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THE REEXAMINATION OF LOCATION CHOICES FOR PYRAMID COMPLEXES FROM  
THE THIRD THROUGH THE SIXTH DYNASTIES

by

Gregory Allen Viessman Jr.

A Dissertation

Submitted in Partial Fulfillment of the

Requirement for the Degree of

Doctor of Philosophy

Major: History

The University of Memphis

December 2022

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Dedication

For my mother Sandy

In Memory of my grandparents Mary and Bob Phillips

## Acknowledgements

This dissertation would have been impossible without the help and support of my family, professors, and friends over the past seven years I have been at the University of Memphis.

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Greg Viessman

St. Louis, Missouri

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List of Abbreviations

<i>AERA</i>	<i>Ancient Egypt Research Associates</i>
<i>ASAE</i>	<i>Annales du Service des Antiquités de l'Égypte</i>
<i>BIFAO</i>	<i>Bulletin de l'Institut français d'archéologie orientale</i>
<i>JARCE</i>	<i>Journal of the American Research Center in Egypt</i>
<i>JEA</i>	<i>Journal of Egyptian Archaeology</i>
<i>MÄU</i>	<i>Münchener Ägyptologische Untersuchungen</i>
<i>MDIAK</i>	<i>Mitteilungen des Deutschen Archäologischen Instituts, Abteilung Kairo</i>

## Abstract

This dissertation is the first overview of location choices for Early Dynastic Period (2900-2545 B.C.E) and Old Kingdom (2543-2118 B.C.E) pyramid complexes since Miroslav Bárta's 2005 article "Location of the Old Kingdom Pyramids in Egypt." The factors that went into the decision of Early Dynastic and Old Kingdom pharaohs for the locations of their pyramid complexes is based on a variety of geological, religious, and historical contexts. An overview and analysis of the geology of the seventy-one-kilometer stretch of pyramid complexes from Abu Rawash to Meidum will be conducted. Additionally, the overall history of each site prior to the construction of their pyramid complexes will be discussed as well. While the first pyramid complex ever constructed in ancient Egyptian history comes from the Third Dynasty (2592-2544 B.C.E), many of the eight sites discussed in this dissertation: Abu Rawash, Giza, Zawiyet el-Aryan, Abusir, Saqqara, South Saqqara, Dahshur, and Meidum had a history prior to the construction of the first pyramid complex. Outside of the political histories that incorporated the Early Dynastic Period, the history of construction and monumental architecture that emerged at these sites prior to the first pyramid complex of Djoser at Saqqara will be discussed as well. Further analysis will also delve into the larger religious symbolism and veneration of the past that pharaohs portrayed in choosing a location for their complex. This includes looking at the ancient Egyptian sense of the past and how they viewed their own history. Of course, this data will lean towards the elite members of society, more specifically the pharaoh, because most surviving textual and archaeological sources on pyramid complexes dealt with the pharaoh. As this dissertation will show, the ancient Egyptian sense of the past and how a pharaoh used that past to display their power changed over the course of the almost 500 year period that made up the Old Kingdom.

Together, these facets are undeniably part of larger reasons why the Third through Sixth Dynasty pyramid sites of chosen. While there are undoubtedly more reasons than what is listed, the three factors mentioned above: geological, religious, and historical, are at the forefront of the current study. With their analysis, I will provide a clearer picture of understanding the mindset of the pharaohs who built their pyramid complexes from Abu Rawash to Meidum during the Early Dynastic Period and Old Kingdom.

## Chapter 1: Introduction

Around 2500 B.C.E in ancient Memphis, Pharaoh Khufu (2509-2483 B.C.E) of the Fourth Dynasty (2543-2436 B.C.E) began construction on his tomb for the afterlife.<sup>1</sup> This massive pyramid complex continued a tradition of monumental royal burials that existed since the beginning of pharaonic history.<sup>2</sup> Before taking this momentous step, Khufu laid his father Sneferu (2543-2509 B.C.E), who undertook a trial-and-error process in pyramid building, to rest in one of the two giant pyramids complexes Sneferu built at the site of Dahshur, roughly eleven kilometers south of Memphis. Less than a century had passed since the Third Dynasty ruler Djoser (2592-2566 B.C.E) built the Step Pyramid in the necropolis of Saqqara next to ancient Memphis, and Djoser's successors constructed pyramid complexes at Saqqara and Zawiyet el-Aryan. Sneferu's two pyramids at Dahshur were prototypes, each with its own inherent flaw or compromise—one was literally a "bent pyramid"—but Sneferu's architects had perfected the art of pyramid construction with the Red Pyramid. Beneficiaries of this research and development on pyramids by Sneferu's architects, Khufu's workers constructed one of the world's most famous monuments: The Great Pyramid. But where should Khufu build it? Should he place his tomb next to his father's pyramids at Dahshur? Or, was the hallowed ancestral cemetery of Saqqara, which holds not only the Step Pyramid, but also the tombs of Second Dynasty pharaohs, the best choice? At last, Khufu chose Giza, a desert plateau nineteen kilometers north of Saqqara and thirty kilometers north from Dahshur. Here Khufu built the Great Pyramid of

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<sup>1</sup> Erik Hornung, Rolf Krauss, and David A. Warburton, *Ancient Egyptian Chronology*, (Leiden: Brill, 2006), 451. Each date used in this dissertation comes from this chronology unless otherwise noted.

<sup>2</sup> Miroslav Bárta, "Location of the Old Kingdom Pyramids in Egypt," *Cambridge Archaeological Journal*, 15, (2005): 177-191.

Giza, the largest individual structure the ancient world had ever seen. It would remain the tallest building in the world for over 3,800 years.<sup>3</sup> After Khufu, his son Djedefre built his pyramid at Abu Rawash, which is eleven kilometers north of Giza; another new site and far from the pyramids of his father and ancestors. Djedefre's brother and successor Khafre then built a second pyramid next to his father Khufu, as did Khufu's grandson Menkaure, which created a dynastic cluster at Giza.

The kings of the Fifth and Sixth Dynasties (2435-2118 B.C.E) each chose to build his own pyramid complex alongside those of his recent forbearers or distant ancestors at the sites of Abusir and Saqqara. What motivated some pharaohs to build their pyramids at sites such as Dahshur and Giza where no other previous king was buried, while the pharaohs of the Fifth and Sixth dynasties chose Abusir and Saqqara? How were Old Kingdom pharaohs such as Khufu legitimizing their rule by striking out new pyramid sites (and potentially recreating the first occasion, or *zp-tpj*, each time new sites were chosen) while others such as Userkaf and Unas expressed a reverence to the past by building their pyramids next to the Step Pyramid of Djoser at Saqqara? Why were some pyramids, such as Khufu and Khafre's at Giza, exponentially larger than the pyramids at Abusir? Were these pharaohs choosing the best sites for their pyramid complex? This dissertation will produce a diachronic analysis on these questions alongside the larger question of how and why Old Kingdom Egyptian kings from the Third to Sixth Dynasties (2592-2118 B.C.E) may have chosen a given site for their pyramid complex from the perspectives of the ancient Egyptian worldview and their sense of history on one hand, and in terms of environmental, economic, and logistical considerations on the other.

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<sup>3</sup> It was overtaken by the Lincoln Cathedral in London in 1311 C.E. See: "Timeline," Lincoln Cathedral, accessed January 12, 2022, <https://lincolncathedral.com/history-conservation/timeline/>.

Chapter 2 covers the historiography of the above question, as well the methodology that will be used to answer the question. Historiographically, little attention has been given to the subject. Outside of Miroslav Barta's article "Location of the Old Kingdom Pyramid in Egypt,"<sup>4</sup> previous scholarship relegates the issue from a few pages to a chapter within a larger book which deals with aspects such as pyramid size, architectural history and construction, or religious symbolism.<sup>5</sup> As a result, this study is the first overview of Old Kingdom pyramid complex location since Barta's article, and I will build on his ideas by making a comprehensive survey of Old Kingdom pyramid complexes from the Third to Sixth Dynasties by introducing new historical and historiographical approaches to the topic such as the role the environment played in influencing the decision made by Early Dynastic and Old Kingdom pharaohs in deciding where they should construct their pyramid complexes. An overview of the geological and topographical considerations of each pyramid site is considered followed by a brief discussion on the historiography of environmental history and its impact on ancient Egyptian scholarship. Chapter 2 continues with what I am calling historical context. This begins with an investigation into how Early Dynastic and Old Kingdom pharaohs viewed their past by building pyramid complexes that associated with ancestral cemeteries, as well as striking out new sites in creating legacies. A discussion of this topic requires an analysis of two crucial studies by Egyptologists Barry Kemp and Donald Redford that focuses on the concept of ancient Egyptian history and uses primary sources in drawing conclusions.<sup>6</sup> Finally, a small discussion will be conducted on

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<sup>4</sup> Bárta, "Location of the Old Kingdom Pyramids in Egypt," 177-191.

<sup>5</sup> See pages 6-12.

<sup>6</sup> Barry Kemp, *Anatomy of a Civilization*, (London: Routledge, 2006); Donald Redford, *Pharaonic King-Lists, Annals and Day-Books: A Contribution to the Study of the Egyptian Sense of History*, (Benben Publishers, Ontario, 1986).

the difficulties with primary sources from the Early Dynastic Period and Old Kingdom, the types of textual primary sources that survive, and how one source, the Palermo Stone, fits into the larger narrative of the dissertation.

Chapter 3 culminates with a discussion of each Old Kingdom pyramid site as my main data points. Eight sites: Abu Rawash, Abusir, Dahshur, Giza, Meidum, Saqqara, South Saqqara, and Zawiyet el-Aryan, will be examined individually. In order to properly answer the question at the heart of this study, a few aspects of each site need to be addressed. First and foremost is the geology and topography of every site. This includes the geochemical composition of materials used to construct Old Kingdom pyramid complexes, as well as their surrounding area. Other topographical features such as wadis, dried up lakes, and hypothetical locations for the Nile River during the Old Kingdom are also key factors. After a geological and topographical overview is completed, a historical analysis of each site prior to the construction of a pyramid complex will be discussed. This includes providing a history of the sites from the dawn of the Early Dynastic Period into the Old Kingdom. For locations such as Saqqara and South Saqqara, pyramid construction continued through multiple dynasties and will be discussed accordingly. Finally, information relating to potential quarry locations for each pyramid complex will be discussed in detail by providing aerial views via Google Maps.<sup>7</sup> In its entirety, linking raw data such as geochemical composition of rocks, quarry locations, and wadis which might have been flooded in antiquity to provide ease of transport with the historical context behind each pyramid site in relation to their place within the narrative of the Old Kingdom provides a multifaceted overview of Old Kingdom pyramid complexes.

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<sup>7</sup> Most of the aerial views is using data taken from two publications by Dietrich and Rosemarie Klemm. See, Dietrich and Rosemarie Klemm, *Stone & Quarries in Ancient Egypt*, (The British Museum Press, London, 2008): *The Stones of the Pyramids: Provenance of the Building Stones of the Old Kingdom Pyramids of Egypt*, (Berlin: Walter de Gruyter, 2010).

As the final chapter of this study, Chapter 4 will draw conclusions based on the methodology introduced in Chapter 2 alongside the data presented in Chapter 3. Combining the archaeological, architectural, geological, and topographical remains with the historical narrative and historical consciousness of the elite ancient Egyptians from the Third through Sixth Dynasties, the synthesis of these chapters will provide a clearer picture into the reasonings why Early Dynastic and Old Kingdom pharaohs chose specific locations for their pyramid complexes.



## Chapter 2: Historiography and Methodology

### Historiography of Pyramid Location Choices Prior to Miroslav Barta

Old Kingdom pyramid complexes fascinated scholars thousands of years before Egyptology became an academic discipline.<sup>1</sup> Herodotus, Manetho, and Josephus wrote of their marvels during antiquity.<sup>2</sup> Four Muslim scholars Muhammad al-Idrisi, Abd al-Latif al-Baghdadi, Al-Maqrizi and Ibn Khaldun wrote about ancient Egypt during the late Middle Ages.<sup>3</sup> One of the oldest books on only pyramids came from 17<sup>th</sup> century British mathematician and astronomer John Greaves.<sup>4</sup> All of these scholars have asked (and attempted to answer) questions relating to: the origins of the pyramids, who built them, and what magical purpose did they serve for the ancient society that built them?<sup>5</sup> None of these authors addressed any issues regarding their locations. At the end of the eighteenth century and into the nineteenth century, ancient Egypt again became a focal point for Europeans as the French conducted a large-scale research project

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<sup>1</sup> The amount of research done on pyramid complexes is too numerous to list here, but some seminal sources need mentioning: Mark Lehner and Zahi Hawass, *Giza and the Pyramids: The Definitive History*, (London: Thames and Hudson), 2017; Michel Valloggia, *Abou Rawash I : Le complexe funéraire royal de Rêdjedef, Vol. 1*, (Cairo:Institut français d'archéologie orientale du Caire, 2011); *Abou Rawash I : Le complexe funéraire royal de Rêdjedef, Vol. 2*, (Cairo:Institut français d'archéologie orientale du Caire, 2011); Rosemarie and Dietrich Klemm, *The Stones of the Pyramids—Provenance of the Buildings Stones of the Old Kingdom Pyramids of Egypt*, (Berlin: De Gruyter, 2010); Rainer Stadelmann, "Origins and Development of the Funerary Complex of Djoser," in *Studies In honor of William Kelly Simpson Vol 2*, ed. Peter Der Manuelian, (Boston: Dept. of Ancient Egyptian, Nubian and Near Eastern Art, Museum of Fine Arts, 1996), 787-800; Miroslav Verner, *The Pyramids: A Complete Guide*, (New York: Grove Press, 2002); and Ahmed Fakhry, *The Pyramids*, (Chicago: The University of Chicago Press, 1961).

<sup>2</sup> Herodotus, *The History of Herodotus: Vol. 1*, trans. G. C. Macaulay, (London: MacMillan and Company, 1890); Manetho, *Manetho: History of Egypt and Other Works*, trans. W.G Waddell, (Cambridge: Harvard University Press, 1940); *Josephus, The Jewish Antiquities*, trans. William Whiston, (New York: J.E. Beardsley, 1895).

<sup>3</sup> Okasha el-Daly, *Egyptology: The Missing Millennium: Ancient Egypt in Medieval Arabic Writings*, (London: University College London Press, 2005), 161-194.

<sup>4</sup> John Greaves, *Pyramidographia, or, a description of the pyramids in Aegypt*, (London, 1646).

<sup>5</sup> Greaves, *Pyramidographia*; Herodotus, *The History of Herodotus: Vol 1*; Manetho, *Manetho: History of Egypt and Other Works*. Islamic sources found in Martyn Smith's "Pyramids in the Medieval Islamic Landscape: Perceptions and Narratives," *JARCE*, vol. 43, (2007): 1-14.

which included hundreds of scholars to observe and record the landscape of Egypt.<sup>6</sup> Throughout the nineteenth century, and into the first decade of the twentieth century, the pyramids of Egypt were heavily documented, but little was written about the reasons behind their locations.<sup>7</sup> Instead, issues such as pyramid measurements, construction, and the supposed greatness of Egyptian pharaohs dominated the literature.<sup>8</sup> Although Gaston Maspero mentions that geography and the environment played a role in pyramid locations regarding Meidum and Giza in his 1894 book *The Dawn of Civilization: Egypt and Chaldaea*,<sup>9</sup> the above mentioned issues are in part due to early twentieth century Egyptologists such as George Reisner and Gustave Jéquier excavating Old Kingdom pyramid complexes and reporting their findings, which included architectural dimensions, materials goods, and even construction technique.<sup>10</sup> It took until 1947 and the

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<sup>6</sup> This expedition was led by Napoleon Bonaparte and lasted between 1798 and 1801. As a result of this expedition, a multi-volumed set organizing the findings by the French was published as the *Description de l'Égypte*. For a complete version of *Description de l'Égypte*, see: *Description de L'Égypte: publiée par les ordres de Napoléon Bonaparte*, (Cologne: Taschen, 2007).

<sup>7</sup> Nineteenth century Egyptologist Karl Richard Lepsius was commissioned by Prussian king Frederick Wilhelm IV in the early 1840s to explore Egypt and Sudan and to provide documentation of the region similar to the earlier Napoleonic expedition. As a result of Lepsius's expedition, he provided the first systematic listing of every ancient Egyptian pyramid. Nevertheless, he does not address the issue of pyramid location in the publication that emerged following his study. See: Karl Richard Lepsius, *Denkmäler aus Ägypten und Äthiopien nach den Zeichnungen der von Seiner Majestät dem Könige von Preußen Friedrich Wilhelm IV nach diesen Ländern gesendeten und in den Jahren 1842–1845. ausgeführten wissenschaftlichen Expedition auf Befehl Seiner Majestät herausgegeben und erläutert*, 13 vols., (Berlin: Nicolaische Buchhandlung, 1849).

<sup>8</sup> James Henry Breasted's *A History of Egypt: From the Earliest Times to the Persian Conquest* is the prime example of fitting these three parts into a larger narrative with this example: "With Sneferu the rising tide of prosperity and power has reached the high level which made the subsequent splendour of the Old Kingdom possible." See: James Henry Breasted, *A History of Egypt: From the Earliest Times to the Persian Conquest*, (New York: Charles Scribner's and Sons, 1905), 116.

<sup>9</sup> Gaston Maspero, *The Dawn of Civilization Egypt and Chaldaea*, trans. M.L. McClure, (London: Society for Promoting Christian Knowledge, 1894), 359, 365.

<sup>10</sup> George Reisner, *The Development of the Egyptian Tomb Down to the Accession of Cheops*, (Cambridge: Harvard University Press, 1936); George Reisner, *Mycerinus*, (Cambridge: Harvard University Press, 1931); Gustave Jéquier, *Le Mastabat Faraoun: douze ans de fouilles à Saqqarah*, (Cairo: Service des Antiquités de l'Égypte, 1928); Gustave Jéquier, *La pyramide d'Aba*, (Cairo: Excavations at Saqqara Service des Antiquités de l'Égypte, 1935).

publication of I.E.S Edwards's seminal work *The Pyramids of Egypt* to mention pyramid location once again. However, Edwards only concentrates on this issue in his concluding chapter.

When choosing a site for a Pyramid, it was necessary that certain overriding considerations should be borne in mind: it must be situated west of the river – the side of the setting sun; it must stand well above the level of the river, but not be too remote from its west bank; the rock substratum must be free from any defect or tendency to crack; it should be situated not far from the capital and possibly even closer to a place where the king may have built as a residence outside the capital. Of the sites chosen by the kings of the Old Kingdom, Saqarra and Abu Sir lay in sight of Memphis, Abu Roash about seventeen miles distant to the north, and Dahshur only five miles away to the south. Thirty-three miles separated Memphis from Meidum, where one Pyramid alone was built. Proximity to the river was an important factor, because much of the stone used for the Pyramid and its adjacent buildings must be conveyed from the quarries by ship. Thus, during the season of the inundation, an expanse of desert only 250 yards in width lay between the river and the Pyramid at Meidum, while at Giza the interval was about a quarter of a mile; at Dahshur and Abu Roash, however, the most practical routes for hauling the building materials measured about a mile.<sup>11</sup>

While the rest of his final chapter deals with potential construction methods of the pyramids, as well as possible iconographic representations of pyramids, this quote shows that early 20<sup>th</sup> century Egyptologists thought about the questions that this study poses. Edwards emphasizes logistical factors over ideological factors. By showcasing distance from one pyramid site to another, Edwards establishes the logistical considerations. Not only are they kilometers (Edwards uses miles) apart, but intricate logistics were needed to construct each pyramid complex. Quarrying local stones, as well as using the Nile to transport stones and other materials, were underlying factors in choosing a site.<sup>12</sup>

Another author, Kurt Mendelssohn, also wrote an extensive account on the pyramids in his 1974 book *The Riddle of the Pyramids*. While Mendelssohn was a physicist and not an

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<sup>11</sup> I.E.S Edwards, *The Pyramids of Egypt*, (Harmondsworth: Penguin Books Ltd, 1961), 254-255.

<sup>12</sup> Research on the stones used in the construction of the pyramids occurred decades after Edwards published *The Pyramids of Egypt*. See: Dieter Arnold, *Building in Egypt*, (New York: Oxford University Press, 1991), and Dietrich and Rosemarie Klemm, *Steine und Steinbrüche im Alten Ägypten*, (Berlin: Springer-Verlag, 1993) were two of the first publications to detail these stones.

Egyptologist,<sup>13</sup> his book was influenced and supported by Egyptologists I.E.S Edwards and Walter Emery.<sup>14</sup> Mendelssohn states the following about the historiography of individual pyramid location:

Not much attention has been paid to the location of the individual pyramids. The pyramids of Zoser and his successor Sekhemket, at Saqqara need no explanation; they were erected in the immediate vicinity of the capital Memphis and adorned its western skyline. The same can hardly be said of Khaba's monument which is 20 miles north, and certainly not of the site of the next pyramid, at Meidum, almost 40 miles upstream from Memphis. It is generally assumed that each pyramid was built in the neighborhood of the pharaoh's palace so that he could supervise and watch with pleasure the growth of his eternal house. This may, indeed, be so. On the other hand, it should be remembered that at the building site of any large pyramid there was a permanent labour force of five to ten thousand stone masons and a seasonal one of 50,000 or more unskilled workers whose normal metabolism must have posed sanitary problems. It is, in fact, interesting that no further large pyramids were built at Memphis but that they were all erected well away from the capital.<sup>15</sup>

This quote is important due to the appearance of the pharaoh Khaba. Mendelssohn noting that Khaba left Saqqara for Zawiyet el-Aryan is a fundamental aspect to my study because that was the first time that a known dynastic royal tomb was built in an area outside of Abydos or Saqqara. Furthermore, the idea that Old Kingdom palaces probably changed from pharaoh to pharaoh could potentially explain why pyramid locations changed is noteworthy as well. However, this idea was challenged by Barry Kemp, who said that the changes "...seems more reasonable to see it simply as the result each time of a search for a suitably flat, firm and unencumbered site."<sup>16</sup> Kemp's reasoning is sound because building pyramid complexes on

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<sup>13</sup> This notion is important in discussing Meidum and its pyramid. See pages 93-106.

<sup>14</sup> Kurt Mendelssohn, *The Riddle of the Pyramids*, (London: Thames and Hudson, 1974), 7.

<sup>15</sup> Mendelssohn, *The Riddle of the Pyramids*, 45.

<sup>16</sup> Barry Kemp, "Old Kingdom, Middle Kingdom and Second Intermediate Period c. 2686— 1552 BC," in *Ancient Egypt A Social History*, eds Bruce Trigger, Barry Kemp, David O'Connor, Alan Lloyd, (Cambridge: Cambridge University Press, 1983), 87.

unstable ground would pose unnecessary challenges for Old Kingdom engineers and architects.<sup>17</sup>

Returning to Mendelssohn's hypotheses for location choices, they falter at the end of the quoted paragraph due to expanded knowledge on the labor force used to build the pyramids.

Mendelssohn's speculation on the number of "unskilled" workers was not known, but Mark Lehner's discovery of the worker's town at Giza in the late 1980s proves that the labor used for pyramid construction was more than "unskilled."<sup>18</sup> Additionally, the belief that the subsequent pyramids following Sekhemkhet were built outside of the of capital of Memphis is problematic due to our uncertainty regarding the boundaries.<sup>19</sup>

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<sup>17</sup> However, Kemp does not consider Djedefre's pyramid at Abu Rawash, which is built atop a rocky knoll, and whose foundation was carved from the bedrock instead of mostly quarried from local stone.

<sup>18</sup> Mark Lehner, "Excavations at Giza 1988-1991: The Location and Importance of the Pyramid Settlement," in *The Oriental Institute News and Notes* 135, (1992): 1-9.

<sup>19</sup> This will be addressed further in the section on Memphis, but it is important to note here that scholars such as David Jeffreys, Ana Tavares, and Serena Love have written about the potential boundaries of ancient Memphis in the since the publication of *The Riddle of the Pyramids*. See: David Jeffreys, "The Topography of Heliopolis and Memphis: Some Cognitive Aspects," in *Sonderdruck aus Stationen Beiträge zur Kulturgeschichte Ägyptens Rainer Stadelmann Gewidmet*, eds. Heike Guksch und Daniel Polz, (Mainz: Verlag Philipp von Zabern, 1998); David Jeffreys and Ana Tavares, "The historic Landscape of Early Dynastic Memphis," *MDAIK*, Band 50, (1994): 143-173; Serena Love, "Questioning the Location of the Old Kingdom Capital of Memphis, Egypt," in *Papers from the Institute of Archaeology* 14 (2003): 70-84. This source will be addressed and analysis further in Chapter 3.

Serena Love, “Stones, Ancestors, and Pyramids.”

Serena Love’s article “Stones, Ancestors, and Pyramids” is the earliest attempt in addressing the relationship between Old Kingdom pyramid complex location and ancient Egyptian historical consciousness. She provides a brief overview of what previous Egyptologists argued for choosing pyramid locations: “...geological suitability, site access, availability of good quality limestone and the proximity to a royal palace.”<sup>20</sup> However, she poses an interesting question: If pharaohs consciously chose their locations, then why not honor their ancestors to legitimize their own sites by constructing pyramid complexes next to a dead ancestor?<sup>21</sup> This question is continued further as her article focuses mostly on the symbolic role landscape played in ancient Memphis.<sup>22</sup>

The location of Memphis was not only in a ‘conspicuously strategic’ location but it also was ‘conspicuously symbolic’, heavily imbued with cultural ideals and cosmological significance. Religious monuments like pyramids were symbolic expressions of the sacred landscape, embodied with social significance. Pyramids are not simply a gross display of wealth. Instead, they demonstrate a developing ideology, heavily loaded with symbolic meaning. Their location on the west bank is deliberate, as well as each individual site. The location and shape of each pyramid reflect deliberate and conscious choices.<sup>23</sup>

The crux of Love’s article deals with the concept of sacred spaces to show how important sites such as cemeteries were to the ancient Egyptians.<sup>24</sup> In conjunction with sacred spaces, Love also

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<sup>20</sup> Love, “Stones, Ancestors, and Pyramids,” 215.

<sup>21</sup> Love, “Stones, Ancestors, and Pyramids,” 215.

<sup>22</sup> An article Love published in 2003, one year before she presented her “Stone, Ancestors, and Pyramids” paper dealt with the location of Memphis Egypt.

<sup>23</sup> Love, “Stones, Ancestors, and Pyramids,” 215.

<sup>24</sup> Sacred space is a heavily researched and written topic and extends far beyond the scope of this dissertation. For an overview of sacred spaces, see: Rudolf Otto, *Das Heilige - Über das Irrationale in der Idee des Göttlichen und sein Verhältnis zum Rationalen*, (Breslau: 1917); Mircea Eliade, *Traité d'histoire des religions*, (Paris: Payot, 1949) and *The Sacred and the Profane: The Nature of Religion*, (New York: Harcourt, 1959); Gaston Bachelard, *L'eau et les*

used landscape archaeology to argue that the pre-pyramid landscape of ancient Memphis was influenced by its symbolic nature with regards to its geography and location.<sup>25</sup> She states: “The purpose here is to examine two ideas: 1) the landscape was sacred before it was used for pyramid building and, 2) the patterns of Predynastic and Early Dynastic land use and how it may have influenced later pyramid placement.”<sup>26</sup> Love’s thesis, especially part two with regards to pyramid placement, is fundamental for the current author’s study. This is due to the larger religious implications such as sacredness, as well as the use of the past as a legitimizing force. She is correct that pharaohs not only revered their ancestors by building pyramid complexes next to a near or distant family member, but also that, in reverence, the pharaoh legitimized their own rule.

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*rêves: Essai sur l'imagination de la matière*, (Paris: 1942) and *La Poétique de l'Espace*, (Paris: Presses Universitaires de France, 1958). For an overview of the ancient world, see: G.J Wightman, *Sacred Spaces: Religious Architecture in the Ancient World* (Leuven: Peeters, 2007); Miroslav Bárta and Jiří Janák, eds., *Profane landscapes, sacred spaces: urban development in the Bronze Age southern Levant*, (Sheffield: Equinox Publishing, 2020); For ancient Egypt in general, see: Guilhermes Borges Pires, “The Study of Sacred Space in Ancient Egypt: an Example of Interaction Between Egyptology and Other Fields of Knowledge,” in *Egypt 2015: Perspectives of Research: Proceedings of the Seventh Conference of European Egyptologists, 2<sup>nd</sup>, 7<sup>th</sup>, June, 2015, Zagreb, Croatia, vol. 1*, eds. Joanna Popielska-Grzybowska and Mladen Tomorad (Oxford: Archaeopress Publishing Limited, 2017), 51-57; Janet Richards, “Conceptual Landscapes in the Egyptian Nile Valley,” in *Archaeologies of Landscape: Contemporary Perspectives*, eds. W. Ashmore and B. Knapp, (London: Blackwell, 1999) 83-100.

<sup>25</sup> Similar to sacred space, landscape archaeological theory is a rich field used to explain how people in the past constructed and used the environment around them. It often spans from the Neolithic Period to the modern day. The historiography and methodology associated with landscape archaeology reaches beyond the study. However, I make note of some important studies. See: Ian Hodder and Clive Orton, *Spatial Analysis in Archaeology*, (Oxford: Oxford University Press, 1976); Mick Aston and Trevor Rowley, *Landscape Archaeology: an Introduction to Fieldwork Techniques on Post-Roman Landscapes*, (Newton Abbot, David and Charles, 1974); Barbara Bender, ed., *Landscape Politics and Perspectives*, (London: Routledge, 1993).

<sup>26</sup> Love, “Stones, Ancestors, and Pyramids,” 209.

## Bárta's Study of Pyramid Location

Despite the massive quantity of scholarship on pyramids, Egyptologists within the past thirty years have given little attention to how Old Kingdom kings chose the locations for their pyramids and the factors that informed their decisions.<sup>27</sup> A 2005 article by Czech Egyptologist Miroslav Bárta titled “Location of the Old Kingdom Pyramids in Egypt,” delves further than any previous scholar on the matter.<sup>28</sup> He summarizes his argument by stating that the deciding factors of Old Kingdom pyramid complex locations were “economic, geomorphologic, socio-political, and unavoidably also of religious nature.”<sup>29</sup> Furthermore, he states that these factors can be combined into two different categories: practical and religious. From the practical (or logistical) side, the resources and organization needed to build pyramids and pyramid complexes were massive and complex. Limestone was the main material used in the core of Old Kingdom pyramids and quarrying from suitable bedrock was necessary for the scale used in building. While Egypt is not lacking in large quarriable limestone, the quality of the limestone for building differs throughout the country.<sup>30</sup> Additionally, there are other factors to think about in terms of practicality such as the amount of labor and where that labor is housed.<sup>31</sup> From a “religious”

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<sup>27</sup> Outside of Serena Love's article, this issue is relegated to a sentence at the least or a few pages at most. See: Zahi Hawass, “Pyramid Construction: New Evidence at Giza,” in *Stationen Beitrage zur Kulturgeschichte Agyptens: Rainer Stadelmann Gewidmet* (Mainz: Verlag Philipp von Zabern, 1998), 53, and Miroslav Verner *Abusir: Realm of Osiris*, (Cairo: The American University in Cairo Press, 2002), 11-14.

<sup>28</sup> Miroslav Bárta, “Location of the Old Kingdom Pyramids in Egypt,” *Cambridge Archaeological Journal*, 15, (2005): 177-191.

<sup>29</sup> Bárta, “Location of the Old Kingdom Pyramids in Egypt,” 177.

<sup>30</sup> Rosemarie and Dietrich Klemm, *Stones and Quarries in Ancient Egypt*, (London: The British Museum Press, 2008), 23.

<sup>31</sup> Mark Lehner has spent the last thirty years working and excavating at the worker's town of the pyramid builders of Giza. For an overview of the site, see: “The Name and Nature of the Heit el-Ghurab Old Kingdom Site: Worker's Town, Pyramid Town, and Port Hypothesis,” in *The Pyramids Between Life and Death: Proceedings of the*



perspective, Bárta concluded that the placement of the pyramids on the Western side of the Nile on desert plateaus acted as a connection between the sacred and profane (the current world and the afterlife).<sup>32</sup> In conclusion, he admits that an organization of reasons between practical and religious are limited in some ways.

The space available for scientific excursus, however, is to a significant degree restricted by the specific Egyptian landscape, by innate, religious concepts and by the social environment. The arguments brought forward in this article add to a large variety of existing opinions and views. As in many cases, it seems feasible to suggest that the location of the pyramids may have been the result of several simultaneously applied strategies or preferences, combining both religious and practical aspects of the decision-making process of the ancient Egyptian architects.<sup>33</sup>

Here, Bárta understands that a definitive answer to pyramid location is not completely feasible due to the number of decisions, preferences, and other aspects such as religious and logistical considerations. However, given the limited space Bárta's article encompasses, he was unable to go into detail on these issues. His division of pyramid locations into practical and religious reasons are at the heart of this study, but there are other mitigating factors that he discusses which needs greater analysis. These items include exploring the geology and topography of the pyramid fields and the larger historical and ideological context of Old Kingdom. As a result, this study is impossible to complete without considering the religious nature that dovetails with each aspect of pyramid location choice.

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*workshop held at Uppsala University, Uppsala, May 31st - June 1st, 2012*, eds. Irmgard Hein, Nils Billing, and Erika Meyer-Dietrich, (Uppsala Universitet, Uppsala), 99-160.

<sup>32</sup> Bárta, "Location of the Old Kingdom Pyramids in Egypt," 187.

<sup>33</sup> Bárta, "Location of the Old Kingdom Pyramids in Egypt," 187-188.

## Methodological and Theoretical Approaches

Chapter 3 of this study delves into each of the eight Old Kingdom pyramid sites that stretch seventy-one kilometers from the furthest northernmost complex at Abu Rawash, to the southernmost complex at Meidum. This data set lends itself to be analyzed through a geographical and topographical framework, as well as an inquiry into the historical context of each site from its beginnings down to end of the Sixth Dynasty. Through this analysis, an important factor arises which Bárta does not mention, but which is at the heart of Love's study, the use of the past as a legitimizing force.<sup>34</sup> To achieve this understanding, I will investigate the role the environment, and more specifically the desert landscape, played in the decision to choose a pyramid site. Additionally, I will investigate how pyramid location choice reflected the historical consciousness of Early Dynastic and Old Kingdom pharaohs. The geological and topographical overviews presented will be based on, and influenced by, studies conducted by Egyptologists, geologists, and historians.<sup>35</sup> Furthermore, combining recent studies on the Nile River,<sup>36</sup> specifically with regards to the floodplain during inundation and the reach of water into desert wadis, alongside other geographic features such as limestone formations,<sup>37</sup> I will show

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<sup>34</sup> Love's use of sacred space/landscape archaeology allows her to observe portion of this aspect, especially with regards to representations of sacred landscape with ancient Egyptian mythology such as the primordial mound. See: Love, "Stones, Ancestors, and Pyramids," 213-214.

<sup>35</sup> My own work is greatly influenced and indebted to each scholar that is mentioned throughout Chapter 2.

