

Bianucci R.^{1-2*}

Donell S.T.^{3*}

Galassi F.M.^{4*}

Nerlich A.G.^{5*}

Lanza T.^{6*}

Mattutino G.^{7*}

Sineo L.^{8*}

¹ *Department of Cultures and Societies, University of Palermo, Palermo, Italy.*

² *The Ronin Institute, Montclair, NJ, USA.*

³ *University of East Anglia, Norwich, UK.*

⁴ *FAPAB Research Center, Avola (SR), Italy.*

⁵ *Institute of Pathology, Academic Clinic Munich-Bogenhausen, Munich, Germany*

⁶ *Istituto Nazionale di Geofisica e Vulcanologia, Rome, Italy.*

⁷ *Legal Medicine Section, Department of Public and Pediatric Sciences, University of Turin, Turin, Italy.*

⁸ *Dipartimento di Scienze e tecnologie biologiche, chimiche e farmaceutiche (STEBICEF); LabHomo, Laboratorio di Antropologia. Università degli Studi di Palermo, Palermo, Italy.*

*All authors equally contributed to the paper and are listed in alphabetical order. All authors are corresponding authors; e-mail for correspondence (*Human Embalming Project*©): heproject2021@gmail.com

DOI: 10.14673/HE2022341107

KEY WORDS: *Ethics, Mummy studies, Embalming, Conservation, Display, Catacombs of Palermo, Sicily.*

The mummy of Rosalia Lombardo at the end of 2022: an update on the status quaestionis and a reflection on the level of evidence

In this communication we present key new evidence on the story of the famous Salafia embalming manuscript that further clarifies the genesis of a series of studies on this topic and corroborates our assumptions published in previous articles on this matter. In the second part of the paper, we provide a concise ethical analysis of Rosalia Lombardo's case and try to establish a level of evidence in the assessment of her preservation by comparing facts and interpretations. Finally, we call for an independent assessment of the mummy's state of preservation and the disclosure of the full content of the Salafia manuscript.

Rosalia Lombardo (1918-1920) was a nearly 2-years-old child when she died in Palermo. Her body underwent artificial mummification. Her cadaver lies in the Capuchin Catacombs of Palermo and, over the decades, it has been the main “attraction” for thousands of visitors. A wonderfully preserved corpse, the Sleeping Beauty of Palermo has lost her endless beauty. Since 2008 her corpse has undergone progressive degradation and, despite having been placed in a high-tech display case, her predicted long-term preservation, has been objectively unsuccessful (1).

Since 2021 the Human Embalming Project[®] team has been re-examining her case. A reappraisal of the scientific studies performed on her mummy has been undertaken and several inconsistencies have emerged (2-5). These have been brought to the attention of the scientific community at national and international levels. Based on further very recent developments, we would like to inform the anthropological readership of the following:

1. Has the Salafia manuscript been published? Is it held at the Eurac Research in Bozen, and is it freely accessible to any scholar interested in it?

In an email dated the 18th October 2022 addressed by the Human Embalming Project[®] team to PD Dr Albert Zink, Director of the Institute for Mummies EURAC (Bozen, Italy), we kindly asked to have access to the Salafia manuscript. This request stemmed from the fact that, in an email dated the 7th February 2022 from Prof. Erich Brenner (University of Innsbruck, Austria) to Dr Raffaella Bianucci, we were informed that a copy of the Salafia handwritten memoirs was in the possession of the EURAC's 'Institute for Mummies'. More precisely, Prof. Brenner wrote that "*he had the pleasure to see it and to read it there (EURAC) in detail*".

In an email dated the 21st October 2022 addressed to the Human Embalming Project[®] team, PD Dr Albert Zink replied that the manuscript is not held at the EURAC on date and wrote: "*I am sorry to inform you that there is no copy of the "Salafia manuscript" in the possession of the Institute for Mummy Studies. I don't remember the visit of Dr. Brenner; but he confirmed me that he came to our Institute in 2008/2009, where he met Dr. Piombino-Mascalì, who was a member of our Institute at that time and who showed him the manuscript, that appeared to be a copy according to Dr. Brenner. However, all documents regarding the Sicily Mummy Project remained in the responsibility of Dr. Piombino-Mascalì and were taken by him after he left the Institute. Therefore, I would recommend you to directly contact Dr. Piombino-Mascalì for any kind of requests regarding the "Salafia manuscript" or any other queries regarding the Sicily Mummy Project.*"

We noted that, in his reply, PD Dr Zink did not contradict our previous statements that, to date, no full-length independent review of the manuscript has been published (2-5), and that he, *de facto*, accepted that asking to view the manuscript was a legitimate request and important for scientific study. His suggestion to *directly contact Dr Piombino-Mascalì for any kind of request regarding the "Salafia manuscript"* confirms that no freely accessible third-party version of it exists (2-5). This infers that no reproducibility of the study can be really achieved unless the document is held by an independent third party which makes it available for scholars to assess freely, or an accurate and complete edition is published.

