1. INTRODUCTION

This article focuses on a large glazed terracotta relief in the Walters Art Museum depicting Adam and Eve in a scene of the Temptation, attributed to the workshop of Giovanni della Robbia and dated to circa 1515 (fig. 1). Based on the inscription on the predella together with the crests of Leo X and the Buondelmonti and Salviati families (Marquand 1911, 1912, 1920, 1928), the relief is associated with the triumphal entry of the Medici Pope Leo X into Florence on November 30 of that year. The relief has been on continuous display in Baltimore since 1909, when Henry Walters completed his private art gallery, and is currently located on a shallow stair landing between floors. Prior to the present study, little was known of its history before its arrival in Baltimore.

In 2013, a palm-size section of the fig leaf at Adam's waist was accidentally damaged and lost. Despite a thorough search of gallery spaces, the fragment was not located. In preparing a damage report and initial examination, it quickly became clear that many other small fragments were loose or partly detached and at risk of loss. Surfaces had last been cleaned superficially 10 years before, and accumulated dirt and grime obscured the original glazed ceramic. There were remnants of a discolored, nonoriginal wax coating left in many areas, trapping dirt and contributing to the uneven appearance. Multiple campaigns of fill and restoration paint had been added to the surfaces over the years, which no longer harmonized well with each other. Additionally, the large size, extreme complexity, and location of the relief had limited prior documentation efforts, and contributed to some difficulties in assessing and responding to the new damage. I consulted with Dr. Joaneath Spicer, the James A. Murnaghan Curator of Renaissance and Baroque Art on the piece. We decided to address the immediate damage in an efficient and reversible way, revisiting other issues at a later date.

At the time, we hoped that the missing fragment would eventually be located; thus, I designed a fill that could be easily removed. I quickly consolidated the loose fragments along the break edge using dilute Paraloid B-72 in acetone/ethanol and spent the afternoon fabricating a laminated paper fill. To do so, a negative mold of the break edge was taken with Zhermack Elite HD dental putty; a positive replica of the
Fig. 1. Before treatment. Attributed to the workshop of Giovanni della Robbia, *Adam and Eve*, ca. 1515, terracotta with glaze, 2.795 × 2.12 m. Walters Art Museum, 27.219
surface was then cast in the same material. Layers of Japanese paper were built up over the replica surface with a 4% mass-to-volume aqueous solution of sodium carboxymethyl cellulose. After drying overnight, the fill was burnished, trimmed, and tacked in place on the relief with several dots of thicker Paraloid B-72 in acetone/ethanol. Inpainting was completed using Golden Fluid Acrylic paints. Unfortunately, the fragment was never found, necessitating that this fill remain in place.

As I prepared my own documentation of this damage and treatment, I delved into prior treatment records. This documentation revealed that the relief, despite its monumentality, is a fragile, compromised object. It was treated at least eight times between the 1950s and 2000s to repair damage, consolidate joins, remove excess restoration material, and improve the aesthetic appearance. The rich written accounts of treatment were instrumental in understanding the 20th century history of this complex object. I am grateful to the many conservators whose work informed my own, including Elizabeth Packard (1958), Peter Michael (1959, 1960), Carol Aiken and Terry Weisser (1974), Carol Snow (1988), Donna Strahan (1998), and Meg Craft (2001, 2003). Yet photographic and diagrammatic records of condition were scant, leaving considerable ambiguity as to the location and extent of issues noted in the written reports.

Using my time as a Mellon Fellow in Conservation, I embarked on a more thorough campaign to document the condition of the relief through photographs and written reports. On further discussion with Dr. Spicer and others, it was decided to undertake a surface cleaning to reduce dirt and grime, remove traces of the uneven and nonoriginal wax coating, and reduce excess restoration material with the goal of increasing overall cleanliness and revealing as much of the original as possible.

2. DOCUMENTATION AND INITIAL TREATMENT

Before treatment, extensive photography was performed both overall and in detail to capture the current state of the object. This proved difficult in execution as well as in organization; the very large number of photographs and complex surface of the relief, with some portions rendered fully in the round, made it difficult to accurately record the condition of all surfaces. Serendipitously, I had the opportunity to work with technicians from Direct Dimensions Inc., a 3D scanning and printing company, to record a medium-resolution scan of the relief overall as well as a high-resolution scan of the central panel of the predella. Three-dimensional scanning has been used in the conservation and preservation of architecture and monuments for some time. The ever-declining cost and increasing portability of scanning equipment and software has rendered it increasingly appropriate for large, complex art objects such as this relief.

