific approach of these excavations provided a solid framework for combining stylistic features with archaeological context to date these portraits between the mid and late second century CE (Gehad *et al.* 2022). It should be borne in mind that most mummy portraits have been unceremoniously divorced not only from their burial context but also from their mummy wrappings – so that neither the archaeological context nor the details of the mummification types are available for the majority of specimens. The more than 300 portraits that derive from the collection of the Viennese antiquities dealer Theodor Graf were, nevertheless, unearthed under clandestine circumstances supposedly at ancient Philadelphia.<sup>11</sup> Graf recruited the German Egyptologist Georg Ebers to date them, and together they believed they could identify many of the Ptolemaic kings and queens among the portraits! This dating to the Hellenistic period and especially the Ptolemaic identifications did much to encourage interest in the portraits among Graf's potential buyers but were of course completely erroneous – if not downright fictitious.

Even at Hawara (the ancient cemetery of Crocodilopolis, near the city of Arsinoe, named after the second Ptolemaic queen, the sister-wife of Ptolemy II), Petrie's excavations could not offer more than a general periodization to the Roman Imperial Age, though he believed the phenomenon commenced only *ca.* 130 CE (Petrie 1889, 17–18, §26). Petrie looked for other clues, and thought he could find them in the jewelry on the female portraits. He devised a typography of the depicted earrings, necklaces and wreaths and developed a hypothesis for their chronology (Petrie 1889, 19–20, §28, pl. 11). Campbell Edgar, an Egyptologist based at the Cairo Museum, already pointed out the error in Petrie's assumption that the jewelry could be so precisely dated (Edgar 1905a, 229–230, *figs.* 1a–f). Nevertheless, by the early twentieth century, most scholars agreed that the mummy portraits dated to the second and early third centuries; but few could define a fixed start or end date. The only portraits with a secure *terminus post quem* are those from Antinopolis (present-day El-Sheikh Ibada). These portraits were excavated by French archaeologist Albert Gayet, and at any rate may be supposed to be no earlier than the reign of Hadrian (r. 117–138 CE), as it was that emperor who founded the Upper-Egyptian city.

A typology of Roman-Egyptian jewelry does have its value as a secondary means of dating the mummy portraits. Archaeological finds

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<sup>11</sup> The exact geographic provenience of Graf's mummy portraits remains unclear.

have been successfully matched to depictions of jewelry in portraits (Walker and Bierbrier 1997, 149–160). The combination of papyrological and historiographical information about jewelry, material-technical examination of surviving jewelry pieces and the depictions of jewelry in artworks has proven a fruitful method of studying developments in jewelry from Roman Egypt (Ogden 1990). These findings are of great significance, as they prove that the jewelry depicted in mummy portraits was worn in real life. However, the method whereby a categorization of jewelry types is proposed in order to contextualize mummy portraits has been practiced for much longer. For example, Petrie divides earrings into three main types: ball, hoop and bar earrings (Pl. 4: 2). The earrings of the Young Lady in Pink can best be classified as bar earrings with one suspended pearl (Edgar 1905a, *fig.* 1d). Depictions of single-pendant bar earrings are more common on mummy masks and stone sculptures than on mummy portraits, but they have been attested on mummy portraits. On sculptures from Palmyra this type of earring came into vogue around 150 CE and it was the most popular type in the third century CE (Ogden 1990, 168). Though this type has been attested less commonly in Egypt, jewelry from Roman Egypt shows a preference for simple bar earring designs from the second half of the first century CE until the late second century CE, when intricate designs with three or more pendants began to gain popularity (Ogden 1990, 166–168). Christopher H. Hallett indeed argues for juxtaposing mummy portraits with Palmyrene sculpture on account of their shared commemorative function (Hallett 2019, 203). Jewelry in Palmyrene sculpture – and earrings are widespread – is interwoven with the funerary portraits’ commemorative messages and chronological developments (Krag 2017; Raja 2021). Consequently, though a refined dating of the Young Lady in Pink based on Palmyrene funerary sculpture extends beyond the scope of this article, it holds a significant value for future research.

