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**THE EXPLOITATION OF ANIMALS IN PTOLEMAIC EGYPT: FROM
BREEDING TO OFFERING TO THE GODS - A CASE STUDY OF
MUMMIFIED CATS AND DOGS**

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Dedication

“This thesis is dedicated to the memory of my beloved dog, Ophelia,
whose gentle companionship offered constant support,
and whose quiet presence sustained me through the most challenging times,
until her unexpected passing.”

Acknowledgements

First and foremost, I would like to express my heartfelt thanks to my supervisor, Dr. Johannes Auenmüller, who supported me from the very first day until the last. His guidance, wisdom, and understanding throughout this long journey have been invaluable, and he has motivated me in the most inspiring way. His support has not only shaped my work in this thesis but has also given me confidence and direction for my future studies in Egyptology. I am truly grateful for his belief in me and for all the opportunities he has provided to explore this field further.

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Finally, completing this thesis marks the end of one of the most important chapters in my life. I would like to thank my family, and especially my mum, for their constant support in my studies, and for always believing in me, giving me the confidence to pursue my dreams.

Preface

My interest in Ancient Egypt began many years ago, when I was a child. I remember constantly searching for information and trying to understand the civilization and religion of the ancient Egyptians. This interest has never faded, and I am extremely grateful that my career path aligns with the dreams of my younger self. Pursuing one's passion as a career can be challenging, but with commitment and effort, success is possible. During my master's program, I developed a strong interest in animal mummies and Egyptian religion, and I hope to continue my studies in this field. Animals and Ancient Egypt are among my greatest passions, and learning about them brings me great joy and inspiration. I am very grateful to Dr. Johannes Auenmüller for helping me get closer to this goal, as I could not have achieved it without his support. I look forward to continuing my journey in this field and I hope to contribute to the understanding and appreciation of Ancient Egypt and its fascinating animal mummies.

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Introduction (Historical Context, Case Studies, Methodology, Scientific Approach and Aim of this Research)

This thesis examines the role of animals in ancient Egyptian religion, especially during the Ptolemaic period (332-30 BCE), when animal cults gained great importance. During this period, millions of animal mummies were produced in connection with religious practices. This vast number of animal mummies proves that animals were exploited, utilized, and mistreated in many ways from their birth until their death. On the other hand, different behaviors have been observed toward sacred animals or pets. This distinction existed even among animals of the same species, proving how complex ancient Egyptian religion and practice were regarding animals.

Priesthoods played an important role in the existence and support of animal cults through their cooperation with the Ptolemaic kings. The Ptolemies understood from the beginning of their rule the deep devotion of the ancient Egyptians to their gods, and consequently they supported these beliefs to gain more power and legitimize their authority.

Within this system, cats and dogs were among the most manipulated species. These two species represent a peculiar case of animal exploitation; Dogs were associated with the ancient Egyptian god Anubis and, through syncretism and *interpretatio Graeca*, with the ancient Greek god Hermes, forming Hermanubis. In contrast, Bastet was not directly associated with a Greek goddess; however, she was worshipped by both ancient Egyptians and Greeks, and important festivals were organized in connection with her veneration.

This study is based on the examination of dog and cat mummies found in various locations in Egypt such as Asyut, Dendra, Saqqara, Tell Basta, Abydos, Kharga Oasis, as well as museum collections of animal mummies, especially those of the Museo Egizio, used as comparative examples and representations. It is also based on the arguments of many important scholars in this field, such as Salima Ikram, Dieter Kessler, Paul T. Nicholson, Alain Zivie, Roger Lichtenberg, Françoise Dunand, Chiori Kitagawa, Edward Bleiberg, and others. This research aims to analyze the role of these two species, the contexts in which they were found, their age at death, the marks of exploitation on their bones, and the possibility of the existence of breeding centers for mass animal production from the beginning of their lives until their death.

Additionally, the techniques of mummification, bandaging textiles, shape, decoration, and the different materials used for coffins have been examined, as they reflect the economic, political, and social status associated with animal mummies. All these factors, together with the use of scientific methods such as CT scanning, X-ray imaging, and radiocarbon (^{14}C) dating, as well as the testimonies of ancient writers and papyri, are crucial for understanding this system of animal production and manipulation within a religious framework.

Chapter 1. Religion, Politics, and Syncretism: The Historical and Cultural Context of Ptolemaic Egypt

1.1 Sacred Animals and Divine Manifestation in Ancient Egyptian Religion

Scholars from the 19th and 20th centuries believed that Egyptian religion developed in a linear way: people initially worshiped objects in a fetishistic manner, then gradually began the worship of animals, and finally worshiped gods in human form.¹ As a result, they suggested that there was progress toward something more developed and logical. However, as Stephen Quirke explains, there is no archaeological evidence to support or suggest such a development.² Instead, already by 3000 BCE, people worshiped gods in human form, hybrid gods with animal heads and human bodies, animals, and symbols/objects, all at the same time. Thus, these forms are not stages of evolution but different ways to represent the same “unknown” divine being, depending on what one wished to express.³ Additionally, art and writing (hieroglyphs) in Egypt were closely linked, and images and symbols were created according to the same rules.⁴ Moreover, Quirke suggests that the reason gods’ forms change (e.g., human vs. human with an animal head) is due to artistic and practical considerations, not because they “evolved.”⁵ For example, a human body is easier to depict sitting on a throne or holding a scepter, and artists sought balance and harmony in the composition. Consequently, the forms of Egyptian gods do not indicate a progression from “primitive” to “developed.”⁶ They are simply different ways of depiction that exist simultaneously and serve artistic and symbolic purposes. Overall, Egyptian gods’ forms were symbolic and artistic choices, not evidence of an evolutionary progression from animals to humans.⁷

¹ Stephen Quirke, *Exploring Religion in Ancient Egypt* (Chichester: Wiley-Blackwell, 2014), 29-31.

² Ibid.

³ Ibid.

⁴ Ibid.

⁵ Ibid.

⁶ Ibid.

⁷ Ibid.

According to Siegfried Morenz, the Ancient Egyptians considered their country the center of the world and themselves its only legitimate inhabitants, which is why their religion was closely tied to Egypt.⁸ The king functioned simultaneously as a priest and political leader, while the gods had a political role, protecting Egypt and the Egyptians, but also acted on a personal level for individual worshippers.⁹ Despite the emergence of a sense of universality during the New Kingdom, the gods remained primarily Egyptian, although they were increasingly seen as creators and protectors of foreign peoples as well.¹⁰ Ancient Egyptian religion did not become a world religion, as the political aspect of the gods and their connection to the country limited their role for outsiders.¹¹ However, through the incorporation of foreign deities into the pantheon, sometimes by merging them with existing gods, as with Baal and Seth, or by adding them directly, as with Astarte or Anat, Egypt presented its own gods as universal creators and protectors, not merely national ones, demonstrating the inclusive character of Egyptian religion.¹² Consequently, the Egyptian pantheon grew very extensive, with festivals and rituals linking Egypt to regions across Africa, the Mediterranean, and the Levant.¹³

In ancient Egyptian religion, according to Jan Assmann, gods participate in both human and cosmic activities, creating what is called “divine presence.”¹⁴ This presence, as he suggested, varies depending on the form of contact, for example in rituals, inner devotion, magic, or self-discipline. Assmann further identifies three dimensions of divine presence: first, the Cultic/Local/Political, where gods reside in specific places and symbolize collective or political identity; second, the Cosmic, where the universe is a realm of divine action and religious experience; and finally, the Mythic, where sacred tradition (including myths, names, and genealogies) preserves the gods in cultural memory.¹⁵ In summary, Assmann explains that divine

⁸ Siegfried Morenz, *Egyptian Religion* (Ithaca, NY: Cornell University Press, 1973), 49.

⁹ *Ibid.*, 50-51.

¹⁰ *Ibid.*, 52.

¹¹ *Ibid.*

¹² Salima Ikram, *Ancient Egypt: An Introduction* (New York: Cambridge University Press, 2010), 118; Morenz, *Egyptian Religion*, 52.

¹³ Ikram, *Ancient Egypt: An Introduction*, 119.

¹⁴ Jan Assmann, *The Search for God in Ancient Egypt*, translated by David Lorton (Ithaca, NY: Cornell University Press, 2001), 7-8.

¹⁵ *Ibid.*

presence is the arena in which gods act and humans experience religion, expressed locally, cosmically, and mythically.¹⁶

As Salima Ikram has mentioned, the ancient Egyptian pantheon consisted of more than eighty deities, ranging from the major gods present since the very origins of Egyptian civilization, who were involved in creation and cosmic order, to minor gods who influenced specific aspects of daily life and the afterlife.¹⁷ Major gods had control over specific areas of influence, though some of their responsibilities could overlap, and many were linked to specific regions or natural phenomena.¹⁸ In addition, each city also had its own local god, sometimes even demi-gods, who were particularly important in local worship.¹⁹ Egyptian gods were represented as both humans and animals because certain animals were symbolically linked to them. According to Ikram, this reflects how, from early on, Egyptian religion was shaped by the natural world and natural phenomena, including animals associated with particular deities.²⁰ The unique traits of animals and their difference from humans were seen as a connection to the divine.²¹ Certain animals were linked to specific gods either because their characteristics matched the deity's powers or because the god was believed to protect people from the animal's dangers.²²

Plutarch (Of Isis and Osiris, Moralia, §77) observes that animals were not worshipped as divine beings but as manifestations of divine power. Ancient philosophers believed that living beings represented divinity more accurately than non-living entities because they are alive, active, possess sensory capabilities, and have awareness of themselves and their environment. People regarded animals as more appropriate objects of veneration than metal or stone objects. Therefore, animals were not offered prayers as if they were gods but were instead used to connect humans to deities, since animals, by their very nature, were seen as a more direct reflection of deities' universal order than inanimate objects. For these reasons, because living beings were considered more valuable and closer in essence to deities than non-living things,

¹⁶ Ibid.

¹⁷ Ikram, *Ancient Egypt: An Introduction*, 118.

¹⁸ Ibid.

¹⁹ Ibid., 119.

²⁰ Ibid., 120.

²¹ Ibid.

²² Ibid.

animals used in religious worship and ceremonies represented a more potent focus than would be possible with non-living objects.²³ A perspective further supported by Günther Hölbl suggests that animals were not simply understood as part of the natural world but as mediators of divine powers.²⁴ This view is also substantiated by H. te Velde, who argues that in Egyptian cosmology, animals were considered living beings equal in some sense to humans.²⁵

For Dieter Kessler, in ancient Egypt the animals that were believed to be sacred were not the gods themselves but served as helpers or symbols of the gods.²⁶ Every god had specific phases of renewal and rebirth, and during festivals, the deities were believed to appear on earth, specifically in their main temples.²⁷ Sacred animals, such as ibises, cats, dogs, and falcons, accompanied the gods in their mythological stories; for instance, in myths about Thoth, ibises are described as killing snakes, showing how they help the god defeat his enemies.²⁸ Of course, such interpretations were not meant to describe the actual behavior of the animals but were a way to express symbolic meanings based on the animals' natural characteristics.²⁹ Essentially, sacred animals helped people see and understand the gods' powers and took part in religious rituals.³⁰

Considering these scholars' observations, sacred animals embodied the gods' powers, making them perceptible to humans and participating actively in religious ceremonies. The Egyptians carefully studied the natural world and chose animals that most clearly embodied the divine traits they wished to express.³¹ Sacred or cult animals were typically identified as specially chosen animals selected because of a set of distinctive and unusual markings, believed

²³ Plutarch, *Of Isis and Osiris*, in *Moralia*, trans. and ed. William Watson Goodwin (1878), §77, digitized by the Internet Archive and reformatted by Brady Kiesling, ToposText, <https://topostext.org/work/274>.

²⁴ Günther Hölbl, *A History of the Ptolemaic Empire*, trans. Tina Saavedra (London and New York: Routledge, 2001), 4-5.

²⁵ H. te Velde, "A Few Remarks upon the Religious Significance of Animals in Ancient Egypt," *Numen* 27, no. 1 (June 1980): 77, <https://www.jstor.org/stable/3269982>.

²⁶ Dieter Kessler, "Part 1 and Part 2: Introduction into the Theology and Ritual Use of Sacred Animals (an Internet Publication by Dieter Kessler, University of Munich, Including an Additional Short Synthesis in Part 3 - Last Version)," n.d., 4.

²⁷ Ibid.

²⁸ Ibid.

²⁹ Ibid.

³⁰ Ibid.

³¹ Yekaterina Barbash, "How the Ancient Egyptians Viewed the Animal World," in *Soulful Creatures: Animal Mummies in Ancient Egypt* (London; Brooklyn: D. Giles Ltd. in association with the Brooklyn Museum, 2013), 21; Ikram, *Ancient Egypt: An Introduction*, 120.

to signify the physical presence of a god.³² These animals were worshipped throughout their lives as living embodiments of that deity.³³ It was believed that the god's divine essence had entered the animal, transforming it into a divine being.³⁴ For example, the Apis bull at Memphis was believed to embody Ptah and Osiris; the Buchis bull at Armant embodied Montu and Re; and the crocodile at Fayum and Kom Ombo embodied the god Sobek.³⁵ These animals were honored and treated as living embodiments of gods during their lifetime, and upon death, they received burials as elaborate as those of pharaohs.³⁶ It was believed that the deity's spirit would then inhabit another animal with similar characteristics, which would also be venerated until its own death.³⁷

Ma'at, was a core principle of ancient Egyptian religion and established at the moment of creation.³⁸ It expressed the belief that the universe is stable and unchanging, and that opposing forces must remain in balance to maintain order.³⁹ The symbolic role of animals was closely connected to the concept of *ma'at*, where gods, humans, and animals coexisted in a hierarchical framework of interdependence.⁴⁰ The concept of *ma'at* represented harmony, justice, and cosmic order, guiding both ethical behavior and social organization.⁴¹ Following this concept, the king was responsible for maintaining the balance of life on Earth through the principles of *ma'at*.⁴² He offered prayers and performed sacrifices to sustain his relationship with the gods and ensure harmony with the people of Egypt.⁴³ In this way, as divine ruler and head of the temple priesthood, the king protected Egypt from harm and ensured its prosperity.⁴⁴

³² Salima Ikram, *Divine Creatures: Animal Mummies in Ancient Egypt* (Cairo: American University in Cairo Press, 2015), 5.

³³ Edward Bleiberg, "Animal Mummies: The Souls of the Gods," in *Soulful Creatures: Animal Mummies in Ancient Egypt* (London; Brooklyn: D. Giles Ltd. in association with the Brooklyn Museum, 2013), 79.

³⁴ Barbash, "How the Ancient Egyptians Viewed the Animal World," 21.

³⁵ Ikram, *Divine Creatures*, 5-6; Bleiberg, "Animal Mummies: The Souls of the Gods," 79.

³⁶ Ikram, *Divine Creatures*, 6.

³⁷ Ibid.

³⁸ Assmann, *The Search for God in Ancient Egypt*, 3-5.

³⁹ Henri Frankfort, *Ancient Egyptian Religion: An Interpretation* (New York: Harper & Row, 1948), 63-64.

⁴⁰ Ikram, *Ancient Egypt: An Introduction*, 117.

⁴¹ Margaret R. Bunson, *Encyclopedia of Ancient Egypt*, rev. ed. (New York: Facts on File, 2002), 221-222; Salima Ikram, *Death and Burial in Ancient Egypt* (Cairo: The American University in Cairo Press, 2015), 21-23, 26, 34.

⁴² Ikram, *Ancient Egypt: An Introduction*, 60, 117.

⁴³ Ibid.

⁴⁴ Ibid.

However, not all animals were perceived as sacred, since they did not have the special or unique markings that identified them as gods.⁴⁵ In contrast, one function was that they could be used as votive mummies in the first millennium onwards, offerings consisting of specific mummified animals purchased by pilgrims as emissaries to the gods and were presented at shrines dedicated to the relevant deity.⁴⁶ For example, cats were given to the goddess Bastet, while dogs and other animals belonging to the canid family were offered to the god Anubis.⁴⁷ However, this is just one explanation; other scholars have suggested different interpretations, such as that votive animal mummies were associated with the annual celebration of the New Year festival as dedications to the gods, which are presented in the following chapters.⁴⁸ Especially during the Late Period and the Graeco-Roman period, votive animal mummies (along with the associated animal cults) experienced significant growth, exhibiting a variety of methods, techniques, forms, and decorations, as well as the establishment of numerous animal cemeteries.⁴⁹ Most mummified animals discovered today have been identified as votive mummies, and it is astonishing that their numbers reach thousands or even millions, particularly in Sacred Animal Necropolises such as Saqqara or Tuna al-Gebel.⁵⁰

As suggested by Salima Ikram, there is evidence indicating that these animals were deliberately bred for sacrificial purposes.⁵¹ Unfortunately, many remains of these animals show evidence that they were intentionally killed, exhibiting signs such as broken necks, skulls crushed by blunt instruments, and marks of strangulation.⁵² Even their young age at death (two to four months, or nine to twelve months) indicates the abusive exploitation carried out by the priests responsible for breeding them.⁵³ Furthermore, the varying quality of the animal mummies provides additional evidence of abuse and economic exploitation, as pilgrims could select the type of votive mummy they desired for each occasion.⁵⁴

⁴⁵ Ikram, *Divine Creatures*, 9-10, 13; Barbash, "How the Ancient Egyptians Viewed the Animal World," 22.

⁴⁶ Bleiberg, "Animal Mummies: The Souls of the Gods," 80; Ikram, *Divine Creatures*, 10.

⁴⁷ Ikram, *Divine Creatures*, 9.

⁴⁸ Bleiberg, "Animal Mummies: The Souls of the Gods," 81.

⁴⁹ Salima Ikram and Aidan Dodson, *The Mummy in Ancient Egypt: Equipping the Dead for Eternity* (London: Thames & Hudson, 1998), 135; Ikram, *Divine Creatures*, 10.

⁵⁰ Ikram, *Divine Creatures*, 10-12.

⁵¹ *Ibid.*, 13.

⁵² *Ibid.*, 13-14.

⁵³ *Ibid.*, 14.

⁵⁴ *Ibid.*, 11.

Therefore, in Egyptian civilization, sacred and everyday life were closely connected, as religious beliefs regarding the gods shaped both the pharaoh's rule and the daily activities of ordinary people, creating a society deeply rooted in faith.⁵⁵ Herodotus' observation that "the Egyptians are religious excessively beyond all other men" (Histories 2.37) reflects a culture devoted to ritual purity and divinity, an idea also supported by Richard H. Wilkinson, who describes Egypt as one of the most profoundly theocratic civilizations of the ancient world, with many gods and goddesses recognized in the ancient pantheon.⁵⁶

While the Egyptian pantheon may sometimes appear complex and unfamiliar to modern observers, the multiplicity of divine forms has often been interpreted through modern scholarly classification: human (anthropomorphic), animal (zoomorphic), hybrid, or composite.⁵⁷ For example, theriomorphic representations like Bastet as a cat or Anubis with a canine head were not just artistic choices but expressed key religious ideas. Through these symbolic associations, animals and animal forms could represent divine qualities and play a symbolic role in rituals and worship.⁵⁸

Ancient Greek writers frequently noted the contrast between their own perceptions and Egyptian practices, finding it puzzling that Egyptian gods could have animal heads, which illustrates the difference between the way the ancient Greeks and ancient Egyptians perceived the relationship of humans to the sacred nature of animals.⁵⁹ As Herodotus observes regarding Egyptian religious practices:

"The Egyptians are excessively careful in their observances, both in other matters which concern the sacred rites and also in those which follow: Egypt, though it borders upon Libya, does not very much abound in wild animals, but such as they have are one and all accounted by them sacred, some of them living with men and others not. But if I should say for what reasons the sacred animals have been thus dedicated, I should fall into discourse of matters pertaining to

⁵⁵ Richard H. Wilkinson, *The Complete Gods and Goddesses of Ancient Egypt* (London: Thames & Hudson, 2003), 12-15.

⁵⁶ Herodotus, *The Histories*, Book 2, Chapter 37, trans. trans. George Campbell Macaulay, ToposText, <https://topostext.org/work/22>; Wilkinson, *The Complete Gods*, 6.

⁵⁷ Te Velde, "A Few Remarks," 79.

⁵⁸ Emily Teeter, "Animals in Egyptian Religion," in *A History of the Animal World in the Ancient Near East* (Leiden: Brill, 2002), 339-341.

⁵⁹ Te Velde, "A Few Remarks," 76.

the gods, of which I most desire not to speak; and what I have actually said touching slightly upon them, I said because I was constrained by necessity.”

(Histories, Book 2, Chapter 65).⁶⁰

Moreover, Diodorus Siculus describes the veneration of animals in Egypt:

“As regards the consecration of animals in Egypt, the practice naturally appears to many to be extraordinary and worthy of investigation. For the Egyptians venerate certain animals exceedingly, not only during their lifetime but even after their death, such as cats, ichneumons and dogs, and, again, hawks and the birds which they call 'ibis,' as well as wolves and crocodiles and a number of other animals of that kind, and the reasons for such worship we shall undertake to set forth, after we have first spoken briefly about the animals themselves.”

(Bibliotheca Historica, Book I, Chapter 83.1).⁶¹

Overall, the connections between animals and specific deities are often unclear due to insufficient evidence. The notion that animals were worshipped, and then humans created images of gods in some sort of 'humanization' of divine powers, remains unsubstantiated.⁶² In prehistoric and predynastic Egypt, images were made of animals and humans, but we do not know if they were meant to be divine images.⁶³ Only with the beginning of historical records can we confidently identify that certain figures (animal, human, or hybrid) were meant to represent gods.⁶⁴ We do not have any evidence suggesting that images of divinities in animal form were made prior to hybrid or human ways, which emphasizes that ancient Egyptian religious representation was a complex typology of symbolic forms rather than the product of a linear evolution.⁶⁵

⁶⁰ Herodotus, *The Histories*, Book 2, Chapter 65, trans. George Campbell Macaulay, Topos Text, <https://topostext.org/work/22>.

⁶¹ Diodorus Siculus, *Bibliotheca Historica*, Book 1, Chapter 83.1, trans. Charles Henry Oldfather, ToposText, <https://topostext.org/work/133>.

⁶² Te Velde, “A Few Remarks,” 78-79.

⁶³ Ibid.

⁶⁴ Ibid.

⁶⁵ Ibid.

1.2 Religious and Cultural Interactions between Ancient Egypt and Ancient Greece: Syncretism, *Interpretatio Graeca*, and Cultural Adaptation

With the beginning of the Hellenistic period (323-30 BCE), especially after the conquest of Egypt by Alexander the Great in 332 BCE and the following establishment of the Ptolemaic Dynasty, ancient Egyptian and Greek religious traditions came into close contact.⁶⁶ This relationship was marked by continuous coexistence and by cultural exchange, adaptation, and reinterpretation.⁶⁷ Ptolemaic society was not just “Greeks versus Egyptians,” but a very complex system where institutions, social networks, and cultural practices developed through the interactions of the two groups.⁶⁸ According to Joseph G. Manning, the Ptolemies did not entirely detach from Egyptian tradition, and the Ptolemaic regime simply built on established power systems put in place under earlier Egyptian and Persian empires while modifying those systems for the new multiethnic circumstances.⁶⁹ The Egyptian religious and social traditions continued to develop and affect Greek presence at the same time.⁷⁰ This multiethnic, flexible, institutional, and culturally hybrid environment led to the development of religious syncretism and new forms of divine identification and worship.⁷¹

In the case of Ptolemaic Egypt, we can use the term syncretism to describe the active cultural and religious negotiations through which ancient Egyptian and Greek deities, rituals, and symbols were interpreted, adapted, blended, and more importantly, sometimes resulted in new forms that were intelligible to both such as Hermanubis, Ammon/Zeus, and Isis/Demeter.⁷² Such syncretic processes certainly were not accidental or superficial; rather, they involved a sustained

⁶⁶ Hölbl, *A History of the Ptolemaic Empire*, 1-5, 25-29.

⁶⁷ Ibid.

⁶⁸ Joseph G. Manning, *The Last Pharaohs: Egypt under the Ptolemies, 305-30 BC* (Princeton: Princeton University Press, 2010), 31-34; Morenz, *Egyptian Religion*, 247-248.

⁶⁹ Manning, *The Last Pharaohs*, 31-34.

⁷⁰ Ibid.

⁷¹ Ibid.

⁷² Charles Stewart and Rosalind Shaw, eds., *Syncretism/Anti-syncretism: The Politics of Religious Synthesis* (London and New York: Routledge, 1994), 1-6. Etymologically, the term syncretism derives from the Ancient Greek *syn-* (“together”) and *krasis* (“mixture”), appearing in compounds such as *syngkrasis* (“a mixing together, compound”) and *idiosyngkrasia* (“peculiar or individual temperament”). Its first attested use as *syngkretismos* appears relatively late in Plutarch.

dialogue between traditions, with Greek notions of Egyptian religion filtered through the lens of the *interpretatio Graeca*, and ancient Egyptian religious practices partially reframed in a Hellenistic cultural milieu.⁷³ Evidence from archaeology, cult practices, and shared ritual objects bear witness to the depth of these engagements, illustrating how syncretic processes oriented both the religious imagination and social realities of Ptolemaic Egypt.⁷⁴

As Charles Stewart argues, syncretism is a widespread feature of human culture and religion. It reflects the natural tendency of societies to borrow, adapt, and merge elements from different traditions.⁷⁵ Although such mixing is very common, the way it is identified or described is often shaped by social, political, or ideological factors. Calling something “syncretic,” therefore, is not neutral but it can carry cultural or moral assumptions.⁷⁶ Moreover, syncretism is both a descriptive and an analytical term because it refers not only to the ways in which familiar elements are borrowed and utilized in new contexts, but also to the historical and cultural meaning of these processes.⁷⁷ Importantly, such forms of cultural and religious blending have existed for thousands of years, long before the global interactions associated with modernity or colonialism.⁷⁸

Historically, syncretism has been influenced not just by cultural exchange but also by the notions of cultural purity and nationalism.⁷⁹ As Stewart notes, nineteenth-century European classicists, such as Karl Otfried Mueller, often portrayed Ancient Greece as a purely Greek civilization, downplaying or denying influences from ancient Egypt and the Near East. Any similarities between ancient Greek myth or cult and Eastern myth or cult, in Mueller's argument, must be Greek.⁸⁰ This is part of an anti-syncretic agenda.⁸¹ In Ptolemaic Egypt, on the other hand, the ancient Greek and ancient Egyptian religious traditions operated with intentionality and

⁷³ Ibid.

⁷⁴ Morenz, *Egyptian Religion*, 244-245; Stewart and Shaw, *Syncretism/Anti-syncretism*, 1-6.

⁷⁵ Stewart and Shaw, *Syncretism/Anti-syncretism*, 119-123.

⁷⁶ Ibid.

⁷⁷ Ibid.

⁷⁸ Ibid.

⁷⁹ Ibid.

⁸⁰ Ibid.

⁸¹ Ibid.

strategy toward one another, resulting in hybrid phenomena (such as Hermanubis, as mentioned above) that shaped both ritual practice and the religious imagination.⁸²

Additionally, it is worthwhile to look at the term *interpretatio Graeca*, which describes the Greek practice of understanding non-Greek deities and religious customs through the lens of their own pantheon. The term *interpretatio Graeca* comes from later European classicists, who considered it unreasonable to claim that Egypt had influenced Greek culture.⁸³ On the other hand, ancient historians such as Herodotus, Hecataeus, and Diodorus believed that there were Egyptian settlements in Greece and that even Athens had Egyptian origins, although they attributed this idea to Egyptian priests.⁸⁴ Plato also saw connections between ancient Greek and Egyptian deities and cities, while the historians regarded Egyptian religion as the basis of Greek religion, and there were other pre-Ptolemaic correspondences between ancient Egyptian and Greek gods, such as Amun with Zeus, Osiris with Dionysus, Horus with Apollo, Ptah with Hephaestus, and Isis with Demeter.⁸⁵ Their aim was not to Hellenize ancient Egyptian religion but instead they wanted to preserve a dynamic set of traditions and historical precedents bridging two cultures.⁸⁶ Also, it is important to highlight that these accounts were not created to serve the Ptolemies in promoting a Greek-Egyptian cultural synthesis, since Herodotus wrote more than a century before Alexander's conquests, while Plato's views can be seen as a kind of prefiguration of the later conquest of Egypt by Alexander the Great.⁸⁷

Moreover, archaeological evidence, rituals, and shared objects show that the Greek Mysteries, including the Eleusinian rites, adopted some Egyptian elements, especially during the Ptolemaic period.⁸⁸ In particular, as has been suggested by Martin Bernal, three points stand out: first, there is strong evidence that Greek Mysteries and Egyptian cults were connected even before the Ptolemies; second, many Greeks believed that the Eleusinian cult came from Egypt; and third, this belief influenced religious practices during the Ptolemaic period.⁸⁹ This process of

⁸² Ibid.

⁸³ Martin Bernal, "Egyptians in the Hellenistic Woodpile: Were Hekataios of Abdera and Diodoros Sikeliotes Right to See Egypt in the Origins of Greece?" in *Ptolemy II Philadelphus and His World* (Leiden: Brill, 2008), 121.

⁸⁴ Ibid., 121-123.

⁸⁵ Ibid., 122.

⁸⁶ Ibid., 122-129.

⁸⁷ Ibid., 123.

⁸⁸ Ibid., 122-129.

⁸⁹ Ibid., 123.

negotiation and mutual recognition allowed hybrid deities to emerge and integrated Egyptian components into the Greek religious imagination. Overall, ancient sources show that Egypt had a significant influence on Greek culture, whereas the notion that this was unjustified (*interpretatio Graeca*) comes only from later European scholars, not from the ancient Greeks.⁹⁰

One of Alexander the Great's first acts after the so-called “liberation” of Egypt from Persian control was to sacrifice to the sacred Apis bull, linked to the cult of Ptah in Memphis.⁹¹ By worshipping Egyptian gods and goddesses through their animal manifestations on earth, he was following his own propaganda to gain the support of the local population, while also honoring the Greek custom of recognizing the gods of a foreign land.⁹² At the same time, this action distinguished his conquest from that of the Persians (especially Cambyses, who killed the sacred bull in 523 BCE, as noted by Herodotus) and reinforced his legitimacy and respect among the locals.⁹³ Moreover, through this act, he sought to create a “climate of trust” and to promote concepts that were very important to the ancient Egyptians, such as order and harmony (*ma'at*), between the ancient Egyptian and Greek populations.⁹⁴ He also had organized athletic and musical contests that are clearly consistent with ancient Greek ritual traditions.⁹⁵ This constitutes the first explicit instance in which an ancient Egyptian divine cult appears alongside distinctively ancient Greek ceremonial practices.⁹⁶

The importance of Apis did not end with Alexander. The Ptolemies quickly recognized the strong legitimizing power of the cult of the sacred bull in consolidating their own rule.⁹⁷ Their interest extended not only to the living manifestation of the god but also to the deceased form, Osiris-Apis.⁹⁸ This policy of respect toward ancient Egyptian cults was not merely symbolic. It reflected a larger context shared first by Alexander and subsequently by the Ptolemies that governing a large and culturally diverse empire required a more proactive

⁹⁰ Ibid., 121-128.

⁹¹ Timothy Howe, “Alexander and Egypt,” in *The Cambridge Companion to Alexander the Great*, ed. Daniel Ogden (Cambridge: Cambridge University Press, 2024), 83-84.

⁹² Ibid., 80-83.

⁹³ Ibid., 84-85.

⁹⁴ Ibid., 85.

⁹⁵ Stefan Pfeiffer, “The God Serapis, His Cult and the Beginnings of the Ruler Cult in Ptolemaic Egypt,” in *Ptolemy II Philadelphus and His World* (Leiden: Brill, 2008), 389.

⁹⁶ Ibid.

⁹⁷ Ibid.

⁹⁸ Ibid.

recognition of local religious traditions and sacred spaces.⁹⁹ Herodotus' account of Cambyses' misconduct in Egypt and the so-called Peukestas papyrus show that the Ptolemaic administration explicitly instructed soldiers to avoid entering temples and religious precincts, revealing a pragmatic approach to religious and cultural accommodation.¹⁰⁰ The management of Egyptian religious sensibilities set an important precedent for later Greco-Egyptian syncretism and the emergence of deities like Serapis and Isis combining both traditions.¹⁰¹

The creation of the cult of Serapis represents one of the clearest examples of Greco-Egyptian syncretism and *interpretatio Graeca* in the Ptolemaic era.¹⁰² While the god was originally based on the Memphite Osiris-Apis cult, he was Hellenized to make him accessible and attractive primarily to the Greek-speaking population and then to the Egyptians, thereby serving both the political need for dynastic legitimacy and the broader goal of cultural integration.¹⁰³ However, as Siegfried Morenz notes, even though Serapis gained widespread popularity among the people of the Mediterranean, the ancient Egyptians preferred to continue worshipping the Osirian group of deities, and consequently, the Ptolemaic plan to create a national god did not succeed.¹⁰⁴ This same pattern of controlled adaptation and strategic promotion of sacred figures is equally observable in the Ptolemaic administration of animal cults.¹⁰⁵ In both cases, whether in the construction of a new anthropomorphic god or in the management of zoomorphic sacred animals such as cats and dogs, religious tradition was combined with practical, administrative, and economic objectives, allowing veneration and utilitarian use to coexist within a single state-sponsored framework.¹⁰⁶

Ptolemaic Egypt constituted one of the most significant cultural and religious contact zones of the ancient Mediterranean. While Greek cults and rituals largely retained their traditional forms, the religious mentality of the Greek-speaking population was gradually

⁹⁹ Manning, *The Last Pharaohs*, 88.

¹⁰⁰ HGV SB 14 11942 (Peukestas Papyrus), *papyri.info*, accessed 19 November 2025, <https://papyri.info/hgv/4274>; [Π] Πευκέστου· μη παραπορεύεσθαι μηδένα· ἱερείως τὸ οἶκημα, *translation*: "Of Peukestes. No one is to pass. The chamber is that of a priest"; E. G. Turner, "A Commander-in-chief's order from Saqqâra", *Journal of Egyptian Archaeology* 60 (1974), 239-242; Hölbl, *A History of the Ptolemaic Empire*, 27-28.

¹⁰¹ J. G. Manning, *The Last Pharaohs*, 89-90.

¹⁰² Ian S. Moyer, *Egypt and the Limits of Hellenism* (Cambridge: Cambridge University Press, 2011), 144-153.

¹⁰³ *Ibid.*

¹⁰⁴ Morenz, *Egyptian Religion*, 246-247.

¹⁰⁵ Moyer, *Egypt and the Limits of Hellenism*, 142-153.

¹⁰⁶ Salima Ikram, "Creatures of the Gods: Animal Mummies from Ancient Egypt," *AnthroNotes* 33, no. 1 (2012): 1-2, <https://doi.org/10.5479/10088/22463>.

permeated by Egyptian practices and conceptions.¹⁰⁷ The example of Serapis and the support of animal cults thus belong to the same broader pattern of Ptolemaic religious policy.¹⁰⁸ Ancient Egyptian elements were neither simply preserved nor abandoned, but actively reorganized and integrated into a new system in which religious meaning, political legitimacy, and economic functionality coexisted and reinforced one another.¹⁰⁹

Syncretism, the blending and identification of gods, was common in both societies but in Egypt took a more formal, structured expression due to its highly elaborate theological tradition and complex temple ritual.¹¹⁰ With time, ancient Egyptian religion became dominant in everyday religious life, as Egypt's reputation for divine wisdom and the minority status of Greek settlers promoted tolerance of native beliefs.¹¹¹ Most of the names of the ancient Greek gods in Ptolemaic papyri (such as Hermes, Aphrodite, or Zeus) are in fact ancient Egyptian gods with whom they were identified.¹¹² The current was not entirely one-way, however: whereas Greeks took something from Egyptian religion, Egyptians borrowed something from Greek art, science, and philosophical reasoning.¹¹³ Ultimately, deities like Serapis, Isis, Hermes, and Anubis embodied this close union, as a bridge between two religious worlds, and gave birth to a truly Greco-Egyptian religious identity.¹¹⁴

1.3 The Role of Priesthood and the Ptolemies' Collaboration to Consolidate Power

During the Graeco-Roman period, priests in Egypt held an important role within the social order. As explained by Marina Escolano-Poveda, they were primarily responsible for acquiring, maintaining, and deciphering specialized knowledge, which was central to

¹⁰⁷ Pfeiffer, "The God Serapis," 387-388.

¹⁰⁸ Moyer, *Egypt and the Limits of Hellenism*, 142-153.

¹⁰⁹ Ibid.

¹¹⁰ Ibid.

¹¹¹ Pfeiffer, "The God Serapis," 387-388.

¹¹² Stewart and Shaw, *Syncretism/Anti-syncretism*, 1-6.

¹¹³ Bernal, "Egyptians in the Hellenistic Woodpile," 134; Morenz, *Egyptian Religion*, 247.

