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PERCEPTIONS OF ANCIENT EGYPT THROUGH HISTORY, ACQUISITION, USE,
DISPLAY, IMAGERY, AND SCIENCE OF MUMMIES

ANNA SHAMORY
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Reviewed and approved* by the following:

Claire Milner
Associate Research Professor of Anthropology
Thesis Supervisor

Douglas Bird
Associate Professor of Anthropology
Honors Adviser

* Electronic approvals are on file in the Schreyer Honors College.

ABSTRACT

To the general public, ancient Egypt is the land of pharaohs, pyramids, and most importantly – mummies. In ancient times, mummies were created for a religious purpose. The ancient Egyptians believed that their bodies needed to be preserved after physical death, so they could continue into the afterlife. In the centuries after ancient Egypt fell to Roman control, knowledge about ancient Egyptian religion, language, and culture dwindled. When Egypt and its mummies were rediscovered during the Middle Ages, Europeans had little understanding of this ancient culture beyond Classical and Biblical sources. Their lack of understanding led to the use of mummies for purposes beyond their original religious context. After Champollion deciphered hieroglyphics in the 19th century, the world slowly began to learn about Egypt through ancient Egyptian writings in tombs, monuments, and artifacts. Fascination with mummies has led them to be one of the main sources through which people conceptualize ancient Egypt. Through popular media, the public has come to have certain inferences about ancient Egypt that differ from their original meaning in Pharaonic times. Children often think mummies are evil, reanimated corpses that have come back to curse us, and adults often assume ancient Egypt was just a culture centered around mummies and death. Museums play a role in either confirming or counteracting common stereotypes about mummies and ancient Egypt. Outside of display, the science of mummies can allow us to learn about health, disease, and culture of ancient Egyptian society, through various technologies and analyses. This thesis purposes to explore what role mummies played in how ancient Egypt and mummification have been understood in the past, and are perceived today through acquisition, use, museums, popular imagery, and modern scientific analyses.

TABLE OF CONTENTS

LIST OF FIGURES	iv
ACKNOWLEDGEMENTS	v
Chapter 1 Introduction	1
Chapter 2 History and Meanings of Egyptian Mummies in Ancient Times.....	4
The Origin of Mummification.....	4
Ancient Egyptian Religion.....	6
Origin of the Word “Mummy”.....	8
Ancient Sources on Mummification	9
Timeline of Ancient Egyptian Civilization in Relation to Mummies	12
Chapter 3 Discoveries and Acquisition of Mummies in Europe	23
Budding Fascination in the Medieval and Renaissance Periods	24
The Napoleon Era and its Impact.....	25
“The Rape of Egypt” in the 19th Century	27
British Occupation of Egypt (1882-1956).....	31
Tutmania and Other Significant Discoveries of Mummies.....	31
Chapter 4 Non-Religious Use of Mummies.....	34
Mummies as the Medicine “Mumia”	35
Mummy Unrolling Parties.....	39
Other Destructive Uses	41
Chapter 5 Museum Acquisition and Display	45
Mummy Acquisitions in Europe	46
Mummy Acquisitions in the United States	49
Meanings Behind Mummies on Display.....	52
Preconceived Notions in Museum Visitors.....	54
King Tut: The First Blockbuster	57
My Experiences as a Museum Visitor	60
Unique Directions that Museums Can Take with Mummies	63
Chapter 6 Popular Imagery	67
Poetry and Plays.....	68
Books	70
Films and TV	73
Newspapers	75
Food, Songs, and Other Imagery.....	77

Chapter 7 Modern Mummy Science	81
Early 20 th Century Mummy Science	82
Less Invasive Procedures: X-rays, CAT Scans, and Endoscopy	84
Paleopathology: Ancient Diseases in Mummies	87
Experimental Archaeology and Reconstruction.....	89
DNA Analysis	92
The Future of Mummy Science.....	95
Chapter 8 Conclusion.....	98
Bibliography	102

LIST OF FIGURES

Figure 1: Pedigree Chart Showing King Tut's Family (Hawass et al., 461)95

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Chapter 1

Introduction

What does the word “mummy” bring to mind? Common answers to that question would emphasize ancient preserved bodies, linen wrappings, curses, reanimated corpses, pharaohs, and death. And what culture is most associated with mummies? Even though others mummified their dead, ancient Egypt would arguably be the most recognized culture that practiced mummification. When one thinks of ancient Egypt, the first things that come to mind are mummies, pyramids, and pharaohs. But why is it that the public sees ancient Egypt through a lens that focuses on the aspect of mummification and mummies? The practice of mummification was only one part of this culture. Ancient Egypt was a fascinating civilization that had a complex history, changing language, significant interactions with its neighbors, and technological innovations. Its multifaceted civilization lasted longer than both ancient Greece and Rome combined, but there is more interest in Egyptian mummies than Egyptian literature, art, or technologies. Ancient Egypt’s contemporary, Greece, is known for its philosophy, writing, and government, not its tombs or cemeteries. Yet there is a modern fixation on death and the ancient Egyptians.

Mummies are often seen as something mystical, and mummification as an archaic ritual that is long dead. But if we think from an outsider’s perspective about mortuary practices, the ancient Egyptian style of mummification may not seem so strange. Our own traditions and beliefs can seem equally as odd when taken out of context. For instance, Western funeral processes often involve short-term preservation for bodies that will be buried. A grieving family

pays a lot of money for morticians to wash, dress up, and make the body presentable for an open-casket ceremony. They also use preservatives on the body to temporarily slow down the decaying process, so the body does not stink for the viewing and funeral services. Western morticians may not spend upwards of 90 days to completely preserve the deceased like the ancient Egyptians did, but there are some commonalities in the two practices. It is easy to view ancient Egyptian culture from an outside viewpoint, and harder to challenge inherent biases about a time and place so far removed from our own.

In order to understand how the public came to have certain inferences about ancient Egypt through mummies, several facets have to be examined. First, the discoveries, interpretations, and use of mummies throughout history must be looked at, in order to understand how the original meanings and history of mummies during ancient Egyptian times changed over the millennia, into the 21st century. Ancient Egyptian mummies played a crucial religious role in ancient times, but mummies were later used for several non-religious uses. Additionally, museum displays and popular imagery shape how we view and interpret ancient Egypt through mummies. Pop culture emphasizes monstrous walking mummies and mummies' curses. Museums may perpetuate or counteract inaccurate representations of ancient Egyptian mummies and popular emphasis on death. Even more, mummies do not only contribute to our knowledge about religion and cult practices, they are vital in learning about ancient Egyptian science, culture, and art. Ancient Egyptian mummies themselves can do more than sit pretty in display cases or help sell souvenirs; scientific innovations allow us to learn about non-religious aspects of ancient Egyptian culture. Mummies can tell us about ancient diseases, health problems, and family relationships. The future of mummies lies in scientific innovations and analyses that will garner more information about ancient Egypt than imagined.

The next six chapters will follow the changing perceptions of ancient Egypt through mummies. It is important to understand how and why discourse about ancient Egypt is saturated with mummification and mummies. Partly, this is due to the nature of what artifacts have survived and been excavated, which happens to overwhelmingly be funerary objects, monuments, and mummies. It can be easy to assume that since most artifacts are related to death, that the ancient Egyptians must have been obsessed with death, the afterlife, and the like. But that logical fallacy belies the complexity of human culture. Ancient Egypt deserves to be known for more than its mummies. But in order to shift public awareness, we must comprehend how mummies have affected and continue to affect perceptions of ancient Egypt.

Chapter 2

History and Meanings of Egyptian Mummies in Ancient Times

The Origin of Mummification

In ancient Egypt, the practice of mummification began around 2600 BCE and lasted for about 3000 years before Christian ideals took over the Mediterranean world, and the pagan ritual of preserving the physical body for the afterlife faded into history. Before mummies can be discussed in their ancient context, mummification must be defined. Mummification is the process that creates “naturally or artificially preserved bodies, in which desiccation (drying, dehydration) of the tissues has prevented putrefaction” (Redford 2005, “Mummification”). Not all mummies are preserved for the same purpose. For example, Chinchorro mummies from the Andes region of South America were the first intentionally mummified human remains and were used for ancestor worship. In ancient Egypt, the purpose was to prevent decomposition, and thus preserve the body’s identity for the afterlife.

Additionally, there are two different types of mummification: natural and artificial. Natural mummification came before intentional mummification. In areas with climatic conditions that are extremely, cold, dry, or anaerobic, the decomposition process works slower. It can lead to naturally preserved mummies, such as the older mummies found in Egypt, Oetzi the Iceman from the Alps, or the Tollund Man who was discovered in a peat bog in Europe. Natural mummification inspired diverse cultures to develop intentional, artificial mummification processes.

The specific cultural conditions found in ancient Egypt influenced the transition from natural to artificial mummification. The intentional mummification process likely first emerged as an intensification of pre-existing environmental conditions that were favorable to natural mummification. Bodies that were buried at the edge of the desert in the arid landscape of Egypt were naturally mummified. In these shallow pit graves, bodies were dried out by the sun and sand before decomposition could begin (Redford 2005, "Mummification"). Animals or people may have accidentally or intentionally dug up these bodies, allowing people to see the lack of decomposition and natural preservation (Smith & Dawson, 23). This may have then inspired the ancient Egyptians to intentionally bury their bodies in similar dry conditions. Thus, over time, more advanced processes emerged, using chemicals and other materials (Redford 2005, "Mummification"). The earliest ancient Egyptians were all buried in equal circumstances, but as wealth and status discrepancies in a growing social hierarchy divided them, not all Egyptians could afford the mummification process. Most of the ancient Egyptian population was buried in pit graves throughout the history of mummification (Redford 2005, "Mummification"). Even when mummification became popular for the non-elites, the poorest could not even afford the basic, cheaper forms of artificial mummification. Overall, the mummification process changed throughout ancient Egypt's long history, where the techniques and materials were more complex and effective in different time periods.

Also, the ancient Egyptians mummified things other than human corpses. They created animal mummies and "victual" (food) mummies. Popular animals to mummify were those connected to the animal aspects of important gods or goddesses, such as cats, bulls, or crocodiles. Some people also mummified their beloved pets. Victual mummies acted as food offerings for the dead to consume in the afterlife. Meat offerings were preserved this way in

Theban burials from the late Second Intermediate period through the New Kingdom period. The process followed the same basic steps to human mummification – they were dried with natron, coated in resins, wrapped in linen, and placed in their own small coffins. The tomb of Amenemhat Q, Yuya, and Thuya contained food mummies (Ikram, 119-120). Those who could afford to pay for the mummification of entities beyond their own corpse, could choose to mummify animals or food items.

Ancient Egyptian Religion

The transition to artificial mummification was due to a combination of environmental conditions and religious beliefs. Like the famous question of “what came first, the chicken or the egg?,” it is not known if myths related to mummification came before or after the transition to artificial mummification. Today, archeologists have a vast amount of knowledge about the ritual and religion of ancient Egypt, thanks to the abundance of elite mortuary palaces and tombs with inscriptions and grave goods that provide detail on beliefs about the afterlife. Thus, the literature about ancient Egyptian myths and religion is vast, compared to books and information about the embalming process. With fewer primary sources on mummification, more analyses and inferences must be deduced from what little is available. Nevertheless, a basic understanding of ancient Egyptian religion, especially in how it relates to mummies and the afterlife, is crucial to understanding how the Egyptians viewed mummies and mummification during their own time.

Within the hierarchy of Egyptian gods and goddesses, Osiris, Isis, Horus, and Seth are the main characters in myths about the afterlife. At the time when humans inhabited the world, Osiris brought agriculture and civilization to Egypt. His brother, Seth, was jealous of his power

and success, so he murdered Osiris, cut him into pieces, and scattered them. Isis, Osiris' sister-wife, searched and found every piece except for his phallus. Then, Isis enlisted Anubis, the jackal-headed god of embalming, to help put Osiris back together. Horus, the son of Osiris and Isis, later challenged Seth to avenge Osiris' murder in a tale called "The Contendings of Horus and Seth." The tribunal of gods ruled in Osiris' favor and made him ruler of the underworld, giving him eternal life. Osiris became the god of the underworld and fertility. In iconography, he is depicted as a linen-wrapped, partially-mummified male with green skin. He frequently appears in artistic depictions of the afterlife in tomb reliefs throughout Egypt. In the afterlife, Osiris was the ruler, and Anubis was the overseer of the embalming ritual, guardian of the dead, and transporter of souls.

For the ancient Egyptians, preparations for the afterlife were crucial. Many Pharaohs spent their whole reigns conscripting builders to create their grand mortuary monuments. In order to be able to complete the journey through the underworld and reach the afterlife, the body must be reunited with the two parts of its 'soul': the *ka* (life force) and *ba* (personality). For that to happen, the body must be recognizable to them, and therefore there is a need for preservation through mummification. Other elements are needed to succeed in the journey, but a primary concern is to have the corpse preserved as close as possible to the living body. Provided that the soul can reunite with its identifiable body, one can begin their journey to the afterlife, which was just a continuation of daily life from the earthly plane. A person must pass the weighing of the heart ceremony, where their heart must be lighter than the feather of Maat (goddess of order and truth). If the person was evil during their earthly life, it would weigh more than the feather, and the Ammit monster would eat their heart. As the heart was thought to do the functions that we today understand our brain does, like controlling personality, this was a horrifying possibility.

Thankfully, artifacts like amulets and spells found in tombs and between mummy wrappings could help a person pass the test, and continue on to the path of the afterlife.

Yet despite the great importance to preserving the body, respect for the deceased was not always upheld. Just as there are tomb robbers today, there was significant plundering during antiquity. Archaeologists have found evidence of disturbed tombs, re-mummification processes, and rearrangement of royals in hidden caches. For example, 20th dynasty Pharaohs were damaged by tomb robbers of the same time period, and the mummies were later reinterred by priests in the 21st dynasty (Smith & Dawson, 106, 177-182). And again, in the Greco-Roman period we see a similar occurrence. About 11 mummies from Dakhel Oasis were initially naturally mummified, but then their tomb was robbed in antiquity and the bodies were disarticulated. Later ancient Egyptians tried to reconstruct the mummies to the best of their abilities, but their obvious mistakes are how archaeologists were able to identify this ancient thievery. One body was rearticulated with the head of a young adult female, trunk of an adult, and legs of two different aged children (Aufderheide, 385-7). Mummification was a crucial religious and scientific process, but protection spells could not ward off desperate or greedy tomb robbers.

Origin of the Word “Mummy”

Where does the word “mummy” come from? Surprisingly, the word “mummy” does not originate from ancient Egyptian language. “Mummy” comes from the Persian word “mum” which meant bitumen or pitch, a black material found in the so-called Mummy Mountain of Persia. The medieval Arabic word “mumia” derived from the Persian meaning, and eventually

became “mummy” in late Middle English. This bitumen, an asphalt-like material, was thought to have medicinal properties and was used in cures for various illnesses (Redford 2005, “Mummification”). The connection from *mumia* to the preserved corpses we today call mummies is due to the fact that ancient Egyptian mummies often had a blackened appearance. Their appearance was mistakenly thought to have been from the same bitumen material and therefore have the same medicinal properties. This connection led to mummies being ground into medicine starting in the medieval era. When mummified bodies were found in other continents, they were also called mummies because of their state of preservation, even though their bodies were not associated with bitumen.

Ancient Sources on Mummification

With all of the prolific records the ancient Egyptians wrote about their beliefs on the afterlife and religion in numerous tombs and mortuary artifacts, there is little information from them about the mummification process itself. To date, nothing has been found that was written by the ancient Egyptians themselves that details the technical process which was so vital to surviving life after physical death. The most referenced detail in writing is from two papyri (Papyrus Boulaq 3 in the Cairo Museum and Papyrus 5158 in the Louvre) that mention the ritual of embalming from the Roman period (Redford 2005, “Mummification”). The papyri were written after the height of ancient Egyptian civilization and mummification, and only mention the ritual. Thus, not much can be gleaned from them. Beyond writing, there are some artistic depictions of the process. There are painted and carved tomb scenes at Thebes from Thoy and Amenemope that show only part of the mummification process (Redford 2005,

“Mummification”). While art adds detail to the limited accounts of mummification from ancient Egypt, they are not helpful in the technical sense. No in-depth accounts from the ancient Egyptians themselves have been discovered yet.

Thus, we turn to what we can infer from analyses of the physical mummies and from a few classical accounts. Classical Greece was interested in Egypt as early as the 7th century BCE (Curl, 2). Herodotus, Diodorus Siculus, Porphyry, and Plutarch wrote accounts of the mummification process. The former two were more detailed and referenced highly in the 19th and 20th centuries by Europeans interested in ancient Egyptian mummies (Moshenska, 454). Early writers on the mummification process relied heavily on those Greek accounts, especially Herodotus’ writings.

Herodotus (c. 490-425 BCE), called “the father of history” by Cicero, is famous for writing *Histories*, the first systematic study of the past. There is some controversy about the accuracy of his *Histories*, as he writes about other cultures as an outsider, has a bias from the culture he was raised in, and sometimes writes about events that happened long before his time. As a foreigner in ancient Egypt, he likely got his account about mummification from sources outside of the mummification profession; he would not have been privy to the specialized religious processes. He also reported interesting statements during his writings of the mummification processes, such as that a casket with the mummy inside would be stored “standing up against a wall in a burial chamber” or that once an embalmer was “caught in the act with the fresh corpse of a woman” (Herodotus 2.86). The former statement does not align with lying-down sarcophagi found in burial spaces, and the latter could be true but seems sensationalized. Nevertheless, with the limited sources on mummification, Herodotus’ intact, albeit short, account on the subject from his time of travelling in Egypt has been heavily relied

on. Interestingly, Egyptologist Bob Brier even successfully mummified a modern cadaver based on Herodotus' account, creating a mummy that was similar to the CAT scans of ancient mummies (Bleiberg, 86). Herodotus has inspired further studies on ancient Egyptian mummification.

Herodotus wrote that there were three main levels of mummification based on price, with the most complex being the most expensive. According to Herodotus, after a person died, their family publicly mourned them before taking the corpse to be embalmed. Embalming specialists showed the relatives three "realistically painted wooden models of corpses" that varied in complexity of the embalming process according to price (Herodotus 2.86). The most expensive level included exacerbation, removal of the intestines by an incision with a "sharp Ethiopian stone", washing and stuffing of the body cavity, and then pickling of the body with saltpeter for 70 days before the body was wrapped in linen and gum paste (Herodotus 2.86). The less expensive level involved no incisions, just an injection of cedar resin to dissolve the innards and saltpeter to dissolve the muscles. This cheaper process produced a skin-and-bone mummy. The least expensive process consisted of the 70-day embalming process after washing away the innards with an enema. The mummification process did not only change over time, but, according to Herodotus, varied in three different monetary levels.