When the portraits in Parlasca’s overview catalogue are reviewed, the specific design of Young Lady’s earrings – a smaller, round pearl at the earlobe and a larger, drop-shaped pearl at the bottom of a golden pendant – appears to be rare; only one other portrait depicts a lady with similar earrings (Parlasca 1969–2003, I: 88, pl. 57, no. 229). It seems no coincidence that Parlasca had this portrait directly follow the Young Lady in his catalogue, as the two images are of remarkable stylistic similarity. Unfortunately, the other portrait’s current whereabouts are unknown; it was last seen in 1966 at the public auction of Helena Rubinstein’s art collection by Parke-Bernet Galleries, New York City (Parke-Bernet sales cat. no. 2430 (22–23 Apr. 1966), 23, lot 240).

When the criteria for comparison to other earring designs are slightly loosened, it becomes possible to match the Young Lady in Pink to other portraits. An interesting parallel is offered by the J. Paul Getty Museum’s

Portrait of a Woman in Pink (Pl. 4: 3), who is depicted wearing single-pendant bar earrings, with a bar that is somewhat longer than that of the Young Lady, and the upper and lower pearls are of roughly the same size (JPGM obj. no. 81.AP.29; Parlasca 1969–2003, III: 59–60, pl. 152, no. 643; Thompson 1982, 52–53 and 66, no. 9; Borg 1996, 15, 52–53, 87, 164 and 169; Walker *et al.* (eds) 1997, no. 96; Corcoran and Svoboda 2010, 37, *fig* 18). Another woman in a pink tunic from the same collection (Pl. 5: 1) diverges significantly from these two portraits in terms of style but the necklace she wears is noteworthy (JPGM obj. no. 79.AP.129; Parlasca 1969–2003, III: 60, pl. 152, *fig.* 3, no. 644 (with lit.); Thompson 1982, 58–59, no. 12; Borg 1996, 47, 59, 87, 105, 168, 171, and 192, pl. 74, *fig.* 2). For this necklace with alternating pearls and green stones is almost identical to the one worn by the Young Lady, bar the fact that the former seems to contain golden beads as well. The similarity in jewelry worn by the three ladies – and the pink tunics (about which more below) – suggests a trend in fashion, which may hold a valuable clue to the chronology and meaning of these portraits and funerary portraits in general. It is important to note, however, that heirlooms were also worn by women in the Roman Empire. Pliny the Elder, for example, remarks that Lollia Paulina, wife of the emperor Caligula, was wont to wear the pearls inherited by her from her grandfather (Plin. *Nat. Hist.* 9.58). Recent work on jewelry from Roman Egypt tends to emphasize the importance of studying the social value of jewelry to understand it as an evolving means of constructing identity (Ward 2021; Swift *et al.* 2021, 1–7, 20–25, 33–42, (specifically for mummy portraits and jewelry); Boozer 2021, 126–129, 145–147 (specifically for earrings)). Examining the combination of jewelry items in a mummy portrait, together with hairstyle, skin, dress, evidence from textual sources and the materials and techniques used by the artist is thus a powerful way to understand a portrait such as the Young Lady in Pink in the cultural context of its time.

Apart from archaeology, style and details such as jewelry, other dating methods have been proposed. For instance, it has long been understood that the hairstyles (including men's facial hair) on many portraits reflect the fashions of Imperial Rome known from sculptural and numismatic images. With regard to depictions of women, the similarity with Flavian coiffures indicates that early mummy portraits can at least be dated to the late first century (*ca.* 69–96 CE) (Parlasca 1969–2003, I: nos. 15, 20, 32, 34–36, 40–41). Some have more recently been dated to the Julio-Claudian dynasty, especially the reign of Claudius (r. 41–54 CE) (Parlasca 1969–2003, I: nos. 10–14, 16, 23–31, 33, 37, 42, 49) or even the reign of Tiberius (r. 14–37 CE) (Parlasca 1969–2003, I: nos. 1–9). This study of imperial hairstyles, combined to a lesser degree with that of jewelry and costume, has become entrenched in scholarly literature to a point where it is often regarded as the only method of dating mummy portraits. This has led to intricate

typologies that seemingly allow mummy portraits to be dated within a few decades, sometimes by looking at coiffure alone (Doxiadis 1995, 234–235).