¹¹⁴ Garth Fowden, *The Egyptian Hermes: A Historical Approach to the Late Pagan Mind* (Princeton: Princeton University Press, 1993), 13-22.

maintaining the order of the cosmos, and also served as intermediaries between the divine and the human world.¹¹⁵ Becoming a priest required a step-by-step initiation and training that constructed a hierarchy of rank that was maintained by many priestly families over generations.¹¹⁶ Temples continued to serve as important institutions of religious, intellectual, and economic responsibility, amassing priests who would fulfill ritual obligations along with administrative ones and with the aid of lay assistants.¹¹⁷ Within the well-populated and multicultural character of the Mediterranean, a high-ranking Egyptian priest had a broad reputation for learning, and many were respected as philosophers, scientists, or magicians.¹¹⁸ This reputation is also evidenced in written sources from the same period.¹¹⁹

In the Ptolemaic era, the role and social composition of the Egyptian priesthood evolved, while the country's deep-rooted religious traditions were preserved.¹²⁰ As Gilles Gorre notes, for many contemporary and later observers (Greek, Roman, and modern scholars alike) the continuity of Egyptian worship between the Pharaonic and Hellenistic periods went without saying.¹²¹ At the same time, the internal organization of temples and the composition of the priesthood gradually came under extensive control by the royal administration; this indeed implied a new form of the relationship between political authority and religious institutions.¹²² He also suggested that this development could be divided into two main phases.¹²³ During the first phase (343-270 BCE), comprising the end of the native Nectanebid dynasty, the second Persian domination, and the early years of Macedonian presence, the Egyptian priesthood maintained its institutional continuity.¹²⁴ Despite political upheavals, during this period priests

¹¹⁵ Marina Escolano-Poveda, *The Egyptian Priests of the Graeco-Roman Period: An Analysis on the Basis of the Egyptian and Graeco-Roman Literary and Paraliterary Sources*, Studien zur spätägyptischen Religion 29 (Wiesbaden: Harrassowitz Verlag, 2020), 329-338.

¹¹⁶ Ibid.

¹¹⁷ Ibid.

¹¹⁸ Ibid.

¹¹⁹ Ibid.

¹²⁰ Gilles Gorre, "A Religious Continuity between the Dynastic and Ptolemaic Periods? Self-Representation and Identity of Egyptian Priests in the Ptolemaic Period (332-30 BCE)," in *Shifting Social Imaginaries in the Hellenistic Period: Narrations, Practices, and Images*, ed. Eftychia Stavrianopoulou (Leiden and Boston: Brill, 2013), 99-100.

¹²¹ Ibid.

¹²² Ibid.

¹²³ Ibid., 100-103.

¹²⁴ Ibid.

continued to function as the primary agents of traditional worship, maintaining their role as mediators between humans and gods.¹²⁵

The second phase of institutional history ranged from the mid-3rd to the 1st century BCE. It reflects an increase in state involvement with temple administration.¹²⁶ The Ptolemaic kings, perceiving the power and social influence of the temples, attempted to control the priesthoods economically and administratively, while simultaneously incorporating temples into the structure of royal authority.¹²⁷ From the 2nd century BCE onwards, many temples were under the oversight of officials appointed by the crown, whereas the traditional priestly aristocracy was losing its status.¹²⁸ Furthermore, Gorre demonstrates that the inscriptions, statues, and funerary monuments of priests reveal a gradual shift in how they presented themselves.¹²⁹ Whereas in the early Ptolemaic period, the priests tended to present themselves as belonging to traditional continuity and to local cult, their self-expression later acquired Hellenized features, which corresponded to their position in a double authority system, at once sacred and royal.¹³⁰ This testifies both to the flexibility of the Egyptian religious tradition and to its ability to survive in new cultural contexts.¹³¹

Under Ptolemaic rule in Egypt, the Greek kings recognized the significant power of the native priesthood and worked through them, honoring traditional religious practices while at the same time using the priesthood to consolidate and legitimize their own political authority.¹³² As part of this process, the king could be worshiped as a god in various social and cultural contexts in the Hellenistic world: during his reign in Alexandria, in the Greek communities that inhabited the *chora*, and in Egyptian temples.¹³³ More often, however, the king was not equated entirely with the gods but received honors that highlighted his human nature, showing that his life and success depended on the favor of ancient Greek and Egyptian deities.¹³⁴ In many cases divine

¹²⁵ Ibid.

¹²⁶ Ibid.

¹²⁷ Ibid.

¹²⁸ Ibid.

¹²⁹ Ibid., 103-106.

¹³⁰ Ibid., 106-108.

¹³¹ Ibid., 110-112.

¹³² Stefan Pfeiffer, "Offerings and Libations for the King and the Question of Ruler-Cult in Egyptian Temples," in *The Materiality of Hellenistic Ruler Cults*, ed. Stefano G. Caneva (Liège: Presses universitaires de Liège, 2020), 83-102, <https://doi.org/10.4000/books.pulg.15790>.

¹³³ Ibid.

¹³⁴ Ibid.

rituals that depicted the king as a god existed alongside rituals to the gods for the king's welfare.¹³⁵

In Egyptian ideology, kingship was viewed as a manifestation of the creative power of the supreme god, temporarily embodied in a mortal ruler who required divine legitimization.¹³⁶ According to the Myth of the Divine Birth, the pharaoh was considered the physical offspring of the gods and thus their representative on earth.¹³⁷ Such myths were used strategically to strengthen the political authority of the king and the ruling dynasty.¹³⁸ The Macedonian Kings capitalized on these ancient Egyptian beliefs about kingship and used them as an additional method to reinforce their authority.¹³⁹ They created an official ruler cult and placed members of the royal family inside the Egyptian religious system.¹⁴⁰ Arsinoe II became the first Ptolemaic queen to marry her brother, Ptolemy II Philadelphus, a union that reshaped both the status and public image of Ptolemaic queens while strengthening the legitimacy of Ptolemaic rule in Egypt.¹⁴¹

Arsinoe II was deified during her lifetime, identified with key female figures of the Greco-Egyptian pantheon like Aphrodite, Isis, and Hathor.¹⁴² Furthermore, she received her own temples and priesthoods within the principal Egyptian sanctuaries, while the king's mother embodied the protective function of Isis over Horus, highlighting the close connection between royal authority and divine symbolism.¹⁴³ As a result of this belief, the king's wife was seen as the earthly manifestation of Hathor, the primordial female creator goddess, who received particular emphasis during the Ptolemaic period.¹⁴⁴ For example, at the temple of Hathor at Dendera, the goddess is sometimes depicted holding the *Was*-scepter, normally carried by male gods, instead

¹³⁵ Ibid.

¹³⁶ Martina Minas-Nerpel, "The Creation of New 'Cultural Codes': The Ptolemaic Queens and Their Syncretic Processes with Isis, Hathor, and Aphrodite," in *Egypt and the Classical World: Cross-Cultural Encounters in Antiquity*, ed. Jeffrey Spier and Sara E. Cole (Los Angeles: J. Paul Getty Museum, 2022), 60.

¹³⁷ Ibid.

¹³⁸ Ibid.

¹³⁹ Dorothy J. Thompson, *Memphis under the Ptolemies*, 2nd ed. (Princeton: Princeton University Press, 2012), 117-128.

¹⁴⁰ Ibid.

¹⁴¹ Minas-Nerpel, "The Creation of New 'Cultural Codes,'" 60-61.

¹⁴² Ibid.

¹⁴³ Ibid., 61-62.

¹⁴⁴ Ibid., 60.

of the *Wadj*-scepter, typical for goddesses.¹⁴⁵ Along with titles such as ‘Lady of All,’ these elements emphasize Hathor’s complex, multifaceted character.¹⁴⁶ Since the queen was understood to embody Hathor on earth, these qualities were also attributed to her, defining her role in the dynasty as a creative and generative force responsible for ensuring continuity.¹⁴⁷

The idea became extremely popular, so the kings continued it with later queens such as Berenice II.¹⁴⁸ Priests wrote decrees, for example the Canopus Decree, in which Ptolemy II and Queen Berenike were honored for their substantial support of animal cults.¹⁴⁹ They also constructed new shrines and added special rituals for these deified queens.¹⁵⁰ From the second century BCE onward, large meetings of Egyptian priests (the so-called “synods”) regularly honored the ruling king and queen.¹⁵¹ They set up royal statues in temple courtyards, performed sacrifices on their behalf, and created new priestly titles that carried the royal name.¹⁵² Many high-priestly families even began giving their children royal names to show loyalty.¹⁵³

As Dorothy Joan Thompson explains, Ptolemies were never worshipped in the same way as traditional Egyptian gods; the offerings were made “for the benefit of” the king and queen rather than directly “to” them.¹⁵⁴ Even so, this ruler cult worked very well: it gave the Greek dynasty a visible place inside Egyptian religious life, brought Greek and Egyptian elites closer together, and made the priests active partners in supporting royal power.¹⁵⁵ Once again, close cooperation with the Egyptian priesthood proved to be one of the most effective tools of Ptolemaic rule.¹⁵⁶

According to the Greek dedicatory custom, as outlined by Stefan Pfeiffer, the so-called hyper-formula (hyper + genitive, i.e., ὑπέρ + γενική), would be employed in dedications and the building of temples on behalf of the king or for gods, serving a key role in the articulation of

¹⁴⁵ Ibid.

¹⁴⁶ Ibid.

¹⁴⁷ Ibid.

¹⁴⁸ Thompson, *Memphis under the Ptolemies*, 122-123.

¹⁴⁹ Angela McDonald, “Animals in Egypt,” in *The Oxford Handbook of Animals in Classical Thought and Life*, ed. Gordon Lindsay Campbell (Oxford: Oxford University Press, 2014), 445.

¹⁵⁰ Thompson, *Memphis under the Ptolemies*, 123-124.

¹⁵¹ Ibid., 117-122.

¹⁵² Ibid.

¹⁵³ Ibid.

¹⁵⁴ Ibid., 125-126.

¹⁵⁵ Ibid.

¹⁵⁶ Ibid.

relationships between an exalted kingly person and the divine sphere.¹⁵⁷ Its meaning could indicate that the offering was made for the well-being of the king or by the king as a virtual agent.¹⁵⁸ In Egyptian contexts, priests acted as the pharaoh's representatives, thus offerings made in temples were effectively directed to the king himself.¹⁵⁹ Egyptian temples were fundamentally dedicated to the king's well-being, as the pharaoh was the primary ritualist who maintained *ma'at*, the cosmic order, through offerings and ceremonies. In return, the gods granted benefits such as fertility, prosperity, and stable rule.¹⁶⁰ Offerings for the king's well-being were therefore integral to temple rituals, demonstrating that the king, although mortal, was the highest god on earth whose power depended on the divine.¹⁶¹ This framework highlights the Ptolemies' religious role which was supported by the priest. Priests installed the king as a god in temples with statues, rituals, and feasts, but emphasized that his divine authority depended on the Egyptian gods.¹⁶²

Furthermore, Françoise Dunand et al. suggests that through the restoration and building of temples, the protection of sacred animals, and the honoring of priestly privileges, the Ptolemies sought to gain greater acceptance and demonstrate their respect for ancient Egyptian religious traditions, rather than imposing Hellenistic forms of worship.¹⁶³ Temples like the ones of Horus at Edfu and Isis at Philae served as both religious and economic centers under the supervision of the royal administration.¹⁶⁴ The priests were often part of well-established local dynasties and held high social status and independently maintained the ideological connection between the royal authority and the divine source.¹⁶⁵ Priests in Egypt frequently employed this hyper-formula in petitions addressed to the king or his officials, explicitly indicating that the offerings were made on behalf of the king.¹⁶⁶ This was acceptable because of the cult of sacred

¹⁵⁷ Pfeiffer, "Offerings and Libations for the King," 83-102.

¹⁵⁸ Ibid.

¹⁵⁹ Ibid.

¹⁶⁰ Ibid.

¹⁶¹ Ibid.

¹⁶² Ibid.

¹⁶³ Françoise Dunand, William Adler, and Michele Renee Salzman, "Traditional Religion in Ptolemaic and Roman Egypt," in *The Cambridge History of Religions in the Ancient World*, ed. Michele Renee Salzman and William Adler (Cambridge: Cambridge University Press, 2013), 165-188.

¹⁶⁴ Ibid.

¹⁶⁵ Ibid.

¹⁶⁶ Pfeiffer, "Offerings and Libations for the King," 83-102.

animals and local deities, as it highlights the role that animals played in everyday and religious life in Egypt.¹⁶⁷

One example discussed by Kyriakos Savvopoulos and Charles Crowther is a small votive offering from Alexandria, dedicated to the Egyptian god Anubis by a group of Egyptian priests.¹⁶⁸

Ὑπὲρ βασιλέως Πτολεμαίου
καὶ βασιλίσσης Ἀρσινόης
θεῶν Φιλοπατόρων Ἀνούβει
οἱ πρεσβύτεροι τῶν ὀλυροκό-
πων. ἱερεὺς Ἀμεννεύς.
Παχὼς Παᾶπις
Παψώβθης Παθβοῦς
Πετοσίρις Πεσιέχων.¹⁶⁹

As Savvopoulos informs us, the inscription states that the dedication was made on behalf of King Ptolemy and Queen Arsinoe, the Theoi Philopatores, to Anubis, by the “elders of the emmer-millers,” followed by a list of priests, including Ammeneus, Pachos, Paapis, Papsobthes, Pathbous, Petosiris, and Pesiechon.¹⁷⁰ Anubis represents yet another prominent Egyptian deity integrated early into the religious and political strategies of the Ptolemies. Already under Ptolemy II (Philopator’s grandfather), a temple dedicated to Anubis, Serapis, and Isis had been established in the region of Kanopos, under the supervision of the Egyptian priest Pasis.¹⁷¹ Although excavations in Alexandria have not revealed a temple of Anubis, various forms of evidence indicate that his cult was associated with those of Serapis and Isis. The identity of the dedicants here is also indicative of the close working relationship between the Egyptian

¹⁶⁷ Dunand, Adler, and Salzman, “Traditional Religion,” 165-188.

¹⁶⁸ Kyriakos Savvopoulos, “Religious Life in Ptolemaic Alexandria under the Royal Aegis: An Overview of the Epigraphic Evidence,” in *The Epigraphy of Ptolemaic Egypt*, ed. Alan Bowman and Charles Crowther (Oxford: Oxford University Press, 2020), 89-90; CPI 22 (TM 43668), Fig. 13.14, 243.

¹⁶⁹ Ibid.

¹⁷⁰ Ibid.

¹⁷¹ Ibid.

priesthood and the Ptolemaic dynasty that benefited both groups.¹⁷² The dedication is particularly notable because it is one of the few cases in Alexandria that refers to loyalty to Egypt in the Hellenistic *koine*.¹⁷³

According to Günther Hölbl, a pivotal example illustrating this pragmatic political theology and the collaboration between the Egyptian priesthood and the Ptolemies is the Amnesty Decree issued by Ptolemy VIII Euergetes II in 118 BCE.¹⁷⁴ The decree ensured that higher and lower priesthoods would receive significant advantages. Priests who had purchased their office were allowed to retain it (though limits were placed on independent transfer), and the immunity and freedom of temple lands was upheld, along with the right of the temples to grant asylum.¹⁷⁵ Such amnesty decrees, which record the benefactions of a ruler, date back to the earliest periods of the pharaonic state and form a key element of ancient Egyptian royal ideology. For example, as Boyo G. Ockinga points out, the texts from the shrine of Nectanebo I at Saft el-Henneh (Thirtieth Dynasty) present the king as being rewarded by the gods for his works on behalf of temples and cults.¹⁷⁶ The reward for these actions is kingship itself, understood as a form of power based on control over both Upper and Lower Egypt and the extension of royal authority over foreign lands, in accordance with traditional Egyptian royal ideology.¹⁷⁷ Ptolemaic temple inscriptions mirror this language and these concepts, describing how the gods grant and maintain royal authority in response to the king's piety.¹⁷⁸ This demonstrates that the ideological foundations of late Pharaonic and Ptolemaic rule share significant elements of continuity.¹⁷⁹

In addition, they played a significant role in legitimizing political authority and promoting peace and stability between Greek and Egyptian communities.¹⁸⁰ With the renovation of temple precincts, Euergetes II actively promoted the animal cults, acting as a devout pharaoh

¹⁷² Ibid.

¹⁷³ Ibid.

¹⁷⁴ The Amnesty Decree issued by Ptolemy VIII Euergetes II in 118 BCE granted privileges to priests, allowing them to retain their offices, confirming temple freedoms, and preserving the right of asylum, while reflecting a long tradition of royal benefactions in Ancient Egypt; *Berkeley Papyri Project*, Papyri.info, accessed 22 November 2025, <https://papyri.info/apis/berkeley.apis.263>; Hölbl, *A History of the Ptolemaic Empire*, 202-203.

¹⁷⁵ Hölbl, *A History of the Ptolemaic Empire*, 202-203.

¹⁷⁶ Boyo G. Ockinga, "The Satrap Stele of Ptolemy: A Reassessment," in *Ptolemy I and the Transformation of Egypt, 404-282 BCE* (Leiden: Brill, 2018), 187.

¹⁷⁷ Ibid.

¹⁷⁸ Ibid.

¹⁷⁹ Ibid.

¹⁸⁰ Hölbl, *A History of the Ptolemaic Empire*, 202-203.

in the ancient Egyptian style. Most importantly, it was decreed that the costs of burying the sacred animals of Apis and Mnevis would be covered by royal funds. This demonstration of royal concern for sacred animals is a common motif in priestly decrees issued between the reigns of Ptolemy III and Ptolemy V.¹⁸¹

It is also important to mention, as Emily Cole notes, that the strategic use of language in Ptolemaic Egypt played a crucial political role and reinforced the collaboration between the Ptolemies and the native priesthood.¹⁸² The so-called *Égyptien de tradition* (the traditional form of Middle Egyptian written in Hieroglyphs and Hieratic) was used as a prestigious language for religious texts, political decrees, and important inscriptions.¹⁸³ Demotic, on the other hand, served as a more accessible script for literate Egyptians who no longer used Middle Egyptian, mainly scribes and officials working in temples and local government offices.¹⁸⁴ By writing texts in multiple languages/scripts, the priests were able to demonstrate cultural authority and facilitated the Ptolemies' adoption of Egyptian religious and administrative practices.¹⁸⁵ This multilingual practice allowed the Ptolemaic kings to legitimize their rule, linking themselves to the pharaonic past, while simultaneously strengthening the priesthood's political and social influence.¹⁸⁶ The strategic use and manipulation of language thus acted as both a tool of governance and a symbol of the mutually beneficial relationship between the Greek rulers and the Egyptian elite.¹⁸⁷

This linguistic cohabitation of the Greek and Egyptian languages in Ptolemaic Egypt is also a term used and analyzed by Anastasia Maravela, who emphasizes its practical and administrative significance.¹⁸⁸ As she explains, Greek was the language of state authority, the courts, and official transactions, whereas demotic remained as the medium for local, religious, and community affairs. Bilingual priests and scribes acted as intermediaries, translating

¹⁸¹ Ibid.

¹⁸² Emily Cole, "Negotiating Elite Identity through Linguistic Display in Ptolemaic and Early Roman Egypt," *Ancient Society* 49 (2019): 231-258, <https://doi.org/10.2143/AS.49.0.3286887>.

¹⁸³ Ibid.

¹⁸⁴ Ibid.

¹⁸⁵ Ibid.

¹⁸⁶ Ibid.

¹⁸⁷ Ibid.

¹⁸⁸ Anastasia Maravela, "Greek Meets Egyptian at the Temple Gate: Bilingual Papyri from Hellenistic and Roman Egypt (Third Century BCE-Fourth Century CE)," in *Multilingualism and History*, ed. Aneta Pavlenko (Cambridge: Cambridge University Press, 2023), 50-70.

documents and ensuring communication between Greek officials and Egyptian society.¹⁸⁹ This bilingual competence not only played a crucial role in effective governance but also reinforced the priesthood's central role as cultural and political mediators, creating a bridge between Egyptian traditions and the Hellenistic state apparatus.¹⁹⁰

To summarize, under Ptolemaic administration, the priestly class served a pivotal role in mediating between the Greek rulers and the indigenous Egyptian population, helping to legitimize the Macedonian rule, whilst blending the Egyptian religious tradition with Hellenistic culture.¹⁹¹ This close connection between temple, palace, and sacred animals created a stable environment in which Greek rulers and Egyptian priests could work and cooperate.¹⁹² The framework outlined here (state support for animal cults, temple management of living animals, and the shared language of legitimacy) will allow us to see, in specific cases of the cat and the dog, how the same system of power and religious organization affected each animal differently, depending on how it was used for worship and political purposes.¹⁹³

Chapter 2. Animals and Human Society in Ptolemaic Egypt: Utility, Companionship, and Cult Practices

2.1 The Dual Roles of Animals in Ptolemaic Egypt: Practical Utility and Human Companionship

Historically, many different peoples and cultures employed a wide range of animals for various utilitarian purposes. This broader pattern is also clearly visible in Ptolemaic Egypt, where the use of animals became deeply integrated into daily life and closely connected to the functions and interests of the royal administration. This wider state system also extended across

¹⁸⁹ Ibid.

¹⁹⁰ Ibid.

¹⁹¹ Gorre, "A Religious Continuity between the Dynastic and Ptolemaic Periods?" 99-112.

¹⁹² Thompson, *Memphis under the Ptolemies*, 102-104.

¹⁹³ Salima Ikram, "Speculations on the Role of Animal Cults in the Economy of Ancient Egypt," in *Apprivoiser le sauvage-Taming the Wild: Glimpses on the Animal World in Ancient Egypt*, ed. M. Massiera, B. Mathieu, and F. Rouffet, CENIM 11 (Montpellier, 2015), 211-228.

religious, economic, and administrative spheres, as well as into warfare, magical practices, hunting, consumption of meat, sacrificial rituals, spectacles involving animal cruelty, horse and chariot racing, animal triumphs, and even medical practice.¹⁹⁴ Animals were valued not only for their symbolic and sacred functions but being used in all aspects of the state economy, were systematically bred, managed, and taxed; they were made available to the state as an essential productive resource.¹⁹⁵

In contrast to the various forms of utilitarian exploitation of animals discussed above, we must also consider species such as cats and dogs that were kept as household companions, since in these cases we observe an entirely different pattern of treatment and human-animal interaction.¹⁹⁶ Michael MacKinnon observes that the modern use of the term “pets” usually involves close and personal bonds between humans and animals. This connection is marked by emotional attachment, shared living spaces, individual names, and the fact that such animals are not consumed as food.¹⁹⁷ Small species like dogs and cats often meet these criteria, which help explain their widespread popularity as companion animals across many cultures. Examples of pet-keeping certainly existed in antiquity, for instance in Ptolemaic Egypt, where special burials, inscriptions, and offerings demonstrate that some animals were honored or remembered.¹⁹⁸ Yet, animals honored or commemorated in these ways were not always considered “pets,” and many companion animals did not receive any distinctive care after death.¹⁹⁹ We must be careful not to project modern assumptions onto the ancient world and take into consideration the term “personal animals”, suggested by modern scholars to avoid confusion with contemporary notions of pet ownership and to emphasize that such relationships were neither standardized nor socially institutionalized in antiquity.²⁰⁰

¹⁹⁴ Angela McDonald, “Animals in Egypt,”; Timothy Howe, “Value Economics: Animals, Wealth, and the Market”; Michael MacKinnon, “Hunting”; Jeremy McInerney, “Civilization, Gastronomy, and Meat-Eating”; Michael MacKinnon, “Pets”; Adrienne Mayor, “Animals in Warfare”; Daniel Ogden, “Animal Magic”; Peter Struck, “Animals and Divination”; Gunnel Ekroth, “Animal Sacrifice in Antiquity”; Jo-Ann Shelton, “Spectacles of Animal Abuse”; Sinclair W. Bell and Carolyn Willekes, “Horse Racing and Chariot Racing,” in *The Oxford Handbook of Animals in Classical Thought and Life*, ed. Gordon Lindsay Campbell (Oxford: Oxford University Press, 2014).

¹⁹⁵ Howe, “Value Economics,” 137-151.

¹⁹⁶ MacKinnon, “Pets,” 269-279.

¹⁹⁷ Ibid.

¹⁹⁸ Ibid.

¹⁹⁹ Ibid.

²⁰⁰ Ibid.

Moreover, Michael Mackinnon notes that in the ancient world it was not always clear the distinction between “pet” and “working animal” since many animals could serve practical purposes for humans while also receiving care or attention similar to that given to pets.²⁰¹ For example, dogs used for guarding or herding, horses for riding or pulling chariots, cats and weasels for controlling pests, and even livestock such as goats, pigs, and poultry could all receive personal care or be given names.²⁰² In other words, many animals had a dual role: they were both useful and personally connected to humans. This dual role depended on several factors, such as economic, social, and emotional considerations, as well as religious beliefs.²⁰³ These factors help explain the varied treatment of animals, as well as the differences in how they were treated in different contexts.²⁰⁴

In Ptolemaic Egypt, for example, animals had a central role in the agrarian economy. This is evidenced by representations in tomb and temple reliefs that repeatedly show oxen pulling the plough, donkeys and cattle treading seed into the soil, and sheep or goats treading in the post-harvest threshing process.²⁰⁵ Livestock also supplied essential secondary products such as meat, milk, fat, leather, and hides, which were everyday necessities.²⁰⁶ Wool, however, remained of limited importance in traditional Egyptian textile production; only after the arrival of Greek settlers and the introduction of new breeds and techniques during the Hellenistic period did large-scale wool production become significant.²⁰⁷

The rapid spread of Hellenistic irrigation technologies in Ptolemaic Egypt, most notably the animal-powered *Saqiya*, a geared water-lifting wheel usually driven by oxen walking in a circle, became widespread in Egypt.²⁰⁸ Although its precise date of introduction is still debated, a complete example depicted in the second-century BCE Wardian tomb at Alexandria confirms that it was a fully developed mechanism and already in use by that time, combining a vertical wheel, horizontal cogwheel, and a chain of pots.²⁰⁹ The *Saqiya* was almost always powered by

²⁰¹ Ibid.

²⁰² Ibid.

²⁰³ Ibid.

²⁰⁴ Ibid.

²⁰⁵ McDonald, “Animals in Egypt,” 447.

²⁰⁶ Ibid.

²⁰⁷ Ibid.

²⁰⁸ Venit, Marjorie Susan. “The Painted Tomb from Wardian and the Antiquity of the *Sāqiya* in Egypt.” *Journal of the American Research Center in Egypt* 26 (1989): 219-222. <https://doi.org/10.2307/40000709>.

²⁰⁹ Ibid.

the same oxen that ploughed the fields and threshed the grain.²¹⁰ In addition to employing different types of draught animals, it was common practice within Ptolemaic society for donkeys to be used primarily for long-distance transport, for oxen to perform agricultural work and for horses to be used primarily for heavy work.²¹¹

In addition, as Thompson notes, animal husbandry formed an additional source of wealth, providing income for settlers and tax revenues for the crown.²¹² Our knowledge of sheep and goat husbandry in Ptolemaic Egypt derives primarily from two complementary bodies of evidence. One source consists of the livestock declarations officially submitted to the authorities for taxation, and the other comprises private administrative records from large estates, especially the Zenon archive from the Fayum.²¹³ When combined with the results of land surveys and agricultural reports, these sources reveal an extensive and highly organized pastoral economy in Ptolemaic Egypt, supporting not only the military cleruchies but also Greek, Jewish, and Arab settlers.²¹⁴ In both the Arsinoite and Memphite *nomes*, the sheep and goat herds on the estates of Apollonios numbered in the thousands; these animals were raised, rented, and taxed in a systematic manner.²¹⁵ Whether this large-scale pastoralism was a Ptolemaic innovation or a continuation of earlier temple practices remains uncertain, but extensive livestock management expanded rapidly due to land-reclamation projects in the Fayum and the growing urban populations of Alexandria and Ptolemais Hermiou.²¹⁶

To understand the financial relationship between livestock and the state, the tax system is crucial. The *ennomion*, for example, was a pasture tax, and livestock taxes were paid not in kind but exclusively in cash, making animals a reliable source of monetary revenue for the government.²¹⁷ In addition, livestock owners were required to pay the *phylakitikon* (a guarding tax), rent for leasing or using animals, and various other fees, such as the one-obol-per-head tax

²¹⁰ Ibid.

²¹¹ McDonald, "Animals in Egypt," 447-448.

²¹² Dorothy Thompson, "Animal Husbandry in Ptolemaic Egypt," in *The Economies of Hellenistic Societies, Third to First Centuries BC*, ed. Zosia Archibald, John Davies, and Vincent Gabrielsen (Oxford: Oxford University Press, 2011), 390-401.

²¹³ Ibid.

²¹⁴ Ibid.

²¹⁵ Ibid.

²¹⁶ Ibid.

²¹⁷ Ibid.

on small stock. Even pastureland itself was subject to monetary rent.²¹⁸ This system shows how deeply animals were fiscally exploited, as every stage of livestock management, grazing, breeding, renting, and selling, generated income for the state.²¹⁹

In conclusion, as has been explained, animals often had a dual role, and sometimes it is difficult to fully understand this role, as it depended on many factors. Additionally, the fact that animals in ancient Egyptian religion had a specific role, deeply connected with the divine sphere, shaped Egyptian civilization in a unique way.²²⁰ With the arrival of the Macedonian kings, a great interest emerged in sacred animal cults, as well as in the large-scale breeding of animals used as votive offerings.²²¹

2.2 The Exploitation of Animals in Ptolemaic Egypt: Breeding, Mummification, and Economic Roles

In striking contrast to their utilitarian functions, the religious veneration of animals did not decline in the Ptolemaic period but instead became more intense, placing animal cults at the very center of political and economic life.²²² The long tradition of animal cults was refashioned as a significant economic industry. In addition to the cult practices focused on the adoration of individual divine manifestations, such as the Apis Bull, the veneration of whole species, such as the cat, ibis, dog and crocodile, led to the mass mummification of animals.²²³

According to Salima Ikram, ancient Egyptians mummified and buried millions of animals.²²⁴ At Saqqara alone, it is estimated that approximately 10,000 birds were interred each year.²²⁵ Dieter Kessler notes that in the Ptolemaic period the Hermopolitan ibis-breeding centers

²¹⁸ Ibid.

²¹⁹ Ibid.

²²⁰ McDonald, "Animals in Egypt," 441-442.

²²¹ McDonald, "Animals in Egypt," 441-442; Ikram, *Divine Creatures*, 7-8, 10.

²²² Ibid.

²²³ Stéphanie Porcier, Camille Berruyer, Stéphane Pasquali, Salima Ikram, Berthet Didier, and Paul Tafforeau, "Wild Crocodiles Hunted to Make Mummies in Roman Egypt: Evidence from Synchrotron Imaging," *Journal of Archaeological Science* 110 (2019), <https://doi.org/10.1016/j.jas.2019.105009>.

²²⁴ Ikram, *Death and Burial*, 77, 91.

²²⁵ Ibid.

produced about one thousand mummies each year, resulting in an annual total of roughly fifteen thousand ibis mummies from ten to fifteen *ibiotropheia*.²²⁶ Lidiya M. McKnight and Stephanie Atherton-Woolham also note that in his publication on the work at Beni Hasan, Garstang mentions the 1889 discovery of a nearby catacomb at Speos Artemidos, which contained 180,000 mummified cats.²²⁷ Edward Bleiberg notes that the dog cemetery at Saqqara contained seven million mummies.²²⁸ Animal mummies can be categorized into four types: pets, which were buried alongside their owners or in separate graves; victual mummies, intended to provide an eternal supply of food for humans in the afterlife; sacred animals, which were honored during their lives and mummified with ceremony upon death; and votive mummies, offered at the shrines of gods to whom these animals were sacred.²²⁹ The first three types of animal mummies are found across Egyptian history, whereas votive mummies are primarily linked to the later periods and especially the Ptolemaic period where the number of votive animal mummies produced to meet the demand of pilgrims seeking the intercession of the gods became an industrial-scale process.²³⁰ This enormous production, involving large breeding farms and workshops, guaranteed the temples a regular income and thus reinforced the financial and administrative influence of the priesthood.²³¹

On the other hand, Dieter Kessler has proposed a different interpretation of votive mummies. Rather than viewing them strictly as offerings, he argues that animals living and dying within temple precincts or on temple-owned land were automatically considered sacred.²³² Because they had existed in consecrated space, these animals were regarded as belonging to the god and therefore had to be mummified and deposited in catacombs dedicated to that deity.²³³ In his model, the sequence mother animal > sacred animal > offspring of sacred animal > deification applied to all animals inhabiting sacred enclosures.²³⁴ Kessler explains the large

²²⁶ Dieter Kessler and Abd el-Halim Nur el-Din, "Tuna al-Gebel: Millions of Ibises and Other Animals," in *Divine Creatures: Animal Mummies in Ancient Egypt*, ed. Salima Ikram (Cairo: American University in Cairo Press, 2015), 155-156.

²²⁷ Lidiya M. McKnight and Stephanie Atherton-Woolham, eds., *Gifts for the Gods: Ancient Egyptian Animal Mummies and the British* (Liverpool: Liverpool University Press, 2015), 43.

²²⁸ Bleiberg, "Animal Mummies: The Souls of the Gods," 64.

²²⁹ Ikram, *Divine Creatures*, 1.

²³⁰ Ikram, *Death and Burial*, 77.

²³¹ Ikram, "Creatures of the Gods", 3-5.

²³² Kessler, "Introduction into the Theology and Ritual Use of Sacred Animals," 1-3, 28-29.

²³³ *Ibid.*, 14, 22, 53.

²³⁴ *Ibid.*, 18-19.

number of buried sacred animals as a result of the increasing “*Osirianisation*” of society during the Late and Ptolemaic periods.²³⁵ He links the killing of sacred animals to ritual renewal connected with the Osirian New Year cycle and the symbolic defeat of chaos.²³⁶ Access to Osirian burial areas was restricted to selected temple personnel, while the general population was excluded, often by physical barriers.²³⁷ Only priests and members of specific cultic groups were allowed to dedicate these animals.²³⁸ Objects such as bronzes and jars found at sites like Tuna should therefore be understood as institutional deposits related to participation in Osirian rituals rather than private votive offerings.²³⁹ According to this view, the enormous number of animal mummies in the Ptolemaic and early Roman periods resulted from expanded royal cult institutions and burial installations, particularly under Ptolemy I and II, rather than from pilgrim activity.²⁴⁰ Consequently, according to Kessler, animals that were not direct manifestations of the gods, such as flamingos, nightjars, and other species found mummified in the Tuna el-Gebel catacombs, likely died within the sacred boundaries of temple-owned land and were mummified because they were considered part of the god’s consecrated domain.²⁴¹ More specifically, a large number of animal mummies connected with a god, such as ibises, were not understood as the god’s embodiment but as creatures living within the sacred confines of the temple, honored for their resemblance to the deity rather than worshipped as gods.²⁴²

Nevertheless, Salima Ikram questions this view, arguing that thousands of mummified animals have been found showing signs of mistreatment, abuse or intentional killing.²⁴³ At the same time, Korshi Dosoo notes that scholars who study animal cults, particularly Alain Charron, have suggested that the killing of animals intended for votive mummification was likely

²³⁵ Kessler, “Introduction into the Theology and Ritual Use of Sacred Animals,” 43; Angelo Colonna, *Religious Practice and Cultural Construction of Animal Worship in Egypt from the Early Dynastic to the New Kingdom: Ritual Forms, Material Display, Historical Development* (Oxford: Archaeopress Publishing Ltd, 2021), 199, Archaeopress Egyptology 36.

²³⁶ Kessler, “Introduction into the Theology and Ritual Use of Sacred Animals,” 45, 51.

²³⁷ *Ibid.*, 51.

²³⁸ *Ibid.*, 51, 54.

²³⁹ *Ibid.*, 46, 51.

²⁴⁰ *Ibid.*, 8-9, 40, 53.

²⁴¹ *Ibid.*, 6-10.

²⁴² *Ibid.*, 44.

²⁴³ Ikram, *Divine Creatures*, 10; Ikram, *Death and Burial in Ancient Egypt*, 90.

restricted to the priesthood.²⁴⁴ Their religious status allowed them to perform actions that would have been considered religiously forbidden if carried out by others, and such practices may have been kept out of public view.²⁴⁵ However, as Ikram notes, more evidence is needed for each of the two interpretations to be certain.²⁴⁶ Even so, it is clear that whether these animals were votive offerings from individuals or respectful burials of creatures living on temple grounds, they were in some way connected to the divine.²⁴⁷

For ancient Egyptians, mummification was understood as a process of transformation from the ordinary to the sacred.²⁴⁸ They considered mummification of sacred and pet animals to be an assurance of the continued existence of gods or respectively, favorite companions in the afterlife and similarly expressed the belief that animals had a soul (*ka* and *ba*) to a degree comparable to that of humans.²⁴⁹ Through mummification, they sought to preserve the physical body so that it could continue to house and support the soul.²⁵⁰ As a result, the *ka* and *ba* (the spiritual aspects of a person or the animal) could continue to exist, inhabit the body, and function.²⁵¹ Within this framework, according to a statement by an Egyptian priest named Hor, animal mummies were understood as the souls of the gods and acted as divine messengers.²⁵² He explained that the ibis represented the soul of Thoth, while the hawk represented the soul of several different gods.²⁵³ For this reason, some animals were believed to be, or to contain, a *ba*, a part of the soul that could act in both the human and the spiritual worlds.²⁵⁴

²⁴⁴ Korshi Dosoo, “Living Death and Deading Life: Animal Mummies in Graeco-Egyptian Magic and Ritual,” in *Magikon zōon*, ed. Jean-Charles Coulon and Korshi Dosoo (Paris: Institut de recherche et d’histoire des textes, 2022), 387, <https://doi.org/10.4000/books.irht.729>.