Four hundred years later, Diodorus Siculus (c. 60-30 BCE) also wrote about ancient Egyptian mummification. Diodorus claimed there were three persons with distinct jobs in the mummification process: cutter, scribe, and embalmer. The embalmer was dressed as Anubis and performed a very specialized professional job. Additionally, he reinforced the idea that there were three levels of mummification based on cost, that was first stated by Herodotus (Smith & Dawson, 18). But Diodorus' writings should be more scrutinized than those of Herodotus, as he

was even further removed from the time that was the height of the mummification process (Smith & Dawson, 63). Diodorus lived at a time where mummification was not at the same level of complexity and effectiveness as the more ancient standards. In fact, at the end of Diodorus Siculus' life, Ancient Egypt fell to Rome not long after the Battle of Actium in 31 BCE. While none of the ancient Greek accounts are perfect, they are an important starting place to understanding the technical process of ancient Egyptian mummification.

Timeline of Ancient Egyptian Civilization in Relation to Mummies

From the prehistoric to Roman periods, there were numerous changes in the mummification process. These changes can be identified through the state of preservation in ancient mummies found over the past couple of centuries by archaeologists and lay-people alike. At times, the viscera were packed inside of the abdominal cavity, sometimes placed in canopic jars, or otherwise completely missing from the body and funerary goods. Mummification was truly not a uniform process over the centuries, nor was it equally used by all ancient Egyptians. It varied by status and wealth, so royals and elites were more likely to be artificially mummified and commoners more likely to be naturally mummified. The following timeline will highlight important mummy-related finds and mummification techniques from specific periods or dynasties. It will also provide a basic historical context of what was happening in ancient Egypt during each period.

* To note: All dates are approximate. Different dates and timelines are used by different scholars. *

Prehistoric Egypt (before ~3150 BCE)

In the time before written history, the land of Egypt was divided into Upper Egypt (roughly south of modern Cairo) and Lower Egypt (roughly north of modern Cairo). The people who inhabited this land lived in small settlements. Prior to around 3400 BCE, people in the land of Egypt were buried in pit graves, with no differences in treatment that would suggest a complex social hierarchy of status or wealth (Redford 2005, “Mummification”). Increasing social stratification led to advances in religious beliefs that aligned with experimentation in artificial mummification, before Egypt unified and became a state, leading to increased economy, social hierarchy, and building advances for mortuary reasons.

Dynastic Egypt (Dynasties 1-2; ~3150-2700 BCE)

During this early period, a man named Narmer (the last king of the Naqada III period of Prehistoric Egypt) united the two kingdoms of Egypt into one unified state and became the first Pharaoh. Also, during this time, the first funerary buildings for elites were constructed in the rectangular shape of a mastaba, the model for the later step pyramid. As for mummification, there is archaeological evidence of mummification experiments by the second dynasty. Archaeologist J. E. Auilbell found a body from this dynasty in a Saqqara cemetery that had corroded linen with it. This indicated a potential attempt at using natron or another chemical as a preservative in mummification (Redford 2005, “Mummification”). The chemical processes of mummification did not always result in a well-preserved mummy, especially during the initial trials to intentionally create artificial mummies.

Old Kingdom (Dynasties 3-6; ~2700-2200 BCE)

This period is considered the “Age of the Pyramids,” named for the numerous triangular pyramids built as mortuary temples for royals. In the third dynasty, the vizier Imhotep designed the first pyramid in Egypt for the Pharaoh Djoser. The building was a step pyramid, which looked like increasingly smaller mastabas built on top of one another. After his innovation, numerous smooth pyramids like we know best were built – the Great Pyramid of Giza (for Khufu), Khafre’s pyramid, and various smaller pyramids.

Mummification during the Old Kingdom was still being perfected, with some mummies better preserved than others. The first evidence of a completely successful mummification was from the fourth dynasty. The mother of Khufu, Queen Hetepheres, had her viscera treated with natron and packed in a chest, but her body was not found with it. Even though her body was not found in the tomb at Giza along with her organs, the treatment of her internal organs shows that disembowelment and dehydration of the body, two important stages of mummification, were occurring during her time (Redford 2005, “Mummification”).

Attempts at preservation were not always successful though. In 1891, Flinders Petrie found a body at Meidum that was from the fifth dynasty. There was an attempt to preserve the tissues and re-create the form with linen strips, but only a skeleton remained under the wrappings (Redford 2005, “Mummification”). Whatever mummification products were used, failed, as the body had decomposed. Other fifth dynasty mummies show problems with preserving some of the fleshier parts of the body, as some of them had fake phalluses made out of cloth under the linen wrappings (Smith & Dawson, 77). Also, the first canopic jars were found during this period (Smith & Dawson, 144). Mummification techniques were still being perfected, and new techniques, like removal of organs into canopic jars, were experimented with.

First Intermediate Period (Dynasties 7- early 11; ~2200-2060 BCE)

While the kingdoms of Egypt are known for their stability, this period was one of three intermediate periods characterizing eras of instability and control of Egypt by outside forces. The First Intermediate period is characterized by a decrease in central authority and an increase in the power of local governors controlling their people. The lack of a central government meant there were a smaller number of grand building projects that would leave behind writings to tell us about their history. Therefore, there was a lack of records during this time and fewer grand tombs of the elites. The mummies of non-elites were even less likely to be preserved or survive long enough for modern-day archaeologists to find their mummies.

Also, this period was likely a time of pyramid and tomb looting, as evidenced in a lamentation text from the 12th dynasty. The text was found in the Middle Kingdom, but references the turbulent times during this intermediate period. In the tale of “Man Who Was Weary of Life,” a man wants his ba to lead him to an early death, for he is tired of living. His ba tells him to focus on and enjoy the happy parts of life, for the afterlife has both happiness and pain, just like life. The man would not escape pain by dying. In the man’s response to his ba, he talks about living in a society where tomb robbing is common and his neighbors are cruel (Redford 2005, “Man Who Was Weary of Life”). It appears that in as early as the First Intermediate Period, there was a problem with ancient tomb robbing. The desecration of tombs is not solely a modern innovation; it was problematic for the ancient Egyptians in their time, too.

Middle Kingdom (Dynasties late 11-14; ~2060-1700 BCE)

The Middle Kingdom was an era of warfare and campaigns, as well as a Classical Age of ancient Egyptian art and literature. One major addition to the mummification process was the removal of the brain, found in some mummies of the time (Redford 2005, “Mummification”). Mummification also became more available to the masses, with the political and economic growth of the middle class and the increasing emphasis on religion in all classes (Redford 2005, “Mummification”). Partially due to the adoption of the practice by an increasing number of people, there have been more mummies found from the Middle Kingdom than the Old Kingdom, but they tend to be of lesser quality. For instance, the mummies of princesses from the 11th dynasty, found at a Deir el-Bahari temple, have different levels of embalming (Smith & Dawson, 78-9). Interestingly, some of those princesses had tattoos, showing that the Egyptians had that technology during this time. The increased demand for mummification led to a disparity in the complexity of the process – richer elites could afford more elaborate preservation than other people.

Second Intermediate Period (Dynasties 15-17; ~1674-1549 BCE)

After a period of renaissance and cultural achievements in the Middle Kingdom, the powers of its last dynasty kings diminished and allowed an opening for foreign powers to take over. The Hyksos ruled the North, the Egyptians ruled in the middle near Thebes, and the Nubians ruled in the south, splitting control of ancient Egyptian civilization. Similar to the First Intermediate period, this was a time of disunity that yielded fewer records. Consequently, little new knowledge about mummification comes from this time.

New Kingdom (Dynasties 18-20; ~1549-1077 BCE)

The Egyptians came back into control of the region at the start of the New Kingdom. Many well-known figures were in power during this period: Hatshepsut, Akhenaten, Nefertiti, and Tutankhamun from the 18th dynasty; Ramesses II (the Great) in the 19th dynasty; and multiple other Ramesses during the 20th dynasty. Hatshepsut, a woman, ruled as Pharaoh and was depicted in stereotypically male Pharaonic iconography. Akhenaten and Nefertiti tried to convert Egypt to monotheism and corresponded with other rulers of the time during the Amarna Period. Ramesses the Great was arguably the most prolific military conqueror and created an Egyptian empire. Ramesses III defeated the Sea Peoples when they tried to invade Egypt. These great Pharaohs accomplished many things that were depicted in mortuary monuments and other documents. The bodies of most of the rulers from these three dynasties were found in excavations during the 1890s (Smith & Dawson, 87). Pharaohs of the 18th to 20th dynasties had their forearms crossed over their chests (Day, 98). The positioning of the limbs in this manner is unique to the New Kingdom only, even if typical mummy representations tend to use this for Pharaohs of other eras.

As for mummification, new techniques were invented and it became more widespread during the New Kingdom. The exceration (brain removal) process was widespread in this era (Redford 2005, "Mummification"). In the 18th dynasty, the body contour technique was first found in the mummy of Amenhotep III, and became more popular by the 21st dynasty (Redford 2005, "Mummification"). Less elaborate forms of mummification may have even become in demand for the lower classes, too. The mummy of a low-status teenage weaver, named Nakht, lived in the time of Ramesses III. His body was prepared with linen wrappings, but there was no evisceration, exceration, or resin coating applied. He was buried in a wooden coffin, but his

body was not actually embalmed (David & Archbold, 119-122). The process was very minimal and cheap, barely artificially mummified, but there was an attempt at copying what the elites did with their elaborate mummification. Nakht's mummification style is thought to be typical of the lower classes.

By the end of this period, financial problems led to plundering of royal tombs by ancient Egyptians, around 1100 BCE. Like with the First Intermediate period, this became a problem with the instability in the late New Kingdom that led to the next era, the Third Intermediate period. Pillaging of Theban tombs led priests to secretly relocate many buried royal mummies in hidden and nondescript tombs (Wilson, 84). Some of the plundered bodies were rewrapped in this process. Thanks to these priests, many New Kingdom mummies survived, but not all are in the best condition or can be easily identified.

Third Intermediate Period (Dynasties 21-25; ~1069-653 BCE)

This intermediate period was the third time when Egypt was not unified under one central power of their own hegemony. Egypt was divided by a civil war during the 23rd dynasty and then came under control of foreign powers for the last two dynasties of the period. Those foreign rulers were the Nubians and then later the Persians.

A temporary addition to the mummification process, from the 21st to 23rd dynasties, was the subcutaneous packing of the body cavities with materials such as linen, sawdust, and mud, to give the body a life-like shape that was not flat. Also, artificial eyes (white with black pupils), which would have been expensive and time-consuming, were put in mummies' eye sockets (Redford 2005, "Mummification"). A 22nd dynasty embalmer's workshop was found at Deir el-

Bahari sometime before 1924, further evidencing materials for this packing process. Excavators wrote a small note about how pots contained nitre, other salts, and chopped straw, and that they found a painted coffin of high-status priest Namenkhetamun that contained no mummy, but several hundred small bags of nitre inside of it (Smith & Dawson, 21-22). Sadly, this amazing find of an embalmer's workshop, that could have yielded significant information about the mummification process, was overlooked in these early years of less systematic archaeology. The excavator was more focused on the architecture of a large temple, rather than the exploration of a small lay-man's workshop.

Late Period (Dynasties 26-31; ~672-332 BCE)

This period was characterized by Persian occupation and domination of ancient Egypt. There were no significant changes in mummification, but there was a continuation of mummification that was available to commoners. A French excavation (1994-7) of a necropolis near the village of Ain Labaka in the Khagra oasis (southwest of Luxor) found many mummies of commoners. The excavation analyzed 60 of the mummies and found signs of the impact of hard labor on bones, showing they were lower status workers (David & Archbold, 2014). This was an extraordinary find, given that most mummies found are royals, due to their higher likelihood of (higher quality) mummification, the desire to find royals, and better burial conditions.

Ptolemaic/Hellenistic Period (Ptolemaic Dynasty; 332-30 BCE)

In 332 BCE, Alexander the Great conquered Egypt, which had been under Persian dynastic rule for centuries. The Egyptians welcomed him, and he founded the city of Alexandria on the Mediterranean Coast. General Ptolemy became the ruler of Egypt after the succession crisis following Alexander's sudden death in 323 BCE. The general started the Ptolemaic Dynasty in Egypt, bringing Greek culture to the kingship. The last pharaoh of this period was Cleopatra VII, known as the last Egyptian ruler. Her apparent suicide ended Egyptian control by the Pharaohs, placing the region under Roman control.

During this time, there was a decline in the availability of mummification to the lower classes and its quality in general. An increased number of people in the poorer classes used shallow desert graves that resulted in natural mummification, as opposed to instances of their artificial mummification in earlier periods (Redford 2005, "Mummification"). Even for the higher classes, mummification standards decreased. Mummies from this time were found to be elaborately covered but suffered worse preservation under their wrappings (Redford 2005, "Mummification"). Perhaps the religious need for mummification was declining during this time or the art of embalming was dwindling down as a profession.

Roman Period (30 BCE-400 CE)

During this time, there was a transition in power for the ancient Egyptians and changes in some mortuary rituals. Portrait masks started to gain popularity in the Hellenistic period, and continued during this time. The portrait of the deceased was painted onto a wooden board and placed inside the coffin along with the mummy. The portraits were distinctively not in traditional

Egyptian style; they resembled true life depictions of people's faces (David & Archbold, 15). In fact, facial reconstructions from mummies may accurately reflect the burial portraits. The Manchester mummy team reconstructed the faces of five mummies that had burial portraits. The 3-D renders were produced blindly, then compared to the portraits (Wilkinson, 172-3). Three out of the five facial reconstructions matched the portraits, showing that some of the portraits were created in the individuals' lifetimes, but others were idealized images (Wilkinson, 173). Unlike the typically Egyptian tomb reliefs, these funerary portraits could accurately portray the true physiques of the dead. Greco-Roman influence seemed to mesh with the idea that the soul needed to recognize the body to journey to the afterlife, so having a portrait of the person included next to the mummy was considered a helpful identifier.

Eventually, ancient Egyptian religion and mummification practices declined with the conversion of Constantine to Christianity in 319 CE and the ensuing rise of Christianity. The final clincher came in 391 CE when Theodosius I decreed that all remaining Egyptian temples had to close. The last hieroglyphic inscription was carved onto a wall by a priest of Isis, thus ending the ancient Egyptian old writing style (Brier, 32). Mummification was deemed pagan and forbidden, and its processes faded into obscurity.

Overall Trends in Mummification through Egyptian History

The process of mummification throughout ancient Egyptian history is characterized by a religious significance and variability in practice. According to ancient Egyptian religious belief, the body needed to be preserved so that the spirit, called the ba, of the deceased could find the body. If the body was decomposed and unrecognizable, one could not travel to the afterlife. The

creation of mummies was significant to the ancient Egyptians. Mummification, whether natural or artificial, complex or simple, was a necessary process. During a period of about three thousand years, mummification techniques and practices varied. Initial experiments were not always effective, but were perfected over time, until the eventual decline of the practice towards the end of ancient Egyptian rule. In most periods, royals and elites were more likely to be artificially mummified than commoners, who often could not afford to pay the priests that conducted artificial mummification processes. From the Middle Kingdom to Late period, mummification was increasingly available to the masses, but often were less complex or of less quality. Despite the variation in mummification based on wealth and status, preservation of the physical body was a necessary process for any ancient Egyptian to continue into the next life.

Chapter 3

Discoveries and Acquisition of Mummies in Europe

In the centuries that followed the decline of ancient Egyptian culture, knowledge about its civilization was lost along with anyone who could read the hieroglyphic languages on its ancient structures. Some medieval royals looked to Egypt for ancient mummies to grind into medicinal potions, destroying them without understanding the history and culture that created the corpses. The revival of interest in Egypt came with an increased fascination in the Classic studies of ancient Greece and Rome during the Renaissance. People of that time were fascinated with Biblical stories, such as the exodus of the Israelites out of Egypt, which painted the Egyptians as a cruel and pagan people (Day, 20). But Europe's obsession with ancient Egypt truly jump-started with the discovery of the Rosetta Stone and amply illustrated reports generated by Napoleon's expedition into Egypt. Once Jean-François Champollion translated the trilingual inscription, it was the first time in over a thousand years that people could again understand ancient Egyptian hieroglyphics. European scholars could learn about the history and culture of this ancient civilization from first-hand accounts of the ancient Egyptians themselves. Additionally, fascination with ancient architecture and death grew during the 19th and 20th centuries, with expositions, mummy unrolling parties, tourism, collecting, museums, and Tutmania.

Budding Fascination in the Medieval and Renaissance Periods

Beginning in the Middle Ages, European encounters with ancient Egyptian mummies came in the form of medieval medicine. In general, medicinal cannibalism, humans consuming human flesh, began to be practiced somewhat in the Middle Ages. All parts of the human body, such as blood, breast milk, and pulverized bone, were used in cures for ailments from common headaches to the plague (Sugg, 1). Not all were supportive of corpse medicine, such as King James I of England, but most people were aware of it. King Charles II of England even experimented himself with making his own corpse medicine (Sugg, 1). Any reverence that Europeans may have had for ancient Egypt and its mummies due to Biblical connections was not enough to fight against vandalism and stealing mummies. In fact, the opposite occurred, ancient Egyptian mummies were considered the “true” mummies to be used in cures, and therefore worth stealing (Sugg, 71). Royals and rich landowners were first interested in corpse medicine, but as it became more popular and easily acquired, the lower classes could afford it as well.

As will be discussed in more depth in chapter four, “mumia” was crucial in how ancient Egyptian mummies were first seen by Europeans after the Classical era. In the mountains of Persia, there was a natural black substance called bitumen, or “mumiya,” which was thought to have medicinal properties. The blackened appearance of some Egyptian mummies, due to chemical processes after the mummification process, led to the connection between the black “mumiya” and the black corpses. Thus, ancient Egyptian mummified bodies came to be called “mummies,” and were also thought to have highly curative powers. By the 16th and 17th centuries, “mumia” was very popular among elites in Europe. For instance, Catherine de Medici sponsored an expedition to Saqqara in 1549 to bring back mummies for medicinal reasons (Moshenska, 454-5). By the 18th century, Europeans had exhausted their easier sources of

mummies from Egypt. Mummies had become popular enough, to elites and commoners, that merchants began to sell counterfeit ancient Egyptian mummies that were actually anything from executed criminals to mummies from other areas of the world (Sugg, 71). Over time, “mumia” lost its popularity but interest in ancient Egyptian mummies continued.

Beyond the acquisition of mummies for medicinal use, the real era of ‘Egyptomania’ in Europe began during the Renaissance with the revival of interest in Classical antiquity. In 1585, Pope Sixtus V wanted to move Caligula’s obelisk (which he had stolen from Egypt) from the old St. Peter’s Basilica to the site of the new basilica (Brier, 32-33). But without much knowledge of the ancient Egyptians, the clergy of the 16th century was wary of this pagan symbol, and an exorcism was performed on the obelisk once it was moved to the new location (Brier, 40). The grandeur of the Egyptian obelisk was appreciated, yet the untranslatable hieroglyphics could yield nothing about an ancient culture. In a similar vein, ancient Egyptian mummies were not fully appreciated until translatable hieroglyphics could provide further context to who the ancient bodies were during their lifetimes. The transition from destroying mummies for medicine to fully appreciating what they tell us about history would take hundreds of years.