Two points should be stressed about coiffures in general. Firstly, it can neither be known how soon the coiffures of the fashions of Rome were introduced in provincial Egypt nor how long they remained in vogue there. It may well be that a hairstyle, once introduced, stayed in favor for a generation or two along the Nile Valley (*ca.* 25–50 years). Coiffures should, therefore, not be dated so narrowly, that is only to the period when they appeared at the Roman Imperial court, as has been a common tendency among experts up until now. Secondly, mummy portraits are practically the only painted representations of Roman hairstyles. It is notoriously difficult to relate details from one artistic medium to another, e.g. from sculpture to painting. Moreover, the most definite evidence for the changing styles of coiffures is exhibited on coins, a different medium altogether, on which portraits are generally shown in profile rather than frontally.

The *Young Lady in Pink* perfectly illustrates the thorny issue of dating portraits on the basis of visual observation of their coiffure alone. Parlasca suggested that “the hairstyle dates the portrait to the early Antonine age” but added, “although Faustina the Elder is usually coiffed with her ears uncovered” (Parlasca 1969–2003, I: 88). When the panel arrived in Amsterdam from The Hague, Eric Moorman, for his part, preferred to date it to the late first century CE on account of what he considered a Flavian coiffure (specifically from the reigns of Titius and Domitian, *ca.* 79–96 CE). Following Parlasca’s suggestion, the portrait had previously been dated to the second century CE (Van Haarlem and Jurriaans-Helle 1998, 37, no. 23), and was subsequently redated to the third.<sup>12</sup> There is no documentation to reconstruct the reasoning behind the current third-century dating. Thus, the portrait has been dated to three different periods. The interpretation of the coiffure as either Flavian or Antonine was crucial to two of these dating efforts, but without decisive results. As our section on (art) historical context below shows, mummy portraits like the *Young Lady in Pink* were the amalgamated products of Mediterranean-wide socio-economic developments. Examining mummy portraits in the light of imperial coiffure trends is thus key to answering dating questions. Yet, taking coiffure as the sole dating method can lead to diverging conclusions without methodological explanations. The particularities of previously proposed dates for the *Young Lady in Pink* show that there is much to be gained from exploring other potential chronological clues as well. While this article does not discuss hairstyle any further because of the amount of attention

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<sup>12</sup> The APM inventory card records as date: “Beginning Antonine period, 200–299 AD” – thus introducing the dating to the third century; *cf.* Hupperetz *et al.* (eds.) 2014, inside cover.

it has already received in studies on the Young Lady in Pink, it should be noted that technical images such as the infrared reflectogram of this portrait (Pl. 3: 2) can illuminate the coiffure details that are difficult or impossible to observe with the naked eye.<sup>13</sup> Therefore, they may be essential for more systematic analyses of coiffure in mummy portraits in the future.

In a few instances, epigraphy may provide chronological information in those instances when the mummy or its portrait contains an inscription (in Greek or demotic Egyptian, rarely in Latin). Objects, such as mummy tags (identifying the deceased by name, family, origin and/or cemetery; Pl. 5: 2), papyri or stelae, found together with mummies may offer further clues. Such tags are, for one, evidence of the bi- or trilingual nature of the Roman Egyptian population. Similar instances, however, are sporadic, and do not apply in the case of the portrait of the Young Lady in Pink.