<sup>36</sup> As the longest river on earth, as well as a river whose importance survives textual records stretching back thousands of years, the Nile has lent itself to a multitude of studies, especially within the past decade. See: Henri Dumont, ed., *The Nile Origin, environments, limnology and human use*, (New York: Springer, 2009); Judith Bunbury, *The Nile Changing Land- and Waterscapes, from the Neolithic to the Roman Era*, (Cambridge: Cambridge University Press, 2019); Thomas Schneider and Christine L. Johnston, eds., *The Gift of the Nile? Ancient Egypt and the Environment*, (Tucson: The Egyptian Expedition, 2020). These studies are influenced by two foundational works that were published in 1976: Karl Butzer, *Early Hydraulic Civilization in Egypt*, (Chicago: The University of Chicago Press, 1976); Julian Rzóska, ed., *The Nile, Biology of an Ancient River*, (The Hague: Dr. W. Junk B.V., Publishers, 1976).

<sup>37</sup> Outside of Dieter Arnold's, *Building in Egypt* and Klemm and Klemm's *Steine und Steinbrüche im Alten Ägypten*, James Harrell has published heavily on the use and history of stone in Egypt, including an upcoming publication.

that the ancient Egyptian pharaohs during the late Early Dynastic Period and Old Kingdom were influenced by the ancient Egyptian environment as it dictated how and where pyramid complexes could be built. First however, a brief overview of the field of environmental history is needed.<sup>38</sup>

An environmental approach towards studying history is relatively recent and has existed in its current form for a little over forty years.<sup>39</sup> Since one of the earliest historiographical reviews of the field in 1985, the field has expanded from an overview of how the environment affected the formation of the American West to the impact that the environment played to other regions throughout the world.<sup>40</sup> As a result, the study of environmental history around the world has exploded and is at the forefront of methodological approaches.<sup>41</sup> In his 2003 historiographical overview of the field, John McNeill defined environmental history as “the

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For the upcoming publication see: James A. Harrell, *Archaeology and Geology of Ancient Egyptian Stones*, (Toledo: The University of Toledo Press, forthcoming). For a full list of Harrell’s publications, see: [http://www.eeescience.utoledo.edu/Faculty/Harrell/Egypt/Quarries/Pubs\\_List.html](http://www.eeescience.utoledo.edu/Faculty/Harrell/Egypt/Quarries/Pubs_List.html).

<sup>38</sup> It is crucial to note here that the terms Landscape Archaeology and Environmental History are oftentimes intertwined with one another due to the separate academic disciplines each one is associated and the differences between the two are not clearly apparent. based on a study by Cătălin Nicolae Popa and Daniel Knitter. They state: “The divide between environment and landscape may be crossed by resorting to fuzzy logic and modelling the data on the basis of qualitative categories.” See: Cătălin Nicolae Popa and Daniel Knitter, “From Environment to Landscape. Reconstructing Environment Perception Using Numerical Data,” in *Journal of Archaeological Method and Theory* 23, (2016): 1301. While this work is a multi-disciplinary study, as a trained historian, I will be using the terminology associated with Environmental History.

<sup>39</sup> Richard White, “Environmental History: The Development of a New Historical Field,” in *Pacific Historical Review* 54, (1985): 297-335.

<sup>40</sup> J.R. McNeill, “Observations on the Nature and Culture of Environmental History,” in *History and Theory, Theme Issue*, 42, (December 2003): 5-43.

<sup>41</sup> For an overview of the discipline, see: J. Donald Hughes, *What is Environmental History*, (Cambridge: Polity, 2006); John R. McNeill and Alan Roe, eds., *Global Environmental History: An Introductory Reader (Rewriting Histories)*, (London: Routledge, 2012); Melanie Arndt, “Environmental History, Version: 3.0,” in: *Docupedia-Zeitgeschichte*, 23.8.2016, [http://docupedia.de/zg/Arndt\\_environmental\\_history\\_v3\\_en\\_2016](http://docupedia.de/zg/Arndt_environmental_history_v3_en_2016); Daniel R. Headrick, *Humans versus Nature: A Global Environmental History*, (Oxford: Oxford University Press, 2020).

history of the mutual relations between humankind and the rest of nature.”<sup>42</sup> Furthermore, he divided the field into three main varieties: material, cultural/ideological, and political.

Material environmental history concerns itself with changes in biological and physical environments, and those changes affect human societies. It stresses the economic and technological sides of human affairs. The cultural/intellectual wing, in contrast, emphasizes representations and images of nature in arts and letters, how these have changed, and what they reveal about the people and societies that produced them. Political environmental history considers law and state policy as it relates to the natural world.<sup>43</sup>

With regards to ancient Egypt, McNeill interestingly noted that, at the time, political environmental history focused solely on modern history and places such as ancient Egypt and Song China “undeniably had policies toward the natural world, and disputes over the use of resources.”<sup>44</sup> He is not completely correct in his assessment that political environmental history studies focused only on the modern age, but it is important to note because there were few political environmental histories dealing with ancient Egypt by 2003.<sup>45</sup> In the past decade, multiple published studies deal solely with the environment and its impact during the late Old Kingdom.<sup>46</sup> This work is indebted to not only these past studies on environmental history, but

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<sup>42</sup> McNeill, “Observations on the Nature and Culture of Environmental History,” 6.

<sup>43</sup> McNeill, “Observations on the Nature and Culture of Environmental History,” 6.

<sup>44</sup> McNeill, “Observations on the Nature and Culture of Environmental History,” 8.

<sup>45</sup> Outside of Karl Butzer’s *Early Hydraulic Civilizations*, there were two books written in the 1990s that dealt with ancient Egypt and political environmental history. See: Edwin C. M. van den Brink, ed, 1992. *The Nile Delta in transition: 4th - 3rd millennium BC. Proceedings of the seminar held in Cairo, 21 - 24 October 1990, at the Netherlands Institute of Archaeology and Arabic Studies*. (Tel Aviv: E. C. M. van den Brink, 1992); Lech Krzyżaniak, Michał Kobusiewicz, and John Alexander, eds., *Environmental change and human culture in the Nile Basin and Northern Africa until the second millennium B.C.* (Poznań: Poznań Archaeological Museum, 1993).

<sup>46</sup> John Burn, “The land and environment,” in *Behind the scenes: daily life in Old Kingdom Egypt*, eds. Ann McFarlane and Anna-Latifa Mourad, (Oxford: Aris and Phillips, 2012), 5-15; John Burn, “Climate change, fishing and the Nile: changes in fishing techniques and technologies at the end of the Old Kingdom,” in *Profane landscapes, sacred spaces: urban development in the Bronze Age southern Levant*, eds. Miroslav Bárta and Jiří Janák, (Sheffield: Equinox Publishing, 2020), 1-17; Nadine Moeller, “The role of settlements and urban society for the history of ancient Egypt: the case study of Tell Edfu during the late Old Kingdom,” in *The gift of the Nile? Ancient Egypt and the environment*, eds. Thomas Schneider and Christine L. Johnston, (Tucson: The Egyptian Expedition, 2020), 87-105.

also by those who conducted research about the Nile River,<sup>47</sup> other physical geographic aspects such as landscape change,<sup>48</sup> and by the twentieth-century historian Fernand Braudel,<sup>49</sup> who can be considered the precursor to the field of environmental history.<sup>50</sup> Chapter 3 of my study will mostly use McNeill's divisions of cultural/intellectual and political environmental history to show the role that the environment played in influencing decisions by Early Dynastic and Old Kingdom pharaohs for their pyramid locations is significant.<sup>51</sup> As more histories of the Third through Sixth Dynasties are written, the role and influence of the environment for the ancient Egyptians should be a focus.<sup>52</sup>

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<sup>47</sup> See footnote 43.

<sup>48</sup> Benjamin T. Pennington, Penelope Wilson, Fraser Sturdt and Antony G. Brown, "Landscape change in the Nile Delta during the fourth millennium BC: a new perspective on the Egyptian Predynastic and Protodynastic periods," in *World Archaeology* 52, no. 4 (2020), 550-565.

<sup>49</sup> Fernand Braudel, *The Mediterranean and the Mediterranean World in the Age of Philip II, Volume I*, trans. Siân Reynolds, (Harper & Row Publishers: New York, 1972. Braudel's is still influencing modern scholars even though Braudel originally published his *Mediterranean World* in 1949, and an English version did not appear until 1972. Some notable references from the past twenty years are as follow: Peregrine Horden and Nicholas Purcell, *The Corrupting Sea: A Study of the Mediterranean*, Wiley-Blackwell: New Jersey, 2000; Ian Morris, "Mediterraneanization," in *Mediterranean Historical Review*, Volume 18, Number 2, (2003): 3-33; Edmund Burke III, "Towards a Comparative History of the Modern Mediterranean, 1750-1919," in *Journal of World History*, Volume 23, Number 4, (December 2012): 907-939; and Cyprian Brookbank, *The Making of the Middle Sea: a History of the Mediterranean from the Beginning to the Emergence of the Classical World*, (Oxford University Press: Oxford University, 2013). Brookbank's book is a continuation of Braudel's work and covers more information than Braudel did in his *Mediterranean*.

<sup>50</sup> Jason W. Moore, "Capitalism as World Ecology," in *Organization & Environment* 16, no. 4 (December 2003), 431-432; Hrvoje Petrić, "Is Fernand Braudel the Predecessor of Environmental History?" in *Annales in Perspective: Designs and Accomplishments Vol I*, eds., Drago Roksandić, Filip Šimetin Šegvić, and Nikolina Šimetin Šegvić, (Zagreb: Filozofski fakultet Sveučilišta u Zagrebu, Centar za komparativnohistorijske i interkulturene studije i FF press, 2019), 437-442. Furthermore, the volume which Petrić's article appears is a collection detailing the role of the Annales School in modern day studies of history. See: Drago Roksandić, Filip Šimetin Šegvić, and Nikolina Šimetin Šegvić, eds., *Annales in Perspective: Designs and Accomplishments Vol I*, (Zagreb: Filozofski fakultet Sveučilišta u Zagrebu, Centar za komparativnohistorijske i interkulturene studije i FF press, 2019),

<sup>51</sup> With regards to material environmental history, this will be most present in my discussion of the geology and topography of each pyramid site. Furthermore, a recent article observes the ancient Egyptian response to the natural world. See: Linda Evans, "Ancient Egyptians Response to the Natural World," in *Profane landscapes, sacred spaces: urban development in the Bronze Age southern Levant*, eds. Miroslav Bárta and Jiří Janák, (Sheffield: Equinox Publishing, 2020), 71-88.

<sup>52</sup> The most recent study on the history of the Old Kingdom comes from Bárta, and while he focuses on the role of the environment with regards to the importance of the Nile, as well as building materials such as limestone, his work

Additionally, I will use literature from Egyptologists such as Barry Kemp and Donald Redford, who have addressed the ancient Egyptians worldview through an analysis of primary data, such as texts, monumental architecture, and the geography Egypt. As a result, this dissertation will use both primary and secondary sources to give a glimpse into the historical and cultural mindset of ancient Egyptian pharaohs from the Third through the Sixth Dynasties. More specifically, this is to show how pharaohs from the Third to Sixth Dynasties viewed and used their past for inspiration and meaning in cultural expressions through the forms of monumental art and architecture to legitimize their reigns. Together, the analysis of the geological and topographical areas constituting Old Kingdom pyramid fields, alongside the past as a legitimizing force for ancient Egyptian pharaohs, are part of the larger group of logistical and religious factors that influenced Early Dynastic and Old Kingdom pharaohs in choosing locations for their pyramid complexes.

### Geological and Topographical Factors

As this study expands on Bárta's two overarching factors of practical and religious for why Old Kingdom pharaohs chose specific locations for their pyramid complexes, there need to be individual case studies for each of the eight Old Kingdom pyramid sites at Abu Rawash, Abusir, Dahshur, Giza, Meidum, Saqqara, South Saqqara, and Zawiyet el-Aryan. First, a general overview of the geology and topography of each site is discussed. This includes using geoarchaeological and geospatial data, such as the composition of limestone at each site; known desert wadis that went through the area in antiquity; lakes that have dried up over the millennia;

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is to tell the most complete narrative history of the Old Kingdom as possible. See: Miroslav Bárta, *Analyzing Collapse: The Rise and Fall of the Old Kingdom*, (Cairo: The American University in Cairo Press, 2019).

images that show the annual inundation prior to the construction of the Aswan High Dam; and potential locations for the Nile River during the Early Dynastic Period and Old Kingdom, that has been initially analyzed by scholars. Additionally, new analysis from the current author will shed new light on the topography of sites such as Abu Rawash, as well as provide a comprehensive historical overview of each site from the beginning of the Early Dynastic Period through the end of the Old Kingdom. In many cases, each site is vastly different from one another, and the geology and topography vary from site to site.<sup>53</sup> Furthermore, the potential and probable locations for local quarried limestone will be discussed in detail as well.<sup>54</sup> As stated previously, the western desert landscape was not lacking suitable limestone in antiquity, but the proximity of quarries to pyramid complexes indicates a massive shift and movement in the natural landscape of the sites. Conjointly, these aspects will show the logistical aspects of pyramid location choice that Bárta mentions but goes into more detail than he did in his article.

### Historical Context

After an overview on the geological and topographic overview of each pyramid site, there will be a discussion of the history of the sites from the beginning of the Early Dynastic Period down through the Old Kingdom. Some of the sites, such as Saqqara, Zawiyet el-Aryan, and Abu Rawash have clear occupation prior to the construction of pyramids that needs to be mentioned. In the case of Saqqara, it served as an elite necropolis in the First Dynasty, became a royal necropolis in the Second Dynasty, and it is the site of the first pyramid complex constructed in

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<sup>53</sup> For example, the site of Dahshur presents evidence of varying limestone, as well as the presence of an ancient lake alongside numerous ancient channels and wadis. See: pages 107-113.

<sup>54</sup> Dietrich and Rosemarie Klemm's *The Stones of the Pyramids: Provenance of the Building Stones of the Old Kingdom Pyramids of Egypt* considers quarry sites for each pyramid complex and the data presented on each Old Kingdom pyramid site is indebted to their observation and analysis.

ancient Egyptian history. Providing historical context behind each of the eight sites will act as crucial evidence in answering the questions posed in this dissertation. Furthermore, a return to the role that topography played at each site will help answer the question of how the ancient Egyptians used their landscapes in symbolic ways to construct their pyramid complexes. For example, the pyramid of Abu Rowash was built on top of a hill, higher than the largest pyramid in Egypt: The Great Pyramid of Khufu. While the pyramid at Abu Rawash is significantly smaller than Khufu's pyramid, its presence on taller land may have played a symbolic role for Djedefre, especially when Khufu's pyramid is visible from Abu Rawash.<sup>55</sup> Similarly, Khafre's choice to build his pyramid complex next to his father Khufu's, albeit on a slightly higher elevation, most likely played a symbolic role as well. Sometimes, pyramid complex location came down to what can be considered "prime space."<sup>56</sup> Revez and Brand define this term as the following: "Prime space (as for instance, in the term "prime office space") is a notion often used in contemporary real estate business to define architectural space of superior grade that is highly sought-after because of its exceptional location."<sup>57</sup> For example, Djoser's Step Pyramid at Saqqara can be considered prime space because it was not only next to the tombs of his predecessors of the Second Dynasty, but it was also near a major wadi that would have been flooded during construction and might have been an ideal or central location for people to see from the city of Memphis.<sup>58</sup> Each of these factors form the larger historical context behind

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<sup>55</sup> See pages 160-172.

<sup>56</sup> This term has been used in Egyptology by Peter Brand and Jean Revez in their discussion on column decoration at the Hypostyle Hall at Karnak. See: Jean Revez and Peter Brand, "The Notion of Prime Space in the Layout of the Column Decoration in the Great Hypostyle Hall at Karnak," in *Cahiers de Karnak*, 15 (2015): 253-310.

<sup>57</sup> Revez and Brand, "The Notion of Prime Space in the Layout of the Column Decoration in the Great Hypostyle Hall at Karnak," 253-254.

<sup>58</sup> The notion of the Step Pyramid being in an ideal location for people to see from the city of Memphis comes from Joris Van Wetering and Elaine Sullivan. See: Joris Van Wetering, "The Royal Cemetery of the Early Dynastic



pyramid location choice and will combine with the known historical narrative of the late Early Dynastic Period and into the Old Kingdom.

### Historiography in Egyptology: The Question of Ancient Historical Writing

One of the fundamental purposes of this study is to see how Old Kingdom pharaohs viewed their past to legitimize their own rule. The traditional sources that Egyptologists have used over the past two centuries, such as tombs, monuments, grave goods, temples, written sources, etc. are crucial towards a better understanding. However, to properly address this issue, the 21<sup>st</sup> century concept of both history and historiography need to be evaluated to create a more precise understanding of what the ancient Egyptians, and specifically Old Kingdom pharaohs, saw as legitimizing their own rule through the past. While the depth of the arguments Egyptologists made over the past century goes well beyond the scope of this study, there are a couple that are important to consider: Barry Kemp and Donald Redford. Kemp's *Anatomy of a Civilization* and Redford's *Pharaonic King-Lists, Annals and Day-Books: A Contribution to the Study of the Egyptian Sense of History* are discussed and analyzed for the purpose of showing how difficult it is to piece together the ancient Egyptian past, especially during the Early

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Period at Saqqara and the Second Dynasty Royal Tombs," in *Egypt at its origins: studies in memory of Barbara Adams. Proceedings of the international conference "Origin of the state: predynastic and early dynastic Egypt"*, Kraków, 28th August - 1st September 2002, eds Stan Hendrickx, R. F. Friedman, K. M. Ciałowicz, and M. Chłodnicki, (Leuven; Dudley, MA: Peeters, 2004); Elaine Sullivan, "Visibility and Invisibility in the Early Dynastic Period and Old Kingdom," in *Constructing the Sacred: Visibility and Ritual Landscape at the Egyptian Necropolis of Saqqara*, Stanford: Stanford University Press, 2020), <https://constructingthesacred.supdigital.org/cts/the-hidden-and-the-seen-visibility-at-saqqara-1?path=the-hidden-and-the-seen-visibility-at-saqqara>. Moreover, visibility/intervisibility at royal funerary landscapes is an emerging subject amongst Egyptologists. While this study does not delve into detail on the topic, it is important to note two sources that discuss visibility/intervisibility with regards to Old Kingdom pyramid sites. One is Sullivan's discussion listed in this footnote, while the other comes from David Jeffreys. See: David Jeffreys, "Size Wasn't Everything: The Memphis Pyramids as Scale Models," in *Sitting besides Lepsius: studies in honour of Jaromir Malek at the Griffith Institute*, eds. Diana Magee, Janine Bourriau, and Stephen Quirke (Leuven: Peeters, 2009), 257-265.

Dynastic Period and Old Kingdom, as well as understanding how the ancient Egyptians viewed their past.

### Barry Kemp

Barry Kemp's influential *Ancient Egypt: Anatomy of a Civilization* delves not only into the history of the ancient Egyptians from the Pre-Dynastic era to the end of pharaonic history, but also asks "the question of just what, whether we study ancient Egypt or our own present society, we are really looking at."<sup>59</sup> More specifically, Kemp's overview of history is crucial for analysis.

History makes the detailed tracery of a myth of the past that provides a model for the present. Ancient Egypt belongs firmly in this category. It knew its own past, and fitted the images so derived within the myth-world of ideology. The past for the ancient Egyptians had a straightforward and rather prosaic course. No epic narrative of events spanned past generations, no great theme or tale of destiny urged a moral on the living. The Egyptians and their neighbours had always, so it seemed, lived in their respective homelands. The past was a model of order, a continuous and almost exclusively peaceful succession of reigns of previous kings, each one handing the throne on to his successor in a single direct linear sequence. This mirrored how things really were during the 'great' periods of peace and stability. It also reflects, incidentally, an elementary view of what history is about—namely the succession of rulers—that still has wide popular currency in the modern world.<sup>60</sup>

Kemp is partially correct that there is no "epic narrative of events spanned past generations, no great theme or tale of destiny urged a moral on the living."<sup>61</sup> Especially during the late Early Dynastic Period and into the Old Kingdom, there is no written evidence of a myth or story that is comparable to Kemp's definition. What survives though is a list of kings in chronological order (Saqqara List, Turin List, etc.) or a list of deeds that a pharaoh did during their reign (Palermo

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<sup>59</sup> Barry Kemp, *Anatomy of a Civilization*, 1.

<sup>60</sup> Kemp, *Anatomy of a Civilization*, 61-62.

<sup>61</sup> Kemp, *Anatomy of a Civilization*, 62.

Stone). This symbolizes the “elementary history” that Kemp mentions because they constitute a stereotypical list that many people might see as famous dates and people.<sup>62</sup> Instead, Kemp uses both the textual record in coordination with archaeological evidence that survives from the Early Dynastic Period and Old Kingdom. With regards to the overall arguments of my study, this quote showcases the impact that rigorous organization and order played for the pharaoh in displaying and maintaining not just power, but a direct lineage to one’s ancestors. This ties together with broader themes such as the establishment of new royal cemeteries at Abydos, Saqqara, or Giza, as well as decisions made in constructing pyramid complexes at certain sites for individual pharaohs.

### Donald Redford

Donald Redford’s *Pharaonic King-Lists, Annals and Day-Books: A Contribution to the Study of the Egyptian Sense of History* examines how the ancient Egyptians recorded history beginning with the Old Kingdom through to the Greco-Roman period (2675-342 B.C.E).<sup>63</sup> More importantly, he examines the ancient Egyptian sense of history which included the veneration of the past as a legitimizing concept.<sup>64</sup> With regards to the Old Kingdom, due to a lack surviving textual evidence, it is more difficult for Redford to examine this topic, but he still presents

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<sup>62</sup> Kemp, *Anatomy of a Civilization*, 62. Furthermore, in 1840, Scottish historian Thomas Carlyle coined the term “great men” of history during a series of six lectures he presented in May 1840. A book combining these lectures were published the next year. See: *On Heroes, Hero-Worship, and The Heroic in History*, (London, James Fraser, 1841). Over time, the “great men” of history became the traditional narrative in teaching and writing history that still exists to this today. For example, I ask my students in an introductory World History course “What is history?” At least one student each semester responds that it is memorizing facts, names, and dates.

<sup>63</sup> Donald Redford, *Pharaonic King-Lists, Annals and Day-Books: A Contribution to the Study of the Egyptian Sense of History*, (Benben Publishers, Ontario, 1986).

<sup>64</sup> This will be seen in discussions on the Fourth Dynasty pharaoh Shepseskaf, as well as the first and last pharaohs of the Fifth Dynasty in Userkaf and Unas.

examples. For instance, the Palermo Stone, which is a combination of deeds from pharaohs, alongside notable yearly events that date from the First Dynasty (3000-2900 B.C.E) down to the Fifth Dynasty (2500-2350 B.C.E), is evidence for Redford that the ancient Egyptians found it important to record events to preserve for the future.<sup>65</sup>

However, Redford notes from the beginning that the ancient Egyptians did not have a term for “history-writing.” Yet, he attempts to define “history-writing” alongside “historical documents.”<sup>66</sup> Redford calls the classification of records such as stelae, biographies, annals, and letters as “historical-writing” “shoddy.”<sup>67</sup> For Redford, “historical documents” and “history-writing” has been polymerized because “history-writing” is “the telling of events involving or affecting human beings (not necessarily though usually in narrative form), which took place prior to the time of composition....”<sup>68</sup> As a result, Redford correctly scours the ancient Egyptian records and looks for words to help him differentiate these two issues. The outcome is not important for this study, but his understanding of history is crucial, especially his definition of “history-writing.”

“History-writing,” as the term seems generally to be used and understood today, means the telling of events involving or affecting human beings (not necessarily though usually in narrative form), which took place prior to the time of composition, the chief aim of which is to explain those events for the benefit, predilection and satisfaction of, contemporaries, and not for the enhancement for the writer’s personal reputation. The form will be without artifice or metaphor, that is it will not be drama, epic poetry, cult prescription or the like. The historian is attempting to interpret past events in that he either shows his readers how he (the reader) is personally affected and/or related to said

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<sup>65</sup> Redford, *Pharaonic King-Lists, Annals and Day-Books: A Contribution to the Study of the Egyptian Sense of History*, 142. He attributes the yearly recording of annals (*gnwt*) as aspects that led to the creation of the king’s lists.

<sup>66</sup> Redford, *Pharaonic King-Lists, Annals and Day-Books: A Contribution to the Study of the Egyptian Sense of History*, xiii.

<sup>67</sup> Redford, *Pharaonic King-Lists, Annals and Day-Books: A Contribution to the Study of the Egyptian Sense of History*, xiv

<sup>68</sup> Redford, *Pharaonic King-Lists, Annals and Day-Books: A Contribution to the Study of the Egyptian Sense of History*, xiv

events; or invites the reader vicariously to share and experience those events. And the reader can only share and experience those events if they are described and interpreted for him.

At its core, the definition presented above is a legitimate way to comprehend “history-writing,” and Redford’s understanding of history is similar to Kemp’s in the section above. One possible explanation for ancient Egyptians failing to have a word that means “historical documents,” or “history-writing” most likely comes from the 19<sup>th</sup> and 20<sup>th</sup> century scholars who shaped historical studies defining “historical documents” and “history-writing”. From the beginning of his chapter on the Old Kingdom, Redford quotes both Herodotus and Diodorus in stating that Old Kingdom pharaohs did not publish their deeds or praised themselves in texts where everyone could see them.<sup>69</sup> Additionally, Redford’s later notion that these Old Kingdom pharaohs did not publish their deeds because they did nothing of note is playful, yet critical in trying to understand the mindsets of Old Kingdom pharaohs.<sup>70</sup> As Redford demonstrated, and the primary source support his claims, elite ancient Egyptians had a clear sense of their past, and oftentimes, revered it.

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<sup>69</sup> Redford, *Pharaonic King-Lists, Annals and Day-Books: A Contribution to the Study of the Egyptian Sense of History*, 127-128. While this is true for current surviving evidence, it is highly unlikely that Egyptologists will have access to every publication and monument that was made during the Old Kingdom. It is possible that Redford is correct with this notion, but unfortunately, it is unprovable. Furthermore, only a select group of elites would have been able to read the texts due to miniscule literacy rates.

<sup>70</sup> Redford, *Pharaonic King-Lists, Annals and Day-Books: A Contribution to the Study of the Egyptian Sense of History*, 129.

## The Past as a Legitimizing Force

How did the history of older pharaohs influence Djoser, Khafre, and Shepseskaf for their tombs? While answering and understanding this question is a key aspect of my study, its answer also considers that ancient Egyptian pharaohs of the Early Dynastic and Old Kingdoms used the past to legitimize their own rules. This is most apparent in pyramid complexes which are located near immediate or even distant predecessors, but the idea of using the past as a legitimizing force through royal mortuary architecture originates in the broader concept of venerating one's ancestors. Ancestor worship is a critical aspect of ancient Egyptian culture as it correlated with the overarching theme of death and the afterlife that dominated all aspects of ancient Egyptian life from the pre-Dynastic down to the end of the Greco-Roman Period.<sup>71</sup> It was a sign of respect for the deceased ancestor alongside the belief that one's existence continued in the afterlife. Ancestor worship and the veneration of the past was not unique to ancient Egyptian pharaohs, but due to their social status as ruler of Egypt, they were able to portray this in more grandiose ways than an everyday farmer who lived on the Nile Delta.<sup>72</sup> The continued construction of elaborate pyramid complexes that began with Djoser in the Third Dynasty throughout the Sixth Dynasty proves this, but it also shows the use of the past as a legitimizing force, especially when looking at the pyramid complexes built at sites such as Saqqara or Giza following Djoser and Khufu respectfully.<sup>73</sup> Unfortunately, it is difficult to fully understand the complexities of the

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<sup>71</sup> Ancestor worship alongside the ancient Egyptian view on death and the afterlife is far beyond the scope of this study. The following two sources provide a starting part with regards to this subject. Nicola Harrington, *Living with the Dead: Ancestor Worship and Mortuary Ritual in Ancient Egypt*, (Oxford: Oxbow Books, 2013); Heike Guksch, Eva Hofmann, and Martin Bommas, eds., *Grab und Totenkult im alten Ägypten*, (Munich: C.H. Beck, 2003).

<sup>72</sup> A cult of royal ancestor worship existed for pharaohs as well as indicated through lists by Seti I and Ramses II during the New Kingdom. See: Redford, *Pharaonic King-Lists, Annals and Day-Books: A Contribution to the Study of the Egyptian Sense of History*, 19-20.

<sup>73</sup> Ancestral cemeteries in ancient Egypt acting as a veneration or memory for the past is an idea that has already been established by Egyptologists. See: Bruce Trigger, "The rise of Egyptian civilization," in *Ancient Egypt A Social*

past as a legitimizing force from the Third to Sixth Dynasties, especially when the textual sources are lacking comparing to other eras.

### What the Textual Sources Say.

As Old Kingdom texts are rarer<sup>74</sup> than Old Kingdom architecture, there is no surviving text that answers the question: Why did Old Kingdom pharaohs choose the locations they did for their pyramid complexes? No evidence exists that even one pharaoh answered this question. Instead, Egyptologists are left with a variety of sources that provide lists of pharaohs (Saqqara List, Turin List), the Palermo Stone,<sup>75</sup> which chronicles yearly deeds accomplished by pharaohs until the Fifth Dynasty, texts that recite spells for the pharaoh's afterlife in the form of Pyramid Texts, and sources such as "autobiographies" from Sixth Dynasty officials such as Weni and Harkhuf that explains not only what they did during their lifetimes,<sup>76</sup> but also show how the subject observed the concept of *mꜣꜥt*.<sup>77</sup> Additionally, new sources such as the Wadi el-Jarf papyri

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*History*, eds Bruce Trigger, Barry Kemp, David O'Connor, Alan Lloyd, (Cambridge: Cambridge University Press, 1983), 52-61; John Baines, "Kingship, Definition of Culture, and Legitimization," In *Ancient Egyptian Kingship*. Edited by David O'Connor, David Silverman, and Wolfgang Schenkel, 3-49. Leiden: Brill, 1995; Miroslav Barta, "Egyptian Kingship during the Old Kingdom," In *Experiencing Power, Generating Authority: Cosmos, Politics, and the Ideology of Kingship in Ancient Egypt and Mesopotamia*, eds Jane Hill, Philip Jones, and Antonio Morales, (Philadelphia: University of Pennsylvania, 2013), 258-260.

<sup>74</sup> Discovery of new papyri and discussion of these sources has expanded within the last decade with the discovery of the Wadi al-Jarf papyrus by Pierre Tallet and his team in 2013. See: Pierre Tallet, *Les papyrus de la mer Rouge I: Le "journal de Merer" (Papyrus Jarf A et B)*, (Le Caire: Institut français d'Archéologie Orientale, 2017); Pierre Tallet, *Les papyrus de la mer Rouge II: "Le journal de Dedi" et autres fragments de journaux de bord (Papyrus Jarf C, D, E, F, Aa)*, (Le Caire: Institut français d'archéologie orientale, 2021). Additionally, a publication on the state of papyrology with regards to the Old Kingdom has been recently published as well. See: Pierre Tallet and Philippe Collombert, eds., *Les Archives Administratives de l'Ancien Empire*, (Leuven: Peeters, 2021).

<sup>75</sup> Toby Wilkinson, *Royal Annals of Ancient Egypt: The Palermo Stone and its associated fragments*, (London: Kegan Paul International, 2000).

<sup>76</sup> Miriam Lichtheim, *Ancient Egyptian Literature a Book of Readings: Volume I: The Old and Middle Kingdoms*, (Berkeley, University of California Press, 1973), 18-28.

that details the day-to-day accounts of an official named Merer who lived during the reign of Khufu.<sup>78</sup> As a collective, these sources give Egyptologists more than a small glimpse into ancient Egyptian history. They provide lists of things done and accomplished by individual accounts of pharaohs, as well as accounts of men who served under pharaohs.<sup>79</sup> While most of these sources are not analyzed in this study because they do not address aspects related to the current topic, there is one that needs attention: the Palermo Stone.

As one of the most analyzed sources of the Old Kingdom, the Palermo Stone is a fragmented corpus of seven surviving early Egyptian royal annals which chronicle early Egyptian history.<sup>80</sup> The stone is divided with one side listing pre-dynastic kings down to Sneferu, while the other side goes from Khufu to Neferirkara. Most of the front side is dedicated to the pre-dynastic kings as well as the First Dynasty but ends with the reigns of Djoser and Sneferu. Following the same structure of chronologizing yearly deeds, Djoser's accomplishments end with the fifth year of his reign. Djoser's first two years are associated with ascension and coronation rituals, while years three and four mention the construction of an image of Min and an unknown building known as "fountain of the gods."<sup>81</sup> The final year is badly damaged and its contents are unknown, but none of these annals mention anything about the Step Pyramid. While the "fountain of the gods" could be referring to the Step Pyramid or something within the Step

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<sup>77</sup> Denise Doxey, "'Autobiographical' Texts," in *The Oxford Handbook of Ancient Egypt*, eds., Ian Shaw and Elizabeth Bloxam, (Oxford: Oxford University Press, 2020), 994. For a general overview of autobiographies, see the entire source from Doxey, 994-1006.

<sup>78</sup> Originally published by Tallet in his two-volume set *Les papyrus de la mer Rouge*, a more recent publication in conjunction with Mark Lehner analyzed the scrolls in greater context with the Old Kingdom. See: Pierre Tallet and Mark Lehner, *The Red Sea Scrolls* (London: Thames and Hudson, 2021).

<sup>79</sup> Or as Barry Kemp calls it, "elementary history."

<sup>80</sup> Wilkinson, *Royal Annals of Ancient Egypt: The Palermo Stone and its associated fragments*, 17.

<sup>81</sup> Wilkinson, *Royal Annals of Ancient Egypt: The Palermo Stone and its associated fragments*, 138-139.



Complex complex , it is speculative at best due to the lack of surviving evidence attributing the name to the pyramid.

In fact, there is only one instance in the surviving fragment Palermo Stone and its where the location of a pyramid is even mentioned. Interestingly, the attestation is for Shepseskaf who did not build a pyramid at all: *[ḥntiw?]-š šsp st qbḥ-špss-kz.f* “provisioners? choosing the location of the pyramid ‘fountain of Shepseskaf.’”<sup>82</sup> Unfortunately, the rest is missing so it is unknown if there was a further explanation for the location with regards to Shepseskaf.

For a document that provides ample evidence for ritualistic activities of pharaohs each year of their reign, building of temples and boats,<sup>83</sup> and expeditions to foreign lands such as Punt,<sup>84</sup> the lack of surviving evidence in the Palermo Stone about the construction and location of the pharaoh’s funerary monuments is fascinating. These projects were critical for the pharaoh and the logistics of building a pyramid complex were complex and required an immense amount of skilled and unskilled laborers alongside places to feed and shelter them. As a list of royal annals, one would think the Palermo Stone would at least address the construction of pyramid complexes, especially when temples are mentioned.<sup>85</sup>

Yet, this collection of primary material, in conjunction with other primary texts, helps to showcase a larger trend that appears within elite society throughout the Early Dynastic and Old Kingdoms: the reverence for the past. While textual sources are limited and the reliance archaeological and architectural remains of pyramid complexes (including pyramids, attached

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<sup>82</sup> Wilkinson, *Royal Annals of Ancient Egypt: The Palermo Stone and its associated fragments*, 149.

<sup>83</sup> Wilkinson, *Royal Annals of Ancient Egypt: The Palermo Stone and its associated fragments* 140-146.


<sup>84</sup> Wilkinson, *Royal Annals of Ancient Egypt: The Palermo Stone and its associated fragments*, 168.

