

Preparations for an Afterlife Ancient Egyptians Would Never See

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Introduction

The monopoly of knowledge possessed on Ancient Egypt revolves around how their dead were treated. The daily life of the average citizen is based on educational interpretations from the textual evidence uncovered in the archaeological record. The most well-known phenomenon, second to the Giza pyramid complex, is mummies. Though many types of mummies have been uncovered worldwide, the ones from Ancient Egypt have gained the most attention. It is human nature to develop a certain fascination and curiosity about the past and the unknown. This has led to the rapid rise in interest in the mummified remains from Ancient Egypt.

In this essay I will provide insight as to why the process of embalming and purposeful mummification in order to preserve the dead in a physical state comparable to the living was incongruous. The steps taken to prepare the deceased for burial contravened religious regulations and the preliminary requirements to gain access to the afterlife; regardless of preparation, the mummified deceased would not be allowed to enter the underworld. In order to explicate the irony of these procedures, and how they counter religious teachings, this paper will provide a brief background on the spiritual drive behind mummification, a timeline of its use, and a review of the process itself. Proceeding this information, bioarchaeological evidence will be presented on cases representing different time periods in Ancient Egypt, followed by an example of experimental archaeology. A discussion will compare the biological data presented and findings will be concluded.

Religion Leading to Mummification

In ancient Egypt, eternal life after death was an important facet of the religion. Whether or not someone would pass on to the afterlife not only depended on their actions during their mortal life on earth but also the physical condition of their body in death. Although there were

other necessary requirements for the dead to meet to be granted access to eternal life, such as the weighing of the heart, these will not be discussed in this paper. Chapter 105 of the ancient Egyptian religious texts, the Book of the Dead, states the bodies of their dead needed to be whole in order to live in the afterlife (Janák 2003:197). Preservation was a key aspect to survival in the afterlife (Taylor 2001:26; Baines and Lacovara 2002:11). Upon death, the spirit of a person was separated into two halves that needed to be rejoined in the underworld in order to survive eternally in the afterlife. The '*ka*' is what was believed to be one half of their spirit or soul. This half was born during the physical birth of a person, giving life to the person who was born (Janák 2003:194). Upon death, the '*ka*' was believed to leave the physical body without perishing. Rather, it would wait in a resting state to be rejoined with whom it belonged, in the afterlife (Janák 2003:194). The '*ba*' was the representation of the deceased after death; the other half to the '*ka*' (Janák 2003:197). Not only were both halves residing in the underworld a requirement for eternal life, but the body of the deceased needed to also retain full functionality (such as eating or seeing) (Janák 2003:197). All parts of the body of the deceased needed to be present and intact in burial in order for the '*ka*' and the '*ba*' to unite in the underworld (Janák 2003:197). In order to meet the physical requirements laid out by the sacred texts of the Book of the Dead, purposeful mummification became the preferred method of preparation of the dead for the afterlife.

Embalming, Drying, and Wrapping

Mummification, or desiccation, is defined as the skin which has shrunken, hardened, and stuck to the bones of the deceased (Finaughty and Morris 2019). Tissues are considered to be petrified, and the presence of adipocere, or grave wax, is not present in the remains (Finaughty and Morris 2019). Though there were thirteen stages to the mummification process

(Abdel-Maksoud and El-Amin 2011:133), including rituals (Figure 1), the focus here will be on the stages related to drying and embalming.

Embalming and purposeful mummification have been recorded in ancient Egypt from the Late Predynastic Period (c.5300-3000BC) through to the Roman Period (30BC-AD395) (Strudwick 2017:180; Abdel-Maksoud et al. 2010:292), the latest being AD4 (Dodson 2008:743). The peak of mummification took place during the New Kingdom (1570-1070BC) (Abdel-Maksoud et al. 2010:292). The mummification process, including both labour and resting time, took a minimum of forty days (Edwards et al. 2007:683). The following steps describe the general process of mummification. The unclothed body of the deceased was laid on an embalming couch. An incision opened the abdomen, giving the embalmer access to the viscera that needed removal (Abdel-Maksoud and El-Amin 2011:131). The removed viscera were then washed and deodorised with palm wine and various spices (Abdel-Maksoud and El-Amin 2011:131). Each organ removed was placed in its own respective canopic jar and sealed with a stopper shaped to the head of a deity, for eternal preservation. The four jars represented four deities, which were referred to as the 'sons of Horus': the lungs were guarded by Hapy, the baboon, the stomach was protected by Duamutef, the jackal, the liver was under the protection of Imsety who had a human head, the intestines were watched over by Qebehsenuef, the falcon (Strudwick 2017:184-185). The heart was the only vital organ that remained, as the brain was also removed, but not considered vital for preservation. The removal of the brain was done through the nasal cavities. Considering the limited space in the orifice, a portion of brain matter was commonly left inside (Abdel-Maksoud and El-Amin 2011:132).