The Napoleon Era and its Impact

Before Napoleon’s campaign into Egypt on the cusp of the 19th century, Europeans had visited Egypt and identified sites mentioned by Classical authors. In fact, these few early European travelers, who were interested in ancient societies, had “discovered” all of the larger Upper Egyptian temples along the Nile, except for Abydos and Edifu (Reid, 31). Nonetheless, the Napoleonic expedition was a crucial turning point in the growth of study about ancient

Egypt, and by association, an evolving fascination with ancient Egyptian mummies and mummification among the general, educated public.

From 1798 to 1801, Napoléon Bonaparte led a military campaign through Egypt that sparked rapid, growing interest, both scholarly and popular, in ancient Egypt. Around 160 *savants* – scholars, scientists, artists, and engineers – accompanied the military expedition. They recorded, sketched, and wrote about the ancient wonders they saw, which were compiled into the multivolume *Description de l'Égypte*. Also, Dominique Vivant Denon, an artist and soldier, sketched the wonders of ancient Egypt. He included those sketches in his book *Travels in Lower and Upper Egypt*, published in 1802. The book was quickly translated from its original French into German and English, and became very popular. It helped aid the growing Egyptian tourism sector in the 19th century, as well as the academic discipline of Egyptology (David & Archbold, 42). The French troops returned home to share stories of the pyramids and other wonders that they had encountered in Egypt. And the *savants* who accompanied them published accounts of the wonders for all to read.

Most importantly from this expedition, the Rosetta Stone was discovered in July 1799 near the town of Rosetta. The black basalt tablet contained a trilingual inscription of ancient Greek, hieroglyphics, and Demotic (a cursive form of hieroglyphics). For 23 years, Classical scholars, who already knew ancient Greek, attempted to translate the other two languages which had not been understood for over a thousand years. In 1822, Jean-François Champollion deciphered the hieroglyphics. He figured out that they were not only pictographs, but were a combination of phonetic words, an alphabet, and pictographs. Before the decipherment of hieroglyphics, knowledge of the ancient Egyptians was limited to the Bible and mostly second-hand Greco-Roman accounts, like Herodotus' *Histories*, but these works were written by

outsiders to the true intricacies of this ancient civilization. With this new discovery, Europeans could gain an inside look into Egyptian history.

Napoleon's invasion into Egypt left lasting impacts, mainly the reawakening of Egyptian interest in their ancient culture and the rediscovery of ancient Egypt by Europeans in a fuller sense than was understood beforehand. Already fascinated with Egypt as a land of Biblical history, Western countries began in earnest to compete for artifacts and excavations in Egypt. Interest in archaeology, and specifically Egyptology, developed in the first half of the 19th century. Scientific methods for excavating and analyzing artifacts (including mummies) developed over the course of the century. As will be discussed further in chapter five, museums sponsored excavations, which resulted in the removal of artifacts, monuments, and mummies from Egypt. Westerners also founded the Egyptian Antiquities Service and four museums in Egypt: The Egyptian Museum, The Greco-Roman Museum, The Coptic Museum, and The Museum of Islamic Art (Reid, 1-2). But Western imperialism stifled Egyptology among actual Egyptians until the 1920s (Reid, 10). A rise in Egyptian nationalism brought renewed interest by modern Egyptians into their ancient past. But even today, the languages for Egyptology texts are primarily in English, French, and German. European rediscovery of the ancient wonders of Egypt opened the doors for learning about ancient Egypt, but stilted the involvement of their descendants' involvement.

“The Rape of Egypt” in the 19th Century

Tourists in the first half of the 19th century created a sort of “archaeological gold rush” in Egypt. One historian called this craze for ancient Egyptian artifacts the “Rape of Egypt.” Rich

European tourists ransacked tombs for artifacts and sometimes mummies (David & Archbold, 44). One Englishwoman, Miss Marianne Brocklehurst, wrote in her diary that she paid an Arab dealer to obtain an ancient Egyptian mummy for her (David & Archbold, 44). Many rich European citizens obtained mummies for mummy unrolling parties to entertain the upper crust of society or to perform autopsies for scientific purposes. These events reached the height of popularity in mid-19th century England. Professional businessmen and aristocrats capitalized on the lack of legal protection against artifacts leaving Egypt. In fact, Muhammad Ali, the pasha in control of Egypt from 1805-1849, welcomed foreigners into Egypt. Both casual tourists and antiquities dealers took ancient Egyptian objects from Egypt quite easily, as Ali cared more about international power and relations than antiquities (Fagan, 57). Ancient monuments and artifacts were useful to keep interested parties in Egypt. Eventually, an export ban on antiquities was eventually established by the Egyptians in 1835, but was not well enforced.

Professional plunderers made money selling artifacts and mummies to both private collectors and museums. These professionals did the most damage in how organized and efficient they were at taking treasures from Egypt. For example, Giovanni Belzoni took artifacts of all sizes, even colossal works such as the head of Ramesses II from the Ramesseum in Thebes, out of Egypt (David & Archbold, 45). Henry Salt and Bernardino Drovetti acquired thousands of ancient Egyptian artifacts as self-titled “antiquers.” They became rich by selling these artifacts to European museums in Berlin, Turin, Paris, and London (David & Archbold, 45). Today, many European museums have the so-called “Rape of Egypt” to thank for their abundant collections.

Americans also joined in on this “Egyptomania.” George R. Gliddon, American consul and member of Cairo’s Egyptian Society, popularized ancient Egypt in the United States during the 1840s. Gliddon misrepresented ancient Egypt, especially by putting forth the idea that the

ancient Egyptians were so advanced because they were Caucasian, not Black (Reid, 58). He also criticized the 1835 antiquities decree in Egypt that limited acquisition from ancient Egypt. Museums in the United States, such as the University of Pennsylvania's Penn Museum, sponsored excavations in Egypt during the 19th century, obtaining the bulk of their ancient Egyptian collections. The United States, along with Europe, profited from the razing of Egypt's ancient artifacts.

Fascination with ancient Egypt also affected the academic community. In the mid-19th century, there was a shift from the patronage of wealthy persons, societies, and museums to a focus on Egyptology as an emerging academic discipline (Reid, 95). Instead of seeing Egypt as simply a place to take artifacts from, archaeologists learned from controlled excavations and research. Excavations still had to be sponsored by a person or entity with monetary funds, but the sole focus was not profit (at least for the archaeologists). Sponsors and excavators had their own motives for being involved with archaeology.

With the new science and evolutionary theories of Charles Darwin, religious dogma about creation and the age of the Earth (purportedly six thousand years old) were challenged. To counter, wealthy Christians sponsored Egyptologists' excavations in hopes of obtaining scientific evidence that certain teachings of the Bible were true, like the exodus of Hebrew slaves from Egypt under Ramesses the Great. Egypt was viewed as one of the "Biblical lands" as exemplified in the Egypt Exploration Fund, which was established in 1882 to find evidence of the Old Testament in Egypt (Wilson, 112). These sponsored excavations resulted in the acquisition of ancient Egyptian mummies to European countries and American museums. For instance, Jesse Haworth of Manchester, England was a wealthy Christian who paid for expeditions directed by Flinders Petrie. Petrie became the founder of scientific archaeology through his systematic work

with Egyptian pottery artifacts, which had previously been seen as insignificant. He used pottery as a means to chronologically date sites through seriation (David & Archbold, 49). In particular, Petrie's excavations expanded the Manchester Museum's Egyptian collections. Egyptology as a discipline would eventually separate from Biblical quests, and become the study of ancient Egypt for its own purpose.

Additionally, ancient Egyptian artifacts and mummies became increasingly visible to common folk at Great Expositions and museums. At the 1889 Paris *Exposition Universelle*, the *Rue de Caire* (Cairo Street) showed off Egyptian grandeur in Mamluk and Ottoman styles. The street showcased buildings based on architecture in Cairo, and had Egyptian merchants and donkey-drivers for visitors to ride on ("La Rue du Caire à l'Exposition Universelle de 1889 à Paris"). It promoted orientalism, an exaggerated view of Egypt as an exotic culture, and promoted interest in the country, even if it was not focused on the time period of ancient Egypt. Four years later, a different exposition capitalized on ancient Egyptian themes. The Columbian Exposition at the Chicago World's Fair had an exhibit with a 2000-year-old ancient Egyptian mummy called the Gilded Lady. She was displayed at the fair, then stored away and not exhibited in public until 2017 when the Field Museum included her in a travelling U.S. exhibition called "Mummies: New Secrets from the Tombs" ("Temporary exhibition comes to..."). As a general trend, museums increasingly became a way for anyone to see ancient Egyptian artifacts and mummies during the latter part of the 19th century. Today, museums still display mummies for the public to learn about.

British Occupation of Egypt (1882-1956)

During the latter half of the 19th century into the 20th century, Western influence continued to strengthen in Egypt, along with some limited growth in Egyptian Egyptology. After World War One, Britain gave the Egyptians their independence in 1922, but continued to meddle in politics. The British kept troops on Egyptian soil until 1956. In the 1920s, two very important Egyptian leaders in archaeology, Ahmad Kamal and Ali Bahgat, died. This allowed Westerners to regain control of Egyptian archaeology in the vacuum of power. The Egyptians finally achieved full independence with Nasser's Revolution in 1952, and regained control over their archaeology and museums (Reid, 17). Today, few artifacts permanently leave Egyptian soil – American and European museums rely on the collections they acquired in the unregulated “rape” of Egypt, or on travelling expositions mounted in cooperation with the Egyptian government.

Tutmania and Other Significant Discoveries of Mummies

In 1922, Howard Carter discovered the intact tomb (KV-62) of Pharaoh Tutankhamun, also known as King Tut, in the Valley of the Kings. The telegraph projected the exciting news instantly to a worldwide audience. The discovery gained global notoriety because the tomb was plundered neither by ancient nor contemporary tomb robbers. It contained thousands of artifacts and riches never before seen from an ancient Egyptian tomb. It took three years for archaeologists to catalogue and remove all of the artifacts from the antechamber and burial chamber before Tut's mummy could be unveiled. In November 1925, the exterior stone sarcophagus and three interior coffins (the innermost made of solid gold) were lifted to reveal Tut himself. Sadly, unlike the rest of the findings, Tut's mummy was not in the best condition. In

fact, his mummy was in a worse condition than other royal mummies who were found in less lavish burial circumstances. His mummy was burnt from a combustion reaction due to the superfluous amount of anointments the mummy was soaked in (David & Archbold, 58-9). The color of his mummy closely resembles the bitumen of Persia that attracted apothecaries to use mummies in medicinal cures. Despite his condition, Tut became the first true blockbuster - he was famous for King Tut's Curse and his golden collections. His resulting influence placed the world into a "Tutmania," which will be discussed further in chapter five.

Additionally, other major discoveries of mummies occurred before and after King Tut's whirlwind fame. Before the 1870s, the excavations of royal tombs in the Valley of the Kings only yielded tombs that had been plundered in antiquity (Wilson, 81). In the late 19th century, two Royal Mummy Caches were discovered in 1871 and 1898. The second mummy cache was found in the tomb (KV-35) of Amenhotep II. Most of the identified royal mummies were found in these two collections (Wilson, 81). Lesser known discoveries of non-royal mummies have been found. One such find was in the Valley of the Golden Mummies, at the Bahariya Oasis. According to Egyptologist Zahi Hawass, only about 250 of the estimated 10,000 mummies have been excavated thus far (Brier, Preface xviii). These mummies from the Greco-Roman period are quite interesting, because most of them are covered with gold and all are buried with artifacts. This would suggest that a large number of people could afford the mummification process (which preserved them well) and the inclusion of grave goods, such as gold and other luxurious artifacts. The substantial estimate of ten thousand mummies is unprecedented and could yield a vast amount of new data on mummies, mummification, and the Greco-Roman period of Egypt in general.

To conclude, Western interest in ancient Egypt developed hand-in-hand with a fascination with mummies. Unlike the emphasis on religious significance in ancient Egyptian times, mummies have recently been acquired for medicinal purposes or as fascinating objects of curiosity. Early excavators took mummies from their final resting places, without understanding the cultural meanings of the preserved corpses. “The Rape of Egypt” depleted Egypt of its own rich history and antiquities during the 19th century. As will be discussed in the next chapter, the ancient Egyptian mummies that had been acquired were used for various non-religious purposes in the past several hundred years.

Chapter 4

Non-Religious Use of Mummies

Ancient Egyptian mummies, in their original context, were created for religious reasons. The mummification process preserved the body for the journey to the afterlife, according to ancient Egyptian religion. This religious understanding was lost in the centuries after Egypt fell to the Romans. Unlike in the Intermediate Periods when Egypt regained control from outside forces after some time, Egyptians did not reclaim national authority until modern times.

The discovery and acquisition of ancient Egyptian mummies by Europeans, starting in the Middle Ages, led to a multitudinous array of non-religious uses for mummies. Medicines containing “mumia” contained the ground-up mummies of the ancient Egyptians. Corpse medicine was very popular because many believed it would cure a variety of ailments, from a common headache to the Bubonic Plague. Mummies were also destroyed to be used as fuel, paint, fertilizer, and fishbait. Mummy unrolling parties used mummies for entertainment and sometimes scientific purposes. These unrolling parties were not as entirely destructive as the uses of mummies for medicine and fuel, but they still led to removal of artifacts, wrappings, and more. Lastly, non-religious use of mummies also included miscellaneous means, such as display at businesses, interior decor, and stage props. Today, ancient Egyptian mummies are used at museums and for scientific analyses, which will be discussed in chapters five and seven, respectively.

Mummies as the Medicine “Mumia”

“Mummy [ha]s become merchandise, Mizraim cures wounds, and Pharaoh is sold for Balsams”

- Sir Thomas Browne, 1658 (Smith & Dawson, 5)

Corpse medicine was popular long before ancient Egyptian mummies were utilized as “mumia.” During the Classical era, consuming parts of a dying or dead body was not uncommon in ancient Rome. Drinking the blood of a Roman gladiator directly from the corpse or eating the liver of a gladiator were well-recorded remedies for epilepsy (Sugg, 10). Not all physicians at the time approved of these bloody remedies, but many wrote of the efficacy of corpse medicines (Sugg, 10-11). Blood was a more popular cure than mummies until around the 15th century. Between the 11th and 15th centuries, ancient Egyptian mummies started their rise to popularity as medicine in Europe. Cannibalistic medicines expanded to include not solely fresh corpses, but ancient preserved bodies, as well.

The word “mummy” itself has an interesting entomological connection which evolved over time. “Mummy” derives from the Persian word “mumia.” Before the 11th century, “mumia” was the word for bitumen, a dark substance that was derived from the mineral pitch found in Persia (Sugg, 11). It was used popularly in medicines to cure anything from leprosy to gout. Increasing demand from Europe led doctors to search for other sources of this substance. When preserved bodies of the ancient Egyptians were found, some had darkened resin-coated wrappings that looked like bitumen, or “mumia.” Thus, these bodies came to be called mummies, for their association with “mumia.” The entirety of an ancient Egyptian mummy was ground up in apothecaries to create potions (David & Archbold, 40). The unfortunate resemblance of the blackened resin wrappings to bitumen led to the destruction of innumerable ancient Egyptian mummies. The processes that helped preserve the bodies for thousands of years in the afterlife

became the mummies' undoing. As Thomas Fuller, an English preacher and historian, said around 1650 "such cost and curiosity used for their preservation, accidentally occasioned their speedier destruction" by Europeans who dug them up for medicine (Sugg, 213). The unfortunate resemblance between "mumia" and the preserved bodies of ancient Egyptians instigated this destructive, "scientific" use of mummies for medicine.

As early as the 13th century, people in the Mediterranean region were purchasing Egyptian mummies. For instance, Baghdad physician Abd Allatif purchased one for a "trifle," and surgeon Lanfranc of Milan prescribed a medicine for broken bones that had mummy as one of the ingredients (Sugg, 12). With the scientific knowledge we have today, we know that ground up corpses will not help broken bones heal faster. But hundreds of years ago, people believed in the curative powers of corpse medicine.

By the 15th century, a strong European demand had grown for ancient Egyptian mummies. In 1424, there was a record of merchants involved in systematic trade for mummies to be sold to Europeans. Authorities in Cairo caught merchants taking mummies and tortured the following information out of them. The merchants confessed that they plundered Egyptian tombs for mummies, then boiled them in hot water to collect the oil that rose to the surface. That oil was then sold to Europeans, at the rate of 112 pounds of oil for 25 gold pieces (Sugg, 12). The demand for "mumia" from ancient Egyptian mummies was so great that merchants were willing to risk great punishments from Egyptian authorities, such as the aforementioned torture, to make a hefty profit.

Punishments for mummy smugglers were even believed to come from nature itself. A 1588 religious treatise called *Colloquium of the Seven About Secrets of the Sublime* claimed that ancient Egyptian mummies smuggled out of Egypt were believed "to cause storms at sea, so

[mummies] were thrown overboard to avert shipwrecks” (Day, 45). Natural phenomena, like deadly storms at sea, warranted extraordinary explanations. The mummies were sacrificed as scapegoats to deter supernatural retribution., because the loss of profit from destroying cargo was better than drowning in a shipwreck. Early ideas of magical retribution against tomb robbing would feed into later sentiments about the mummy’s curse.

By the 16th century, ancient Egyptian mummies were a popular medicinal ingredient in Europe, especially in England. King Francis I of France was said to always have some “mumia” with him, which he mixed with ground rhubarb to consume whenever he had an ailment (David & Archbold, 40). Another royal, Catherine de Medici, sponsored her own expedition to Saqqara in 1549 to bring back mummies for medicinal reasons (Moshenska, 454-5). Mummy medicine was easily accessible to those with the resources to obtain it, but was also available to others. At least by the second half of the 16th century, “mumia” was found in apothecaries, thus available to the lower classes when they could afford it. In the 1580s, John Sanderson shipped 600 pounds of mummy to his home in England, for the sole purpose of medicine (Reid, 24). Mummy was even available enough that it was used to treat not just humans, but animals, too. George Turberville’s *The Book of Falconry or Hawking* (1575) referenced mummies more times than any book published in England before 1600 (Sugg, 26-7). It contained writings about how to treat injured hawks with potions that included mummy as an ingredient. During this century, mummy medicine was used by anyone from the royal aristocracy to falconers.

In the 17th century, mummies had become so popular that counterfeit ones were sold to keep up with the rising demand and limited supply. An English play from 1626, *The Fair Maid of the Inn*, included the insult of “counterfeit mummy,” which suggests that this must have been known as a problem by that time (Sugg, 76). For the audience to understand this reference, it is

clear that falsely labeled ancient Egyptian mummies were common. In fact, dealers in Egypt who had been exporting real mummies started selling mummies created from recently executed criminals which were dried to look like ancient ones (David & Archbold, 42). Thus, “men deliberately murdered so that men could be made into corpses” (Sugg, 213). The mummy business was lucrative enough that recently deceased bodies were violated – dried, sold, and crushed to make medicine for the living.

Furthermore, even governments began to capitalize on the trade value of ancient Egyptian mummies. By the mid-17th century, England had an import tax on mummies, which was one shilling per mummy (Sugg, 75). And at the end of the century, the problem of fraudulent mummies was even more directly written about. Pierre Pommet, chief apothecary to Louis XIV, described what an authentic ancient Egyptian mummy was like, so that people would know which mummies were real and should be bought (Sugg, 76-7). Pommet expanded the body of evidence that counterfeit mummies were a grave issue, enough so that he was compelled to describe in detail how to distinguish a true ancient Egyptian mummy from a fake one.