<sup>85</sup> It is possible that the original stone mentioned the pyramid complexes and broken off over time.

cult temples, adjacent town settlements) is high in order to reconstruct the history and culture of Old Kingdom pyramid complexes, I believe new conclusions can be reached by combining both of these aspects. An analysis of primary sources is a venture taken by all historians and anthropologists. Chapter 3 will show, with a combination of mostly archaeological and geological evidence alongside a small amount of textual evidence, that the decisions behind choosing a specific site for one's pyramid complex were multi-faceted.

## Chapter 3: Pyramid Sites

### Memphis

Old Kingdom pyramids stretch seventy-one kilometers from Abu Rawash to Meidum. Many Egyptologists believe that this limit incorporated the area of ancient Memphis.<sup>1</sup> But what does the limit of ancient Memphis during the Old Kingdom look like? Is it simply the area surrounding the modern-day site of Mit Rahina and extending westward towards Abusir and Saqqara? Does it extend the entire seventy-one kilometers from Abu Rawash to Meidum? Or is it simply the boundaries of the first nome of Lower Egypt *Jnbw-Hd* ? Much has been written on these questions which go far beyond the scope of this study.<sup>2</sup> Nevertheless, some discussion on the area is needed to understand location choices for the Old Kingdom pyramid complexes, especially when many of them are located near the immediate vicinity of the modern town of Mit Rahina. The original boundaries of Memphis during the late Early Dynastic Period and Old Kingdom is not completely known,<sup>3</sup> but the earliest attention of *Jnbw-Hd* was found on a

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<sup>1</sup> Judith Bunbury, Ana Tavares, Benjamin Pennington, and Pedro Gonçalves, “Development of the Memphite Floodplain Landscape and Settlement Symbiosis in the Egyptian Capital Zone,” in *The Nile: Natural and Cultural Landscape in Egypt*, eds. Harco Willems, and Jan-Michael Dahms, (Bielefeld: Verlag, 2017), 71; Maria Helena Trindade Lopes, “What are we Talking about when we Talk about Memphis?” *Trabajos de Egiptología - Papers on Ancient Egypt 7*, (Puerto de la Cruz: Isfet. Egiptología e Historia, 2016): 59-66; David Jeffreys, “Investigating Ancient Memphis, Pharaonic Egypt’s Northern Capital,” in *Archaeology International 3*, (2000): 2624; Serena Love, “Questioning the Location of the Old Kingdom Capital of Memphis, Egypt,” *Papers from the Institute of Archaeology 14* (2003): 70-84. This notion has been contested by the Egyptologists mentioned above. For instance, on page 71 in “The Topography of Heliopolis and Memphis: Some Cognitive Aspects,” Jeffreys notes that Meidum and its satellite pyramid Seila most likely marks the most southern boundary of the Memphite nome. However, on page 71 of her article “Questioning the Location of the Old Kingdom Capital of Memphis,” Serena Love states that the nome (district) of Memphis stretched from Abu Rawash to Dahshur; this means that the Meidum pyramid was not part of the larger nome of Memphis, but she notes that the Meidum pyramid was part of the Memphite necropolis.

<sup>2</sup>As referenced in the footnote immediately above this one, both Serena Love and Maria Helena Trindade Lopes’ article provides a historiography on some of the more important sources on the area of Memphis.

<sup>3</sup> Love, “Questioning the Location of the Old Kingdom Capital of Memphis, Egypt,” 71-72; Jaromir Málek, “The Temples at Memphis. Problems Highlighted by the EES Survey,” in *The Temple in Ancient Egypt*:

sealing from Abydos by Petrie,<sup>4</sup> while the singular version of “White Walls,” “White Wall” or *Jnb-Hd*, was found on a seal from a tomb dating to the reign of Djoser at Beit Khallaf.<sup>5</sup> The first appearances of the name of the nome appears in the Fifth Dynasty at Abusir/Abu Ghurab at the pyramid complex of Sahure,<sup>6</sup> as well as the so-called “Weltkammer” in the Sun Temple of Niuserre.<sup>7</sup> Additionally, the term that becomes “Memphis”, which became the name the area is commonly known as today, originated during the Sixth Dynasty with the Pyramid of Pepi I, whose name was *Mn-nfr*.<sup>8</sup>

My discussion of the Old Kingdom pyramid complexes will be using the boundaries of the nome *Jnbw-Hd* when discussing the area of Memphis. Egyptologists such as Lehner, Jeffreys, Tavares, and Love argue that the area of Memphis incorporates the entirety of *Jnbw-Hd*.<sup>9</sup> Lehner refers to Mit Rahina as a “capital zone,”<sup>10</sup> which Love states is an appropriate term to use due to the presence of settlements at places such as Giza.<sup>11</sup> For Love, she also states that if “this region was reconsidered as such, then perhaps the capital of Memphis constantly moved or

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*New Discoveries and Recent Research*, ed. Stephen Quirk, (London: British Museum Press, 1997), 90-95.

<sup>4</sup> William Flinders Petrie, *The Royal Tombs of the Earliest Dynasties 2*. (London: The Egypt Exploration Fund, 1901), 193.

<sup>5</sup> John Garstang, *Mahâsna and Bêt Khalâff*, (London: Bernard Quaritch, 1903), 11

<sup>6</sup> Ludwig Borchardt, *Das Grabdenkmal des Königs S'ahu-Re (Band 2,1): Die Wandbilder: Text*, (Leipzig, J.C Hinrichs'sche Buchhandlung, 1913), 105.

<sup>7</sup> Elmar Edel, *Zu den Inschriften auf den Jahreszeitenreliefs der "Weltkammer" aus dem Sonnenheiligtum des Niuserre*. (Göttingen, 1961-3).

<sup>8</sup> John Bennett, “Pyramid Names” in *The Journal of Egyptian Archaeology*, vol 52, (1956): 176.

<sup>9</sup> Lehner, *The Complete Pyramids*, 7 and 15; Jeffreys and Tavares, “The historic landscape of Early Dynastic Memphis,” 159; Love, “Questioning the Location of the Old Kingdom Capital of Memphis, Egypt,” 81-82.

<sup>10</sup> Lehner, *The Complete Pyramids*, 7 and 15.

<sup>11</sup> Love, “Questioning the Location of the Old Kingdom Capital of Memphis, Egypt,” 81.

the evidence has created a new manifestation for Memphis.”<sup>12</sup> Jeffreys and Tavares used the term ribbon development to describe the occupation of pyramid sites and settlements alongside the western side of the Nile, which refers to the building of houses along a route of communication.<sup>13</sup> Unfortunately, these theories are currently impossible to prove, and it is equally possible that Memphis was simply a city within the larger confines of the nome of *Jnbw-Ḥd* during the Early Dynastic and Old Kingdom. Until there is more evidence supporting the claim that *Mn-nfr* and *Jnbw-Ḥd* are interchangeable during this time and *Mn-nfr* is further attested in sources outside the pyramid name of Pepi I, this study will use the term *Jnbw-Ḥd* to refer to the area between Abu Rawash and Dahshur.

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<sup>12</sup> Love, “Questioning the Location of the Old Kingdom Capital of Memphis, Egypt,” 81-82.

<sup>13</sup> Jeffreys and Tavares, “The historic landscape of Early Dynastic Memphis,” 159

## Saqqara and Abusir

Arguably the most important burial site in Egypt, the necropolis of Saqqara was the resting place of hundreds of pharaohs, viziers, and other important members of the royal family from the First Dynasty to the end of the Greco-Roman period. Its use spanned the entirety of pharaonic Egypt, and even became the site for an early Christian monastery.<sup>14</sup> The reasons why this area became such a focal point for the ancient Egyptians needs to be considered and will paint a clearer picture of the origins of the Old Kingdom pyramid complex. The answer possibly lies with environmental factors that affected the origins of the Saqqara landscape, the proximity to the capital of Memphis, as well as the sacred nature of the site. All three of these factors intertwine with one another to help create a clearer picture of the Saqqara necropolis.

### Geology and Topography

Saqqara lies on a vast desert plateau which is also geographically diverse. The plateau is part of the larger Maadi formation. The Maadi formation consists of brownish limestones dating to the Late Eocene period<sup>15</sup> and stretches from the south of the Giza pyramids to the Fayum.<sup>16</sup> Stratigraphically at Saqqara/Abusir, there are five layers of the Maadi formation. The lowermost, exposed only at the foot of the Abusir plateau, is greyish in color and is the oldest part of the formation at the site.<sup>17</sup> Next is an alternating light-yellow hard limestone and yellow soft marl

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<sup>14</sup> J.E. Quibell, *Excavations of Saqqara (1908-9, 1909-10): The Monastery of Apa Jeremias*, (Cairo: L'Institut Français d'Archéologie Orientale, 1912).

<sup>15</sup> 53.5 to 36 million years ago.

<sup>16</sup> Rushdi Said, *The Geology of Egypt*, (Amsterdam: Elsevier Publishing Company, 1932). 136-137.

<sup>17</sup> Mourad Youssef, Omar Cherif, Mohamed Boukhary, and Ali Mohamed, "Geological Studies on the Sakkara Area" in *Neues Jahrbuch für Geologie und Paläontologie*, 168, (1984): 128.

which makes up most of the bulk of the Saqqara and Abusir plateaus,<sup>18</sup> and for the purpose of this study, is the most crucial layer as the stone monuments in the area were constructed using this type of limestone.

Additionally, this region presents two wadis (Wadi Saqqara and Wadi Abusir) which spans between the causeway of Unas, and the valley temples of the Abusir pyramids. In-between the wadis lie the Early Dynastic mastabas, the Old Kingdom mastabas, and the pyramids of Djoser, Userkaf, and Teti.<sup>19</sup> Wadi Abusir was perhaps the most important because it was the main pathway to these Early Dynastic mastabas.<sup>20</sup> Furthermore, the wadi flowed into Abusir lake, and fed the seasonal Nile floods.<sup>21</sup> During the Early Dynastic Period, the Nile was only a couple kilometers from the easternmost part of the Saqqara desert. The two wadis surrounding the area provided a pathway into the plateau for transporting materials and organizing the building of the mastabas, and later, the pyramid complexes of the Third and Fifth Dynasties.

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<sup>18</sup> Youssef, et al. "Geological Studies on the Sakkara Area" in *Neues Jahrbuch für Geologie und Paläontologie*, 129.

<sup>19</sup> David Jefferys and Ana Tavares, "The historic landscape of Early Dynastic Memphis" 156.

<sup>20</sup> Malek, "The Temples at Memphis, Problems Highlighted by the EES Survey," ed. Stephen Quirke, (London: The Egyptian Exploration Society, 1997), 92; Miroslav Bárta and Břetislav Vachala, "The Tomb of Hetepi," in *Egyptian Archaeology*, 19, (Autumn 2001): 33-35; Colin Reader, "On Pyramid Causeways," in *The Journal of Egyptian Archaeology*, vol. 90, (2004): 63-66.

<sup>21</sup> Elaine Sullivan, "Saqqara the Site" in *Constructing the Sacred: Visibility and Ritual Landscape at the Egyptian Necropolis of Saqqara*, <http://constructingthesacred.supdigital.org/cts/saqqara-the-site?path=sqqara-through-space-and-time>

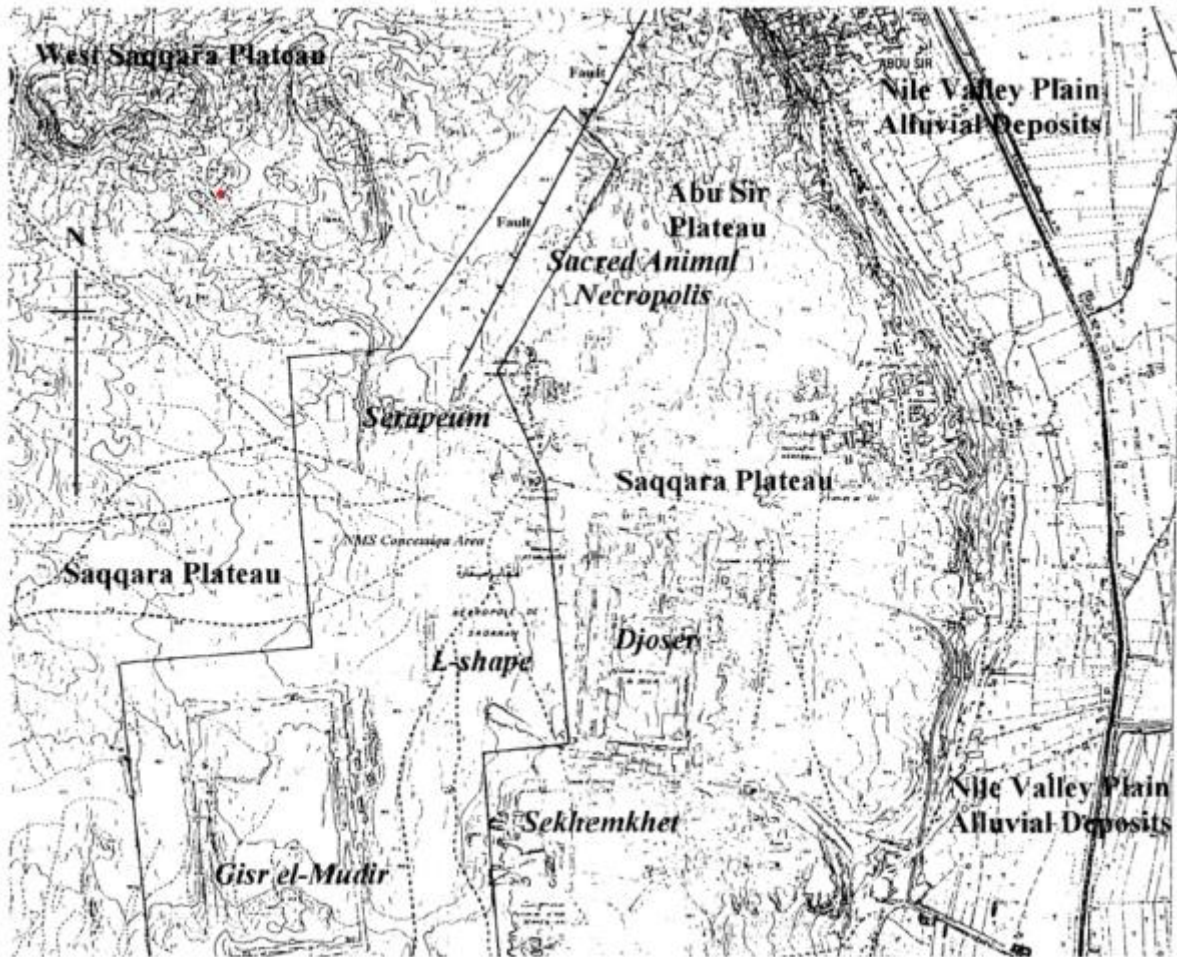


Figure 1: Mathieson et al-The Saqqara Necropolis.<sup>22</sup>

<sup>22</sup> Ian Mathieson, Elizabeth Bettles, Jon Dittmer, and Colin Reader “The National Museums of Scotland Saqqara Survey Project, Earth Sciences, 1990-1998,” in *The Journal of Egyptian Archaeology*, vol. 85, (1999): 23.



## Abusir Lake

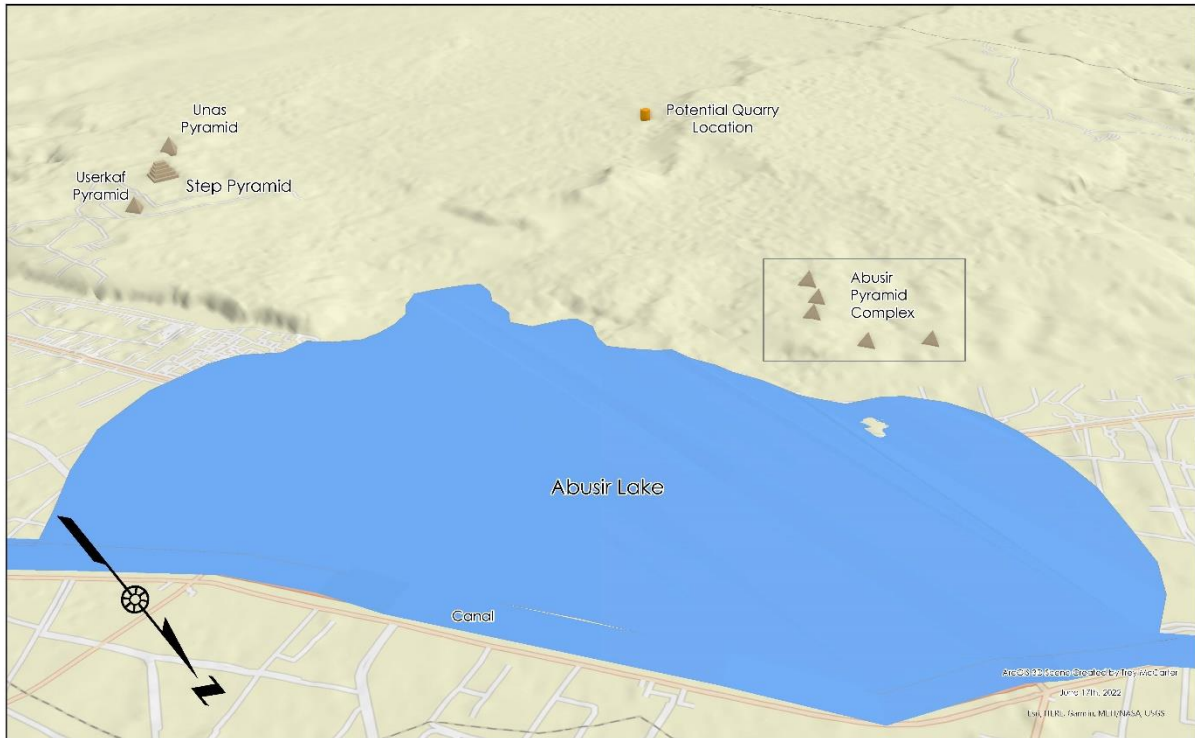


Figure 2: 3D Map of Abusir Lake nearby Saqqara, Abusir, and Potential Abusir Quarry Location.

The above picture shows an outline of where Abusir Lake would have possibly been in ancient times.<sup>23</sup> It lies almost precisely in the middle between the sites of Saqqara and Abusir. Possibly known in ancient times as “lake of pharaoh,”<sup>24</sup> Abusir Lake’s geomorphology was most likely formed by an older Nile River course from the Early-Mid Holocene period.<sup>25</sup> As Figure 3 shows

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<sup>23</sup> Miroslav Verner, “Abusir Pyramids Quarry and Supply Road,” in *Structure and Significance: Thoughts on Ancient Egyptian Architecture*, ed. Peter Jánosi, (Verlag der Österreichischen Akademie der Wissenschaften: Wien, 2005), 534; Václav Čilek, Miroslav Bárta, Lenka Lisá, Adéla Pokorná, Lucie Juříčková, Vladimír Brůna, Abdel Moneim A. Mahmoud, Aleš Bajer, Jan Novák, and Jaromír Beneš, “Diachronic development of the Lake of Abusir during the third millennium BC, Cairo, Egypt,” in *Quaternary International*, XXX, (2012): 2.

<sup>24</sup> J.D Ray, “The World of North Saqqara,” *World Archaeology* 10, no. 2 (1978): 153.

<sup>25</sup> Čilek, et al, “Diachronic development of the Lake of Abusir during the third millennium BC, Cairo, Egypt,” 10.

below, the channeling of the Nile to reach the desert edge during the Old Kingdom would create easy access for transporting materials such as red granite and basalt to Abusir, as well as Saqqara.

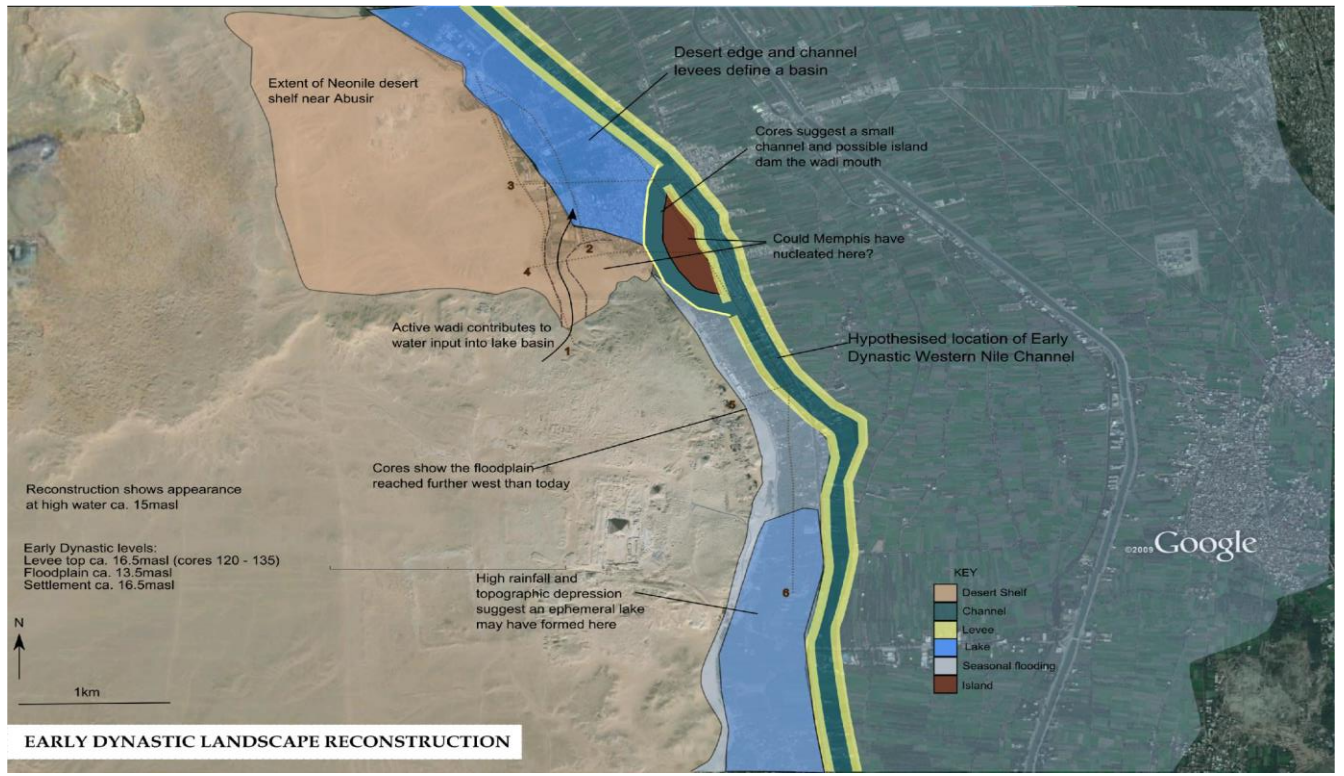


Figure 3: Dean-Early Dynastic Landscape Reconstruction.<sup>26</sup>

<sup>26</sup> Erin Dean, *The Lake of Abusir, Northern Egypt*, Cambridge University Unpublished Dissertation, 2011, 81

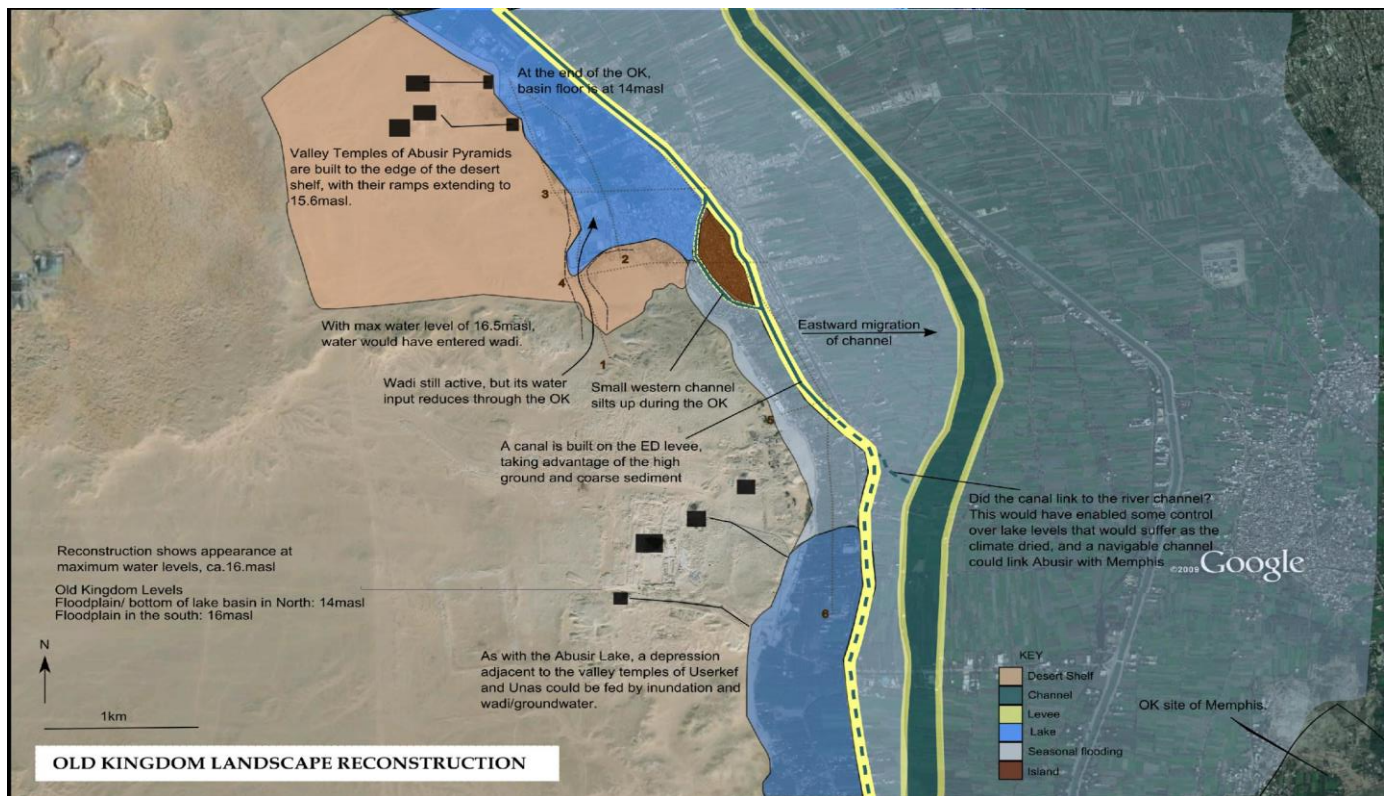


Figure 4: Dean-Old Kingdom Landscape Reconstruction.<sup>27</sup>

<sup>27</sup> Dean, Unpublished Dissertation, 82

Additionally, the channeling into the wadi of Abusir Lake existed long before the Old Kingdom. It is possible that these harbors were used to bring materials into the Saqqara/Abusir area during the Early Dynastic Period. The pharaohs of the Fifth Dynasty continued the same process as they built their own mortuary complexes. Both the wadi and lake existed long before any pharaoh or royal official built their tombs on the Saqqara and Abusir plateaus and they served as a crucial part of the construction process for the pyramid complexes.<sup>28</sup>

### Saqqara Quarry

To build these pyramid complexes, Djoser, Userkaf, Unas, and Teti needed access to stone. As Egypt is a country surrounded by large rock formations along the Nile River, the site of Saqqara is not unique. In fact, stone was used at Abydos in the construction of the tomb of First Dynasty pharaoh Den, as well as the Second Dynasty pharaoh Khasekhemwy.<sup>29</sup> The use of stone at Saqqara was higher than that of Abydos, as the Second Dynasty royal tombs used bedrock-cut underground galleries and chambers. The definitive quarry sites for the Step Pyramid (as well as the other monuments built at Saqqara throughout the Old Kingdom) are unknown primarily due to the “geological composition and the limestone sequences found there.”<sup>30</sup> However, after an examination of the Saqqara plateau by both Rosemarie and Dietrich Klemm, they assumed that the production site for the quarries were not too far away from the construction site in order to

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<sup>28</sup> See Figure 20 which showcases the basalt floor of Sahure’s mortuary temple.

<sup>29</sup> Angela La Loggia, “The Use of Stone in Early Dynastic Egyptian Construction,” in *Bulletin of the Australian Centre for Egyptology*, (2008): 137-138.

<sup>30</sup> Klemm and Klemm, *Stones and Quarries in Ancient Egypt*, 55.

minimize logistical problems.<sup>31</sup> They further investigated the area to the immediate east of both the Userkaf and Teti pyramids. It has been suggested that there was a fault line on the escarpment to the east of these pyramids where the desert ends and the agricultural land, that incorporates the modern village of Saqqara, begins.<sup>32</sup>



Figure 5: Satellite aerial view of Saqqara with escarpment area East of Teti and Userkaf markers (July 2007).

This hypothetical quarry location consists of angular rock debris, which is common for quarry locations in Egypt, as well as rocky outcrops which is consistent with quarrying activity. Furthermore, based on a satellite image there is clear evidence of a previously worked zone.<sup>33</sup> As

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<sup>31</sup> Klemm and Klemm, *The Stones of the Pyramids*, 13.

<sup>32</sup> Youssef et al, 1984, "Geological Studies on the Sakkara Area," Abbreviation. 4.

<sup>33</sup> Klemm and Klemm, *The Stones of the Pyramids*, 15.

the image below shows, the escarpment (indicated by a red polygon) is close to the Step Pyramid, the Pyramid of Userkaf, and the Pyramid of Teti. The distance from the Step Pyramid to the potential quarry site is approximately 600 meters, while the distance from the potential site to Userkaf and Teti is 460 meters and 650 meters respectively. Additionally, the analysis of the stones from the “Buried Pyramid” of Sekhemkhet also point to this area as a quarry site, as they share similar geochemical properties to the stones of the Step Pyramid.<sup>34</sup> While this is an estimated distance, it does show that if the core blocks came from this location, it would not have been a long distance, even to the “Buried Pyramid,” which is roughly one and a half kilometers from this hypothetical quarry site.

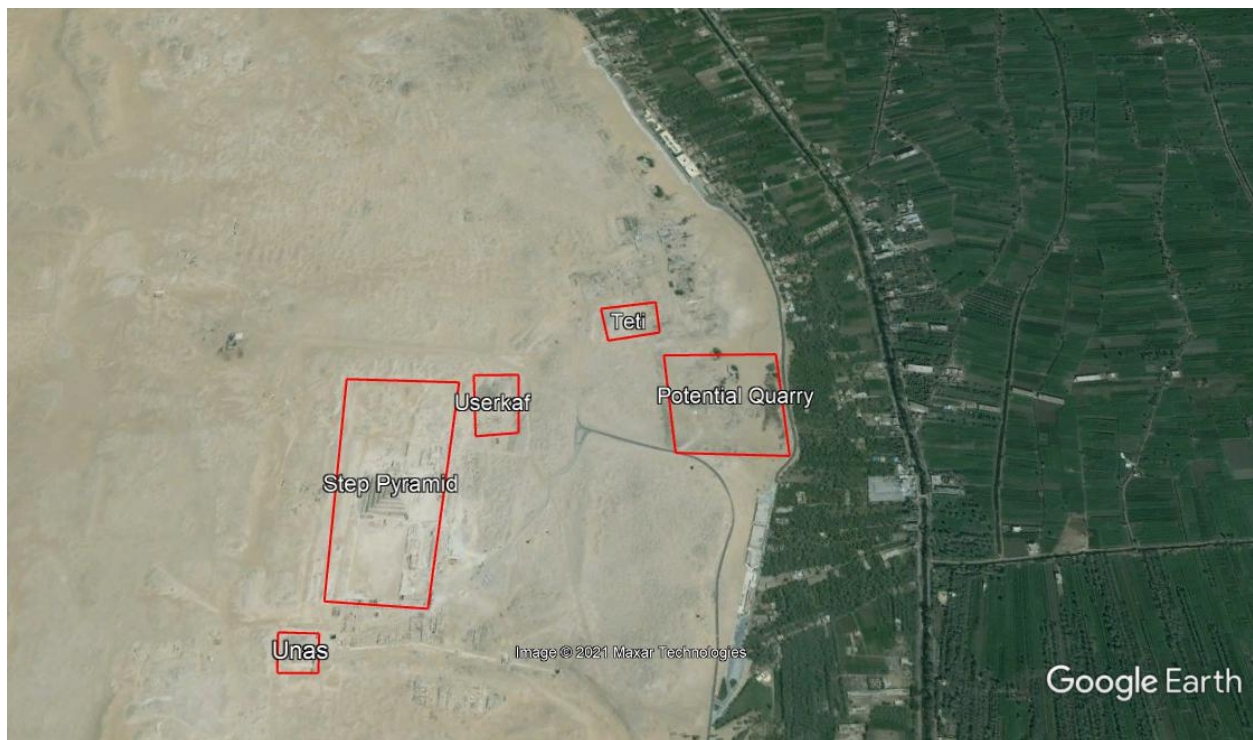


Figure 6: Satellite aerial view of Saqqara showing distances from pyramid sites to potential quarry location (July 2007).

<sup>34</sup> Klemm and Klemm, *The Stones of the Pyramids*, 30.



Figure 7: Top of Djoser's Shrine looking Northwest towards the Step Pyramid (photo by author).

The evidence presented above does not guarantee that the quarry location for these pyramid complexes were strictly located within the confines of the red polygon in Figure 6. As Figure 7 indicates, the core blocks at the Step Pyramid complex for both the pyramid and surrounding buildings were significantly smaller than the core blocks used to construct the three pyramid complexes at Giza. This allowed easier transportation of the limestone to the individual pyramid sites, especially since some of the stones appear to be small enough for individual transport.



## Abusir Quarry

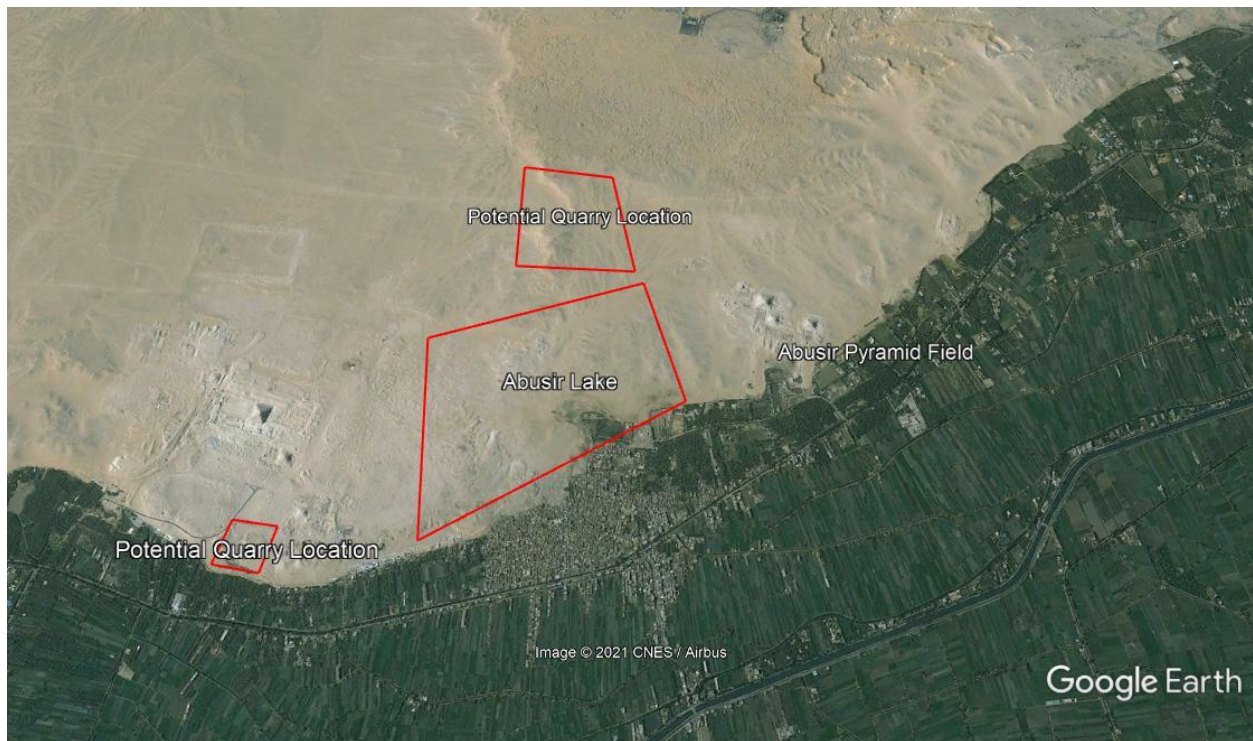


Figure 8: Potential Abusir Pyramid Quarry Location.