The hollowed corpse would be covered and packed with natron, then left out to dry for an average of forty days (Abdel-Maksoud and El-Amin 2011:132; Edwards et al. 2007:683). Natron

is a naturally occurring mineral composed of sodium compounds, making it a type of salt mixture (Abdel-Maksoud and El-Amin 2011:133; Edwards et al. 2007:683). After the drying process, the natron would be washed away. Crushed cinnamon, frankincense, and myrrh would replace the natron within the cavity (Abdel-Maksoud and El-Amin 2011:132), accompanied by the additional use of onions and lichen (Abdel-Maksoud and El-Amin 2011:142). The body, including orifices, was then covered and plugged with a resinous compound made of various tree saps (Abdel-Maksoud and El-Amin 2011:134), and oils. The oils and saps aided with preservation whilst producing a pleasant scent for the body. Small sized onions were placed in the eye sockets occasionally to give the body a lifelike appearance (Dodson 2008:746). This lifelike appearance was important because in chapter 105 of the Book of the Dead, an important set of texts describing what happens to the 'ka' and the 'ba' in the afterlife, states that the eyes give the dead the ability to live in the afterlife (Janák 2003:203; Blackman 1924:55). The final stage of wrapping was conducted with linen soaked in the resinous compounds.

The Opening of the Mouth Procedure

The Opening of the Mouth Procedure, not to be confused with the Opening of the Mouth Ritual (Figure 1), was the fifth stage occurring after desiccation but prior to ceremonial wrapping of the body (Seiler and Rühli 2015:1209). The Opening of the Mouth Procedure has been passed down through generations of the inhabitants of Egypt, from Babylonian inhabitants (Blackman 1924:47, 52). Though there is a lack of artistic evidence in the archaeological record to support the performance of this rite, texts have been uncovered over the years. The oldest recordings of texts describing the Opening of the Mouth were found in the burial chamber of King Unas, dating to around 2320 BC (Peacock et al. 2011:1306). The evidence available in support of the Opening of the Mouth Procedure consists of preserved texts on papyrus currently held at the

Papyrus Museum in Vienna (Seiler and Rühli 2015:1212). This procedure is highlighted to provide evidence of deliberate destruction of the physical integrity of the deceased in the name of spiritual passage into the afterlife.

This crucial ritual in Ancient Egyptian funeral rites consisted of breaking or removing facial bones, sometimes teeth (Figure 2), in order to open the jaw of the deceased, post-mortem (Seiler and Rühli 2015:1215). The purpose of the physical mutilation of the facial structure was for the embalmer to perform rites within the oral cavity of the deceased by the insertion of a hand (Seiler and Rühli 2015:1212-1213). The rites performed within the oral cavity of the deceased was to bless the deceased and give them the ability to drink and eat in the afterlife (Blackman 1924:52; Peacock et al. 2011:1306). The Opening of the Mouth Procedure contradicts the requirement that the body of the deceased must retain appearance akin to that of the living in order for life after death to occur (Gupta et al. 2008:712).

Bioarchaeological Evidence

Djehutnuakht was a political figure during the Middle Kingdom, around 2000BC (Gupta et al. 2008:705; Peacock et al. 2011:1301). Using magnetic resonance imaging (MRI), x-rays, and a computerized tomography scan (CT), analysis was completed on the mummified head of Djehutnyakht to determine whether or not post-mortem injuries were sustained during the stages of mummification (Gupta et al. 2008:706). Damage to various facial bones and teeth were observed in Djehutnyakht (Peacock et al. 2011:1302), coinciding with permanent alteration of the facial structure associated with the Opening of the Mouth Procedure (Gupta et al. 2008:712). The physical evidence observed from this individual demonstrates how the Opening of the Mouth Procedure compromises the deceased, rendering them unable to reach the afterlife in accordance with Ancient Egyptian religious teachings as the body was no longer intact.