We propose that the Young Lady's distinct pink tunic (*chitōn*) provides a new chronological clue, because comparison with over 250 portraits (in the Getty APPEAR database [as of January 2021]) reveals that only ten are depicted with a similarly pink tunic – and *all* are women. While women's fashion shows a greater diversity than men's clothing (mostly white tunics), the most common colors for women's clothes – as seen on the mummy portraits – were purple and red, and only more occasionally white or pink (and very rarely ochre or blue). Whether this color represents a trend of a certain period or region – or a characteristic of a specific artist or workshop – cannot as yet be determined. With that in mind it can, nevertheless, be observed that the other nine examples have all been dated to the (late) second century CE (In addition to APM 14.232, JPGM obj. no. 79.AP.129 (175–200 CE), and JPGM obj. no. 81.AP.29 (170–200 CE), also KHM-AS inv. no. X-301 (160–190 CE), PAHM inv. nos. 6-21382 (140–170 CE) and 6-21383 (160–190 CE), and WAM no. 32.7 (2<sup>nd</sup> cent. CE); Parlasca 1969–2003, nos. 228, 431, 436, 561, 643, 768 and 1107). Two of these examples (portraits from Tebtynis, now in the Phoebe Hearst Museum), can in fact be fairly securely dated to the period 140–190 CE based on their archaeological context (PAHM inv. nos. 6-21382 (Tebtynis; 140–170 CE) and 6-21383 (Tebtynis; 160–190 CE); cf. Parlasca 1969–2003, II: no. 431 (mid-2<sup>nd</sup> cent. CE) and 436 (early 3<sup>rd</sup> cent. CE)). The two ladies in pink from the J. Paul Getty Museum mentioned above are comparably dated to the final quarter of the second century CE. Accordingly, based on the combined observations regarding the expression of vogue within the portrait, it would appear best to propose a dating for the Young Lady in Pink in the same period, *ca.* 175–200 CE.

<sup>13</sup> For an example of how technical images can reveal details in the coiffure hidden to the naked eye, see the X-radiograph of another mummy portrait from the Allard Pierson collection in Barr *et al.* 2019, 100, fig. 6.

## (Art) Historical Context

Mummy portraits were a funerary luxury attainable only for the wealthiest members of the population. Mummification was itself an expensive practice that was inaccessible to the less affluent members of society. These reflections on the (art) historical context of the Young Lady in Pink provide a grip on the socio-economic context in which the portrait came to be.

The wealth of the Young Lady in Pink is evident from her luxurious jewelry on the one hand, and from the materials in the portrait on the other hand, most notably the imported wood and the arsenic-based pigments. Most mummies were unadorned with any kind of portrait. Mummy masks made of (gilded and/or painted) cartonnage or plaster, however, could also be fashioned to decorate the remains of the deceased (Edgar 1905*b*; Bierbrier 1997; Walker *et al.* 1997, 77–85 and 131–148; Riggs 2000). While in Pharaonic times these masks stayed fairly generic, they gradually acquired more individualized portrait features in the Hellenistic period; and they remained in use during the Roman Imperial Age into the third century, which made them contemporary with the painted portraits.

Why exactly the desire emerged during the early first century of the common era to insert portrait paintings (whether on panels or on linen shrouds) has never been successfully explained. Even if one were to understand the phenomenon as a purely Egyptian development dating back millennia and comparable to the gradual development of the mummy masks, as Lorelei Corcoran (1995) argues, it can neither be explained why the inserted portraiture emerged precisely during that period and never earlier, nor why it fell into disuse a little over two centuries later. Moreover, while the tempera method was invented in Roman Egypt itself, the encaustic method was based on the combination of an originally Classical Greek painting technique with the indigenous practice of using beeswax for painted surfaces (Doxiadis 1995, 95–98; Stacey *et al.* 2018; Newman and Serpico 2000, 489–491).

Many of the panels, additionally, were made of south European linden wood (Cartwright 1997, 106–107 (63 of 82 = 76.8% identified as *Tilia* sp.); Cartwright and Middleton 2008, 61–62 (70 of 94 = 74.5% *Tilia* sp.); Cartwright, Spaabæk and Svoboda 2011, esp. 51–52 and 56 (86 of 118 = 72.9% *Tilia* sp.)). A series of mummy cartonnages, incidentally, are painted in a bright red made from an iron-based pigment of a Spanish ore (Walton and Trentelman 2009); while the arsenic-based pigment used for the Young Lady's earrings might derive from Asia Minor or the Persian Gulf. Egyptian works of art were traditionally designed to be viewed in profile or facing frontally, while many of the mummy portraits are turned slightly to either side. This typical pose of the subjects also facilitates a visual emphasis on the jewelry that is often depicted in mummy portraits. Ancient viewers

of the Young Lady in Pink could recognize her wealthy status immediately through her prominently painted pearls. In the Roman period, pearls were recognized, both on governmental and on individual level, as luxury goods that were part of the trade networks of the Erythraean Sea (Schörle 2014). Signe Krag observed this phenomenon too in the jewelry of Palmyrene women; to communicate a message of prestige, their funerary sculptures not only depicted jewelry that was immediately recognizable as expensive, but which was also meant to *look* expensive – pigments and inlays served to emphasize this message (Krag 2017, 39–42).