Not all doctors believed that “mumia” was an effective cure for various illnesses. But the majority believed in it, causing a heavy demand for mummies. Any person who had funds for medicine could walk into an apothecary and buy medicine with mummy as one of the ingredients. Mummy was used to treat a wide range of ailments: bone fractures, nausea, coughs, concussions, epilepsy, and more (David & Archbold, 42). “Mumia” was not limited anymore to solely the rich who could afford expeditions to Egypt – trade for mummies was well established by the 17th century.

All the same, the non-religious use of mummies as “mumia” did not last forever, it began to dwindle in the 18th century. This may be due in part to new Enlightenment ideals, new ideas

about science, or changing ideas of disgust in general (Sugg, 265). A transition to medicines that could scientifically prove their effectiveness might have limited mummy medicine as an alternative method to proven cures. Additionally, a change in hygiene ideals may have also changed popular opinion of corpse medicine to be seen as something gross or disgusting. There was some lingering use of “mumia” in the 19th and 20th centuries, but nowhere near the degree of popularity and usage during the previous centuries (Sugg, 265). Modern inventions and understanding of medicine overtook, for the most part, superstitious or unscientific remedies. In the sanitized world of the 21st century, the thought of consuming grinded up old human bodies does not have the same appeal as it did in the past.

Mummy Unrolling Parties

In craze. In the 17th to 19th centuries, Europeans acquired ancient Egyptian mummies for events called mummy unrolling or unwrapping parties. The parties were a Europe-wide phenomenon, but most frequently recorded in Victorian England, where they reached a height of popularity in the mid-19th century. Before that time, there were a small number of mummy unrollings recorded in Europe during the 17th and 18th centuries (Moshenska, 456-7). In 1658, German author Andreas Gryphius wrote about a mummy autopsy he witnessed in a pharmacy in Breslau (modern Wroclaw) (Moshenska, 456-7). In 1718, German apothecary owner Christian Herzog published his findings from unwrapping a mummy, which he then likely ground up afterwards into medicine (David & Archbold, 48). In 1763, John Hadley unrolled a mummy from the British Royal Society at his home with a small audience. In 1825, Augustus Bozzi Granvillid recorded in detail the unwrapping of a mummy, in what is now seen as the first

modern medical autopsy of a mummy (Moshenska, 456-7). Over time, unrollings transitioned from private spaces to public theaters, where the “journey from exotic commodity to scientific object ended... with the shriveled corpse displayed naked upon a table” (Moshenska, 453).

Mummy unrolling parties overlapped in time with the use of mummies in medicine, with the height of unrolling parties coinciding with the decline of “mumia” medicine.

The purpose of mummy unrollings was for scientific reasons, entertainment, or a mix of both. Autopsies were often performed in front of an invited or paying audience for entertainment, while some events were more scientific than others. In the 19th century, unrollings took place in medical and military museums, operating theaters, provincial playhouses, drawing rooms, artists’ studios, pharmacies, and at evening lectures at the Royal Institution in London (Moshenska, 453). The entertainment value for mummy unrolling parties was tied to Egyptomania, the renewed fascination in ancient Egypt. Ancient Egypt was seen as an exotic place full of mummies and lavish artifacts. At mummy unrolling parties, the artifacts and wrappings were sometimes passed around for the audience to touch and smell (Moshenska, 452). For many Europeans, Egypt was an exotic place they would never visit, so mummy unrolling events allowed them to experience something that came from thousands of miles away and thousands of years in the past.

Mummy unrolling parties grew in popularity during the 19th century. Giovanni Belzoni, a plunderer of ancient Egyptian artifacts, helped fuel the fire of mummy unrolling parties. He held one such party as a promotional event for the reveal of a replica of an ancient Egyptian tomb. In 1821, he reconstructed the tomb of Pharaoh Sethos I in London, which had not yet been revealed to the public. Belzoni limited the mummy unrolling party to elite people with personal invitations, using the event to create excitement for the unveiling of his replica (David &

Archbold, 45). He was seemingly the first person to use a mummy unrolling as public entertainment and with theatrical purpose, but he was not the first European to unroll a mummy.

The addition of an entertainment aspect heightened the popularity of mummy unwrapping events, but some of them still retained the scientific aspect from unrollings of the 17th and 18th centuries. The most well-known mummy unroller was Thomas Pettigrew, a highly respected British surgeon and member of the medical community. He attended Belzoni's unrolling party and was hooked on it. In 1833 he acquired two mummies, which he unrolled at a lecture hall in Charing Cross Hospital. The audience included the press and Pettigrew's elite connections. Over that year, he hosted many more unrollings, so much so that he was nicknamed "Mummy Pettigrew" (Moshenska, 463-5). He took detailed notes from his mummy unwrapping events and treated each like a scientific autopsy (Moshenska, 463-5). Pettigrew published a book in 1834, called *History of Egyptian Mummies*, which was the first serious study of ancient Egyptian mummies and the methods of mummification (David & Archbold, 47). Still, Pettigrew did retain a theatrical aspect to it, and his unrollings became very popular. One audience for an unrolling event, which took place at the Royal College of Surgeons in January 1834, was sold out. Contemporary accounts described Pettigrew as a talented showman (David & Archbold, 47). Overall, Pettigrew's prowess as a talented medical examiner and showman helped to further fuel the Victorian mummy craze.

Other Destructive Uses

The most popular uses of mummies for several centuries were for "mumia" and mummy unrolling parties, but ancient Egyptian mummies were also exploited for various other purposes

that resulted in their destruction. For instance, artists ground up mummies to make an umber colored “mummy brown” pigment from around the 16th to 19th centuries (David & Archbold, 42). The use of this pigment declined over time because it was discovered that the resinous finish eventually cracked (Moshenska, 455). Even if the color of “mummy brown” was better than other browns, it failed to stand the test of time, unlike how the mummy itself lasted before being discovered and made into the pigment.

Additionally, mummies were ground up to make fertilizer, paper (from the linen wrappings), and fish bait. For example, a sports magazine from 1686 advised buyers to choose a bait that was double the price of others, but was more effective. The ingredients for the more expensive bait include hemp seed and 2 ounces of mummy (or the “fat of a man” as an alternative). The magazine told the reader to get the mummy at an apothecary (Sugg, 28). This account shows us that during the late 17th century, mummy was easily found at apothecaries, and cheap enough to be used in bait. If mummy was expensive to obtain, it would not likely be advertised for bait, since there were cheaper alternatives like earthworms. In a different writing medium, mummy was also recommended for fish bait. Eight years later, Pierre Pomet wrote in his *Complete History of Drugs* that ancient Egyptian mummies could be used to stop blood from coagulating in internal bleeding, but were best used for catching fish (Sugg, 65). Mummies were not only ingested by humans for medicine, but were swallowed by fish via fishbait.

Another major use of ancient Egyptian mummies was for fuel and burning. In 19th century Egypt, there were so many mummies available for use that peasants used them for firewood (David & Archbold, 42). As a country that is mostly desert, trees are a limited resource that can only grow within a certain radius of the Nile or other water sources. Thus, mummies were used in lieu of firewood. Others in Egypt burned mummies and related artifacts as fuel.

British Egyptologist Gardner Wilkinson allegedly lived in a tomb and burned mummy cases for fuel, during periods of time from 1821 to 1833 (Reid, 42). Even this man, who was interested and educated on ancient Egypt, supposedly destroyed mummy-related artifacts. And in another way, mummies were used as fuel for machines, too. Mark Twain claimed, in his book *The Innocents Abroad*, that “fuel for locomotives composed of mummies 3000 years old” (Twain, 481).

Mummies were also used to make fertilizer and paper. In the late 19th century, mummies were shipped to Germany and Britain, then ground up to be used as fertilizer in gardens (Day, 25). Ironically, the bodies of the ancient Egyptians underwent mummification to stop the decomposition process, the opposite of what their use was as fertilizer for European gardens. Another interesting utilization of mummies found its way across the Atlantic Ocean. In America, modern paper was first manufactured from rag fiber. When there was a rag shortage in the Northeastern United States, companies imported mummy wrappings from Egypt, as this was cheaper than employing domestic rag pickers (Day, 25). The mummy itself was not an ingredient in the paper, but would have been robbed of its protective wrappings. The naked body left behind was then likely used for other purposes discussed above.

We will never truly know how many ancient Egyptian mummies were made into medicine, unrolled, ground into substances like paint and fishbait, or burned as fuel. And how much history that has been lost with the removal and destruction of mummies is unknowable, too. Finding justification for disturbing the graves of ancient people can be easy to find when archaeologists and institutions help preserve mummies and related buildings or artifacts. But it is harder to contend with the destructive history of mummies as “mumia” that did not truly benefit patients, work well as “mummy brown” paint, or truly entertain via mummy unrolling parties.

At what point does the quest for medicine, display, or science go too far?

Misunderstanding ancient Egypt and the total lack of regard for its mummies contributed to the ruin of important historical information that could have been extracted. The history of the non-religious use of ancient Egyptian mummies is less than ideal, but the past cannot be undone. Mummies cannot be un-destroyed – society can only learn and grow from its past mistakes.

Chapter 5

Museum Acquisition and Display

Today, museums are one of the few places that people can legally encounter an ancient Egyptian mummy. As museums grew out from their earlier incarnations, cabinets of curiosities and *studiolos* of the aristocracy, into full-fledged institutions, mummies gradually found their ways into museums, rather than to apothecaries or artists' palettes. Tomb robbers, collectors, and other entities sold or donated mummies to museums around the world. Universities and museums also sponsored their own excavations, which filled their ancient Egyptian collections with mummies and thousands of artifacts. Acquisition of ancient Egyptian mummies came through various means, which were often destructive and unethical, if not illegal.

Beyond how museums acquired their collections, display is another key element to the history and interpretations of ancient Egyptian mummies within the past couple centuries. As will be further detailed in the sixth chapter, museum visitors have preconceived notions about mummies and ancient Egypt from media stereotypes. Visitors bring ideas and opinions with them to exhibits that include ancient Egyptian mummies. Museums can either propagate common stereotypes, or counteract them through both temporary and permanent exhibitions. Temporary or travelling exhibits can bring collections to people in cities that might not have a chance to visit the museums they came from, like the Tut collection from Cairo. Permanent displays of ancient Egypt and mummies can change over time and evolve with new perspectives. All in all, how museums acquire and display mummies is crucial to understanding their impact on perceptions of ancient Egypt.

Mummy Acquisitions in Europe

The acquisition and removal of ancient Egyptian artifacts from Egypt to foreign museums was extremely easy during the 19th century. At the beginning of the century, there were no regulations against removal of Egyptian antiquities, and laws created later were rarely enforced. The so-called “Rape of the Nile,” by Europeans and Americans alike, drained Egypt of its own antiquities. For the first half of the century, Egypt was under control by a Turkish outsider named Muhammad Ali. To him, Egyptian antiquities were a political means to please foreign investors and dignitaries who were interested in collecting artifacts (Fagan, 154). Thus, he did not limit the collecting of artifacts and mummies. European museums, through antiquity dealers or their own excavations, seized this opportunity to ship large monuments, entire tombs, and caches of funerary objects from Egypt. Renan, a French philosopher, wrote that “purveyors to museums... these avid destroyers treated Egypt as their own property” (Fagan, 154). In this time of early archaeology, sponsored expeditions were just as destructive as tomb robbers. One expedition in the 1830s used gunpowder and caused significant damage to the Great Pyramid (Fagan, 179). Acquiring artifacts was a damaging process.

Champollion, decipherer of the Rosetta Stone, wrote to Muhammad Ali decrying the plundering of Egypt. His pleas led the pasha to create the Antiquities Law of 1835, and to establish a national museum in Cairo to house Egyptian antiquities. While this law was not enforceable on the scale needed to hinder plundering, it was a step in the right direction (Fagan, 170). Excavators easily bribed officials to circumvent the law. Ernest Budge, assistant keeper of Egyptian and Assyrian antiquities in the British Museum, collected artifacts from Egypt by “bribery, trickery, and sheer audacity, ... outrageous even by contemporary standards” (Fagan,

198). By the time that archaeology became a more scientific discipline, the damage had already been done and the historical contexts of stolen objects were forgotten.

Collectors and excavators like Budge believed the plundering of Egypt was for its own good. Before Egypt created the Boulaq Museum (now the Egyptian Museum), collectors and museums in the 19th century justified the removal of artifacts out of Egypt. They argued that it was better to allow dealers and scholars to take antiquities from Egypt, than to leave them there where they would be plundered and destroyed by the local people (Fagan, 180-1). Since Egypt did not yet have its own museum to house Egyptian antiquities, Europeans thought it was okay for outsiders to take artifacts to their own museums, for “safety” reasons, of course. Ironically, in supposedly trying to keep artifacts safe from destruction and plundering, they ended up doing just that. Budge justified the removal of mummies to the British Museum with the above rhetoric, claiming that they would be better preserved in the care of the museum than anywhere in Egypt (Fagan, 203). The belief of Europeans in their own superiority allowed them to legitimize, at the time, their moral right to looting Egypt of its treasures and history. Westerners were used to dominating other countries in the time of imperialism, where similar ideas about protecting less “civilized” people for their own good, really for Western economic gain, were abundant.

Museums also used less direct means to acquire artifacts. They bought antiquities from collectors, or accepted donations after collectors died. Three great rival collectors of antiquities, Belzoni, Drovetti, and Salt, were responsible for the collections that formed the basis of Egyptian collections in the British Museum, Turin collection, and the Louvre, respectively (Fagan, 150). Additionally, Drovetti sold some of his antiquities to the Berlin Museum, and Salt sold a

collection to the British Museum (Fagan, 147-50). The history of mummy acquisition for museums is steeped in bribery, destruction, and imperialist sentiments.

Competition for antiquities left some European museums with larger mummy collections than others. There was a large rivalry between French and British Egyptology during the 19th and 20th centuries (Reid, 10). As a result, the Manchester Museum and the British Museum both have sizable collections of mummies, more so than the Louvre. In the United Kingdom, the Manchester Museum acquired much of their ancient Egyptian collection thanks to Christian interest in ancient Egypt. Jesse Haworth, a devout Christian, sponsored Flinders Petrie's excavations in Egypt. Thanks to those early excavations, the museum has approximately 24 human mummies (David & Archbold, 14). While the museum's beginnings were tied to religion, the institution later became important for scientific analyses that will be discussed in chapter seven.

The British Museum houses over 100,000 objects from Egypt and Sudan. Since its creation in the 1750s, the museum has acquired collections from wills, donations, excavations, and purchases. The first mummy and coffin were left to the museum in William Lethieullier's will in 1756, and a second mummy with coffin was donated by his nephew. Only one other mummy entered the museum in the 18th century ("Collecting histories"). In the 19th to 20th centuries, Henry Salt sold many artifacts to the museum and Ernest Budge actively sought out mummies and coffins to build a mummy collection that spans nearly all of ancient Egyptian history ("Collecting histories"). The museum even acknowledges online that "some ways in which objects entered the British Museum are no longer current or acceptable" ("Collecting histories"). They chose to mention the unsavory parts of early Egyptology, instead of covering them up.

On the other hand, the Louvre in France has few ancient Egyptian mummies. From what could be found on their website, the Louvre only has three human mummies and one mummified head from ancient Egypt. They have many funerary objects like sarcophagi and mummy masks, but very few mummies. This may have occurred because Britain took France's Egyptian antiquities, acquired during the Napoleon Expedition, as spoils of war in the early 19th century. Among other things, the Rosetta Stone was taken to the British Museum. It was not until 1827 that the Egyptian Antiquities Department was opened by curator Champollion (Reid, 6). Private donations in the 1820s provided their initial collection. Later additions came from European collectors, sponsored archaeologists and excavations, and individual donations ("Collections & Departments"). It is peculiar to see a well-known European museum have so few mummies in its Egyptian collection, as visitors would likely expect to see. The Louvre did not invest as much resources into acquiring Egyptian mummies as British museums did.

Mummy Acquisitions in the United States

In contrast, American museums had a slower start in the 19th century in regards to acquiring mummies. Europeans had interest in obtaining ancient Egyptian artifacts and mummies for centuries before many museums in the United States were established and became interested in funding archaeology. The first ancient Egyptian mummies entered America in the early 19th century. In 1823, a merchant named van Lennep gave an ancient Egyptian mummy and its coffin to the people of Boston (Wilson, 37). The mummy was transferred to the Massachusetts General Hospital, as there was no better place to keep it. In 1826, two more mummies entered the public eye in America. They became part of a curiosities exhibit at Peale's Museum and the Gallery of

the Fine Arts. When that museum failed, the two mummies became part of P.T. Barnum's American Museum in New York and were eventually destroyed by a fire in 1865 (Wilson, 37). American citizens also hosted their own travels to Europe, bringing back artifacts and mummies that eventually found their ways into museum collections (Wilson, 37-9). Interest in ancient Egyptian mummies slowly expanded in America as mummies trickled in.

By the end of the 19th century, museums in the United States took matters of obtaining ancient Egyptian artifacts and mummies into their own hands. They became involved initially by contributing to the Egyptian Exploration Society (EES) and the British School of Archaeology (BSA). By donating \$50 or \$100 to the organizations' excavation seasons, American museums would get a share of the season's finds (Wilson, 129). Excavations by the EES and BSA at the turn of the century provided ancient Egyptian artifacts to the following larger museums: University of Chicago, University of Pennsylvania, and museums in Boston, Michigan, and Detroit (Wilson, 129). By 1914, even smaller institutions were interested in this exchange. Antiquities from Abydos went to the Smithsonian Institute, the Brooklyn Museum, the Cincinnati Museum, the Art Institute of Chicago, and at least six other institutions. Antiquities from Harageh ended up in museums in Brooklyn, Cleveland, and St Louis, as well as the University of Pennsylvania (Wilson, 129).

Early American museums that were able to sponsor excavations or buy mummies from collectors tend to have larger mummy collections than smaller and more recently established museums. The Field Museum in Chicago claims to house "one of the largest collections of mummies in the United States" with 23 human and more than 30 animal mummies ("Exhibitions: Inside Ancient Egypt"). These mummies are part of an exhibit, called *Inside Ancient Egypt*, that displays dioramas of the mummification process, sarcophagi, mummies, and

other funerary objects. Only general details about the exhibit and its collections were available on their website. On the other hand, more recently founded museums, like the Rosicrucian Egyptian Museum in San Jose, CA, have smaller mummy collections. In its early days, the REM supported excavations from the Egypt Exploration Society and got some artifacts in return (“Collection”). The museum has over 4000 objects, comparable to the 3500 objects in the Egyptian archaeological collections of the Field Museum (which is only one of many other collections the museum owns). According to their online database, the Rosicrucian Egyptian Museum has 5 adult mummies, one mummy of a child, 4 mummified hands, around 20 animal mummies, and numerous coffins. The object details include a description, date, material, and dimensions, but do not tell when or how the mummies were acquired. Both American museums amassed solid collections of mummies and related paraphernalia, but the older and larger Field Museum had acquired more mummies, especially human ones. Yet, both museums failed to provide specific information about acquisition of their mummy collections online, where it would be easily available to the public.