The size and location of the relief presented a number of unusual challenges when designing a plan to clean the glazed surfaces and reduce excess restoration material. A ladder and additional lamps were necessary, and the nearest power source was located on the next floor, requiring power cords securely taped down to the outside of the stairwell. Because the landing remained open to foot traffic, a stanchion was needed to guide visitors around the work area. All tools and materials had to be packed up and removed each day, as the space at the foot of the stairs was frequently used for after-hours special events. Owing to space restrictions, no fume extraction equipment could be used, which prevented the use of volatile organic compounds (VOCs) during treatment. Furthermore, because the object remained on continuous display, the curator was keen to ensure that it remained in “visually acceptable condition” during the course of treatment.

I completed initial tests and tried out equipment configurations on Mondays and Tuesdays, when the museum is closed to visitors. After settling on materials and procedures and further discussions with Dr. Spicer, I continued treating the relief several additional days per week during the museum’s open hours.
To reduce dirt, grime, wax, and excess plaster and paint, surfaces were first poulticed for several minutes with Webril nonwoven cotton pads wetted with tap water adjusted to pH 9 by the addition of sodium hydroxide. The increased contact time of the poultice meant that less mechanical action and a smaller volume of water were necessary to begin the cleaning process, which were both important factors when working atop a ladder on a stairwell. Poulticing softened the restoration materials on glazed terracotta surfaces, allowing mechanical reduction using scalpel blades or micro-spatulas. Excavating the excess material proceeded slowly, as the goal was to reveal as much of the original surface as possible while leaving fills in place rather than removing all of the restoration materials. In many areas, three or four campaigns of plaster and spackle fill were evident, covering the glazed surfaces with as much as an inch of excess material.

Wax was reduced by rolling swabs dampened with Shellsol 71, so-called “odorless” mineral spirits, a mixture of aliphatic solvents with a very low VOC content. Solvent and waste containers were kept covered to limit exposure.

Dirt and grime were reduced by rolling cotton swabs dampened with sodium citrate adjusted to pH 8.5. Surfaces were cleared by rolling with swabs or washing with cotton pads wetted with tap water. In part because setup and cleanup each day was laborious and time-consuming, completing the cleaning process required approximately 12 months of working several days per week.

Though not initially accounted for in planning the project, interaction with the public came to occupy a considerable portion of my time. Given the prominence of the relief’s location and the fact that there were several other concurrent opportunities to interact with conservators in gallery spaces at the Walters, many visitors were extremely interested in my work, eager to learn more about the object and the process of conservation. Through informal interactions over time, many security officers and volunteer docents became familiar with the project and were often willing to answer questions from visitors. Though informal, this cooperation proved to be a valuable strategy for my own time management.

Interacting with the public also yielded some surprising and nuanced insights into the materials, techniques, and context of this complex artwork. I had the opportunity to speak at length with physicians who commented on the anatomy of the figures, sculptors and ceramists with observations on the construction of the relief, seminary students on the narrative of the Temptation, and botanists who speculated on the species of flora represented in the border and background. Often, interaction with the public is presented as an extra service provided by conservators—sometimes to the detriment of treatment and examination—when, in reality, it can enhance our knowledge and appreciation of artworks by drawing on diverse fields of expertise and experience.

As I worked to reduce the restoration materials, it became clear that the central scene was assembled from many sections of severely damaged terracotta at some point in the past (fig. 2). Most fragments were repaired by pinning or stapling with iron rods, though many appeared to align along original joins. Some joins were loose or very poorly aligned, such as the vines around Adam’s waist and the digits of the figures’ hands. These were disassembled either mechanically, by cutting through the pins with a narrow file, or by softening the plaster fill material. Working away from the object, corroding iron pins were removed, the sections were cleaned and repaired with Paraloid B-72, and fills were made in Modostuc, an acrylic-bound calcium carbonate material. After reattaching the fragments to the relief with Paraloid B-72, inpainting was again completed using Golden Fluid Acrylic paints and Acrysol WS-24 acrylic medium to adjust gloss as necessary.
The center of the relief and the upper register of leaves consist of misaligned fragments with no clear join edges. These appear to be held in place with plaster alone; the gaps between them have been filled with additional plaster and integrated with paint. Several fragments of original glazed terracotta are clearly out of place; they seem to have been inserted merely to fill gaps among the larger pieces. Similarly, the text on the predella includes gaps and dislocations that had previously been obscured by overpaint, indicating that it should be read as fragmentary and incomplete.
3. ANALYSIS AND IDENTIFICATION OF PRIOR RESTORATION

As cleaning and reduction of restoration material progressed, it became apparent that two different types of glazed terracotta fragments were incorporated into the relief. The majority of the fragments consisted of buff-colored terracotta covered with a single opaque layer of glaze. On the whole, these were visually consistent with glazed terracotta produced in the della Robbia workshops (Gentilini 1992).