²⁴⁵ Ibid.

²⁴⁶ Ikram, *Divine Creatures*, 10; Ikram, *Death and Burial in Ancient Egypt*, 90.

²⁴⁷ Ibid.

²⁴⁸ Salima Ikram et al., *The Animal Mummies of the Museo Egizio, Turin* (Modena: Franco Cosimo Panini Editore, 2024), 10.

²⁴⁹ Ikram, “Creatures of the Gods”, 1-2; Ikram, *Death and Burial*, 23-31.

²⁵⁰ Ikram, “Creatures of the Gods”, 3.

²⁵¹ Ikram, *Death and Burial*, 48-49.

²⁵² Bleiberg, “Animal Mummies: The Souls of the Gods,” 81-82.

²⁵³ Ibid.

²⁵⁴ Ibid.

As a result, votive animal mummies were created so that these souls could act as intermediaries between humans and the gods.²⁵⁵ Once an animal was mummified, it was believed to become the *ba* of the god to whom it was connected.²⁵⁶ This belief is frequently mentioned in texts from the ibis sanctuary at Saqqara.²⁵⁷ The *ba*, which formed part of every person's spiritual identity, was commonly shown as a bird with a human head.²⁵⁸ This is why today we have at our disposal a great number and variety of mummified animals. Once a sacred animal was mummified, it gained a semi-divine status, and its body, like that of the gods, was believed to become gold.²⁵⁹ This idea explains why many humans and animal mummy masks or body parts were gilded or painted yellow (Fig.1) to show this change.²⁶⁰



Figure 1. Coffin for a cat containing a mummy, with gilded facial features resembling a gold mask.

Inventory Number: Cat.2361.

Source: Museo Egizio, Turin Online Collection.

Sacred animals were among the most important types of mummies.²⁶¹ Egyptians believed that each god had a special animal connected to them, and only one animal could serve as a host for the god's divine spirit.²⁶² Priests could recognize these animals by their markings, and during

²⁵⁵ Ibid.

²⁵⁶ Ibid.

²⁵⁷ Ibid.

²⁵⁸ Ibid.

²⁵⁹ Ikram et al., *Animal Mummies*, 10.

²⁶⁰ Ibid.

²⁶¹ Ikram et al., *The Animal Mummies*, 12.

²⁶² Ibid.

their lives, these animals were treated by people as living gods on earth.²⁶³ For example, they were fed special foods, participated in ceremonies, and even had oracular powers. When they died, their divine spirit moved to a new host, and the dead animal was mummified and buried in a special tomb.²⁶⁴

In addition, as Ikram has mentioned, the most common animal mummies were votive or ex-voto offerings.²⁶⁵ These were animals associated with a god but not regarded as hosts for the divine spirit; instead, certain animals could be understood as ‘avatars’ of specific deities.²⁶⁶ Because people believed that they were a “gift to the god,” they used to offer these types of mummies throughout the year on multiple occasions and especially during important dates, such as ceremonial ones.²⁶⁷ Pilgrims could buy these animals at temples, explain their wishes to priests, and have the priest consecrate the animal, sending the prayer to the god. After this, the mummies were kept in sacred places until they were buried in catacombs, pits, or mass tombs, often during religious festivals.²⁶⁸ Many types of animals were used for this purpose, including cats, dogs, snakes, mongooses, crocodiles, and even beetles.²⁶⁹

Between the Late Period and Roman period (c. 664 BCE-320 CE), millions of votive mummies were produced, which indicates that there was a significant increase in the breeding of animals to meet this demand.²⁷⁰ Some of the votive animals that were offered were intentionally killed as votive sacrifices rather than being considered sacred or treated as pets. Exotic animals, such as baboons, were occasionally imported for use in temple cults.²⁷¹ The existence of breeding programs and the exploitation of animals can be supported by various forms of evidence, although this cannot be stated with absolute certainty. One form of evidence for the diversity among votive mummies is seen in cat mummies, which display notable variations in size, ear morphology, and form. Some exhibit larger or smaller ears, others show rounded or

²⁶³ Ibid.

²⁶⁴ Ibid.

²⁶⁵ Ibid., 13-14.

²⁶⁶ Ikram, “Role of Animal Cults,” 211-228.

²⁶⁷ Ikram et al., *The Animal Mummies*, 13-14.

²⁶⁸ Ibid.

²⁶⁹ Ibid.

²⁷⁰ Ibid.

²⁷¹ Ibid.

triangular shapes, ears bent inward, or even the absence of one ear.²⁷² Of course, this phenomenon is not observed only in cats but also in other animals used as votive mummies.

Secondly, mummification techniques can also provide evidence of how animal mummies were produced and, in many cases, how these animals were abused or mistreated. While these techniques changed over time, this section focuses on the methods used mainly during the Late and Greco-Roman periods, when most votive mummies were offered. A common technique involved removing the internal organs through a cut and then treating the body with natron to dry it.²⁷³ This method (desiccation and anointment) became widespread during this period, especially for votive animal mummies, because it was quicker and more practical than the longer evisceration and drying methods used in the Middle and New Kingdoms.²⁷⁴ It is likely that the same natron was reused for several animals due to economic reasons, which meant the drying was often incomplete, resulting in generally lower-quality mummies.²⁷⁵ Another technique involved removing the flesh from the dead animal before mummification.²⁷⁶ Scholars still debate this practice, as it is unclear why the flesh was removed and whether it served a particular purpose.²⁷⁷ Many mummified animals show signs of defleshing, mostly from the Greco-Roman period, when the production of votive offerings reached its maximum.²⁷⁸ Finally, there is the molten bitumen and resin technique, which was an extremely violent technique for the animal, since the animal was alive and was dipped into containers of hot bitumen or resin before being wrapped.²⁷⁹ The embalmer would hold the animal by its feet and immerse it in the hot liquid, killing it at the same time.²⁸⁰ This method allowed for quick killing and then mummification, but the animals were usually poorly preserved.²⁸¹

²⁷² Ikram et al., *The Animal Mummies*, 142-178.

²⁷³ Lidija Mary McKnight, *Imaging Applied to Animal Mummification in Ancient Egypt* (Oxford: British Archaeological Reports [Archaeopress], 2010), 7; Ikram, *Divine Creatures*, 21-23.

²⁷⁴ McKnight, *Imaging*, 7; Ikram, *Divine Creatures*, 25.

²⁷⁵ Ibid.

²⁷⁶ McKnight, *Imaging*, 8; Ikram, *Divine Creatures*, 25.

²⁷⁷ McKnight, *Imaging*, 8.

²⁷⁸ McKnight, *Imaging*, 8; Salima Ikram, "Manufacturing Divinity: The Technology of Mummification," in *Divine Creatures: Animal Mummies in Ancient Egypt*, ed. Salima Ikram (Cairo and New York: The American University in Cairo Press, 2015), 25.

²⁷⁹ McKnight, *Imaging*, 8; Ikram, "Manufacturing Divinity," 26.

²⁸⁰ Ikram, *Divine Creatures*, 26.

²⁸¹ McKnight, *Imaging*, 8; Ikram, "Manufacturing Divinity," 26.

Furthermore, during this era, wrapping techniques, textile types and shapes, bandaging methods and patterns (Fig.2, Fig.3, Fig.4), as well as the use of oils and resins, became increasingly complex, and greater attention was given to these aspects.²⁸² Possibly, these changes constitute another factor in the commercialization of animals. Based on a recent study on the bandaging patterns of animal mummies from Ancient Egypt by Salima Ikram et al., it has been demonstrated that animal mummies can take various forms: some replicate the posture of the animal they contain or are intended to contain, while others follow a more standardized wrapping.²⁸³ The same species may be prepared in multiple ways, as has been suggested, although it remains unclear whether these differences reflect chronological change, geographic origin, or workshop practices; cost may also have played a role, but this has not yet been confirmed.²⁸⁴

More specifically, they created a typology of animal mummies from museum collections throughout the world. The results showed that animal mummies were prepared using a wide range of bandaging techniques, reflecting both functional and decorative choices. These include plain fabrics, sometimes enhanced with edging, painted decoration, appliqué, crisscrossed or net patterns (Type A); overlapping bandages in spiral or herringbone motifs, including monochrome, polychrome, or diamond patterns (Type B); simple orthogonal interweaving such as tabby, chevron twill, or crenellated patterns (Type C); more complex coffered designs with varied coloring and mirrored or meandered patterns (Type D); and hybrid techniques, including diamond coffers or D-shaped arrangements (Type E).²⁸⁵ This classification highlights the technical diversity and creativity present (Fig.2, Fig.3, Fig.4) in the production of votive animal mummies in Ancient Egypt.

²⁸² Ikram et al., *The Animal Mummies*, 10.

²⁸³ Salima Ikram, Marie Vandenbeusch, Matilde Borla, and Cinzia Oliva, "It's a Wrap! Bandaging Patterns on Animal Mummies from Ancient Egypt," *Rivista del Museo Egizio* 9 (2025), <https://doi.org/10.29353/rime.2025.7357>.

²⁸⁴ Ibid.

²⁸⁵ Ibid.



Figure 2. Cat mummy. Inventory Number: Cat. 2348/02. Source: Museo Egizio, Turin Online Collection.



Figure 4. Cat mummy. Inventory Number: Cat. 2349/01. Source: Museo Egizio, Turin Online Collection.



Figure 3. Cat mummy. Inventory Number: Cat. 2349/04. Source: Museo Egizio, Turin Online Collection.

In addition, Maria Diletta Pubblico notes that during mummification, the ritual transformation of animal offerings was carried out through the careful manipulation and wrapping of the body.²⁸⁶ Ancient Egyptian texts and images rarely describe the handling of the body itself, focusing instead on the elaborate wrapping, which allowed pilgrims to select from a wide variety of animal mummies.²⁸⁷ This deliberate silence suggests that the emphasis on wrapping was intentional.²⁸⁸ Also, as she notes, variations in animal mummies may reflect changes in wrapping techniques, regional styles, workshop practices, or pilgrims' requests.²⁸⁹ It is likely that pilgrims chose their offerings directly in the workshops, where some mummies were ready for purchase, as suggested by the plain, unfinished sides intended to be hidden, leaving only the decorated side visible.²⁹⁰ Another possibility is that models of mummies or examples of wrapping patterns were shown to devotees, allowing them to partly choose the appearance of their offering.²⁹¹ Worshippers may also have played a more active role,

²⁸⁶ Maria Diletta Pubblico, "Wrapping Matters: Unpacking the Materiality of Votive Animal Mummies," *Heritage* 8, no. 10 (2025): 415, <https://doi.org/10.3390/heritage8100415>.

²⁸⁷ Ibid.

²⁸⁸ Ibid.

²⁸⁹ Ibid.

²⁹⁰ Ibid.

²⁹¹ Ibid.

commissioning specific patterns and decorative features according to their personal preferences and budget.²⁹²

The cost of animal mummies varied depending on the amount of raw materials such as textiles, adhesives, colorants, and plant-based materials and the skilled labor needed to shape the bundles.²⁹³ Elaborate decorative patterns on the outer surface, intended to appeal both to pilgrims and to the gods, required time, expertise, and access to specialized craft knowledge, further increasing the value of the offering.²⁹⁴ In many cases, the wrapping may have been more important than the body inside, serving three purposes: symbolic, by shaping the mummy so the gods could recognize it; aesthetic, by making the bundle look attractive to pilgrims; and ritual, by turning the offering into a sacred object.²⁹⁵

Another form of evidence could be the large-scale production of animal mummy containers, from the different materials used and their costs to the effort required to create them. These are indications of the economic impact of the ritual use, mummification, and deposition of millions of animals, affecting both local and state-level economies.²⁹⁶ According to Johannes Auenmüller and Federica Facchetti animal mummy containers can be distinguished into four categories.²⁹⁷ The first type of animal containers are ones made of ceramic and were widely used for many animal mummies, especially for falcons and ibis catacombs in North Saqqara. The fact that they were made in large numbers shows that they were the cheapest option for keeping mummies.²⁹⁸ Other examples include clay coffins shaped like ibises and larger handmade ceramic boxes, which were sometimes used to hold wooden mummy containers, as seen at Tuna el-Gebel.²⁹⁹ The second type of animal mummy container is made of wood. Wooden containers were highly valued, with costs affected by the type of wood, its origin, processing, joinery, and

²⁹² Ibid.

²⁹³ Pubblico, “*Wrapping Matters*,” 415; Bob Brier, *Egyptian Mummies: Unraveling the Secrets of an Ancient Art* (New York: William Morrow, 1994), 229.

²⁹⁴ Pubblico, “*Wrapping Matters*,” 415.

²⁹⁵ Ibid.

²⁹⁶ Johannes Auenmüller and Federica Facchetti, “Ceramic, Wood, Stone & Bronze: Considerations about the Materiality and Value of Containers for Animal Mummies Kept in the Museo Egizio, Turin,” in *Animals in Religion, Economy and Daily Life of Ancient Egypt and Beyond*, ed. R. Pirelli, M.D. Pubblico, and S. Ikram, Studi Africanistici (Napoli: UniorPress, 2023), 32-34.

²⁹⁷ Ibid.

²⁹⁸ Ibid., 37-38.

²⁹⁹ Ibid.

reuse.³⁰⁰ Coatings, paint, inscriptions, and gilding added extra value, and decorated wooden containers were often placed inside larger stone or ceramic boxes.³⁰¹ Even boxes that look simple could be costly, because carving the animal form in a single piece of wood needed a skilled artisan, produced waste, and often required extra parts such as lids.³⁰²

The third type of animal mummy container was made of stone. Sarcophagi made of limestone were often created to fit the species and size of the animal and were used at sites like Saqqara for falcons, Tuna el-Gebel for ibises, and Elephantine for sacred rams.³⁰³ Moreover, small sarcophagi of different qualities were made for ibises and falcons, while more elaborate painted or animal-shaped coffins were created for cats, falcons, and sometimes ibises. Additionally, rectangular boxes with a carved image of the animal on top were also used for scarabs, shrews, and lizards.³⁰⁴ Although these stone coffins were usually small and made from local limestone, skilled artisans were needed in order to carve the reliefs and, in some cases, add painted decorations.³⁰⁵ The last type of animal mummy container is made of metal. Bronze coffins (Fig.5, Fig.6) were made using the lost-wax method, so each one was unique and usually did not need extra parts or decoration.³⁰⁶ Small figures, like shrews, ichneumons, or cat heads, could be separated votives or part of larger objects.³⁰⁷ Consequently, the production and trade of these bronzes show both the high demand and complexity of metal trade in the Eastern Mediterranean during the 1st millennium BCE.³⁰⁸

³⁰⁰ Ibid., 38-45.

³⁰¹ Ibid.

³⁰² Ibid.

³⁰³ Ibid., 45-46.

³⁰⁴ Ibid.

³⁰⁵ Ibid.

³⁰⁶ Ibid., 47-49.

³⁰⁷ Ibid.

³⁰⁸ Ibid.



Figure 5. Hollow-cast copper alloy animal mummy coffin. Inventory Number: Cat. 887. Source: Museo Egizio, Turin Online Collection.



Figure 6. Lower part of the coffin (from Fig. 5) showing a linen bundle placed in the upper part of the tube, about 5 cm from the bottom, probably containing the mummified remains of a cat. Source: Museo Egizio, Turin Online Collection.

To understand the cost of a bronze container, we must rely on the limited archaeological and textual evidence available.³⁰⁹ Bleiberg suggests that bronze containers for animal mummies were an additional expense, since one *deben* of bronze (about 90 grams) was worth 20 bronze *drachmas*.³¹⁰ At the same time, an agricultural worker in Ptolemaic Egypt earned about 18 *drachmas* per month.³¹¹ This means that bronze objects, including bronze mummy containers, were too expensive for the lower classes and were mainly affordable to wealthier individuals, such as priests and state officials.³¹² This indicates that lower social groups were more likely to offer simpler animal mummies, while more elaborate offerings were accessible mainly to wealthier individuals.³¹³ This practice also reflects the economic exploitation of animals within a system that functioned on principles of supply, demand, and profit. At the same time, votive animal mummies may have acted as markers of social status, since it would have been evident who could afford more costly offerings, even if this display of status was not always intentional.

³⁰⁹ Bleiberg, “Animal Mummies: The Souls of the Gods,” 100-104.

³¹⁰ Ibid.

³¹¹ Ibid.

³¹² Ibid.

³¹³ Ibid.

Part of this large-scale production included pseudo-mummies. Some bundles, wrapped to look like cats, dogs, hawks, or other animals, were empty or contained only fragments of bones, lumps of mud, resin, or other small materials.³¹⁴ Occasionally, they included only part of the animal, representing the whole or even different species in one wrap.³¹⁵ It is also possible that feathers or other fragments became detached during mummification and were preserved separately instead of being discarded.³¹⁶ Some scholars have suggested that these bundles represent any creature that had lived within a sacred site and became holy by association.³¹⁷ Salima Ikram, on the other hand, has proposed that these animal mummies were made when there were not enough real animals available for offerings.³¹⁸ Priests may have believed that even a part of an animal was sufficient to represent the whole, and with the right spells and rituals, these fragments could serve as offerings to the gods.³¹⁹

As mentioned above, there was a large and organized system for producing animal mummies. During the Ptolemaic period, animal cults reached their peak, and the demand for mummies was probably very high, so there might not have been enough animals to meet it.³²⁰ Also, pseudo-mummies found in votive contexts were produced as part of the votive mummy industry, likely allowing pilgrims to remain unaware of the contents inside.³²¹ Furthermore, Ikram suggested that mummies wrapped in a very elaborate way were more likely to be falsified.³²² This was probably because embalmers wanted to attract the attention of potential buyers. These points support Ikram's view that pseudo-mummies were produced to meet the high demand, which may have exceeded the number of available animals.

Moreover, the fact that this technique was adopted later, rather than from the beginning of votive mummy production, suggests that something prompted embalmers and priests to change their mummification methods. McKnight notes that archaeological evidence from

³¹⁴ Salima Ikram, *Beloved Beasts: Animal Mummies from Ancient Egypt* (Cairo: Supreme Council of Antiquities / American University in Cairo Press, 2004), 17.

³¹⁵ Ikram, *Divine Creatures*, 14.

³¹⁶ Ikram, *Beloved Beasts*, 17.

³¹⁷ Ibid.

³¹⁸ Ikram, *Divine Creatures*, 14.

³¹⁹ Ibid.

³²⁰ McKnight, *Imaging*, 7.

³²¹ McKnight, *Imaging*, 85.

³²² Ikram, *Divine Creatures*, 14.

temples suggests that animals were bred and raised in captivity within temple complexes.³²³ This would have required housing vast numbers of animals at the same time, raising serious questions about logistics, such as where the animals were kept, how they were cared for, and who was responsible for them.³²⁴ Keeping such a system running and well-organized would have placed extreme pressure on space, labor, and manpower.³²⁵ At the same time, butchering an animal after death added another level of manipulation and economic exploitation, especially considering how many votive mummies could be made from a single animal.³²⁶ On the other hand, it could be argued that this practice may have had a somewhat positive effect, if it resulted in fewer animals being killed with the creation of pseudo-mummies. However, if we accept that falsified mummies were created because there were not enough animals available, and if we consider the archaeological evidence for the millions of animals killed to meet religious demand, this suggests an extreme level of animal exploitation, particularly of animals that were not regarded as direct manifestations of the gods.

In addition, the workforce involved must have faced very difficult conditions, especially during festival periods when production increased greatly.³²⁷ Managing all the different mummification techniques up to the final product would have required a great deal of labor. Considering all the stages involved in producing an animal mummy, the workload was substantial.³²⁸ At the same time, many surviving mummies show careful attention, at least in their outer appearance, suggesting that effort was invested in their presentation.³²⁹ McKnight also suggests that pseudo-mummies may have been produced because embalmers were paid per piece, meaning that the more mummies they produced, the more they earned.³³⁰ This raises further questions about temple practices and beliefs.³³¹ Did priests truly believe that a single part could represent the whole animal, and that the ritual act of depositing a mummy in a sacred necropolis was what truly mattered? Were pilgrims aware that some mummies contained only bones or other materials, and if so, did they care mainly about appearance and a way to show

³²³ McKnight, *Imaging*, 85.

³²⁴ Ibid.

³²⁵ Ibid.

³²⁶ Ibid., 86.

³²⁷ Ibid.

³²⁸ Ibid.

³²⁹ Ibid.

³³⁰ Ibid.

³³¹ Ibid.

their social status? Since more elaborate mummies cost more, this also suggests that votive mummies may have reflected wealth and social status.³³²

Bob Brier further supports this discussion by citing Hor's archive, in which Hor emphasized the need to ensure that pilgrims were not cheated and instructed workers to place "one god to one vessel," meaning that each pot should contain a complete ibis.³³³ If this is accepted, then Hor's insistence on including the entire ibis rather than just one part indicates that completeness had significant ritual meaning. Consequently, based on this explanation, a partial animal would not represent the whole, thus highlighting the care taken to produce "authentic" votive mummies.

Papyrological evidence gives an insight into the system of feeders and keepers of the animals. They were responsible for their daily care, feeding, and supervision, while at the same time benefiting from the economic structure that developed around the cults.³³⁴ A letter to Zenon from two *hierodouloi* of Bubastis dated to 247-240 BCE (P. Cair. Zen. III 59451) illustrates this dynamic.³³⁵ The two cat-feeders, serving the cult of Bubastis in the village of Sophthis, report that both the king (Ptolemy II Philadelphus) and Apollonios had granted individuals of their profession exemption from all compulsory labour throughout the country. Despite this royal privilege, Leontiskos, the chief policeman, compelled them to work in the harvest (work they completed so as not to trouble Zenon) and subsequently ordered them to make bricks, while allowing two actual brick-makers in the village to go free for his own purposes. The feeders therefore appeal to Zenon, requesting that he uphold and enforce the order issued by the king and the dioiketes.

This petition shows that animal feeders were under significant labor pressure, as they were repeatedly assigned to physically demanding tasks unrelated to their official role. The existence of officially designated cat feeders suggests an organized system of animal care, and likely breeding, within temple contexts. Also, the exemption from compulsory labor granted by royal authority indicates that animal feeders enjoyed a recognized and protected status. While not

³³² Ibid.

³³³ Brier, *Egyptian Mummies*, 235-237.

³³⁴ Ikram, "Role of Animal Cults," 211-228.

³³⁵ Michael Austin, *The Hellenistic World from Alexander to the Roman Conquest: A Selection of Ancient Sources in Translation* (Cambridge: Cambridge University Press, 1981), 419; P. Cair. Zen. 3.59451, DDBDP (online papyrus database), accessed December 1, 2025, <https://papyri.info/ddbdp/p.cair.zen;3;59451>.

necessarily belonging to an elite social class, feeders appear to have held a distinct professional status within temple economies. Finally, the existence of specialized feeders further supports the idea of organized animal care and possibly breeding, required to sustain the large-scale production of votive animal mummies.

Moreover, some animal mummies were found together with written texts asking the gods for help with human problems, such as protection or salvation, especially during the first millennium BCE.³³⁶ It is also important to note that one of these texts is a vow.³³⁷ A vow was a personal promise made between a person and a god.³³⁸ In this type of text, the writer promised to give money or goods to the god in exchange for help.³³⁹ Usually, the person asked for mercy during a difficult situation or for some form of assistance.³⁴⁰ The vow clearly stated that a specific payment or action would be offered to the god's temple in return for divine help.³⁴¹

From this, it can be concluded that offering money or goods to a temple to increase the chances of receiving divine help through a vow represents a form of economic exploitation of animals, from which the temples themselves ultimately benefited through yet another ritual process. In addition, the inclusion of a written text together with a votive mummy likely involved an extra cost, since not everyone was able to write and a scribe would have been required.³⁴² For this reason, only a small number of texts have been found accompanying votive animal mummies.³⁴³

To sum up, the evidence discussed above demonstrates that the production of votive animal mummies was part of a highly organized and large-scale system in the Ptolemaic era. The variety of mummification techniques, from desiccation and defleshing to the use of bitumen, reflects attempts to balance ritual requirements with speed, cost, and high demand. In the same way, the wrapping styles and the various types of containers, from simple ceramic vessels to decorated wooden, stone, and bronze coffins, reflect different levels of cost, effort, and social value. Additionally, it is important to note that this massive, deliberate breeding for the

³³⁶ Bleiberg, "Animal Mummies: The Souls of the Gods," 84-85.

³³⁷ Ibid.

³³⁸ Ibid.

³³⁹ Ibid.

³⁴⁰ Ibid.

³⁴¹ Ibid.

³⁴² Ibid., 86.

³⁴³ Ibid.

production of votive animals in Ptolemaic Egypt is also confirmed through X-ray studies, which have shown that many cat mummies found in the precinct of Bastet were deliberately killed for mummification, with some having their necks broken, while others had their skulls crushed with blunt instruments.³⁴⁴ All of these practices demonstrate a structured industry supported by specialized labor, temple and state administration, and complex logistical networks. At the same time, the large scale of production and the way animals were treated show the heavy pressure placed on both workers and animals to maintain the votive cults. What is certain, however, is that animals were the primary victims of this system. Although some animals received occasional attention for food and disease, the majority suffered from malnutrition, illness, and stress due to transportation and housing.³⁴⁵ The way these animals were treated as religious objects also demonstrates that they served an additional purpose as an economic resource for both temples and society, as their bodies and lives were utilized by temples, worshippers, and the economy of Ptolemaic Egypt.³⁴⁶

2.3 Case Studies: Cats and Dogs in Ptolemaic Egypt

The role of sacred animals was the key point where Greek and Egyptian beliefs could come together.³⁴⁷ Greeks who were initially surprised by animal worship later adopted the Egyptian deities through syncretism, creating hybrid forms that were agreeable to both groups.³⁴⁸ The association of the Apis Bull to Osiris as Serapis is considered the preeminent political and religious fusion of the dynasty.³⁴⁹ This process led to the creation of Hellenistic-Egyptian hybrid figures that are important for our topic.³⁵⁰ For example, Anubis, often shown as a dog or jackal, was associated with the Greek god Hermes (who guided souls), resulting in the hybrid deity

³⁴⁴ Ikram, *Death and Burial*, 91.

³⁴⁵ Ikram, "Role of Animal Cults," 211-228.

³⁴⁶ Ibid.

³⁴⁷ Manning, *The Last Pharaohs*, 31-34.

³⁴⁸ Stewart and Shaw, *Syncretism/Anti-syncretism*, 1-6.

³⁴⁹ McKechnie and Guillaume, *Ptolemy II Philadelphus and His World*, 121-128.

³⁵⁰ Ikram, "Creatures of the Gods." 1-2.

Hermanubis.³⁵¹ This shows how animals played an important role in combining cultural traditions and how these mixed deities became part of religious worship.

On the other hand, although there is no clear Hellenistic-Egyptian hybrid form of the goddess Bastet, Alleyn Diesel has suggested that during the Ptolemaic period she was loosely associated with Greek goddesses such as Artemis and was referred to as the “Mother of the Cats.”³⁵² Bastet was usually represented as a cat or a lioness and became particularly popular during the Ptolemaic period. She was also associated with other goddesses, including Hathor, Isis, and Mut.³⁵³ The festival in her city of Bubastis, dedicated to Bastet, was one of the largest in Egypt.³⁵⁴ The overall popularity of animal cults at this time was likely influenced by economic factors.³⁵⁵ In the case of the cat cult dedicated to Bastet, it was also accepted by the Greek population. Evidence from Bubastis or Saqqara shows that people with Greek names offered votive items to Bastet, or adopted names associated with her, such as Petobastis or Senobastis.³⁵⁶ At the same time, this cult may have served as a form of Egyptian nationalism, helping the local population stay united and protect their traditional beliefs.³⁵⁷

The above analysis has made clear that the double value of animals, ranging from their essential utilitarian function in agrarian production to their ultimate sacral status in syncretistic cults, underlines the impressive complexity of the Ptolemaic melting pot. This dichotomization shows how religion shaped the economy, with the same animal species sometimes taxed by the state (such as the *ennomion*), sometimes used in worship, sometimes kept as pets, and sometimes killed as offerings to the gods.³⁵⁸

Most importantly, the species that exhibit one of the strongest dichotomies between utility and deification, the dogs (utilized for guarding and hunting but associated with Anubis)

³⁵¹ Savvopoulos, “Religious Life in Ptolemaic Alexandria,” 89-90.

³⁵² Alleyn Diesel, “Felines and Female Divinities: The Association of Cats with Goddesses, Ancient and Contemporary,” *Journal for the Study of Religion* 21, no. 1 (2008): 83, <https://www.jstor.org/stable/24764036>.

³⁵³ Jaromir Malek, *The Cat in Ancient Egypt* (Philadelphia: University of Pennsylvania Press, 1997), 95.

³⁵⁴ Abdalla Abdel-Raziq, “Sacred Bark of the Bastet,” *مجلة الإتحاد العام للآثارين العرب* (Journal of the General Union of Arab Archaeologists) 12, no. 1 (2011): 14; Malek, *The Cat in Ancient Egypt*, 98.

³⁵⁵ Malek, *The Cat in Ancient Egypt*, 98.

³⁵⁶ Lesley Jackson, *Sekhmet & Bastet: The Feline Powers of Egypt* (London: Avalonia, 2018), 61; Malek, *The Cat in Ancient Egypt*, 99.

³⁵⁷ Ikram, *Divine Creatures*, 8; Malek, *The Cat in Ancient Egypt*, 99.

³⁵⁸ Thompson, “Animal Husbandry in Ptolemaic Egypt,” 390-401; Ikram, “Speculations on the Role of Animal Cults,” 211-228.

and the cats (used for vermin management but consecrated to Bastet), are, in fact, the perfect field of study in which to analyze this Hellenistic phenomenon.³⁵⁹ The selection of these two species of animals is not accidental, since both held a distinctive position within ancient Egyptian society, functioning simultaneously as part of the domestic sphere and as objects of religious veneration.³⁶⁰ Finally, because they appear frequently in a wide range of evidence, including textual, archaeological, artistic, and osteological sources, they offer clear and well-documented examples representing case studies through which one may analyze how this dual role was conceptualized, practiced, and integrated into daily life, as well as gain a better understanding of the broader cultural dynamics of this period.

Chapter 3. The Cat in Ancient Egypt: A Case Study

3.1 The Dual Role of the Cat: From Domestication to Religious Veneration

As has been explained and analyzed above, ancient Egyptians had an extremely close relationship with the natural world and particularly with the animals.³⁶¹ This is something that is directly reflected in their religious beliefs and in the divine qualities they attributed to them.³⁶² They had a strong belief that animals represented the power of the gods on earth and provided a bridge between the human and divine worlds.³⁶³ For the Egyptians, animals were not just part of the environment, something testified to by their presence in almost every area of daily life such as wall painting, sculptures, reliefs.³⁶⁴ It is also important to highlight that scholars have noted

³⁵⁹ McDonald, "Animals in Egypt," 441-448.

³⁶⁰ MacKinnon, "Pets," 269-275; Mayor, "Animals in Warfare," 286-287; McDonald, "Animals in Egypt," 441-448.

³⁶¹ Jackson, *Sekhmet & Bastet*, 11-13.

³⁶² Ibid.

³⁶³ Ibid.

³⁶⁴ Diesel, Alleyn. "Felines and Female Divinities: The Association of Cats with Goddesses, Ancient and Contemporary." *Journal for the Study of Religion* 21, no. 1 (2008): 78-79, <http://www.jstor.org/stable/24764036>.

that more than 20 percent of hieroglyphic signs depict animals, and animal imagery is very common in Egyptian art and symbolism.³⁶⁵

One of the most prominent animals was the cat, belonging to the feline family, and venerated as a sacred animal by the ancient Egyptians.³⁶⁶ Cats gained a great importance in ancient Egyptian society, religion and they had a long history since scholars have found cat remains dated before 4,000 BCE.³⁶⁷ Ancient Egyptians perceived both species of cats (*Felis chaus* and *Felis silvestris lybica*) in the same way, without distinction, something that is also explained by the same onomatopoeic word, *mii or miu*, used for both species.³⁶⁸ As James Allen Baldwin notes, to understand which species of cats were first domesticated, scholars should base their research on three types of evidence: the remains of cats in Egyptian burials; depictions of cats in Egyptian tombs or papyri; and statuettes in the form of cats.³⁶⁹ Around 2000 BCE, cats and humans had a closer relationship, as there are representations of cats in domestic environments, such as the painted scene of a cat in the tomb of Baket III at Beni Hasan during the Middle Kingdom period, dating to circa 1950 BCE.³⁷⁰ Another piece of evidence for a domestic cat is a limestone stela that depicts a woman with a cat behind her feet, dating to around 2400-1786 BCE and found in the area of Koptos.³⁷¹ Furthermore, an inscription from Dayr al-Bahri confirms the domestication of cats during this period, as it includes information showing that King Mentuhotep II of the Eleventh Dynasty (c. 2150 BCE-c. 1991 BCE) had a cat as a pet.³⁷² A tomb from Abydos that contained seventeen cat skeletons and offering pots further confirms the domestication of cats, since it shows the ancient Egyptians' desire to provide for these cats in the afterlife as well.³⁷³

Given these examples, the cat domesticated in Egypt around 2000 BCE, and Egyptians had already adopted a close relationship with cats, as witnessed by their depictions, burials,

³⁶⁵ Jackson, *Sekhmet & Bastet*, 11-13.

³⁶⁶ Ibid.

³⁶⁷ Diesel, "Felines and Female Divinities," 78-79.

³⁶⁸ Barbash, "How the Ancient Egyptians Viewed the Animal World," 39; Jackson, *Sekhmet & Bastet*, 22-23.

³⁶⁹ James Allen Baldwin, "Notes and Speculations on the Domestication of the Cat in Egypt," *Anthropos* 70, no. 3/4 (1975): 431-432, <http://www.jstor.org/stable/24764036>.

³⁷⁰ Malek, *The Cat in Ancient Egypt*, 49-50; Geraldine Pinch, *Handbook of Egyptian Mythology* (Santa Barbara, CA: ABC-CLIO, 2002), 132.

³⁷¹ Baldwin, "Domestication of the Cat in Egypt," 431-432.

³⁷² Ibid.

³⁷³ Ibid.

mummies, papyri and statuettes.³⁷⁴ Nevertheless, this process of domestication required a long period of time, depending on many factors, such as interaction between humans and animals, historical, political, and social changes, and religious beliefs, along with an understanding of the natural world.³⁷⁵ However, even during the Predynastic period, the ancient Egyptians had established a strong bond with animals. An example of this is the link between animals and gods with the rulers of this period, because they had linked royalty and animals, and as a result they used to adopt names of animals such as serpent, scorpion, or catfish to identify the divinity of animals with themselves.³⁷⁶ Consequently, nearly every wild or domestic animal (apart from mice, vermin, and species domesticated later, such as camels or horses) played a significant role in shaping ancient Egyptian religion.³⁷⁷

The domestication process as mentioned above was not an easy procedure. However, it became much easier when cats and humans became used to each other's presence and realized that living together was helpful for both sides.³⁷⁸ Cats were good at adapting to new environments, as proved by their wild ancestors in Egypt since they probably lived in varied habitats, so they had to take advantage of new opportunities that were essential for their survival.³⁷⁹ It is suggested that cats first stayed near granaries and storage areas and then began moving closer to people's homes.³⁸⁰ Their natural ability to hunt rats, mice, and especially snakes made them very useful for humans.³⁸¹ Cats also offered qualities different from other pets during that time, such as dogs, monkeys, and baboons, and they quickly became loved and accepted in Egyptian households.³⁸² For cats, human homes provided food and comfort, and in return they gave up some of their independence. This allowed humans to slowly influence their development through diet and selective breeding.³⁸³ In this way, as suggested by Jaromír Málek, cats eventually became domesticated or, more accurately, domesticated themselves.³⁸⁴

³⁷⁴ Ibid.

³⁷⁵ Ibid., 434-435.

³⁷⁶ Ikram, *Divine Creatures*, 7.

³⁷⁷ Baldwin, "Domestication of the Cat in Egypt," 437-438.

³⁷⁸ Malek, *The Cat in Ancient Egypt*, 55-56.

³⁷⁹ Ibid.

³⁸⁰ Ibid.

³⁸¹ Pinch, *Handbook of Egyptian Mythology*, 132.