The quarries for the Abusir pyramids are mostly unknown.<sup>35</sup> Verner postulated that the potential quarry site lies to the west of Abusir Lake.<sup>36</sup> Klemm and Klemm investigated Verner's claim, but concluded that the stones from the potential quarry area and the pyramids of Abusir were completely different.<sup>37</sup> Additional research and investigation is needed, but it is possible that the builders quarried near Northern Saqqara where Djoser, Userkaf, and Teti's quarries were

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<sup>35</sup> Klemm and Klemm, *The Stones of the Pyramids*, 130.

<sup>36</sup> Miroslav Verner, "Abusir pyramids quarry and supply road," in Peter Janosi (ed), *Structure and significance: Thoughts on Ancient Egyptian architecture, Untersuchungen der Zweigstelle Kairo des Osterreichischen Archäologischen Institutes 25, Österreichische Akademie der Wissenschaften, Denkschriften 33*, (Wien, 2005), 534-536.

<sup>37</sup> Klemm and Klemm, *The Stones of the Pyramids* 133.

located.<sup>38</sup> Depending on the size of Abusir Lake during the Fifth Dynasty, quarrying at the Saqqara quarry does not make too much sense especially considering the potential quarry to the immediate north of the lake. Interestingly, the mortuary temple floor of the unfinished pyramid of Neferefre consists of blocks sharing the same geological aspects as the Menkaure quarry site.<sup>39</sup> As the Giza Plateau continued to be heavily used during the Fifth Dynasty, this is not a strange occurrence, but more research is needed to find the Abusir quarry site, and unfortunately the guesses by Verner and Klemm and Klemm are still speculation.

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<sup>38</sup> Klemm and Klemm, *The Stones of the Pyramids*, 130.

<sup>39</sup> Klemm and Klemm, *The Stones of the Pyramids*, 127.

## Saqqara

### Saqqara Before Djoser

With the establishment of the city of Memphis as the new capital during the First Dynasty, high ranking officials during this time began to construct their tombs at Saqqara. While this excludes First Dynasty pharaohs who decided to build their tombs at Abydos, roughly 500 kilometers south of Saqqara,<sup>40</sup> this new area appears as an obvious new cemetery due to its proximity to Memphis.



Figure 9: Satellite aerial view showing location of Early Dynastic Mastabas and the Memphis Open Air Museum (May 2021).

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<sup>40</sup> However, throughout most of the 20<sup>th</sup> century, there was an Egyptological debate on whether First Dynasty pharaohs built their tombs at both Abydos and Saqqara. See: Walter Emery, *Hor-aha*, (Cairo: Government Press, 1939); *Great Tombs of the First Dynasty Vol. II*, (Cairo: Government Press, 1954); *Great Tombs of the First Dynasty Vol. III*, (Cairo: Government Press, 1958); Hermann Kees, “Zur Problematik des archaischen Friedhofes bei Sakkara.” In *Orientalistische Literaturzeitung*, 52, (1957), 12–20; “Neues vom archaischen Friedhof von Sakkara.” *Orientalistische Literaturzeitung*, 54, (1959), 565–70; Barry Kemp, “Abydos and the royal tombs of the First Dynasty” *Journal of Egyptian Archaeology* 52, (1966); “The Egyptian 1st Dynasty royal cemetery” *Antiquity* 41, (1967); Jean-Phillipe Lauer, *Histoire monumentale des pyramides d’Égypte, Vol. 1*, (Cairo: Imprimerie de l’institute français d’archéologie orientale, 1962).

The distance between the Early Dynastic mastabas and the entrance of the modern Memphis Open Air Museum is roughly three and a half kilometers. While the ancient city of Memphis spanned more than the current location of the museum, Saqqara served as an obvious burial location, especially when the royal residence moved north to Memphis from Abydos. The area surrounding the Memphis Open Air Museum is part of the modern village Mit Rahina, and extensive excavations took place during the 1980s and the 2010s by the Egyptian Exploration Society and Ancient Egypt Research Associates (AERA).<sup>41</sup> Unfortunately, the excavations have not revealed any evidence of settlements dating to the Early Dynastic Period and only traces of Old Kingdom pottery has been uncovered, especially in the area of Kôm el-Fakhry.<sup>42</sup> Located to the immediate south of Mit Rahina, Kôm el-Fakhry has the oldest settlement remains in the Memphis region which date to the end of the First Intermediate Period and the Middle Kingdom.<sup>43</sup> David Jeffreys, who spent his career excavating and surveying the area of Memphis summarized the absence of strong evidence for an Old Kingdom or Early Dynastic settlement with the following: “the total absence so far of any settlement remains of the Early Dynastic and Old Kingdom periods (3000-2000 BC) could be explained by the rapid abandonment, erosion and silting up of these earlier parts of the town lying farther west.”<sup>44</sup> While there is no surviving evidence of an Early Dynastic or Old Kingdom town in the area to the immediate east of the Saqqara necropolis in Memphis/Mit Rahina, the emergence of royal mastabas in the First

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<sup>41</sup> David Jeffreys, *The survey of Memphis I: The archaeological report. Occasional Publications 3* (London: Egypt Exploration Society, 1985); Ana Tavares and Mohsen Kamel, “Memphis, a City Unseen: Joint AERA-ARCE-EES Beginners Field School Excavates Oldest Part of Egypt’s Ancient Capital City,” *AERAGram*, vol. 13 no. 1, (2012): 2-7.

<sup>42</sup> Barry Kemp, “A Note on Stratigraphy at Memphis,” in *JARCE*, 13, (1976): 26.

<sup>43</sup> Teodozja I. Rzeuska, “In Search of the Lost Memphis The Old Kingdom Settlement at Kôm el-Fakhry,” trans. K. Olchowska, in *Études et Travaux*, XXVI (2), (2016): 582.

<sup>44</sup> David Jeffreys, “Investigating Ancient Memphis, Pharaonic Egypt’s Northern Capital,” 26.

Dynasty, and pharaonic burials in the Second Dynasty at Saqqara prove the importance of the region. Why Memphis became the capital during the Early Dynastic Period<sup>45</sup> is beyond the scope of this research, but its establishment is crucial in understanding the history of Saqqara.

### First Dynasty

The First Dynasty mastabas located in what is considered North Saqqara have been thoroughly excavated and analyzed by Egyptologists since James Quibbel and Cecil Firth first excavated around the area at the turn of the 20<sup>th</sup> century.<sup>46</sup> Over two decades later, Walter Emery continued work in the area for close to forty years and helped establish a clearer timeframe for the First Dynasty mastabas.<sup>47</sup> The earliest mastaba at Saqqara is from the time of Aha<sup>48</sup>, and it is located near an indentation in the escarpment where the other mastabas were later built.<sup>49</sup> As Figure 10 below shows, this earliest Mastaba (S3357) sits at the edge of the escarpment of the

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<sup>45</sup> Wilkinson provides some potential reasons why Memphis was chosen as the capital. See: Wilkinson, *Early Dynastic Egypt*, 311.

<sup>46</sup> James Quibbel, *Excavations at Saqqara (1912–1914): Archaic Mastabas, Excavations at Saqqara 6* (Cairo: Institut français d'archéologie orientale, 1923).

<sup>47</sup> From his first publication in 1938 until his death in 1972, Emery extensively published about his excavations in Saqqara. See: Emery "Preliminary Report on the Excavations at North Saqqara 1964–5," in *Journal of Egyptian Archaeology*, 51, (1965): 3–8; "Preliminary Report on the Excavations at North Saqqara 1965–6," in *Journal of Egyptian Archaeology*, 52, (1966): 3–8; "Preliminary Report on the Excavations at North Saqqara 1965–6," in *Journal of Egyptian Archaeology*, 53, (1967): 141–145; "Tomb 3070 at Saqqara," in *Journal of Egyptian Archaeology*, 54, (1968): 11–13; "Preliminary Report on the Excavations at North Saqqara 1968–9," in *Journal of Egyptian Archaeology*, 56, (1970): 5–11; "Preliminary Report on the Excavations at North Saqqara 1969–70," in *Journal of Egyptian Archaeology*, 57, (1971): 3–13. More recently, Emery's excavations and field notes were reanalyzed by Rinus Ormeling. See: Rinus Ormeling, "Revisiting Walter B. Emery at Saqqara: Exploring Emery's excavations, a re-evaluation of his field notes (1946–1956)," in *Current Research in Egyptology 2016 Proceedings of the Seventeenth Annual Symposium*, eds. Julia M. Chyla, Joanna Dębowska -Ludwin, Karolina Rosińska-Balik, and Carl Walsh, (Oxford: Oxbow Books, 2017), 1-22.

<sup>48</sup> Emery, *Hor-Aha*.

<sup>49</sup> Jeffreys and Tavares, "The historic landscape of Early Dynastic Memphis," 147.

Saqqara plateau. Interestingly, the subsequent mastabas to the north and south of S3357 appear to use it as a reference point.<sup>50</sup>



Figure 10: Helck- Archaische Nekropole von Saqqara-Nord.<sup>51</sup>

<sup>50</sup> Jeffreys and Tavares, “The historic landscape of Early Dynastic Memphis,” 147.

<sup>51</sup> Wolfgang Helck, “Saqqara,” in *Lexikon der Ägyptologie Band V*, eds Wolfgang Helck and Eberhard Otto, (Wiesbaden: Otto Harrassowitz, 1984), 387-388.

## Second Dynasty

By the dawn of the Second Dynasty, Saqqara was firmly established as a royal cemetery for the newly unified Egyptian state. While Abydos was the final resting place for First Dynasty pharaohs, a shift emerged, bringing Memphis to the forefront of royal burials. This trend lasted for almost 700 years (with notable exceptions) as tombs became more elaborate and the superstructures evolved towards a pyramid shape. In combination with Second Dynasty pharaohs such as Hotepsekhemwy and Ninetjer.<sup>52</sup> other structures such as Gisir el-Midir, as well as the continuation of mastabas of high-ranking officials emerged. Why Saqqara became the premier necropolis during the Second Dynasty is speculative, but some Egyptologists argue that the royal court firmly moved to *Jnbw-Hd*, which necessitated the relocation of the royal necropolis from Abydos to Saqqara.<sup>53</sup> This is a plausible explanation, but it does not explain why Peribsen<sup>54</sup> and Khasekhemwy built their tombs at Abydos instead of Saqqara. For this reason, Wilkinson's argument cannot be the only one. However, any subsequent arguments are merely speculative because there is no evidence explaining why or how these shifts took place. Nevertheless, Saqqara became the main royal necropolis at the beginning of the Second Dynasty with Hotepsekhemwy

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<sup>52</sup> Günter Dreyer, "Aktuelles von der Grabanlage des Ninetjer," *Sokar*, 14, (2007): 6–7.

<sup>53</sup> Wilkinson, *Early Dynastic Egypt*, 121. He also argues that this move created the nome system as "a new mechanism for exercising control over the distant provinces of Upper Egypt. The experience of administering royal domains in the Delta provided a template, and the nome system was devised along the same lines." See Wilkinson *Early Dynastic Egypt*, 121.

<sup>54</sup> For an overview on Peribsen's tomb, see: Claudia Lacher-Raschdorff, *Umm El-Qaab VIII: Das Grab Der Peribsen*, (Wiesbaden: Harrassowitz Verlag, 2020).

Alongside Hotepsekhemwy, both Raneb and Ninetjer also constructed their tombs at Saqqara.<sup>55</sup> While the tomb of Raneb has yet to be found,<sup>56</sup> both the tombs of Hotepsekhemwy and Ninetjer have been excavated.<sup>57</sup> Their locations on the Saqqara plateau are interesting because they influenced later pharaohs such as Djoser and Unas, with the former constructing his complex to the immediate north of these tombs, and the later constructing his pyramid, pyramid temple, and causeway over the area of the Second Dynasty superstructures.<sup>58</sup> As for their locations during the Second Dynasty, they were roughly one kilometer to the south of the First Dynasty mastabas.

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<sup>55</sup> Alessandro Barsanti and Gaston Maspero, “Fouilles autour de la pyramide d'Ounas (1900-1901 / 1901-1902),” *Annales du Service des Antiquités de l'Égypte*, 3, 1-6, (1902): 182-190; Toby Wilkinson, “Dynasties 2 and 3” in *UCLA Encyclopedia of Egyptology*, (2014), <https://escholarship.org/uc/item/1hb1s3pn>. For the most comprehensive study on the tomb of Ninetjer, see: Claudia Lâcher-Raschdorff, *Das Grab des Königs Ninetjer in Saqqara : Architektonische Entwicklung frühzeitlicher Grabanlagen in Ägypten*, (Wiesbaden : Harrassowitz-Verlag, 2014).

<sup>56</sup>Lâcher-Raschdorff, “Plan 2.” Lâcher-Raschdorff postulates that Raneb’s tomb lies between the tombs of Hotepsekhemwy and Nineter. See: Figure 17.

<sup>57</sup> Barsanti, and Maspero, “Fouilles autour de la pyramide d'Ounas (1900-1901 / 1901-1902)” and Lâcher-Raschdorff, *Das Grab des Königs Ninetjer in Saqqara*.

<sup>58</sup>See Figure 17.



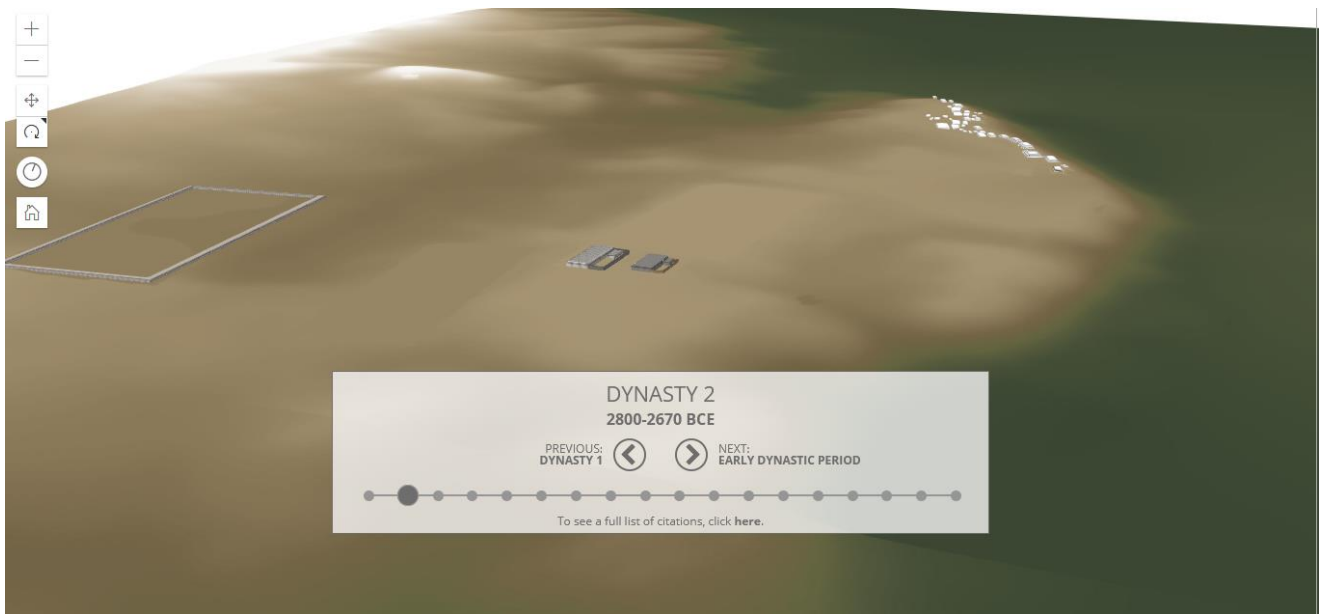


Figure 11: Sullivan-3D Saqqara Model: View of Dynasty 2 Royal Tombs.<sup>59</sup>

<sup>59</sup>Sullivan, <https://constructingthesacred.supdigital.org/cts/3d-saqqara-model-view-of-dynasty-2-royal-tombs>.



Figure 12: Satellite aerial view Second Dynasty tombs relative to Early Dynastic mastabas: looking North (October 2017).

The figures above represent two possibilities about the locations for the tombs of the first three Second Dynasty pharaohs. Interestingly, Sullivan ignores Lacher-Raschdorff's speculation about Raneb's tomb being placed in-between the tombs of Hotepsekhemwy and Ninetjer, but neither author explains why Hotepsekhemwy, Nintejer, and potentially Raneb built their tombs in these exact locations and not closer to the First Dynasty mastabas. It is possible that the depression near the current location of Unas' Valley Temple was a factor due to the yearly inundation which would have created a seasonal lake.<sup>60</sup> Creating a new dynastic cemetery away from the high-ranking officials of the First Dynasty may have also played a role; Hotepsekhemwy wanted to

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<sup>60</sup> Dean, *The Lake of Abusir, Northern Egypt*, 82.

establish his own lineage of tombs and not associate himself with people who were not pharaohs during the First Dynasty.

### Gisr El-Mudir

First observed by British Egyptologist John Shae Perring in the 19<sup>th</sup> century, the Gisr El-Mudir (Enclosure of the Boss/Chief) structure was an anomaly in Egyptology until a systematic excavation took place by the Scotland Survey Project in the 1990s.<sup>61</sup> Previous scholars thought the enclosure to be an unfinished pyramid complex,<sup>62</sup> but excavations revealed that there was no evidence of a pyramid inside the structure as the high resolution of the surveying would have revealed a large structure within the enclosure.<sup>63</sup> However, this did not rule out a possibility that Gisr El-Mudir was an unfinished pyramid complex or another type of funerary monument similar to those at Abydos and Hierakonpolis; Gisr El-Mudir was constructed with stone instead of mudbrick used at the other two sites.<sup>64</sup> Unfortunately these excavations failed to address the questions of the structure's purpose, its date of construction, and the owner. The modern-day

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<sup>61</sup> Ian J. Mathieson and Ana Tavares, "Preliminary Report of the National Museums of Scotland Saqqara Survey Project, 1990-91," in *The Journal of Egyptian Archaeology*, vol 79, (1993): 17-31; Ian Mathieson, Elizabeth Bettles, Joanne Clarke, Corinne Duhig, Salima Ikram, Louise Maguire, Sarah Quie and Ana Tavares, "The National Museums of Scotland Saqqara Survey Project 1993-1995," in *The Journal of Egyptian Archaeology*, vol 83, (1997), 17-53; Ian Mathieson, Elizabeth Bettles, Jon Dittmer and Colin Reader, "The National Museums of Scotland Saqqara Survey Project, Earth Sciences 1990-1998," in *The Journal of Egyptian Archaeology*, vol 85, (1999), 21-43; Ana Tavares 'The National Museum of Scotland Saqqara Survey Project', unpublished paper delivered at the Seventh International Congress of Egyptologists, Cambridge, September 1995.

<sup>62</sup> Daniel Wildung, 'Zur Deutung der Pyramide von Medum', in *Revue d'Égyptologie*, 21, (1969): 135-45; I.E.S Edwards, *The Pyramids of Egypt*, 93.

<sup>63</sup> Mathieson et al., "The National Museums of Scotland Saqqara Survey Project 1993-1995," 53.

<sup>64</sup> Mathieson et al., "The National Museums of Scotland Saqqara Survey Project 1993-1995," 53.

consensus is that the structure should be given a Second Dynasty<sup>65</sup> date due to the stone being “cruder and more rudimentary than in the Third Dynasty monuments.”<sup>66</sup> This use of stone potentially indicates that Gisir El-Mudir was a segue between the large scale use of mudbrick architecture during the First Dynasty and into the Second Dynasty, and the large scale use of stone that emerged with the construction of the Step Pyramid Complex of Djoser and the Unfinished Pyramid of Sekhemkhet. An additional possibility is that the structure was built by Khasekhemwy during the sixth Cattle Count due to the mention of a stone building named “the goddess endures” *qd in(r) mn-nrt*.<sup>67</sup> Similar to the reasons behind the Second Dynasty tombs, until more research is conducted, or textual evidence emerges supporting these claims, these hypotheses are speculative. Nevertheless, the establishment of Saqqara as a royal cemetery during the Second Dynasty ushered in a new age of construction with pyramid building.

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<sup>65</sup> Matheison et al., “The National Museums of Scotland Saqqara Survey Project 1993-1995,” 53; Wilkinson, *Early Dynastic Egypt*, 211.

<sup>66</sup> Wilkinson, *Early Dynastic Egypt*, 211.

<sup>67</sup> Matheison et al., “The National Museums of Scotland Saqqara Survey Project 1993-1995,” 53; Toby Wilkinson, *The Royal Annals of ancient Egypt: The Palermo Stone and its associated fragments*, (London: Keegan Paul International, 2000), 132.

## Third Dynasty

### Djoser and the Step Pyramid

With the construction of the Second Dynasty royal tombs, as well as the Gisir el-Mudir enclosure, Saqqara became the premier necropolis by the dawn of the Third Dynasty with the construction of Djoser's Step Pyramid Complex.<sup>68</sup> In order to accomplish this feat, Djoser, his architect Imothep, and the other engineers had numerous factors to consider. Where was the complex going to be built? What materials would be used to build it? How large will the complex be once it is finished? These questions were undoubtedly considered alongside many other factors and will be discussed below. By the time Djoser died, his funerary complex began a trend of building monumental funerary architecture that lasted throughout the entirety of the Old Kingdom.

At this point in Egyptian history, Djoser had two logical choices for building his tomb in Abydos and Saqqara. The tombs of First Dynasty pharaohs and the final two pharaohs of the Second Dynasty were located at Abydos, while Hotepsekhemwy, Raneb, and Ninetjer constructed their tombs at Saqqara. *Jnbw-Hd* as the administrative center of unified Egypt played a factor in the decision, but it is possible that building his tomb near his father Khasekhemwy's tomb at Abydos might have been tempting as well.<sup>69</sup> Ultimately Djoser chose Saqqara, but the

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<sup>68</sup> As mentioned above, the last two pharaohs of the Second Dynasty, Peribsen and Khasekhemwy, returned to Abydos for their tombs

<sup>69</sup>The chronology of pharaohs from the Second Dynasty into the Third Dynasty is debated amongst Egyptologists, which includes Djoser's father, who most say is Khasekhemwy. For the discussion on the succession of pharaohs into and throughout the Third Dynasty, see, Nabil Swelim, *Some problems on the history of the Third Dynasty Archaeological & Historical Studies 7*, (Alexandria: Archaeological Society of Alexandria, 1983); Nabil Swelim, "Rollsiegel, pierre de taille and an update on a king and monument list of the third dynasty," *The intellectual heritage of Egypt: studies presented to László Kákósy by friends and colleagues on the occasion of his 60th birthday*, ed. Ulrich Luft (Budapest: Chaire d'Égyptologie, 1992), 541-554; Andrzej Ćwiek, "History of the Third Dynasty: Another update on the kings and monuments," in *Chronology and Dynasties 2 and 3, archaeology in ancient Egypt (the third millennium B.C.)*, ed. Hana Vymazalová and Miroslav Bárta, (Prague: Czech Institute of

exact location of his pyramid complex on the Saqqara plateau is fascinating due to the surrounding topography and tombs.

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Egyptology, 2009), 90-93; Stephan Seidlmayer, “The Relative Chronology of Dynasty 3,” in *Ancient Egyptian Chronology*, eds. Erik Hornung, Rolf Krauss, David A. Warburton, (Leiden: Brill, 2006), and Toby Wilkinson, “Dynasties 2 and 3,” <https://escholarship.org/uc/item/1hb1s3pn>.

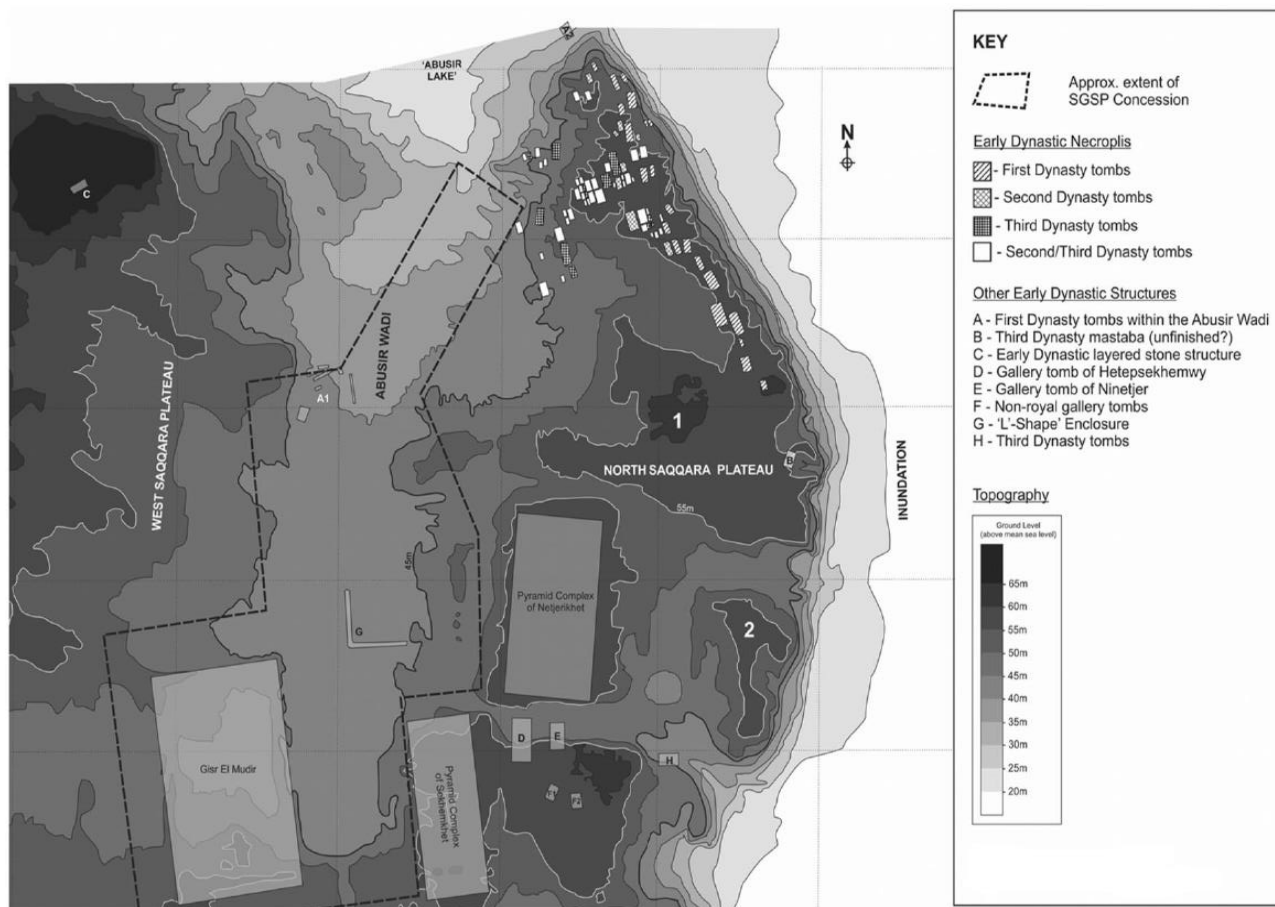


Figure 13: Reader- Map of North Saqqara.<sup>70</sup>

<sup>70</sup> Colin Reader, "An early dynastic ritual landscape at North Saqqara: An inheritance from Abydos?" in *The Journal of Egyptian Archaeology*, 103, (2017): Figure 1.

The most interesting aspect about Figure 13 is the location choice for the Step Pyramid complex. Abusir Lake flows into the Abusir Wadi, which during the inundation would have been filled completely with water. While much of the complex was built with local limestone, the wadi allowed for easier transport access of materials such as granite from Aswan or Tura limestone. Most likely the presence of a filled Wadi would have influenced the owner of Gisir El-Mudir as well. As the figure shows, with Gisir El-Mudir already prominently featured around the mouth of the wadi, there were not many other choices to build a complex in the area. Building further westward was a possibility, as well as near the area where Sekhemkhet would construct his pyramid complex immediately after Djoser's death. Instead, Djoser built between the First and Second Dynasty mastabas located on the northeastern escarpment of the plateau, and the Second Dynasty Royal tombs. By constructing the complex in this area, Djoser chose the most prominent part of Saqqara. However, during the construction of the tomb, it is possible that he affected the superstructures of the Second Dynasty tombs<sup>71</sup> as there were over 40,000 vessels<sup>72</sup> as well as reused mudbrick<sup>73</sup> in the galleries of the substructure of the complex. Van Wetering argues that Djoser possibly chose this exact location on the plateau because the central portion of "Memphis" had shifted further east to Mit Rahina, which would have made the Step Pyramid

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<sup>71</sup> Joris Van Wetering, "The Royal Cemetery of the Early Dynastic Period at Saqqara and the Second Dynasty Royal Tombs," in *Egypt at its origins: studies in memory of Barbara Adams. Proceedings of the international conference "Origin of the state: predynastic and early dynastic Egypt"*, Kraków, 28th August - 1st September 2002, eds Stan Hendrickx, R. F. Friedman, K. M. Ciałowicz, and M. Chłodnicki, (Leuven; Dudley, MA: Peeters, 2004), 1071-1072.

<sup>72</sup> Pierre Lacau and Jean-Philippe Lauer published these findings into three volumes: *La pyramide à degrés IV. Inscriptions gravées sur les vases. 1er fascicule*, (Fouilles à Saqqarah. Le Caire, 1959); *La pyramide à degrés IV. Inscriptions gravées sur les vases. 2me fascicule*, (Fouilles à Saqqarah. Le Caire, 1961); *La pyramide à degrés V. Inscriptions à l'encre sur les vases*, (Fouilles à Saqqarah. Le Caire, 1965). Lacau and Lauer note numerous times throughout these volumes that the names of pharaohs such as Ninetjer and Nwbnefer appear on many of the vessels that were initially excavated from the galleries underneath the superstructure of the Step Pyramid.

<sup>73</sup> Ana Tavares, "The Saqqara Survey Project," in *Proceedings of the seventh International Congress of Egyptologists: Cambridge, 3 - 9 September 1995*, ed. Christopher Eyre (Leuven: Peeters, 1998), 1137.



more visible to the citizens of Memphis.<sup>74</sup> While this is possible, especially since the owners of the First Dynasty mastabas were influenced by the elevation of the northwest escarpment of the plateau that overlooked Abusir Lake and potentially the settlement below,<sup>75</sup> there are more factors to consider, especially the presence of the Second Dynasty royal tombs.

The location of the Step Pyramid complex being in the immediate vicinity of the known tombs of Hotepsekhemwy and Ninetjer is important because it shows Djoser did not abandon the tradition of clustered royal burials.<sup>76</sup> Unless Djoser established a new cemetery, he was most likely going to place his tomb near other royal tombs. The combination of the geology of the Saqqara plateau, as well as the placement of the tombs of the Second Dynasty pharaohs influenced Djoser's decision.

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<sup>74</sup> Van Wetering, "The Royal Cemetery of the Early Dynastic Period at Saqqara and the Second Dynasty Royal Tombs," 1072.

<sup>75</sup>Jeffreys and Tavares, "The historic landscape of Early Dynastic Memphis 159.

<sup>76</sup>See Figure 14.

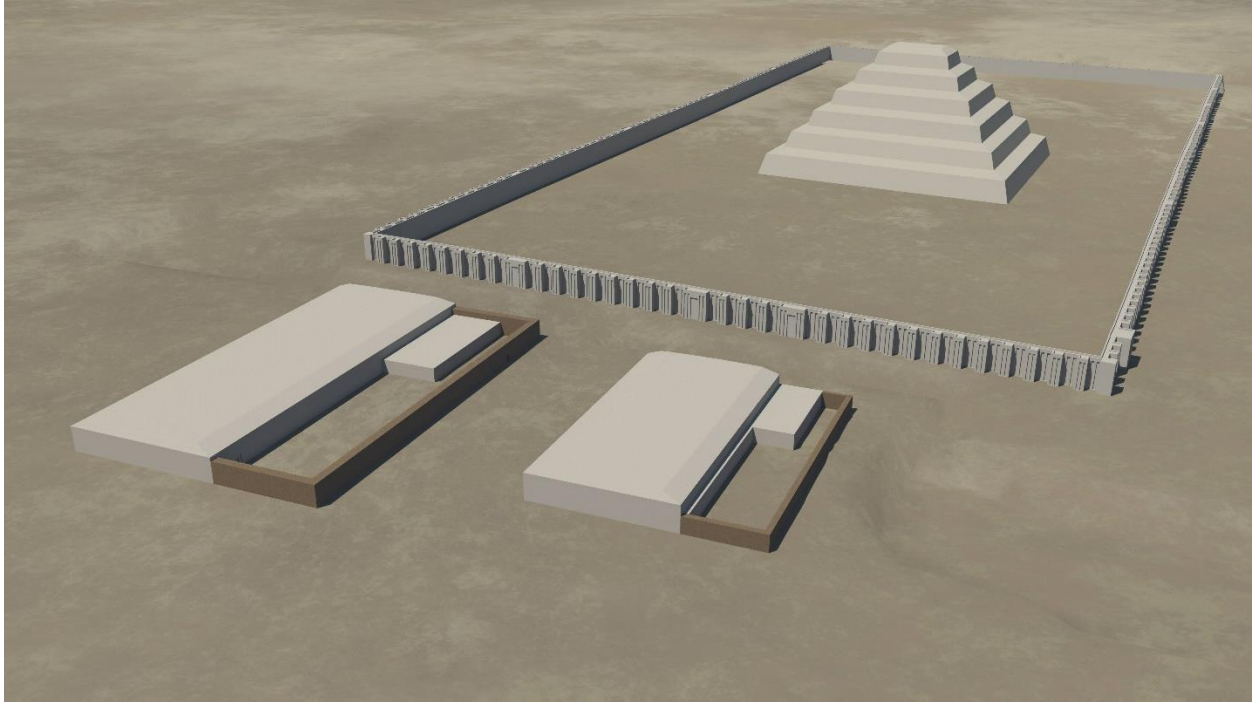


Figure 14: Sullivan-Reconstructed 3D Model of Hotepsekhemwy and Nintjer's tombs.<sup>77</sup>

The above reconstructed 3D model potentially shows what a nearly finished Step Pyramid complex looked like surrounded by the tombs of Hotepsekhemwy and Ninetjer. It is unknown how much of the earlier superstructures were damaged in the complex's construction, so Sullivan's model is most likely not accurate, but it shows the mindset of Djoser and his architects in building his complex around the tombs of his predecessors.