A smaller, but still substantial, number of fragments were made from a reddish terracotta that had undergone two glaze firings. These pieces were first glazed overall with a white ground, over which a second layer of semi-translucent glaze was applied in a brushy, impressionistic manner and fired again. In both materials and technique, these broadly resemble descriptions of 19th century restorations of della Robbia works, such as those believed to have been added to a large retable of the Ascension (now at the Musée du Louvre) by the firm of Alfred André between 1885 and 1890 (Lepeltier and Labbe 2011).

Working with Dr. Glenn Gates, Research Scientist at the Walters Art Museum, I performed XRF spectrometry on the two different types of glazed terracotta using portable instrumentation loaned by the Baltimore Museum of Art (a Bruker Tracer III-V) and Elio XRF (Elio XRF unit). Using the Bruker Tracer III-V, 12 sites of similarly colored glazes on each of the two types of terracotta were analyzed (120-second acquisition time at 40 kV and 4.75 µA with no filter, in contact with the surface and under vacuum, average counts per second ~2.5k). Spot analysis on the same 24 sites was performed with the Elio XRF unit under varying parameters.

Analysis by XRF identified consistent differences between the two visually distinct glazed terracotta sections. The composition and colorants used for the glazes on the buff-colored terracotta fragments are consistent with published data on della Robbia glazes (Zucchiatti and Bouquillon 2011), whereas those used for the glazed surfaces on the reddish-colored terracotta were more consistent with 19th century manufacture. In particular, the identification of chromium in green glazes provides strong evidence for the 19th century origins of these fragments, as chromium is not known to have been used as a colorant for vitreous materials before approximately 1800 (Hornig-Sutter 1985; Wypyski 2004).

4. PROVENANCE RESEARCH AND EARLY RESTORATION HISTORY

Concurrent with my documentation, treatment, and analysis of the relief, I pursued provenance research in an effort to unravel its complicated treatment history. Henry Walters purchased the relief in 1902 at auction in Paris, from the estate of the widow of the Parisian art collector Camille Lelong (Le Bulletin de L’Art, 1902). The sale catalog includes an image of the relief, which appears damaged and visibly grimy. The text of the inscription on the predella is presented in a different configuration, and the catalog entry notes that it is incomplete (Lelong 1902).

Lelong had successfully purchased the relief in 1886 from Adele Ristori, a woman from Valdarno, despite efforts by Italian authorities to bar its export (Gentilini 2012). Ristori had acquired it sometime during or after 1884, when it was in the shop of the antiques dealer Angelo Cappelli, located in the Borgo Ognissanti, Florence (Marquand 1920).

In December 1870, the relief had been in the hands of “V. Cappelli,” who shipped it to South Kensington Museum in London (now the Victoria & Albert Museum). The relief was offered for sale at the
considerable price of £1000 (Victoria & Albert Archives RP/1870/48677 1870/12/20). No photographic records of its condition are known to survive. However, it is described in detail in a technical report written for the South Kensington Museum by Matthew Digby Wyatt (Victoria & Albert Archives MA/3/35 RP/1870/49059). It is also described in the 1871 January and February issues of *The Art Journal* (London), leaving no doubt as to the identity of the relief (*The Art Journal*, 1871). The written accounts of the appearance and condition of the object reveal that the newly made glazed terracotta restorations were in place at that time as well as the initial campaign of tinted plaster fills and paint (fig. 3).

Digby Wyatt had the benefit of examining the object while it was disassembled in several pieces for shipping. He summed up his observations thus: “I think a little of this is old and a great deal quite modern [emphasis in the

Fig. 3. During treatment, after cleaning. Sections of glazed terracotta made in the 19th century are highlighted in bright green. Archival research suggests that these restorations were made as part of a concerted campaign to reconstruct and restore the relief in Italy in 1870 or before.
original]…. It is much made up with plaster and coloured (not fired) in many places. The various pieces are made with… two different kinds of clay—and colour has been applied in many places to make new material appear old” (Victoria & Albert Archives MA/3/35 RP/1870/49059). The South Kensington declined to purchase the relief, and it was returned to Florence in 1871 (Victoria & Albert Archives RP/1871/12407 1871/03/13).