³⁸² Malek, *The Cat in Ancient Egypt*, 55-56.

³⁸³ Ibid.

³⁸⁴ Ibid.

In addition, cats were useful to humans in a different way than other animals. Some animals, like pigs, cattle, sheep, and poultry, were kept by humans mainly for food or materials.³⁸⁵ Others, like horses, donkeys, and dogs, were valued for abilities humans did not have. Some animals, such as monkeys and baboons, were kept as pets for entertainment.³⁸⁶ Cats, on the other hand, were appreciated for qualities that required them to remain independent and free to move as they wished.³⁸⁷ The development of settled farming was the key factor that allowed cats to become domesticated. Ultimately, cats are basically animals of farming communities, while dogs are linked to hunting groups.³⁸⁸ This is why cats appeared later in ancient Egyptian domestication and why there is much more evidence of dogs in earlier periods.³⁸⁹

The rise of the cat in ancient Egyptian religion was remarkable and can be considered in many ways unusual, because it did not begin with a strong connection to major deities or important religious centers like other sacred animals.³⁹⁰ Additionally, the cat never achieved a high, formal divine status; for example, no temples contained reliefs of goddesses with the heads of cats.³⁹¹ Cats were not regarded as physical manifestations of divine beings, as was the case with sacred animals like Apis, Mnevis, and Buchis.³⁹² Rather, they served as mediators linking devotees with the gods, symbolically transmitting divine will and messages.³⁹³ This role can be explained by the believers' desire for a more direct relationship with the gods and for a closer, more personal form of interaction that did not rely on priestly mediation.³⁹⁴ The earliest evidence of this practice dates back to the New Kingdom, when the first centers of sacred animal

³⁸⁵ Ibid.

³⁸⁶ Ibid.

³⁸⁷ Ibid.

³⁸⁸ Ibid.

³⁸⁹ Ibid.

³⁹⁰ Ibid., 73

³⁹¹ Ibid.

³⁹² Maria Diletta Pubblico, "The Cult of Bastet during the First Millennium BC: Some Bronzes from the Museum of Fine Arts in Budapest," in *Egypt 2015: Perspectives of Research*, 2017, 214, <https://doi.org/10.2307/j.ctv170x4dg.24>.

³⁹³ Ibid.

³⁹⁴ Ibid.

necropoleis were established.³⁹⁵ Nevertheless, despite these limitations, over time cats eventually became more popular and their reputation spread throughout Egypt.³⁹⁶

Cats are/were considered members of the feline family and have been viewed throughout time as being solar creatures.³⁹⁷ Although Bastet was associated with feline symbolism and described as a protective mother goddess from as early as the Second Dynasty, her dominant iconographic representation during the Old and Middle Kingdoms remained leonine.³⁹⁸ The depiction of Bastet as a cat or a cat-headed woman became firmly established only in later periods, particularly from the Twenty-Second Dynasty onward.³⁹⁹ Bastet was believed to be the daughter of Re and regarded as a protective mother goddess; she was therefore frequently depicted with symbols associated with the sun, including the winged scarab, necklaces with pendants showing the *udjat*-eye of Horus.⁴⁰⁰ In her representations, Bastet is frequently depicted carrying a sistrum, a menat, or an aegis, often in combination.⁴⁰¹ The aegis was usually decorated with the head of a deity, most often one of the Eye Goddesses, such as Hathor, Tefnut, Sekhmet, Mehit, Bastet, or sometimes Isis.⁴⁰² Also, Bastet is unique among goddesses in being depicted with an aegis, which may represent her peaceful and protective aspect, in contrast to the more aggressive forms of Hathor or Sekhmet.⁴⁰³

In addition, kittens were most often depicted together with an adult cat, likely because ancient Egyptians associated cats with sexuality and fertility due to their natural ability to produce numerous offspring, up to twelve kittens annually.⁴⁰⁴ As a result, cats were strongly linked to women, an association that is clear in ancient Egyptian art.⁴⁰⁵ In an agricultural society like Egypt, fertility had a great importance in both humans and animals, and cats became a

³⁹⁵ Ibid.

³⁹⁶ Malek, *The Cat in Ancient Egypt*, 55-56.

³⁹⁷ Barbash, "How the Ancient Egyptians Viewed the Animal World," 38-39.

³⁹⁸ Pubblico, "The Cult of Bastet during the First Millennium BC," 214; Barbash, "How the Ancient Egyptians Viewed the Animal World," 38-39.

³⁹⁹ Pubblico, "The Cult of Bastet during the First Millennium BC," 214.

⁴⁰⁰ Barbash, "How the Ancient Egyptians Viewed the Animal World," 38-39; Malek, *The Cat in Ancient Egypt*, 100-103.

⁴⁰¹ Jackson, *Sekhmet & Bastet*, 62.

⁴⁰² Ibid.

⁴⁰³ Ibid.

⁴⁰⁴ Malek, *The Cat in Ancient Egypt*, 102; Jackson, *Sekhmet & Bastet*, 241-242.

⁴⁰⁵ Jackson, *Sekhmet & Bastet*, 30-31.

significant emblem of abundance.⁴⁰⁶ Their role in protecting stored grain by hunting pests further reinforced their image as restorers and protectors of life.⁴⁰⁷ This is the reason why cats are related to peace, prosperity, and the safeguarding of essential resources.⁴⁰⁸

The cat, considered by many Egyptians as a religious animal, had an obvious influence on their culture due to how cats have been revered throughout history for both their basic characteristics and their protective or "apotropaic" abilities to ward off evil.⁴⁰⁹ Because of this background, many Egyptians held the cat in very high esteem and regarded them as an integral part of their everyday religious rituals.⁴¹⁰ A striking moment during the early first millennium BCE brought many changes, when rulers from the city of Bubastis (modern Tell Basta) rose to power during a time of political instability and the female cat began to be linked with the goddess Bastet.⁴¹¹

Furthermore, under the Ptolemaic era (332-30 BCE), cats' worship reached its highest point.⁴¹² This is evidenced by the large-scale burial of cats in necropoleis across Egypt, with mummies or cat burials documented at sites including Bubastis in Lower Egypt, Speos Artemidos in Middle Egypt, Memphis, Tanis in the Delta, Giza, Akhmim, Abydos, Dendera, the Dakhla Oasis, and numerous other locations.⁴¹³ Archaeological evidence from Bubastis and Saqqara shows that these practices were organized and part of temple economies, not just accidental or popular customs.⁴¹⁴

Additionally, during this period, a significant number of objects connected to goddess Bastet were made, mostly as ex-votos for temples or for use in public and private ceremonies.⁴¹⁵ These objects were believed to have protective or magical properties and were positioned in temple spaces, possibly as part of rituals connected with oracles.⁴¹⁶ During this period, amulets were commonly placed in graves as burial goods. This practice became more widespread from

⁴⁰⁶ Pubblico, "The Cult of Bastet during the First Millennium BC," 214.

⁴⁰⁷ Jackson, *Sekhmet & Bastet*, 30-31.

⁴⁰⁸ Ibid.

⁴⁰⁹ Malek, *The Cat in Ancient Egypt*, 73.

⁴¹⁰ Ibid.

⁴¹¹ Ibid.

⁴¹² Pinch, *Handbook of Egyptian Mythology*, 135.

⁴¹³ Malek, *The Cat in Ancient Egypt*, 129; Ikram, *Divine Creatures*, 107.

⁴¹⁴ Colonna, *Religious Practice and Cultural Construction of Animal Worship in Egypt*, 13-14.

⁴¹⁵ Pubblico, "The Cult of Bastet during the First Millennium BC," 207.

⁴¹⁶ Ibid.

the 21st and 22nd Dynasties onward, especially in the Late Period, when there was a noticeable decline in the use of other types of grave goods.⁴¹⁷ As a result, amulets took on a more prominent role in burial customs. These amulets were also worn as jewelry and often depicted gods such as Bastet or Sekhmet, who were associated with fertility and maternity.⁴¹⁸ Small cat amulets were also worn on the body to protect against dangers such as snake bites and scorpion stings or were sometimes kept in homes to guard against illness and poverty.⁴¹⁹

Moreover, as Penelope Wilson notes, temples may have served as centers of commerce connected with the practice of religious devotion.⁴²⁰ They likely encouraged the purchase of amulets, votive bronzes, and ritual items, as well as access to specific temple spaces used for activities such as oracles or incubation rituals; all of these can be seen as forms of business transactions that took place within the temple.⁴²¹ It is likely that animal religious practices acted as a continuous source of supplies for the temple, either through the breeding or the purchase of animals. These animals would be killed, mummified, or turned into small figurines and sold as offerings to worshippers.⁴²² Worshippers made these offerings to the gods in the expectation of gaining assistance from the respective deity; through the supply of offerings via animal cults, the temple was always able to receive offerings to present to the gods.⁴²³

Over time, as Maria Diletta Pubblico suggested, many of these objects were moved to cat necropoleis linked to the temples or placed in special storage during the construction, renovation, or repair of temple buildings.⁴²⁴ For example, the Ptolemies promoted Bubastis as a major cult center within the Egyptian religious system.⁴²⁵ This can be seen in several actions taken by the rulers, such as the building of a Bubasteion in Alexandria by Queen Berenice II and

⁴¹⁷ John H. Taylor, "Changes in the Afterlife," in *Egyptian Archaeology*, ed. Willeke Wendrich (Chichester; Malden, MA: Wiley-Blackwell, 2010), 236-237.

⁴¹⁸ Ibid.

⁴¹⁹ Diesel, "*Felines and Female Divinities*," 82.

⁴²⁰ Penelope Wilson, "Consolidation, Innovation, and Renaissance," in *Egyptian Archaeology*, ed. Willeke Wendrich (Chichester; Malden, MA: Wiley-Blackwell, 2010), 250.

⁴²¹ Ibid.

⁴²² Ibid.

⁴²³ Ibid.

⁴²⁴ Pubblico, "The Cult of Bastet during the First Millennium BC," 207.

⁴²⁵ Emanuele Casella, "The Study of Greco-Roman Period Ex-votos: New Perspectives on the Cult of Bastet/Bubastis in Egypt and in the Mediterranean," in *Current Research in Egyptology 2022: Proceedings of the Twenty-Second Annual Symposium, Université Paul-Valéry Montpellier 3, 26-30 September 2022*, ed. A. Bouhafs et al. (Oxford: Archaeopress Publishing Ltd, 2023), 82.

the repair of the main temple of Bastet at Bubastis, which was the most significant center of her worship in the Delta.⁴²⁶ In addition, changes to the Decree of Canopus connected Bastet's main festival with *Euergesia*, a celebration dedicated to the ruling family.⁴²⁷ These actions show a clear political and religious effort to support and revive traditional Egyptian cults, especially in the 3rd and 2nd centuries BCE.⁴²⁸ As a result, the cat became the most "Egyptian" animal that had relationships with gods; as they were still partially wild, their mystique and independence were elevated through the gradual domestication process.⁴²⁹ By then, cats had been welcomed into most Egyptian households by almost all Egyptians.⁴³⁰

In conclusion, the cat has a long and complex history of interaction with humans, and its dual role as both a useful companion and a religiously valued animal was especially important in ancient Egyptian society.⁴³¹ However, it is important to underline that during the last phase of the Pharaonic period as well as the Ptolemaic and Roman times, the number of animals considered to embody deities increased dramatically.⁴³² The fact that a deity could appear in animal form did not prevent that species from being exploited and utilized for practical or economic purposes.⁴³³ In addition, this manifestation does not mean that every individual animal of that species was viewed as sacred but sometimes animals related to a divine specimen, such as the mother or offspring of the Apis bull, often received special treatment.⁴³⁴

3.2 The Divine Form: The Cat and the Cult of Bastet

As has been noted by James Allen Baldwin, two major ancient Egyptian deities were linked to cats. Firstly, female cats were related to goddess Bastet, who was associated with

⁴²⁶ Ibid.

⁴²⁷ Ibid.

⁴²⁸ Ibid.

⁴²⁹ Malek, *The Cat in Ancient Egypt*, 73.

⁴³⁰ Ibid.

⁴³¹ Ibid., 54-57.

⁴³² Ibid., 77.

⁴³³ Barbash, "How the Ancient Egyptians Viewed the Animal World," 38-39.

⁴³⁴ Malek, *The Cat in Ancient Egypt*, 77.

fertility and whose main cult center was in the east Delta city of Bubastis.⁴³⁵ In Bubastis, large festivals were organized annually, attracting both local people and visitors who wished to take part in the ceremonies.⁴³⁶ Ancient Egyptians were obliged to participate in these mysteries, as they were held to honor Osiris.⁴³⁷ On the other hand, male cats became associated with the solar god Re who later identified with Amun of Thebes and whose chief temple stood at Heliopolis.⁴³⁸ These divine cats were probably chosen by ancient Egyptians for their distinctive markings, possibly including a scarab-shaped pattern between the ears, like the one visible on the Gayer-Anderson cat.⁴³⁹

This hollow-cast bronze sculpture of the so-called Gayer-Anderson cat depicts a seated cat with fine incised details, a silver inlaid sun-disc and *udjat*-eye pectoral on its chest, as well as gold earrings and nose rings.⁴⁴⁰ The metal extensions underneath show that it was meant to be attached to a base.⁴⁴¹ Stylistically, the figure belongs to the Late Period (c. 600 BCE).⁴⁴² It represents a goddess and was most likely a votive offering dedicated to a temple by a wealthy patron, possibly even a member of the royal family. The large-scale dedication of such divine statuettes became widespread in ancient Egyptian society only during the late first millennium BCE, and inscriptions on similar pieces show that people gave these statues to ask the gods for blessings in return.⁴⁴³ The attributes of cats such as fertility, maternal behavior, and hunting skill made them fitting embodiments of divine power, and the iconography on the Gayer-Anderson

⁴³⁵ Baldwin, “Domestication of the Cat in Egypt,” 438.

⁴³⁶ Morenz, *Egyptian Religion*, 90; καὶ ἐπειδὴ καθ’ ἕκαστον μῆνα ἄγονται ἐν τοῖς ἱεροῖς ἑορταὶ τῶν Εὐεργετῶν θεῶν κατὰ τὸ πρότερον γραφὲν ψήφισμα ἢ τε πέμπτη καὶ ἡ ἐνάτη καὶ ἡ πέμπτη ἐπ’ εἰκάδι, τοῖς τε ἄλλοις μεγίστοις θεοῖς κατ’ ἐνιαυτὸν συντελοῦνται ἑορταὶ καὶ πανηγύρεις δημοτελεῖς, ἄγεσθαι κατ’ ἐνιαυτὸν πανήγυριν δημοτελεῖ ἐν τε τοῖς ἱεροῖς καὶ καθ’ ὅλην τὴν χώραν βασιλεῖ Πτολεμαίῳ καὶ βασιλίσσῃ Βερενίκῃ θεοῖς Εὐεργέταις τῇ ἡμέρᾳ ἐν ἣ ἐπιτέλλει τὸ ἄστρον τὸ τῆς Ἰσιδος, ἢ νομίζεται διὰ τῶν ἱερῶν γραμμάτων νέον ἔτος εἶναι, ἄγεται δὲ νῦν ἐν τῷ ἐνάτῳ ἔτει νομηνία τοῦ Παῦνι μηνός, ἐν ᾗ καὶ τὰ μικρὰ Βουβάστια καὶ τὰ μεγάλα Βουβάστια ἄγεται καὶ ἡ συναγωγὴ τῶν καρπῶν καὶ ἡ τοῦ ποταμοῦ ἀνάβασις γίνεται. The decree establishes an annual, state-sponsored festival for the Benefactor Gods, explicitly linking royal cult, agricultural cycles, the heliacal rising of Isis’ star, and the public celebrations of both the Lesser and the Greater Bubastia (Milne, *Cairo Museum* 5, 22187, ll. 33-38; see <https://epigraphy.packhum.org/text/218656>).

⁴³⁷ Morenz, *Egyptian Religion*, 90.

⁴³⁸ Baldwin, “Domestication of the Cat in Egypt,” 438.

⁴³⁹ Nora E. Scott, “The Cat of Bastet,” *The Metropolitan Museum of Art Bulletin* 17, no. 1 (1958): 3, <https://www.jstor.org/stable/3258805>.

⁴⁴⁰ Fleur Shearman, “A New Look at an Old Cat: A Technical Investigation of the Gayer-Anderson Cat,” *Archetype Publications*, 2008, 1-3.

⁴⁴¹ *Ibid.*

⁴⁴² *Ibid.*

⁴⁴³ *Ibid.*

cat reinforces these associations.⁴⁴⁴ A scarab placed on the head, along with a winged scarab engraved on the chest, refers to the rising sun and its symbolism of creation and renewal.⁴⁴⁵ The stylized rendering of the hair tufts inside the cat's ears resembles the hieroglyph for *ma'at*, evoking the Egyptian ideals of truth, order, and justice.⁴⁴⁶ It is difficult to say with certainty which deity the Gayer-Anderson Cat represents, since ancient Egyptian gods could appear in various anthropomorphic, animal, or hybrid forms. However, many scholars consider the goddess Bastet to be the most probable candidate.⁴⁴⁷

Additionally, it is important to note that Bastet could also be depicted as a lioness, especially in her main temple at Bubastis, reflecting her association with goddess Sekhmet.⁴⁴⁸ In the myth of *The Destruction of Mankind*, Sekhmet is depicted as trying to destroy mankind.⁴⁴⁹ In another story, an angry lioness Sekhmet leaves Egypt but later returns in a calmer form as a cat.⁴⁵⁰ Therefore, Bastet in cat form may be understood as the gentler manifestation of Sekhmet.⁴⁵¹ A variety of votive figurines of Bastet that found in her temples consistently depict her as either a cat or a cat-headed woman, rather than as a lioness.⁴⁵²

The Egyptian word for “cat” first appears in the First Intermediate Period, in two personal names.⁴⁵³ Not long after, a young girl who received a royal burial was called “The Cat,” likely in honor of the goddess rather than the animal.⁴⁵⁴ Older translations rendered her name as *Bast* and interpreted it as “She of Bubastis,” but this is no longer considered correct.⁴⁵⁵ Her epithets are typically either geographic or general, such as “Bastet, Lady of Ankhtawy” or “Bastet the Great.” A text from the Old Kingdom even calls her “Mistress of Habes, Mistress of the Two Lands in all her places.”⁴⁵⁶ It has been suggested that Bastet was originally a goddess of

⁴⁴⁴ Ibid.

⁴⁴⁵ Ibid.

⁴⁴⁶ Ibid.

⁴⁴⁷ Ibid.

⁴⁴⁸ Malek, *The Cat in Ancient Egypt*, 95.

⁴⁴⁹ Shearman, “A New Look at an Old Cat,” 1-3.

⁴⁵⁰ Ibid.

⁴⁵¹ Jackson, *Sekhmet & Bastet*, 59-63.

⁴⁵² Jackson, *Sekhmet & Bastet*, 59-63; Shearman, “A New Look at an Old Cat,” 1-3.

⁴⁵³ Scott, “The Cat of Bastet,” 3.

⁴⁵⁴ Ibid.

⁴⁵⁵ Jackson, *Sekhmet & Bastet*, 59-60.

⁴⁵⁶ Ibid.

ointments because her name is written with the hieroglyph of an ointment jar.⁴⁵⁷ However, there is no evidence that the town of Bubastis had any link to ointment production.⁴⁵⁸ The jar sign is likely used only because its sound, *bas*, matches the pronunciation of her name.⁴⁵⁹ Even so, the jar may later have become symbolically connected to her. In tomb scenes, the deceased is often shown holding such a jar to the nose, perhaps a reference to goddess Bastet.⁴⁶⁰

Bastet was first portrayed as a lioness-headed goddess, visually like other leonine deities, carrying the sun-disc, uraeus, ankh, and papyrus scepter.⁴⁶¹ This fierce form appears in Middle Kingdom and New Kingdom material, and it was the only version represented in temple reliefs.⁴⁶² In later periods, however, Bastet increasingly took on a cat-headed or fully feline form, becoming closely and uniquely associated with the domestic cat.⁴⁶³ While other goddesses could occasionally be shown as cats, this was far less common.⁴⁶⁴ Bastet's identity as a cat-goddess became distinctive, especially as the true cat arrived relatively late in Egypt, preventing most traditionally lion-associated deities from adopting feline imagery.⁴⁶⁵ Over time, Bastet also became linked with ritual instruments connected to pacification, especially the sistrum and the menat (Fig. 7), both of which were central in calming dangerous lioness goddesses such as



Figure 7. Statuette of cat-headed Bastet, Late Period–Ptolemaic Period (664–30 BCE). She carries a banded basket, a lion-headed aegis, and a sistrum. Her dress features a detailed striped pattern, a decorative feature common in her depictions and possibly intended to evoke the natural striping of a cat. The menat, often carried by royal women and priestesses, could symbolize or channel divine power; some examples even depict cats wearing them.

Object Number: 58.67.

Source: The Metropolitan Museum of Art, photo by Anna-Marie Kellen.

⁴⁵⁷ Scott, “The Cat of Bastet,” 3.

⁴⁵⁸ Ibid.

⁴⁵⁹ Ibid.

⁴⁶⁰ Ibid.

⁴⁶¹ Jackson, *Sekhmet & Bastet*, 60–63.

⁴⁶² Ibid.

⁴⁶³ Pubblico, “The Cult of Bastet during the First Millennium BC,” 214.

⁴⁶⁴ Jackson, *Sekhmet & Bastet*, 60–63.

⁴⁶⁵ Ibid.

Sekhmet.⁴⁶⁶ Iconographic evidence, such as the bronze statuettes of Bastet, indicates that the cult of the cat continued during the Ptolemaic period and was adopted by the Greek population.

The large number of bronze cat statuettes that have been discovered suggests that they were dedicated at the shrines of Bastet as pilgrimage offerings, as expressions of thanks for divine favors, or as requests for future benefits such as healing, success, fertility, since Bastet was associated with these qualities.⁴⁶⁷ Most of the statuettes depict a seated cat with its tail neatly wrapped around its front legs.⁴⁶⁸ In these representations, the cat's ears were often pierced and adorned with gold or silver rings, and sometimes a scarab symbol was carved between the ears to indicate the cat's connection to the sun god.⁴⁶⁹

Bastet did not assume the role of the Distant Goddess, but she was sometimes viewed as that deity's pacified form, especially in contrast to the goddess Sekhmet.⁴⁷⁰ Like the other lioness goddesses, she was regarded as the "Eye of Ra," acting as his aggressive protector and even appearing as a knife-wielding cat battling Apophis.⁴⁷¹ Moreover, texts describe her as a warlike deity: in the battle accounts of Amenhotep II, enemies are said to be slain like victims of Bastet.⁴⁷² Her dangerous side is also evident in the Coffin Texts, the Book of the Dead, and medical spells, where the "slaughterers of Bastet" bring plague at the year's end.⁴⁷³ To avoid her wrath, people sometimes called themselves her children in spells, and offered flasks, amulets, or cat statuettes at New Year, often inscribed with her name.⁴⁷⁴

The moment when Bastet became connected with the domestic cat remains uncertain.⁴⁷⁵ A 17th-dynasty scarab bearing her name along with a cat hieroglyph is the earliest evidence of this link, though it may simply indicate a cult animal.⁴⁷⁶ The first known depiction of Bastet as a

⁴⁶⁶ Ibid.

⁴⁶⁷ Abdalla Abdel-Raziq, "A New Look at the Goddess Bastet Bronze Statue at Zagazig University Archaeological Museum," in *14th Conference of the General Union of Arab Archaeologists, Cairo, 2011*, 3-4; Diesel, "Felines and Female Divinities," 82.

⁴⁶⁸ Abdel-Raziq, "A New Look at the Goddess Bastet Bronze Statue," 4.

⁴⁶⁹ Ibid., 5.

⁴⁷⁰ Pinch, *Handbook of Egyptian Mythology*, 71-72; Jackson, *Sekhmet & Bastet*, 65-67.

⁴⁷¹ Ibid.

⁴⁷² Jackson, *Sekhmet & Bastet*, 65-67.

⁴⁷³ Ibid.

⁴⁷⁴ Ibid.

⁴⁷⁵ Ibid.

⁴⁷⁶ Ibid.

cat-headed goddess appears on the 21st-dynasty Papyrus of Dirpu, where she guides the deceased into the Hall of Judgment.⁴⁷⁷ However, Pubblico notes that Bastet's depiction as a cat goddess likely began during the Twenty-Second Dynasty, when the royal residence was probably at Bubastis.⁴⁷⁸ Supporting evidence includes a cat-topped ring in the Louvre inscribed with the name of Pharaoh Osorkon, "son of Bastet."⁴⁷⁹ By the Twenty-Sixth Dynasty, the connection between Bastet and cats was clearly established, as shown by a gilded bronze cat statuette in the Louvre bearing the name of Psammetichus I and a dedicatory inscription to the goddess.⁴⁸⁰

In summary, as Angelo Colonna notes, many scholars, including Siegfried Morenz and Erik Hornung, have argued that Egyptian religious thought allowed for multiple forms of divine representation, including anthropomorphic, zoomorphic, and hybrid images, all of which carried different aspects of a god's character.⁴⁸¹ The animal form, therefore, did not replace the deity but served as a meaningful sign through which divine presence was made visible.⁴⁸² In the case of Bastet, the transition from a lioness-headed goddess to a cat-headed or fully feline form does not mean a decline in religious thought, but a theological shift that emphasized her pacified, protective, and nurturing aspects, in contrast to the more destructive qualities associated with lioness deities such as Sekhmet.⁴⁸³

3.3 Ritual Use and Economic Exploitation (The Dichotomy of the Sacred)

The way we view our connection to animals today is fundamentally different from what it was for the Ancient Egyptians.⁴⁸⁴ For many people, pets represent a source of love and emotional

⁴⁷⁷ Ibid.

⁴⁷⁸ Pubblico, "The Cult of Bastet during the First Millennium BC," 214.

⁴⁷⁹ Ibid.

⁴⁸⁰ Ibid.

⁴⁸¹ Colonna, *Religious Practice and Cultural Construction of Animal Worship in Egypt*, 10-11.

⁴⁸² Ibid.

⁴⁸³ Jackson, *Sekhmet & Bastet*, 67-68; Colonna, *Religious Practice and Cultural Construction of Animal Worship in Egypt*, 10-11.

⁴⁸⁴ Bleiberg, "Animal Mummies: The Souls of the Gods," 65-66.

connection; as such, this has not been part of human experience until quite recently.⁴⁸⁵ They are regarded as an extension of our families, and the grief associated with losing them is considerable.⁴⁸⁶ Although today many individuals advocate for animal rights, the Ancient Egyptians' relationship to animals was much less emotionally charged than people's relationship to animals today. Whereas nowadays we associate emotional bonds between humans and animals, the Ancient Egyptians connected spiritually to the animal world through religious, ceremonial, and practical means such as mummification and labor. However, Egyptians could show care and affection for animals, as explained earlier, especially pets or sacred animals, but this affection was primarily religious or functional rather than emotional in the way we understand it today.⁴⁸⁷

For example, a passage from Herodotus shows that the ancient Egyptians sometimes did show affection for animals in their own way. When a cat died naturally in a household, everyone living in that house would shave only their eyebrows, but when a dog died, they would shave their entire body and head. However, this was certainly done for very different reasons from the way we mourn animals today.

“Moreover, when a fire occurs, the cats seem to be divinely possessed; for while the Egyptians stand at intervals and look after the cats, not taking any care to extinguish the fire, the cats slipping through or leaping over the men, jump into the fire; and when this happens, great mourning comes upon the Egyptians. And in whatever houses a cat has died by a natural death, all those who dwell in this house shave their eyebrows only, but those in whose houses a dog has died shave their whole body and also their head.”

(Histories, Book 2, Chapter 66)⁴⁸⁸

Another example of care for cats is found on the Metternich Stela, which includes three spells specifically meant to heal a cat that has been poisoned.⁴⁸⁹

⁴⁸⁵ Ibid.

⁴⁸⁶ Ibid.

⁴⁸⁷ Ikram, *Beloved Beasts*, 16-17; MacKinnon, “Pets,” 269-279.

⁴⁸⁸ Herodotus, *The Histories*, Book 2, Chapter 66, trans. George Campbell Macaulay, ToposText, <https://topostext.org/work/22>.

⁴⁸⁹ Philippa Lang, *Medicine and Society in Ptolemaic Egypt*, in *Studies in Ancient Medicine* 41 (Leiden: Brill, 2012), 191; Nora E. Scott, *The Metternich Stela*, Bulletin of the Metropolitan Museum of Art, N.S. (New York: The Metropolitan Museum of Art, 1947), 205-207.

Even though animals were important in ancient Egyptian religion, only pets and sacred animals were treated carefully.⁴⁹⁰ The earliest example of cat mummification, dating to circa 1350 BCE, is represented by an elaborately sculpted limestone sarcophagus believed to have contained Prince Thutmose's favored pet, the majority of surviving cat mummies in Egypt and museum collections are votive in nature, indicating their extensive and systematic production.⁴⁹¹ Burying sacred animals was quite common, even during the Ptolemaic period, and continued into the first half of the Roman period, around the second century AD.⁴⁹²

Although mummification was done to preserve the body so that the soul could live in the afterlife, animals of the same species as sacred animals such as cats for Bastet, dogs for Anubis, and ibises for Thoth, along with the practice of mummification, were likely exploited to produce large numbers of votive animal mummies.⁴⁹³ This was driven by the growing popularity of animal cults and the economic benefits for certain members of society.⁴⁹⁴ For example, Ptolemy I Soter appears to have introduced new regulations that required villagers to provide labor and financial support for newly established cult associations.⁴⁹⁵ Another example is the creation of large local necropolises, which were built so that sacred animals could be deified and buried close to where they were worshipped.⁴⁹⁶ This helped reduce transportation costs for local cult institutions.⁴⁹⁷

In addition, many new cult facilities were established for priests, both inside and around the galleries of the Ibiotapheion at Tuna el-Gebel. During the reigns of Ptolemy I and Ptolemy II, housing was likely also provided for the families of the newly appointed cult personnel.⁴⁹⁸ Ancient Egyptian law strictly protected these animals, and severe penalties were imposed on

⁴⁹⁰ Ikram, *Divine Creatures*, 1-9; Ikram, *Beloved Beasts*, 16-17.

⁴⁹¹ Edward Bleiberg, "Cats of the Pharaohs: Genetic Comparison of Egyptian Cat Mummies to Their Feline Contemporaries," *Journal of Archaeological Science* (2012): 3217, 3221, <https://doi.org/10.1016/j.jas.2012.05.005>.

⁴⁹² Deborah Schorsch and James H. Frantz, "A Tale of Two Kitties," *The Metropolitan Museum of Art Bulletin* 55, no. 3 (Winter 1997-1998): 17, <https://www.jstor.org/stable/3258799>.

⁴⁹³ Ikram, *Creatures of the Gods*, 1; Ikram, *Beloved Beasts*, 154; Joanna Wilimowska, "Sacred Animal Cult Workers in the Ptolemaic Fayum," *The Journal of Juristic Papyrology* 1 (2020): 267, <https://doi.org/10.36389/uw.jjurp.50.2020.pp.263-298>.

⁴⁹⁴ Ikram, *Creatures of the Gods*, 4.

⁴⁹⁵ Kessler and Nur el-Din, "Tuna al-Gebel," 142.

⁴⁹⁶ Ibid.

⁴⁹⁷ Ibid.

⁴⁹⁸ Ibid., 150.

anyone who harmed or killed them.⁴⁹⁹ At the same time, however, these animals could be part of the votive animal system, being intentionally bred and killed at a young age.⁵⁰⁰ Cats were among the most exploited animals within this system, as evidenced by numerous remains showing signs of violent death and killing at a very young age.⁵⁰¹ These findings indicate that cats were kept in captivity and deliberately killed as part of the temple economy to meet the demand for votive offerings by pilgrims.⁵⁰²

The cat cemeteries near the temple of Bastet at Bubastis represent one example of where these animals were buried and may have been among the earliest large animal burial sites, dating to around 600 BCE.⁵⁰³ The location of these cemeteries was carefully chosen. At sites such as Bubastis, Saqqara, and Istabl Antar, cat burial grounds were located near temples dedicated to local feline deities like Bastet, Sekhmet-Bastet, and Pakhet.⁵⁰⁴ Most of the cats originated from temple catteries and were raised and maintained by temple personnel before being buried.⁵⁰⁵ Another important area is in the southwest of Cairo, the so-called area of Saqqara. Many mummified cats have been found near Bubastieion, a sanctuary dedicated to the goddess Bastet.⁵⁰⁶ This site may have been founded during the Late Period, possibly under King Ahmose, but it became especially important in the Ptolemaic period.⁵⁰⁷ Bubastieion was one of several temple buildings on the eastern edge of the pyramid plateau, close to Saqqara's main animal burial area, the Serapeum, where the sacred Apis bulls were buried.⁵⁰⁸ The connection between this area and Bastet might date back to the New Kingdom (1540-1069 BCE), although no temple remains from that period have been discovered.⁵⁰⁹ The exact location of the temple cattery is

⁴⁹⁹ Wilimowska, "Sacred Animal Cult Workers," 267.

⁵⁰⁰ Maria Diletta Pubblico, "Making a Cat Mummy: Some Case Studies from Italian Collections," *Archeologie tra Oriente e Occidente (CISA)* 1 (2022): 5, <https://doi.org/10.6093/archeologie/9385>; Luise Ørsted Brandt, Anne Haslund Hansen, Hussein Shokry, and Chiara Villa, *Bandages for Bastet: A Study of Three Egyptian Cat Mummies* (2020), 7.

⁵⁰¹ Alain Zivie and Roger Lichtenberg, "The Cats of the Goddess Bastet," in *Divine Creatures: Animal Mummies in Ancient Egypt*, ed. Salima Ikram (Cairo: American University in Cairo Press, 2005), 117-118.

⁵⁰² Wilimowska, "Sacred Animal Cult Workers," 276; Zivie and Lichtenberg, "The Cats of the Goddess Bastet," 117-118.

⁵⁰³ Malek, *The Cat in Ancient Egypt*, 126.

⁵⁰⁴ Malek, *The Cat in Ancient Egypt*, 126; Zivie and Lichtenberg, "The Cats of the Goddess Bastet," 106-107.

⁵⁰⁵ Malek, *The Cat in Ancient Egypt*, 126.

⁵⁰⁶ Malek, *The Cat in Ancient Egypt*, 127; Zivie and Lichtenberg, "The Cats of the Goddess Bastet," 108.

⁵⁰⁷ Malek, *The Cat in Ancient Egypt*, 127.

⁵⁰⁸ Ibid.

⁵⁰⁹ Malek, *The Cat in Ancient Egypt*, 127; Zivie and Lichtenberg, "The Cats of the Goddess Bastet," 110.

unknown, but it was likely inside one of the nearby buildings.⁵¹⁰ Valleys nearby contained rock-cut tombs, known locally as “cat galleries,” which were used for burying cats.⁵¹¹

Additionally, large cat necropoleis have also been found at Istabl Antar (Speos Artemidos), south of Beni Hasan in Middle Egypt.⁵¹² These sites are located near the rock-cut temple of the goddess Pakhet, built by Queen Hatshepsut around 1470 BCE. Although Pakhet was worshipped as early as the Middle Kingdom, no sanctuary from that period has been discovered.⁵¹³ Unfortunately, these cemeteries have been heavily looted and were never properly studied. At Thebes, a demotic papyrus from the mid-second century BCE mentions a place called “the resting place of the cats,” and Greek documents from the same period refer to special privileges granted to people connected with cat cemeteries.⁵¹⁴ Mummified cats have also been found at Dra Abu el-Naga on the west bank of the Nile.⁵¹⁵

During the Ptolemaic period, cats were buried in animal cemeteries across Egypt and cat burials or mummies have been discovered in many locations, including Tanis in the Delta, Giza, Akhmim, Abydos, Dendera, the Dakhla Oasis, and others.⁵¹⁶ This makes it difficult to estimate the total number of animals involved, but the figures are likely to reach hundreds of thousands or even millions.⁵¹⁷ One example comes from a single shipment of cat remains sent to England in the late nineteenth century. This shipment weighed about nineteen tons and is believed to have contained approximately 180,000 mummified cats, which were used to produce fertilizer.⁵¹⁸

It is worth noting, as Paul T. Nicholson points out, that even though these mummies were not from Saqqara, they reveal the large scale of animal cults and the strong demand for votive animals.⁵¹⁹ Based on the Bubastion research by Zivie and Lichtenberg, about 31% of the 272

⁵¹⁰ Malek, *The Cat in Ancient Egypt*, 127-128.

⁵¹¹ Ibid., 128.

⁵¹² Ibid.

⁵¹³ Ibid.

⁵¹⁴ Ibid.

⁵¹⁵ Ibid., 128.

⁵¹⁶ Ibid., 129.

⁵¹⁷ Ibid.

⁵¹⁸ Ibid.