The painting style, furthermore, is notably similar to the portraits on Roman wall paintings, such as that of Terentius Neo from Pompeii (Pl. 5: 3) (Clarke 2003, 261–268, pl. 24). Additionally, both male and female hairstyles tend to follow Roman fashion; yet women's clothing (*chitōn* often with *himation*) is based on Greek tradition, while men usually wear Roman clothing (*toga*) and the jewelry is of classical Graeco-Roman styles (King 1996; Rooijackers 2016; Cardon *et al.* 2018).

A possible explanation for the emergence of the phenomenon of the Fayum portraits might be suggested by taking into account the social and cultural changes that occurred after Egypt became a province of the Roman Empire (Barr *et al.* 2019, 15–23). An example of such a change is the granting, under Augustus, of a special status to the citizens of district capitals such as Arsinoe (Canducci 1991; Walker in Bierbrier 1997, 2; Bagnall in Bierbrier 1997, 7–15; Bagnall in Walker and Bierbrier 1997, 17–20; Monson 2013, 98–99). Even though under Roman jurisdiction the Egyptian population outside of Alexandria was considered “Egyptian,” descendants of settlers from the Hellenistic period, who now called themselves “the 6,475 *katoikoi* (inhabitants, or rather military colonists) of the Greek men of the Arsinoite *nomos* (district),” were granted a privileged tax status (Whitehorne 1982; Vandorpe 2012; Rowlandson 2013). Thus far no mummy portraits have been unearthed in Alexandria. In principle that might be because until recently few Roman burials have been discovered (Majcherek 2015–2019). It may also be because mummification, unlike cremation or inhumation did not become as popular in Alexandria as in the rest of the country (Landvatter 2012; Guimier-Sorbets 2018). That is to say, the social and cultural conditions which engendered the emergence of mummy portraits in the Fayum and elsewhere in Egypt where notably absent in Alexandria.

Nevertheless, papyri and other documents (such as mummy tags; Pl. 5: 2) demonstrate that many personal names among the population of the Fayum (and elsewhere) derived from Egyptian tradition, and that individuals could have double names (Greek or Roman, and Egyptian) (Quaegebeur 1992; Monson 2013, 99; Broux 2015). For instance, examples of mummy tags (wooden “labels” that were originally attached for the purpose of identifying the deceased) from the cemetery of Panopolis (mod. Achmim), written

in Greek and/or demotic on one or either side, dated to the 1<sup>st</sup>–3<sup>rd</sup> century CE, now in the Allard Pierson Museum, provide names such as: Thatres, daughter of Psentatriphis; Demetrios, son of Sarapion; Orpheus, son of Areios and Tealous; Artemidora, daughter of Romanus and Magōs; Aurelia Senenteris, daughter of Haryotes and Thaesis; Dioskoras, son of Paniskos (called Peteminis, son of Sansneus, in demotic); and so forth.<sup>14</sup> Note that despite her Egyptian name, Magōs, the wife of Romanus, is known elsewhere as the daughter of Apollonios and granddaughter of Sokrates.<sup>15</sup> Ethnic and cultural identity, and socio-economic and legal status were in other words adaptable and intertwined rather than well-defined and mutually exclusive categories (Goudriaan 1988; Vandorpe 2012; Rowlandson 2013; Fischer-Bovet 2018). The mummy portraits are a proud testament to this intricately entangled and culturally diverse society.