Based on this evidence, it seems likely that the relief was reconstructed in the 19th century, probably in Italy in 1870 (or slightly before) from an incomplete collection of fragments from a larger 16th century monument. The restorers created a reduced version of the original that strongly privileged the sculptural qualities of the two figures, working from the largest to the smallest sections and completing the assemblage with newly made pieces of glazed terracotta. The application of colored glazes over a white ground on these pieces approximates the look of the original della Robbia glazes. However, this technique is borrowed from maiolica vessels (Piccolpasso 1980) and represents a fundamental misunderstanding of the techniques of the della Robbia workshop on the part of the restorers.

The restoration materials and techniques employed in the assembly and completion of the relief borrow equally from traditional repairs to both ceramics and marble statuary.

The 19th century restorations in glazed terracotta are remarkably well fitted to the break edges of the original fragments, suggesting that they were modeled on the original surfaces in a low-shrinking clay, then separated for firing and glazing before securing them to the relief with tinted plaster or iron pins. Nineteenth century restorers employed such methods for completing fragmentary ceramic vessels as well as marble sculptures. For vessels, restorers would throw or build a section of new clay directly on the original and fire it separately. For sculpture, clay modeled in situ was detached and restorers carved precisely fitted pieces of new marble with the aid of pointing machines (Carradori 1802).

The techniques used to integrate the glazed terracotta restorations are likewise similar to those used by Italian restorers of marble sculpture during this period. This includes the iron staples and pins used to secure the restorations in place as well as the overall wax coating, which was commonly used to disguise repairs and additions (Bourgeois 2003).

A close examination of the restorations thus suggests that the overall effect was calculated to appeal to Victorian tastes in collecting and that the materials and techniques themselves seem to be predicated upon an understanding of the glazed terracotta works of della Robbia as partaking of both the craft of maiolica and the art of marble sculpture (Bailey 2018).

5. COMPENSATION APPROACH

Recognizing that the Adam and Eve relief is a hybrid object—one that combines fragments of a 16th century monument with 19th century restorations in the same material—presented a significant challenge for the aesthetic reintegration of loss and damage. Previously, layers of paint and wax had been applied to disguise differences in the two sets of terracotta, obscuring the true nature of the object to create an aesthetically unified whole. The opposite approach, which would privilege authenticity over aesthetics, might lead to disassembling the relief and removing the 19th century additions. Neither approach is quite satisfactory. It would be difficult to justify either returning the relief to the state of a deceptive but alluring pastiche or reducing it to a pile of disarticulated but authentic rubble. Indeed, we never seriously considered disassembling the relief, not least because of the prohibitive costs in time, labor, and resources needed to free the terracotta sections from the concrete, plaster, wooden beams, and iron rebar in which they are embedded.
Recognizing that it was not possible to either return to the relief’s 19th century appearance or restore the still unknown original appearance, I devoted considerable time to discussing the nature and goals of aesthetic reintegrations with Dr. Spicer and my conservation colleagues. Ultimately, the unique physical location of the relief within the museum came to guide the approach to compensation.

Because of its location on the stair landing, the relief is visible from long distances in many locations within the 1909 building. Most people, most of the time, experience this artwork from a distance. We thus decided that damages and losses should be toned or inpainted in order to present a unified appearance overall. This approach necessitated little additional filling and minimal resurfacing of the old fills to bring them closer to surface level with surrounding areas of glazed terracotta. This helped to ensure that damages, losses, and prior restorations remained evident on close inspection, bearing witness to the history and hybrid nature of the object.

Virtually all areas of existing fill and damage were retouched using Golden Fluid Acrylic paints. Though not all prior inpainting was removed, much of it had either discolored over time or had been painted to match dirty glazed surfaces, appearing dark and murky after cleaning. Though many areas had been toned with washes of color during the 12 months that it took to clean the relief, the final process of retouching required more than three weeks to complete.

Some areas of prior fill that stood proud of the surface were mechanically reduced and resurfaced using scalpel blades. Some small losses along joins, such as those on the figures’ hands, were filled and leveled using Modostuc or Flügger spackle.