Canopic jars are immensely overlooked as evidence during research of desiccated remains. Their use lasted between 2700-300BC (Eppenberger et al. 2018). The Canopic Jar Project was created to analyse the internal contents of these jars, focusing on four jars dating to the Late Period c.664-332BC (Eppenberger et al. 2018). These canopic jars were analysed using MRI, CT scans, and Xrays (Eppenberger et al. 2018). Through the means of radiological observation, it is suspected that the entirety of the removed viscera from the deceased were not desiccated within the jars (Eppenberger et al. 2018). These results negate the Ancient Egyptian religious belief that the entirety of each organ was placed into the canopic jars prior to being sealed. As part of the ancient Egyptian funeral cult, the organs removed from the deceased needed to be nearby for the *ka* and *ba* to reunite after death (Janák 2003:197; Walker-Smith 2002:886). Furthermore, it was believed that the vital organs removed could not be left unaccounted for as they could be used to perform curses against the deceased (Walker-Smith 2002:886). This evidence is in direct violation of the necessary requirements for the deceased to meet in order to access the afterlife.

Experimental Archaeology

The skin of the mummified individuals tend to have a dark appearance, almost black, in colour. The assumption has been that bitumen, a naturally occurring pitch, was responsible for this change in colour (Nissenbaum and Buckley 2013:564-565; Harrell and Lewan 2002:285; Dutoit et al. 2020:15445). Bitumen was not used during the mummification process until the New Kingdom (Clark et al. 2016; Dutoit et al. 2020:15445). In order to comprehend the change of skin colour in embalmed bodies, an embalming experiment was conducted using the leg of a cadaver (Papageorgopoulou et al. 2015:975). The leg was covered with, and placed in, artificially mixed natron, creating a modern rendition of the methods used for mummification during the

New Kingdom Period (Papageorgopoulou et al. 2015:980). Reaching the 40 day mark, the specimen had yet to achieve a complete state of desiccation. With the knowledge of the desiccation process sometimes passing the 40 day mark, it was left for an extra 168 days; it did not achieve complete desiccation during the study (Papageorgopoulou et al. 2015:980).

Throughout the period of 208 days, the specimen changed in both colour and shape in various places. Colours observed varied between a dark green, yellowish, and predominantly brown in areas most desiccated (Papageorgopoulou et al. 2015:977). This case of experimental archaeology demonstrated that bitumen was not the sole determining factor in the change of colour of skin in the deceased who had been mummified. Additionally, it demonstrated the shrinkage of the human body and the intentional drying out of skin, resulting in a specimen not visually similar to that in the beginning.

A computer simulation of natural desiccation was conducted to observe the various states of dehydration of flesh (Frerichs et al. 2019:3). With the appropriate data and algorithms entered into a program, the simulation provided a visual representation of natural desiccation. According to the simulation, the skin darkened and took on a blackish-brown colour (Frerichs et al. 2019:19). Parts of the digitally dehydrated body that had a significant amount of blood at the beginning of the experiment had a darker pigment towards the end in comparison to the parts that did not (Frerichs et al. 2019:19). The physical texture of the skin appeared to be similar to dried leather (Frerichs et al. 2019:19), which is similar to the results from the experiment above. This experiment demonstrated that neither embalming nor bitumen is a necessary additive for the skin of a desiccated person to darken in colour (Figure 3).

Discussion

The many steps of embalming the deceased in ancient Egypt is overall redundant and meaningless in preparation of the body for the afterlife. While these stages are meant to allow a person the chance at immortality in the underworld, the acts of preparation desecrates the physical bodies rendering them incapable of doing so. Those who were deceased needed to resemble those of the living as much as possible to gain access to the afterlife (Gupta et al. 2008:712). Needing a resemblance of the living made the preservation of their dead largely in focus for the ancient Egyptians (Baines and Lacovara 2002:11). Desiccation may be considered a type of preservation but the end result is a perverted version of the deceased, as their bodies do not remotely resemble that of the living and breathing. The Opening of the Mouth Procedure is an example of how aspects of the embalming rituals add further insult to injury to the already manipulated body. The ritual depends on destruction of the facial bones of the deceased, rendering them incapable of entering the underworld. The Book of the Dead states that if the mummified was not perfect nor pure, access to the afterlife would not be granted (Janák 2003:197). Preserving only partials of the viscera, in the canopic jars, disobeys the rule that the body must be complete and attached in order to reach the afterlife, according to ancient Egyptian beliefs (Walker-Smith 2002:886). The experimental archaeologies demonstrate that whether or not the deceased were embalmed the end results of the physical bodies were identical, rendering the lengthy process of embalming futile. This suggests that the mummified ancient Egyptians never made it to the afterlife due to oversights of the living.