⁵¹⁹ Paul T. Nicholson, *The Sacred Animal Necropolis at North Saqqara*, in *The Catacombs of Anubis at North Saqqara: An Archaeological Perspective*, ed. Paul T. Nicholson, with contributions by Salima Ikram, Steve Mills, Louise Bertini, John P. Harrison, Delyth Hurley, Hendrikje Nouwens, Ying Qin, Stephanie Vann, Manja Voss, Scott Williams, and Cary Woodruff (Leuven-Paris-Bristol, CT: Peeters, 2021), 13.

mummy “packets” examined between 1991 and 1992 consisted only of mud, clay, or a few pebbles, meaning they can be classified as pseudo-mummies.⁵²⁰ This indicates that, despite the mummification of thousands or even many thousands of animals, the need for votive offerings was so great that substitutes had to be created.⁵²¹ Additionally, roughly 4% of the mummies contained only a few cat bones rather than a full animal, a pattern also observed in the Falcon Catacomb.⁵²²

Furthermore, the significance of cat and other animal cults during this period, the well-organized breeding system, as well as the high demand for animal mummies, is reflected in many texts that record specialized professional titles.⁵²³ Joanna Wilimowska notes that people who worked within these cults held priestly status and can be divided into two main groups based on their responsibilities.⁵²⁴ The first group consisted of caretakers of sacred animals, whose primary duties were to look after the animals and ensure they were properly fed.⁵²⁵ Because the number of animals bred for these cults was very large, papyri indicate that temples associated with animal cults owned agricultural land.⁵²⁶ This land was cultivated both to support the animals and to provide food for temple staff.⁵²⁷ Evidence from the Ptolemaic Fayum reveals a distinct category of officials connected with animal care.⁵²⁸ In Greek texts, these officials are identified by titles ending in *-βοσκός*, with each keeper named after the animal under their care. Thus, cat keepers were called *αἰλουροβοσκοί*, dog keepers *κυνοβοσκοί*, and hawk keepers *ἱερακοβοσκοί*, among others.⁵²⁹ The title *αἰλουροβοσκοί* is also attested outside the Fayum.⁵³⁰

Other sources, as mentioned by Wilimowska, written in Demotic, refer to similar roles using the term *mn-iry.t tʿ ml.t*, which literally means “nurse of cats,” and describe these

⁵²⁰ Ibid.

⁵²¹ Ibid.

⁵²² Ibid.

⁵²³ Wilimowska, “Sacred Animal Cult Workers,” 277.

⁵²⁴ Ibid.

⁵²⁵ Ibid.

⁵²⁶ Wilimowska, “Sacred Animal Cult Workers,” 277; Willy Clarysse and Dorothy J. Thompson, *Counting the People in Hellenistic Egypt*, 2 vols. (Cambridge: Cambridge University Press, 2006), 181.

⁵²⁷ Wilimowska, “Sacred Animal Cult Workers,” 277.

⁵²⁸ Ibid., 278.

⁵²⁹ Ibid.

⁵³⁰ Wilimowska, “Sacred Animal Cult Workers,” 278; Clarysse and Thompson, *Counting the People in Hellenistic Egypt*, 182.

individuals as feeders of cats.⁵³¹ They were likely equivalent to the *αἰλουροβοσκοί*, although it is also possible that their duties were limited to ritual functions and did not include the actual breeding of the animals.⁵³² Another title attested in Greek is *γαλακτοφόρος*, and in Demotic *ḡy mḥn*, both meaning “milk carrier.”⁵³³ This role is recorded in P.Count. Verso (229 BCE), column xxviii, line 1.628, where both women and one man are mentioned as performing this task.⁵³⁴ Editors of this document associate this occupation with the cult of Bastet.⁵³⁵ However, P.Count 2 provides no further details about their activities, leaving their exact role within the animal cults uncertain.⁵³⁶

The second group consisted of undertakers or buriers who were responsible for animals after death.⁵³⁷ Their duties included burial-related activities, such as mummification and the burying of remains.⁵³⁸ Evidence from the Ptolemaic Fayum records several professional titles connected with mortuary work in animal cults.⁵³⁹ In Greek documents, these occupations are identified by titles ending with the suffix *-τάφος*.⁵⁴⁰ Examples include *ἰβιοτάφοι*, who were responsible for the burial of ibises, and *κυνοτάφοι*, who dealt with the burial of dogs, and so on.⁵⁴¹ The sources do not clearly describe their exact tasks, and it remains uncertain whether they were directly involved in the mummification process.⁵⁴² However, Wilimowska argues that the evidence suggests that they were mainly responsible for funerary rites, burial practices, and the care of the animals’ tombs.⁵⁴³ Compared to animal keepers, professions linked to the burial of sacred animals are less frequently attested in the Fayum material.⁵⁴⁴ There were also other roles, like the palm bearers (*θαλλοφόροι*) and the bearers of the gods (*θεαγοί* or *ḡy (nʿ) ntr.w*), which

⁵³¹ Wilimowska, “Sacred Animal Cult Workers,” 285.

⁵³² Ibid.

⁵³³ Ibid., 286.

⁵³⁴ Ibid.

⁵³⁵ Ibid.

⁵³⁶ Ibid.

⁵³⁷ Ibid., 277.

⁵³⁸ Ibid.

⁵³⁹ Ibid., 287.

⁵⁴⁰ Ibid.

⁵⁴¹ Wilimowska, “Sacred Animal Cult Workers,” 287-293; Clarysse and Thompson, *Counting the People in Hellenistic Egypt*, 179.

⁵⁴² Wilimowska, “Sacred Animal Cult Workers,” 287.

⁵⁴³ Ibid.

⁵⁴⁴ Ibid.

were done by minor priests who had certain religious tasks.⁵⁴⁵ These jobs were probably only needed at certain times, like during festivals, when more animal mummies were required.⁵⁴⁶

Additionally, this organized system for the exploitation of cats can be observed at various other stages. As Jaromír Málek has highlighted, modern research on cat mummies has revealed the main steps in how they were prepared.⁵⁴⁷ The first step, which was optional, involved opening the body, removing the internal organs, and filling the cavity with materials like sand or mud, often mixed with natron.⁵⁴⁸ Unlike humans, whose organs were sometimes preserved in special containers called canopic jars, cats' organs were usually discarded.⁵⁴⁹ The cat's legs were generally straightened along the body, which was stretched out, treated with resin or similar substances, and tightly wrapped in natron-soaked linen.⁵⁵⁰ Sometimes reeds were added to support the body.⁵⁵¹ In some cases, the legs were wrapped separately to make the mummy look more life-like.⁵⁵² The combination of natron and the dry, hot climate helped preserve the rest of the body.⁵⁵³

Moreover, temples that kept animals nearby probably had specialized staff to perform the mummification, and in larger centers, the process resembled a production line.⁵⁵⁴ The final steps before burial varied between cemeteries, and different methods could be used at the same site.⁵⁵⁵ Most often, the cat was wrapped in one or more layers of linen, sometimes in decorative patterns like stripes or diamonds, and simple ornaments, like strings of beads, could be added.⁵⁵⁶ Studies of individual animal mummies have also revealed bandages made from different types of

⁵⁴⁵ Wilimowska, "Sacred Animal Cult Workers, 293; Clarysse and Thompson, *Counting the People in Hellenistic Egypt*, 181.

⁵⁴⁶ Wilimowska, "Sacred Animal Cult Workers, 293.

⁵⁴⁷ Malek, *The Cat in Ancient Egypt*, 129.

⁵⁴⁸ Ibid.

⁵⁴⁹ Ibid.

⁵⁵⁰ Ibid.

⁵⁵¹ Ibid., 129-130.

⁵⁵² Ibid., 130.

⁵⁵³ Ibid.

⁵⁵⁴ Ibid.

⁵⁵⁵ Malek, *The Cat in Ancient Egypt*, 129; Pubblico, "Making a Cat Mummy," 10.

⁵⁵⁶ Pubblico, "Making a Cat Mummy," 6; Malek, *The Cat in Ancient Egypt*, 130; Lisa Bruno, "The Scientific Examination of Animal Mummies," in *Soulful Creatures: Animal Mummies in Ancient Egypt*, ed. Edward Bleiberg, Yekaterina Barbash, and Lisa Bruno (Brooklyn, NY: Brooklyn Museum/D. Giles Ltd, 2013), 111-115; Brandt et al., *Bandages for Bastet*, 7-9.

textiles, which supports the idea that materials were reused.⁵⁵⁷ The majority of cat mummies had a slightly tube-like shape, with only the head and ears clearly visible. Some cat mummies were shaped to resemble humans, with features like feet and shoulders.⁵⁵⁸ The face could be painted on the bandages, or a bronze mask shaped like a cat's head could be placed over it.⁵⁵⁹ Sometimes, they display vertical lines on the heads, designed to imitate the texture of a cat's fur.⁵⁶⁰ Examples of cat mummies held in museums worldwide differ widely in length, from small specimens around 24 cm, like one in Cairo, to much larger ones exceeding 80 cm, such as a piece in New York's Brooklyn Museum.⁵⁶¹ These features clearly raised the value of the offerings, which was influenced not only by their size but also by their outward appearance.⁵⁶² As a result, Egyptians often created bundles that were larger than the skeleton inside.⁵⁶³

In some cases, cats were placed inside wooden coffins made from several small pieces of wood.⁵⁶⁴ These coffins were usually made in two parts and shaped to look like animals.⁵⁶⁵ They were often covered with a white coating and decorated with painted details, such as collars or necklaces around the cat's neck, like those seen on bronze cat figures.⁵⁶⁶ Sometimes the coffins were even covered with gold.⁵⁶⁷ There are also examples where bronze cat heads were attached to wooden coffins. Other coffins were small, simple versions of the rectangular coffins used for human burials. Some coffins show the person responsible for the burial, standing with raised arms in a pose of worship in front of a cat.⁵⁶⁸ In a few cases, hollow bronze cat figures were used to hold the remains of very small cats.⁵⁶⁹ This method was more common for small animals and birds, and only rarely used for cats, since most figures were too small to contain a cat's body.⁵⁷⁰ In other cases, a bronze figure was attached to a small box that held the mummified cat.⁵⁷¹

⁵⁵⁷ Brandt et al., *Bandages for Bastet*, 7.

⁵⁵⁸ Malek, *The Cat in Ancient Egypt*, 130

⁵⁵⁹ Ibid.

⁵⁶⁰ Pubblico, "Making a Cat Mummy," 7.

⁵⁶¹ Brandt et al., *Bandages for Bastet*, 9.

⁵⁶² Pubblico, "Making a Cat Mummy," 8.

⁵⁶³ Ibid.

⁵⁶⁴ Malek, *The Cat in Ancient Egypt*, 130.

⁵⁶⁵ Ibid.

⁵⁶⁶ Malek, *The Cat in Ancient Egypt*, 130.; Bruno, "The Scientific Examination of Animal Mummies," 130-131.

⁵⁶⁷ Malek, *The Cat in Ancient Egypt*, 130.

⁵⁶⁸ Ibid.

⁵⁶⁹ Ibid.

⁵⁷⁰ Ibid.

⁵⁷¹ Ibid.

Because of the very large number of animals, individual graves were not always possible.⁵⁷² Depending on the local area, mummified cats were buried in shared brick-lined graves (Tell Basta), placed in rock-cut tunnels (Dendra), put into reused older tombs (Saqqara), or buried inside large pottery jars (Tell Basta or Abydos).⁵⁷³

For example, some of these patterns are clearly shown in the project by Zivie and Lichtenberg at the Bubastieion.⁵⁷⁴ Their study showed that cat mummies can be divided into two main types.⁵⁷⁵ In the first type, the front legs were placed straight along the body, while the back legs were bent under the belly. The tail was pulled between the back legs, and the head was wrapped in a simple way, giving only a rough shape of the animal. These mummies were often covered with resin or similar substances, and two examples were even found inside limestone sarcophagi.⁵⁷⁶ The second type was made to look more like a real cat. In these mummies, the head, legs, and tail were wrapped separately, creating a clear cat shape.⁵⁷⁷ The head was sometimes painted with details such as eyes and nose, and in some cases, cloth ears or eyes were added to make the mummy look more lifelike.⁵⁷⁸

Overall, the mummification methods were quite simple in Bubastieion.⁵⁷⁹ There is no clear evidence that the internal organs were removed, and only a small number of mummies had complex or decorative wrapping.⁵⁸⁰ In addition, differences between the mummies suggest that they may have been made at different times or by different embalming workshops.⁵⁸¹ Most of the cats studied in this project had died at a young age, and many showed signs of violent death, such as strangulation, breaking the neck or strong blows to the head.⁵⁸² In some cases, the injuries were so severe that the skull bones were completely broken apart.⁵⁸³ About two-thirds of the examined mummies appear to have died violently, and perhaps the most tragic aspect is that

⁵⁷² Ibid.

⁵⁷³ Ibid., 133.

⁵⁷⁴ Zivie and Lichtenberg, "The Cats of the Goddess Bastet," 114-115.

⁵⁷⁵ Ibid., 116.

⁵⁷⁶ Ibid.

⁵⁷⁷ Ibid.

⁵⁷⁸ Ibid.

⁵⁷⁹ Ibid., 117.

⁵⁸⁰ Ibid.

⁵⁸¹ Ibid.

⁵⁸² Ibid., 117-118.

⁵⁸³ Ibid.

many of these animals were killed in this way intentionally, as part of the votive animal system itself.⁵⁸⁴

Another radiographic study conducted at the National Museum of Antiquities in Leiden examined twelve mummies, four of which were cats, as proved by radiological analysis.⁵⁸⁵ Among them, one was a pseudo-mummy, containing only the skull, the proximal part of the vertebral column, and the forelimbs of a cat.⁵⁸⁶ The mummified cats belonged to the *Felis lybica* subspecies and were dated to the Greco-Roman period, although the exact locations of their discovery were not provided. Furthermore, one cat exhibited significant under-mineralization of the bones, which was interpreted as the result of a diet that was too high in the consumption of internal organs while in captivity.⁵⁸⁷ This diet raised phosphorus levels in the blood and led to a lack of calcium.⁵⁸⁸ The poor nutrition was also seen as a factor in the broken thigh bone (femur) found in one of the cats.⁵⁸⁹ The ages at death were estimated using dental eruption patterns and epiphyseal fusion, revealing that all four cats were young. However, the radiographs did not allow the researchers to determine the cause of death, so it was not possible to conclude how the animals had been killed.⁵⁹⁰

3.4 Understanding Aging, Reproduction, and Species of Cats in Ancient Egypt

According to the research by Kurushima et al. in 2012, scientists studied DNA from Egyptian cat mummies from the Late Period and the Ptolemaic/Roman periods (664 BCE-250 AD).⁵⁹¹ The results from the DNA analysis indicated that these mummies were domestic cats (*Felis silvestris catus*) and were not from wild cats such as the jungle cat (*Felis chaus*) or other

⁵⁸⁴ Ibid.

⁵⁸⁵ McKnight, *Imaging*, 18.

⁵⁸⁶ Ibid.

⁵⁸⁷ Ibid.

⁵⁸⁸ Ibid.

⁵⁸⁹ Ibid.

⁵⁹⁰ Ibid.

⁵⁹¹ Jennifer D. Kurushima, Salima Ikram, Joan Knudsen, Edward Bleiberg, Robert A. Grahn, and Leslie A. Lyons, "Cats of the Pharaohs: Genetic Comparison of Egyptian Cat Mummies to Their Feline Contemporaries," *Journal of Archaeological Science* 39, no. 10 (2012): 3217-3223, <https://doi.org/10.1016/j.jas.2012.05.005>.

wild subspecies.⁵⁹² The mummies also contained genetic types (mitotypes) found in modern cats from Egypt and the Middle East, indicating that modern Egyptian domestic cats descended directly from these ancient cats.⁵⁹³ The domestic cats found in Egypt descended from the Near East and were introduced into Egypt through trade or human migration as domesticated cats.⁵⁹⁴ Although the morphology of the mummies was similar to wild cats, DNA analysis was able to identify these mummies as domestic cats.⁵⁹⁵ These findings provide the first genetic evidence that the ancient Egyptians used domesticated cats (*Felis silvestris catus*) for the production of votive mummies and suggest that cat domestication occurred before the large-scale practice of cat mummification.⁵⁹⁶ Also, this research indicates the genetic connection between domestic cats found in Egypt during the days of the Pharaohs and modern-day Egyptian domestic cats, showing their connection and ability to trace these modern cats back to their ancient ancestors.⁵⁹⁷ Additionally, this interpretation is also supported by Zivie and Lichtenberg in the Bubastieion project (1991-1999), who suggest that the presence of large numbers of cats kept within temple precincts prior to their ritual killing and burial in dedicated catacombs indicates that most of these animals were domesticated, while wild cats were likely rare exceptions.⁵⁹⁸ Another scholar, Philippe Germond, argued that the domestic cats familiar to the ancient Egyptians have been the ancestors of modern domestic cats (*Felis catus*).⁵⁹⁹

Based on these results, it can be observed that the reproductive biology of cats has not been significantly altered over thousands of years.⁶⁰⁰ Domestic cats, both ancient and modern, are seasonal polyestrous, which means that they can breed several times during the breeding season, which takes place in spring and summer when days are longer.⁶⁰¹ Cats generally experience their first estrus between five and nine months old, but the timing can differ greatly,

⁵⁹² Ibid.

⁵⁹³ Ibid.

⁵⁹⁴ Ibid.

⁵⁹⁵ Ibid.

⁵⁹⁶ Ibid.

⁵⁹⁷ Ibid.

⁵⁹⁸ Zivie and Lichtenberg, "The Cats of the Goddess Bastet," 114,118.

⁵⁹⁹ Philippe Germond and Jacques Livet, *An Egyptian Bestiary: Animals in Life and Religion in the Land of the Pharaohs* (London: Thames & Hudson, 2001), 77.

⁶⁰⁰ Ilona Rodan, "Understanding the Cat and Feline-Friendly Handling," in *The Cat*, 2nd ed., *Clinical Medicine and Management*, ed. Susan E. Little (Elsevier, 2024), 3.

⁶⁰¹ Susan E. Little, "Female Cats: Normal Reproduction, and Reproductive Diseases and Conditions," in *The Cat*, 2nd ed., *Clinical Medicine and Management*, ed. Susan E. Little (Elsevier, 2024), 1382; Margaret V. Root Kustritz, *Clinical Canine and Feline Reproduction: Evidence-Based Answers* (Ames, IA: Wiley-Blackwell, 2010), 211.

with some reaching it as early as three and a half months and others as late as eighteen months.⁶⁰² Additionally, today the typical length of a cat's pregnancy ranges from 65 to 67 days.⁶⁰³ This means that the cats found in Egypt during the time of the Pharaohs would have had the same seasonal breeding patterns as those found today. It is therefore possible that the Egyptian domestic cats found today are descended from these ancient cats, and that their breeding patterns may have been similar, suggesting a potential continuity over time.

As noted by Wojciech Ejsmond, small cats in ancient Egypt appear to have had two main breeding periods each year and were generally killed once annually, most likely to meet the demand for cat mummies used in religious practices.⁶⁰⁴ Information about cat reproduction in ancient Egypt and North Africa is limited.⁶⁰⁵ However, as he suggested, available evidence indicates that *Felis chaus* gave birth mainly between January and April.⁶⁰⁶ Overall, the timing of reproduction in cats depends on environmental factors such as climate and temperature. On a global level, most kittens are born between December and June, and in some cases, cats can produce a second or even a third litter within the same year.⁶⁰⁷ This reproductive cycle likely made it possible to have enough kittens available for an annual religious festival, when visitors came to temples and purchased animal mummies as offerings.⁶⁰⁸ Most kittens were born during two main periods, from January to April and again in August.⁶⁰⁹ The killing of cats probably occurred between late September and December, followed by the preparation of mummies so they would be ready for sale during the winter and spring months.⁶¹⁰

Determining how an animal died is often a difficult task to understand; most cases are usually just known through some general classification.⁶¹¹ X-rays can provide valuable information regarding the condition of bones; however, there are many factors that can produce false positives when using x-ray technology such as overlapping pictures of bones or unclear

⁶⁰² Little, "Female Cats: Normal Reproduction, and Reproductive Diseases and Conditions," 1381.

⁶⁰³ Ibid., 1383.

⁶⁰⁴ Wojciech Ejsmond, "Some Remarks on Cat Mummies in Light of the Examination of Artefacts from the National Museum in Warsaw Collection," *Studies in Ancient Art and Civilization* 18 (2014): 245-246.

⁶⁰⁵ Ibid.

⁶⁰⁶ Ibid.

⁶⁰⁷ Ibid.

⁶⁰⁸ Ibid.

⁶⁰⁹ Ibid.

⁶¹⁰ Ibid.

⁶¹¹ McKnight, *Imaging*, 38.

photographs of bones.⁶¹² Also, many interpretations of the condition of an animal's remains are based on modern interpretations and may not reflect how the people living in Ancient Egypt perceived their environment.⁶¹³ The ancient Egyptians mummified a wide variety of animals and used different methods of killing for each species.⁶¹⁴ However, a study conducted by the British Museum identified two age groups in which cats appear to have died: one to four months and nine to twelve months.⁶¹⁵ This conclusion, based on radiological evidence, suggests that the ancient Egyptians deliberately killed animals of specific ages for mummification for votive purposes.⁶¹⁶

The collection of cat mummies from the Museo Egizio in Turin (Fig.8) classified the young cat mummies into three categories based on age range: 1 to 4 months, 6 to 10 months, and 9 to 12 months.⁶¹⁷ Also, part of this collection includes some mummies of 2-3 years old (Cat. 2348/3, Suppl. 11010, Suppl. 11011, Cat. 2359, Cat. 2371).⁶¹⁸ The collection mostly hosts cats that belong to *Felis silvestris lybica*.

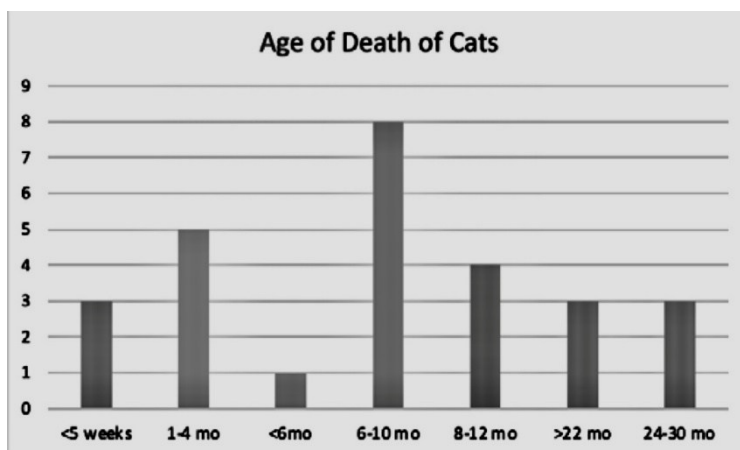


Figure 8. Age at death of cats in the Museo Egizio collection. Source: Salima Ikram, Sara Aicardi, and Federica Facchetti, eds., *The Animal Mummies of the Museo Egizio, Turin* (Leiden: Sidestone Press, 2019), 142.

⁶¹² Ibid.

⁶¹³ Ibid.

⁶¹⁴ Ibid.

⁶¹⁵ Ibid., 18.

⁶¹⁶ Ibid.

⁶¹⁷ Ikram et al., *The Animal Mummies*, 142.

⁶¹⁸ Ibid., 147-148, 176-177, 178, 182-183, 192-194.

If we assume that ancient Egyptian cats had the same reproductive cycle as modern cats, experiencing their first estrus between five and nine months of age, then we can conclude that cat mummies aged 1-4 months had not yet given birth. Cats aged 5-10 months could have had one litter, those 8-12 months probably one or two litters, and cats older than one year likely two to three litters, while cats over two years could have had three to four litters. Furthermore, within the framework of temple breeding programs, it may have been possible to encourage cats to reproduce, especially considering the high demand for cat mummies and the existence of pseudo-mummies, which suggests that resources may not have been sufficient to meet this demand. In addition, Bastet, as a goddess, was associated with fertility, prosperity and motherhood.⁶¹⁹ Within this large system of animal exploitation, it could be assumed that mummies of cats that had given birth were seen as even more connected to fertility and female reproduction, and this may have been another way to increase the economic value of a mummy. There is evidence of votive mummies of older age, such as the specimen Suppl. 11010, which was found as a votive offering.⁶²⁰

Another example could be a cat mummy in a wooden *qeresu*-type coffin (Fig.9), in the Museo Egizio, Turin, includes a cat mummy with a complete skeleton (45.3 cm) of an adult cat, probably 2 years old, and it has been suggested that the cause of death is based on epiphyseal fusion.⁶²¹ The cat's skull morphologically belongs to the wild cat *Felis chaus*, but the analogy between the body and tail length indicates a *Felis silvestris lybica* cat.⁶²² The date of the mummy, as well as its provenance, is unknown.⁶²³ Based on radiocarbon dating (¹⁴C), the coffin dates to 770-430 BCE, and it probably belongs to the Theban region based on the prosopography that the coffin bears.⁶²⁴ The coffin's decoration shows Hersenef with a shaved head and arms raised in a worshipful pose, standing in front of the grey cat.⁶²⁵ The hieroglyphic inscription written on the coffin helped in the identification of Hersenef. It has been suggested that this coffin might belong to a member of the Theban family, specifically another Hersenef, son of Nesmin, who is known from several sources and mentioned in a document dated to Year 6 of

⁶¹⁹ Malek, *The Cat in Ancient Egypt*, 59.

⁶²⁰ Ikram et al., *The Animal Mummies*, 176.

⁶²¹ Ibid., 192.

⁶²² Ibid.

⁶²³ Ibid.

⁶²⁴ Ibid.

⁶²⁵ Ibid.

Alexander IV (311 BCE).⁶²⁶ This Hersenef had a different mother, Tamit.⁶²⁷ However, as the reconstructed family tree shows, the names Hersenef and Nesmin were used by multiple individuals within the family and may have been passed down through several generations.⁶²⁸ The Hersenef associated with this coffin could be an ancestor of the latter one.⁶²⁹



Figure 9. Cat mummy in a wooden qeresu-type coffin. Inventory Number: Cat.2371. Source: Salima Ikram, Sara Aicardi, and Federica Facchetti, eds., *The Animal Mummies of the Museo Egizio, Turin* (Leiden: Sidestone Press, 2019), 192.

The inscription has been unified into a single text but extends across multiple sides of the coffin, appearing in several locations. It reads:

“Saying the words: ‘Ha[il] divine Miut (female cat) ...] with offering-bearers, who appears and shines with Re and joins the followers of the gods, justified’. [...] divine [cat]: may she give life, prosperity and health to Hersenef, son of the divine father and priest of Amun in Kar-nak, Nesmin. Miut (female cat), lady of jubilation, who gives life, prosperity and health to Hersenef, son of the priest and prophet of Amon in Karnak Nesmin, and whom the lady of the house Neskhnos has borne. Be well, be well, vice versa and twice, justified. May you rise and shine because of it, justified.’⁶³⁰

⁶²⁶ Ibid., 194.

⁶²⁷ Ibid.

⁶²⁸ Ibid.

⁶²⁹ Ibid.

⁶³⁰ Ibid., 193.

Based on Auenmüller and Facchetti observations, the inscription contains a dedication to a divine cat.⁶³¹ Consequently, the cat likely had a votive function rather than to be considered as a pet, as it was associated with blessings, fertility, and divine protection. The inscription connects the divine cat Miut with giving life, health and prosperity to Hersenef. By invoking the cat in such a ritual context, it highlights how cats were perceived as powerful symbols of fertility and reproductive vitality. The repeated expression “be well, be well...justified” demonstrates how the cat was used to ensure well-being and to maintain life, which is consistent with the general perception of the Egyptians on the relationship between cats and fertility and protection. As has been suggested, the cause of the cat’s death was the epiphyseal fusion, and the scholars have not commented on any evidence of abuse or mistreatment.⁶³² Therefore, considering that the cat was approximately two years old, it is likely that she had given birth at least once, especially when we take into account the inscription that refers to fertility and life.

According to Carolin Johansson et al., it is challenging to compare the size and shape of modern domestic or wild cats with those of ancient cats, as their appearance may have changed over thousands of years.⁶³³ The unusually large size of some mummified cats could be explained by natural breeds, lifestyle, crossbreeding, human-controlled breeding, or because the museum samples were not representative.⁶³⁴ Additionally, it is difficult to determine whether the reproductive cycle has evolved linearly, as cat species, and species in general, have changed significantly over the years.

However, if these assumptions are true and if we consider that modern veterinary medicine gives an average litter size of four kittens, with variability among cat species, as well as the huge number of votive animal mummies that have been found and the existence of pseudo-mummies, then we can conclude that large numbers of cats were exploited by temples in breeding programs.⁶³⁵ Some questions arising from these considerations are whether ancient

⁶³¹ Auenmüller and Facchetti, “Ceramic, Wood, Stone & Bronze,” 43.

⁶³² Ikram et al., *The Animal Mummies*, 192.

⁶³³ Carolin Johansson, Geoffrey Metz, and Margareta Uhlhorn, “Feline Descendant of the Red or the Black Land: A Multidisciplinary Investigation of an Unusually Large Ancient Egyptian Cat Mummy,” in *Egyptian Bioarchaeology: Humans, Animals, and the Environment*, ed. Salima Ikram, Jessica Kaiser, and Roxie Walker (Leiden: Sidestone Press, 2015), 198.

⁶³⁴ Ibid.

⁶³⁵ Little, “Female Cats: Normal Reproduction, and Reproductive Diseases and Conditions,” 1385; Zivie and Lichtenberg, “The Cats of the Goddess Bastet,” 118.

Egyptians used some cats solely for reproduction, given that the age of most votive cat mummies ranges from one month to two years (rarely older). Secondly, did they use these cats as votive animals after multiple litters, and if so, did these cats have a different symbolic meaning as mothers?

To summarize, the data suggest cats played an important role in the temple economy of ancient Egypt as well as being viewed as symbols of reproduction and religious importance.⁶³⁶ While several cats were bred for use in votive offerings, the differences in age and symbolic connection indicate a more elaborate role for cats, particularly concerning fertility and maternal figures. Further research is needed to clarify the full meaning and function of cat mummification.

3.5 The Exploitation of Cats through Magical Practices

In ancient times, the animal domain and magic were closely connected in numerous ways. As suggested by Daniel Ogden, this discussion focuses on four main areas: first, the ways in which humans could be transformed into animals; second, the use of animals, or parts of animals, for magical purposes; third, the application of magic to affect or control animals; and



Figure 10. Cat Amulet.

Inventory Number: Suppl. 2915

Source: Museo Egizio, Turin Online Collection.

⁶³⁶ Salima Ikram, “Shedding New Light on Old Corpses: Developments in the Field of Animal Mummy Studies,” in *Creatures of Earth, Water, and Sky: Essays on Animals in Ancient Egypt and Nubia*, ed. Stéphanie Porcier, Salima Ikram, and Stéphane Pasquali (Leiden: Sidestone Press, 2019), 183; Malek, *The Cat in Ancient Egypt*, 59.

fourth, the reverse scenario, in which animals themselves could employ magical means against humans.⁶³⁷

Cats were considered apotropaic symbols, a role that always existed in ancient Egyptian belief, though it shifted over the years.⁶³⁸ There are examples of cat representations on cosmetic jars for protection.⁶³⁹ The ancient Egyptians also believed that cats were guardians in the afterlife and could protect from demons, probably because of the reflective quality of their eyes.⁶⁴⁰ In the Middle Kingdom, they were often depicted attacking snakes with magical knives and wands, and were believed to have the power to protect humans from snakes as well as from evil and bad luck.⁶⁴¹ Cat amulets (Fig.10) have been found in cemeteries at Qaw-Badari in Upper Egypt, dating to the Old Kingdom and First Intermediate Period, used as body or cloth charms for protection against hazards.⁶⁴² In the Ptolemaic period, many small amulet and magical statuettes were used for protection against snake bites and scorpion stings.⁶⁴³

The ancient Egyptians were closely connected with both magical practices and medicine, as they believed that magic could provide protection and healing.⁶⁴⁴ Magic and medicine were often practiced together. For example, some medical recipes included cures using cat and lion dung, as well as substances from other creatures.⁶⁴⁵ Another example comes from a medical papyrus, in which cat fat was used for protection against mice.⁶⁴⁶ Magic was also used for love spells, fertility, good luck, and even to alter one's fate. On the other hand, magic was sometimes employed to harm others.⁶⁴⁷

Given the general framework of magic and practical objects of use, this chapter will focus on the exploitation and further abuse of cats as attested in the Greek Magical Papyri. The

⁶³⁷ Ogden, "Animal Magic," 294.

⁶³⁸ Malek, *The Cat in Ancient Egypt*, 78-80.

⁶³⁹ Ibid.

⁶⁴⁰ Jackson, *Sekhmet & Bastet*, 28-29.

⁶⁴¹ Malek, *The Cat in Ancient Egypt*, 78-80.

⁶⁴² Korshi Dosoo and Thomas Galoppin, "Animals in Graeco-Egyptian Magical Practice," in *Magikon zōon*, ed. Jean-Charles Coulon and Korshi Dosoo (Paris: Institut de recherche et d'histoire des textes, 2022), 208. <https://doi.org/10.4000/books.irht.704>.

⁶⁴³ Ibid.

⁶⁴⁴ Donald B. Redford (ed.), *The Ancient Gods Speak: A Guide to Egyptian Religion* (Oxford; New York: Oxford University Press, 2002), 198-199; Morenz, *Egyptian Religion*, 7-8; Jackson, *Sekhmet & Bastet*, 189-190.

⁶⁴⁵ Jackson, *Sekhmet & Bastet*, 168-169.

⁶⁴⁶ Germond and Livet, *An Egyptian Bestiary*, 75.

⁶⁴⁷ Dosoo and Galoppin, "Animals in Graeco-Egyptian Magical Practice," 209; Jackson, *Sekhmet & Bastet*, 188-194.

magical texts date to the Roman period, and there are numerous examples of the exploitation of animals through rituals, including sacrifices, the use of animal bodies to provide ingredients, and the killing of animals as part of magical practices, such as the drowning ritual.⁶⁴⁸ For example, in PGM IV. 3086-3097 the formula instructs the ritualist to offer the heart of a cat to a god.⁶⁴⁹ In PGM III. 84-97, the ritualist is told to take the whiskers of a cat and wear them as phylactery.⁶⁵⁰ In PGM VII. 846-861, after the purification of the ritualist, they are instructed to walk toward the sun while being crowned with a cat's tail.⁶⁵¹ These are only a few examples from the PGM that demonstrate the exploitation of animals. Many other instances show the use of whole animals or animal parts, such as organs, skins, fur, hair, blood, feathers, tails, and more, in magical practices.⁶⁵²

In the drowning ritual, after the purification of the ritualist, the appropriate animal for the ritual had to be selected and then drowned.⁶⁵³ A wide variety of liquids were used, such as water, oils, honey, wine, fats, or a mixture of these.⁶⁵⁴ Beyond their symbolic and ritual significance, these ingredients also served a practical purpose, allowing the killing of fish and other aquatic creatures that could otherwise survive in water.⁶⁵⁵ In PGM III. 1-164, a cat was drowned in water while the ritualist simultaneously recited the spell.⁶⁵⁶ The ritual demonstrates connections to Bastet and Sekhmet, reflecting their dual roles as protective yet potentially violent deities in Egyptian magical practice, both of whom were associated with the destructive and protective aspects of the Eye of Ra.⁶⁵⁷

“[Take a] cat, and [make] it into an Esies [by submerging] its body in water. While you are drowning it, speak [the formula] to [its] back...”

⁶⁴⁸ Dosoo and Galoppin, “Animals in Graeco-Egyptian Magical Practice,” 203; Dosoo, “*Living Death and Deading Life*,” 340.

⁶⁴⁹ Hans Dieter Betz (ed.), *Greek Magical Papyri in Translation, Including the Demotic Spells* (Chicago: The University of Chicago Press, 1997), 98.

⁶⁵⁰ Ibid., 21.

⁶⁵¹ Ibid., 141.

⁶⁵² Dosoo and Galoppin, “Animals in Graeco-Egyptian Magical Practice,” 239-241.

⁶⁵³ Dosoo, “*Living Death and Deading Life*,” 346.

⁶⁵⁴ Ibid.

⁶⁵⁵ Ibid.

⁶⁵⁶ Ibid., 347.

⁶⁵⁷ Betz, *Greek Magical Papyri in Translation*, 18; Dosoo, “*Living Death and Deading Life*,” 358-359.

“Come hither to me, you who are in control of the form of Helios, you the cat- / faced god, and behold your form being mistreated by [your] opponents...”