Another significant collection of ancient Egyptian mummies in the United States can be found at the Michael C. Carlos Museum at Emory University. The museum, currently located on Emory’s Atlanta campus, has one of the most extensive collections from ancient Egypt in the southeast U.S. The Carlos Museum’s history dates back to 1876, when its collections resembled assortments of curiosities, like the “wonder rooms” of the Renaissance (Dixon 2013). In 1921, professor William Shelton purchased an Old Kingdom mummy from Abydos while leading an excavation through Egypt (O’Neil 2019). Around 30 years later, the museum acquired a mummified Hawk, among other ancient Egyptian artifacts (O’Neil 2019).

In 1999, the museum greatly added to its Egyptian collections with the acquisition of 145 ancient Egyptian artifacts from the Niagara Falls Museum in Canada. Most significantly, the Carlos Museum acquired many decorated sarcophagi and human and animal mummies (Dixon 2013). One of the nine human mummies acquired is the oldest ancient Egyptian mummy in the Western Hemisphere (O'Neil 2019). The museum has its patrons to thank for, as their donations made the large purchase possible. The coffins and mummies are now important focal pieces in a permanent exhibit on ancient Egyptian art. It is rare for museums to acquire large collections of ancient Egyptian artifacts after the tightening of Egyptian control over their antiquities in the early 20th century. And most recently, the museum was gifted the Senusret Collection from the Georges Ricard Foundation, containing 1500 ancient Egyptian artifacts, such as gilded funerary masks and Late Period mummies (O'Neil 2019). The foundation chose the Carlos Museum due to its dedication to education and conservation.

Meanings Behind Mummies on Display

The first displays in museums were grouped by artifact type and function. In the 19th century, museums displayed “exotic” objects from foreign cultures, like ancient Egypt, but tended to interpret them from a solely Western perspective. The perspectives of ancient and historical cultures were rarely recorded, let alone included, in displays (Day, 12). Small exhibit rooms were oversaturated with objects, and contained little context or labels. As museums grew into larger establishments and moved into bigger buildings, there was increasing space to lay out with some organization system. At the same time, when these museums became more open to the general public, there was a need to label objects for the layperson to understand what they

were seeing. Over time, museums evolved in how they interpreted, presented, and explained artifacts to visitors. But even today, there are problems of emphasizing Western perspectives, perpetuating stereotypes, and combatting ethical dilemmas in museum displays.

In the early days of Egyptology, flashy funerary artifacts and whole mummies were valued over simple pottery sherds and fragments of mummies. For instance, Flinders Petrie found the older ancient Egyptian human remains at the time - part of a mummified arm with a lot of bracelets on it. He sent it to the Boulaq Museum, but the curator only cared about the display value of the bracelets. The curator threw away the arm and linen pieces (Day, 26). Museums attempted to display as many mummies and artifacts as possible to show-off. Displaying pieces of mummies was less impressive than showcasing a whole mummy or its elaborate mummy case. The overabundance that some museums had in their mummy collections made individual mummies less distinguished as remains of past individuals who used to be alive (Day, 26). Instead, mummies were curious objects to wonder at.

Before the decipherment of the Rosetta Stone, the context of individual mummies was severely limited. Without understanding the hieroglyphic writing, all mummies were nameless and timeless. Museums could not label mummies by their name or dynasty, or include any other ancient context about their collections. Mummies were objectified as curiosities. This did not initially change, even after hieroglyphics could be translated; mummies were still targets of objectification under a Western perspective. Mark Twain wrote in 1870 of the British Museum's surplus of mummies as "a whole Greenwood Cemetery of them – old mummies, young mummies, he mummies, she mummies, high-toned mummies, ragged mummies..." (Day, 27). With limited mummy science, it was not until the 20th century that much knowledge could be gleaned from mummies themselves. Thus, there was limited interest in contextualizing their

display. In fact, luxurious objects, like fine jewelry, found in the wrappings or alongside mummies garnered more interest (Day, 30). While mummies were being sought after by museums, information that visitors could learn from their display was initially very limited.

One example of early display of ancient Egyptian mummies can be seen from the British Museum in London. From the very beginning of the museum's creation in the 1750s, ancient Egyptian mummies were displayed. In 1759, one of the first exhibits encountered by visitors was an ancient Egyptian decorated mummy case and its mummy (Moser, 1). Early museum exhibits displayed numerous artifacts cramped into small rooms, without labels to explain their contexts. Yet visitors were awed at ancient curiosities. William Hutton, a historian, visited the British Museum in 1784 and recorded his reaction to the rooms where there are "a thousand things to demand his attention" (Moser, 1). But without context for the artifacts, the museum failed to disseminate information or shape understanding about different cultures. These two important roles of museums evolved over time, as displays became less bombardments of curiosities, and more carefully organized exhibits.

Preconceived Notions in Museum Visitors

Museums have gotten better at providing ancient perspectives, but Western media stereotypes influence visitors. Ancient meanings are especially overlooked, with how much further back in time we are removed from them (Day, 12). Museum visitors come with their own knowledge (the accuracy of which varies considerably) and preconceived ideas about mummies and ancient Egypt. Visitors bring limited ideas from the media saturation about ancient Egyptian mummies - curses, reanimation, and a focus on the death aspect of mummification. If museums

do not debunk or address common stereotypes about mummies, they end up reinforcing those same stereotypes.

Sensationalist stories of mummies can be propagated by not only media, such as movies and books, but indirectly by museums themselves. In the second half of the 19th century, the coffin lid of an unknown priestess, called “The Unlucky Mummy,” was said to bring misfortune to those surrounding it (Day, 48). It was allegedly bought by several Englishmen in 1860, leading to the death, injury, or bankruptcy of the group members. It also purportedly caused fires in a London house, conducted poltergeist activity, and was blamed for the sinking of the RMS Titanic in 1912 (Day, 49). Despite the legends, the British Museum bought and displayed “The Unlucky Mummy” in 1889. The museum itself did not perpetuate the popular myth, but the hired nightguards spread stories to visitors of hearing strange noises at night and deaths associated with the mummy (Day, 49). The British Museum eventually sold it, not even thirty years later, to a wealthy American overseas (when it was blamed for sinking the Titanic) (Day, 50). Popular belief in the legends about “The Unlucky Mummy” was so powerful that the museum stopped displaying the mummy and eventually sold it. Even before King Tut’s curse, portrayals of cursed, or in this case “unlucky,” mummies impacted museum collections and displays.

Museum displays of ancient Egyptian mummies must contend with a lack of knowledge about ancient Egypt, and preconceived notions by visitors. As early as 1870, museum visitors’ comments show limited understanding of ancient Egyptian mummification. A textile worker was interviewed at the Leeds Museum, where he commented on the strangeness of the “sort of pickled body” produced by mummification, instead of Christian burial – they must have been “queer foaks to pickle each other in this fashion” (Day, 57). It seems that the museum did not explain the mummification process well enough if a visitor thought it was akin to pickling. The

visitor also did not seem to understand why mummification was chosen instead of the traditional Christian burial that he was accustomed to.

Even in recent times, museum visitors have preconceived notions about ancient Egyptian mummies. Jasmine Day, a lecturer in Egyptology, surveyed 790 museum visitors across three countries (Australia, U.K., and the U.S.A.) in the mid-1990s and observed visitor behaviors (Day, 129-30). Her research revealed the popular views of mummies both during and after visitors encountered ancient Egyptian mummies in museum exhibits. Visitors often expected to see mummies in ancient Egyptian displays, even if the theme was a non-funerary aspect of ancient Egyptian society (Day, 130). Respondents to Day's questionnaire at two Australian museums expressed disappointment that the ancient Egyptian exhibits contained only mummy fragments or a small number of whole mummies and several mummy fragments: "disappointed there were no whole bodies"; "get more mummies"; and "the mummy section was quite disappointing" (Day, 131). Visitors expected to learn about ancient Egypt through mummies, thinking that anything Egyptian had to relate to mummies.

Children were most likely to have preconceived notions of mummies from movies. They wondered aloud about the mummies coming alive to walk around and curse people. A young respondent from Day's questionnaire at the Brooklyn Museum of Art responded "can they come alive again" to the question of "What one or two words best describe your first reaction when you saw the human mummies on display?" (Day, 12). And in questionnaires, many young children aged 6 to 12, described mummification as variations of "gross yet cool" (Day, 109). Both children and adults alike often emphasized the bandages or the gory details of mummification like organ removal. They placed less emphasis or had less understanding about natron preservation and the religious context (Day, 109). The stereotype that the Egyptians were

obsessed with death is truer of museum visitors – they are the ones clamoring for more mummies. It can be hard to combat misinformation, but necessary in order to promote comprehensive and accurate perspectives of ancient Egypt through display of mummies.

Displays that include mummies do not always lead to better understanding of ancient Egyptian culture in general or mummies in particular. Day claims that “museums often fail to address visitors’ media- influenced preconceptions and sometimes even support them” (Day, 130). Errors of omission, like a lack of explanation about the process of mummification, do not contest visitors’ preconceived ideas. Museums’ advertising campaigns and gift shops often directly reinforce stereotypes. They over-emphasize mummies as icons of ancient Egypt, “perpetuating a misconception that the Egyptians were obsessed with death (an assumption resulting from the preservation of many artefacts in tombs, and from a current media and past academic focus upon funerary archaeology)” (Day, 130). In this direct manner, museums support popular imagery of ancient Egyptian mummies to capitalize on profits that may be needed to support museums.

King Tut: The First Blockbuster

Arguably the most well-known mummy is Tutankhamun. He may well be what most people first think of when imagining an ancient Egyptian mummy – fully intact and buried in golden riches. The hype surrounding his tomb’s excavation, helped along by the media blitz via the telegraph, magazines, and newspapers, eventually led to major exhibitions of Tut discoveries around the world. As the mummy itself would be difficult to transport as a travelling exhibition, King Tut remains in Egypt. Though interestingly, a fake model mummy that claimed to be

Tutankhamun toured the United States during the 1920s (Day, 23). The fascination with the boy king was so extremely profitable that forgers created mummies out of wax and other materials. Legitimate tours of King Tut's treasure have toured around the world. An exhibition called *Tutankhamun Treasures* toured North America in the early 1960s. The exhibit opened at the Smithsonian in 1961, before travelling to 18 American and 6 British cities. Even though it only had 34 small artifacts from his tomb, the exhibit was a hit (Brier, 194). Other travelling exhibits of Tut's treasures attracted millions of visitors in Japan and Paris (Brier, 194).

Tutmania was reawakened in the second half of the 20th century. In the 1970s, the first blockbuster exhibit of Tut was created with the support of Egyptian leaders. The British Museum hosted an exhibition with some larger artifacts from Tut's tomb from March to September 1972. More than a million and a half people visited the exhibit in London, before it travelled to Russia (Brier, 194). Museums in the United States were next to negotiate with Egypt. Between 1976 and 1979, an even larger exhibit that also included the famous gold mask of Tut, visited seven cities. Eight million visitors came to see the exhibition, and this new blockbuster reinvigorated Egyptomania in America (Brier, 196). The popular comedy show *Saturday Night Live* even wrote a sketch with the song "King Tut" that mentioned the popular *Treasures of Tutankhamun* exhibit (Brier, 196). The whole world was obsessed with seeing artifacts from the young pharaoh's tomb. Later, in 2004 a new Tut exhibition, called *Tutankhamun: The Golden Hereafter*, began a tour around the world (Brier, 197). Generations of museum visitors have lined up to see the treasures of ancient Egypt.

The most recent tour of King Tut's treasures is currently under exhibition in London. *Tutankhamun: Treasures of the Golden Pharaoh* has visited Los Angeles, Paris, and London, and will visit Boston, Sydney, and later undisclosed locations. This world tour began in 2018 and

is scheduled to end in 2023. Egyptian authorities are calling this the last world tour of Tut's treasures, "before they return back to Egypt forever" says Dr. Waziry, Secretary General of Egypt's Supreme Council of Antiquities (Dowson, 2020). The travelling exhibit contains 150 objects from Tut's tomb, compared to previous ones that only contained 55 objects. At the end of the tour, the funerary objects will return to Egypt's new Grand Egyptian Museum, scheduled to open in 2021 (Dowson, 2020). While it is impossible to say that the artifacts from King Tut's tomb will never again travel as a huge blockbuster event, it seems that Egypt wants to keep them in a permanent exhibit. In the future, those interested in the young pharaoh may have to travel to Egypt to assuage their Tutmania.

Tut and his collection are housed in the Egyptian Museum at Cairo, but will be moved to new museums that have recently been built: The Grand Egyptian Museum and The National Museum of Egyptian Civilization. The first ever Egyptian museum for antiquities was not founded until 1858. When it opened in 1863, the Boulaq Museum (later rebuilt as the Egyptian Museum in Cairo) relied on aesthetic rather than scientific arrangement (Reid, 106). Until recently, there were still problems with display: vague or nonexistent signs, old cases, outdated labels, and bad lighting. Rosalie David, creator of the Manchester Museum's Mummy Project, visited the royal mummy room at the Egyptian museum in the 1960s, but was disappointed with the display of mummies because it was hard to see inside their coffins in the dim lighting (David & Archbold, 10). When she visited thirty years later, the museum had vastly improved its display. Thankfully, most of the mummies left in Egyptian museums have found and will find new homes in updated displays, including the famous Tut collection. The mummy of Tutankhamun is important to the history of Egyptology and representation of ancient Egypt to the world.

My Experiences as a Museum Visitor

The Cleveland Museum of Art

In July of 2019, I visited the Cleveland Museum of Art without the expectation of seeing ancient Egyptian art or mummies. But upon skimming the museum guide, I saw there was an ancient Egyptian section, so naturally I had to check it out. The *Egyptian and Ancient Near Eastern Art* department first acquired Egyptian antiquities in 1913, before the museum was even built (“Egyptian and Ancient Near Eastern Art”). As an art museum, I did not have high hopes of seeing a mummy, but I was pleasantly surprised that there were several coffins and mummy-related paraphernalia that I could observe for my thesis. The museum may not have mummies in the exhibit, but labels did mention some funerary aspects of Egyptian culture. Mainly, labels for funerary items discussed artistic aspects, such as the iconography on the decorated coffins or the material used. The art museum framed their objects in a way to emphasize their artistic value, but with some historical context. In the same way that an archaeology museum would likely emphasize history and culture, the Cleveland Museum of Art focused on aesthetic aspects.

In regards to the labels on coffins, mummy masks, funerary portraits, canopic jars, and other mummy-related objects, the museum included acquisition information. This was contrary to the fact that museums have often concealed how mummies were removed from their original contexts and relocated to museum collections (Day, 173). Museums have not always included acquisition information, since many ancient Egyptian artifacts were collected by now unacceptable means. Thus, I was pleasantly surprised at their openness to bring light to past mistakes. Labels also included other vital information: object names, approximate dates, materials, and descriptions.

The Penn Museum

As mentioned earlier in this chapter, the Penn Museum obtained its collections mainly from its own excavations in the 19th century. The museum sponsored excavations at Denderah, Memphis, Giza, Dra abu el-Naga, Meidum, Abydos, and Malkata (“Egyptian Section”). Before antiquities laws gained the authority to keep Egyptian artifacts in Egypt, the Penn Museum was able to amass one of the largest collections of Egyptian and Nubian material in the United States. Also, interestingly, the museum recently acquired new ancient Egyptian mummies, which does not happen frequently, at least outside of Egypt, anymore. The Academy of Natural Sciences at Drexel University recently gave a few mummies to the Penn Museum. The mummies are currently undergoing conservation (Shepard 2019).

One month after my visit in Cleveland, I visited the Penn Museum in Philadelphia, this time specifically with the intention to visit their ancient Egyptian exhibits and extensive mummy collection. On floor 3 there were two different Egypt sections. The first section I visited was titled: *Egypt (Mummies)*. Its main hall was very open and spacious, with various animal and anthropomorphic statues in the space. Two smaller, enclosed display areas to the sides of the main hall showcased smaller funerary artifacts and a few mummies. The displays look very outdated, with faded labels that were hard to read in the tomb-like, dark enclosed spaces. The labels themselves appeared old, and sometimes lacked information. One of the side rooms, that housed *The Egyptian Mummy: Secrets and Science*, had a mummy in a sarcophagus that did not even have a name, label, or any identifiers. In this room, the labels were hard to read sometimes with the bad lighting, or were positioned in places that were hard to see. Some of the labels provided information about where the mummies were found or how they were acquired, but not all. In general, the layout of the *Secrets and Science* room was hard to follow and there was a lot

going on. I tried to follow the layout as best I could, with my understanding of the time periods in ancient Egypt, but I can imagine how people who knew little or children with short attention spans would skip over a lot of the wordy, hard-to-read labels. I was confused and disappointed in the exhibit, as I heard that the Penn Museum had a great ancient Egyptian mummy collection. I hope the Penn Museum will renovate this exhibit soon.

I should note that this was not the first time I visited the Penn Museum. After visiting the University of Pennsylvania in 2016, I had less than an hour to visit the museum before it closed. I visited the *Egypt (Mummies)* section, which seems virtually unchanged three years later – I vividly remember taking a photo next to the unlabeled mummy. As I tried to go through the exhibit quickly, I did not even realize there was a second Egyptian exhibit, located further into the museum. Perhaps there were signs in the museum that would have alerted me to visit the second exhibit, but I may have missed them in my rush to see as much of the ancient Egyptian displays as possible. My revisit in 2019 allowed me to experience both exhibits.

Thankfully, the second exhibit was the near opposite experience of the first one. *Ancient Egypt: From Discovery to Display* contained storage areas for mummies that were visible through glass walls. The exhibit was very interactive with visitors - it had an Artifact Lab program and twice-daily Q&A sessions. A handout for the exhibit promised that you would “walk in the shoes of an archaeologist and see the fascinating journey artifacts take from excavation site to museum display.” Over 200 objects, including mummies, were displayed and labeled. The exhibit was very new-looking and full of up-to-date labels and technology. The bright white space, with a visible storage section, was the opposite of the dark and muted first exhibit. The contrast of the two exhibits is quite shocking. If visitors only visited the first exhibit (like I did in 2016), they would not get the full experience of the mummy collections that the

Penn Museum has. Also, it is important to note that the sphinx gallery was currently closed for renovations for new exhibit space that will be opened in 2022 (Shepard 2019). So, I did not experience the full scope of the museum's ancient Egyptian collections.

Museum displays have come a long way in communicating the bigger picture of Egypt as more than an ancient society about death and mummies. At the Penn Museum, it was interesting to see the two extremes in exhibit spaces – one that was tomb-like and outdated, and one that was scientific and advanced. I got a glimpse into how museum displays can be very different and often change over time. The Penn Museum both emphasized the history of Egypt in relation to different exemplary mummies and promoted the aspect of mummy science in their different exhibit spaces. At the Cleveland Museum of Art, I saw how art museums treat mummy-related objects differently than how history or anthropology museums display them. The labels for mummy-related artifacts at the museum explained the iconography on various objects, and did not focus as much on death and mummification. Although I am a biased visitor when it comes to ancient Egyptian exhibits, I experienced how displays can share different information and perspectives about ancient Egypt and its mummies.