Conclusion

Archaeologists, researchers, and historians have taken the time to decipher pyramid texts, coffin texts, and interpret archaeological finds. Due to their diligence, it is understood why the Ancient Egyptians took to embalming and purposefully mummifying their dead. Initially, the

biological evidence supporting how and why mummification was conducted, was limited. The advancement of science and technology has been the two keys that unlocked the door to a better understanding of the biological aspects of Ancient Egyptian mummification. Overall, embalming and purposeful mummification were superficial concepts performed to give the living hope of entering the afterlife upon death. After an in-depth analysis of the stages and how the body of the deceased was manipulated, it is self-evident that any person who underwent the stages of embalming in Ancient Egypt would not gain access to the underworld in accordance with their religion. In hindsight, the regulations and expectations the deceased needed to meet were virtually impossible to achieve. The evidence presented above demonstrates the power religion had over the people of ancient Egypt, as they did not perceive the irony behind their ritualistic preparations for the afterlife that they would never see.

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Figures

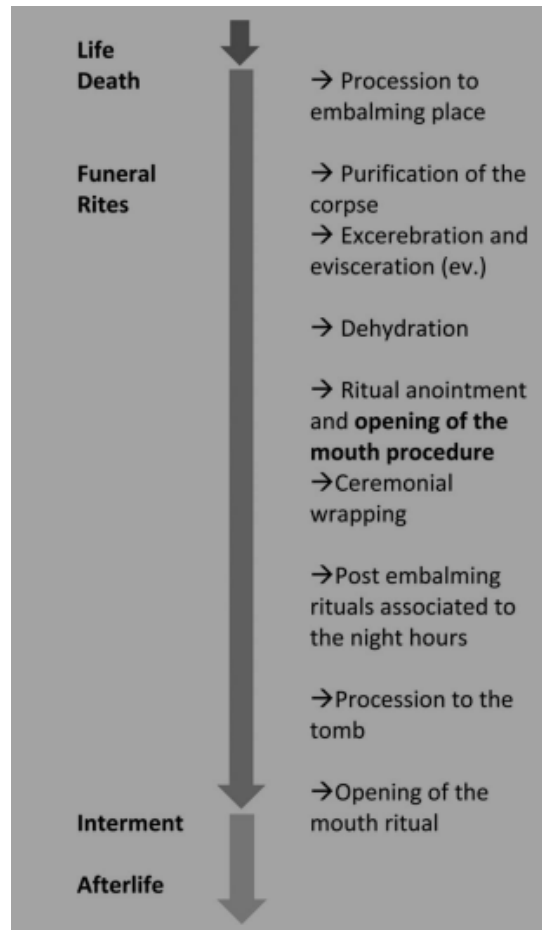


Figure 1. Diagram of Funeral Rites (Abdel-Maksoud and El-Amin 2011:133)

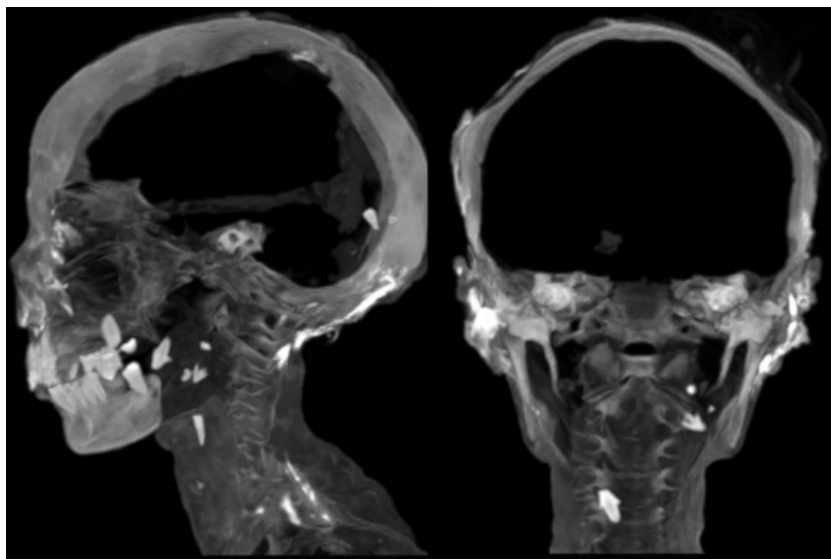


Figure 2. Female Mummy with Broken and Moved Teeth (Seiler and Rühli 2015:1214)



Figure 3. Simulation of Natural Desiccation: Arm (Frerichs et al. 2019:18)