“Take the cat, and make [three] lamellae, one for its anus; one for..., and one for its throat, and write the formula [concerning the] deed on a clean sheet of papyrus...”⁶⁵⁸

The animal might have been left in the asphyxiating liquid for a significant period after its death.⁶⁵⁹ This ritual was so abusive that oils were sometimes prepared to avoid decomposition of the bodies.⁶⁶⁰ After killing the animal, it was likely dried, after immersion in the oils, using sand, linen, bowls, or papyrus strips.⁶⁶¹ Natron, fragrant preservatives such as myrrh, frankincense, saffron, and wine may also have been used, due to their magical qualities.⁶⁶² The drying and preparation process was very complex, often involving decorated bindings inscribed with magical words, spells, drawings, or colored strips.⁶⁶³

Another brutal use of cats in magical practice involved killing them violently, based on the belief that this would send bad dreams to a targeted individual, a practice explicitly described in PGM XII. 107-21.⁶⁶⁴

“Take a completely black cat that died a violent death, make a strip of papyrus and write with myrrh the following, together with the [dream] you want sent, and place it into the mouth of the cat.”⁶⁶⁵

The Greeks believed that those who died violently entered a special category of the dead, and their bodies could be treated similarly to those of the *hasye*.⁶⁶⁶ Dosoo argues that the cat used in

⁶⁵⁸ The following passages, taken from different points of the same ritual in PGM III, illustrate the continuous procedure of the drowning ritual. The translation is provided by Hans Dieter Betz; Betz, *Greek Magical Papyri in Translation*, 18.

⁶⁵⁹ Dosoo, “*Living Death and Deading Life*,” 347.

⁶⁶⁰ *Ibid.*, 348.

⁶⁶¹ *Ibid.*, 348-349.

⁶⁶² *Ibid.*, 349.

⁶⁶³ *Ibid.*

⁶⁶⁴ *Ibid.*, 362.

⁶⁶⁵ The translation is provided by Hans Dieter Betz; Betz, *Greek Magical Papyri in Translation*, 157.

⁶⁶⁶ *Hasye* translates as “the blessed one,” a concept in Egyptian belief referring to individuals who were loved and praised during their lives and after death, and who enjoyed the favor or recognition of their divine or royal superiors; Dosoo, “*Living Death and Deading Life*,” 362-365; Dosoo and Galoppin, “Animals in Graeco-Egyptian Magical Practice,” 208.

the curse was deliberately drowned rather than simply immersed in water.⁶⁶⁷ He further notes that it is unlikely that *hasye* originally referred to a “justified drowned individual,” since the term appears very early in Egyptian history and acquired multiple meanings depending on context.⁶⁶⁸ Evidence from ancient authors such as Herodotus, together with material gathered by Alan Rowe, suggests that death by water was associated with a form of deification by at least the fifth century BCE, and that this concept became connected with the term *hasye* by the fourth century BCE.⁶⁶⁹ The purpose of the ritual was to sacrifice an animal through drowning, although this did not necessarily mean that the animal became divine.⁶⁷⁰ In these texts, the term *hasye* is used in connection with such deaths.⁶⁷¹ In late Egyptian belief, death by drowning could carry religious significance, but not in all cases; therefore, depending on the context, *hasye* could refer either to a religious status or simply to the manner of death.⁶⁷²

As suggested by Dosoo, these ritual practices show similarities with mummification.⁶⁷³ In Roman Egypt, animal mummies used for magic were created according to rituals like those described by Herodotus for elaborate human mummification, but their production was generally carried out privately by the ritualist, sometimes incorporating parts of their own body.⁶⁷⁴ The materials used included oils, scented resins, colored cloth, and magical incantations. Through these rituals, animals were transformed into spiritual beings connected to the ritualist, capable of assisting in magic by providing protection, healing, or even helping to curse the ritualist’s enemies.⁶⁷⁵ The construction of magical animal mummies also reflected Egyptian beliefs about rebirth and the afterlife.⁶⁷⁶ Modeled on archetypes such as the sun-god and Osiris, these mummies were seen as the physical embodiment of magical helpers.⁶⁷⁷

While magical mummies shared some similarities with votive mummies, there were important differences. Magical mummies were created for the ritualist’s private use as spiritual

⁶⁶⁷ Dosoo, “*Living Death and Deading Life*,” 372-373.

⁶⁶⁸ Ibid.

⁶⁶⁹ Ibid.

⁶⁷⁰ Ibid., 379-381.

⁶⁷¹ Ibid.

⁶⁷² Ibid.

⁶⁷³ Ibid., 349.

⁶⁷⁴ Ibid.

⁶⁷⁵ Ibid., 350-351.

⁶⁷⁶ Ibid., 352.

⁶⁷⁷ Ibid.

assistants and magical texts used to create this divine being, whereas votive mummies were publicly dedicated to the gods as acts of devotion or as requests for divine favor.⁶⁷⁸ There is no evidence that animals used as votive mummies were drowned, as this ritual practice seems to have been employed mainly in later periods.⁶⁷⁹

The magical papyri show a clear difference from other practices, because in these rituals the animal's death is central and purposeful.⁶⁸⁰ The animal is not just killed, but deliberately drowned in a specific substance, becoming a divine figure, such as Osiris, and the ritualist had to follow a specific formula and steps.⁶⁸¹ While the ritual can be understood in mythological terms, the animal represents the dying and reborn god, and the liquid symbolizes the primeval Nile, while the ritualist who performs the killing remains hidden.⁶⁸² In contrast to myths like that of Osiris, where Seth, the killer, is a prominent figure who faces consequences, the practitioner acts in a practical, non-mythical role, similar to the butcher-priests of votive animal cults.⁶⁸³ However, this practical role came at the expense of the animals' lives. Additionally, the death of animals is never voluntary, although this is rarely questioned.⁶⁸⁴ These animals were valued more for their death than for their life, as clearly shown in curses where a cat is drowned, mummified, and buried.⁶⁸⁵ The texts acknowledge that the animal dies unwillingly and even instruct it to act against others.⁶⁸⁶

In summary, in Egyptian religion more broadly, the death of animals was generally seen as symbolic or typical, rather than focusing on each individual animal's life or personality, at least as far as their actions reveal.⁶⁸⁷ Exceptions exist, such as pet mummies or graves shared by humans and their dogs, where individual animals with names and histories appear.⁶⁸⁸ But in most

⁶⁷⁸ Ibid., 351, 357-358.

⁶⁷⁹ Ibid., 390-391.

⁶⁸⁰ Dosoo, "*Living Death and Deading Life*," 394; Dosoo and Galoppin, "Animals in Graeco-Egyptian Magical Practice," 212.

⁶⁸¹ Dosoo, "*Living Death and Deading Life*," 394

⁶⁸² Ibid., 395.

⁶⁸³ Ibid.

⁶⁸⁴ Ibid., 400.

⁶⁸⁵ Ibid., 400-402.

⁶⁸⁶ Ibid., 402.

⁶⁸⁷ Ibid., 403.

⁶⁸⁸ Ibid.

cases, including votive mummies, animal *hasye*, and even animal gods, little is said about their happiness, suffering, or the circumstances of their deaths.⁶⁸⁹

Chapter 4. The Dog in Ancient Egypt: A Case Study

4.1 From Domestication to Deification: The Role of Dogs in Ancient Egypt

Dogs are among the first animals to be domesticated and have developed a close bond with humans, acting as pets, guards, herders, and helpers in police work.⁶⁹⁰ Although some 19th-century scholars suggested that dogs descended from wild species such as coyotes (*Canis latrans*) or jackals (*Canis aureus*), today the consensus is that the wolf (*Canis lupus*) is the primary ancestor of modern dog breeds.⁶⁹¹ This is supported by multiple lines of evidence, including the skull and teeth morphology of dogs, which closely resemble those of wolves rather than jackals.⁶⁹² While dogs and other canids share general physical similarities, the strongest evidence comes from molecular biology and genetic studies, which demonstrate a very close genetic relationship between dogs and wolves.⁶⁹³

In ancient Egyptian society, the first evidence of dogs dates to 4800 BCE in Merimde Beni Salama in the Delta, but it has been suggested that dogs existed even earlier, when people lived as hunters and used dogs to assist them in these activities.⁶⁹⁴ There were many breeds, which can be categorized as Pariahs, Greyhounds (the Tesem and Saluki), Mastiffs, and Hounds.⁶⁹⁵ Because of these qualities, dogs were highly valued by the Egyptians, as evidenced

⁶⁸⁹ Ibid.

⁶⁹⁰ Barbash, “How the Ancient Egyptians Viewed the Animal World,” 37.

⁶⁹¹ Douglas J. Brewer, Donald B. Redford, and Susan Redford, *Domestic Plants and Animals: The Egyptian Origins* (Warminster: Aris & Phillips, 1994), 110-111; Germond and Livet, *An Egyptian Bestiary*, 71.

⁶⁹² Brewer, Redford, and Redford, *Domestic Plants and Animals*, 110-114.

⁶⁹³ Ibid.

⁶⁹⁴ Germond and Livet, *An Egyptian Bestiary*, 71-72; Brewer, Redford, and Redford, *Domestic Plants and Animals*, 114.

⁶⁹⁵ Barbash, “How the Ancient Egyptians Viewed the Animal World,” 37; Brewer, Redford, and Redford, *Domestic Plants and Animals*, 116-117.

by many tomb scenes depicting them as pets or hunting companions.⁶⁹⁶ Moreover, in these representations, dogs often wear elaborate collars and frequently have names reflecting their color, character, or abilities. Some examples include Blacky, Wind, and Brave One.⁶⁹⁷ However, from the 26th Dynasty onwards, there is very little evidence of dogs' names.⁶⁹⁸ Some examples do exist, such as the two epitaphs for a hunting dog named Tauron found in the Zenon archive, but overall, dog names are extremely rare in the Graeco-Roman period.⁶⁹⁹ This may be because owners did not consider it necessary to record their pets' names on monuments, or more likely, the names have simply been lost over time in the surviving texts and archaeological evidence.⁷⁰⁰

Additionally, the ancient Egyptians had such a close bond with their dogs that they often buried them like humans, sometimes in individual coffins with inscriptions.⁷⁰¹ An example of this is a stele from the Old Kingdom that refers to a dog of royal protection, the mummification of which was ordered by the Pharaoh, as well as the construction of a sarcophagus and an appropriate burial for the animal.⁷⁰² The Pharaoh also had a tomb for his pet dog.⁷⁰³ Consequently, dogs were not seen only as useful animals that assisted humans in everyday activities, but as true companions who deserved to remain close to their masters in the afterlife.⁷⁰⁴ However, it is important to note that this close bond with domestic dogs did not automatically associate them with the jackal gods, nor were all dogs considered sacred.⁷⁰⁵

The ancient Egyptians worshiped several jackal gods from as early as the First Dynasty, including Anubis, Wepwawet, Khentimentu and Duamutef, all of whom were associated with death and the afterlife.⁷⁰⁶ Other jackal deities were also venerated, but usually within a more

⁶⁹⁶ Brewer, Redford, and Redford, *Domestic Plants and Animals*, 117-118.

⁶⁹⁷ Ibid.

⁶⁹⁸ Youssri Ezzat Hussein Abdelwahed, *Houses in Graeco-Roman Egypt: Arenas for Ritual Activity* (Oxford: Archaeopress, 2016), 59.

⁶⁹⁹ Ibid.

⁷⁰⁰ Ibid.

⁷⁰¹ Brewer, Redford, and Redford, *Domestic Plants and Animals*, 118; Abdelwahed, *Houses in Graeco-Roman Egypt*, 67.

⁷⁰² Brewer, Redford, and Redford, *Domestic Plants and Animals*, 118.

⁷⁰³ Ibid.

⁷⁰⁴ Germond and Livet, *An Egyptian Bestiary*, 75-75.

⁷⁰⁵ T. G. Wilfong, *Death Dogs: The Jackal Gods of Ancient Egypt* (Ann Arbor: Kelsey Museum Publications, 2015), 16.

⁷⁰⁶ Barbash, "How the Ancient Egyptians Viewed the Animal World," 37; Wilfong, *Death Dogs*, 18; Brewer, Redford, and Redford, *Domestic Plants and Animals*, 118.

local or regional context.⁷⁰⁷ In general, jackal gods were predominantly male, and female figures were often derived from male deities, such as Anupet, who was associated with Anubis.⁷⁰⁸ Independent female jackal gods were rare; one example is Hereret. Overall, Egyptian religious tradition tended to associate jackal deities with male roles and activities.⁷⁰⁹ Anubis was one of the most important Egyptian deities. He was initially identified as a jackal because of his long tail, but due to his black coloration and his strong association with the afterlife and rebirth, he was later characterized more broadly as a wild dog.⁷¹⁰ He was also associated with embalmers, as according to myth he was the embalmer of the god Osiris and acted as their patron.⁷¹¹ As a result, dogs were associated with chthonic deities such as Osiris, Isis, and Anubis, and were believed to belong to both the upper and underworld.⁷¹²

In addition, he was the protector of the necropolis, guiding the dead and participating in their judgment.⁷¹³ Anubis is the Greek version of his name; the original Egyptian name was likely Anoub or Anoup and he was sometimes depicted with the *Imiut*, a symbol consisting of an animal skin attached to a stand.⁷¹⁴ He was often depicted as a jackal-headed dog, and sometimes he was considered the son of Re; in later periods, he became associated with Isis and Osiris.⁷¹⁵ One of his main sanctuaries was in Cynopolis (meaning "City of Dogs" in Greek) and was located in the 17th nome of Upper Egypt.⁷¹⁶ However, many other cities also worshipped Anubis, and dog cemeteries have been found in places such as Kharga, Saqqara, Hierakonpolis, Abydos, Asyut, Badari, Koptos and others.⁷¹⁷ Especially in Hierakonpolis, a large dog cemetery

⁷⁰⁷ Wilfong, *Death Dogs*, 17.

⁷⁰⁸ Ibid.

⁷⁰⁹ Ibid.

⁷¹⁰ Donald B. Redford (ed.), *The Ancient Gods Speak: A Guide to Egyptian Religion* (Oxford; New York: Oxford University Press, 2002), 21; Barbash, "How the Ancient Egyptians Viewed the Animal World," 37.

⁷¹¹ Barbash, "How the Ancient Egyptians Viewed the Animal World," 37-38; Redford, *The Ancient Gods Speak*, 21; Pinch, *Handbook of Egyptian Mythology*, 104.

⁷¹² Abdelwahed, *Houses in Graeco-Roman Egypt*, 60; Wilkinson, *Complete Gods and Goddesses*, 187.

⁷¹³ Barbash, "How the Ancient Egyptians Viewed the Animal World," 38.

⁷¹⁴ Wilfong, *Death Dogs*, 21; Pinch, *Handbook of Egyptian Mythology*, 104.

⁷¹⁵ Brewer, Redford, and Redford, *Domestic Plants and Animals*, 118; Wilfong, *Death Dogs*, 51; Germond and Livet, *An Egyptian Bestiary*, 131.

⁷¹⁶ Redford, *The Ancient Gods Speak*, 22; Brewer, Redford, and Redford, *Domestic Plants and Animals*, 118; Wilkinson, *Complete Gods and Goddesses*, 190.

⁷¹⁷ Salima Ikram, "Man's Best Friend for Eternity: Dog and Human Burials in Ancient Egypt," *Anthropozoologica* 48, no. 2 (2013): 301, <https://doi.org/10.5252/az2013n2a8>.

dating to the Late and Ptolemaic periods was found, as well as in Saqqara with the so-called Anubieion cemetery.⁷¹⁸

Other jackal gods, such as Wepwawet, were worshipped in places like Asyut or Lycopolis (meaning "City of Wolves" in Greek), and Abydos.⁷¹⁹ His name meant "Opener of the Ways," and he was seen as a guide and protector of the deceased.⁷²⁰ Another jackal god, Khentiamentu, whose name means "First in the West" (the land of the dead), was a local god in Abydos.⁷²¹ He was a complex deity whose functions overlapped with the growing funerary god Osiris.⁷²² Over time, through a process that is not fully understood, Khentiamentu was merged with Osiris and lost his independent identity.⁷²³ However, his name survived as a title for Osiris for more than 2,000 years.⁷²⁴

Nevertheless, Anubis was the most famous of the jackal gods and played a very important role in the understanding of life, death, and the afterlife, which was directly connected with Egyptian beliefs.⁷²⁵ His influence was so great that many priests who supervised mummification wore masks with the head of Anubis, and during the actual ceremony, a selected priest would wear the Anubis mask.⁷²⁶ Furthermore, because of his active role in guiding the dead, Anubis was often depicted on coffins, and many amulets bearing his image were worn by the deceased to gain the god's favor and protection.⁷²⁷

⁷¹⁸ Barbash, "How the Ancient Egyptians Viewed the Animal World," 37; Redford, *The Ancient Gods Speak*, 22.

⁷¹⁹ Brewer, Redford, and Redford, *Domestic Plants and Animals*, 118; Barbash, "How the Ancient Egyptians Viewed the Animal World," 38; Pinch, *Handbook of Egyptian Mythology*, 213.

⁷²⁰ Wilkinson, *Complete Gods and Goddesses*, 191; Barbash, "How the Ancient Egyptians Viewed the Animal World," 38.

⁷²¹ Wilfong, *Death Dogs*, 19; Brewer, Redford, and Redford, *Domestic Plants and Animals*, 118.

⁷²² T. DuQuesne, "Wepwawet," in *The Encyclopedia of Ancient History*, ed. R. S. Bagnall et al. (Oxford: Wiley-Blackwell, 2012), 1, <https://doi.org/10.1002/9781444338386.wbeah15416>; Wilfong, *Death Dogs*, 19.

⁷²³ Wilfong, *Death Dogs*, 19.

⁷²⁴ Ibid.

⁷²⁵ T. DuQuesne, "Anubis," in *The Encyclopedia of Ancient History*, ed. R. S. Bagnall et al. (Oxford: Wiley-Blackwell, 2012), 1, <https://doi.org/10.1002/9781444338386.wbeah15038>; Wilfong, *Death Dogs*, 25.

⁷²⁶ Brier, *Egyptian Mummies*, 75; Wilfong, *Death Dogs*, 25.

⁷²⁷ Wilfong, *Death Dogs*, 25.

During the Ptolemaic period, the Greek rulers supported the cult of jackal gods.⁷²⁸ Although none of the temples dedicated to jackal gods survive, many other temples provide evidence of their worship.⁷²⁹ Numerous temples from this period also depict Anubis wearing royal crowns, linking him to kingship.⁷³⁰ Additionally, many texts offer insight into the Anubis cult, particularly self-dedication documents. For example, a Demotic papyrus dated to the 23rd year of King Ptolemy VI Philometor records a woman dedicating herself to the great god Anubis and asking for protection from spirits and demons.⁷³¹ Moreover, many amulets from this period showed Anubis (Fig.11, Fig.12,) with a human body and a jackal head in a standing pose.⁷³²



Figure 11. Faience Amulet depicting the god Anubis. Inventory Number: Cat. 135. Source: Museo Egizio, Turin Online Collection.



Figure 12. Wood Amulet depicting the god Anubis. Inventory Number: Cat. 120. Source: Museo Egizio, Turin Online Collection.

⁷²⁸ DuQuesne, “Anubis,” 1; Wilfong, *Death Dogs*, 68.

⁷²⁹ Wilfong, *Death Dogs*, 70.

⁷³⁰ Ibid., 26.

⁷³¹ Ibid., 70.

⁷³² DuQuesne, “Anubis,” 1; Wilfong, *Death Dogs*, 29.

These amulets were probably used both for everyday protection and placed with mummies to safeguard the deceased in the afterlife⁷³³ Additionally, a variety of bronze figurines representing Anubis (Fig.13) were found in temples, likely serving as votive offerings.⁷³⁴



Figure 13. Anubis Bronze statuette. Inventory Number: Cat.115. Source: Museo Egizio, Turin Online Collection.

Furthermore, a few mummy labels (Fig.14, Fig.15) that recorded the name, parentage, and age of the deceased also featured the figure of Anubis and other canine gods, although such labels were not very common.⁷³⁵ These images likely served a protective function and were intended to ensure the deceased's rebirth.⁷³⁶

⁷³³ Ibid.

⁷³⁴ Wilfong, *Death Dogs*, 29-30.

⁷³⁵ Adrienn Almásy-Martin, "Dogs on Labels: Anubis Representations on Mummy Labels from the Louvre," in *Ripple in Still Water: When There Is No Pebble Tossed. Festschrift in Honour of Cary J. Martin* (2022), 45-54; Wilfong, *Death Dogs*, 71.

⁷³⁶ Almásy-Martin, "Dogs on Labels," 45-54.

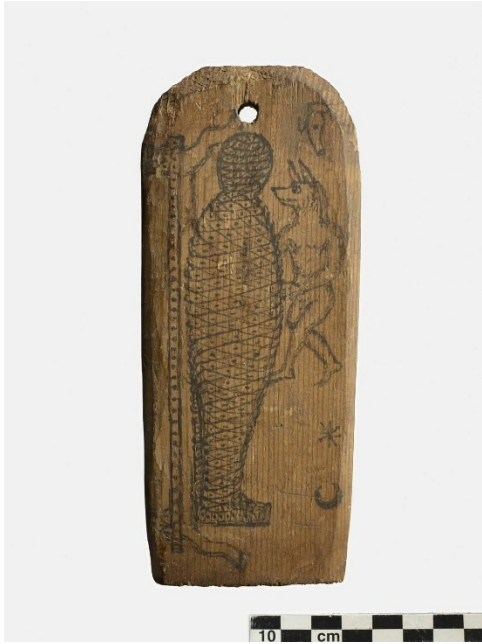


Figure 14. Mummy Label with Jackal figure
Object Number: E 9716. Source: © 2016
Musée du Louvre, Dist. GrandPalaisRmn /
Chipault – Soligny.



Figure 15. Mummy Label with Jackal figure.
Object Number: E 20417. Source: © 2016
Musée du Louvre, Dist. GrandPalaisRmn /
Chipault – Soligny.

Another very interesting representation of the god Anubis involves jackals shown wearing keys suspended from their collars. The key as a divine attribute is first attested in Middle Ptolemaic temple inscriptions, where it functions as an ideogram or determinative for the word *sʿw*, meaning “to protect” or “guardian.”⁷³⁷ In the Late Roman period, the same motif also appears in the Great Paris Magical Papyrus, confirming its continued symbolic significance.⁷³⁸ Jackals carrying keys do not occupy a fixed position within the iconographic programs of mummy decoration. When they do appear, they are usually placed in the lower part of the image, near the feet of the deceased. These representations first emerge in the early second century CE on sarcophagi and funerary shrouds from the family tomb of Soter in Thebes (Fig.16).⁷³⁹ Overall, depictions of Anubis or his jackal holding a key are concentrated mainly in Upper Egypt, particularly in the Theban region. Outside Thebes and Upper Egypt more broadly, such

⁷³⁷ Klaus Parlasca, “Anubis mit dem Schlüssel in der kaiserzeitlichen Grabkunst Ägyptens,” in *Isis on the Nile: Egyptian Gods in Hellenistic and Roman Egypt*, 221-232, <https://doi.org/10.1163/ej.9789004188822.i-364.56>.

⁷³⁸ Ibid.

⁷³⁹ Christina Riggs, *The Beautiful Burial in Roman Egypt: Art, Identity, and Funerary Religion* (Oxford; New York: Oxford University Press, 2005), 227-228; Parlasca, “Anubis mit dem Schlüssel,” 225.

representations are extremely rare, suggesting that this iconographic motif had a strong regional character.⁷⁴⁰ This iconographic motif further demonstrates the continuity of the cult of Anubis into the Roman period, showing that his protective role and religious significance remained important long after the Ptolemaic era.⁷⁴¹



Figure 16. Cartonnage fragment from a woman's mummy mask, dated to c. 100-200 CE. The lower register depicts Anubis performing rites over a mummy, surrounded on both sides by two jackals, each shown wearing keys on their collars.

Object Number: Cat.2265.

Source: Museo Egizio, Turin Online Collection.

In the Ptolemaic period, Anubis was not only worshipped but also elevated to a cosmic deity, and his funerary role was associated with that of Hermes *Psychopompos*.⁷⁴² Specifically, Anubis was merged with the Greek god Hermes, forming the syncretic deity Hermanubis, who served as the *psychopompos*, or guide of the dead.⁷⁴³ Due to these shared mythological qualities, the cult of Hermanubis became very popular and received the support of the Ptolemaic kings.⁷⁴⁴ Occasionally, Anubis was associated with Kerberos (*Interpretatio Graeca*), the three-headed

⁷⁴⁰ Parlasca, "Anubis mit dem Schlüssel," 221-232.

⁷⁴¹ Pinch, *Handbook of Egyptian Mythology*, 105.

⁷⁴² Donald B. Redford (ed.), *The Oxford Encyclopedia of Ancient Egypt* (Oxford; New York: Oxford University Press, 2001), 97-98.

⁷⁴³ Abdelwahed, *Houses in Graeco-Roman Egypt*, 64.

⁷⁴⁴ A. Benaissa, "The Onomastic Evidence for the God Hermanubis," in *Proceedings of the Twenty-Fifth International Congress of Papyrology* (Ann Arbor, 2010), 67-76.

guardian of Hades.⁷⁴⁵ Because souls were believed to travel along the paths of the planets on their journey to the afterlife, Anubis/Hermes was thought to wield powerful words that enabled him to pass through all gates and protect the souls from any dangerous spirits.⁷⁴⁶ Hermanubis is a clear example of syncretism and evidence of this can be found in many dedicatory inscriptions from the period.⁷⁴⁷ As a result, the Ptolemies created an *oikoumene* characterized by cultural synthesis, adding new deities to the Egyptian pantheon without replacing or displacing the ancient Egyptian gods.⁷⁴⁸

4.2 Canine Mummification and Economic Practices at the Anubieion

Dog burials have been found in many locations in Egypt and date from the Predynastic to the Graeco-Roman period.⁷⁴⁹ Dogs were often regarded as pets, and many of these burials, especially in early periods, appear to be pet burials.⁷⁵⁰ These graves usually contain a single dog, with no signs of deliberate killing, and sometimes include collars or leashes.⁷⁵¹ In several cases, dogs were placed in wooden coffins and were occasionally buried in association with human bodies, possibly near the feet or heads of their owners.⁷⁵² In later periods, particularly during the Ptolemaic era, when animal cults reached their peak, many dogs were regarded as sacred animals or were used as votive offerings, or perhaps also as amulets in association with Anubis or Hermanubis the *psychopompos*.⁷⁵³

⁷⁴⁵ Abdelwahed, *Houses in Graeco-Roman Egypt*, 60.

⁷⁴⁶ Abdelwahed, *Houses in Graeco-Roman Egypt*, 64.

⁷⁴⁷ Savvopoulos, "Religious Life in Ptolemaic Alexandria," 89-90, 91-93; Bernal, "Egyptians in the Hellenistic Woodpile," 121, 134; Stewart and Shaw, *Syncretism/Anti-syncretism*, 119-120.

⁷⁴⁸ Savvopoulos, "Religious Life in Ptolemaic Alexandria," 92-93.

⁷⁴⁹ Ikram, "Man's Best Friend for Eternity," 300.

⁷⁵⁰ Mary Hartley, "The Significance of Predynastic Canid Burials in Ancient Egypt," *Archéo-Nil* 25 (2015): 58, <https://doi.org/10.3406/arnil.2015.1089>.

⁷⁵¹ Ibid.

⁷⁵² Mary Hartley and Susanne Binder, "Canine Interments in the Teti Cemetery North at Saqqara" (n.d.), 23-24; Hartley, "Predynastic Canid Burials," 59; Ikram, "Man's Best Friend for Eternity," 301.

⁷⁵³ Hartley and Binder, "Canine Interments," 27-28.

Mary Hartley and Susanne Binder have suggested the amuletic use of dog based on their excavations carried out between 2007 and 2010 in the Teti Cemetery North at Saqqara.⁷⁵⁴ This project brought to light votive dog mummies dating to the Graeco-Roman period, as well as individual dogs buried in association with human burials, suggesting that this practice may have begun earlier.⁷⁵⁵ These individual dogs were found in contexts without other grave goods and were placed at the feet of the deceased. The excavators suggested that these dogs had an amuletic function and were also associated with Anubis as theriomorphic manifestation of a deity, intended to assist humans in their journey to the afterlife or to provide protection.⁷⁵⁶ Additionally, the presence of a canine mummy may have been considered a more effective form of grave protection than conventional grave goods, which were often targeted by tomb robbers.⁷⁵⁷ However, Salima Ikram proposed a different interpretation, suggesting that these dogs function as household pets, since this type of burial is found in association with many human burials and may have served as guardians of the entire family.⁷⁵⁸ This idea is further supported by findings from another excavation at Gisir-Mudir (Saqqara), where a dog dated to the 26th Dynasty was found buried in association with four human bodies. This has been interpreted as the dog being a pet of the deceased.⁷⁵⁹ Overall, as Ikram mentioned, more research is needed on these burials with both humans and dogs before we can be sure about their meaning.⁷⁶⁰

The role of dogs as pets and companions, combined with their religious connection to canine gods, sometimes makes interpreting these burials very difficult, as there are many variations and contexts. Dogs were also identified as sacred and as votive mummies buried in large numbers, often associated with the cult of Anubis and found in many necropolises and catacombs, such as the Anubieion at Saqqara.⁷⁶¹ Their role was likely similar to that of cat mummies, as discussed above.⁷⁶² Scholars have suggested that dogs buried in niches were

⁷⁵⁴ Ibid., 17.

⁷⁵⁵ Ibid., 22.

⁷⁵⁶ Hartley and Binder, "Canine Interments," 26-27; Hartley, "Predynastic Canid Burials," 59.

⁷⁵⁷ Hartley and Binder, "Canine Interments," 28-29.

⁷⁵⁸ Ikram, "Man's Best Friend for Eternity," 304.

⁷⁵⁹ Hartley and Binder, "Canine Interments," 22.

⁷⁶⁰ Ikram, "Man's Best Friend for Eternity," 306.

⁷⁶¹ Salima Ikram, Paul T. Nicholson, Louise Bertini, and D. Hurley, "Killing Man's Best Friend?" (2013), 49-50, https://www.researchgate.net/publication/308054467_Killing_man's_best_friend.

⁷⁶² Ibid.

considered sacred, while all others were treated as votive offerings, used by pilgrims in connection with the associated deity.⁷⁶³

Based on stratigraphic and numismatic evidence, the Anubieion and its extensions originated in the early Ptolemaic period, when they were first attributed to renovations by Ptolemy II, and the main structure was built during the rule of Ptolemy V.⁷⁶⁴ Some evidence suggests that this site was already in use as a burial ground from the 4th century BCE, prior to the construction of the Anubieion.⁷⁶⁵ It is located relatively close to the Bubastieion and linked by stairs to the Serapieion, and appears to have been occupied until approximately 1 CE, as the Romans never fully accepted or supported animal cults in the same way the Ptolemies had.⁷⁶⁶ The Anubieion had at least three temple complexes within its enclosure, along with other individual dog burials found in the area.⁷⁶⁷ The dog catacombs were located in the northeast of the Saqqara plateau, near to Anubieion Temple, where large deposits of canine mummies dedicated to the god were discovered.⁷⁶⁸ Nevertheless, the catacombs were likely built later, and the duration of their use remains uncertain.⁷⁶⁹

Furthermore, forty-nine galleries were discovered in the Dog Catacombs, and they were used to house votive offerings.⁷⁷⁰ Although the area was dedicated to Anubis, among the eight million animals found there were not only dogs, but also jackals/wolves, goats, donkeys, horses, cats, jungle cats, mongooses, sheep, pigs, and foxes.⁷⁷¹ Scholars have made some estimates regarding the enormous number of dog remains found, calculating that over a period of four centuries, beginning in the 4th century BCE, more than 50 animals would have been needed daily.⁷⁷² These figures also clearly indicate the existence of a dog-breeding program alongside

⁷⁶³ Ikram, "Man's Best Friend for Eternity," 301; Ikram et al., "Killing Man's Best Friend?" 50-51.

⁷⁶⁴ H. S. Smith and D. G. Jeffreys, "The Anubieion, North Saqqâra: Preliminary Report, 1979-80," *The Journal of Egyptian Archaeology* 67 (1981): 22, <https://www.jstor.org/stable/3856598>; Maria Cannata, "Social Identity at the Anubieion: A Reanalysis," *American Journal of Archaeology* 111, no. 2 (2007): 224, <http://www.jstor.org/stable/40037273>.

⁷⁶⁵ Cannata, "Social Identity at the Anubieion," 224.

⁷⁶⁶ Bleiberg, "Animal Mummies: The Souls of the Gods," 76; Cannata, "Social Identity at the Anubieion," 224.

⁷⁶⁷ Ikram et al., "Killing Man's Best Friend?" 52.

⁷⁶⁸ Ibid.

⁷⁶⁹ Ibid.

⁷⁷⁰ Salima Ikram and Louise Bertini, with contributions by Delyth Hurley and Stephanie Vann, "The Faunal Material," in *The Catacombs of Anubis at North Saqqara: An Archaeological Perspective*, ed. Paul T. Nicholson et al. (Leuven; Paris; Bristol, CT: Peeters Publishers, 2021), 135; Ikram et al., "Killing Man's Best Friend?" 53.

⁷⁷¹ Ikram and Bertini, "The Faunal Material," 137-138.

⁷⁷² Ikram et al., "Killing Man's Best Friend?" 53-54, 58-59.

other breeding programs for different animals.⁷⁷³ Consequently, even though dogs were regarded as beloved pets and companions, the existence of this vast number of mummified dogs also demonstrates that they were exploited for religious practices.

Most of the mummies contained a single animal, although there are indications that different species were sometimes wrapped together.⁷⁷⁴ The majority of dogs were simply wrapped with spiral bandages, though some had twisted papyrus strips or additional horizontal linen strips creating a lined pattern.⁷⁷⁵ An interesting exception is a dog from a niche, which may have originally been in a coffin. The niche also contained cartonnage made of linen and plaster, decorated with a checkerboard pattern in blue, white, red, and green.⁷⁷⁶ If the cartonnage belonged to the dog, it suggests that niche burials were for more valued animals and involved more elaborate wrapping, if not full mummification.⁷⁷⁷ The dogs were found as complete mummies, typically positioned in a seated posture with the tail aligned along the belly and the hind paws flexed; in a few cases, this positioning could be observed in situ.⁷⁷⁸ Overall, the animals were poorly mummified, and only a small number appear to have been treated with natron to desiccate their bodies.⁷⁷⁹ Scanning Electron Microscopy has shown that, even in these cases, only minimal amounts of natron were used.⁷⁸⁰

In addition, the age range of the dogs was divided into three categories: zero to six months, seven to fourteen months, and fifteen months and older.⁷⁸¹ Approximately 75% of the individuals were puppies, while the remaining were mostly adults.⁷⁸² Regarding the pathologies, some Anubieion dogs show signs of rough handling or poor management.⁷⁸³ These include spinal deformities, possibly from confinement, improperly healed fractures, blunt-force trauma to the skull, and conditions such as fused bones or tooth loss.⁷⁸⁴ These injuries suggest that some

⁷⁷³ Ibid.

⁷⁷⁴ Ikram and Bertini, "The Faunal Material," 141.

⁷⁷⁵ Ibid., 142.

⁷⁷⁶ Ibid.

⁷⁷⁷ Ibid.

⁷⁷⁸ Ibid., 141.

⁷⁷⁹ Ikram et al., "Killing Man's Best Friend?" 54; Ikram and Bertini, "The Faunal Material," 141.

⁷⁸⁰ Ikram and Bertini, "The Faunal Material," 141.

⁷⁸¹ Ikram et al., "Killing Man's Best Friend?" 56-59.

⁷⁸² Ikram and Bertini, "The Faunal Material," 146; Ikram et al., "Killing Man's Best Friend?" 56-59.

⁷⁸³ Ikram et al., "Killing Man's Best Friend?" 56-59.

⁷⁸⁴ Ibid.

dogs were mistreated, kept in crowded conditions, or received inadequate care, particularly breeding females.⁷⁸⁵ These data provide further evidence for large-scale production and indicate that not only puppies were killed, but specifically male dogs, while females were likely retained for breeding purposes.⁷⁸⁶

Moreover, considering the limited use of natron, the poor state of mummification, and the loss of tissue in relation to age and sex, as well as the traditional mummification process, which involved forty days for body preparation including evisceration and desiccation with natron followed by thirty days of applying oils and resin to the animal's body, one can draw the following observations.⁷⁸⁷ A recent experimental project by Andreas G. Nerlich, Stephanie Panzer, Florian Fischer, and Oliver K. Peschel demonstrated that an 88 kg piglet with a body length of 1.30 m required approximately 240 kg of natron over a period of 40 days for complete desiccation.⁷⁸⁸ Other studies have likewise shown that very large quantities of natron were necessary for the mummification process.⁷⁸⁹ Natron salt not only dried the body quickly, stopping it from decaying, but also turned the fats into a stable substance, helping to keep the mummy preserved.⁷⁹⁰

Natron was naturally available in Egypt, particularly from Wadi Natrun (northwest of Cairo) and El Kab in Upper Egypt.⁷⁹¹ Papyri indicate that it was exported over long distances, demonstrating its importance and widespread necessity.⁷⁹² The Aramaic papyri from Elephantine record customs duties on Ionian and Phoenician ships, listing incoming goods such as wine, oil, and metals, and outgoing cargoes primarily consisting of natron.⁷⁹³ Likely produced

⁷⁸⁵ Ibid.