Unique Directions that Museums Can Take with Mummies

The majority of museums that contain mummy collections tend to focus on aspects such as art, general Egyptian history, religious ritual, or common stereotypes about ancient Egyptian mummies. But some museums take a unique focus on mummies and mummification. The Michael C. Carlos Museum at Emory University focuses on the science of mummification. The museum has a dual mission in conservation and making their collections accessible to the public

(O'Neil 2019). Inside the museum, there is a place where visitors can see the conservation and analysis of mummies being done. One example of conservation treatment applied to an ancient Egyptian mummy was an Old Kingdom mummy acquired in Abydos in 1920. An article published in the *Journal of American Research Center in Egypt* describes the history, importance, mummification methods, and conservation of this mummy, which is the oldest ancient Egyptian mummy in the United States (Lacovara et al., 65). The condition of the mummy before the conservation treatment was abysmal: the head was detached, the body structure had collapsed in on itself, and there was severe deterioration on many parts of the body (Lacovara et al., 72). The mummy was documented with photography, x-rays, and CAT scans before it was treated. After numerous treatments all over the body, the mummy is now fit to be displayed, where it has been now for the past five years (Lacovara et al., 74). The Michael C. Carlos Museum at Emory University is unique in how it emphasizes educating visitors about the science of mummies, rather than emphasizing mummies as objects of art, curiosity, or death.

Another unique take on exhibiting mummies are ones that include ancient Egyptian mummies with other mummies from around the world. The travelling exhibit called *Mummies of the World: Dream of Eternal Life*, was one such popular exhibit that took a unique direction with mummies. It displayed ancient mummies and related artifacts, which were loaned from numerous museums, from around the world: South America, ancient Egypt, and Europe. *Mummies of the World* included the mummy of an ancient Egyptian priest named Nes-Hor, MUMAB (the first replication of ancient Egyptian mummification on a modern body), and ancient Egyptian animal mummies (“FAQ”). The exhibit featured modern science, interactive and hands-on exhibits, and multimedia presentations (“Information for Families”). It aimed to teach visitors about how mummification varied in different ancient cultures, and how scientific

innovations allow us to study mummies without damaging them. Mummy science is not often emphasized in museums that feature ancient Egyptian mummies. These two examples, one emphasizing science and the other emphasizing cross-cultural comparisons, show that museums can take other directions with mummies beyond what exhibits typically accentuate. New perspectives on mummy exhibits have been very popular, rewarded for bringing important innovation to old or overdone manners of exhibition.

Early acquisition of collections at museums often involved what we would now consider unethical removal of mummies from Egypt. Sadly, records about whether these acquisitions included mummies can be hard to find. Online resources and articles from the museums themselves are not always transparent about when, where, and how their mummy collections were acquired. Museums in Europe and the United States often sponsored excavations in the 19th and early 20th centuries, where they gained the majority of their ancient Egyptian collections. Early displays at museums usually emphasized mummies as objects of curiosity, and preferred to display whole mummies, elaborate coffins, and rich funerary artifacts. Since these early acquisitions and displays, museums have generally gotten better at including important historical and contextual information about their mummies. But outdated displays may still lack in that regard, or perpetuate common popular stereotypes about ancient Egypt. On the other hand, some exhibits, like the two mentioned above can bring new ideas for museums to educate the public on lesser-known aspects of mummies, and what we can learn about ancient Egypt from them.

Museums are the venues where many people around the world can learn accurate information about ancient Egypt. More times than not, mummies are vessels through which people expect to learn about Egypt. Museums with mummies on display need to understand how

media portrayal of mummies and mummification impact visitors, and be prepared to address common stereotypes in laypeople's terms. Mummies do not rise from the dead or curse tomb robbers, and mummification is more than gory organ removal and wrappings. Museums should strive to encourage visitors to read labels, watch videos, or interact with hands-on displays that first debunk common misconceptions, then present correct information in an engaging way. Historical context should be provided about how mummies were acquired, the cultural context of mummification, and that the Egyptians were not obsessed with death. Displays with little to no information cause people to fall back on media portrayal, and professional hard-to-read labels may be skipped over, especially for families with young children (Day, 180). Perceptions about ancient Egypt can be positively influenced by museums, but misconceptions can be just as easily perpetuated.

Chapter 6

Popular Imagery

As discussed in the previous chapter, museums world-wide acquired and displayed ancient Egyptian mummies in diverse ways. Clearly, museum exhibitions can either propagate or counteract misinformation about ancient Egypt and their mummies. In a similar manner, popular imagery found outside of educational institutions may aid or hinder the public's understandings about ancient Egyptian mummies. Popular imagery used to represent ancient Egypt usually include mummies, pharaohs, pyramids, and the Sphinx. These select few images hinder the public's understanding of ancient Egypt as a whole, but at the same time they can inspire future Egyptologists (Day, 2). For example, when people in the 21st century think of archaeologists, Indiana Jones first comes to mind. Indy's experiences were set in the 1930s, while Europeans still had control of foreign antiquities (Day, 154). His treasure hunting would not be so easy, or ethically allowed, in the realm of archaeology today. But while Dr. Jones is not the best representation of what an archaeologist does, he helps provide a general impression to people who may not understand archaeology and he may also inspire future students to study archaeology. There is a careful balance between how popular imagery simultaneously inspires public interest yet can generalize the science of archaeology to the point where the wrong impression is given. Written media can also spread ideas about mummies and ancient Egypt. Newspaper articles about King Tut helped share his story to the world, but also promulgated the myth of King Tut's curse, painting ancient Egyptian mummies in a negative, sensationalized light as vengeful, zombie-like creatures.

Poetry and Plays

By the 17th century, references to mummies began to appear in literary works of poetry and prose. Poets, playwrights, and writers alike used the common popular knowledge about mummies to include in their works. Their audiences presumably understood poetic references to ancient Egyptian mummies. To exemplify this notion, the poem “Love’s Alchemy” by John Donne, contains an unflattering comparison of women and mummies (Sugg, 26). This poem was commonly referred to as “Mummy” during the time period from 1633 to 1719. Even though the poem only contained this comparison at the end, the popularity of mummies overshadowed other themes in the work. Lines 23-24 contain this unflattering comparison:

Hope not for mind in women; at their best
Sweetness, and wit, they are but Mummy, possess'd.

In the poem, the speaker calls women possessed mummies (but not in the literal sense like horror movies tend to depict in the 20th and 21st centuries). Mummies represent bodies that do not have a mind anymore (Donne, 145). Ironically, the idea that mummies do not have a mind is quite literally true for the ancient Egyptian mummies which often had their brains removed during the mummification process. If women are mummies possessed, they have the unsightly appearance of a preserved body with the mind or spirit of a woman. The image portrayed by these two lines indicates that people of this time had an idea of what a mummy looked like - a corpse that retained human features but looked dried up and bony. The poet uses the word “mummy” to create that poetic image.

Another example that showcases how mummies became part of popular imagery by the 17th century, is from the 1623 play *The Bond-Man* by Philip Massinger. The character Timagoras belittles a woman for her age, stating how even cosmetics can no longer hide how old

she is. Cosmetics made out of mummy or other materials can no longer cover her old age (4.4, 30-35).

You are grown thrifty, smell like other women;
 The College of Physicians have not sat,
 As they were us'd, in counsel how to fill
 The crannies in your cheeks, or raise a rampire
 With mummy, ceruses, or infants' fat.
 To keep off age, and time.

The speaker implies that the woman uses three different products to smooth out her wrinkles: “mummy,” a typical ingredient found in apothecaries; “ceruses,” the white lead paint used to cover smallpox marks in Elizabethan times; and “infants’ fat” that witches obtained from murdered babies to use for their potions (Sugg, 29). Of these ingredients, only the latter has an outright negative connotation, as being called a murdering witch was a dangerous insult at the time when witch hunts were popular. On the other hand, mummy, or “mumia,” was a quite ordinary ingredient found in products during the 17th century. This play suggests that an additional application of mummies occurred in cosmetics, as well as the aforementioned usage in medicine.

In both the poem and play, the word “mummy” appears in poetic styles of imagery. The poem uses the image of a whole mummy to create an unflattering comparison to women, while the play mentions ground-up mummy as a typical ingredient in women’s cosmetics. Both works referred to harsh criticisms about women’s fleeting beauty and age, whether or not the mummy itself was supposed to also have been viewed in a negative light. Nevertheless, the mere mention of mummy in poetic imagery shows that ancient Egyptian mummies had made their way into popular imagery by the 17th century.

Books

Beyond dead. Beyond poetic analysis, literary works written in prose also utilized references to mummies. As mentioned in chapter four, many European books contained references to mummies in the context of medicinal “mumia.” These works did not consider mummies in a non-scientific context. Nevertheless, Europeans became more interested in the history behind mummies after the discovery of the Rosetta Stone during Napoleon’s campaign into Egypt, and thus more authors have discussed mummies in a context outside of medicine. Egyptomania in the 19th century led to an increased fascination with ancient Egypt in general, and its mummies, in particular.

Stories about mummies coming back to life or mummies’ curses became popular in Europe and America. For instance, English author Jane Loudon wrote *The Mummy! A Tale of the Twenty-Second Century* in 1827, five years after the decipherment of ancient Egyptian hieroglyphics. This fictional work was the first story centered around the idea of a mummy coming back to life (Day, 46). In the story, King Cheops (also known as Khufu), a pharaoh from the Old Kingdom, is reanimated by electricity and travels to England in 2126 to usurp the monarchy. It is interesting to imagine that a reanimated Egyptian pharaoh would want to take England under his control, as opposed to his home country.

Fictional stories about mummies also became popularized in the United States. By the mid-19th century, mummy lore was firmly established in America (Day, 46). Even the famous novelist Jane Austin was impacted by the renewed interest in Egypt. Her book *After Three Thousand Years* (1868) contained themes about ancient Egypt. The character Millard presents his sweetheart, Marion, a necklace which was taken from the mummy of an ancient Egyptian princess (Day, 46-7). But before Marion can wear it, an Egyptologist tells her the necklace’s

inscription warns that death will befall the wearer. The curse holds true, ruining Marion's love life and leading her to a tragic death.

Ancient Egyptian mummies found new life in fictional stories, but were also mentioned in personal anecdotes. One important literary work that referenced ancient Egyptian mummies was *The Innocents Abroad*, written by Mark Twain. This famous travel book, written in 1869, followed Twain's adventures through Europe, the Holy Land, and Egypt. Twain travelled aboard the ship *Quaker City* with his fellow American passengers in 1867. His humorous anecdotes were a "record of a pleasure-trip" not of a "solemn scientific expedition" through which Twain showed the reader how the average traveler would see the sites he visited (Twain, 3). By the time that the *Quaker City* reached Egypt, Twain had nearly lost his sense of awe at grand historical sites. Most of his writing about Egypt recounted harassment by locals to buy donkeys, services to climb to the top of the Pyramids, and other various means that Egyptian men kept trying to get money out of tourists (Twain, 474-7). Twain described how he went inside a pyramid, where he saw a stone sarcophagus in the King's Chamber (Twain, 476-7). He also wrote about the "relic-hunter" in his group that continually tried to chip off pieces of ancient Egyptian monuments to take back to America (Twain, 480). That tidbit about the "relic-hunter" was very typical of how tourists treated ancient sites. During the late 19th century, rich tourists frequently visited Egypt and further despoiled mummies and artifacts from the country (Day, 20). The chaotic hustle of tourists who tried to see as many monuments as possible left little time for Twain to contemplate the true grandeur of ancient Egypt. Twain did not hold back on writing about Egypt as he experienced it. He did not sensationalize his Egyptian travels by adding anecdotes about mummies.

As for references about mummies in *The Innocents Abroad*, Twain wrote a small page about the religion, embalming practices, and monumental architecture of ancient Egypt. Most notably, he claimed that ancient Egyptian mummies were used as “fuel for locomotives composed of mummies 3000 years old” (Twain, 481). Twain did not provide any details about where he saw this, so it is plausible that he simply heard about this alternative fuel from an outside source. In fact, his letter in the NY Herald newspaper said that “the pleasure trip was a funeral excursion without a corpse” (Twain, 492). Twain likely never saw a mummy while in Egypt, so he wrote very little about them in his work.

Whether or not his claim about the usage of mummy as fuel is true, what is intriguing is how little he referenced mummies, in spite of the fact that they were a popular image that typified ancient Egypt. The reality of visiting ancient Egypt during the late 19th century did not align with the image of Egypt as a place overflowing with mummies. In fact, many of the easily-available mummies had already been taken to Europe for uses as ground-up medicine, paint, or at unrolling parties.

The image of ancient Egyptian mummies that we get from Mark Twain, is of burned corpses – a far cry from the later sensationalization of mummies in films and other media. Nowadays, there are numerous books, both fictional and nonfictional, that are about ancient Egyptian mummies. Since the Egyptomania of the early 19th century, many forms of media have been written about ancient Egyptian mummies, which often portrays them as undead monsters who curse tomb robbers and rise up from the dead.

Films and TV

Since the first motion picture productions were recorded in the late 19th century, countless films have been set in the land of ancient Egypt. They ranged from short films that are only a few minutes long to feature films that last several hours. A truncated list of these popular films from the 20th to 21st centuries are Antony and Cleopatra; Cleopatra; The Curse of King Tut's Tomb; Exodus; Moses; The Mummy; The Prince of Egypt; The Scorpion King (1-4); and The Ten Commandments. Several of these films are related to Biblical stories of ancient Egypt, continuing the early European trend of Christian interest in ancient Egypt as it relates to the Bible. Movies such as "The Mummy" franchise follow a plot dedicated to an ancient Egyptian mummy. Common themes found in these mummy movies are: a reanimated mummy finding his reincarnated lover in modern times, a medallion that brings life back to the dead mummy, and a mummy's curse on those who desecrate their tomb (Brier, 183). The first mummy movies were often romances, before they became the modern horror movies that fixated on violent mummies.

There were many films about ancient Egypt and mummies that came before the discovery of King Tut's tomb and the idea of a mummy's curse, but the ensuing Tutmania led to even more mummy films. The earliest mummy film and possibly the first horror film was Cleopatra's Tomb (1899). There have been a multitude of films titled "The Mummy" that range from a period of over a hundred years, from 1908 to 2017. The 1932 classic Hollywood horror film starred Boris Karloff as the Mummy. It took 8 hours for the makeup and special effects team to get him into the mummy makeup and wrappings (David & Archbold, 152). The movie, which featured the mummy Imhotep who came back to life and who was involved in a romance with his reincarnated lover (based on Tut's wife and half-sister Ankhesenamun), was loosely based on the discovery of King Tut's tomb (Brier, 176-8). "The Mummy" (1932) was a huge success, due in

part to capitalizing on the public's interest in King Tut. Although the 1999 version was one of the top grossing films of that year, it retained long standing inaccuracies. For example, the film was set in ancient Thebes but included the pyramids in the background, even though they would actually be hundreds of miles to the south (David & Archbold, 150). Movies that star ancient Egyptian mummies are inaccurate to varying degrees. One can only imagine what the ancient Egyptians would think of these movies. Mummification was the process designed to help the ancient Egyptians to exist in the afterlife, not to reanimate in a mutated life thousands of years in the future.

In a similar manner, popular imagery of mummies also found their way into TV shows and cartoons, starting in the 1920s. For instance, in 1933, a short animation with Tom and Jerry was titled "The Magic Mummy." The Three Stooges had two episodes about mummies in 1939 and 1948, "We Want Our Mummy" and "Mummy's Dummies," respectively. Two TV movies, from 1988, in the Scooby-Doo Franchise included a linen-wrapped mummy character in "Scooby-Doo and the Ghoul School" and "Scooby-Doo and the Reluctant Werewolf." These are just a few examples of shows that dedicated episodes to mummy themes.

In the realm of non-fiction, numerous documentaries have focused on ancient Egyptian mummies in recent years. Television channels, such as National Geographic and the History channel, have aired programs about mummies. For example, "Mummy Forensics" is a documentary TV series that aired on the History Channel in 2008. Documentaries strive to educate by presenting factual information about subjects of interest. On the other hand, pseudo-documentary series air episodes about ancient Egyptian mummies that promote inaccurate or harmful ideas. For example, the American TV series "Ancient Aliens" presents hypotheses about human contact with extraterrestrials through history, texts, and archaeology. The pseudo-

documentary series has aired 20 seasons as of March 2020, with many episodes referencing ancient Egypt and its mummies.

Both fiction and nonfiction films can promote misinformation about ancient Egypt in how they portray ancient Egyptian mummies. In fictional media, mummies are often negatively portrayed as wanting to curse, attack, or kill people. This view distorts the original purpose of mummification as necessary for survival into life after physical death. Nonfiction films tend to do a better job with staying away from misinformation, but may still present mummies in a limited way. Hyper focus on the death cult of ancient Egypt leaves less room for people to consider other aspects of ancient Egyptian culture and history.

Newspapers

The main role that newspapers played with regards to ancient Egyptian mummies is in Tutmania that started in the 1920s. Newspaper articles spun tales about the so-called “Curse of the Pharaoh” or “King Tut’s Curse.” The early and untimely deaths of several people were connected to the opening of Pharaoh Tutankhamun’s tomb on November 29th 1922. Newspapers sensationalized these people as victims who fell to the so-called curse (Brier, 168). The most notable death from the “curse” was Lord Carnarvon, a British aristocrat who financed the excavation. He died on April 5th 1923, just a few months after the opening of the tomb, from blood poisoning that started as an infected mosquito bite (Brier, 168). An article titled “See ‘Curse of Pharaoh’ on Carnarvon” from the *Chicago Daily Tribune* reported about this tragedy on the day of his death. The article talked about how Lord Carnarvon died from blood poisoning, but then spent most of its lines referencing theories about the Egyptian mummy curse that was

“laid by the Ancient Egyptians with mystic incantation on any who dared disturb the sleep of a Pharaoh” (“See Curse of Pharaoh”). Yet out of the dozens of people who were involved with the opening of King Tut’s tomb, very few people died soon after. Sensationalist journalism quickly spread the idea of King Tut’s curse.

Explanations for mummies’ curses can be supernatural or scientific. Supernatural explanations, like Egyptian magic, are often used by children and young adults to explain how curses work. Conversely, scientific explanations explain away the unusual deaths as a result of poisons, gases, bacteria, or diseases contracted from unsealed tombs (Day, 154). In reality, mummy curses are ideologically based, arising from old legends and myths.

Old legends that were created to protect tombs from grave robbers became swept up in the media’s hype about King Tut. The legends about mummy curses were based loosely on actual tomb inscriptions. Some tomb owners cursed potential robbers on inscriptions in their tombs, but the curses did not say that the mummy would awaken to kill any who disturbed their final resting place. One inscription dated to the Old Kingdom says “Listen all of you! The priest of Hathor will beat twice any one of you who enters this tomb or does harm to it” (Day, 17). And another one threatened that the tomb owner would “seize [the neck of a thief] like a bird” (Day, 17). In the two examples, neither meant that the mummy itself would rise up to conduct a violent attack against a tomb robber. They are simply statements warning against desecrating the owners’ final resting places. The image of a violent awakened mummy is a recent popular image that does not coincide with the ancient meaning.