Finally, the phenomenon of encasing mummies with portraits may well have fallen into disuse along with the general abandonment of mummification and burial practices of Egyptian tradition by the mid-third century. While Egypt experienced an increased prosperity during the early Roman Imperial Age, a socio-economic decline becomes apparent after the late-second century. A devastating plague, for instance, reduced the population of the Fayum to less than ten percent compared to a few generations earlier (Bagnall 1985; Monson 2013, 91). In the same regions salinization of arable land led to decreased agricultural yields (El-Shabrawy and Dumont 2009, 111–112; Monson 2013, 91). It might, therefore, have been simply that fewer and fewer people could afford the expenses of mummification; and with the decrease in demand, fewer professional embalmers as well as artists would be able to maintain their workshops.

The Young Lady in Pink is an amalgam of cultural traditions. The portrait was created as a prestige object for a socio-economic elite, incorporating local elements as well as those from the wider ancient world. It embodies the interconnectivity of the ancient Mediterranean perfectly; this is reflected on a physical level in the mixture of imported as well as locally available materials. In a more abstract sense, it is the product of a Greco-Roman style of individualized portraiture, executed in a painting technique that was originally Greek, as part of an Egyptian funerary tradition.

<sup>14</sup> APM inv. nos. 7065 (Θατρής = *T3-htr.t*, “the female twin”; Ψεντατρίφης = *P3-šr-n-ta-T3-rpy.t* = “The son of the one of Triphis”), 7066 (Δημήτριος; Σαραπίων), 8116 (Ορφεύς; Ἄρειος; Τεαλοῦς = *Ta-’lw*, “the one of the child”), 8117 (Ἀρτεμιδώρα; Ῥωμανός; Μαγῶς = *M3-wi3.t*), 8120 (Ἀὐρηλία Σεεντηρίς = *T3-šr:t-n-n3-ntr.w*, “the daughter of the gods”; Ἄρωτης = *Hr-wd3*, “the hale Horus”; Θάησις = *Ta-’Is.t*, “the one of Isis”) and 8124 (Διοσκοράς, *P3-di-Mn*, “He who was given by Min”; Πανίσκος, *Sn-sn.w*, “the two brothers”); Sijpesteijn 1965.

<sup>15</sup> Ashmolean, Oxford, Bodl. Gr. Inscr. no. 2824 (Μαγῶς Ἀπολλωνίου Σωκράτους γυναικ [scil. γυνή] Ῥωμανοῦ νεωτ[έρου]).

## Conclusion

By examining the Young Lady in Pink from four perspectives we were able to appreciate the portrait as a complicated object whose life in Roman Egypt and afterlife from the early twentieth century onwards lie at the heart of its meaning. Provenance, materials and techniques, dating questions and (art) historical context all proved to be fundamental in writing a history of an important object of which the archaeological context is irrevocably lost.

The Young Lady in Pink has an “impeccable” acquisition history which can be traced back via the Gemeentemuseum (The Hague) to the collections of Arthur Sambon (Paris) and William MacGregor (Tamworth). We deem it plausible that the latter acquired the portrait from one of the excavations of Flinders Petrie at Hawara (Crocodilopolis, the ancient necropolis of Arsinoe). Since this and, consequently, the portrait’s original place of burial cannot be substantiated without doubt, this investigation effectively spotlights the gaps in knowledge which future provenance research may help fill.

The technical examination of the Young Lady in Pink yielded hitherto unknown information about the materials and techniques used by the ancient artist. In short, the portrait was painted with a relatively basic palette, consisting of red lake, lead-white and iron-based earth pigments, as well as some arsenic sulfate, organic black, organic and/or Egyptian blue and calcium sulfate, perhaps bound in emulsified beeswax, possibly on a calcium-based ground layer, applied on a panel likely of linden or lime wood. The analytical techniques employed for this research project were necessarily non-invasive, which comes with its limitations. The absolute date of the panel, the nature of the binding medium and the composition of the pigments that elude XRF remain topics that could enrich and further nuance the current research results.