⁷⁸⁶ Ikram and Bertini, "The Faunal Material," 146; Ikram et al., "Killing Man's Best Friend?" 59, 62.

⁷⁸⁷ Abdelwahed, *Houses in Graeco-Roman Egypt*, 68.

⁷⁸⁸ Andreas G. Nerlich, Stephanie Panzer, Florian Fischer, and Oliver K. Peschel, "Experimental Ancient Egyptian Human Mummification Tested in a Porcine Model: Excellent Preservation at a 13-Year Follow-Up," *Heritage* 8, no. 6 (2025): 194, <https://doi.org/10.3390/heritage8060194>.

⁷⁸⁹ Ikram, "Manufacturing Divinity," 18.

⁷⁹⁰ Gomaa Abdel-Maksoud and Abdel-Rahman El-Amin, "A Review on the Materials Used during the Mummification Processes in Ancient Egypt," *Conservation Department, Faculty of Archaeology, Cairo University, Human Remains Lab. Conservation Centre, The Grand Egyptian Museum* (2011): 131-132.

⁷⁹¹ Arthur C. Aufderheide, *The Scientific Study of Mummies* (Cambridge: Cambridge University Press, 2003), 30; Brier, *Egyptian Mummies*, 55.

⁷⁹² Brian Muhs, *The Ancient Egyptian Economy: 3000-30 BCE* (Cambridge: Cambridge University Press, 2016), 187; Salima Ikram, "Shedding New Light on Old Corpses: Developments in the Field of Animal Mummy Studies," in *Creatures of Earth, Water, and Sky: Essays on Animals in Ancient Egypt and Nubia*, ed. Stéphanie Porcier, Salima Ikram, and Stéphane Pasquali (Leiden: Sidestone Press, 2019), 183; Ikram, "Manufacturing Divinity," 18.

⁷⁹³ Muhs, *The Ancient Egyptian Economy*, 187.

at a northern port, these documents highlight the economic value of natron, whose long-distance trade and essential role in mummification would have kept its price high. This widespread trade, combined with the high demand for mummification, likely increased its economic value and may have limited its use in low-cost animal mummification.

Additionally, Salima Ikram and Louise Bertini suggested that the whitish material found on a few bodies and wrappings may have been lime, gypsum, or limestone dust.⁷⁹⁴ Some dogs may have been briefly treated in lime, then anointed with oil and resin before wrapping, while others were dipped in oil, resin, or bitumen. Not all animals were treated this way, as some still had visible fur and flesh, suggesting that the white powder was probably not lime.⁷⁹⁵ If this is true, however, it would indicate a new type of mummification.⁷⁹⁶

In P. Innsbruck 75 BCE, there is evidence of a cloth workshop in Anubieion, suggesting that some family members were involved in the production and trade of textiles.⁷⁹⁷ Considering the large amounts of cloth needed for the mummification of humans and animals, it is therefore not unexpected that specialists in textile production and trade were active within the Anubieion.⁷⁹⁸ Also, most of the animals found were wrapped in seven or eight layers of linen bandages, or in some cases fourteen to eighteen layers, meaning that huge quantities of cloth were needed for these votive mummies.⁷⁹⁹ Herodotus' account provides information about pricing for customers. Specifically, an embalmer's price list mentions that linen cost one hundred and thirty-six drachmas, making it the most expensive item on the list, while at the same time a dog cost only eight drachmas.⁸⁰⁰ The placement of a cloth workshop within the Anubieion was probably not incidental, as it minimized transportation costs and allowed direct use without time-consuming delays. These factors indicate a well-organized system of breeding up to the final step of animal mummy production.

Consequently, if natron was indeed expensive and required in large quantities, this could explain why it was not always used or was reused. Smaller bodies would require proportionally

⁷⁹⁴ Ikram and Bertini, "The Faunal Material," 141.

⁷⁹⁵ Ibid.

⁷⁹⁶ Ibid.

⁷⁹⁷ Cannata, "Social Identity at the Anubieion," 233.

⁷⁹⁸ Ibid.

⁷⁹⁹ Ikram and Bertini, "The Faunal Material," 142.

⁸⁰⁰ Brier, *Egyptian Mummies*, 74.

less natron, which may provide an additional reason for killing animals at a young age. The high demand for animals, produced in large numbers for sale, was also likely a contributing factor. Both explanations may have played a role. Furthermore, the poor mummification and evidence of alternative mummification techniques may also suggest the existence of breeding programs. They may also explain the enormous number of animal mummies found and the presence of a cloth workshop within the Anubieion. Further research is needed on the price and efficiency of gypsum or lime, as these materials may have offered a cheaper and faster method for producing large numbers of mummies in a shorter time.

As Paul Nicholson observes, animal cults held considerable economic power but also needed to cover their expenses.⁸⁰¹ The production and sale of votive animals to pilgrims was therefore an important source of income, and he suggests that the Anubieion may have served as the main entrance to the Saqqara plateau.⁸⁰² Archaeological and Demotic textual evidence (P. Louvre E 3266, 197 BCE; P. BM EA 10075 / P. Bodleian MS Egypt. A. 41 (P), 64 BCE; P. Louvre 3268, 73 BCE; P. Leiden 378, 160 BCE) shows that the Anubieion was a major temple complex with a diverse community, including various professions, and played a central role in the Late Period necropolis of Memphis.⁸⁰³ The large number of dog mummies indicates that they formed part of the votive system and were probably raised within the confines of the Anubieion or in nearby areas such as Memphis.⁸⁰⁴ However, there is no direct evidence for the existence of organized breeding farms.⁸⁰⁵ It also remains unclear, if one accepts the existence of pilgrims, whether they were aware of this system or whether they selected the animals while they were still alive.⁸⁰⁶ Textual sources do not mention these practices, which may suggest an intentional silence surrounding the treatment of the animals.⁸⁰⁷

⁸⁰¹ Paul T. Nicholson, "Priests, Procurers, Preparators and Pilgrims: An Overview of the Sacred Animal Cults at Saqqara," in *The Catacombs of Anubis at North Saqqara: An Archaeological Perspective*, ed. Paul T. Nicholson et al. (Leuven; Paris; Bristol, CT: Peeters Publishers, 2021), 247.

⁸⁰² Ibid.

⁸⁰³ Cannata, "Social Identity at the Anubieion," 229-238.

⁸⁰⁴ Nicholson, "Priests, Procurers, Preparators and Pilgrims," 250.

⁸⁰⁵ Ibid.

⁸⁰⁶ Nicholson, "Priests, Procurers, Preparators and Pilgrims," 247-248; Kessler, "Introduction into the Theology and Ritual Use of Sacred Animals," 53.

⁸⁰⁷ Nicholson, "Priests, Procurers, Preparators and Pilgrims," 250.

The Archive of Hor provides evidence for financial reforms connected with the House of the Ibis during the reign of Ptolemy VI Philometor (c. 180-145 BCE).⁸⁰⁸ Around 174 BCE, these reforms introduced fixed prices for bandaging, showing that mummies were charged at standardized rates.⁸⁰⁹ This suggests that different prices were applied to different types of mummies, likely depending on the amount of linen used and the complexity of the wrapping and decoration. A similar pricing system may also have existed at the Anubieion and other cult centers. As suggested by Bob Brier, bronze statues were much more expensive than mummified animals and were therefore a more affordable offering for most people.⁸¹⁰ The presence of set prices, along with coffins made of different materials and values, points to an organized, market-based system for producing and selling animal mummies.

Nevertheless, even in the absence of direct evidence for breeding programs, the factors discussed above may help explain the large-scale production of animal mummies and the potential existence of organized breeding programs. What can be stated with certainty is that animals were intentionally slaughtered and systematically utilized, regardless of whether organized breeding facilities existed. However, the concept of “exploitation” is a modern one and should not be uncritically applied to ancient societies, whose practices must be understood within their own religious, social, and cosmological frameworks.

4.3 Canine Mummification Beyond Anubieion: Regional Practices and Mortality Patterns

Excavations at el-Deir in the Kharga Oasis, conducted since 1991, have revealed approximately 500 dog mummies.⁸¹¹ In 2001, many dog remains were discovered in the North Cemetery. Specifically, in tomb N18, four dogs were found carefully mummified with elaborate

⁸⁰⁸ Bleiberg, “Animal Mummies: The Souls of the Gods,” 91, 99-100.

⁸⁰⁹ Ibid.

⁸¹⁰ Brier, *Egyptian Mummies*, 226-228.

⁸¹¹ Dunand, Françoise, Roger Lichtenberg, and Cécile Callou. “Dogs at El-Deir.” In *Egyptian Bioarchaeology: Humans, Animals, and the Environment*, edited by Salima Ikram, Jessica Kaiser, and Roxie Walker, 169, 174. Leiden: Sidestone Press, 2015.

wrappings, leading archaeologists to suggest that they may have been pets buried with their owner. Tomb N22 contained the remains of more than forty dogs.⁸¹²

Further discoveries were made in 2002 in the East Cemetery, where around 250 dogs were found. A small number were well preserved and carefully mummified, while the majority consisted of skeletal remains.⁸¹³ In 2004, excavations of a small hill near the East Cemetery uncovered approximately 200 dogs, eighty of which were wrapped mummies featuring colored textiles and painted faces, suggesting that they were probably votive mummies.⁸¹⁴ Additionally, X-ray analysis of the better-preserved mummies showed that some contained very young dogs, others included multiple puppies bundled together, and some contained only bones or small packets of earth.⁸¹⁵

Archaeologists believe that the human burials belong to the Ptolemaic period, while the dog interments occurred later, during the Roman period.⁸¹⁶ X-ray analysis indicates that most of the dogs belonged to the species *Canis familiaris*, although a small number of other dog types may also be present among the burials.⁸¹⁷ There were very few signs of trauma on the dog skeletons, as only a limited number of adult dog skulls showed marks or damage consistent with injury; other damage to the bones was likely caused by looting.⁸¹⁸ No cut marks were identified on the skeletal remains of the dogs at this site. However, the researchers noted that puppies may have been killed by methods such as drowning or breaking the neck, which would leave no evidence on the skeleton.⁸¹⁹

Another important site is the so-called “Tomb of the Dogs” in the necropolis of Gebel Asyut al-Gharbi, Middle Egypt, dating to the Late to Ptolemaic/Roman period, containing massive quantities of mummified canids.⁸²⁰ According to Chiori Kitagawa, while there is no

⁸¹² Ibid., 169-170.

⁸¹³ Ibid., 170-171.

⁸¹⁴ Ibid., 171-172, 174.

⁸¹⁵ Ibid.

⁸¹⁶ Ibid.

⁸¹⁷ Ibid., 174-175.

⁸¹⁸ Ibid.

⁸¹⁹ Ibid.

⁸²⁰ Chiori Kitagawa, “Mummies from the City of Canine Deities: An Analysis of Canid Osteofaunal Remains from the Tomb of the Dogs on Gebel Asyut al-Gharbi, Asyut, Middle Egypt,” in *Creatures of Earth, Water, and Sky: Essays on Animals in Ancient Egypt and Nubia*, ed. Stéphanie Porcier, Salima Ikram, and Stéphane Pasquali (Leiden: Sidestone Press, 2019), 193-207.

clear archaeological or textual evidence for possible breeding facilities at the Asyut necropolis, the quantity of mummy remains and evidence of pathologies (i.e., calcium deficiency or vitamin D deficiency) in the dog mummies suggest that there may have been breeding facilities in proximity to the temples of Anubis and/or Wepwawet.⁸²¹ Additionally, temple officials probably managed both sacred and ordinary dogs, handing them over to embalmers after death, and may also have collected stray dogs.⁸²² Given that ibises at Tuna el-Gebel were shipped from different parts of Egypt, it is possible that dogs were also brought from other regions to Asyut for use in a religious context.⁸²³

Large numbers of canine mummies have also been discovered at el-Dabashiya close to the west area of el-Deir, where they are generally interpreted as votive offerings.⁸²⁴ Françoise Dunand et al. suggest that the scale of these deposits at both el-Dabashiya and el-Deir points to the presence of a nearby cult center, possibly a temple dedicated to Anubis or Wepwawet.⁸²⁵ This interpretation is strengthened in the case of Wepwawet, the god of Lycopolis, since northern Kharga was connected to Lycopolis by a well-known and frequently used route.⁸²⁶ Other sites where dog mummies have been found, such as Asyut, consisted mainly of dogs whose age at death was over three years and they were found inside human tombs dated to the Middle Kingdom.⁸²⁷ Additionally, a peculiar case is the Late Period/Ptolemaic cemetery at Qasr ‘Allam, where both humans (adults as well as young individuals) and dogs were buried in the same way, in small graves (loculi), together with beads and amulets.⁸²⁸ This similar treatment suggests that the burials followed a shared funerary practice or ritual.⁸²⁹

Overall, as Ikram observes, the varying mortality patterns seen at Saqqara, el-Deir, el-Dabashiya, and Asyut point to diverse approaches to animal management that differed by location and chronological period.⁸³⁰ In this context, the mummified dogs in the Turin collection

⁸²¹ Ibid.

⁸²² Ibid.

⁸²³ Ibid.

⁸²⁴ Ikram and Bertini, “The Faunal Material,” 146; Dunand, Lichtenberg, and Callou, “Dogs at El-Deir,” 173.

⁸²⁵ Dunand, Lichtenberg, and Callou, “Dogs at El-Deir,” 173.

⁸²⁶ DuQuesne, “Wepwawet,” 1; Dunand, Lichtenberg, and Callou, “Dogs at El-Deir,” 173.

⁸²⁷ Ikram and Bertini, “The Faunal Material,” 146.

⁸²⁸ Dosoo, “*Living Death and Deading Life*,” 350.

⁸²⁹ Ibid.

⁸³⁰ Ikram and Bertini, “The Faunal Material,” 146.

show no clear signs of violent death, with only one exception; however, the fact that most of the animals died before reaching one year of age suggests intentional killing (Fig.17, Fig.18, Fig.19, Fig.20), possibly through methods such as drowning or poisoning that would leave no visible traces on the skeleton.⁸³¹

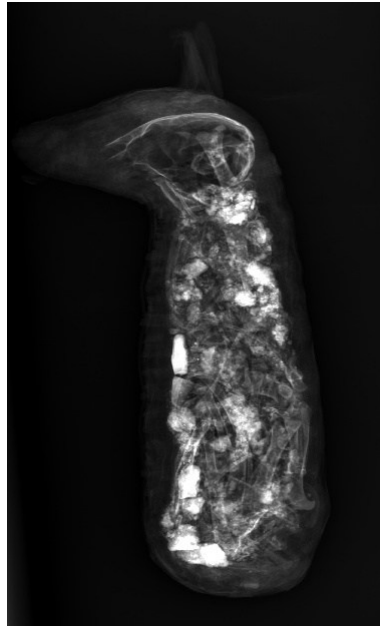


Figure 17. Dog mummy with less than 6 weeks old at death.

Inventory Number: Cat.2347/1.

Source: Museo Egizio, Turin Online Collection.



Figure 18. Dog mummy between one and four months old at death.

Inventory Number: Provv. 1442.

Source: Museo Egizio, Turin Online Collection.

⁸³¹ Ikram et al., *The Animal Mummies*, 116, 119-120, 123-124, 131-134.



Figure 19. Dog mummy about five months old at death.

Inventory Number: Suppl. 11008.

Source: Museo Egizio, Turin Online Collection.

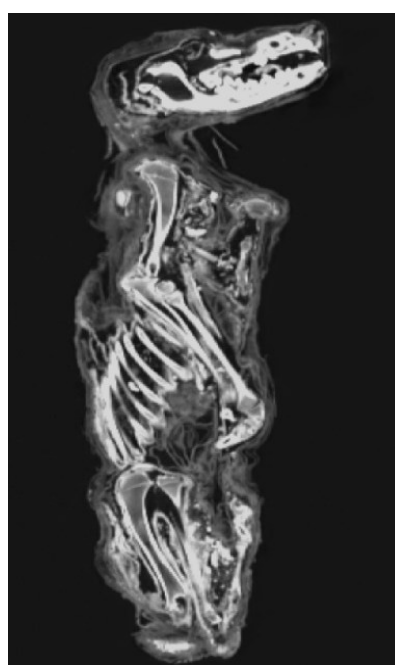
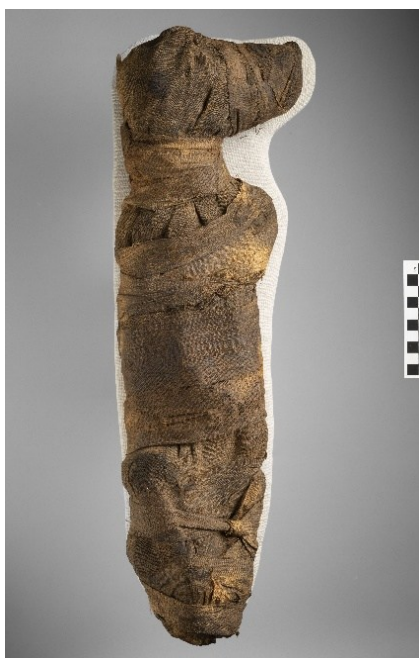


Figure 20. Dog mummy about six to eleven months old at death.

Inventory Number: Suppl. 11007.

Source: Museo Egizio, Turin Online Collection.

If it is accepted that dogs mummified before reaching one year of age were deliberately killed, they were likely part of an organized breeding system; however, this pattern is not evident in all dog mummies. The dog mummy (Fig.17) could be interpreted as a votive offering dedicated to Anubis, since its face is covered with black paint, the symbolic color associated with the god.⁸³² Moreover, the elaborate style of wrapping is often characteristic of votive mummies.⁸³³ Matilde Borla and Salima Ikram suggest that decorative patterns reflected the wealth and social status of the donor, and that richly decorated mummies with colorful designs were intended to be visually appealing both to pilgrims and to the gods to whom they were offered.⁸³⁴ However, both the date and provenance of this mummy remain unknown.⁸³⁵

The second dog mummy (Fig.18), dated to 370-200 BCE based on radiocarbon analysis, has an unknown provenance.⁸³⁶ Its bandaging style differs significantly from that of the mummy shown on Fig.17. This mummy contains additional limbs and four canine jawbones, probably belonging to dogs of a similar age.⁸³⁷ It may also represent a votive mummy; however, it more clearly illustrates the diversity of wrapping and bandaging styles, body positioning, and mummification techniques, as well as the inclusion of supplementary materials within the wrappings.⁸³⁸ These features highlight the variability in production practices across different geographical areas, chronological periods, workshops, and functions.⁸³⁹

The dog mummies in Fig.19 and Fig.20 were both found in Asyut and acquired in 1910 by the Italian Archaeological Mission, directed by Ernesto Schiaparelli.⁸⁴⁰ They are dated to the early Ptolemaic period (322-300 BCE) based on radiocarbon analysis.⁸⁴¹ These puppy mummies

⁸³² Matilde Borla, with a contribution by Cinzia Oliva, “Enveloping the Animals: Textile Types & Patterns,” in *The Animal Mummies of the Museo Egizio, Turin*, ed. Salima Ikram, Sara Aicardi, and Federica Facchetti (Turin: Museo Egizio, 2015), 31.

⁸³³ Dunand, Lichtenberg, and Callou, “Dogs at El-Deir,” 173-174.

⁸³⁴ Matilde Borla and Salima Ikram, “Reflections on Wrapping: Shapes, Patterns, Provenance, and Periods,” in *The Animal Mummies of the Museo Egizio, Turin*, ed. Salima Ikram, Sara Aicardi, and Federica Facchetti (Turin: Museo Egizio, 2015), 49.

⁸³⁵ Ikram et al., *The Animal Mummies*, 119-120.

⁸³⁶ Ibid., 123-124.

⁸³⁷ Ibid.

⁸³⁸ Borla and Ikram, “Reflections on Wrapping,” 49-52.

⁸³⁹ Ibid.

⁸⁴⁰ Ikram et al., *The Animal Mummies*, 131-134.

⁸⁴¹ Ibid.

were roughly wrapped in a few layers of fragmentary shrouds, held in place with simple knotted bandages, like other dog mummies from Asyut.⁸⁴² Among these mummies, there is one dog wrapped in the same simple way that is over six years old, dated to 370-200 BCE, and it is suggested to be female.⁸⁴³ It is unclear whether this dog (Fig.21) is related to the younger dogs in Fig.19 and Fig.20, or if it died later. However, the radiocarbon dating gives a broader range for the adult dog's death compared to the puppies, which are dated more narrowly to 322-300 BCE. Unfortunately, there is no information about whether these dogs were found together or separately, which could help determine any possible relationship between them. Further investigation is needed, as establishing a relationship between these dogs could provide evidence for deliberate breeding practices.



Figure 21. Dog mummy over six years age of death.

Inventory Number: Suppl. 11009.

Source: Museo Egizio, Turin
Online Collection.

Little is known about Schiaparelli's work in Asyut during 1910-1911. What is certain is that in 1910 he excavated the Salakhana Tomb, where mummies were discovered alongside steles and sculptures dedicated to Wepwawet.⁸⁴⁴ Trenches VII and VIII, near Tombs III and IV, revealed several reused tombs and shafts containing Late Antique mummies, including numerous

⁸⁴² Cinzia Oliva, "Conserving Animal Mummies," in *The Animal Mummies of the Museo Egizio, Turin*, ed. Salima Ikram, Sara Aicardi, and Federica Facchetti (Turin: Museo Egizio, 2015), 56.

⁸⁴³ Ikram et al., *The Animal Mummies*, 135-136.

⁸⁴⁴ Matilde Borla and Federica Facchetti, "The Museo Egizio and Its Animal Mummies," in *The Animal Mummies of the Museo Egizio, Turin*, ed. Salima Ikram, Sara Aicardi, and Federica Facchetti (Turin: Museo Egizio, 2015), 20-21.

animal mummies.⁸⁴⁵ Only a few tombs, such as Tombs 3, 4, and 14, were intact. All the remaining tombs had been reused and were partly filled with Late Antique mummies.⁸⁴⁶ A mud-brick wall found above these tombs, later identified as part of the Monastery of Deir el-Meitin, was originally thought to protect the tombs but dates to the Late Roman Period.⁸⁴⁷ Overall, the 1910 mission focused on areas near the Muslim cemetery, the Salakhana Tomb, and above Tomb I (Stabl Antar), recording 617 inventory entries, including many animal mummies, though their exact origins were not noted.⁸⁴⁸

Another excavation in 1922 in the same Salakhana area uncovered numerous dogs inside the tomb of a Middle Kingdom prince of the Lycopolitan nome, together with many stelae dedicated to Wepwawet.⁸⁴⁹ Unfortunately, these mummies are now lost, and their exact number is unknown.⁸⁵⁰ A similar pattern is observed at el-Deir, as discussed above, where family tombs were reused in later periods, often after the original owners had disappeared.⁸⁵¹ In both cases, dogs represent a wide age range, from very young puppies to older animals, and are dated from the Ptolemaic to the early Roman period. Consequently, these assemblages were probably not formal animal cemeteries like those at Saqqara.⁸⁵² Instead, the fact that the dogs were buried with or close to human remains suggests several possible interpretations.

These mummies found in Asyut and now housed in the Museo Egizio, Turin, do not display decorative features; however, as Cinzia Oliva has suggested, they may originally have been placed in coffins or covered with cartonnage.⁸⁵³ A votive function remains possible, particularly given the strong association with Wepwawet, although clear evidence such as elaborate wrapping or a clearly defined cultic context is lacking. An amuletic or protective role is particularly likely, as the placement of dogs near human burials fits well with Wepwawet's role as a guide and protector of the dead. The interpretation of these animals as pets is less

⁸⁴⁵ Alice Maria Sbrigliio, "Schiaparelli at Asyut," in *Asyut: The Excavations of the Italian Archaeological Mission (1906–1913)* (Modena: Franco Cosimo Panini Editore, 2019), 80, 84–85.

⁸⁴⁶ Ibid., 79–80.

⁸⁴⁷ Ibid.

⁸⁴⁸ Ibid., 85.

⁸⁴⁹ Dunand, Lichtenberg, and Callou, "Dogs at El-Deir," 172.

⁸⁵⁰ Ibid.

⁸⁵¹ Ibid.

⁸⁵² Ibid.

⁸⁵³ Oliva, "Conserving Animal Mummies," 90.

convincing, given the large numbers involved, except perhaps in isolated cases. Finally, a functional or ritual burial practice also represents a convincing explanation, in which the animals were interred as part of broader funerary or cultic traditions rather than as individual personal offerings.

In summary, dogs held great importance for the ancient Egyptians, and archaeologists have found them in many different contexts, which is crucial for their interpretation. In many cases, it is challenging to explain the role these animals played, since earlier archaeologists did not keep proper documentation or provide appropriate curation for animal mummies at all. However, even if their exact function sometimes remains unknown, the ages at death, the abusive marks on their bones, and the vast number of animals prove that there was deliberate breeding.⁸⁵⁴ Dogs are a peculiar category, since their role as pets and at the same time their religious connection with Anubis and Wepwawet, gods associated with death, mummification, and the afterlife, adds additional elements that scholars need to take into consideration. Also, dogs are a clear example of the distinctions ancient Egyptians drew within animals of the same species. Even if dogs were considered pets and beloved animals, this does not mean that they could not be part of religion or the votive animal industry, where they were mistreated, exploited and killed by the millions.

4.4 Ritual Exploitation of Canines in Ancient Egyptian Magic

Magic played an important role in ancient Egyptian life, and Anubis was linked to magical practices from an early period, although at first this connection was mainly as a protective force rather than an active magical agent.⁸⁵⁵ The Graeco-Roman period changed this, as Anubis became more closely associated with magic because of his chthonic nature and his association with necromancy.⁸⁵⁶ He was also connected with love spells and general protection in daily life.⁸⁵⁷ Anubis was thought to have protective characteristics because of his connection

⁸⁵⁴ Ikram et al., "Killing Man's Best Friend?" 61-62.

⁸⁵⁵ Wilfong, *Death Dogs*, 73.

⁸⁵⁶ Duquesne, "Anubis," 2.

⁸⁵⁷ Ibid.

with Isis (he assisted her during the birth of Horus) and with the protection of the king, which explains his association with Anubis in *mammisi*.⁸⁵⁸ As a result of being associated with both Hekate, who was thought of as a bridge between both the upper and lower worlds, and with Kerberos, the underworld dog that protected the souls of the dead and kept the living out of the underworld, Anubis represented all the boundaries between life, death, and the afterlife.⁸⁵⁹ For this reason, he had a lot of influence over various aspects of magical practices that were connected to dreams, omens, and divination.⁸⁶⁰

Demotic and Greek magical papyri often refer to Anubis as an intermediary between humans and gods, in the sense that he brought the gods to answer questions.⁸⁶¹ For example, in PDM xiv. 528-553, Anubis is described as the Pharaoh of the Underworld, acting as the figure who facilitates the gods' responses to human questions.⁸⁶² In addition, magical gems and amulets bearing his image were used for protection and *tyche*, as well as the so-called Anubis plant (PDM xiv. 425-427), which was used as an ingredient in magical spells.⁸⁶³ Furthermore, the blood of a black dog and dog bones, such as jawbones or skulls, sometimes marked with red lines and dots, were also used as part of ritual practices.⁸⁶⁴

Because dogs and jackals were associated with Anubis, many Greek magical papyri show how dogs were used and incorporated into magical practices. In PDM Suppl. 101-116, dogs were used in a spell to send dreams. The practitioner was instructed to draw an image of Anubis using the blood of a black dog, and then, after writing the spell, place it into the mouth of a black dog from the embalming house.⁸⁶⁵ In PDM Suppl. 117-130, a similar ritual is described, but this time it involves a jackal instead of a dog.⁸⁶⁶ Additionally, in PGM XXXVI. 361-371, a love spell instructs the practitioner to put the magical material and the spell inside the mouth of a dead dog.⁸⁶⁷ Dogs were also involved in drowning rituals, the category of *biaiothanatoi* (those who

⁸⁵⁸ Wilkinson, *Complete Gods and Goddesses*, 189.

⁸⁵⁹ Abdelwahed, *Houses in Graeco-Roman Egypt*, 60.

⁸⁶⁰ Ibid.

⁸⁶¹ Wilfong, *Death Dogs*, 74.

⁸⁶² Betz, *Greek Magical Papyri in Translation*, 225-226; Wilfong, *Death Dogs*, 74.

⁸⁶³ Betz, *Greek Magical Papyri in Translation*, 220; Wilfong, *Death Dogs*, 73-75.

⁸⁶⁴ Wilfong, *Death Dogs*, 75.

⁸⁶⁵ Betz, *Greek Magical Papyri in Translation*, 327.

⁸⁶⁶ Ibid.

⁸⁶⁷ Ibid., 278.

died violent deaths), and beliefs related to *hasye*, as described in Chapter 3.5.⁸⁶⁸ For example, Pliny mentions that the livers of drowned puppies were used as a remedy to prevent rabies following a dog bite.⁸⁶⁹

In conclusion, these examples show that dogs and jackals were deliberately exploited and killed for the practice of magic, particularly in ritual contexts where their bodies or bodily substances were considered effective tools for communication with the divine or the supernatural. The magical papyri reveal this distinct ritual approach, in which dogs, cats, and other animals were intentionally killed through very violent techniques, following a strict sequence of actions and fixed ritual formulas. On the other hand, the texts do not refer to the fact that the animals were forced to die, and this may explain why, for the ancient Egyptians as well as for later populations who adopted Egyptian religion and practices through syncretism and *interpretatio Graeca*, animals were understood as divine symbols whose deaths marked the beginning of a new life in the afterlife.⁸⁷⁰

Conclusion

Ptolemaic Egypt represents one of the most important zones of cultural and religious interaction in the ancient Mediterranean and one of the most interesting cases of syncretism and *interpretatio Graeca*.⁸⁷¹ As research has shown, animal cults played a decisive role in legitimizing the power of the Ptolemaic kings, reinforcing the authority of the priesthoods, and sustaining the worship of ancient Egyptian gods among both the Egyptian and Greek populations.⁸⁷²

Animal cults occupied a central position, as they allowed the ancient Egyptians to demonstrate their deep devotion to their religion and the importance of cultic practices.⁸⁷³ At the

⁸⁶⁸ Dosoo, “*Living Death and Deading Life*,” 361-363.

⁸⁶⁹ Ibid.

⁸⁷⁰ Ibid., 403.

⁸⁷¹ Stewart and Shaw, *Syncretism/Anti-syncretism*, 1-6.

⁸⁷² Thompson, *Memphis under the Ptolemies*, 117-128; Pfeiffer, “The God Serapis,” 387-389; Pfeiffer, “Offerings and Libations for the King,” 83-102; Ockinga, “The Satrap Stele of Ptolemy,” 187.

⁸⁷³ Manning, *The Last Pharaohs*, 31-34; Ikram, *Divine Creatures*, 8; Ikram and Dodson, *The Mummy in Ancient Egypt*, 135.

same time, the Ptolemies, through close cooperation with the priesthoods, actively promoted these cults together with other strategies such as the introduction of new gods like Serapis, temple building, the Greek dedicatory custom of the hyper-formula, and the deification of queens like Arsinoe II.⁸⁷⁴ Through the preservation and promotion of traditional myths such as the Myth of the Divine Birth, the Ptolemies presented themselves as pharaoh-gods on earth closely connected to the divine.⁸⁷⁵ As a result, these measures served as instruments of political, economic, and social power.

Animal mummies constituted a central element of animal cultic practice. Despite the fact that certain animals were regarded as manifestations of the gods or as beloved pets and therefore received special treatment, other animals of the same species were exploited for the mass production of votive animal mummies.⁸⁷⁶ Among these species, cats and dogs appear to have been the most maltreated; millions of such animal mummies have been discovered in Egypt and are today housed in museums around the world.

Although many scholars propose different interpretations of the role of animal mummies, their function is often difficult to explain due to the lack of evidence and the absence of direct proof for the existence of organized breeding programs. Nevertheless, the indirect evidence presented in this research, including the manner of death with strangulation or asphyxiation, the pattern of deaths at a young age, the elaborate wrapping techniques, the varied decorative use of bandages, the specific positioning of the bodies within the wrappings, the variety of materials used in the production of coffins, and their deposition in designated areas such as catacombs alongside other animals, can be interpreted as indicating an organized system in which animals were the victims.

However, it is important to underline that not all animals were the same, in the sense that animals, by their nature, had different behaviors and instincts, and consequently we should always bear in mind the different treatment and control that animals experienced. For example, it is possible to create a breeding farm for dogs and cats, control their behavior more easily, and

⁸⁷⁴ Escolano-Poveda, *The Egyptian Priests of the Graeco-Roman Period*, 329-338; Moyer, *Egypt and the Limits of Hellenism*, 142-153; Dunand, Adler, and Salzman, "Traditional Religion," 165-188; Pfeiffer, "Offerings and Libations for the King," 83-102; Thompson, *Memphis under the Ptolemies*, 122-123; Hölbl, *A History of the Ptolemaic Empire*, 202-203; Gorre, "A Religious Continuity between the Dynastic and Ptolemaic Periods?," 99-100.

⁸⁷⁵ Minas-Nerpel, "The Creation of New 'Cultural Codes,'" 60-61.

⁸⁷⁶ Ikram, *Ancient Egypt: An Introduction*, 120; Ikram, *Divine Creatures*, 5.

kill them more easily than a crocodile or a snake. It is possible to keep a dog or a cat on a farm, but it is more difficult to keep an ibis on a farm, as this would require more elevated constructions such as cages. Additionally, crocodiles are by their nature wild animals and need access to water, so in this case, if we claim that crocodiles were part of a breeding program, this would certainly have existed close to the Nile River. Even in this case, it would have been difficult enough to create a construction inside the water to imprison crocodiles, and with or without imprisonment practices, it is difficult to catch and kill a crocodile. The crocodile represents just one example to show that we should not study all animals holistically, since each animal is different, and even if some were “domesticated enough” and their behavior was more easily controlled, not all animals received the same treatment and control because it is impossible to fully change their nature and instincts. Therefore, we should consider more carefully in which cases breeding farms existed and how they functioned in a practical way.

In this system of industrial-scale mummification, animals became a source of profit for the state and were used as a tool for political legitimization. Votive animal mummies further illustrate the complexity of ancient Egyptian religion and challenge the common misconception that all animals were treated as sacred. This provides a clear example of the dichotomy in the treatment of animal species within this society. Although cats were sacred to the goddess Bastet, scientific studies indicate that millions died at a young age, along with other signs of manipulation. Dogs, in contrast, represent a peculiar case because they were associated with the god Anubis and, through syncretism, with the god Hermanubis, yet they were also kept as companion pets, and their religious role sometimes overlapped with their functional status, making their interpretation more complex; however, millions of them were deliberately killed.

These animals, together with other species, were bred to die; they were not simply mummified after a natural death and offered as dedications to the gods, nor were they part of a sacrificial practice. The factors discussed in this research demonstrate that from their birth until their deliberate death, these animals belonged to an organized system. Sometimes it is difficult to distinguish between what should be considered exploitation and what should not. This is partly because today animals often receive better treatment, especially those considered pets, and we unwittingly project these beliefs onto Graeco-Roman practices. From a modern analytical perspective, these practices may be interpreted as a form of animal exploitation.

In a society more than 2,200 years ago, even though many ancient Greek and Roman philosophers, such as Pythagoras, Empedocles, Plato, Plutarch, Theophrastus, Ovid, and others, argued that animals, even if non-human beings, have emotions, memories, care for their offspring, a sense of community, gratitude, and restraint, and that we should consider them living beings, the ancient Egyptians regarded animals as, in some way, equivalent to humans, and also as manifestations of the gods.⁸⁷⁷ If someone killed an animal, they had to face the consequences and other sources mention that because the Cynopolites were eating the fish Oxyrhynchus, the Oxyrhynchites killed dogs and ate them.⁸⁷⁸ At the same time there are millions of animal mummies showing signs of deliberate killing connected with religious practices. These examples once again demonstrate the complexity of ancient Egyptian religion and the fine line between exploitation and religious veneration. What is certain is that the ancient Egyptians worshiped their gods in animal form, and consequently these votive practices were not considered acts of mistreatment but as acts of mediation between humans and the gods; with their death, these animals were believed to begin a new life in the Netherworld.

In conclusion, this research has demonstrated that many factors which are not always interpreted as animal exploitation can, in fact, be considered forms of manipulation carried out for various profitable reasons. All these factors further prove that the mummification of animals was a highly organized system, involving multiple stages, from breeding animals to the final product, and a wide range of professions engaged in this process as papyri testify. It is also important to highlight that animal mummies have been systematically studied since the late nineteenth century, and therefore many questions regarding all aspects of what we know about mummified animals still need further investigation and understanding. Animals had a central position in Egyptian religion, which was central to ancient Egyptian beliefs about daily life and the afterlife. Consequently, animal mummies represent one of the most important and valuable categories of ancient remains at our disposal and their study is essential for a clearer

⁸⁷⁷ Stephen T. Newmyer, "Being the One and Becoming the Other: Animals in Ancient Philosophical Schools," in *The Oxford Handbook of Animals in Classical Thought and Life*, ed. Gordon Lindsay Campbell (Oxford: Oxford Academic, 2014), 528-529; Te Velde, "A Few Remarks," 77.