One of the final steps in completing the tomb was determining the scale of the finished complex. The original size of the Djoser complex has been debated amongst Egyptologists.<sup>78</sup> It is now commonly accepted that the complex did not start with a pyramid in its center, but a

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<sup>77</sup> Sullivan, [https://stacks.stanford.edu/file/druid:qn026tk6324/qn026tk6324\\_Dynasty2\\_royaltombsB.jpg](https://stacks.stanford.edu/file/druid:qn026tk6324/qn026tk6324_Dynasty2_royaltombsB.jpg)

<sup>78</sup> Rainer Stadlemann's article "Origins and Development of the Funerary Complex of Djoser" provides a comprehensive historiography on the subject that details the initial observations by Lauer, as well as theories proposed by Kaiser and Ricke. See: Stadlemann, "Origins and Development of the Funerary Complex of Djoser," 787-790.

mastaba. Over the course of construction, there were multiple building phases which transformed the mastaba in the center of the complex. After the completion of the first building phase the mastaba was enlarged into the current Step Pyramid state.<sup>79</sup> From the niched mastaba appearance of the enclosure wall, the presence of an enclosure wall, and the stone mastaba turned pyramid located in the center of the complex, this was a culmination of prior monumental royal architecture that existed in both Abydos and Saqqara during the First and Second Dynasties. In its finished state though, the Step Pyramid complex was an anomaly in royal funerary architecture. At thirty-seven acres,<sup>80</sup> it was by far the largest pyramid complex in Egypt and its innovative design was never replicated in the Old Kingdom.

### Sekhemkhet

As the successor of Djoser, Sekhemkhet also began construction on a step pyramid complex to the southwest of his father's complex.<sup>81</sup> While most likely unfinished, Sekhemkhet's pyramid complex is a direct imitation of Djoser. Its fragmented state is potentially due to Sekhemkhet's short reign of six years.<sup>82</sup> Although there is limited evidence surrounding his reign, it is possible why Saqqara was chosen as a site was the same as his father. However, the burial chamber inside the pyramid was unfinished and most likely never held the body of the deceased pharaoh.<sup>83</sup> The final resting place for Sekhemkhet is unknown to this day, but the

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<sup>79</sup> Staddlemann, "Origins and Development of the Funerary Complex of Djoser," 798.

<sup>80</sup> Lehner, *The Complete Pyramids*, 84.

<sup>81</sup> See Figure 13.

<sup>82</sup> Seidlmayer, "The Relative Chronology of Dynasty 3," 116-117.

<sup>83</sup> Lehner, *The Complete Pyramids*, 84; Wilkinson, *Early Dynastic Egypt*, 218.

existence of his pyramid complex at Saqqara indicates that the site was still going to be used as the royal cemetery into the Third Dynasty.

## Fifth Dynasty

### Userkaf

For 100 years after the reign of Sekhemkhet,<sup>84</sup> Saqqara was abandoned as the de-facto royal cemetery. Each site will be discussed at length later in this study, but the pharaohs at the end of the Third Dynasty until the beginning of the Fifth Dynasty felt the need to establish new royal cemeteries. Userkaf, who is traditionally known as the founder of the Fifth Dynasty, returned to Saqqara and built his tomb to the immediate northeast of Djoser's Step Pyramid. At first glance, the choice for this location is a mystery. His predecessors built at South Saqqara and Giza and Userkaf's own sun temple is a little over three kilometers to the north of his pyramid.<sup>85</sup> Bárta and Verner attribute this location choice to a tumultuous and uneasy transition of power lasting from Menkaure to Userkaf; Userkaf wanted a harkening back to a time of better stability and chose to be placed near the Step Pyramid.<sup>86</sup> Bárta argues this by analyzing Userkaf's Horus name *Jry-Ms't* (The One who Does/Performs Maat). According to Bárta, this name implies that the era prior to Userkaf was disorganized and Userkaf would reestablish Maat. By placing his pyramid next to Djoser's, Userkaf was legitimizing his rule by linking himself to the founder of the Old Kingdom.<sup>87</sup> Bárta's explanation is believable and might be correct. However, the

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<sup>84</sup>Hornung, Krauss, and Warburton, (2006), 490-491.

<sup>85</sup> Using data from Google Earth, the exact distance through the desert from the Sun Temple to the approximate center of the pyramid is 3.49 kilometers.

<sup>86</sup> See: Miroslav Verner, *Abusir: The Necropolis of the Sons of the Sun*, (Cairo: The American University in Cairo Press, 2017), 25-27, 91; Bárta, *Analyzing Collapse: The Rise and Fall of the Old Kingdom*, 101-102.

mindset amongst the Czech Egyptologists that there must have been a tumultuous transition of power is a bit problematic because of the fragmentary evidence that creates an unclear history of the transition from the Fourth Dynasty into the Fifth Dynasty.

Additionally, Bárta's correlates Userkaf's pyramid placement to Sneferu's Bent Pyramid. He notes that Userkaf's pyramid "precisely aligned with that of Shepseskaf's tomb, and with Sneferu's Bent Pyramid at Dahshur."<sup>88</sup> This correlation is incorrect. Modern Egyptologists have luxuries such as satellite imagery in seeing the overall landscape of an area in ways the ancient Egyptians were unable to see. Figures 15 and 16 clearly show that Userkaf's pyramid was not precisely aligned with either Shepseskaf's mastabas or the Bent Pyramid. Instead, the only mortuary complex that Userkaf aligns with is the later Sixth Dynasty king Teti. This makes Bárta's argument that there was a link between Userkaf and Sneferu because of their pyramid locations a bit problematic. Another piece of evidence Bárta includes is the similarities in Horus name between Userkaf and Sneferu. As mentioned above, Userkaf's Horus Name was *Jry-Mꜣꜥt* (The one who performs Maat) while Sneferu's Horus name was *Nb-Mꜣꜥt* (The Lord of Maat). While no other known pharaoh between the reigns of Sneferu and Userkaf had known Horus names incorporating Maat, it is difficult to conclude that this proved a clear link between the two.

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<sup>87</sup> Bárta, *Analyzing Collapse: The Rise and Fall of the Old Kingdom*, 109.

<sup>88</sup> Bárta, *Analyzing Collapse*, 109.



Figure 15: Alignment of Userkaf’s Pyramid with Teti Pyramid.<sup>89</sup>

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<sup>89</sup> Shepseskaf’s mastabas is about 0.3 kilometers to the west on the longitudinal scale. The exact eastern longitude that I use for the “center of his pyramid” is 31°13’08.00’E.



Figure 16: Satellite aerial view with line showing Userkaf to Bent Pyramid (December 2013).<sup>90</sup>

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<sup>90</sup> The Bent Pyramid is roughly 0.8 kilometers to the west of the longitudinal line in the center of Userkaf's pyramid

## Unas

By the time Unas began constructing his pyramid complex to the southwest of Djoser's Step Pyramid, pharaohs constructed pyramid complexes outside of the Saqqara/Abusir/South Saqqara region at Zawiyet el-Aryan, Meidum, Dahshur, Giza, and Abu Rawash. Unas could have chosen any of these sites, or even continued the Fifth Dynasty royal cemetery at Abusir. Instead, not only did he choose the Saqqara plateau, but he built on top of the Second Dynasty tombs of Hotepsekhemwy and Ninetjer. Why did Unas return to Saqqara? Why did he build next to Djoser instead of near his predecessor Djedkare Isesi at South Saqqara? Why did he build over the tombs of long deceased pharaohs? These questions are among the numerous that can be asked about the location choice of Unas's pyramid, but each one only tells a small part of why the decision was made to construct a pyramid near the Step Pyramid.

Unas's return to Saqqara is not unique when considering his immediate predecessors Menkauhor and Djedkare Isesi. While their relationship to Unas (and even each other) are not fully known,<sup>91</sup> both abandoned Abusir which had been the royal cemetery for roughly eighty years. Menkauhor was the first to leave Abusir and is most likely the owner of Lepsius Pyramid XXIX located to the northwest of Userkaf's tomb,<sup>92</sup> while Djedkare built his pyramid complex further south on the Saqqara plateau in the modern-day area of South Saqqara.<sup>93</sup> Unas simply continued

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<sup>91</sup> Verner, *Abusir: The Necropolis of the Sons of the Sun*, 111; Bárta, *Analyzing Collapse*, 149.

<sup>92</sup> The last systematic excavation of the so-called "Headless Pyramid" took place by Zahi Hawass in 2008. No academic publications emerged from this excavation by Hawass or his team, but three publications about Menkauhor have been written since the excavation. See: Hana Vymazalová and Filip Coppens, „König Menkauhor. Ein kaum bekannter Herrscher der 5. Dynastie“, in *SOKAR*, 17/2, (2008): 32–39; Hana Vymazalová and Filip Coppens, “Hledá se Menkauhor,” in *Pražské egyptologické studie*, VI, (2009): 76-80; Miroslav Verner, “Mysterious Menkauhor,” in *Guardians of Egypt: Studies in Honor of Zahi Hawass, Vol. III*, eds. Janice Kamrin, Miroslav Bárta, Salima Ikram, and Mark Lehner, (Prague: Czech Institute of Egyptology, 2021), 1615-1627.

<sup>93</sup> His pyramid complex will be discussed down below in the South Saqqara Section, but it should be noted here that the distance from Djedkare Isesi's pyramid complex to the central point of Saqqara (Djoser's pyramid) is less than Djoser's pyramid to the Abusir pyramid field.



the tradition of his immediate predecessors, but he did not erect his pyramid complex near either one. His reasoning is unknown, but it is possible that he was not directly related to either Menkauhor or Djedkare. Instead, Unas situated his pyramid and its complex in-between the Step Pyramid and the Buried Pyramid of Sekhemkhet and on top of the tombs of the Second Dynasty pharaohs.

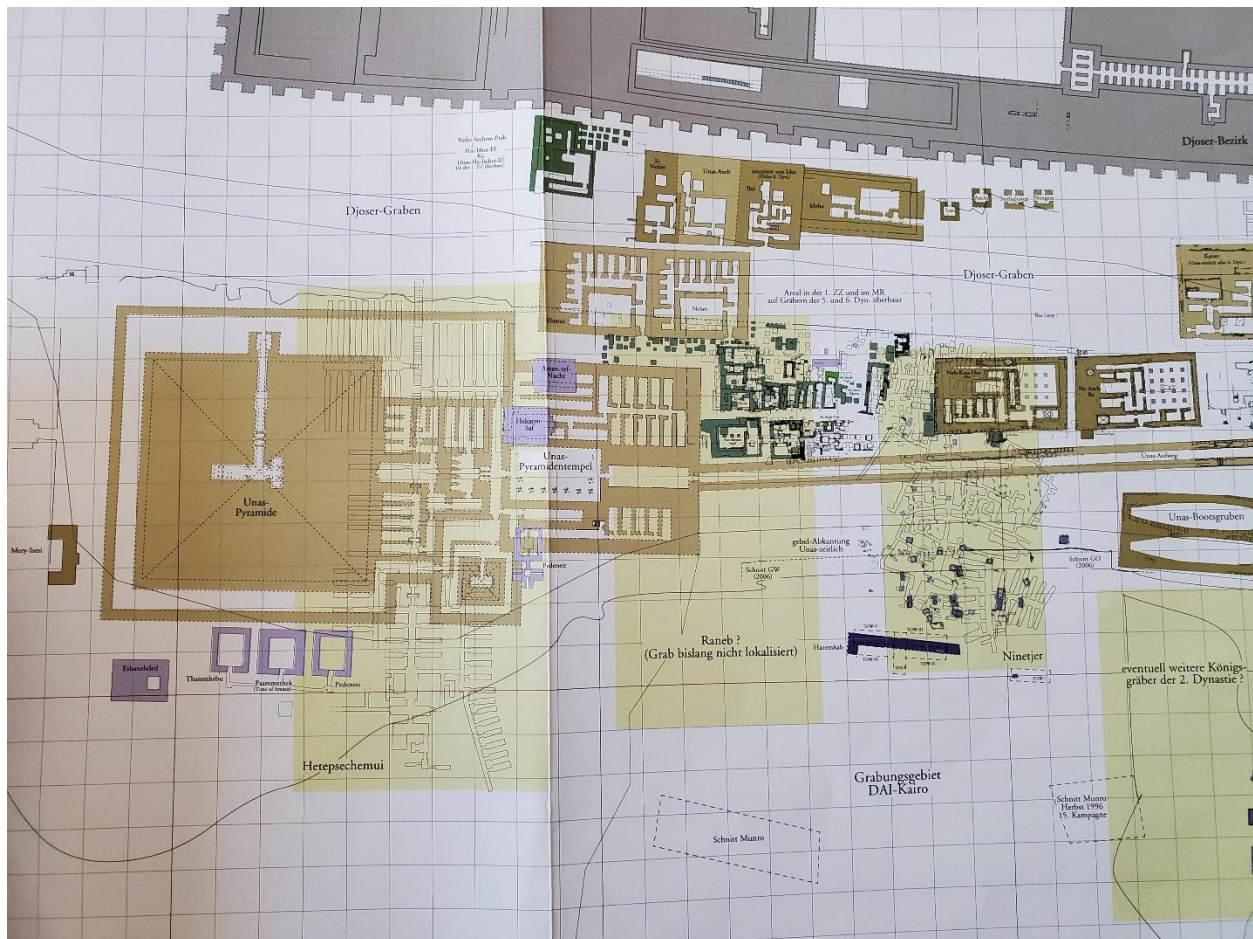


Figure 17: Lacher-Raschdorff-Lageplan, Saqqara-Nord, Unas-Aufweg<sup>94</sup>

<sup>94</sup> Lacher-Raschdorff, *Das Grab des Königs Ninetjer in Saqqara*, Plan 2.

This plan of Northern Saqqara shows the Unas Pyramid Complex invading the area of the tombs of Hotepsekhemwy, Ninetjer, and possibly Raneb. The pyramid itself, alongside the pyramid temple cover almost the entire northern half of Hotepsekhemwy's tomb, while a part of the causeway interferes with Ninetjer. It is clear by the time Unas began construction on his pyramid complex, that the superstructures of these tombs were probably destroyed. Unas's pyramid location is also important because of the 750-meter causeway that stretches east from the pyramid temple to the valley temple. The causeway sits on top of a natural wadi which provided a natural route for a harbor at the entrance of the valley temple.<sup>95</sup> As there was already precedent for this type of harbor at Giza, Unas was influenced by his surrounding topography in determining location for his pyramid complex.

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<sup>95</sup> Lehner, *The Complete Pyramids*, 155.

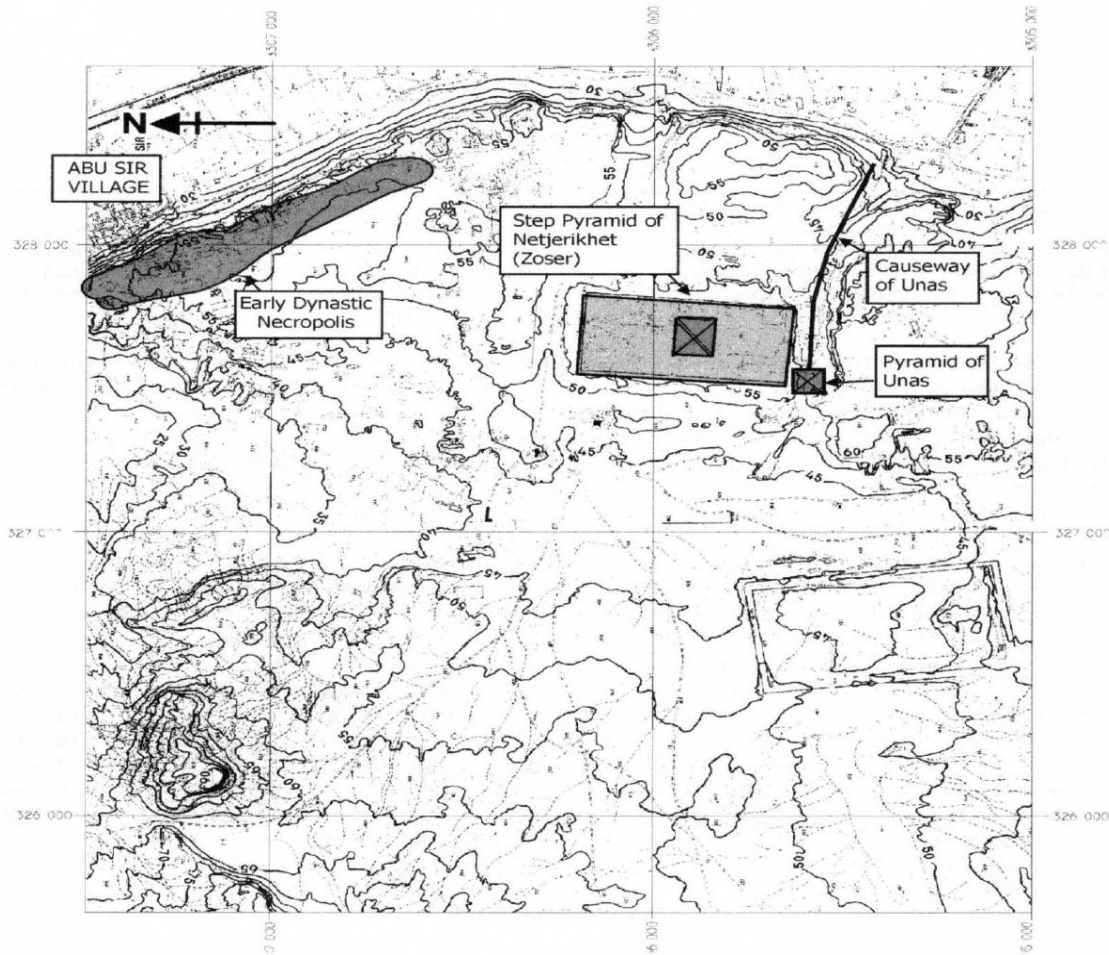


Figure 18: Reader-Map of North Saqqara showing the Step Pyramid of Netjerikhet (Zoser), the pyramid and causeway of Unas, the Early Dynastic necropolis and the modern village of Abusir.<sup>96</sup>

One final aspect of Unas’s pyramid needs to be discussed in terms of the northeast-southwest corner correlation between the Saqqara pyramids. The northeast corner of Teti’s pyramid lines up with the southwest corner of Userkaf’s pyramid. This corner of Userkaf’s pyramid lines up with the southwest corner of Djoser’s pyramid, which lines up with the southwest corner of Unas’s pyramid. Finally, Unas’s pyramid lines up to the northeast of

<sup>96</sup> Reader, “On Pyramid Causeways,” 64.

Sekhemkhet's pyramid.<sup>97</sup> These correlations are seen earlier at Giza and Abusir,<sup>98</sup> and most likely are critical in determining locations for constructing a pyramid complex. However, this still does not answer the question to why Unas and his architects chose the location they did to build his pyramid complex. If the NE-SW corner correlation was important to Unas, he had the area where Teti built his pyramid complex immediately after Unas. The only plausible explanation is that Unas wanted to make symmetry between his pyramid complex and Userkaf's complex sitting on the NE and SW corners of the Step Pyramid complex.<sup>99</sup>

This discussion of Unas's reign puts the questions asked above into a larger context. Most likely, it was a combination of Unas wanting to associate himself with his predecessors Userkaf and Menkauhor, who also built their pyramid complexes at Saqqara,<sup>100</sup> as well as wanting to associate himself with his more distant predecessors in Djoser, Sekhemkhet, and possibly Hotepsekhemwy and Ninetjer. On a practical level though, there was not much more room in the area around the Step Pyramid to construct a large pyramid complex. If Saqqara was the only place Unas wanted to build, he had limited options. Ultimately though, the answers to these questions are completely unknowable due to a lack of surviving evidence and Egyptologists can only speculate why these decisions were chosen.

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<sup>97</sup>Mark Lehner, "A contextual approach to the Giza pyramids," *Archive für Orientforschung*, (1985): 143.

<sup>98</sup>Lehner, "A contextual approach to the Giza pyramids," 143.

<sup>99</sup> Lehner, *The Complete Pyramids*, 154.

<sup>100</sup> Userkaf returned after 100 years and Menkauhor abandoned Abusir.

## Abusir

Since 1960, the Czech Institute of Egyptology at the Faculty of Arts, Charles University in Prague has led excavations at the site of Abusir.<sup>101</sup> Their extensive research on an Old Kingdom pyramid site that is not as well-known as Giza or Saqqara has provided a plethora of information on the timeline ranging from the end of the Fourth Dynasty and throughout the Fifth Dynasty.<sup>102</sup> By using their work, as well as other scholar's contributions, there will be a clearer understanding of why Abusir became a royal necropolis during the Old Kingdom. To properly showcase these facts, the history of Abusir before the Fifth Dynasty needs to be considered because the presence of Archaic tombs in the area demonstrates that the site already had a history as a cemetery. A combination of Abusir's relative location to both Saqqara and Memphis, as well as the existence of Abusir Lake both provide critical evidence for potential reasons of Abusir's existence as a pyramid field. In addition, Fifth Dynasty pharaohs constructed sun temples at Abusir and the nearby site of Abu Ghurab.<sup>103</sup> Their coordination with the city of Heliopolis to the east also factors into the equation for location.

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<sup>101</sup> Jaromir Krejčí, *Abusir XVIII: The Royal Necropolis in Abusir* (Prague: Czech Institute of Egyptology, Faculty of Arts, Charles University in Prague, 2010), 14.

<sup>102</sup> In addition to various publications by faculty, the Czech Institute has published twenty-eight volumes of the *Abusir* series since 1982 detailing excavations at Abusir. For an overview of the work done by the Czech Mission, see Miroslav Bárta, Vladimír Brůna, Ladislav Bareš, Jaromír Krejčí, Veronika Dulíková, Martin Odler, and Hana Vymazalová, "Map of archaeological features in Abusir," in *Prague Egyptological Studies*, vol 24, (2020): 7-34.

<sup>103</sup> Massimiliano Nuzzolo, *The Fifth Dynasty Sun Temples Kingship, Architecture and Religion in Third Millennium BC Egypt*, (Prague: Czech Institute of Egyptology, Faculty of Arts, Charles University in Prague, 2018).

## Abusir/Abu Ghurab area prior to Fifth Dynasty

Led by Cairo University in the late 1980s and early 1990s, Ali Radwan published numerous articles detailing the discovery of a First Dynasty cemetery north of Niuserre's Sun Temple at Abusir/Abu Ghurab.<sup>104</sup> Two of these mastabas, (IV and XIV), contained sealings depicting the names of Den and Qa'a respectively.<sup>105</sup> While not clustered within the area that became the Abusir pyramid field, it is relatively close to the future pyramid site and shows that burial activity took place in the surrounding area hundreds of years before any of the Fifth Dynasty pharaohs built their funerary monuments. At further glance, the site for these First Dynasty tombs near the future location of Niuserre's Sun Temple is not surprising due to their proximity to the First Dynasty mastabas found in northern Saqqara.

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<sup>104</sup> Ali Radwan, "Ein Treppengrab der 1. Dynastie aus Abusir," in *MDAIK* 47, (1991) 305-308; Ali Radwan, "Recent Excavations of the Cairo University at Abusir, "A Cemetery of the First Dynasty,"" in *Gedenkschrift für Winfried Bárta: ꜥtp dj n ꜥzj. Münchener Ägyptologische Untersuchungen 4*, eds. Dieter Kessler, and Regine Schulz (Frankfurt am Main: Berlin, 1995), 311-314.; Ali Radwan, "Some Remarks Concerning the Superstructure of Some Mastabas at Abusir," in *Egyptology at the dawn of the Twenty-first Century : proceedings of the Eighth International Congress of Egyptologists Volume 1*, ed. Zahi Hawass, (Cairo: The American University in Cairo Press, 2000), 377-379.

<sup>105</sup> Radwan, "Some Remarks Concerning the Superstructure of Some Mastabas at Abusir," 377.

## Userkaf's Sun Temple

It is long established amongst Egyptologists that Userkaf was the immediate successor to Shepseskaf and began a new dynasty.<sup>106</sup> However, Userkaf did not build his pyramid at Abusir/Abu Ghurab. Instead, the pyramid was built to the immediate northeast of Djoser's Step Pyramid at Saqqara.<sup>107</sup> Nevertheless, Userkaf began a tradition that lasted throughout the Fifth Dynasty when he decided to construct a sun temple a little over three kilometers to the north of his pyramid. The creation of a sun temple by a pharaoh who did not have the name of Ra in his prenomen is an interesting facet that will be discussed below. Furthermore, the location of Userkaf's sun temple at the modern site of Abusir/Abu Ghurab is of interest as well.

The correlation between the three pyramids at Giza and Heliopolis is an important factor to consider when looking at the pyramids and sun temples of Abusir/Abu Ghurab. Verner argues the following about Userkaf's location choice.

By choosing the area of Abusir, specifically the area close to Abu Ghurab, and building there a sun temple, Userkaf probably wanted not only to show his relationship to the solar cult but also to provide the opportunity for his successors to build their pyramids there and to orientate them to Heliopolis in a symbolic way, similar to what Khufu and Khafre had done in Giza<sup>108</sup>

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<sup>106</sup> Two ancient sources, The Turin Canon and Manetho, both mention a pharaoh which is Hellenized as Thamphthis. No sources from the Old Kingdom have been found to corroborate this pharaoh. In her book, Vera Blumenthal gives a table with a chronological list of Fourth Dynasty pharaohs mentioned by every book of ancient Egypt history and chronology from 1965-2011. Out of the nineteen books listed, only four of them mention Thamphthis. One of the books, by Michael Höveler-Müller, states that Thamphthis was another name for Khentkaus. For a more detailed discussion, see: Vera Blumenthal *Das ägyptische Alte Reich: Diskussionen zur „Ereignisgeschichte“ der 3. bis 6. Dynastie*, (Wiesbaden: Harrassowitz Verlag, 2019), 88-89; Michael Höveler-Müller, *Am Anfang war Ägypten: die Geschichte der pharaonischen Hochkultur von der Frühzeit bis zum Ende des Neuen Reiches ca. 4000-1070 v. Chr.*, (Mainz: Verlag Philipp von Zabern, 2005), 88-89.

<sup>107</sup> This is discussed on pages 64-65.

<sup>108</sup> Verner, *Abusir: The Necropolis of the Sons of the Sun*, 63.

Verner's argument is plausible, but the main aspect of this quote has been challenged by a variety of scholars, and most recently by Nuzzolo in numerous publications.<sup>109</sup> The crux of the argument for the importance of Heliopolis as a cultic hub during the Old Kingdom stems from limestone fragments associated with Djoser.<sup>110</sup> Nuzzolo and Krejčí notes that other scholars stated that Heliopolis was associated more with Atum or the Ennead instead of Ra during the Old Kingdom.<sup>111</sup> This association is important because Ra is incorporated into the prenomen of many of the Fourth and Fifth Dynasty pharaohs. Therefore, according to Egyptologists such as Helck,<sup>112</sup> Raue<sup>113</sup>, and Morenz,<sup>114</sup> the connection between Heliopolis and Abusir and Giza is not as clear as originally thought. However, as Nuzzolo and Krejčí correctly point out, the distinction between Atum and Ra is not completely black and white and there are numerous layers of

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<sup>109</sup> See: *The Fifth Dynasty Sun Temples Kingship, Architecture and Religion in Third Millennium BC Egypt*, 477-490; Massimiliano Nuzzolo and Jaromir Krejčí, "Heliopolis and the Solar Cult in the Third Millennium B.C.," *Ägypten und Levante*, 27, (2017), 357-379; Masimiliano Nuzzolo, "Royal Authority, Divine Legitimization. Topography as an Element of Acquisition, Confirmation and Renewal of Power in the Fifth Dynasty," in *Royal versus divine authority: acquisition, legitimization and renewal of power, Prague, June 26-28, 2013. 7. Symposium zur ägyptischen Königsideologie / 7th symposium on Egyptian royal ideology*, eds. Filip Coppens, Jiří Janák, and Hana Vymazalová, (Wiesbaden: Harrassowitz, 2015), 289-304.

<sup>110</sup> These limestone reliefs were inscribed with Djoser's prenomen Netjerykhet. For a more thorough discussion, See: Raymond Weill, "Monuments nouveaux des premières dynasties. Un temple de Noutrikha-Zosir à Héliopolis," in *SPHINX*, 15, (1911): 9-26; William Stevenson Smith, *A history of Egyptian sculpture and painting in the Old Kingdom*, (Oxford: Oxford University Press 1946); Dietrich Raue, *Heliopolis und das Haus des Re: eine Prosopographie und ein Toponym im Neuen Reich*, (Berlin: ADAIK, 1999); Ludwig Morenz, "Die Götter und ihr Redetext: Die älteste belegte Sakral-Monumentalisierung von Textlichkeit auf Fragmenten der Zeit des Djoser aus Heliopolis," in *5. Ägyptologische Tempeltagung: Würzburg, 23.26. September 1999, Akten der Ägyptologischen Tempeltagungen, Teil 3*, H. Beinlich, J. Hallof, H. Hussy, and Ch. Von Pfeil (eds), (Wiesbaden: Harrassowitz 2002). 137-158; and Richard Bussman, *Die Provinztempel Ägyptens von der 0. bis zur 11. Dynastie: Archäologie und Geschichte einer gesellschaftlichen Institution zwischen Residenz und Provinz*, (Leiden: Brill 2010).

<sup>111</sup> Nuzzolo and Krejčí, "Heliopolis and the Solar Cult in the Third Millennium B.C.," 357.

<sup>112</sup> Wolfgang Helck, "Heliopolis und die Sonnenheiligtümer," in *Sundries in honour of Torgny Säve-Söderbergh*, (Stockholm: Uppsala, 1984), 67.

<sup>113</sup> Raue, *Heliopolis und das Haus des Re*. 81-82.

<sup>114</sup> Morenz, "Die Götter und ihr Redetext: Die älteste belegte Sakral-Monumentalisierung von Textlichkeit auf Fragmenten der Zeit des Djoser aus Heliopolis," 142



complexity.<sup>115</sup> In his highly influential book *Kingship and the Gods*, Henri Frankfort addressed this issue decades before any of the Egyptologists mentioned above.

Attempts to treat Re and Atum, not as different aspects of a single god manifest in the sun, but as two deities who were originally distinct, rely on purely hypothetical constructions and must do so since the earliest texts do not allow the distinction to be made. This applies to Sethe, *Urgetschichte*, 99. 94-95, as well as to Junker, *Der sehende und blinde Gott*, pp. 29 ff.m 39, *et passim*. Sethe states that the sun's old nontheological name was Re but that he was identified at Heliopolis with a local god Atum, who was not, however, like the old local gods "natürlichen Ursprungs," but a product of theological speculation . . . It is significant that Atum's name is never combined with that of any other god but Re.<sup>116</sup>

The syncretism of deities, especially Ra, lasted throughout ancient Egyptian history with Amun-Ra and Ra-Horakhty being the two most well-known examples. For Ra and Atum, the potential syncretism appears multiple times throughout the Pyramid Texts.<sup>117</sup> As Frankfort suggested, the distinction between the two is a modern hypothetical construct, especially when dealing with Old Kingdom sources. If Old Kingdom ancient Egyptians saw both Ra and Atum as representing the same aspects of the solar cult, then the lack of Ra appearing at Heliopolis during this time period is a moot point. Interestingly, there is a spell from Unas that mentions Ra within the confines of Heliopolis.

There is a Heliopolitan in Unis, god: your Heliopolitan is in Unis, god. There is a Heliopolitan in Unis, Sun: your Heliopolitan is in Unis, Sun. The mother of Unis is a Heliopolitan, the father of Unis is a Heliopolitan, and Unis himself is a Heliopolitan, born in Heliopolis when the Sun was above the Dual Ennead and above the subjects, Nefertem without peer, heir of his father Geb.<sup>118</sup>

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<sup>115</sup> Nuzzolo and Krejčí, "Heliopolis and the Solar Cult in the Third Millennium B.C," 375.

<sup>116</sup> Henri Frankfort, *Kingship and the Gods A Study of Ancient Near Eastern Religion as the Integration of Society & Nature*, (Chicago: The University of Chicago Press, 1948), 379.

<sup>117</sup> The translation of these attestations is crucial. James Allen translates *Rc Jtm* as Sun Atum, but it can conceivably be translated as Ra Atum as well. The lack of a determinative indicating that the sun hieroglyph represents Ra is not concerning because the subsequent name for Atum does not have one either. For Allen's full translation of the passages mentioning "Sun Atum," see: James Allen, *The Ancient Egyptian Pyramid Texts*, (Atlanta: The Society of Biblical Literature, 2005), 32-33.

<sup>118</sup> Allen, *The Ancient Egyptian Pyramid Texts* 58. Taken from PT 307.

Allen also notes that Heliopolis was the cult center of Atum and Ra and that both were called the Heliopolitan.<sup>119</sup> If both deities are, at times, associated with Heliopolis in the Pyramid Texts, and it is possible for both to be interchangeable during the Old Kingdom, then the arguments against the correlation between Giza/Abusir and Heliopolis are insignificant.

A second potential factor for the location choice of Userkaf's sun temple, as well as the sun temples and pyramids of his successors, is a line of sight between Abusir/Abu Ghurab and Heliopolis. After Goedicke and Lehner argued for the direct line sight between Heliopolis and Giza,<sup>120</sup> David Jeffreys went one step further by comparing the distances of Heliopolis to the other Old Kingdom pyramid sites besides Meidum.<sup>121</sup> In the case of Abusir/Abu Ghurab, Jeffreys argues that the Sun Temples of Userkaf and Niussere were visible to Heliopolis in ancient times, but the Abusir pyramids, as well as the pyramids at Saqqara and Dahshur, were obstructed by the Mokkatam hills where the Citadel sits today.<sup>122</sup> Verner initially argued in favor of an Abusir and Heliopolis connection when he stated that the north west corners of the pyramids of Sahure, Neferirkare, and Neferefre precisely aligned with Heliopolis,<sup>123</sup> but he later retracted his argument after he realized the presence of the Mokattam hill.<sup>124</sup>

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<sup>119</sup> Allen, *The Ancient Egyptian Pyramid Texts*, 433.

<sup>120</sup> See Heliopolis Connection pages 155-157.

<sup>121</sup> Jeffreys "The Topography of Heliopolis and Memphis: Some Cognitive Aspects," 65-71.

<sup>122</sup> Jeffreys, "The Topography of Heliopolis and Memphis: Some Cognitive Aspects," 66.

<sup>123</sup> Verner, *The Pyramids*, 302-303.

<sup>124</sup> Miroslav Verner and Vladimir Bruna, "Why was the Fifth Dynasty cemetery founded at Abusir?" in *Old Kingdom, New Perspectives: Egyptian Art and Archaeology 2750-2150 BC*, eds. Nigel Strudwick, and Helen Strudwick, (Oxford: Oxbow Books, 2011), 289.

This leads to a case made by Nuzzolo after he reviewed all the information provided in the paragraph above.<sup>125</sup> He concludes that there is not enough evidence indicating a connection between Abusir/Abu Ghurab and Heliopolis and points to the Mokkatam formation as the leading factor to why these sites were not aligned.<sup>126</sup> Furthermore, Userkaf legitimized himself by constructing his pyramid in the immediate vicinity of Djoser's Step Pyramid, and the location of his sun temple is halfway between the "two main, solar symbols of his time, i.e, the pyramid of Khufu and Sneferu..."<sup>127</sup> With his sun temple at a different site than his pyramid, Userkaf was able to create a new sacred landscape for his family.<sup>128</sup>

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<sup>125</sup> Nuzzolo, "Royal Authority, Divine Legitimization. Topography as an Element of Acquisition, Confirmation and Renewal of Power in the Fifth Dynasty," 253.