Food, Songs, and Other Imagery

Popular imagery of ancient Egyptian mummies has also been used on many products ranging from food to music to cologne. In the more recent past, interest in ancient Egypt has led to food products marketed with mummy imagery, as opposed to products that actually contained mummies like the “mumia” of previous centuries. Trader Joe’s, a popular grocery store in America that first opened in 1967, sold a cereal called “Kamut Flakes.” The product was marketed as grown from 36 kernels of wheat that were found in an ancient Egyptian tomb at Dahshur (Brier, 4). The image on the box shows a figure rendered in ancient Egyptian artistic style, holding a bowl of the “Kamut Flakes.” Another product, Lik-a-Stix’s “Yummy Mummies,” branded their traditional candy packs in an ancient Egyptian mummy theme (Brier, 5). The sugary candy contained imagery of an ancient Egyptian male holding a mummy in the shape of the candy stick. The product did not claim to be from ancient Egypt but the imagery was obviously inspired by ancient Egyptian design. Both alimentary products show that the popular imagery of ancient Egypt can contain indirect (Kamut Flakes) or direct (Yummy Mummies) reference to ancient Egyptian mummies.

Other imagery related to mummies is found in cigarettes, sheet music, cologne, and other objects. Before the Tutmania of the 20th century, ancient Egyptian mummies were found on all sorts of varied imagery. For instance, a collectible card from a tobacco packet, from the era of 1885-1895, shows two versions of the mummy of Ramesses II. One side shows a sullen pharaoh with his crook and flail, and the other side shows a smiling king who wears a suit and smokes a Sweet Caporal cigarette (Day, 59). Ramesses II, dressed in typical ancient Egyptian fashion, is opposite to a Westernized version of himself, which seems to be happier. The caption under the Western mummy describes the suit-wearing mummy as “civilized and content in mind” (Day,

59). The card is likely inspired by Western imperial ideas about civilization that were common in the late 19th century. This example shows that ancient Egyptian mummies were not always depicted in a positive light in popular advertisements.

For the most part though, popular imagery that included ancient Egyptian mummies were not as negative as the Sweet Caporal advertisement. Tutmania of the 20th century brought increased advertising with ancient Egyptian mummy iconography and reference. The song “Old King Tut” was published in 1923, before excavators of Tut’s tomb excavated the burial chamber and found that the king was a young adult around the age of 18 at his death. The song became so popular that another song was inspired by it. J.W. Jenkins Sons Music Company created “Old King Tut Was a Wise Old Nut” that contained the lyrics “and as they Jesse Jamesed his tomb, these royal ghouls would sing” (Brier, 170). The media were excited for the excavation to finally uncover the face of “Old King Tut.” Companies from all different types of industries capitalized on the Tutmania that arose in the 1920s. Mechanical pencils were made into the shape of mummy cases and pocket knives were made to resemble Egyptian mummies (Brier, 172-3). A cologne called “King Tut” was created by the Louangel Company in New York, that was decorated in hieroglyphics and the golden funeral mask of King Tut’s mummy (Brier, 171). Popular imagery of ancient Egyptian mummies around the 1920s focused on King Tut and heightened images of mummies in general.

References to and imagery of ancient Egyptian mummies can be found anywhere. Today, mummy culture has permeated our collective knowledge so much that ‘mummy’ puns are common, as seen in anthropologist Jasmine Day’s participant observation in museums during the 1990s, or even in Mother’s Day cards (Day, 96-7). Popular imagery of mummies has even permeated into the well-known comedy show *Saturday Night Live*. On April 22, 1978 the

comedian Steve Martin sang the song “King Tut,” which was inspired by the *Treasures of Tutankhamen* exhibition which was touring the US around the time of the comedy sketch (Brier, 196). The introduction of the song contained lyrics about the famous museum exhibition: “Now when he was a young man, / He never thought he’d see, / People stand in line to see the boy king.../ (King Tut) Now if I’d known / They’d line up to see him, / I’d taken all my money / And bought me a museum (King Tut)” (Brier, 196). One of the most popular shows on television was so inspired by Tutmania that a museum exhibition was mentioned in a song.

Public interest in ancient Egyptian mummies has inspired images and references to mummies in various popular media over the centuries. As early as the 17th century, poetry and plays referenced mummies, suggesting that mummies were popularly known about by the general public. By the 18th century, ancient Egyptian mummies were such popular subjects of interest that fictional and nonfictional books were written about them. Later, with the advent of video technology in the late 19th century, mummies made their debut early in the film and television industries. Anyone with access to cinema or a TV could consume popular images of mummies. These various media popularized mummies as representative of ancient Egypt, and disregarded other aspects of ancient Egyptian culture. Sensationalist journalism in the 20th century popularized the Curse of the Pharaoh, after the world-wide hype with the discovery of King Tut’s tomb. The lasting Tutmania of the past century has led to the production of millions of products produced with designs of ancient Egyptian mummies. Anything from cigarettes to cereal to cologne have featured mummies. The vast reaches of different media and mass production of mummy-related products typically perpetuate common stereotypes of ancient Egypt as death-central or of mummies as reanimated corpses. Ancient Egyptian mummies are so

saturated in pop culture, one does not have to wander far before seeing or reading something related to them.

Chapter 7

Modern Mummy Science

In the past two centuries, mummy science has evolved from “mumia” medicine and unrolling parties to scholarly studies using the numerous technologies and analyses available in the 21st century. Modern science has given archaeologists the ability to learn more about the mummification process and mummies themselves. As discussed in the previous chapters, we have a limited understanding of the embalming process that the ancient Egyptians used for thousands of years. The most specific information comes from Herodotus’ account on the mummification process, but even that only consists of a few paragraphs that describe the practice during one time period.

In contrast, new technologies provide further ways to learn about ancient Egypt from mummies. Ancient Egyptian mummies hold more than just the knowledge about death and cult practices of their ancient culture; they expand our understanding of other aspects of society. Scientific analyses of mummies can show what diseases the ancient Egyptians had, the genetic relationships between royal mummies, their reconstructed faces, and even the voice of a three-thousand-year-old ancient Egyptian priest. New methods, from the early 20th century to today, give us a glimpse into the lives of the ancient Egyptians in realms beyond their religion. We can gain a fuller appreciation of ancient, historical, and modern Egyptian society through the modern science of mummies.

Early 20th Century Mummy Science

The mummy unrolling parties popularized in the 19th century were some of the first recorded scientific analyses of ancient Egyptian mummies. While these events were often performed in private and public settings for entertainment purposes, some unrollers also recorded their autopsies in a highly scientific manner. British surgeon Thomas Pettigrew unwrapped mummies with some of the same methodologies used in modern mummy science, but he was limited by the technology and understanding of diseases and bacteria at the time (David & Archbold, 47). Pettigrew was unable to view mummy specimens on a microscopic level, nor did he have x-ray technology to view beneath the wrappings and skin. His autopsies were as methodical as current mummies' autopsies, but the unwrapping process was more destructive than techniques commonly used in the 20th and 21st centuries.

Even by the early 20th century, mummy science was still very limited. The book *Egyptian Mummies*, published in 1924, exemplifies what pre-modern science could discern about mummies and mummification. The book is an important work that shows the limits of scientific understanding at a time when there was limited technology available to personally examine mummies. Less invasive ways of examining mummies were not available until later in the 20th century. In 1924, the x-ray was a new technology that was not widespread enough yet to scan many mummies. Smith and Dawson wrote in a footnote that only one mummy from the 18-20th dynasties had been examined with x-ray technology (Smith & Dawson, 94). In order to discuss mummies and mummification techniques, they relied on visible markers like abdominal incisions that were made during the mummification process.

Other available published works and textbooks during the early 20th century had little information about mummification, and mainly relied on classical accounts and generalizations.

Egyptian Mummies aimed to provide an outline of the technical processes of mummification and provide a brief commentary on its funerary purposes. The authors compiled information about ancient Egyptian mummies from the corpus of available research and science. Smith and Dawson provided detailed examples of the various conditions that mummies were found in, the different mummification processes that were undertaken, and how these changed over time. By compiling accounts of mummies from various time periods, they came to an important conclusion that mummification changed over time. The authors prompted other archaeologists and writers to pay more attention to direct scientific analyses of mummies, rather than resorting to classical accounts and generalizations that provided little detail.

On the other hand, the book contains problematic sentiments and ideas from the early 20th century. The first line of the preface states that there is “nothing more characteristically Egyptian than a mummy” (Smith & Dawson, 7). While understandably the authors were focusing their studies on ancient Egyptian mummies, the sentiment continues the stereotype that ancient Egypt was all about mummies. Second, Smith and Dawson referenced racial evolutionary theory, which was believed to be scientific at the time. Craniometric analysis measured skull size and shape in order to determine things such as intelligence and ethnicity. Smith and Dawson described an 11th dynasty princess named Kemsit, whose “skull [was] negroid in type” (Smith & Dawson, 79). The skull of a different royal, this time a Pharaoh, was considered to be “very remarkable for its large capacity” (Smith & Dawson, 92). Based on accepted racial theories, scientists believed that Egyptians were the genetic white ancestors to Europeans (Day, 23). While Smith and Dawson do not explicitly promote this idea, the mention of skull type and size suggests that they accepted these ideas as proven true. Today, measuring

skulls to determine race and the entire concept of racial categories are accepted neither by scientists nor anthropologists.

Less Invasive Procedures: X-rays, CAT Scans, and Endoscopy

Shortly after *Egyptian Mummies* was published, little advancement occurred in mummy science for some time. This stagnation in scientific growth may have been due in part to the Great Depression, World War II, the Arab-Israeli conflict, and other global issues that hindered development (David & Archbold, 59). During this time, the only new technology that could have been applied to mummy studies was radiography. Although the x-ray was discovered at the end of the 19th century, mummies were not commonly scanned until the middle of the 20th century. Thousands of mummies were x-rayed in the 20th century, particularly in the 1960s (David & Archbold, 103). By the mid-1970s, radiography became more sophisticated. Xerograms could produce pictures of soft tissue, unlike the x-rays that passed through flesh and only showed bone or metal (David & Archbold, 103). These less invasive procedures were also less damaging to the fragile ancient mummies.

The next technological advancement for mummy science was CAT scans. This technology was around in the 1970s, but was mainly used in hospitals. Live patients were a higher priority than ancient mummies, especially in the initial years of this new technology. In 1976, the first documented CAT scan of an ancient Egyptian mummy, Nakht, was performed in Toronto, Canada. Nakht's brain was scanned, revealing a remarkably well-preserved brain that looked like any normal human brain (David & Archbold, 114-117). A year later, a different mummy went into the CAT scan machine, this time for a whole-body scan, not just the brain.

This was the first time that the entire body of an ancient mummy was scanned. In November 1977, a mummy named Djedmaatesankh, from Toronto's Royal Ontario Museum, was scanned at the Hospital for Sick Children in Toronto. Djedmaatesankh was encased in a sealed coffin that remained unopened after entering the museum's collection in 1910 (David & Archbold, 130). The museum chose the mummy of Djedmaatesankh because they wanted to see what was inside the coffin without having to break the seal. The scan identified artifacts, paddings, bandages, and organs (David & Archbold, 130). Most importantly, the application of CAT scans allowed researchers to see inside of a mummy without having to unwrap, dissect, or unbox it.

Like many technologies, CAT scans have improved since their invention in the 1970s. With updated technology, Djedmaatesankh was rescanned in 1994. Paired with new software technology, the 2-D images produced by the scan were compiled into a 3-D image that was easier to analyze. The new scan revealed something that was not found in 1977 – a dental abscess (David & Archbold, 136-141). Even the ancient Egyptians had tooth pain! Without the CAT scan technology, it is unlikely that the abscess would have been found. Even if the mummy had been autopsied, this feature would have been easily missed, unless deep rooted dental abnormalities were specifically searched for (David & Archbold, 136-141). CAT scans are helpful for finding additional medical abnormalities that a physical autopsy might miss. Non-invasive procedures like x-rays and CAT scans are preferred, as they do not cause irreversible damage to mummies.

Another less invasive procedure to examine ancient Egyptian mummies is endoscopy. In this nonsurgical procedure, a long thin tube with a camera and light attached to the end, is inserted into the body to examine internal cavities. For ancient Egyptian mummies, an endoscopy allows researchers to view the abdominal cavity and identify if organs or packing

materials are still inside the body. Different mummification processes through the centuries packed the abdominal cavity with various materials, which can be identified through endoscopy. While a CAT scan would show a full image of a mummy's insides, it would not show color like with an endoscopy. Access to a CAT scan is also limited by monetary funds, availability, and ease of transporting the mummy, while endoscopic procedures are generally easier in those regards. Either way, both procedures, along with x-rays, are important methods for scientific examination. They are less invasive and destructive than physical autopsy, which was the only option for in-depth research of a mummy before modern science of the 20th and 21st centuries.

The importance of applying new advancements can be exemplified in the case of King Tut. Theories about why the famous pharaoh died so young changed when updated analyses sprouted from newer technology. In 1968, an x-ray of King Tut's mummy identified a fracture at the back of the skull and a fractured left thigh bone (Hawass 2010). Archaeologists interpreted these injuries in two different ways: either Tut was murdered by a blow to his head from political enemies or he fell off a chariot (perhaps like one of the many chariots found in his tomb). Later, theories about his death were revisited when Tut's mummified body underwent further procedures, including a CAT scan in 2006. These examinations showed that Tut broke his leg shortly before his death, but the hole in his skull happened after death, likely during the mummification process. Thus, the 2006 CAT scan ruled out the murder conspiracy theory. Additional analyses found that he had malaria, was born with a club foot and cleft palate, and came from an inbred family (Hawass 2010). The young pharaoh was in such poor health that even a simple fall that broke his leg could have led to death from an infection. Alternatively, the death of Tut could have been completely unrelated to his broken leg. The cause of his death is

still uncertain, but new and improved technology, from x-rays to CAT scans, ruled out the main theory of murder.

Paleopathology: Ancient Diseases in Mummies

Advances in the medical analyses of mummies escalated in the 1970s. Paleopathology, the study of ancient diseases, came into the forefront of mummy science. Scientific professionals who were interested in the change of diseases over time wanted to use ancient Egyptian mummies to gain insight into past disease and compare it with contemporary knowledge about diseases. In 1975, the Manchester Museum created the “Mummy Museum Project.” The project aimed to “(1) to look for evidence of disease and the causes of death in Egyptian mummies while gaining further information about life and death in ancient Egypt and (2) to come up with a standard method for examining ancient remains that could be used by Egyptologists and other students of ancient cultures around the world” (David & Archbold, 23). Its initiative paralleled similar efforts on a global scale, including the Paleopathology Association. This organization publishes a quarterly journal and endorses the interdisciplinary study of ancient diseases (David & Archbold, 95). The study of diseases that affected the ancient Egyptians gives insight into their health conditions, ailments, and everyday life.

Advances in studying ancient disease on a microscopic level were made possible by the electron microscope. Under the electron microscope, which is thousands of times stronger than the light microscope of the early 19th century, the cells from various parts of the human body can be analyzed on a cellular level. Microbial analysis of parasites and bacteria can yield important information about what diseases affected the ancient Egyptian population. The organ

contents, plant cells, blood cells, and tapeworms inside of a mummy are only a few things that can be studied with the electron microscope (David & Archbold, 106).

Two significant diseases that affected the ancient Egyptians were malaria and schistosomiasis. Malaria is commonly found in tropical and subtropical climates. Today, it is more prevalent in Africa, causing more deaths there than in any other continent. Interest in whether the disease was prevalent in ancient Egypt led to investigations with mummies. One study conducted a paleoimmunological investigation on 50 ancient Egyptian mummies from the Predynastic period, finding that 40% of the sample contained indicators of malaria (Massa et al., 7). Another study, conducted in 1994, found that mummies from the Predynastic to Roman periods had the protozoa antigen for malaria, indicating that the people had malaria during their lifetimes (David & Archbold, 161). The authors of this study concluded that malaria was likely endemic in ancient times, like it is today. Even King Tut is known to have had malaria (Hawass 2010). The fact that mummies from all periods of ancient Egyptian history had evidence of malaria, shows that the disease has had a long history in Africa.

Another disease that is caused by parasitic infection, schistosomiasis, has been studied in ancient Egyptian mummies. Like malaria, this disease also is a continuing concern in modern societies. Health issues due to schistosomiasis are still prevalent today along the Nile, and in the Middle East in general (David & Archbold, 153). An initiative called the “Schistosomiasis in Ancient and Modern Egypt Project” aimed to reconstruct the 5000 years of evolution in this disease. To gather the large sample of ancient Egyptian mummies needed for the study, the Manchester Mummy Tissue Bank was created in 1997 to get as many mummy tissue samples as possible from across the periods of ancient Egyptian history (David & Archbold, 155-6). In 2000, 25 of the 300 samples were tested for schistosomiasis, and 30% had the disease (David &

Archbold, 156). Even with that small sample size, that is a large percentage of people who had that disease. By 2008, the tissue bank had around 1400 samples (David, 246). As the tissue bank gains more samples, it greatly increases the ability of future studies to test more mummies for malaria, schistosomiasis, and other bacteria and diseases.

From a scientific standpoint, it is interesting to study how diseases evolved from their ancient to modern contexts, but from a cultural standpoint, paleopathology raises many questions about how ancient people understood and treated diseases. Did the ancient Egyptians understand that the various symptoms of malaria came from one disease? The symptoms of malaria vary from very mild to severe cases that cause death. How did the ancient Egyptians treat these symptoms and how effective were their treatments? Perhaps these parasitic infections can teach us about health differences across class lines. Differences in grave goods and embalming allow us to identify the socio-economic status of different mummies, but the disparity in the health of various mummies could also play a factor (David & Archbold, 178). Differences in the health problems of royalty versus the working class could tell us something about the cultural sector of hygiene and medicine. Further paleopathological studies may provide important contextual information to answer these questions.

Experimental Archaeology and Reconstruction

Experimental science can help us learn more about ancient Egypt from its mummies with non-traditional methods of investigation. Experimental archaeology attempts to test archaeological hypotheses by replicating methods, techniques or something else from a culture, in order to test its practicality or possibility. Experiments can be anything from replicating stone

tool production by knapping, to building an ancient sailing vessel based off of ancient descriptions and models. But how could one do experimental archaeology in an ethical manner without harming fragile ancient Egyptian mummies? One study did so by making a modern mummy based on knowledge about ancient Egyptian mummification. In 1994, Bob Brier and Ronn Wade conducted the first modern attempt of ancient Egyptian mummification and fully documented the process (David & Archbold, 85-87). They used the donated body of an anonymous 76-year-old man who died of a heart attack. Instead of the body being used for teaching medical students, it was mummified so that researchers could learn exactly how the process actually worked – not just in theory or from historical accounts.

Brier and Wade used a mummification process based on Herodotus' account of a 70-day mummification process and used replica tools from the time period. To compliment the limited historical and second-hand knowledge, they used physical evidence from ancient Egyptian mummies to fill in any blanks (David & Archbold, 85-87). The mummification was deemed successful, as a CAT scan of the modern mummy appeared similar to the scans of ancient Egyptian mummies (Bleiberg, 86). Speculation about the embalming process was laid to rest, at least somewhat, with the replication and documentation of a modern Egyptian-style mummy.