⁸⁷⁸ Wilimowska, "Sacred Animal Cult Workers," 267; Brewer, Redford, and Redford, *Domestic Plants and Animals*, 118.

understanding of ancient Egyptian religion and religious practice during the Late and Graeco-Roman periods.

Glossary

Aegis: A protective attribute or ritual object associated with divine power.

Ailouroboskoi (Αἰλουροβοσκοί): Temple officials responsible for the care and feeding of sacred cats.

Amulets: Small objects used for protection or magic.

Anointment: The ritual of applying oil or ointment during religious ceremonies or mummification.

Anubieion (Ἀνουβιεῖον): A sanctuary dedicated to the god Anubis in Saqqara.

Anubis: Egyptian deity associated with mummification, protection of the dead, life and afterlife.

Apotropaic: Having the power to protect against evil; used to describe cats and objects believed to ward off harm.

Archive of Hor: A collection of temple records, including accounts, offerings, and administrative documents related to the cult of Horus.

Baket III, tomb of (Beni Hasan): An ancient Egyptian cemetery in Middle Egypt, located about 20 km south of modern Minya, known for its Middle Kingdom tombs and animal burials.

Bastet: Egyptian goddess associated with cats, fertility, maternity and protection.

Bitumen and resin technique: A method used in mummification to preserve bodies.

Bubastieion (Βουβαστεῖον): A Ptolemaic and Roman temple complex dedicated to Bastet, located on the cliff face at the desert boundary of Saqqara. It was a site of worship and ritual, associated with sacred cats and offerings to the goddess.

Bubastis: Ancient Egyptian city, center of the cult of Bastet. Modern Tell-Basta.

Canopus Decree: Trilingual decree of Ptolemaic Egypt concerning priestly reforms and cult practices.

Catacomb: An underground burial complex in ancient Egypt, often used to place mummified animals.

Chora (χώρα): The Egyptian countryside, as distinct from the capital Alexandria, in Ptolemaic administrative terminology.

CT scanning: A useful method that allows researchers to examine mummies without unwrapping them. Using 3D imaging, they can find out age, sex, health problems, hidden amulets, and study mummification techniques from different periods.

Cynopolis (Κυνόπολις): City associated with the worship of dogs and the god Anubis.

Debben: An ancient Egyptian unit of weight, used to measure goods for trade and taxes.

Defleshing: The removal of flesh during mummification.

Desiccation: Drying process technique essential for mummification, often achieved using natron.

Dioiketes (διοικηταῖς): Administrative official in charge of economic and fiscal matters during the Ptolemaic Period.

Drachmas (δραχμή): Ancient currency used in Hellenistic Egypt.

Duamutef: Believed to be one of the Four Sons of Horus, associated with canopic jars and canine deities.

Égyptien de Tradition: The traditional form of Middle Egyptian, used for religious and official texts.

Ennomion (ἐννόμιον): A tax or charge on pastureland and the right to feed animals, recorded in Hellenistic and Roman papyri.

Ernesto Schiaparelli: An Italian Egyptologist (1856-1928) known for major archaeological discoveries in Egypt, including the tomb of Queen Nefertari and the tomb of the architect Kha, and excavations including animal burials. He served as director of the Egyptian collections in Florence and later the Museo Egizio in Turin and led the Italian archaeological mission in Egypt in the early 20th century.

Euergesia (εὐεργασία): A concept in Greek culture referring to doing good deeds or public service, especially during the Hellenistic period.

Hasye: translated as “The blessed one,” an individual favored during life and after death.

Hierodouloi (ιεροδούλοι): They were temple servants or sacred slaves in ancient Egypt, often serving in religious rituals.

Hierakoboskoi (ἱερακοβοσκοί): Temple officials responsible for the care of sacred falcons or birds.

Hermanubis: Syncretic deity combining ancient Greek Hermes and ancient Egyptian Anubis.

Hybrid: Figure or deity combining both human and animal features.

Hyper-formula (ὕπερ + genitive): Dedicatory formula expressing action “on behalf of” someone often a king or a god.

Ibiotropheia (ιβιοτροφήια): Institutions or practices for raising sacred ibises in ancient Egypt, often linked to temple rituals.

Imiut: Symbol consisting of an animal skin attached to a stand.

Interpretatio Graeca: Term used for the ancient Greek interpretation of foreign gods.

Ka and Ba: Two important parts of the ancient Egyptian soul: Ka is the life force, and Ba is the personality or character of a person.

Khentiamentu: An ancient Egyptian god whose name means ‘Foremost of the Westerners,’ referring to the dead. Worshipped at Abydos as a protector of the necropolis and his role was later absorbed into those of Osiris and Anubis.

Lost-wax method: A technique for creating metal statues by creating a wax model, then casting it in metal; used for ancient Egyptian ritual objects.

Lycopolis (Λυκόπολις): City associated with the worship of wolves or the god Wepwawet.

Ma’at: One of the most important concepts for the ancient Egyptians, representing truth, order, and cosmic balance.

Mammisi: It was a birth house of a deity in a temple complex.

Menat: A ritual object and amulet in ancient Egypt, often associated with the goddess Bastet; used in ceremonies and believed to bring protection and good fortune.

Mn-iry.t ꜥ mꜥ.t: Translated as “nurse of cats,” the workers that were responsible for raising and feeding cats.

Mummy label: A tag or inscription showing the name, parentage, and age of the deceased, sometimes including images of dogs for protection in the afterlife.

Myth of the Divine Birth: A common story in many ancient cultures where gods or heroes are born through supernatural conception, often to show their special status, divine connection, or authority.

Myth of the Destruction of Mankind: An ancient Egyptian myth describing the punishment of humanity by the gods.

Natron: Salt mixture used for drying bodies of humans and animals during mummification.

Oikoumene (οἰκουμένη): Often used in Hellenistic context meaning “The inhabited world”, including all the people and lands on Earth.

Osirian group of deities: A set of five important Egyptian deities (Osiris, the elder Horus, Seth, Isis, and Nephthys), they form a family in the city of Annu and are central to ancient Egyptian religion.

Osirianisation: The process in ancient Egyptian belief of identifying the deceased with Osiris, so the dead person shared in his life after death.

Pakhet: Ancient Egyptian lioness goddess of war and hunting.

Papyri Graecae Magicae (PGM): A collection of papyri from Graeco-Roman Egypt, mostly in Greek, containing magical spells, rituals, hymns, and formulae. The collection dates from around the 2nd century BCE to the 4th century CE and were discovered through the antiquities trade.

Phylakitikon (φυλακτικόν): A tax in Ptolemaic Egypt used to pay for guards and police, sometimes related to the care or protection of sacred animals. It appears in papyri from the 3rd century BCE onward and helped cover security costs. Guards sometimes also received land and tax benefits in addition to this tax.

Pilgrims: Devotees visiting temples or sacred sites and made offerings to the gods.

Pseudo-mummies: Animal mummies that contain only part of an animal along with other materials like feathers and sand.

Qeresu-type coffin: A rectangular coffin with small pillars, first appearing during the 25th Dynasty in Egypt.

Radiocarbon dating (¹⁴C): Scientific method to determine the age of organic materials.

Sacred animals: Animals considered as representatives or manifestations of gods in ancient Egypt.

Saqiya: Water-lifting device, usually powered by animals.

Sarcophagus: A coffin or container for a human or animal mummy, made of stone, wood, ceramic, or bronze.

Sekhmet: Lioness goddess associated with war and healing.

Sistrum: A sacred musical instrument, like a small U-shaped rattle with metal discs, often held by the goddess Bastet. Its sound was used in rituals to honor her, keep away evil spirits, and ask for protection. It represents music, dance, joy, and celebration, and was usually made of metal or wood, sometimes decorated with the head of Bastet or Hathor.

Thallophoroi (θαλλοφόροι): People who carried palms in religious or ceremonial processions.

Theagoi / ἱεῖς (n³) ntr.w/ θεαγοί: Officials who carried statues of the gods during rituals.

Tyche (τύχη): Ancient Greek goddess of fortune and luck.

Udjat-eye: Symbol of protection and healing, also called the Eye of Horus.

Vow: Personal promise made between a person and a god.

Wadj-scepter: Ancient Egyptian symbolic scepter representing life.

Was-scepter: A ceremonial symbol used by gods and rulers in ancient Egypt to show power and control.

Wepwawet: Ancient Egyptian canine god and guide of the dead.

Wrapping: The linen bandaging used in mummification process.

X-ray studies: The use of X-rays to look inside mummies without opening them, helping researchers study bones, objects, and mummification methods.

Bibliography

Ancient Authors

Diodorus Siculus. *Bibliotheca Historica*. Translated by Charles Henry Oldfather. ToposText. <https://topostext.org/work/133>.

Herodotus. *The Histories*. Book 2, Chapter 37. Translated by George Campbell Macaulay. ToposText. <https://topostext.org/work/22>.

Herodotus. *The Histories*. Book 2, Chapter 65. Translated by George Campbell Macaulay. ToposText. <https://topostext.org/work/22>.

Herodotus. *The Histories*. Book 2, Chapter 66. Translated by George Campbell Macaulay. ToposText. <https://topostext.org/work/22>.

Plutarch. *Moralia: Of Isis and Osiris*. Translated and edited by William Watson Goodwin. 1878. Digitized by the Internet Archive and reformatted by Brady Kiesling. ToposText. <https://topostext.org/work/274>.

Modern Scholars

Abdel-Maksoud, Gomaa, and Abdel-Rahman El-Amin. "A Review on the Materials Used during the Mummification Processes in Ancient Egypt." *Conservation Department, Faculty of Archaeology, Cairo University, Human Remains Lab. Conservation Centre, The Grand Egyptian Museum* (2011).

Abdel-Raziq, Abdalla. "A New Look at the Goddess Bastet Bronze Statue at Zagazig University Archaeological Museum." In *14th Conference of the General Union of Arab Archaeologists*, Cairo, 2011.

Abdel-Raziq, Abdalla. "Sacred Bark of the Bastet." *العرب للآثارين العام الإتحاد مجلة* (*Journal of the General Union of Arab Archaeologists*) 12, no. 1 (2011).

Almásy-Martin, Adrienn. "Dogs on Labels: Anubis Representations on Mummy Labels from the Louvre." In *Ripple in Still Water: When There Is No Pebble Tossed. Festschrift in Honour of Cary J. Martin* (2022).

Assmann, Jan. *The Search for God in Ancient Egypt*. Translated by David Lorton. Ithaca, NY: Cornell University Press, 2001.

Auenmüller, Johannes, and Federica Facchetti. "Ceramic, Wood, Stone & Bronze: Considerations about the Materiality and Value of Containers for Animal Mummies Kept in the Museo Egizio, Turin." In *Animals in Religion, Economy and Daily Life of Ancient Egypt and Beyond*, edited by R. Pirelli, M.D. Pubblico, and S. Ikram. Studi Africanistici. Napoli: UniorPress, 2023.

Aufderheide, Arthur C. *The Scientific Study of Mummies*. Cambridge: Cambridge University Press, 2003.

Austin, Michael. *The Hellenistic World from Alexander to the Roman Conquest: A Selection of Ancient Sources in Translation*. Cambridge: Cambridge University Press, 1981.

Baldwin, James Allen. "Notes and Speculations on the Domestication of the Cat in Egypt." *Anthropos* 70, no. 3/4 (1975). <http://www.jstor.org/stable/24764036>.

Barbash, Yekaterina. "How the Ancient Egyptians Viewed the Animal World." In *Soulful Creatures: Animal Mummies in Ancient Egypt*. London; Brooklyn: D. Giles Ltd. in association with the Brooklyn Museum, 2013.

Bell, Sinclair W., and Carolyn Willekes. "Horse Racing and Chariot Racing." In *The Oxford Handbook of Animals in Classical Thought and Life*, edited by Gordon Lindsay Campbell. Oxford: Oxford University Press, 2014.

Benaissa, A. "The Onomastic Evidence for the God Hermanubis." In *Proceedings of the Twenty-Fifth International Congress of Papyrology*. Ann Arbor, 2010.

Bernal, Martin. "Egyptians in the Hellenistic Woodpile: Were Hekataios of Abdera and Diodoros Sikeliotes Right to See Egypt in the Origins of Greece?" In *Ptolemy II Philadelphus and His World*. Leiden: Brill, 2008.

Betz, Hans Dieter, ed. *Greek Magical Papyri in Translation, Including the Demotic Spells*. Chicago: The University of Chicago Press, 1997.

Bleiberg, Edward. "Animal Mummies: The Souls of the Gods." In *Soulful Creatures: Animal Mummies in Ancient Egypt*. London; Brooklyn: D. Giles Ltd. in association with the Brooklyn Museum, 2013.

Borla, Matilde, and Federica Facchetti. "The Museo Egizio and Its Animal Mummies." In *The Animal Mummies of the Museo Egizio, Turin*, edited by Salima Ikram, Sara Aicardi, and Federica Facchetti. Turin: Museo Egizio, 2015.

Borla, Matilde, and Salima Ikram. "Reflections on Wrapping: Shapes, Patterns, Provenance, and Periods." In *The Animal Mummies of the Museo Egizio, Turin*, edited by Salima Ikram, Sara Aicardi, and Federica Facchetti. Turin: Museo Egizio, 2015.

Borla, Matilde, with a contribution by Cinzia Oliva. "Enveloping the Animals: Textile Types & Patterns." In *The Animal Mummies of the Museo Egizio, Turin*, edited by Salima Ikram, Sara Aicardi, and Federica Facchetti. Turin: Museo Egizio, 2015.

Brandt, Luise Ørsted, Anne Haslund Hansen, Hussein Shokry, and Chiara Villa. *Bandages for Bastet: A Study of Three Egyptian Cat Mummies* (2020).

Brewer, Douglas J., Donald B. Redford, and Susan Redford. *Domestic Plants and Animals: The Egyptian Origins*. Warminster: Aris & Phillips, 1994.

Brier, Bob. *Egyptian Mummies: Unraveling the Secrets of an Ancient Art*. New York: William Morrow, 1994.

Bruno, Lisa. "The Scientific Examination of Animal Mummies." In *Soulful Creatures: Animal Mummies in Ancient Egypt*, edited by Edward Bleiberg, Yekaterina Barbash, and Lisa Bruno. Brooklyn, NY: Brooklyn Museum/D. Giles Ltd, 2013.

Bunson, Margaret R. *Encyclopedia of Ancient Egypt*. Rev. ed. New York: Facts on File, 2002.

Cannata, Maria. "Social Identity at the Anubieion: A Reanalysis." *American Journal of Archaeology* 111, no. 2 (2007). <http://www.jstor.org/stable/40037273>.

Casella, Emanuele. "The Study of Greco-Roman Period Ex-votos: New Perspectives on the Cult of Bastet/Bubastis in Egypt and in the Mediterranean." In *Current Research in Egyptology 2022: Proceedings of the Twenty-Second Annual Symposium, Université Paul-Valéry Montpellier 3, 26-30 September 2022*, edited by A. Bouhafs et al. Oxford: Archaeopress Publishing Ltd, 2023.

Clarysse, Willy, and Dorothy J. Thompson. *Counting the People in Hellenistic Egypt*. 2 vols. Cambridge: Cambridge University Press, 2006.

Cole, Emily. "Negotiating Elite Identity through Linguistic Display in Ptolemaic and Early Roman Egypt." *Ancient Society* 49 (2019). <https://doi.org/10.2143/AS.49.0.3286887>.

Colonna, Angelo. *Religious Practice and Cultural Construction of Animal Worship in Egypt from the Early Dynastic to the New Kingdom: Ritual Forms, Material Display, Historical Development*. Oxford: Archaeopress Publishing Ltd, 2021.

Diesel, Alleyn. "Felines and Female Divinities: The Association of Cats with Goddesses, Ancient and Contemporary." *Journal for the Study of Religion* 21, no. 1 (2008). <http://www.jstor.org/stable/24764036>.

Dosoo, Korshi, and Thomas Galoppin. "Animals in Graeco-Egyptian Magical Practice." In *Magikon zōon*, edited by Jean-Charles Coulon and Korshi Dosoo. Paris: Institut de recherche et d'histoire des textes, 2022. <https://doi.org/10.4000/books.irht.704>.

- Dosoo, Korshi. "Living Death and Deading Life: Animal Mummies in Graeco-Egyptian Magic and Ritual." In *Magikon zōon*, edited by Jean-Charles Coulon and Korshi Dosoo. Paris: Institut de recherche et d'histoire des textes, 2022. <https://doi.org/10.4000/books.irht.729>.
- Dunand, Françoise, Roger Lichtenberg, and Cécile Callou. "Dogs at El-Deir." In *Egyptian Bioarchaeology: Humans, Animals, and the Environment*, edited by Salima Ikram, Jessica Kaiser, and Roxie Walker. Leiden: Sidestone Press, 2015.
- Dunand, Françoise, William Adler, and Michele Renee Salzman. "Traditional Religion in Ptolemaic and Roman Egypt." In *The Cambridge History of Religions in the Ancient World*, edited by Michele Renee Salzman and William Adler. Cambridge: Cambridge University Press, 2013.
- DuQuesne, T. "Anubis." In *The Encyclopedia of Ancient History*, edited by R. S. Bagnall et al. Oxford: Wiley-Blackwell, 2012. <https://doi.org/10.1002/9781444338386.wbeah15038>.
- DuQuesne, T. "Wepwawet." In *The Encyclopedia of Ancient History*, edited by R. S. Bagnall et al. Oxford: Wiley-Blackwell, 2012. <https://doi.org/10.1002/9781444338386.wbeah15416>.
- Ejsmond, Wojciech. "Some Remarks on Cat Mummies in Light of the Examination of Artefacts from the National Museum in Warsaw Collection." *Studies in Ancient Art and Civilization* 18 (2014).
- Ekroth, Gunnel. "Animal Sacrifice in Antiquity." In *The Oxford Handbook of Animals in Classical Thought and Life*, edited by Gordon Lindsay Campbell. Oxford: Oxford University Press, 2014.
- Escolano-Poveda, Marina. *The Egyptian Priests of the Graeco-Roman Period: An Analysis on the Basis of the Egyptian and Graeco-Roman Literary and Paraliterary Sources*. Studien zur spätägyptischen Religion 29. Wiesbaden: Harrassowitz Verlag, 2020.
- Fowden, Garth. *The Egyptian Hermes: A Historical Approach to the Late Pagan Mind*. Princeton: Princeton University Press, 1993.
- Frankfort, Henri. *Ancient Egyptian Religion: An Interpretation*. New York: Harper & Row, 1948.
- Germond, Philippe, and Jacques Livet. *An Egyptian Bestiary: Animals in Life and Religion in the Land of the Pharaohs*. London: Thames & Hudson, 2001.
- Gorre, Gilles. "A Religious Continuity between the Dynastic and Ptolemaic Periods? Self-Representation and Identity of Egyptian Priests in the Ptolemaic Period (332-30 BCE)." In *Shifting Social Imaginaries in the Hellenistic Period: Narrations, Practices, and Images*, edited by Eftychia Stavrianopoulou. Leiden and Boston: Brill, 2013.

Hartley, Mary, and Susanne Binder. "Canine Interments in the Teti Cemetery North at Saqqara." n.d.

Hartley, Mary. "The Significance of Predynastic Canid Burials in Ancient Egypt." *Archéo-Nil* 25 (2015). <https://doi.org/10.3406/arnil.2015.1089>.

Hölbl, Günther. *A History of the Ptolemaic Empire*. Translated by Tina Saavedra. London and New York: Routledge, 2001.

Howe, Timothy. "Alexander and Egypt." In *The Cambridge Companion to Alexander the Great*, edited by Daniel Ogden. Cambridge: Cambridge University Press, 2024.

Howe, Timothy. "Value Economics: Animals, Wealth, and the Market." In *The Oxford Handbook of Animals in Classical Thought and Life*, edited by Gordon Lindsay Campbell. Oxford: Oxford University Press, 2014.

Hussein Abdelwahed, Youssri Ezzat. *Houses in Graeco-Roman Egypt: Arenas for Ritual Activity*. Oxford: Archaeopress, 2016.

Ikram, Salima. "Creatures of the Gods: Animal Mummies from Ancient Egypt." *AnthroNotes* 33, no. 1 (2012). <https://doi.org/10.5479/10088/22463>.

Ikram, Salima. "Man's Best Friend for Eternity: Dog and Human Burials in Ancient Egypt." *Anthropozoologica* 48, no. 2 (2013). <https://doi.org/10.5252/az2013n2a8>.

Ikram, Salima. "Manufacturing Divinity: The Technology of Mummification." In *Divine Creatures: Animal Mummies in Ancient Egypt*, edited by Salima Ikram. Cairo and New York: The American University in Cairo Press, 2015.

Ikram, Salima. "Shedding New Light on Old Corpses: Developments in the Field of Animal Mummy Studies." In *Creatures of Earth, Water, and Sky: Essays on Animals in Ancient Egypt and Nubia*, edited by Stéphanie Porcier, Salima Ikram, and Stéphane Pasquali. Leiden: Sidestone Press, 2019.

Ikram, Salima. "Speculations on the Role of Animal Cults in the Economy of Ancient Egypt." In *Apprivoiser le sauvage-Taming the Wild: Glimpses on the Animal World in Ancient Egypt*, edited by M. Massiera, B. Mathieu, and F. Rouffet. CENIM 11. Montpellier, 2015.

Ikram, Salima, and Aidan Dodson. *The Mummy in Ancient Egypt: Equipping the Dead for Eternity*. London: Thames & Hudson, 1998.

Ikram, Salima, and Louise Bertini. "The Faunal Material." In *The Catacombs of Anubis at North Saqqara: An Archaeological Perspective*, edited by Paul T. Nicholson et al. Leuven; Paris; Bristol, CT: Peeters Publishers, 2021.

Ikram, Salima, ed. *The Animal Mummies of the Museo Egizio, Turin*. Modena: Franco Cosimo Panini Editore, 2024.

Ikram, Salima, Marie Vandenbeusch, Matilde Borla, and Cinzia Oliva. "It's a Wrap! Bandaging Patterns on Animal Mummies from Ancient Egypt." *Rivista del Museo Egizio* 9 (2025). <https://doi.org/10.29353/rime.2025.7357>.

Ikram, Salima, Paul T. Nicholson, Louise Bertini, and D. Hurley. "Killing Man's Best Friend?" (2013). https://www.researchgate.net/publication/308054467_Killing_man's_best_friend.

Ikram, Salima. *Ancient Egypt: An Introduction*. New York: Cambridge University Press, 2010.

Ikram, Salima. *Beloved Beasts: Animal Mummies from Ancient Egypt*. Cairo: Supreme Council of Antiquities / American University in Cairo Press, 2004.

Ikram, Salima. *Death and Burial in Ancient Egypt*. Cairo: The American University in Cairo Press, 2015.

Ikram, Salima. *Divine Creatures: Animal Mummies in Ancient Egypt*. Cairo: American University in Cairo Press, 2015.

Jackson, Lesley. *Sekhmet & Bastet: The Feline Powers of Egypt*. London: Avalonia, 2018.

Johansson, Carolin, Geoffrey Metz, and Margareta Uhlhorn. "Feline Descendant of the Red or the Black Land: A Multidisciplinary Investigation of an Unusually Large Ancient Egyptian Cat Mummy." In *Egyptian Bioarchaeology: Humans, Animals, and the Environment*, edited by Salima Ikram, Jessica Kaiser, and Roxie Walker. Leiden: Sidestone Press, 2015.

Kessler, Dieter. "Part 1 and Part 2: Introduction into the Theology and Ritual Use of Sacred Animals (an Internet Publication by Dieter Kessler, University of Munich, Including an Additional Short Synthesis in Part 3 - Last Version)." n.d.

Kessler, Dieter, and Abd el-Halim Nur el-Din. "Tuna al-Gebel: Millions of Ibises and Other Animals." In *Divine Creatures: Animal Mummies in Ancient Egypt*, edited by Salima Ikram. Cairo: American University in Cairo Press, 2015.

Kitagawa, Chiori. "Mummies from the City of Canine Deities: An Analysis of Canid Osteofaunal Remains from the Tomb of the Dogs on Gebel Asyut al-Gharbi, Asyut, Middle Egypt." In *Creatures of Earth, Water, and Sky: Essays on Animals in Ancient Egypt and Nubia*, edited by St phanie Porcier, Salima Ikram, and St phane Pasquali. Leiden: Sidestone Press, 2019.

Kurushima, Jennifer D., Salima Ikram, Joan Knudsen, Edward Bleiberg, Robert A. Grahn, and Leslie A. Lyons. "Cats of the Pharaohs: Genetic Comparison of Egyptian Cat Mummies to Their Feline Contemporaries." *Journal of Archaeological Science* 39, no. 10 (2012). <https://doi.org/10.1016/j.jas.2012.05.005>.

Lang, Philippa. *Medicine and Society in Ptolemaic Egypt*. Studies in Ancient Medicine 41. Leiden: Brill, 2012.

- Little, Susan E. "Female Cats: Normal Reproduction, and Reproductive Diseases and Conditions." In *The Cat*, 2nd ed., Clinical Medicine and Management, edited by Susan E. Little. Elsevier, 2024.
- MacKinnon, Michael. "Hunting." In *The Oxford Handbook of Animals in Classical Thought and Life*, edited by Gordon Lindsay Campbell. Oxford: Oxford University Press, 2014.
- MacKinnon, Michael. "Pets." In *The Oxford Handbook of Animals in Classical Thought and Life*, edited by Gordon Lindsay Campbell. Oxford: Oxford University Press, 2014.
- Malek, Jaromir. *The Cat in Ancient Egypt*. Philadelphia: University of Pennsylvania Press, 1997.
- Manning, Joseph G. *The Last Pharaohs: Egypt under the Ptolemies, 305-30 BC*. Princeton: Princeton University Press, 2010.
- Maravela, Anastasia. "Greek Meets Egyptian at the Temple Gate: Bilingual Papyri from Hellenistic and Roman Egypt (Third Century BCE-Fourth Century CE)." In *Multilingualism and History*, edited by Aneta Pavlenko. Cambridge: Cambridge University Press, 2023.
- Mayor, Adrienne. "Animals in Warfare." In *The Oxford Handbook of Animals in Classical Thought and Life*, edited by Gordon Lindsay Campbell. Oxford: Oxford University Press, 2014.
- McDonald, Angela. "Animals in Egypt." In *The Oxford Handbook of Animals in Classical Thought and Life*, edited by Gordon Lindsay Campbell. Oxford: Oxford University Press, 2014.
- McInerney, Jeremy. "Civilization, Gastronomy, and Meat-Eating." In *The Oxford Handbook of Animals in Classical Thought and Life*, edited by Gordon Lindsay Campbell. Oxford: Oxford University Press, 2014.
- McKnight, Lidija M., and Stephanie Atherton-Woolham, eds. *Gifts for the Gods: Ancient Egyptian Animal Mummies and the British*. Liverpool: Liverpool University Press, 2015.
- McKnight, Lidija Mary. *Imaging Applied to Animal Mummification in Ancient Egypt*. Oxford: British Archaeological Reports [Archaeopress], 2010.
- Minas-Nerpel, Martina. "The Creation of New 'Cultural Codes': The Ptolemaic Queens and Their Syncretic Processes with Isis, Hathor, and Aphrodite." In *Egypt and the Classical World: Cross-Cultural Encounters in Antiquity*, edited by Jeffrey Spier and Sara E. Cole. Los Angeles: J. Paul Getty Museum, 2022.
- Morenz, Siegfried. *Egyptian Religion*. Ithaca, NY: Cornell University Press, 1973.
- Moyer, Ian S. *Egypt and the Limits of Hellenism*. Cambridge: Cambridge University Press, 2011.
- Muhs, Brian. *The Ancient Egyptian Economy: 3000-30 BCE*. Cambridge: Cambridge University Press, 2016.

- Nerlich, Andreas G., Stephanie Panzer, Florian Fischer, and Oliver K. Peschel. "Experimental Ancient Egyptian Human Mummification Tested in a Porcine Model: Excellent Preservation at a 13-Year Follow-Up." *Heritage* 8, no. 6 (2025). <https://doi.org/10.3390/heritage8060194>.
- Newmyer, Stephen T. "Being the One and Becoming the Other: Animals in Ancient Philosophical Schools." In *The Oxford Handbook of Animals in Classical Thought and Life*, edited by Gordon Lindsay Campbell. Oxford: Oxford Academic, 2014.
- Nicholson, Paul T. "Priests, Procurers, Preparators and Pilgrims: An Overview of the Sacred Animal Cults at Saqqara." In *The Catacombs of Anubis at North Saqqara: An Archaeological Perspective*, edited by Paul T. Nicholson et al. Leuven-Paris-Bristol, CT: Peeters, 2021.
- Nicholson, Paul T. *The Sacred Animal Necropolis at North Saqqara*. In *The Catacombs of Anubis at North Saqqara: An Archaeological Perspective*, edited by Paul T. Nicholson et al. Leuven-Paris-Bristol, CT: Peeters, 2021.
- Ockinga, Boyo G. "The Satrap Stele of Ptolemy: A Reassessment." In *Ptolemy I and the Transformation of Egypt, 404-282 BCE*. Leiden: Brill, 2018.
- Ogden, Daniel. "Animal Magic." In *The Oxford Handbook of Animals in Classical Thought and Life*, edited by Gordon Lindsay Campbell. Oxford: Oxford University Press, 2014.
- Oliva, Cinzia. "Conserving Animal Mummies." In *The Animal Mummies of the Museo Egizio, Turin*, edited by Salima Ikram, Sara Aicardi, and Federica Facchetti. Turin: Museo Egizio, 2015.
- Parlasca, Klaus. "Anubis mit dem Schlüssel in der kaiserzeitlichen Grabkunst Ägyptens." In *Isis on the Nile: Egyptian Gods in Hellenistic and Roman Egypt*. <https://doi.org/10.1163/ej.9789004188822.i-364.56>.
- Pfeiffer, Stefan. "Offerings and Libations for the King and the Question of Ruler-Cult in Egyptian Temples." In *The Materiality of Hellenistic Ruler Cults*, edited by Stefano G. Caneva. Liège: Presses universitaires de Liège, 2020. <https://doi.org/10.4000/books.pulg.15790>.
- Pfeiffer, Stefan. "The God Serapis, His Cult and the Beginnings of the Ruler Cult in Ptolemaic Egypt." In *Ptolemy II Philadelphus and His World*. Leiden: Brill, 2008.
- Pinch, Geraldine. *Handbook of Egyptian Mythology*. Santa Barbara, CA: ABC-CLIO, 2002.
- Porcier, Stéphanie, Camille Berruyer, Stéphane Pasquali, Salima Ikram, Berthet Didier, and Paul Tafforeau. "Wild Crocodiles Hunted to Make Mummies in Roman Egypt: Evidence from Synchrotron Imaging." *Journal of Archaeological Science* 110 (2019). <https://doi.org/10.1016/j.jas.2019.105009>.
- Pubblico, Maria Diletta. "Making a Cat Mummy: Some Case Studies from Italian Collections." *Archeologie tra Oriente e Occidente (CISA)* 1 (2022). <https://doi.org/10.6093/archeologie/9385>.

- Pubblico, Maria Diletta. "The Cult of Bastet during the First Millennium BC: Some Bronzes from the Museum of Fine Arts in Budapest." In *Egypt 2015: Perspectives of Research*, 2017. <https://doi.org/10.2307/j.ctv170x4dg.24>.
- Pubblico, Maria Diletta. "Wrapping Matters: Unpacking the Materiality of Votive Animal Mummies." *Heritage* 8, no. 10 (2025). <https://doi.org/10.3390/heritage8100415>.
- Quirke, Stephen. *Exploring Religion in Ancient Egypt*. Chichester: Wiley-Blackwell, 2014.
- Redford, Donald B., ed. *The Ancient Gods Speak: A Guide to Egyptian Religion*. Oxford; New York: Oxford University Press, 2002.
- Riggs, Christina. *The Beautiful Burial in Roman Egypt: Art, Identity, and Funerary Religion*. Oxford; New York: Oxford University Press, 2005.
- Rodan, Ilona. "Understanding the Cat and Feline-Friendly Handling." In *The Cat*, 2nd ed., Clinical Medicine and Management, edited by Susan E. Little. Elsevier, 2024.
- Root Kustritz, Margaret V. *Clinical Canine and Feline Reproduction: Evidence-Based Answers*. Ames, IA: Wiley-Blackwell, 2010.
- Savvopoulos, Kyriakos. "Religious Life in Ptolemaic Alexandria under the Royal Aegis: An Overview of the Epigraphic Evidence." In *The Epigraphy of Ptolemaic Egypt*, edited by Alan Bowman and Charles Crowther. Oxford: Oxford University Press, 2020.
- Sbriglio, Alice Maria. "Schiaparelli at Asyut." In *Asyut: The Excavations of the Italian Archaeological Mission (1906–1913)*. Modena: Franco Cosimo Panini Editore, 2019.
- Schorsch, Deborah, and James H. Frantz. "A Tale of Two Kitties." *The Metropolitan Museum of Art Bulletin* 55, no. 3 (Winter 1997-1998). <https://www.jstor.org/stable/3258799>.
- Scott, Nora E. "The Cat of Bastet." *The Metropolitan Museum of Art Bulletin* 17, no. 1 (1958). <https://www.jstor.org/stable/3258805>.
- Scott, Nora E. *The Metternich Stela*. Bulletin of the Metropolitan Museum of Art, N.S. New York: The Metropolitan Museum of Art, 1947.
- Shearman, Fleur. "A New Look at an Old Cat: A Technical Investigation of the Gayer-Anderson Cat." Archetype Publications, 2008.
- Shelton, Jo-Ann. "Spectacles of Animal Abuse." In *The Oxford Handbook of Animals in Classical Thought and Life*, edited by Gordon Lindsay Campbell. Oxford: Oxford University Press, 2014.
- Smith, H. S., and D. G. Jeffreys. "The Anubieion, North Saqqâra: Preliminary Report, 1979-80." *The Journal of Egyptian Archaeology* 67 (1981). <https://www.jstor.org/stable/3856598>.

- Stewart, Charles, and Rosalind Shaw, eds. *Syncretism/Anti-syncretism: The Politics of Religious Synthesis*. London and New York: Routledge, 1994.
- Struck, Peter. "Animals and Divination." In *The Oxford Handbook of Animals in Classical Thought and Life*, edited by Gordon Lindsay Campbell. Oxford: Oxford University Press, 2014.
- Taylor, John H. "Changes in the Afterlife." In *Egyptian Archaeology*, edited by Willeke Wendrich. Chichester; Malden, MA: Wiley-Blackwell, 2010.
- te Velde, H. "A Few Remarks upon the Religious Significance of Animals in Ancient Egypt." *Numen* 27, no. 1 (June 1980). <https://www.jstor.org/stable/3269982>.
- Teeter, Emily. "Animals in Egyptian Religion." In *A History of the Animal World in the Ancient Near East*. Leiden: Brill, 2002.
- Thompson, Dorothy J. *Memphis under the Ptolemies*. 2nd ed. Princeton: Princeton University Press, 2012.
- Thompson, Dorothy. "Animal Husbandry in Ptolemaic Egypt." In *The Economies of Hellenistic Societies, Third to First Centuries BC*, edited by Zosia Archibald, John Davies, and Vincent Gabrielsen. Oxford: Oxford University Press, 2011.
- Turner, E. G. "A Commander-in-chief's order from Saqqâra." *Journal of Egyptian Archaeology* 60 (1974).
- Venit, Marjorie Susan. "The Painted Tomb from Wardian and the Antiquity of the Sāqiya in Egypt." *Journal of the American Research Center in Egypt* 26 (1989). <https://doi.org/10.2307/40000709>.
- Wilfong, T. G. *Death Dogs: The Jackal Gods of Ancient Egypt*. Ann Arbor: Kelsey Museum Publications, 2015.
- Wilimowska, Joanna. "Sacred Animal Cult Workers in the Ptolemaic Fayum." *The Journal of Juristic Papyrology* 1 (2020). <https://doi.org/10.36389/uw.jjurp.50.2020.pp.263-298>.
- Wilkinson, Richard H. *The Complete Gods and Goddesses of Ancient Egypt*. London: Thames & Hudson, 2003.
- Wilson, Penelope. "Consolidation, Innovation, and Renaissance." In *Egyptian Archaeology*, edited by Willeke Wendrich. Chichester; Malden, MA: Wiley-Blackwell, 2010.
- Zivie, Alain, and Roger Lichtenberg. "The Cats of the Goddess Bastet." In *Divine Creatures: Animal Mummies in Ancient Egypt*, edited by Salima Ikram. Cairo: American University in Cairo Press, 2005.