<sup>126</sup> Nuzzolo, "Royal Authority, Divine Legitimization. Topography as an Element of Acquisition, Confirmation and Renewal of Power in the Fifth Dynasty," 303.

<sup>127</sup> Nuzzolo, "Royal Authority, Divine Legitimization. Topography as an Element of Acquisition, Confirmation and Renewal of Power in the Fifth Dynasty," 303.

<sup>128</sup> Nuzzolo, "Royal Authority, Divine Legitimization. Topography as an Element of Acquisition, Confirmation and Renewal of Power in the Fifth Dynasty," 303-304.

Userkaf/Sahure (Abusir as a pyramid site: Abu Ghurab as a Sun Temple site)

Following the reign of Userkaf, Sahure continued in the tradition of his predecessor by building both a sun temple and a pyramid. The exact location of Sahure's sun temple is debated,<sup>129</sup> but it is highly likely that he built it in the Abusir/Abu Ghurab area. Additionally, Sahure established a new royal cemetery at Abusir, that continued to be the burial place of pharaohs for the next eighty years, when he built his pyramid. The reasons why this location became a new royal cemetery are numerous, but the surviving evidence points to two key aspects: Abusir Lake, and the Userkaf Sun Temple.

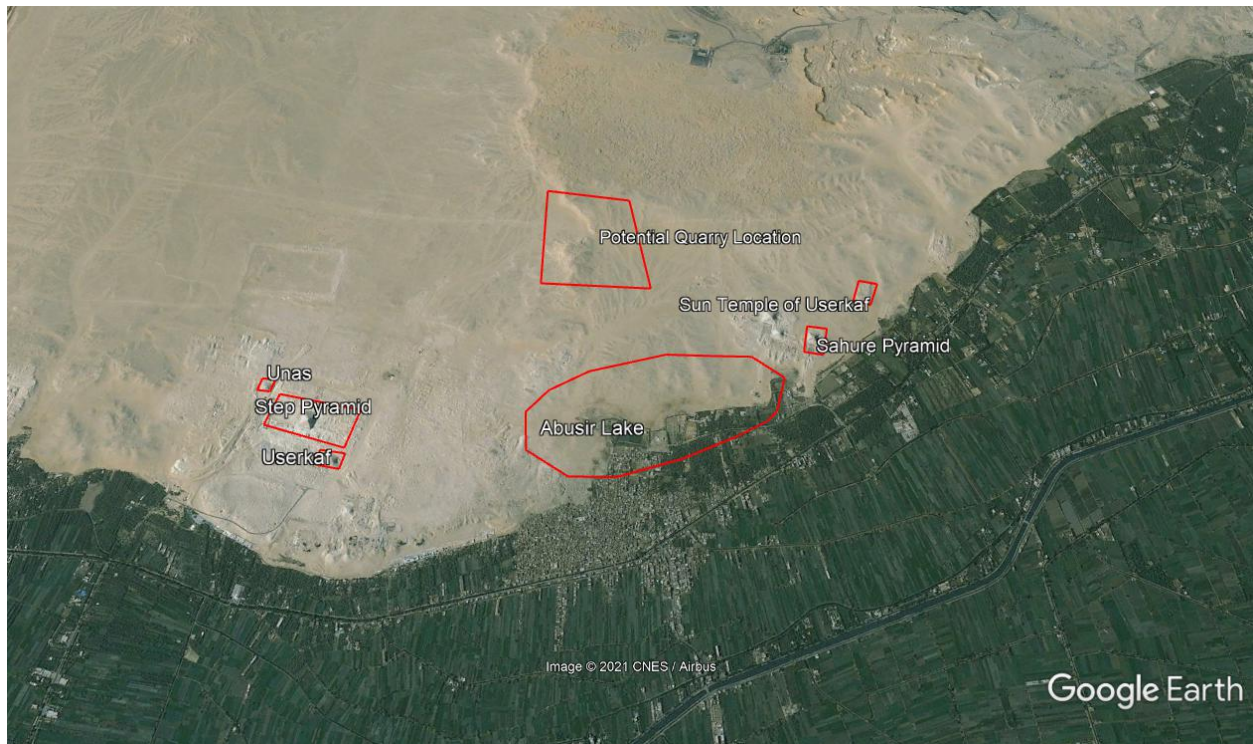


Figure 19: Satellite aerial view of Abusir Lake.

<sup>129</sup> Nuzzolo, *The Fifth Dynasty Sun Temples Kingship, Architecture and Religion in Third Millennium BC Egypt*, 99-104.

Sahure's pyramid lies between Userkaf's Sun Temple and Abusir Lake. Additionally, this figure shows other important surrounding places such as the Step Pyramid, Userkaf's pyramid, and a potential quarry location that was used by Sahure and other Fifth Dynasty pharaohs in the construction of their funerary monuments and sun temples. The exact dimensions of Abusir Lake during the Old Kingdom are unknown,<sup>130</sup> but its existence allowed for pharaohs, such as Sahure, to easily transport basalt or red granite.



Figure 20: Mortuary Temple of Sahure with Basalt flooring (photo by author)

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<sup>130</sup> The work done by Jeffreys, Earl, and the Czech mission to Abusir still provides crucial information regarding theoretical dimensions.



Figure 21: Ministry of Tourism and Antiquities-Sahure Pyramid Temple looking East (early 20<sup>th</sup> century).<sup>131</sup>

Based on the two images above, it is clear why Userkaf, Sahure, and the other Fifth Dynasty pharaohs this location for the pyramid and sun temple complexes on a practical level. Close access to Abusir Lake, as well as its location on the edge of the annual inundation<sup>132</sup> allowed an easier transport of materials, and with its continual use throughout the Early Dynastic and Old Kingdom periods, there was most likely a complex organizational system in place in terms of using the lake as a transport system, especially when it came to transporting exotic stones such as the basalt used for the floor of Sahure's Pyramid Temple. Furthermore, the location of a quarry (which had been used previously) to the immediate west of the lake provided these pharaohs and their engineers suitable materials for the core masonry of the monuments.

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<sup>131</sup> I want to thank Dr. Mohamed Ismail Khaled for providing me this image, as well as allowing me to visit Abusir during my visit to Egypt in 2019.

<sup>132</sup> Based on the data from Figures 3 and 4, the Nile River was further west than today, so it is probable that the inundation levels in antiquity were more dramatic than Figure 21 shows.

Ideologically, the reasons for Abusir/Abu Ghurab as a royal site are not as obvious. When it comes to Sahure and subsequent Fifth Dynasty pharaohs, the presence of Userkaf's Sun Temple certainly played a crucial role. However previously studied aspects, such as the potential correlation between Abusir/Abu Ghurab and Heliopolis, are plausible but not definitive based on the surviving evidence. Instead, the ideological reasons behind the location choices for the Fifth Dynasty pyramids and sun temples might be due to a commonly understood theory amongst Egyptologists who study the region: Abusir and Saqqara were considered part of a single location in antiquity "with an individual past and future."<sup>133</sup> Today there are over sixty villages in Egypt with the name Abusir.<sup>134</sup> The modern Arabic name of Abusir most likely comes from the Latin Busiris, which comes from the ancient Egyptian *Pr-Wsjr* (the house of Osiris).<sup>135</sup> According to Jean Yoyotte, the Middle Ages historian Abd al-Latif al-Baghdadi used the name Busir not for the zone surrounding the Fifth Dynasty pyramids, but for the area which contains the Serapeum and the Anubieion in North Saqqara.<sup>136</sup> Late Period inscriptions attribute these buildings with a place of worship associated with Osiris and Sokar called *Rwt-Jswt*.<sup>137</sup> Unfortunately not much is known about the *Rwt-Jswt*, as one of its only attestations comes from the tomb of *K3-m-snw*, who served as the Overseer of the Granary, and was buried in the area that became the Teti

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<sup>133</sup> Miroslav Bárta, Jaromir Krejčí, "Forward" in *Abusir and Saqqara in the Year 2000*, eds. Miroslav Bárta and Jaromir Krejčí, (Prague: Academy of Sciences of the Czech Republic Oriental Institute, 2000), xiii.

<sup>134</sup> Verner, *Abusir: The Necropolis of the Sons of the Sun*, vii.

<sup>135</sup> Jean Yoyotte, "Les Bousiris et les Abousir d'Égypte (Toponymie de l'Égypte pharaonique I)," in *Comptes rendus du Groupe Linguistique d'Études Chamito-Sémitiques*, 8, (1957-1960): 58.

<sup>136</sup> Yoyotte, "Les Bousiris et les Abousir d'Égypte (Toponymie de l'Égypte pharaonique I)," 59.

<sup>137</sup> Yoyotte, "Les Bousiris et les Abousir d'Égypte (Toponymie de l'Égypte pharaonique I)," 59.

pyramid cemetery in Saqqara.<sup>138</sup> Sethe states that *K3-m-snw* served under Sahure, Neferirkare, and Niuserre, and he was a priest for the pyramid complexes of the latter two pharaohs.<sup>139</sup> *Rwt-Jswt* appears as a place of offering in the textual evidence alongside the pyramid complexes of Neferirkare and Niuserre, but its exact location is unknown. Hannig states *Rwt-Jswt* is an “Ort in Saqqara oder Abusir.”<sup>140</sup> While this is a vague description of the location, the evidence points to Hannig being correct in this matter. For the purposes of this study, the fact that *K3-m-snw* held important titles for Fifth Dynasty pharaohs who were buried at Abusir and was buried at Saqqara shows an interconnection between the two sites.

Another crucial aspect that links the sites together is the lineage between Userkaf and Sahure. It has only been within the past twenty years that the relationship between Userkaf and Sahure was supported by surviving archaeological evidence. In 2003, an Egyptian expedition excavated around Sahure’s causeway at Abusir and found scenes depicting the queen Neferhetepes, along with her title *mwt njswt-bjtj Nfr-ḥtp-s* (Mother of the king of Upper and Lower Egypt, Neferhetepes).<sup>141</sup> She is also shown alongside her son Sahure in these scenes, and they strengthen the affirmation that she was also the wife of Userkaf.<sup>142</sup> This familial relationship helps explain some of the reasonings behind Sahure’s location choice for his pyramid complex,

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<sup>138</sup> Rainer Hannig, *Ägyptisches Wörterbuch 1: Altes Reich und Erste Zwischenzeit*, (Mainz: Philipp von Zabern, 2000), 1564; Kurt Sethe, *Urkunden des Alten Reichs: Erster Band*, (Leipzig: J. C Hinrichs’sche Buchhandlung, 1933), 175; Nigel Strudwick, *The Administration of Egypt in the Old Kingdom*, (London:KPI 1985), 149-150.

<sup>139</sup> Sethe, *Urkunden des Alten Reichs: Erster Band*, 175.

<sup>140</sup> Hannig, *Ägyptisches Wörterbuch 1*, 1564.

<sup>141</sup> Tarek El-Awady, “The royal family of Sahura. New evidence,” in *Abusir and Saqqara 2005: Proceedings of the Conference held in Prague (June 27-July 5, 2005)*, *PROCEEDINGS OF THE CONFERENCE HELD IN PRAGUE (JUNE 27–JULY 5, 2005)* eds. Miroslav Bárta, Filip Coppens, Jaromir Krejčí, (Prague: Charles Institute of Egyptology, Faculty of Arts, 2006), 192-194. For a full detailed description of the blocks found by the expedition, see: Tarek El-Awady, *Abusir XVI: Sahure - The Pyramid Causeway. History and Decoration Program in the Old Kingdom*, (Prague: Charles Institute of Egyptology, Faculty of Arts, 2009).

<sup>142</sup> El-Awady, “The royal family of Sahura. New evidence,” 196.



but it fails to address why Sahure did not build his pyramid immediately next to his father's complex. As mentioned above, the exact dimensions of Abusir Lake in antiquity are unknown, as well as how it changed over time. It is possible that building another pyramid complex to the immediate north of Userkaf's was impossible during Sahure's lifetime based on the landscape. However, Teti built his pyramid complex to the northeast of Userkaf's complex. less than 100 years after Sahure died. The new focus on Sun Temples during the Fifth Dynasty played a crucial role in the locations for new pyramid complexes. Nevertheless, Userkaf began a tradition of pyramid and sun temple building in Abusir that lasted for the next eighty years.

## Zawiyet el-Aryan

Out of all the Old Kingdom pyramid sites, Zawiyet el-Aryan is the least studied. Excavations of the site are prohibited because it currently resides within a military zone, and this results in only minor discussion by Egyptologists of it in scholarship about Old Kingdom pyramid complexes. Even though current research on the site is limited, its importance within the larger confines of Old Kingdom pyramid sites is still crucial as the Layer Pyramid represents the continuation of pyramid building shown at Saqqara with the Step Pyramid and the Buried Pyramid of Sekhemkhet. With regards to the Unfinished Pyramid, the uncertainty surrounding its date will be analyzed, but a definitive conclusion is unable to be reached due to restricted access to Zawiyet el-Aryan.

### Geology and Topography

While the shorter political history surrounding the pharaohs who constructed their pyramids at Zawiyet el-Aryan is cloudy, the longer geological and topographical history may point to a clearer reason why it was chosen as a site for pyramid construction. As Mark Lehner and Miroslav Bárta state below, a combination of the quality of bedrock, alongside its proximity to the floodplain are contributing factors.

The pyramid occupies a site about 7 km north of Saqqara. It is situated about 113 m west of an escarpment that rises 27 m above the flood plain. In choosing a location close to the flood plain the builders departed from the trend of Netjerykhet and Sekhemkhet to build far out in the desert. In this sense the setting of the Layer Pyramid is transitional to that of the Meidum pyramid, where proximity to the flood plain facilitated the connection of the pyramid with a dock and valley temple by way of a causeway.<sup>143</sup>

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<sup>143</sup> Mark Lehner, "Z500 and The Layer Pyramid of Zawiyet el-Aryan," in *Studies in Honor of William Kelly Simpson Vol. II*, ed. Peter Der Manuelian and Rita E. Freed, (Boston: Museum of Fine Arts Boston, 1996), 508.

It may be said that its location with regard to Memphis resembles that of the Dahshur pyramids (it is about 8 km away) but with much better bedrock. Thus the relative proximity to Memphis, good bedrock plus other, at present unknown, site features may have played a decisive role.<sup>144</sup>

Geologically, the limestone of the Layer Pyramid belongs to the late Eocene Maadi formation, while the limestone within the burial chamber of the Unfinished Pyramid dates to the Upper Eocene period.<sup>145</sup> In addition to the Upper Eocene period limestone of the Unfinished Pyramid, there is evidence of "...sandy, brownish limestone, rich in fossils such as oysters."<sup>146</sup> These date to the early Pliocene and come from hills that are nearby the Unfinished Pyramid.<sup>147</sup>

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<sup>144</sup> Bárta, "The Location of Old Kingdom Pyramid Complexes," 184.

<sup>145</sup> Klemm and Klemm, *The Stones of the Pyramids*, 34-36.

<sup>146</sup> Klemm and Klemm, *The Stones of the Pyramids*, 36.

<sup>147</sup> Klemm and Klemm, *The Stones of the Pyramids*, 36.



Figure 22: Satellite aerial view of Zawyet el-Aryan Pyramid Site (February 2009).

The figure above is a modern-day aerial view of Zawyet el-Aryan which shows the proximity between cultivation and the Layer Pyramid. Lehner mentions that the escarpment descends sixteen meters over the course of sixty-eight meters to the cultivation to the east.<sup>148</sup> Additionally, there is slope to the northwest of the pyramid that is possibly comparable to the wadi slopes that stretch from Abusir Lake to the enclosures of the Second and Third Dynasty royal tombs at Saqqara.<sup>149</sup>

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<sup>148</sup> Lehner, “Z500 and The Layer Pyramid of Zawiyet el-Aryan,” 510.

<sup>149</sup> Lehner, “Z500 and The Layer Pyramid of Zawiyet el-Aryan,” 510.

## Quarry

Although excavations at Zawiyet el-Aryan have been mostly dormant for the past sixty years, the probable quarry sites for the Layer Pyramid and Unfinished Pyramid are not as unknown compared to other Old Kingdom pyramid complexes.



Figure 23: Potential Quarry Area for Layer Pyramid (May 2003).

The most likely location of the quarry for the Layer Pyramid lies roughly 200 meters to the northwest of the pyramid near a limestone bank. Lehner postulated that quarry might have been located near a wadi to the southwest of the pyramid,<sup>150</sup> but Klemm and Klemm were unable to confirm in their survey.<sup>151</sup>

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<sup>150</sup> Lehner, “Z500 and The Layer Pyramid of Zawiyet el-Aryan,” 510.

<sup>151</sup> Klemm and Klemm, *The Stones of the Pyramids*, 35.



Figure 24: Satellite aerial view of Unfinished Pyramid (May 2003).

On the other hand, the Unfinished Pyramid was only in its earliest phase of construction as much of the pyramid was carved from the local bedrock.<sup>152</sup> In their survey of the pyramid, Klemm and Klemm noticed sandy reddish-brown limestones, similar to the limestone found at the Red Pyramid and *Mastaba al’Fir’aun*, which came from a group of hills near the Unfinished Pyramid.<sup>153</sup>

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<sup>152</sup> As mentioned above, this is similar to Djedefre’s pyramid at Abu Rawash.

<sup>153</sup> Klemm and Klemm, *The Stones of the Pyramids*, 36.

## Early Dynastic Period

Like almost every other Old Kingdom pyramid site, Zawiyet el-Aryan also has traces of Early Dynastic burials as C.S Fisher discovered them in his excavation near the Layer Pyramid in 1910-1911.<sup>154</sup> However, these burials do not explain why Zawiyet el-Aryan is home to two of the earliest built pyramids in Egypt. The exact reasons why this site was chosen remains unclear, but the following discussion will shed some light on why pharaohs possibly chose this site.

## Third (and possibly Fourth) Dynasty

Previous scholarship on Zawiyet el-Aryan has focused mostly on the owners of the Layer Pyramid and the Unfinished Pyramid.<sup>155</sup> A mysterious Third Dynasty pharaoh Khaba is said to be the owner of the Layer Pyramid, while a relatively unknown Fourth Dynasty pharaoh Nebka/Baka is said to be the owner of the Unfinished Pyramid.<sup>156</sup> Both attributions have been questioned, especially by Aidan Dodson.<sup>157</sup> Nevertheless, Aidan Dodson concludes that the Layer Pyramid dates to the Third Dynasty, even if its owner is unknown.<sup>158</sup> As for the Unfinished Pyramid, the arguments dating it to the Fourth Dynasty comes mostly from the layout of its substructure due to its resemblance to the substructure of Djedefre's pyramid at Abu

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<sup>154</sup> Jeffreys & Tavares, "The Historical Landscape of Early Dynastic Memphis," 146. Interestingly, the details of Fisher's excavations were not published until the 1970s. See: Dows Dunham, *Zawiyet el-Aryan. The Cemeteries Adjacent to the Layer Pyramid*, (Boston: Museum of Fine Arts Boston, 1978).

<sup>155</sup> For a thorough historiography, see: Ćwiek, "History of the Third Dynasty, another update on the kings and monuments," 87-103.

<sup>156</sup> Ćwiek, "History of the Third Dynasty, another update on the kings and monuments," 97.

<sup>157</sup> Aidan Dodson, "On the Unfinished Pyramid of Zawiyet el-Aryan," in *Discussions in Egyptology*, vol 3, (1985): 21-23; Aidan Dodson, "The Layer Pyramid of Zawiyet el-Aryan: Its Layout and Context," in *JARCE*, vol 37, (2000): 81-90.

<sup>158</sup> Dodson, "The Layer Pyramid of Zawiyet el-Aryan: Its Layout and Context," 90.

Rawash, as well as the use of granite and the position of the sarcophagus which points to a Fourth Dynasty date.<sup>159</sup> Dodson's provides reasonable explanations for each factor, but he fails to address a potential key question. Why is it conclusive that these factors originated during the Fourth Dynasty? It is possible that the Fourth Dynasty pharaohs were influenced by the Unfinished Pyramid when building their pyramids and this would date the pyramid to the Third Dynasty as well. Each argument related to the Unfinished Pyramid is pure speculation and until more research at the site is conducted (which unfortunately may never occur due to its presence on a military site), we can never correctly attribute a date or ruler to the pyramids at Zawiyet el-Aryan.

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<sup>159</sup>Dodson, "On the Unfinished Pyramid of Zawiyet el-Aryan," 21; Ćwiek, "History of the Third Dynasty, another update on the kings and monuments," 97.



## Sneferu: The Projects at Meidum and Dahshur

As previously discussed, the transition and chronology between the First, Second, and Third Dynasties is still not completely known.<sup>160</sup> However, pyramid building beginning with the reign of Djoser and continuing throughout the Third Dynasty is abundantly clear. Traditionally thought of as the founder of the Fourth Dynasty, Sneferu's reign culminated with the most pyramids ever built by a single ruler in ancient Egyptian history. The amount of stone used in the construction of his three main pyramids is more than any other pyramid in the Old Kingdom and is more than every other Old Kingdom pyramid combined besides Khufu and Khafre.<sup>161</sup> While Sneferu is considered the builder of the Red and Bent Pyramids, two of the pyramids located near the Faiyum (Meidum and Seila)<sup>162</sup> are usually attributed to Sneferu as well. The current study will provide an overview and analysis of the pyramid complexes at the sites of Meidum and Dahshur. Additionally, there are other important questions to consider such as why is the pyramid at Meidum seemingly far away from the capital of *Jnbw-Hd* and distant from the other pyramid sites of the time at Saqqara and Zawiyet el-Aryan. An anomaly amongst Old Kingdom pharaohs, Sneferu and his architects and engineers undertook what became the largest construction project in the Old Kingdom with the construction of three pyramid complexes. The historical background of events prior to Sneferu ascending to the throne is not completely known, but the consensus amongst most Egyptologists is that Sneferu's father was Huni.<sup>163</sup> This

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<sup>160</sup> See Hornung, Krauss, and Warburton, *Ancient Egyptian Chronology*, 490.

<sup>161</sup> See Table 2 at the end of this dissertation.

<sup>162</sup> The pyramid of Seila will not be discussed in this study due to its status of not being a tomb. For the current overview, as well as a comprehensive historiography of the pyramid site see: Kerry Muhlestein, Bethany Jensen, and Krystal V.L. Pierce, *Excavations at the Seila Pyramid and Fag el-Gamous Cemetery*, (Leiden: Brill, 2020).

<sup>163</sup> See *Tabelle 1: Abfolge der Könige der 3. Dynastie* in Blumenthal, *Das ägyptische Alte Reich*, 86. There are three sources she provides which indicate a pharaoh ruling after Huni. Jürgen von Beckerath amends this list in his later

is based on the appearance of his name before Sneferu's in both the Turin King's List and Saqqara King's List. Additional information about Huni's reign is more fragmentary as there is little that survived.<sup>164</sup> Out of the five known Horus names of the Third Dynasty, three of them have been attributed to known pharaohs, while the other two, Khaba and Qahedjet, are currently unknown with scholars weighing both names as an option for Huni.<sup>165</sup> Until more evidence about Huni's reign is uncovered, these arguments are speculation. This uncertainty surrounding the period immediately prior to Sneferu's reign makes it harder to provide a definitive answer to the questions that this study asks. Nevertheless, the landscape of both sites will provide clearer insight into Sneferu's decision to construct multiple large pyramid complexes were built.<sup>166</sup>

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work *Chronologie des pharaonischen Ägypten*. Thomas Schneider writes that there are three pharaohs following Huni: Sanacht, Chaba (Khaba), and Qahedjet. See: Thomas Schneider, *Lexikon der Pharaonen*, (München: Deutscher Taschenbuch Verlag, 1996).

<sup>164</sup> A cone near one of the so called "minor step pyramid" at Elephantine bears the name of Huni. See: Andrezj Ćwiek in "Date and Function of the So-Called Minor Step Pyramids," in *Göttinger Miszellen*, 161, (1998): 46-47.

<sup>165</sup> For Khaba as Huni, see: Rainer Stadlemann, "King Huni: His Monuments and His Place in the History of the Old Kingdom," in: *The Archaeology and Art of Ancient Egypt. Essays in Honor of David B. O'Connor*. Band II, eds Zahi A. Hawass, Janet Richards (Cairo: Conceil Suprême des Antiquités de l'Égypte, 2007), 425-431. For Qahedjet as Huni see: Jacques Vandier, "Une stèle égyptienne portant un nouveau nom royal de la IIIe dynastie," in *Comptes Rendus de l'Académie des Inscriptions et des Belles-Lettres*, (1968), 16-22; Wilkinson, *Early Dynastic Egypt*, 104-105.

<sup>166</sup> It is possible that Sneferu had more pyramids built. The so-called "Minor Step Pyramids" have been attributed to either Sneferu or his father Huni. Seminal sources discussing these pyramids include: Jan Bock "Die kleinen Stufenpyramiden des frühen Alten Reiches: ein Überblick" in *Sokar: die Welt der Pyramiden*, (12), 2006, 20-29. Andrezj Ćwiek, "Date and Function of the So-Called Minor Step Pyramids" in *Göttinger Miszellen: Beiträge zur ägyptologischen Diskussion*, no. 162, (1998), 39-52. Günter Dreyer and Werner Kaiser, "Zu den kleinen Stufenpyramiden Ober- und Mittelägyptens." in *MDAIK* 36, (1980): 43-59.

## Meidum

The pyramid complex of Meidum is an outlier compared to every other Old Kingdom pyramid complex mostly due to its distant location. Its distance to the Bent Pyramid, which is the next closest pyramid complex (roughly forty-five kilometers) is almost fifteen kilometers further than the distance between the Bent Pyramid and the most northern Old Kingdom pyramid complex of Djedefre at Abu Rawash. Its builder has been debated and the location appears random as Egyptologists spent decades attempting to find answers to many other questions such as a potential collapse and its distant location to other pyramid complexes of the Old Kingdom.<sup>167</sup> While the potential collapse is not particularly crucial for this study, there is an underlying factor that connects all of them: the geology and topography of the region that houses the Meidum pyramid. After a brief discussion of the geology and topography, the issues posed previously by Egyptologists will be discussed at further length.

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<sup>167</sup> The historiography on Meidum is vast and comprehensive since Perring first excavated the site in the 1830s and many of the sources discuss these issues. For some crucial arguments and details, see: Vyse and Perring, *Operations Carried out on the Pyramids of Gizeh*, (London 1840-1842); William Flinders Petrie, *Medum*, (London, 1892); William Flinders Petrie, E. Mackay, and G. A. Wainwright, *Mejdum and Memphis III*, (London, 1910); Ludwig Borchardt, *Die Entstehung der Pyramide an der Baugeschichte der Pyramide von Mejdum nachgewiesen*, (Berlin, 1928); I.E.S Edwards, *The Pyramids of Egypt*, (Middlesex: Penguin, 1961), 90-116, Ahmed Fakhry, *The Pyramids*, (Chicago: The University of Chicago Press, 1961), 63-70; Kurt Mendlessohn, "A Building Disaster at the Meidum Pyramid," in *The Journal of Egyptian Archaeology*, vol 59, (August 1973): 60-71; I.E.S Edwards, "The Collapse of the Meidum Pyramid" in *The Journal of Egyptian Archaeology*, vol 60, (August 1974): 251-252; Kurt Mendlessohn, *The Riddle of the Pyramids*, (London: Thames and Hudson, 1974), 86-87; Christopher J. Davey, "The Structural Failure of the Meidum Pyramid," in *The Journal of Egyptian Archaeology*, vol 62, (1976): 178-179; Kurt Mendlessohn, "Reply to Mr. C. J. Davey's Comments," in *The Journal of Egyptian Archaeology*, vol 62, (1976): 179-181, Rainer Stadlemann, "Snofru und die Pyramiden von Meidum und Dahshur," in *MDAIK*, 36, (1980), 437-449; Rainer Stadlemann, "Snofru-BUILDER and Unique Creator of the Pyramids of Seila and Meidum," in *Echoes of Eternity: Studies Presented to Gaballa Aly Gaballa*, eds Ola El-Aguizy, and Mohamed S Ali, (Wiesbaden: Harrassowitz Verlag, 2010), 31-38.

## Geology and Topography

Located at the edge of the Nile floodplain, the Meidum pyramid is situated on a ten-kilometer strip of desert that separates the Nile and the northeastern portion of the Faiyum.

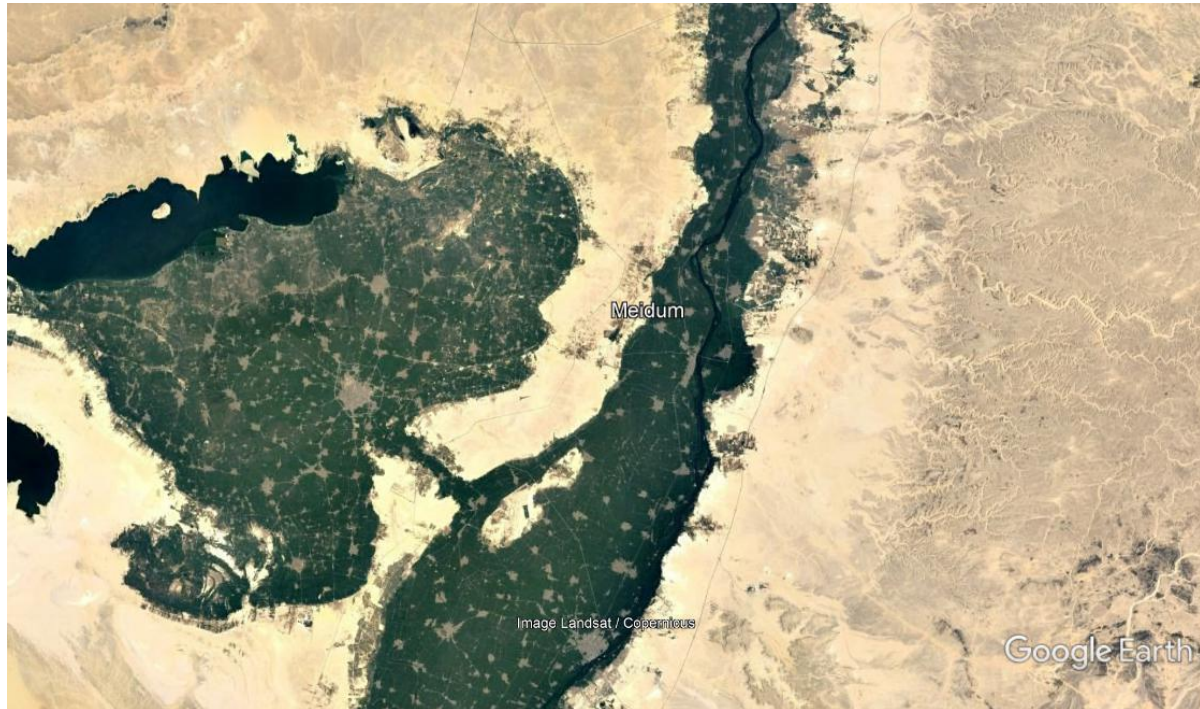


Figure 25: Satellite aerial view of Meidum in relation to the Faiyum (July 2020).

The Faiyum itself is considered a depression which covers an area of approximately 1,700 km<sup>2</sup> and is connected to the Nile via the Bahr Youssef canal.<sup>168</sup> Its origins date back to the Middle Eocene period (ca. 50,000,000 years ago) as it evolved and grew, and the area where the Meidum pyramid lies is part of a deposit from the Pliocene period (ca. 2,500,000 to 5,000,000 years ago).<sup>169</sup> Unlike Saqqara, there are no wadis cutting through the area. However, the Meidum

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<sup>168</sup> Said, *The Geology of Egypt*, 99-100.

<sup>169</sup> Said, *The Geology of Egypt*, 100, 105. A recent work by Claire Malleson covers the history of the Faiyum region and goes into a detailed account of how people have used the Faiyum from millennia prior to the construction of the

pyramid does not sit on a higher elevated surface compared to the Step Pyramid and the Buried Pyramid of Sekhemkhet. Instead, it lies on the current modern day separation line between the cultivation and the desert edge. The area surrounding the pyramid towards the edge of the desert consists of clay shales, white marly limestones, and gypsum.<sup>170</sup> The presence of limestone in this area is of most importance as it most likely served as the core of the Meidum pyramid.

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pyramids to the modern day. See: Claire Malleon, *The Fayum Landscape: Ten Thousand Years*, (Cairo: The American University in Cairo Press, 2019).

<sup>170</sup> Hugh John Llewellyn Beadnell, *The Topography and Geology of the Fayum Province of Egypt*, (Cairo: National Print Department, 1905), 77.

## Quarry

The potential quarrying sites for the Meidum pyramid are located to the immediate south of the pyramid itself. In their sampling of the area, Klemm and Klemm noticed three potential spots for quarrying: the escarpment area near the desert edge, a potential site 600 meters south of the pyramid, and a region one kilometer to the south of the pyramid near modern-day cultivation. Their research indicated that the escarpment area did not have any suitable stone for pyramid building and that the potential quarry area 600 meters south of the pyramid did not match the analysis of the core or casing masonry.<sup>171</sup>

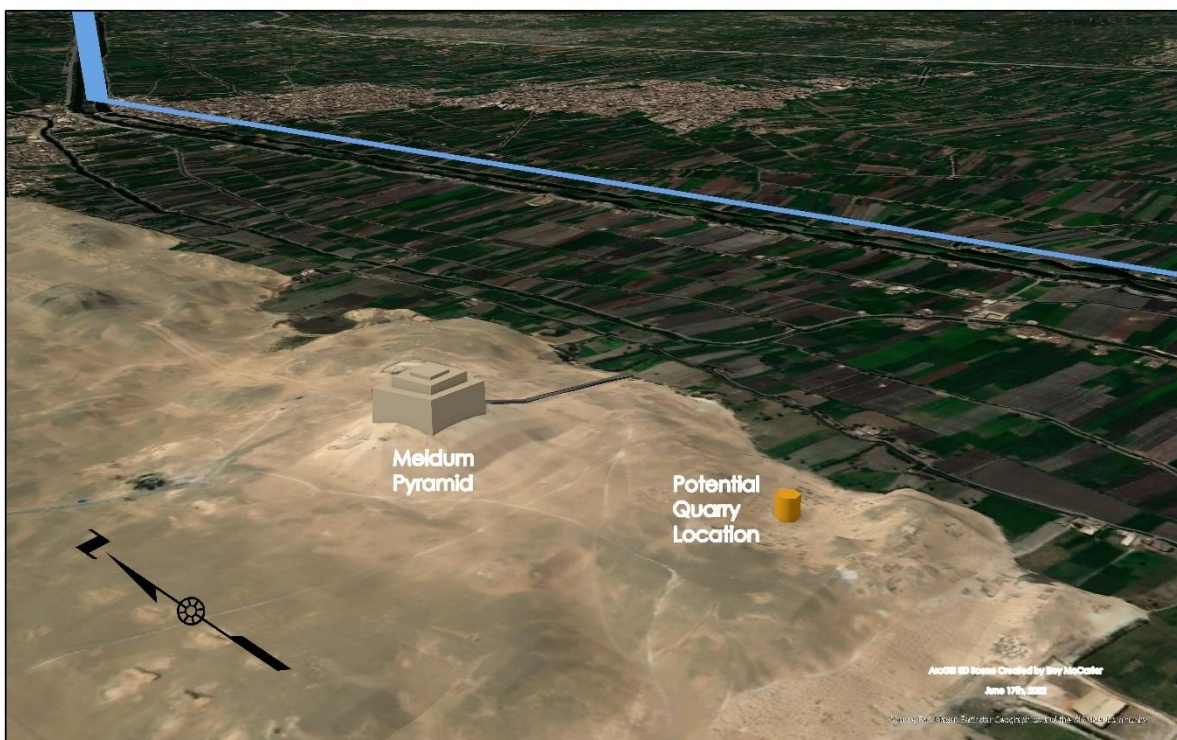


Figure 26: 3D map depicting Meidum with its potential quarry location.<sup>172</sup>

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<sup>171</sup> Klemm and Klemm, *The Stones of the Pyramids*, 43

<sup>172</sup> Klemm and Klemm, *The Stones of the Pyramids*, 43.