Dating is a third topic that we identified as an area of interest. Taking the Lady’s characteristic pink tunic as a novel secondary means of chronological contextualization allowed us to suggest a date of *ca.* 175–200 CE for its creation. We provided a critical assessment of the way the portrait has been dated and redated thus far. We provided a framework for an extensive redating effort of the portrait that considers not only coiffure, but also jewelry and fashion. Lastly, our consideration of the portrait’s (art) historical context helps to ground it in the socio-economic aspects of the world where it was produced. Our multidisciplinary examination of the Young Lady’s earrings shows this in practice. The portrait presents earrings that are atypical fashion-wise, but depicted in a typically conspicuous manner that captures the viewer’s attention. The viewer would recognize the earrings as something special, perhaps even exotic. The pigments and the compositional outlining of the earrings show that materials and techniques were meant to amplify this message. A follow-up examination

of the Young Lady's jewelry assemblage and tunic color could explore these topics further to formulate the communicative strategies behind the fashion that the portrait depicts.

Our decidedly multidisciplinary approach contributes to a rapidly developing field of mummy portrait studies. As knowledge about the materials and techniques is becoming increasingly available about Roman-Egyptian mummy portraits, the Getty APPEAR database (though as yet inaccessible to the general public) may prove the decisive step toward encouraging more research, sharing the necessary information (at least among experts), and thus providing the resources for an overarching survey of the subject. This article advocates for and takes steps towards a comprehensive synthesis of various dating methods – based on archaeological context, associated epigraphic documents, technical and material data, artistic and stylistic features, jewelry, coiffure and clothing as well as regional variations. Such an approach is desirable for establishing a more precise chronology and for gauging regional and artistic idiosyncrasies. Through our research we realized that herein still lies future potential, not only for research on the Young Lady in Pink, but for the study of mummy portraits in general.

We hope to have shown the importance of multidisciplinary investigations of objects like the present mummy portrait in which the complexities of cultural and historical contexts, the artist's material and technique, excavation and art dealing, acquisition and collection can and should all be considered in tandem with each other. This is what is needed to cast a flattering new light on a complicated object and its anonymous subject, which we have come to call the Young Lady in Pink.

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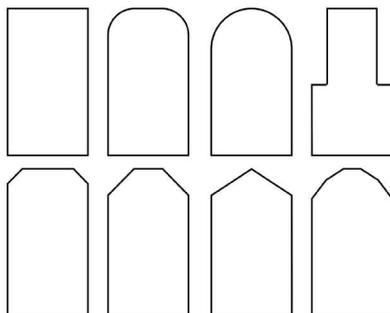
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Pl. 1 – The Young Lady in Pink (APM inv. no. 14.232); painting on wooden panel; perhaps from Hawara (Fayum), Egypt; h. 356 mm; *ca.* 175–200 CE; ex MacGregor coll., Tamworth, Staffordshire, *ca.* 1890–ex Sambon coll., Paris, 1922–ex Gemeentemuseum, The Hague, 1952–APM, Amsterdam, 1998. Photography by Stephan van der Linden; courtesy of the Allard Pierson Museum



1



2



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Pl. 2: 1 – Three objects from the Allard Pierson Museum deriving from the MacGregor collection: a small silver wine vase decorated with acanthus and lotus leaves (APM 3397); a terracotta figure of a winged Eros playing the lute (APM 1985); and a small faience amphora decorated with floral motifs (APM 7592). Photos by Stephan van der Linden; photo-edited by Branko van Oppen; courtesy of the Allard Pierson Museum

Pl. 2: 2 – Four main types of panel shapes can be recognized (rectangular, rounded, stepped and angled), in which further subcategories can be discerned; combinations of two types are possible, too. Drawing by Branko van Oppen

Pl. 2: 3 – Six pottery saucers containing the pigments Egyptian blue, jarosite, madder with gypsum, minimum, gypsum, red ochre with haematite (from left to right), excavated by Flinders Petrie at Hawara in 1888 (BM acc. nos. 1888,0920.23–28). Photograph courtesy of the Trustees of the British Museum, London; image credit: CC BY-NC-SA 4.0