2. The mummy's current state of preservation: narrative vs visual evidence

In an Italian-language TV interview dated 2nd of November 2022, the archaeo-anthropologist Dr Piombino-Mascali, here titled as the anthropologist conservator of the Capuchin Catacombs of Palermo, stated that [the aim of the Special Tour] “*is to share this Sicilian Spoon River that many believe to be acquainted with but, in the reality, they know only the tip of the iceberg of such an interesting [burial] complex.* [Original Italian version: “è un po’ condividere questa Spoon River siciliana che molti credono di conoscere ma, in realtà, conoscono solo la punta dell’iceberg di questo complesso così interessante”] (Le mummie svelate dallo studioso, serata speciale alle Catacombe dei Cappuccini, available at <https://www.youtube.com/watch?v=jK3TTAjP570> minute 1:23). Indeed, learning what the real condition of Rosalia Lombardo’s mummy is, at present, would be optimal.

In Figure 1A, the anthropologist conservator of the Capuchin Catacombs of Palermo is shown with his hands on the high-tech case containing the corpse of Rosalia Lombardo but no close-up picture of the coffin was shown throughout the whole documentary. Therefore, no third-party assessment was made possible. An eventual claim to avoid filming her body for ethical purposes would be ungrounded since several mummified/embalmed bodies have been filmed in the Catacombs; similarly, several cadavers are usually photographed and filmed by visitors. Last but not least, postcards representing the dead and the corridors have been, and still are, sold at the entrance.

Ethical approaches concerning the reproduction of images of the dead have been recently recommended by Squires and Piombino-Mascali (5); the same is for the identities of the dead (5). Quoting Squires and Piombino-Mascali (2022) (5): “... where the names or identifying traits...of mummies are known, these individuals have to be anonymised and no personal identifying traits should be included in publications or other outputs”. The recent Special Tour of the Catacombs organised during Day of the Dead fully contradicts the proposed recommendations (Le mummie svelate dallo studioso, serata speciale alle catacombe dei Cappuccini

<https://www.youtube.com/watch?v=jK3TTAjP570> minute 0:50). During the interview Dr Piombino-Mascali stated that “we will talk about the numerous personages that were buried at the Catacombs such as painters, heroes of the Risorgimento, lyric singers, pianists, bookmakers, hatmakers, etc. [Original Italian text: “parleremo dei personaggi che sono stati sepolti alle Catacombe e che sono tanti, pittori, eroi risorgimentali, cantanti lirici, pianisti, librai, fabbricatori di cappelli”]. This statement implies that, based on their features and their ornaments, the mummies are identified and not anonymised to the visitors.

Back to the mummy of Rosalia Lombardo, one of us (T.L.) visited the Catacombs on the 19th of September 2022. Our co-author reports that the face of the

mummy shows a high degree of dehydration and the overall corpse appears shrunken. Over the past five decades, T.L. visited the Catacombs every year apart from the period of the COVID pandemic (2020-2021) when the Catacombs were closed to the public. The Catacombs reopened to the public on the 22nd of June 2022.

The decay of Rosalia's face progressed after July 2008 (3-5). The alteration of Rosalia's facial features can be observed by comparing the following pictures. Figure 1B shows the face of Rosalia on the 23rd February 2008 (Credits: Dr Giuseppe Carotenuto). Figure 1C shows the progressive oxidation of the mummy's face inside the high-tech passive display (this picture was taken by a visitor of the Catacombs and freely published in the social media *Facebook* on the 5th of September 2015: <https://www.facebook.com/photo/?fbid=10205002808845990&set=a.1843600765835>). Figure 1D shows the current state of the mummy (picture taken by a visitor of the Catacombs and freely published in the social media *Facebook* on the 1st of August 2022: <https://www.facebook.com/pages/Catacombe%20dei%20Cappuccini/129467167105836>; Andrzej Bacza is at Catacombe dei Cappuccini).

All together the three images dated 2008, 2015 and 2022 show that Rosalia's facial features have drastically changed over the past 14 years. These facts indicate that the oxidation process progressed rapidly after her introduction in the high-tech case display. This is in sharp contrast with the claims that the high-tech case would have guaranteed the long-term preservation (100 years) of the mummy (1,7).

Since December 2021 the Human Embalming Project[®] team has brought to the attention of the international community the case of Rosalia Lombardo and the decay of her cadaver. An immediate process of restoration was suggested (2-5). Nevertheless, at the end of 2022, no restorative intervention is officially known to have been set in place. Furthermore, in a very recent paper Piombino-Mascalì & Zink state that "... *additional studies on Lombardo... are not only unnecessary, but would irreversibly damage the long-term conservation of the mummy*"(8). Piombino-Mascalì & Zink's statements are obviously contradicted by the images published in the present report.

We also request that, given the special nature of this cultural heritage item, an independent investigation and thorough assessment of the current state of preservation of the mummy, using objective methodologies be implemented. At the same time, for the sake of reproducibility of science, we publicly request that the Salafia manuscript is made available via a physical or online repository allowing all scholars interested in this topic to make up their own mind.