The potential quarrying area one kilometer south of the pyramid showed similar qualities, such as structure and size, to the limestone used for the Meidum pyramid,<sup>173</sup> but more research needs to be conducted. More interestingly though are the casing stones used for Meidum. It shares geochemical similarities to the casing stones of the Step Pyramid and the Buried Pyramid of Sekhemkhet at Saqqara. Klemm and Klemm postulate that either the same type of limestone once existed at Saqqara and was exhausted by the Third Dynasty pyramids, or that Djoser and Sekhemkhet used the Meidum quarries.<sup>174</sup> While currently unprovable, if this turns out to be true, the choice of Meidum as a pyramid site becomes much clearer. One can argue that Sneferu wanted to build a pyramid similar to Djoser's Step Pyramid and the only way to build it using the same material was to find a site that was not exhausted of quality limestone. Furthermore, it is known that the Faiyum was an established hub prior to the Old Kingdom, and it undoubtedly played a role in Sneferu's decision to build at Meidum. The extent that it played still needs more research.

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<sup>173</sup> Klemm and Klemm, *The Stones of the Pyramids*, 43.

<sup>174</sup> Klemm and Klemm, *The Stones of the Pyramids*, 44.

## The Pyramid

The Meidum pyramid complex was most likely the fourth one built after the complexes of Djoser, Sekhemkhet, and potentially Khaba with the Layer Pyramid at Zawiyet el-Aryan.<sup>175</sup> As mentioned previously, the two overarching questions regarding the Meidum pyramid that puzzled Egyptologists for decades was the owner of the tomb, as well as when/how did it collapse. For the first question, both Huni and Sneferu have been attributed to the Meidum pyramid either as a co-builder (Sneferu finished building the pyramid after Huni died)<sup>176</sup> or that the pyramid was constructed entirely during Sneferu's reign (it was continuously erected throughout Sneferu's lifetime).<sup>177</sup> The latter is the established consensus amongst pyramid scholars, but there is still a debate on the original builder based on the fact that the pyramid appears to be built in different phases.<sup>178</sup> For example, Reader argues the quality of workmanship for the earliest phases of construction of the pyramid does not fit the quality of workmanship for either pyramid at Dahshur.<sup>179</sup> Furthermore, Sneferu could not have been the sole builder of the Meidum pyramid, and it is probable that his father Huni began the initial construction of the monument and Sneferu finished it as a form of piety.<sup>180</sup> This assertion is problematic. While

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<sup>175</sup> See 85-91.

<sup>176</sup>Jean Philippe-Lauer, *Histoire monumentale des pyramides d'Égypte, I*, (IFAO, Cairo, 1962), 218-220; Jean Vercoutter, *L'Égypte et la Vallée du Nil, Tome I*, (Paris: PUF, 1992); Colin Reader, "The Meidum Pyramid," in *JARCE* vol. 51, (2015): 221.

<sup>177</sup> Mark Lehner, *The Complete Pyramids*, 97; Miroslav Verner, *The Pyramids*, 166-168; Rainer Stadelmann, „Beitrage zur Geschichte des Alten Reiches," in *MDAIK* 43, (1986): 236.; Franck Monnier, "The satellite pyramid of Meidum and the problem of the pyramids attributed to Snefru," in *The Journal of Ancient Egyptian Architecture Vol. 3*, (2018), 10-15.

<sup>178</sup> This is discussed in further detail below.

<sup>179</sup> Reader, "The Meidum Pyramid," 219-221.

<sup>180</sup> Reader, "The Meidum Pyramid," 221.



there is evidence of a pharaoh's successor finishing a pyramid complex in the case of Shepseskaf finishing the Menkaure Valley Temple,<sup>181</sup> there is no evidence supporting Huni's involvement at all. Furthermore, the discovery of graffiti marks found during Petrie's excavation clearly indicate Sneferu as the builder of the pyramid.<sup>182</sup>

With regards to the construction of the pyramid, in his initial excavation, Petrie stated that the pyramid was built similarly to Djoser's Step Pyramid where it began as a mastaba but later took the form of a step pyramid.<sup>183</sup> From here, it was given its outer casing which created the "true pyramid" shape. This idea was based on the clearing of debris on the eastern face of the pyramid where Petrie found an intact structure that he dated as the oldest surviving structure in Egypt and later termed "primal mastaba."<sup>184</sup> Petrie did not finish his investigation into the supposed earlier structure in either his initial excavation in 1892 or on his return to Meidum in 1909.<sup>185</sup> However, his idea of the pyramid's construction happening in multiple phases was later challenged and modified by Borchardt who was interested in the two strips of masonry that appears to show the construction of the Meidum pyramid in multiple phases.<sup>186</sup>

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<sup>181</sup> For discussion of Menkaure and Shepseskaf, see 149-153 and 177-183.

<sup>182</sup> Rainer Stadelmann, "Snofru: builder and unique creator of the pyramids of Seila and Meidum," 31-38; Petrie, McKay, and Wainwright, *Meydum and Memphis III*, plates 32-39.

<sup>183</sup> Petrie, *Medum*, 5.

<sup>184</sup> Petrie, *Medum*, 4.

<sup>185</sup> Reader, "The Meidum Pyramid," 207.

<sup>186</sup> Reader, "The Meidum Pyramid," 208.



Figure 27: Meidum Pyramid showing two strips of rough masonry (photo by author).

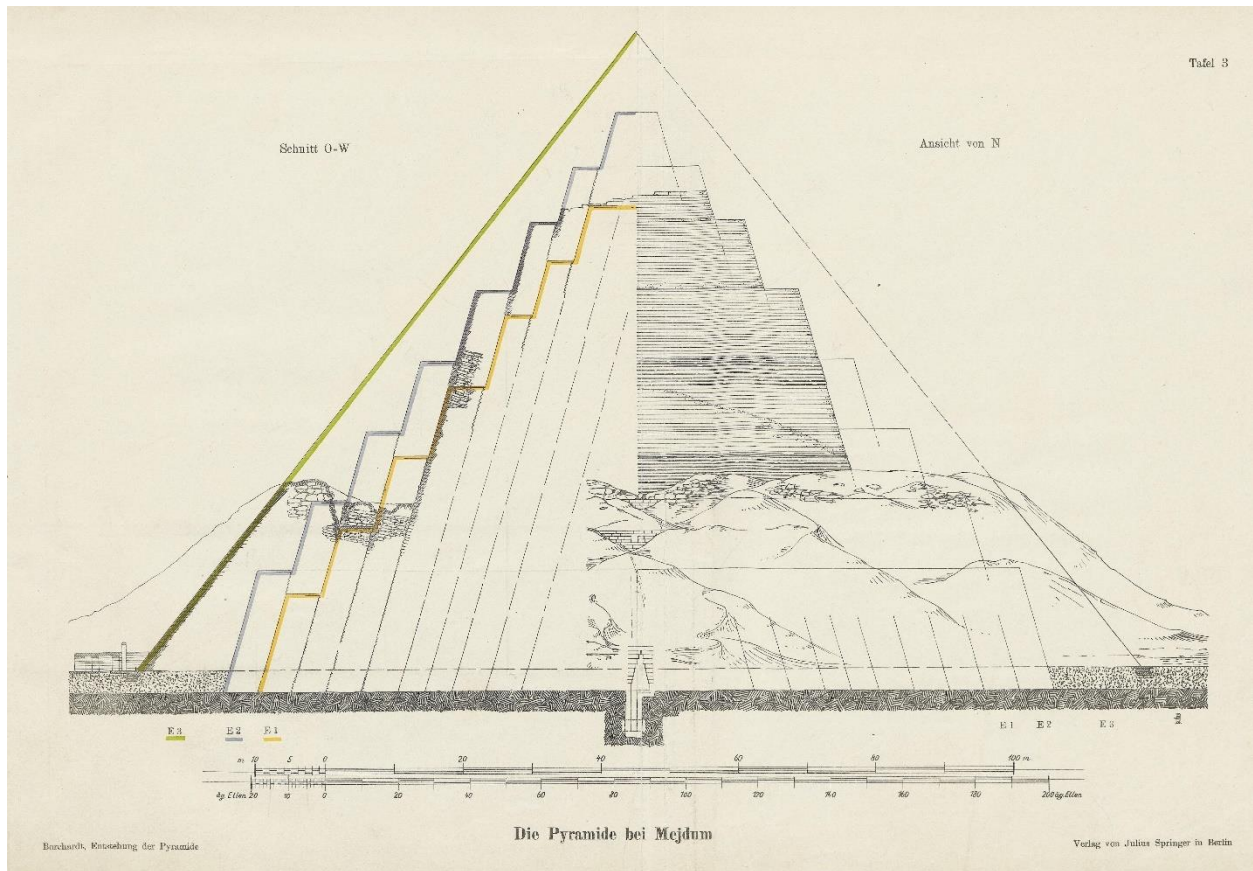


Figure 28: Borchardt: Die Pyramide bei Mejdum.<sup>187</sup>

In Borchardt’s reconstruction above, he believed the pyramid was built in three phases: an initial seven stepped pyramid, followed by an eight stepped pyramid which was finished by constructing a “true-pyramid” shaped outer case.

This leads to the debate to whether the pyramid collapsed or was robbed of its stones in antiquity. While this issue it is not vital to the present study, some minor notes must be made. Petrie argued that the pyramid was robbed of its stone throughout antiquity and into the modern

<sup>187</sup> Ludwig Borchardt, *Die Entstehung der Pyramide an der Baugeschichte der Pyramide bei Mejdum nachgewiesen*, Table 3.

age.<sup>188</sup> Kurt Mendelssohn brought forth a theory that the pyramid collapsed due to inadequate construction techniques, but he was subsequently rebuked by I.E.S Edwards and Christopher Davey.<sup>189</sup> Davey's questions are especially interesting; "If the present physical shape of the Meidum Pyramid is largely due to structural failure, there are many unanswered questions concerning that collapse. Why has it failed so regularly on all four sides? Why does so much of the outer casing remain and why did some of the buttresses collapse and not others?"<sup>190</sup> These questions were not sufficiently explained in later publications, especially from Ali el-Khouli and Colin Reader.<sup>191</sup> Reader's argument is the most recent attempt to address the Meidum pyramid complex and he uses Mendelssohn's theory combined with the evidence found during el-Khouli's re-excavation of the site in the 1980s. He does not think the pyramid's current state is solely based on stone robbing, but a "sudden and unplanned event, such as a collapse or partial collapse of the structure."<sup>192</sup> This idea is taken from the discovery of three thousand stone blocks from el-Khouli's excavation. According to Reader, if the superstructure of the pyramid was robbed of stone after the pyramid was finished, the three thousand blocks of stone would have been taken from the site as well.<sup>193</sup> Reader's conclusions are sound, but impossible to prove because the topography of the land over the course of the construction of the pyramid and the

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<sup>188</sup> Petrie, McKay, and Wainwright, *Meidum and Memphis III*, 9.

<sup>189</sup> Kurt Mendelssohn, "A Building Disaster at the Meidum Pyramid," in *The Journal of Egyptian Archaeology*, vol 59, (1973): 60-71; I.E.S Edwards, "The Collapse of the Meidum Pyramid" in *The Journal of Egyptian Archaeology*, vol 60, (Aug., 1974): 251-252, Christopher J. Davey, "The Structural Failure of the Meidum Pyramid," in *The Journal of Egyptian Archaeology*, vol 62, (1976): 178-179, Kurt Mendelssohn, "Reply to Mr. C. J. Davey's Comments," in *The Journal of Egyptian Archaeology*, vol 62, (1976): 179-181

<sup>190</sup> Christopher J. Davey, "The Structural Failure of the Meidum Pyramid," 179.

<sup>191</sup> Ali el-Khouli, *Meidum*: (Sydney: Australian Centre for Egyptology, 1991); Reader, "The Meidum Pyramid".

<sup>192</sup> Reader, "The Meidum Pyramid," 214.

<sup>193</sup> Reader, "The Meidum Pyramid," 212-214.

present day is unknowable. Petrie, Borchardt, Mendelssohn, and Reader might all be correct about certain aspects, but until there is more sufficient evidence, these claims are speculative in nature.



Figure 29: Yann Arthus-Bertrand/Getty Images: Aerial Photo Overlooking Meidum Pyramid.

## The Pyramid's Location

On the surface, Meidum is the outlier compared to every other Old Kingdom pyramid site. It is the furthest away from where the central area of the city of Memphis would have most likely stood. Bárta believes a combination of quality limestone bedrock, alongside a potential settlement near the area factored into Sneferu's decision.<sup>194</sup> These two theories are plausible, and even probable, but what type of settlement would make Sneferu not want to build a pyramid at either Saqqara or Zawiyet el-Aryan? Figure 29 above shows that the pyramid was built on the desert's edge near the cultivation area, while the region surrounding the Meidum pyramid complex housed numerous settlements and cemeteries that predate Meidum. Both Gerzeh and Tarkhan are roughly ten kilometers to the north of Meidum and both were important Early and Proto-Dynastic cemeteries and towns.<sup>195</sup> To the immediate west, closer to the Faiyum, was Shedet and Seila. Known in later times as Crocodopolis, Shedet was the main cult center of Sobek, but might have been an important administrative center as well.<sup>196</sup> Shedet is attested in the Pyramid Texts<sup>197</sup> and in a funerary relief of Niussere.<sup>198</sup> Most importantly, *ḥm-nṯr Sbk Šḏty* (Priest of Sobek of Crocodopolis) appears as a title for two individuals: *K3i-Nfr* from Dahshur and *K3-Nfr* from Giza,<sup>199</sup> while Sneferu's son Nefermaat held the title "Chief of the Lake of the

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<sup>194</sup>Bárta, "Location of the Old Kingdom Pyramids in Egypt," 181.

<sup>195</sup>Bertha Porter and Rosalind Moss, *Topographical Bibliography of Ancient Egyptian Hieroglyphic Texts, Reliefs, and Paintings IV. Lower and Middle Egypt (Delta and Cairo to Asyût)*, (Oxford: Griffith Institute, 1968), 85-89.

<sup>196</sup> Andrzej Ćwiek, "Fayum in the Old Kingdom," in *Göttinger Miszellen*, 160, (1997): 18-19.

<sup>197</sup>The Pyramid Texts of Unas and Pepi both mention Shedet. See: James Allen, *The Pyramid Texts*, 52 and 186.

<sup>198</sup>Borchardt, *Das Grabdenkmal des Königs Ne-User-Re*, (Leipzig: J.C. Hinrichs, 1907), 92.

<sup>199</sup> Dilwyn Jones, *An Index of Ancient Egyptian Titles, Epithets, and Phrases of the Old Kingdom Volume I* (Oxford: British Archaeological Reports, 2000), 574.

Crocodile.”<sup>200</sup> This shows evidence that Shedet was an important area in at least the Fourth Dynasty if not earlier.

The vicinity around the Seila Pyramid, roughly ten kilometers west of Meidum, also shows hints of settlement around the time Sneferu constructed the Meidum pyramid. It has been postulated that Seila became an important seat of royal power and administration,<sup>201</sup> and may have even been the administrative capital of the Faiyum.<sup>202</sup> There is not enough surviving evidence to support these claims, especially since excavations are still ongoing at Seila.<sup>203</sup> Nevertheless, the Faiyum already had a deep and important history for the ancient Egyptians prior to Sneferu ascending to the throne.<sup>204</sup>

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<sup>200</sup> Petrie, *Medum*, 20.

<sup>201</sup> Günter Dreyer and Warner Kaiser, “Zu den kleinen Stufenpyramiden Ober-und Mittelägyptens,” 56-57.

<sup>202</sup> Andrzej Ćwiek, “Date and Function of the So-Called Minor Step Pyramids,” 42.

<sup>203</sup> See footnote 254 above on BYU’s current excavation at the Seila Pyramid.

<sup>204</sup> Evidence of Faiyum occupation during the Neolithic period is well documented and studied. For a general overview see, Wilma Wetterstrom. “Foraging and farming in Egypt: the transition from hunting and gathering to horticulture in the Nile valley,” in *The Archaeology of Africa. Food, metals and towns*, eds Thurstan Shaw, Paul Sinclair, Bassey Andah, and Alex Okpoko, (London: Routledge, 1993), 204-211.

## Dahshur

The Red and Bent Pyramids at Dahshur are the most northern of Sneferu's pyramid and are a little over six and a half kilometers south from Djoser's Step Pyramid complex. Since Ahmed Fakhry's excavations at Dahshur in the middle of the 20<sup>th</sup> century, the consensus amongst Egyptologists is that during the beginning of the Fourth Dynasty, a trial-and-error process of pyramid building existed when Sneferu and his architects constructed the Bent Pyramid.<sup>205</sup> As the architects, engineers, and workers constructed the pyramid, there was an unforeseen structural problem that caused a massive shift in the slope of the pyramid, thus creating the "bent" shape. To rectify this, Sneferu had an additional pyramid built near the site of the Bent Pyramid: The Red Pyramid, which gets its name from the reddish colored limestone blocks which make up the core of the pyramid. For decades, this argument seemed the most plausible explanation of why two pyramids were built in the same space during the reign of a single ruler. Recently, this notion has been challenged and the arguments stemming from these conclusions might help explain why Dahshur became a site with two Old Kingdom pyramids.<sup>206</sup> A further explanation relates to the geology and topography of the site prior to the time of Sneferu. The presence of an ancient lake, alongside various wadis and dried up channels will shed some light into Dahshur as a pyramid complex location.

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<sup>205</sup> Ahmed Fakhry, *The Bent Pyramid, The Bent Pyramid. The monuments of Sneferu at Dahshur 1*. (Cairo: General Organization for Government Printing Offices. At head of title: United Arab Republic. Ministry of Culture and National Orientation. Antiquities Department of Egypt, 1959); Edwards, *The Pyramids of Egypt*, 90-115; Dieter Arnold, *Building in Egypt. Pharaonic Stone Masonry*, 234-235; Lehner, *The Complete Pyramids*, 97-106; Verner, *The Pyramids*, 174-183.

<sup>206</sup> Giulio Magli, "Topography, astronomy and dynastic history in the alignments of the pyramid fields of the Old Kingdom," in *Archaeoastronomy/History of Astronomy; Mediterranean Archaeology and Archaeometry, Vol. 10. No. 2*, (2010), 59-74; Massimiliano Nuzzolo "The Bent Pyramid of Snefru at Dahshur. A project failure or an intentional architectural framework?\*" in *Studien zur Altägyptischen Kultur*, (Hamburg: Helmut Buske Verlag, 2015), 260-282.



## Geology and Topography

Geologically, the area surrounding the Dahshur pyramids consists of limestone and sandstone deposits that date from the Middle Eocene and Pliocene eras.<sup>207</sup> Much like their predecessor at Meidum, the pyramids at Dahshur are made from local limestone that comes from the Wadi Ryan Formation of the larger Mokkatam Group,<sup>208</sup> and they lie on a plateau near the desert escarpment that once looked over the floodplain of the Nile River.<sup>209</sup> Furthermore, there is evidence of a wadi to the southeast of the Red Pyramid near one of the transport ramps.



Figure 30: Satellite aerial view of Dahshur showing wadi near Red Pyramid and harbor near the Bent Pyramid Causeway (February 2007).

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<sup>207</sup> Wiebke Bebermeier, Nicole Alexanian, Dirk Blaschta, Arne Ramisch, Brigitta Schütt and Stephan Johannes Seidlmayer, “Analysis of Past and Present Landscapes Surrounding the Necropolis of Dahshur,” in *DIE ERDE – Journal of the Geographical Society of Berlin*, 142 (3), 328.

<sup>208</sup> James Harrell, “Building Stones,” in *UCLA Encyclopedia of Egyptology*, eds Willeke Wendrich, Jacco Dieleman, Elizabeth Froid, and John Baines, (Los Angeles, 2012), 13.  
<http://digital2.library.ucla.edu/viewItem.do?ark=21198/zz002c10gb>

<sup>209</sup> Bebermeier, et al, “Analysis of Past and Present Landscapes Surrounding the Necropolis of Dahshur,” 332.

The presence of the wadi was beneficial for the construction process as it provided a natural pathway of transportation of materials to the Red Pyramid. Most likely, this wadi would have been flooded with water from the Nile tributaries that existed between the Red and Bent Pyramids.

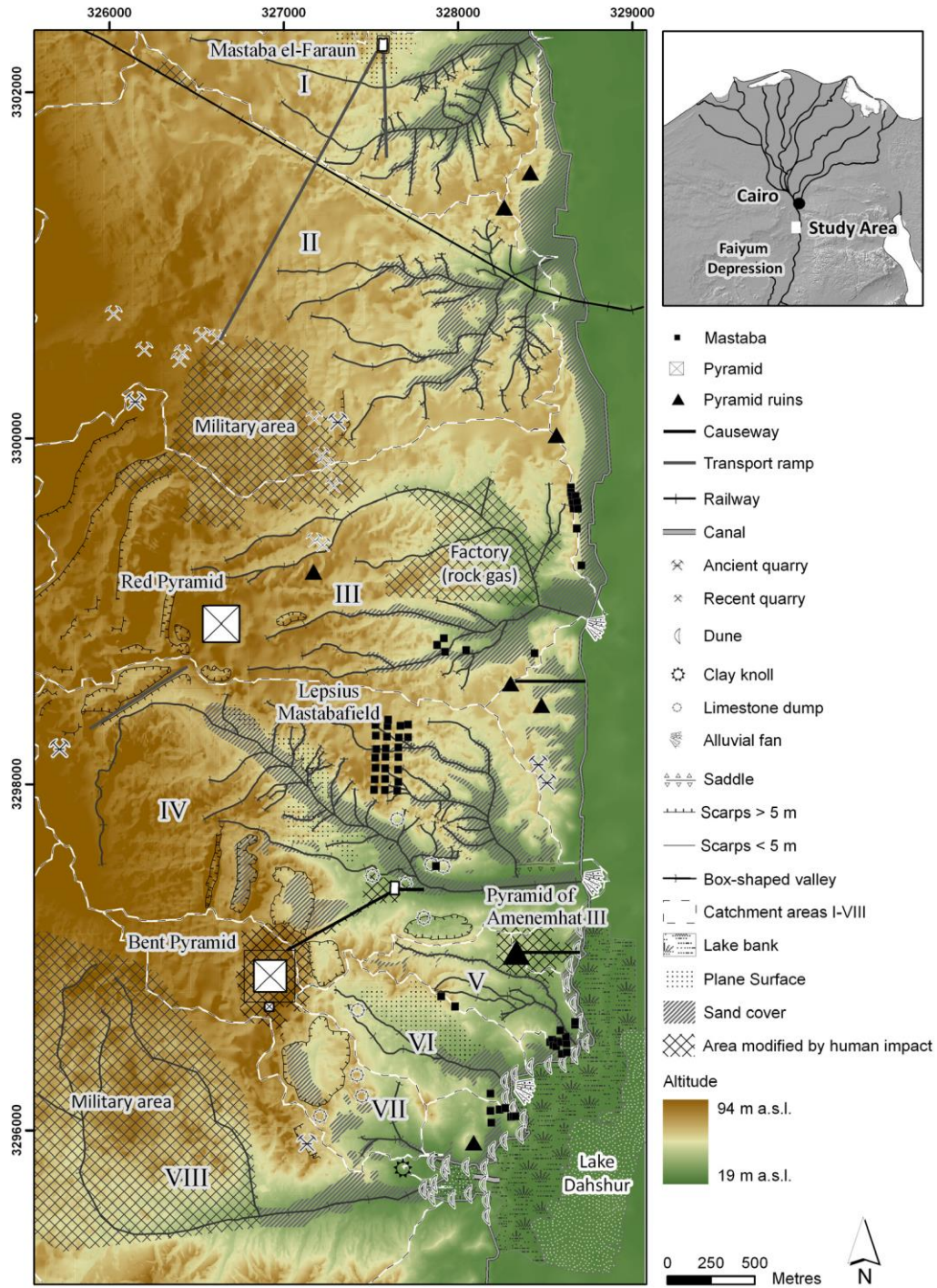


Figure 31: Geomorphological map of Dahshur.<sup>210</sup>

<sup>210</sup> Bebermeier, et al, “Analysis of Past and Present Landscapes Surrounding the Necropolis of Dahshur,” 333.

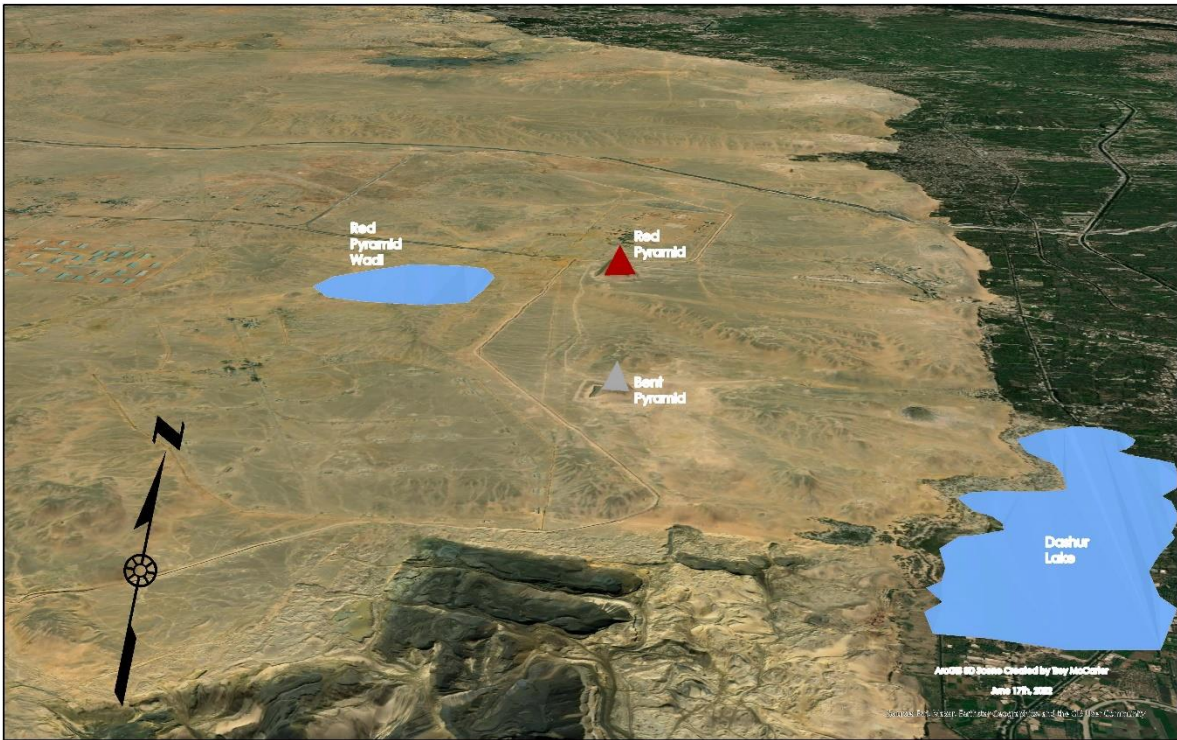


Figure 32: 3D Map of Dahshur Landscape.

Figure 31 above shows the modern-day landscape of the Dahshur plateau. Near the area marked IV is a group of tributaries which would have come directly from the Nile's position during the Old Kingdom. A combination of these tributaries, alongside Lake Dahshur would have provided sufficient transportation routes of materials for the pyramids, alongside any other necessities to keep the construction project running smoothly.



Figure 33: Satellite aerial view of Dahshur Lake in 2004.

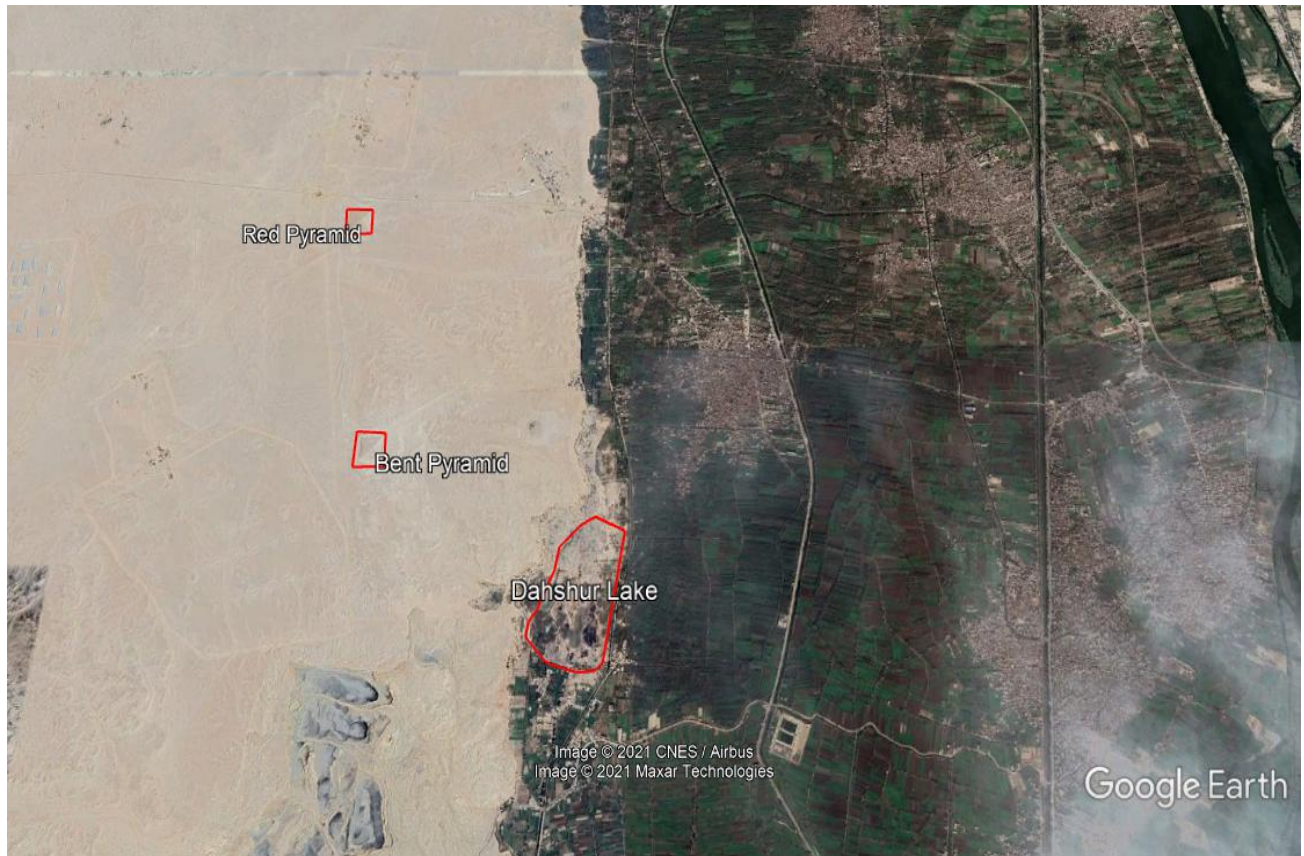


Figure 34: Satellite aerial view of Dahshur Lake in 2019.

Unfortunately, the extent of the role Lake Dahshur played is unknown at this time, and it might continue to elude Egyptologists, especially since the area has dried up significantly over the past decade as the two figures directly above show, and further research is limited due to military presence.<sup>211</sup>

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<sup>211</sup> Communication with PhD student Lea Rees who is writing her dissertation "Transformationen der kulturellen Landschaft in Dahschur. Eine landschaftsarchäologische und raumsoziologische Studie zur Sozialtopographie Dahschurs" at Freie Universität Berlin on the pre-Sneferu landscape of Dahshur



Figure 35: Eliot Elisofon: Sneferu Bent pyramid, close to the cultivation, Dahshur, Egypt.

Luckily, American photographer Eliot Elisofon took hundreds of photographs of ancient Egyptian sites during his travels in Africa, with many showing the divide between the cultivation and the desert. As the above photo shows with the remains of Dahshur Lake, the demarcation line between the desert and the cultivation was clearly visible even in 1973.<sup>212</sup> It is plausible that this area was filled with more water during the Old Kingdom and would have been used in the construction of the two Sneferu pyramids.

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<sup>212</sup> Eliot Elisofon, *Sneferu Bent pyramid, close to the cultivation, Dahshur, Egypt*, Smithsonian Institution Archives, Eliot Elisofon Field Collection, EEPA 1973-001, Image, <https://www.si.edu/object/archives/components/sova-eeepa-1973-001-ref8528>.

## Quarry

The quarries for the Red Pyramid appear to the southwest of the pyramid as clearly recognizable transport ramps, as well as fragments of sandy, reddish-brown blocks remain.<sup>213</sup> Unfortunately, the transport ramps are barely recognizable from a current overhead view of the Red Pyramid as the modern road construction obstructs the once prominent ramp.



Figure 36: Satellite aerial view of Red Pyramid Complex with Transport Ramp (August 2019).

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<sup>213</sup> Klemm and Klemm, *The Stones of the Pyramids*, 60-61.





Figure 37: Satellite aerial view of Red Pyramid with Ramps and Potential Quarry Site (in red) (March 2018).<sup>214</sup>

As shown in the image above, the location of the Red Pyramid is close to this potential quarry.<sup>215</sup>

The functional reason why the Red Pyramid was built at Dahshur is rather clear. Building a structure 105 meters tall whose volume consists of 1,694,000 cubic meters is a monumental task, but it becomes easier when the core masonry of the monument is located next to the site.<sup>216</sup>

As for the Bent Pyramid there was a different type of limestone rock used to build it. Klemm notes that the actual quarry site is in a restricted military zone so studying this site is

<sup>214</sup> This potential quarry site comes from Klemm and Klemm, *The Stones of the Pyramids* 61.

<sup>215</sup> A measurement from the southwest corner of the pyramid to the middle of the red rectangle reads 0.54 kilometers.

<sup>216</sup> For measurements of all Old Kingdom pyramids, see Table 2 on page 209.

impossible now.<sup>217</sup> This quarry site is located near the Red Pyramid, so it makes sense why Sneferu would quarry from this site. However, it begs another question of why Sneferu builds the pyramids at Dahshur with two different types of limestone. Further research on the geology of Dahshur will be needed in order to construct a clearer picture.