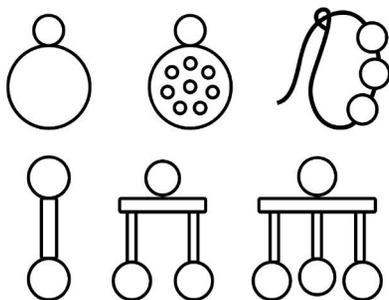
Pl. 3: 1 – Ultraviolet photograph of APM 14.232 (taken at a wavelength of 365 nm,  $f/11$ , 10 seconds shutter speed and ISO 200), in which the pink tunic fluoresces under UV-light; the absence of a varnish layer is also confirmed. Imaging by Jan van Daal; photo-edited by Branko van Oppen

Pl. 3: 2 – Infrared reflectogram of APM 14.232 (taken at a wavelength of 0.9–1.7  $\mu\text{m}$ ), showing the dark outlines around the pearls as well as small locks of loose hair. Imaging by Moorea Hall-Aquitania and Jan van Daal; photo-edited by Branko van Oppen

Pl. 3: 3 – Micrography of APM 14.232: *a.* left eye (8.8x magnification); *b.* brushstrokes in the rouge on the proper left cheek (5.9x magnification); *c.* right eye (8.2x magnification); *d.* highlight above the lip at the philtrum (29x magnification); *e.* mouth and chin (6.1x magnification); *f.* hatched brushstrokes on the proper left corner of the lower lip (29x magnification). Imaging by Jan van Daal; photo-edited by Branko van Oppen  
the Allard Pierson Museum



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Pl. 4: 1 – Micrography of APM 14.232: *a.* the left earring (29x magnification); *b.* hatched brushstrokes on the left cheek (29x magnification); *c.* dark outline around the top pearl of the right earring (29x magnification); *d.* dark outline around the pearls of the left earring (9.6x magnification); *e.* dark outline around a pearl on the necklace (29x magnification); *f.* dark outline around the bottom pearl of the right earring (29x magnification). Imaging by Jan van Daal; photo-edited by Branko van Oppen

Pl. 4: 2 – Simplified typology of Roman-Egyptian earrings, taken from Campbell C. Edgar, “On the Dating of the Fayum Portraits,” *JHS* 25 (1905), *fig.* 1. Drawing by Branko van Oppen

Pl. 4: 3 – Portrait of a Woman in Pink (JPGM obj. no. 81.AP.29); tempera painting on fig wood panel; probably from Philadelphia (Fayum, near mod. Rubayat), Egypt; h. 349 mm; *ca.* 170–200 CE (wood carbon-dated to 38 BCE–66 CE); ex Graf coll., Vienna, 1880s–ex Benesch coll., Vienna, *ca.* 1930s–ex Herzer coll., Munich, 1979–JPGM, Malibu, 1981. Photography courtesy of the Getty Open Content Program



Pl. 5: 1 – Portrait of a Woman in a Pink Tunic (JPGM obj. no. 79.AP.129); tempera painting on cedar wood panel; probably from Philadelphia (Fayum, near mod. Rubayat), Egypt; h. 282 mm; *ca.* 175–200 CE (wood carbon-dated to 39 BCE–61 CE); ex Graf coll., Vienna (no. 46)–ex Emerson coll., Paris, 1903–ex Flinker coll., Vienna, 1932–ex Kende coll., New York, 1942–ex Brummer coll., Hungary, 1942–JPGM, Malibu, 1979. Photography courtesy of the Getty Open Content Program

Pl. 5: 2 – Six examples of mummy tag (attached for the purpose of identifying the deceased) written in Greek and/or demotic on one or both sides (APM inv. nos. 7065–66, 8116–17, 8120 and 8124); ink and/or inscription on wood; from the cemetery of Panopolis (mod. Achmim), Egypt; *ca.* 1<sup>st</sup>–3<sup>rd</sup> cent. CE. Photography by Stephan van der Linden; courtesy of the Allard Pierson Museum

Pl. 5: 3 – Double portrait of a man and woman, attributed to the baker Terentius Neo and his wife, members of the Italian mercantile elite, holding attributes of their literacy, *viz.* a scroll, stylus and wax tablet (MANN inv. no. 9058); wall painting; from Pompeii (House VII, 2, 6), Italy; *ca.* 55–79 CE. Photography by Carole Raddato; photo-edited by Branko van Oppen; courtesy of the National Archaeological Museum of Naples; image credit: CC BY-SA 2.0