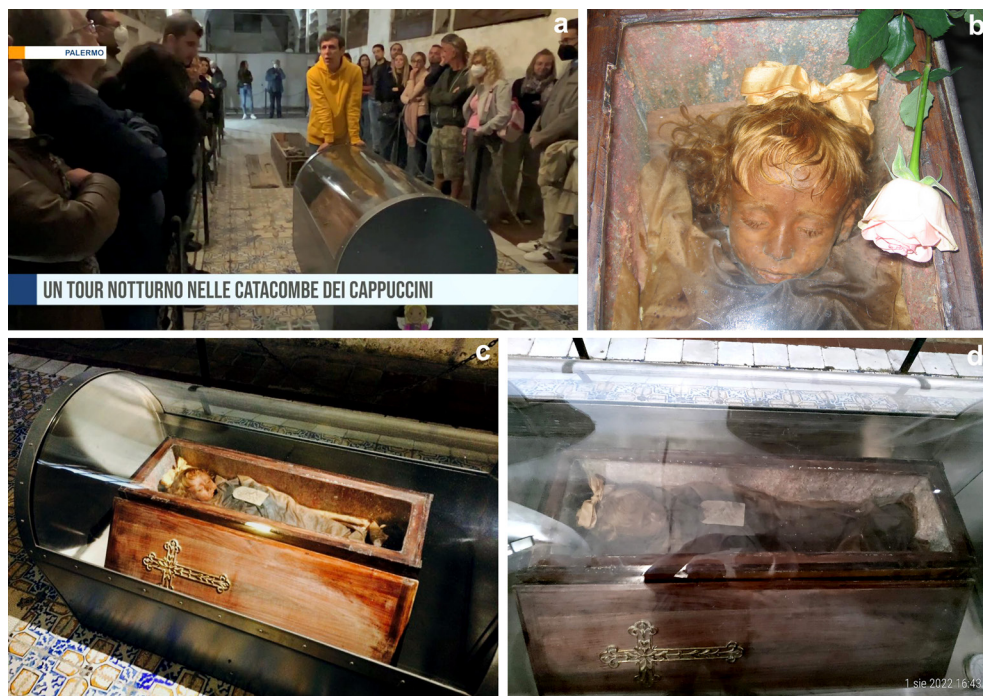


Figure 1. A: Image of the anthropologist conservator of the Capuchin Catacombs of Palermo showing the high-tech case that contains the corpse of Rosalia Lombardo (The Special Tour of the Catacombs of Palermo on the 2nd of November 2022; B: Rosalia Lombardo, February 23rd 2008; C: Rosalia Lombardo, September 5th 2015; D-Rosalia Lombardo, August 1st 2022.

References

1. Samadelli M., Zink A.R., Roselli G., Gabrielli S., Tabandeh S., Fernicola V.C. (2019) Development of passive controlled atmosphere display cases for the conservation of cultural assets. *Journal of Cultural Heritage* 35:145-153.
2. Nerlich A.G., Bianucci R. (2021) Mummies in Crypts and Catacombs. In: Shin D.H., Bianucci R.: *The Handbook of Mummy Studies. New Frontiers in Scientific and Cultural Perspectives*; Springer Nature Singapore, Singapore, Pp. 750-751, 756-759.
3. Galassi F.M., Lanza T., Mattutino G., Sineo L., Nerlich A.G., Donell S.T., Bianucci R. (2021) The discovery of the Salafia handwritten manuscript and formula: chronological and biological considerations. *Archivio per l'Antropologia e l'Etnologia* 151: 1-19.
4. Bianucci R., Donell S.T., Galassi F.M., Lanza T., Mattutino G., Nerlich A.G., Sineo L. (2022). The Ethics of Preservation of Scientific Data and Images of Cadavers to a Popular Audience: from the Salafia embalming method to the case of Rosalia Lombardo. *Paleopathology Newsletters* 198:26-30.

5. Bianucci R., Galassi F.M., Lanza T., Mattutino G., Nerlich A.G. (2022). What lies behind the embalmed body of Rosalia Lombardo (1918-1920)? *Italian Journal of Anatomy and Embryology* 126 (1): 5-13.
6. Squires K. & Piombino-Mascali D. Ethical Considerations Associated with the Display and Analysis of Juvenile Mummies from the Capuchin Catacombs of Palermo, Sicily, *Public Archaeology*, DOI10.1080/14655187.2021.2024742
7. *DVD Italy's Mystery Mummies* National Geographic Explorer. Director: Ron Bowman, 2009
8. Piombino-Mascali D, Zink A.R. (2022) *Alfredo Salafia's handwritten memoir and the embalming of Rosalia Lombardo: a commentary*. https://www.schweizerbart.de/papers/anthranz/detail/prepub/101858/Alfredo_Salafias_handwritten_memoir_and_the_embalming_of_Rosalia_Lombardo_a_commentary