Other experiments on ancient Egyptian mummies are not as physical as replicating a mummy. Facial reconstruction, or facial approximation, can bring back to life the blackened, sunken, and dried faces of old mummies. First used in forensic investigations to profile for potential suspects, facial reconstruction can be used in ancient contexts, too. Some ancient Egyptian mummies are so well preserved that most of their facial features, and sometimes their hair, survived the toll of time. For instance, the aged face of Ramesses the Great and his shock of red hair are remarkably well-preserved. But even then, mummified faces are eternally stuck in

one position, often with sunken eyes and a misshapen nose that resulted from mummification. With facial reconstruction technology, lifelike 3-D models of ancient Egyptian faces have been rendered from their mummies.

Yet, facial reconstruction is not an exact science. The degree of accuracy depends on various factors, such as availability of x-rays, CAT scans, or pictures of the mummy's facial features, to build realistic models from. Still, depictions that are not exactly perfect can be recognizable to study participants when applied in forensic cases. Blind studies demonstrated that facial reconstructions based on CAT scans produce a "better than approximate resemblance to the individual," and could be used to recreate ancient Egyptian faces (Wilkinson, 165). Different methods of facial reconstruction from ancient Egyptian mummies transform old, lifeless corpses to individual faces of people who actually lived and had families. Figures such as King Tut, Nesperennub, Janus, and Ramesses II have been reconstructed (Wilkinson, 168-171). There is a certain personal connection to seeing what people of the past looked like. Viewers at museums or elsewhere may connect more to ancient Egyptian history and its people through facial reconstruction depictions.

Lastly, another type of reconstruction that has recently emerged is vocal recreation. At the beginning of 2020, media outlets publicized a study published in the journal *Scientific Reports*, which recreated the voice of an ancient Egyptian priest. Nesyamun, a Theban priest and scribe, lived during the reign of Ramesses XI (1099-1069 BCE). The co-authors of the study, an archaeologist and a speech scientist, used CAT scans of Nesyamun's vocal tract to print a 3-D copy of his throat, which was then attached to a machine that mimicked the sound that his vocal tract would have made if reanimated (Solly 2020). But as the mummy's throat was preserved in one shape, it can only make one sound - an underwhelming "ahh." Because Nesyamun's tongue

was heavily deteriorated, the sound produced by the study was also unlikely a sound that the priest ever would have made in his life (Solly 2020). Even though the sound clip may be disappointing for those who were expecting more, the study is a fascinating first step towards true vocal reconstruction. Future research in recreating voices from ancient mummies may eventually allow us to hear full sentences in the voice of someone who has been dead for thousands of years.

DNA Analysis

Modern DNA analysis connects genealogies of ancient royal mummies. Nuclear DNA comes from the unique recombination of one's parent's DNA, while mitochondrial DNA is passed down from one's mother. Ancient DNA, both nuclear and mitochondrial, have been successfully extracted from bone, teeth, soft tissues, and hair (Rutherford, 116). Unfortunately, there are problems with degradation of DNA and potential contamination by modern DNA. Over time, DNA degrades, and it is harder to obtain a sample that has enough DNA in it to sequence. Ancient samples only yield one to two percent of what can be extracted from modern samples (Rutherford, 117). Thus, it is difficult to obtain the full genome from the DNA sample of an ancient human. This is especially poignant with nuclear DNA, as opposed to mitochondrial DNA (mDNA), as the former only has two copies per cell while the latter can have several hundred per cell (Rutherford, 117). Both types of DNA are degraded at the same rate, but mDNA may yield a fuller DNA sequence, as it has more copies per cell than nuclear DNA. Nonetheless, it is important to study both types of DNA for genealogical reconstruction, as mDNA only reconstructs the female line.

Additionally, samples that are extracted from ancient mummies can be easily contaminated. Embalming spices, herbs, and oils can contaminate DNA samples in ancient mummies (Rutherford, 116). Modern DNA can also contaminate samples if the retrieval process is not conducted in a sterile and clean lab environment. Obtaining a good DNA sample may take many tries, which is costly and time-consuming. Also, it is a destructive process to take many samples from a mummy, when samples repeatedly yield little to no DNA. There is a finite amount of mummy that can be tested; therefore, DNA testing is not appropriate or warranted in all ancient Egyptian mummies.

Analyses of ancient DNA samples began in the 1980s. The first successful extraction of human DNA from the tissue of an ancient Egyptian mummy was in 1985 (Rutherford, 119). The results of early DNA tests and conclusions were questioned as the process of DNA extraction, amplification, and sequencing became better understood. In the 1990s, DNA analysis was used in sibship studies to establish familial relationships in human samples. A sibship study in 1993 attempted to discover if a newly discovered group of five ancient Egyptian mummies were related to each other as their inscriptions claimed (Rutherford, 122). The results suggested that they were related, but additional tissue samples could not be tested to confirm this conclusion.

The importance of DNA analysis truly came to the forefront in the 21st century. One of the most recent innovations in mummy science came with the completion of the Human Genome Project in 2003. The international research project identified and mapped all of the genes in the human genome, revolutionizing our knowledge about DNA and benefitting the fields of disease, medicine, and evolution. As geneticists continue to learn about genes and traits, the DNA from ancient Egyptian mummies will yield further data about diseases, physical traits, and family relationships.

Thus far, the most notable usage of DNA analysis with ancient Egyptian mummies relates to King Tut. Though there were issues with obtaining a sufficient DNA sample from his badly preserved mummy, King Tut's parents and other family members were identified through DNA analysis (Hawass 2010). King Tut and 10 potentially-related royal mummies underwent DNA testing to find genetic relatedness, in a study conducted from 2007-2009 (Figure 1, see below). The identities were only known for three of the mummies, who were later identified as King Tut's great-grandparents, Yuya and Thuya, and his grandfather Amenhotep III (Hawass et al., 641). An unmarked mummy (KV35YL), called the "Younger Lady," was identified as Tut's mother. Another unmarked mummy (KV55) was identified as Tut's biological father, and is almost certainly the heretical, monotheistic pharaoh Akhenaten (Hawass et al., 640-1). Tut's parents were identified as blood-related siblings, so his mother could not have been the foreign princess Nefertiti (great wife of Akhenaten). The "Younger Lady" was likely a lesser wife of Akhenaten. DNA analysis confirmed genealogical relationships between mummies of Tut's lineage, but they could not identify with complete accuracy the names of unmarked mummies.

Incomplete genetic profiles caused issues in identifying a few genetic relationships in the study. An unmarked female mummy (KV21A) was found to probably be the mother of two mummified fetuses (KV62) that were found in Tut's tomb. In ancient Egyptian iconography, it is shown that Tut's wife was Ankhesenamun, the daughter of Akhenaten and Nefertiti. Thus, KV21A is likely Ankhesenamun, Tut's half-sister (Hawass 2010). King Tut and Ankhesenamun were likely the parents of these two fetuses, but only incomplete genetic profiles were obtained from the small children and their genealogical connection is inconclusive (Hawass et al., 641). The problems with obtaining complete DNA samples continues to limit research, as well as lack

of identification in unmarked mummies. DNA analysis is a new field that will grow and be able to decode further data about ancient people from mummified remains.

Pedigree Showing the Genetic Relationships of the Tested 18th-Dynasty Mummies

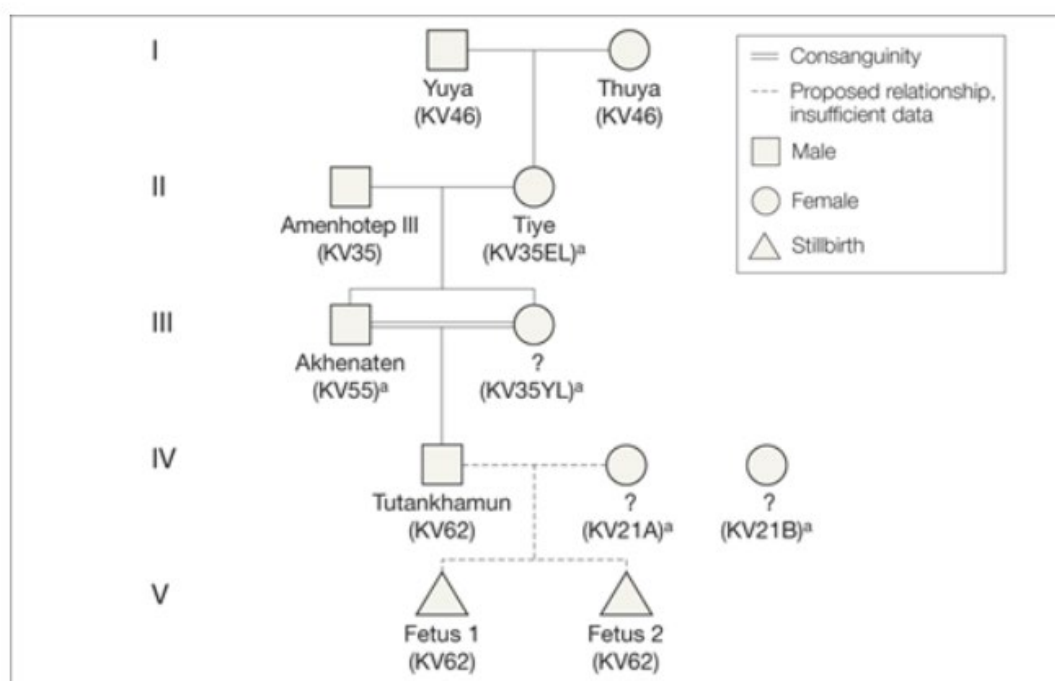


Figure 1: Pedigree Chart Showing King Tut's Family (Hawass et al., 461)

The Future of Mummy Science

Even with all of the previously mentioned advancements in mummy science, we are often left with more questions than answers. For instance, it is still difficult to determine the sex of children without contextual markers (artifacts, names, inscriptions) or DNA analysis (which is expensive and not always an option). The autopsy of Mummy 1770, from the Manchester Museum, could not determine the sex of the young teenager, since the biological sex of non-adults is difficult to determine from just the features of a mummy. The mummy had both

feminine and masculine artifacts within its wrappings, so the sex could not be determined from contextual markers either (David & Archbold, 20-1). At the time that the sex determination was inconclusive, the Human Genome Project had not even been completed. With the understanding of DNA that is currently available, the sex of Mummy 1770 could be determined with this newer technology. Like seen in this example, future technologies and advancements will bring further understanding about ancient Egypt from its mummies.

The future of mummy science also lies in conserving and preserving the mummies that have already been displaced from their final resting places. Not all museums have had or currently have storage and display conditions that stop decay in mummies. For example, Ramesses the Great was decaying from fungi and bacteria transferred from visitors. The Cairo Museum displayed his body in a glass case that was neither climate controlled nor sealed from outside specimens (David & Archbold, 108-9). The lack of proper treatment led to such significant deterioration that the Egyptian government, which is very hesitant to let mummies or artifacts in general leave Egypt, permitted the mummy of Ramesses II to go to France for conservation in September 1976 (David & Archbold, 108-9). Thankfully, it was not too late to conserve Ramesses II, but an emphasis on conservation is needed to save mummies for future viewing and study.

All of these new methods in modern mummy science impart a glimpse into the lives of an ancient culture – their health problems, diseases, physical looks, and voices. Mummies can teach us about more than religion, despite the longstanding emphasis on this aspect of mummies in ancient Egypt. Future analyses of mummies can build off of older technologies. For instance, CAT scans initially provided information about tissues of a mummy, and then they were later used to help in facial and vocal reconstruction. Clearly, new advancements in the future may

need access to earlier results. In addition, new unprecedented methods can emerge. Less than 20 years ago, the human genome was unknown and we could learn little from the DNA of ancient remains. Future work with DNA could lead to discoveries beyond the familial relationships of royal mummies. As we learn what genes and combinations of genes relate to diverse disease risks, archaeologists will be able to generate new understandings about ancient Egypt and its population.

Chapter 8

Conclusion

Mummies play a crucial, if not the most important, role in how the general public has perceived and continues to perceive ancient Egypt. To the ancient Egyptians, mummies were the physical remains of their loved family members, friends, and rulers. They were preserved, through either natural or artificial mummification, so that the ba (personality or spirit) could reunite with the body in the afterlife. The embalming process was a religious ritual and a technical treatment which was applied to the corpses of ancient Egyptians who could afford it. Mummification styles and techniques changed during its nearly three thousand years of history in Egypt. Preparations for the afterlife were an important aspect of religious belief, but ancient Egyptian society was more complex than this end-of-life process. Despite the growth in modern science and the fuller appreciation of ancient Egypt we have access to today, popular characterization of this ancient society continues to emphasize death and mummies.

In the centuries after ancient Egyptian religion, language, and other aspects of culture faded into obscurity, the ancient understanding of mummification was lost. Until the decipherment of hieroglyphics in the early 19th century, there was a large disconnect to understanding ancient Egypt through its material remains. It was popular from about the 15th to 19th centuries for merchants, wealthy tourists, and collectors to obtain mummies for “mumia” medicine or mummy unrolling parties. Mummies were destroyed for medicine, entertainment, art, fuel, and various other endeavors. The land of Egypt was full of mummies, ripe for the taking. Ancient Egyptian artifacts, including mummies, were viewed as objects of curiosity from

an ancient culture that was not very well understood. Ancient Egypt was perceived, through Biblical stories and its religious iconography, as a pagan society obsessed with the afterlife. The Western world was entranced with Egyptomania and mummymania,

When ancient inscriptions on mummy cases, artifacts, tombs, and monuments could be translated, thanks to Champollion's decipherment of hieroglyphics in 1822, knowledge about ancient Egypt could draw from ancient insider sources. Perceptions about ancient Egypt began to change in the second half of the 19th century, with the shift to a more scientific study of mummies. While tombs were still robbed up through the early 20th century, archaeology became more systematic and focused on recording contextual information at excavations. Private collectors and museums sponsored archaeological excavations, filling the Egyptian antiquity collections of American and European museums (more so than those of Egyptian museums).

The emphasis on the display of mummies in ancient Egyptian exhibitions enabled the general public to view ancient Egypt through mummies. Early museums displayed mummies as objects of curiosities, disjunct from their original ancient context. Visitors were fascinated with or unsettled by ancient Egyptian mummies. The early emphasis on including mummies as centerpieces of ancient Egyptian displays still impacts the public's perception of ancient Egypt in the 21st century. Museum goers expect to see mummies in exhibits about Egypt, even if the exhibit does not have a funerary theme. World-wide representations of ancient Egyptians in popular imagery, from books, films, TV, newspapers, and innumerable marketable objects, influence the public's perceptions of mummies and ancient Egypt. Smaller children especially have a hard time separating real mummies in museums from the popular media representations of evil, walking mummies who curse tomb robbers.

Museums often neglect to address common stereotypes about mummies and ancient Egypt. In order to offset these stereotypes, museums need to directly debunk common misunderstandings about ritual, death, and mummification, and then teach visitors about them from the original perspective of the ancient Egyptians. Labels, multimedia presentations, and interactive displays need to engage visitors, so they do not fall back on previous (and likely false) information from popular media. Displays with mummies should also include contextual information about their acquisition, time period, historical context, and other relevant information, in order to humanize mummies to the public.

In addition, museums would benefit from presenting mummy science as an important means of acquiring new information and data about the lives and culture of the ancient Egyptians. The general public typically knows little about research on disease, diet, health, and DNA in regards to mummies. In the world of archaeology, mummy science is not a new discipline, but the scientific community has not adequately presented these new advancements to the general public. In order to effectively change perceptions about ancient Egypt through mummies, we need to find new and innovative ways to teach the public about ancient Egypt as a multi-faceted civilization that contributed more than just mummies to modern collections.

Modern perspectives about ancient Egypt rely heavily on mummies, and have tended to misunderstand the ancient perspective. Today, museums and archaeologists are trying to combat misinformation and common stereotypes, but deep-rooted ideas from popular media are difficult to unravel. Thinking of ancient Egypt as a simple culture of mummies and pyramids belies all that we can learn from mummies about ancient culture. If thousands of years from now all that was left behind of a modern country was stone, metal, or other-long lasting materials, how accurate would those materials portray to archaeologists the complexities of contemporary life?

Certain aspects would be better preserved than others, even though they were no more important than ephemeral aspects. In the same vein, it is limiting to view the ancient Egyptians as just a pagan people obsessed with death – what survived simply happened to be mainly preserved in tombs.

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Academic Vita

Anna Shamory

amshamory@gmail.com

Education

- Schreyer Honors College at The Pennsylvania State University Date of graduation: May 2020
- B. S. Archaeological Science; B.A. Classics and Ancient Mediterranean Studies
 - Minor: French and Francophone Studies
 - Dean's List: 7 semesters

Work Experience

- Field Technician and Laboratory Assistant, Rue Environmental LLC, State College PA May-Aug 2019
- Conducted archaeological surveys in Pennsylvania and recorded artifact excavations
 - Cleaned, labeled, sorted, and bagged artifact collections in accordance with required curation guidelines to send to the State Museum of Pennsylvania
- Assistant, Children's Summer Program, Rudy Gelnett Library, Selinsgrove PA 2014-2015
- Instructed lessons and created diverse activities for elementary aged children

Archaeological Field School Experience

- Tel Akko Total Archaeology Field School, Akko, Israel July 2018
- Penn State accredited field school, received six 400 level credits in anthropology
 - Contributed in excavation, survey, conservation, and public/community outreach
 - Recorded and wrote excavation and conservation field reports; collaborated with local students and the Israel Antiquities Authority

Leadership & Volunteer Experience

- Vice President, CAMS Club 2018-2020
- Club for students interested in classics and ancient Mediterranean studies
 - Planned game nights and ancient language activities for members
- Active Service Member, Circle K 2016-2020
- Circle K is a community service organization at the collegiate level of Kiwanis International, and is dedicated to three tenets: service, fellowship, and leadership
 - Dedicated over 70 hours for Trailer sales as Fundraiser Chair for the 2017-2018 academic year at Penn State Football Games: evaluated monetary transactions, recorded stock inventories, interacted with customers, organized member's shifts
 - Treasurer for 2018-2019 academic year: managed budget and record of members' dues; processed receipts and transfers with ASA Office; updated Circle K's membership center
- Member, The Student Programming Association of Penn State 2016-2018
- Programmed diverse activities and musical acts for students, in order to enhance their recreational experiences at Penn State
 - Hospitality committee member during fall 2017. Prepared backstage rooms at venue, in accordance with artists' riders.
- Committee Member, THON Rules & Regulations: Volunteer Safety Committee 2016-2017
- Supervised and provided security for 24 hours of service during THON weekend
 - Answered questions effectively; upheld the safety of dancers and attendees

Honors and Awards

- CITI program Penn State IRB Human Subjects Research certificate, 2019
- Accepted into Schreyer Honors College and Paterno Fellows Program, 2017
- Honorable Mention for art portfolio at Bloomsburg University Portfolio Review, 2016

Skills

- Adept in Microsoft Word, PowerPoint, and Excel
- Proficient in reading, writing, and speaking French