Several more speculative fills were deemed necessary for the aesthetic reintegration of damage and loss. Removal of overpaint on the proper right arm of Eve revealed a broken ridge of terracotta outlined in dark-purple glaze with traces of yellow glaze along the edges. Close inspection suggested that the ridge was evidence of an additional lock of hair that had originally been glazed to the arm but was later damaged and lost. In its cleaned state, the arm appeared disfigured, if not outright necrotic. Dr. Spicer therefore agreed to recreating a lock of hair, which, while speculative, would conform as closely as possible to the physical evidence of the location and position of the lost original. To do so, a thick double layer of Japanese tissue impregnated with Paraloid B-72 was cut to shape and adhered with acetone over the ridge on the arm to serve as a release layer. Milliput fine white epoxy putty was then molded by hand in situ, taking care to restrict the form only to the Japanese tissue release layer. After setting, the epoxy locks were painted with Golden Fluid Acrylic paints.

At the end of treatment, photographic and diagrammatic documentation were performed overall and in detail. While it has not yet been possible to capture an after-treatment 3D scan, this remains a possibility.

6. CONCLUSION

The initial plans for examination, documentation, and limited treatment evolved to encompass the previously underappreciated complexity of this object. Ultimately, the treatment—aesthetic compensation in particular—was considerably more difficult and time-consuming than expected. Furthermore, though scientific analysis and provenance research were beyond the scope of the original plan, they proved essential to understanding the complex physical state revealed during treatment (fig. 4). Thus, while I was tempted to conceive of this treatment as a linear process with clearly defined steps and
Fig. 4. After treatment. After completing cleaning, filling, and inpainting, gallery lighting was adjusted to better show the figures’ forms.
goals, it proved to be a recursive exercise, requiring a multi-pronged, collaborative approach to achieve negotiated outcomes.

As a result of this process, the *Adam and Eve* relief is more structurally stable and cleaner, with improved documentation. More of the glazed terracotta surfaces are now visible, and the multi-layered history and physical state of the object are better understood. Much work remains, however, to discover the origins of the object and attribute the 19th century restoration to a particular workshop. As with any conservation treatment, this process has revealed more questions—and a greater multiplicity of prior states—than could have been anticipated.

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Victoria & Albert Archives. RP/1870/48677 1870/12/20. Note on correspondence of “Ferrario, C. enqs. respecting Mr. Cappelli’s Della Robbia & calls attention to some objects in his possession.”

Sources of Materials

Manufactured by Zhermack SpA
Via Bovazecchino
100 45021 Badia Polesine (RO)
Italy +39 0425 597611
web@zhermack.com
www.zhermack.com/en/
Sekishu Japanese Paper: heavy weight, machine-made kozo fiber paper
Hiromi Paper, Inc.
469 Jefferson Blvd., Suite 117
Culver City, CA 90232
310-998-0098
washi@hiromipaper.com
www.hiromipaper.com

Sodium carboxymethyl cellulose. Manufactured by Dow Chemical, www.dow.com
Available from Sigma Aldrich
800-325-3010
www.sigmaaldrich.com

Available from Talas
330 Morgan Ave.
Brooklyn, NY 11211
212-219-0770
www.talasonline.com

Golden Fluid Acrylics: pigments in aqueous acrylic dispersion
Manufactured by Golden Artist Colors, Inc.
188 Bell Rd.
New Berlin, NY 13411-9527
800-959-6543
help@goldenpaints.com
www.goldenpaints.com
(Available from Dick Blick at www.dickblick.com)

Modostuc: calcium carbonate spackle material bound with a polyvinyl acetate copolymer in an aqueous dispersion
Manufactured by Plasveroi S.p.A.
Via Camussone 38
Franzionale Giovannenzano, Vellezzo Bellini, PV, Italy
+390 382 926895
www.plasveroi.it
(Available from Talas, www.talasonline.com)

Flügger: calcium carbonate spackle material bound with butylmethacrylate in an aqueous dispersion.
Manufactured by Flügger A/S
Islevdalvej 151
2610 Rødovre, Denmark
+45 70 15 15 05
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(Available from Conservation Resources at www.conservationresources.com)
Milliput Superfine White: two-part epoxy putty
   Manufactured by Milliput
   Unit 8, The Marian
   Dolgellau, Gwynedd, LL40 1UU United Kingdom
   01341 422562
   info@milliput.demon.co.uk
   www.milliput.com

Acrysol WS-24: aqueous emulsion of acrylic copolymers
   Manufactured by Rohm and Haas, a subsidiary of Dow Chemical, www.dow.com
   (Available from Talas, www.talasonline.com)

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