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<sup>217</sup> Klemm and Klemm, *Stone Quarries*, 57

## Pre-Sneferu Dahshur

While Dahshur's landscape prior to the construction of the Red and Bent Pyramids is not completely understood, there is current research being conducted on the subject that could shed some new light on the area,<sup>218</sup> as well as initial excavations undertaken by Jacques de Morgan at the pyramid complex of Senwosret III and a reevaluation of the complex by Dieter Arnold.<sup>219</sup> During his excavation, de Morgan found two tomb shafts on the western side of the court of the complex that each contained an alabaster sarcophagus. One was empty with its lid on the floor, while the other had four smaller alabaster jars alongside fragments of cloth.<sup>220</sup> Lauer later dated these sarcophagi to the Third Dynasty due to the similarities to the ones he discovered under the Step Pyramid. He speculated that the empty sarcophagus de Morgan found once had a mummy inside while the other served as a chest for the four alabaster jars.<sup>221</sup> In his reassessment of the site, Dieter Arnold speculated that they belonged to an older important structure due to the correlation between alabaster sarcophagi and queens of the Third Dynasty.<sup>222</sup> He thinks it is possible that an undiscovered Third Dynasty royal tomb is in the area and this could have been Sneferu's influence for choosing Dahshur as a site.<sup>223</sup> Additional evidence pointing to an earlier

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<sup>218</sup> In addition to Lea Rees' dissertation topic, she gave a lecture on the topic as well. Lea Rees, "Dahshur before Sneferu: The pre-pyramid cultural landscape of Dahshur," (presentation, German Archaeological Institute Cairo, Zoom, June 29<sup>th</sup>, 2021).

<sup>219</sup> Jacques de Morgan, *Fouilles a Dahchour: Mars-Juin 1894*, (Adolphe Holzhausen: Vienna, 1895); Dieter Arnold, *The Pyramid Complex of Senwosret III at Dahshur Architectural Studies*, (New York: The Metropolitan Museum of Art, 2002).

<sup>220</sup> De Morgan, *Fouilles a Dahchour: Mars-Juin 1894*, 75-76.

<sup>221</sup> Jean-Phillipe Lauer, "'Fouilles du Service des Antiquites a Saqqarah (secteur nord) (novembre 1932-mai 1933)," *ASAE*, 33, (1933): 165-66.

<sup>222</sup> Arnold, *The Pyramid Complex of Senwosret III at Dahshur Architectural Studies*, 108.

<sup>223</sup> Arnold, *The Pyramid Complex of Senwosret III at Dahshur Architectural Studies*, 108.

Third Dynasty occupation of Dahshur was a Fourth Dynasty tomb 105 meters to the northwest of the Senwosret III pyramid complex. Inside the tomb Arnold and his team found a boundary stela of Djoser.<sup>224</sup> Finally, the discovery of a column in 1990, as well as the interior architecture of the Senwosret III complex points to a Third Dynasty structure and indicates that Senwosret III possibly built on top of an older structure and used aspects for his own pyramid complex.<sup>225</sup> Arnold's arguments here are definitely feasible, especially considering that it is widely known that pharaohs built their pyramid complexes on top of older structures as in the case of Unas at Saqqara. More research outside of the Senwosret III pyramid complex is needed, but the presence of architecture and burial equipment that resemble the Third Dynasty indicates that Dahshur was not as isolated of a burial ground as once previously thought.

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<sup>224</sup> Arnold, *The Pyramid Complex of Senwosret III at Dahshur Architectural Studies*, 108.

<sup>225</sup> Arnold, *The Pyramid Complex of Senwosret III at Dahshur Architectural Studies*, 108. Additional excavations which uncovered "fake" gates at the pyramid complex similar to the Djoser complex were discovered by Arnold and a team in 2011. See: Dieter Arnold, "Weitere Erkenntnisse zur Umfassung der Pyramide Sesostris' III. in Dahschur." *Sokar*, 24, (2012): 24-31.

## The Dahshur Pyramids: A Unified Project?

The two pyramids at Dahshur represent an important innovation in pyramid building which influenced pharaohs for the rest of the Old Kingdom. As mentioned above, the commonly held perception among most Egyptologists is that there was a catastrophic error during construction of the Bent Pyramid.<sup>226</sup> Due to this error, Sneferu commissioned a third pyramid which became the Red Pyramid. However, a few recent studies have challenged this theory<sup>227</sup> and proposed that the pyramids at Dahshur were part of a unified project. The subsequent paragraphs will discuss and analyze these theories in detail and show that it is plausible that Sneferu intended both pyramids to be part of a unified project.

Some of the common conceptions about Bent Pyramid comes from the instability in the slope of the incline, a fracturing within the pyramid itself, as well as the sturdiness of the ground where the pyramid lies. In their survey of Dahshur, Maragioglio and Rinaldi point out that there was a settling of the pyramid which caused a fracture to occur within the pyramid. This was a result of the outside masonry sliding with respect to the inside masonry.<sup>228</sup> However, Maragioglio and Rinaldi, as well as recent studies by Nuzzolo and Belmonte and Magli,<sup>229</sup> note that it is impossible to determine when the fracturing occurred. If it happened during construction, why is the pyramid finished down to the outer Tura limestone casing? If it occurred after construction, then the initial theory that the fracturing caused an abandonment is irrelevant.

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<sup>226</sup> See footnote 297.



<sup>227</sup> See footnote 298.

<sup>228</sup> Maragioglio and Rinaldi, *L'architettura delle piramidi menfite. Parte 3. Il Complesso di Meidum, la Piramide a Doppia Pendenza, e la Piramide Settentrionale in Pietra di Dahciur*, (Torino/Rapallo, 1964), 98.

<sup>229</sup> Nuzzolo, "The Bent Pyramid of Snefru at Dahshur," 262; Magli, "Topography, astronomy and dynastic history in the alignments of the pyramid fields of the Old Kingdom," 181.

Either outcome is a strong case against a trial-and-error process in pyramid building. Additionally, Nuzzolo notes that similar fracturing exists in the Red Pyramid and no one questioned its stability issues.<sup>230</sup> He believes that the Bent Pyramid’s design was purposeful and that the two pyramids at Dahshur represent tomb duality similar to the funerary enclosure and tombs of Abydos, as well as chapels dedicated to Upper and Lower Egypt at the Step Pyramid complex.<sup>231</sup> Belmonte and Magli also point out these similarities,<sup>232</sup> but none of these scholars address the biggest issue with this comparison: the Abydos tombs and Step Pyramid chapels are not representations of pyramids. While there was a significant evolution in mortuary complexes from the First Dynasty to the Fourth Dynasty, Nuzzolo, Belmonte, and Magli take liberties with the surviving architectural evidence in this case and end up hurting their own arguments. The surviving textual evidence, which Belmonte and Magli discuss at length, makes a stronger case for a duality project for Dahshur.

The first piece of textual evidence that supports a dual project for the Dahshur pyramids

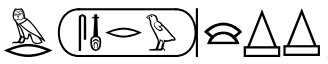
comes from the names of the Red and Bent Pyramids:  and . The first is the name of the Red Pyramid: *h<sup>c</sup>-snfrw* (Sneferu which arises) while the latter is the Bent Pyramid: *h<sup>c</sup>-snfrw-rsy* (Sneferu, which arises to the south).<sup>233</sup> A long standing tradition amongst Egyptologists in the late 19<sup>th</sup> and early 20<sup>th</sup> centuries, *h<sup>c</sup>-snfrw-rsy*


<sup>230</sup> Nuzzolo, “The Bent Pyramid of Snefru at Dahshur,” 263.

<sup>231</sup> Nuzzolo, “The Bent Pyramid of Snefru at Dahshur,” 266-267. He references David O’Connor, *Abydos. Egypt’s First Pharaohs and the Cult of Osiris*, (London: Thames and Hudson 2009), 174–181, and Rainer Stadelmann, “Origins and Development of the Funerary Complex of Djoser.”

<sup>232</sup> Magli, “Topography, astronomy and dynastic history in the alignments of the pyramid fields of the Old Kingdom,” 181

<sup>233</sup> Bennett, “Pyramid Names,” 175.

was attributed to the Meidum pyramid instead of the Bent Pyramid due to archaeological and textual evidence mentioning two built pyramids for Sneferu. This thinking changed when in 1945, Abdel Salam Hussein worked at the Bent Pyramid complex and found the name of Sneferu chiseled underneath some of the blocks of the Bent Pyramid.<sup>234</sup> Additional textual evidence pointing to a possible joint project comes from the tombs of *Dw3-r3*, *Hn-k3*, and *K3i-ḥ3f* at Dahshur. Each one of these individuals had the title of *jmy-rḥ Hḥwy-Snfrw* (the overseer of Sneferu’s two pyramids, which rise in splendor)<sup>235</sup> . This title had a strong distinction because both *jmy-rḥ hḥ-snfrw* and *jmy-rḥ hḥ-snfrw-rsy* were given titles as well.<sup>236</sup> The difficulties that appear with these individuals who have this title is their chronology. It is hard to discern whether they lived during the time of Sneferu, lived in the middle of the Fifth Dynasty, or lived in the Sixth Dynasty.<sup>237</sup> If these individuals lived during the Fourth Dynasty during the reign of Sneferu, then this is early textual evidence that the pyramids at Dahshur were potentially constructed as a dual project.<sup>238</sup>

Furthermore, the shaping of the Dahshur landscape points to a global project. Magli notes that the literal mountain (*dḥw*)  shape the Red Pyramid and Bent Pyramid creates when viewing from Saqqara.

<sup>234</sup> Ahmed Fakhry, *The Pyramids*, 73-75.

<sup>235</sup> Juan Antonio Belmonte, and Giulio Magli. “Astronomy, Architecture, and Symbolism: The Global Project of Sneferu at Dahshur,” in *Journal for the History of Astronomy*, vol. 46, issue 2, (2015): 184. See also Nigel Strudwick, *The Administration of Egypt in the Old Kingdom*, 118, 146, and 162. For a full reference on this title, see: Jones, *An Index of Ancient Egyptian Titles, Epithets, and Phrases of the Old Kingdom Volume I*, 187.

<sup>236</sup> For example, *K3i-nfr* only had the title of *jmy-rḥ hḥ-snfrw*

<sup>237</sup> See: Jones, *An Index of Ancient Egyptian Titles* 186-187 and Strudwick, *The Administration of Egypt in the Old Kingdom*, 118, 146, 152, and 162.

<sup>238</sup> If they lived during the Fifth or Sixth Dynasties, then this evidence makes the case weaker than before.



Figure 38: Looking towards the Dahshur Pyramids from Saqqara (photo by author).

As shown in the above image, the pyramids at Dahshur clearly look like the *dw* hieroglyph when looking south from Saqqara. This use and shaping of landscapes are not a new idea as places such as Abydos were important areas where the landscape was worshipped and modified.<sup>239</sup> The mountain shape of the pyramids at Dahshur is used further at the end of the Fourth Dynasty with Shepseskaf and the end of the Sixth Dynasty with Pepi II when they appear to create a literal *sh* (horizon).<sup>240</sup>

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<sup>239</sup> See: Günter Dreyer, *Umm el-Qaab I: Das prädynastische Königsgrab U-j und seine frühen Schriftzeugnisse* (Mainz: DAI Archäologische Veröffentlichungen, 1998), David O'Connor, *Abydos: Egypt's First Pharaohs and the Cult of Osiris*, (London: Thames and Hudson, 2009) and Ilona Regulski (ed), *Abydos the Sacred Land at the Western Horizon*, (Leuven: Peeters, 2019). Additionally, Belmonte and Magli (182) points out the importance of the

ancient Egyptian word for Abydos *shdw*  , which depicts the mountain hieroglyph.

<sup>240</sup> This is discussed on pages 178-186 below



This leads into another potential ideological and historical reasoning behind this global project at Dahshur. Belmonte and Magli points to the Palermo Stone which has a passage of *sḥ q(zi)-ḥdt Snfrw tp(i)-r sbḥt mḥtt irt ʿzw ḥ-nswt ʿš zp 8 tnwt*.<sup>241</sup> Translated, this passage reads “erecting (the building) 'Sneferu high of the white crown' (at) the base? of the southern gateway, (and the building) 'Sneferu (high of) the red crown' (at) the base? of the northern gateway; making doors for the royal palace (of) pine; eighth occasion of the census.”<sup>242</sup> Wilkinson concludes that these two buildings are unknown<sup>243</sup>, but Belmonte and Magli suggests that they are the Red Pyramid and Bent Pyramid for a couple of reasons. First, they note the colors the stones used for both pyramids. The Red Pyramid, being geographically north, represented the Red Crown of Lower Egypt with its reddish limestone. The Bent Pyramid, being geographically south, represented the White Crown of Upper Egypt with its limestone core blocks and Tura casing.<sup>244</sup> The conical shape of the Bent Pyramid also represents the shape of the White Crown.<sup>245</sup> These two pyramids showcase the duality of the title of *nswt-bity* in a literal monumental form. Secondly, they argue that the Dahshur pyramids acting as a “gateway” are due to their location near the start of Nome 22 in Upper Egypt. They are a literal divide between Upper and Lower Egypt.<sup>246</sup>

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<sup>241</sup> Belmonte and Magli, “The Global Project” 185.

<sup>242</sup> Toby Wilkinson, *The Royal Annals of ancient Egypt: The Palermo Stone and its associated fragments*, 144.

<sup>243</sup> Wilkinson, *The Royal Annals of ancient Egypt: The Palermo Stone*, 144.

<sup>244</sup> Belmonte and Magli, “The Global Project,” 185-186.

<sup>245</sup> Belmonte and Magli, “The Global Project,” 185-186.

<sup>246</sup> Belmonte and Magli, “The Global Project,” 177.

At first glance, there are major issues with parts of Belmonte and Magli's argument. First, the lack of a pyramid determinative after the names of Sneferu's cartouches with the crowns of Upper and Lower Egypt on the Palermo stone is problematic. The pyramid names of Sahure and Userkaf, alongside the name of Shepseskaf's mastabas, appears in the Palermo Stone with the pyramid determinative, while Sneferu's pyramid names are nowhere to be found.<sup>247</sup> Belmonte and Magli note this omission, but fail to address why this occurs.<sup>248</sup> Secondly is the issue of the casing for the Red Pyramid. Because Old Kingdom "true" pyramids were encased with fine white limestone from Tura, it is believed that the Red Pyramid would have had this type of limestone as well.<sup>249</sup> However, they argue the following:

However, while the casing of the Bent Pyramid is almost intact, that of the Red Pyramid has nearly completely disappeared (see Figure 2). Perhaps, the pyramid was left unfinished due to the death of the king in his year 31, or it is indeed possible that there was no intention of completely casing it in white limestone. Only some sections of the lowest courses have survived in situ, which is surprising considering that the general idea is that the casing blocks of Tura limestone of the Red Pyramid were used to burn lime in Roman times. Curiously, the white limestone pyramidion (a tiny fraction of the total casing) was found in fragments during the excavations of the funerary temple, and under this consideration, it would be reasonable to assume that more rubble of the rest of the hypothetical white limestone casing should have been found on the site if this was ever finished. Interestingly, when just excavated, the pyramidion showed traces of a red pigment that could be either painting or rock oxidation, see Stadelmann, 1985, op. cit. (ref. 15). If they were rests of painting, it may after all suggest that the Red Pyramid could have been painted red once finished.<sup>250</sup>

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<sup>247</sup> See Figures 1-3 in Wilkinson *The Royal Annals of Ancient Egypt*, 288-290

<sup>248</sup> Their only argument to this omission is "...although the text is rather wordy in that particular section." See: "The Global Project," 200.

<sup>249</sup> It should be noted that Klemm and Klemm claim that the casing for the Red Pyramid came from Maasara instead of Tura; although this observance is somewhat moot within the bigger picture because both Maasara and Tura are near one another. See Klemm and Klemm, *The Stones of the Pyramids*, 52 and 65.

<sup>250</sup> Belmonte and Magli, 200.

Stadlemann argues that the reddish-brown discoloration of the pyramidion is a result of a patina on the stone: it oxidized after many millennia.<sup>251</sup> Furthermore, he is against the idea that any part of the pyramid or pyramidion was painted.<sup>252</sup> Until more definitive evidence is found though, the representation of the crowns of Upper and Lower Egypt in the form of the Dahshur pyramids is nothing more than pure speculation.

What does all this evidence essentially mean for choosing Dahshur as a location choice for pyramid complexes? The consensus amongst Egyptologists is that there is no doubt Sneferu's architects and engineers began construction on both pyramids during his lifetime. The exact timeline, and even the order, of construction for the Bent and Red Pyramids is hazier. It is possible that Sneferu wanted a literal representation of the duality of ancient Egyptian kinship through the two crowns, and that the two different types of limestone that make up the core blocks of the Red and Bent Pyramids symbolize duality. Yet, there is no definitive proof that this is the case. Textual evidence gives some credence to a potential dual project, and the theories proposed by Nuzzolo, Magli, and Belmonte should be investigated further, especially with regards to the Dahshur pyramids acting as the gateways mentioned in the Palermo Stone. I detailed the arguments about the boundaries and issues between *Jnbw-Ḥd* and Memphis above, but it needs to be noted again that there is not a clear Egyptological consensus for the boundaries during the Old Kingdom.<sup>253</sup>

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<sup>251</sup> Rainer Stadlemann, *Die ägyptischen Pyramiden: Vom Ziegelbau zum Weltwunder*, (Mainz am Rhein: Philip von Zabern, 1997), Table 36.

<sup>252</sup> Stadlemann, *Die ägyptischen Pyramiden: Vom Ziegelbau zum Weltwunder* 306. Stadlemann provides two sources which discuss the possibility that the pyramids may have been originally painted. See: Ali Hassan, „Waren die Außenseiten der Pyramiden in Giza farbig?“ *MDAIK* 28, (1972), 153-155. Jean-Philippe Lauer, *Observations sur les pyramides*, (BdE 30,1960), 31.

<sup>253</sup> See pages 30-33.

## Giza

### Geology and Topography.

The area that houses the pyramid complexes, cemeteries, and Sphinx on the Giza Plateau originated around 50 million years ago during Middle Eocene period. Stretching 2.2 kilometers east to west and 1.1 kilometers north to south, the Moqattam Formation was used by the pharaohs of the Fourth Dynasty to create the largest pyramids in the Old Kingdom.<sup>254</sup> The figure below is a reconstruction by Mark Lehner on what the Giza Plateau potentially looked like prior to the construction in the Fourth Dynasty.<sup>255</sup> The two numbers nearest the north arrow in the photograph: 18 and 23, represent the floodplain and a canal, respectively. Numbers 1 through 3 represent the locations of each of the three pyramids of Khufu, Khafre, and Menkaure. The area surrounding these numbers, which ends to the immediate west of number 6, the southeast of 7, and right before 14 indicates the limits of the Moqattam Formation on the plateau. Number 14 is of utmost importance because it represents the sandy wadi which separates the Moqattam Formation and Maadi Formation, and the limits of where Khufu, Khafre, and Menkaure built their pyramid complexes.<sup>256</sup>

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<sup>254</sup> Kawae and Kamei, "Geomorphological Aspects at the Giza Plateau in Egypt during the Age of Pyramid Building," 864-865.

<sup>255</sup> Mark Lehner, "The Development of the Giza Necropolis: The Khufu Project," in *Mitteilungen des Deutschen Archäologischen Instituts Abteilung Kairo*, vol 41, (1985): 113

<sup>256</sup> Lehner, "The Development of the Giza Necropolis: The Khufu Project," 114.

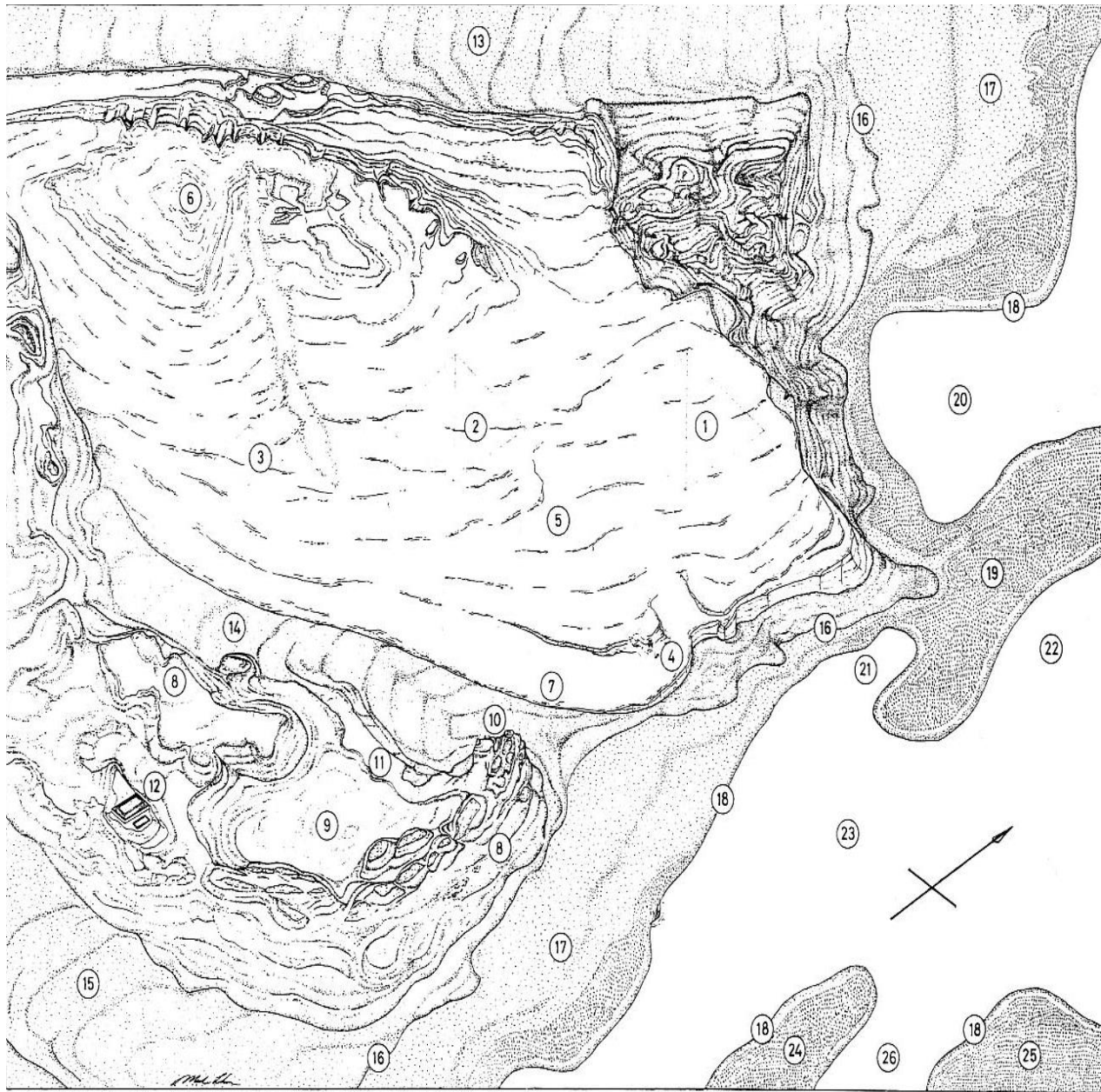


Figure 39: Lehner-Isometric projection of the Giza Pyramids site before 4<sup>th</sup> Dynasty quarrying and construction.<sup>257</sup>

<sup>257</sup> Lehner, "The Development of the Giza Necropolis: The Khufu Project," 113.

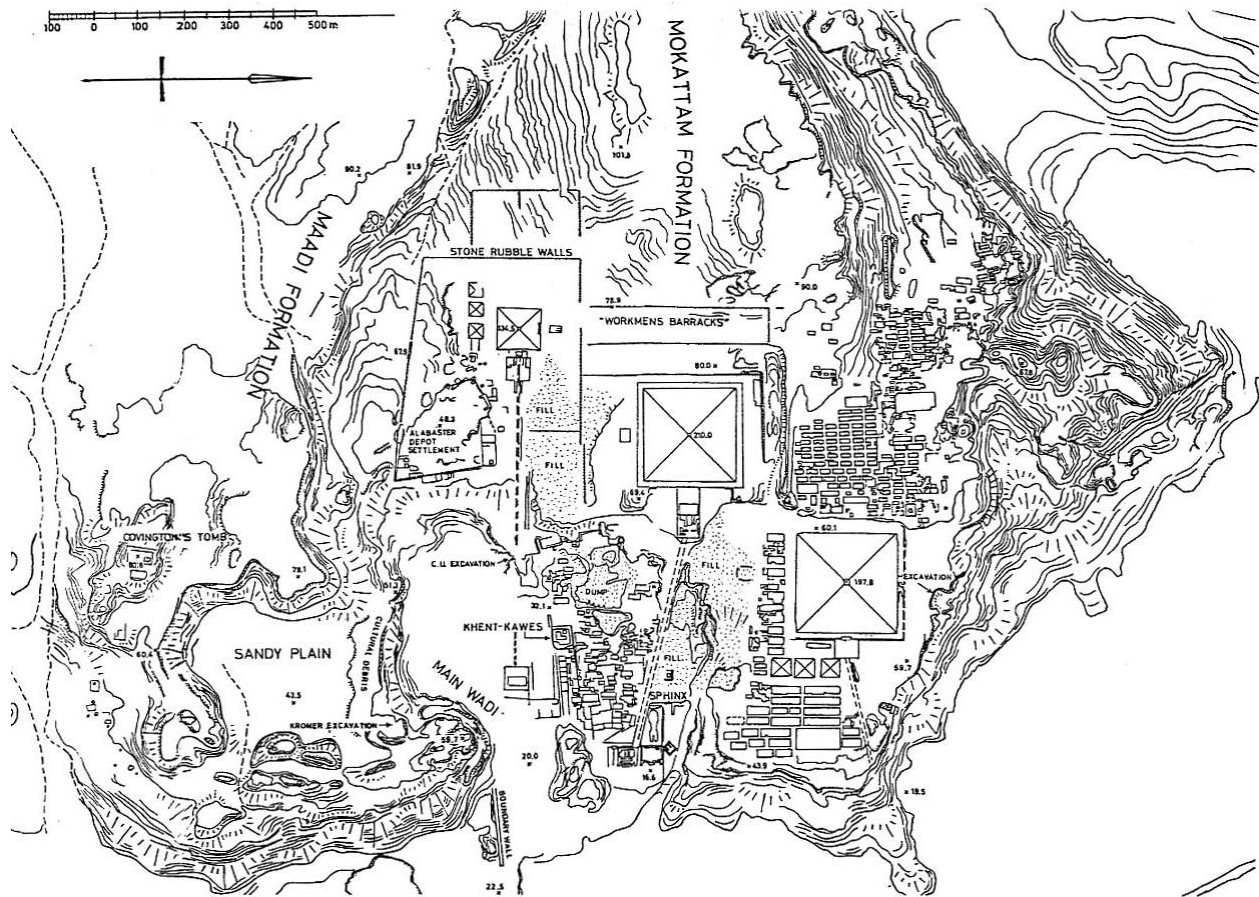


Figure 40: Lehner-Form-line map of the Giza Pyramids site traced from the 1:5000 topography map sheets produced by photogrammetry for the Egyptian Ministry of Housing and Reconstruction.<sup>258</sup>

<sup>258</sup> Lehner, "The Development of the Giza Necropolis: The Khufu Project," 111.

Lehner's above image shows the Giza Plateau as it mostly looks today. Another important aspect of this location comes from the natural wadi that sweeps through the southeastern portion of the plateau near where the Khentkaus tomb and the Menkaure Valley Temple currently reside. This aerial overview of the modern-day landscape of the Giza Plateau will become vital later in this study as it shows the impracticalities of building another pyramid complex on the plateau.



Figure 41: Satellite aerial view of Giza Plateau with Harbor (March 2020).

Another area of interest on the plateau are the harbors that were built during the construction of the Khufu complex and was used extensively during the construction of Khafre and Menkaure's complexes. The harbors reached towards the valley temples serving as large scale transport and unloading of stones such as granite and basalt. This required larger ships, as

well as access to a canal system from the Nile.<sup>259</sup> The proposed location for the canal that would have delivered the materials to the plateau comes towards the current day location of the Khafre Valley Temple and the Sphinx Valley Temple and is located between two mounds known as Nazlet el-Sissi and Nazlet el-Batran East.<sup>260</sup> While Khufu's Valley Temple has yet to be excavated due to it sitting beneath modern housing and businesses, the remains of his harbor most likely lie near the modern-day street of Zaghloul, which is less than a kilometer to the northeast of the Khufu pyramid.<sup>261</sup> As for Khafre and Menkaure, their harbors lie where the canals would have transported the building materials for the pyramid complexes.

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<sup>259</sup> Butzer, *Early Hydraulic Civilization in Egypt: A Study in Cultural Ecology*, 45-46. Furthermore, a proposed "defunct arm of the Nile" has also been attributed outside of canaling the Nile closer to the harbors found at Giza. Using pollen-derived vegetation patterns over the course of 8,000 years, there is evidence that a potential "Khufu-branch" of the Nile existed during the time of the Old Kingdom and dried up around the Late Period. See: Hader Sheisha, David Kaniewski, Nick Marriner, Morteza Djamali, Gamal Younes, Zhongyuan Chen, Gad El-Qady, Amr Saleemf, Alain Véron, and Christophe Morhangea, "Nile waterscapes facilitated the construction of the Giza pyramids during the 3rd millennium BCE," in *PNAS*, vol. 119 (37), (September 13 2022), 1-6.

<sup>260</sup> Mark Lehner, "On the Waterfront: Canals and Harbors in the Time of Giza Pyramid-Building," in *AERAGram* vol. 15 (1-2), (Fall 2014): 15.

<sup>261</sup> Mark Lehner, "On the Waterfront: Canals and Harbors in the Time of Giza Pyramid-Building," 15.





Figure 42: Pathway leading out to the harbor near the Khafre Valley Temple (photo by author).

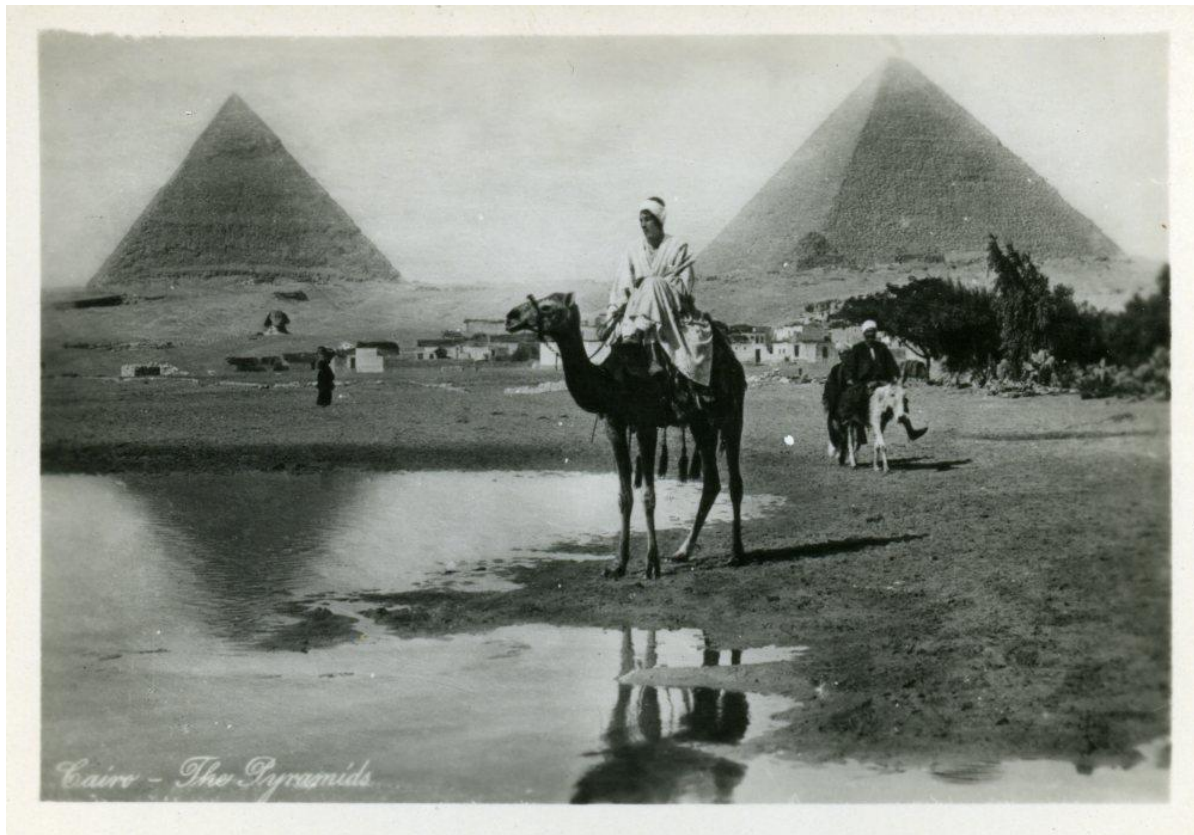


Figure 43: Lehnert and Landrock-Cairo-The Pyramids<sup>262</sup>

The two figures above showcase the area to the immediate east of the Khafre and Sphinx Valley Temples. Figure 42 is a modern-day image of the ramp that was part of the harbor which led out to the water basin. While the location of Figure 43 is further to the east than Figure 42, it provides a visual to how the basin might have looked during the Old Kingdom. With the annual inundation of the Nile, this region flooded and allowed easier transport access of materials for the Fourth Dynasty pharaohs.

### Quarry

Unlike other Old Kingdom pyramids, the quarry sites of the three pyramids at Giza are the most studied and well known of all the Old Kingdom pyramid complexes.<sup>263</sup> This is mostly due to the Giza Plateau Mapping Project which has mapped the plateau for forty years, as well as the amazing preservation of the tombs in the Central Field.

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<sup>262</sup> Rudolf Lehnert and Ernst Landrock, "Cairo-The Pyramids," 1940, [https://scholarworks.moreheadstate.edu/still\\_postcards/204/](https://scholarworks.moreheadstate.edu/still_postcards/204/)

<sup>263</sup>For a general overview of the quarrying and its impact on the Giza Plateau, see: Lehner and Hawass, *Giza and the Pyramids*, 402-419.



Figure 44: Overlooking Quarry area of Khufu and Khafre pyramids (photo by author)



Figure 45: Area surrounding Khentkaus Monument and Khufu/Khafre quarries (photo by author).

The vast landscape manipulation created by the architects, engineers, and workers of Khufu, Khafre, and Menkaure's pyramid complexes are nothing short of extraordinary, especially considering that the original elevation of the Giza Plateau prior to the construction of Khufu's pyramid complex might have been the top of the Khentkaus monument and its immediate surrounding landscape (Figure 45).<sup>264</sup> The excavations and research completed at the Giza Plateau has made it easy to locate the quarrying areas for all three pyramids.



Figure 46: Satellite aerial view of Giza Plateau with Quarry Areas (in red) (October 2018).

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<sup>264</sup> Mark Lehner personal communication.

The stones quarried for both Khufu and Khafre's pyramid complex comes from the area to the immediate east of Khafre's pyramid which stretches north past Khafre's causeway and south towards the Khentkaus monument through the Central Field. In the image directly below, there is even surviving archaeological evidence of a ramp which would have been used to transport the stone from the quarried area to the pyramid locations. With regards to the Menkaure quarry, it lies to the southwest of the pyramid complex near the edge where the Mokkatam formation ends and the Maadi formation begins.<sup>265</sup>



Figure 47: Remains of Transport Ramp at Giza (photo by author).

With the Giza Plateau mostly being a new necropolis beginning with the reign of Khufu, the surrounding area was unused, and Khufu, Khafre, and Menkaure manipulated the geography of the plateau. Again, due to the archaeological work completed on the plateau over the past

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<sup>265</sup> See Figure 39.

forty years,<sup>266</sup> the locations of the quarries for the pyramid complexes on the Giza Plateau are fully known and there is no speculation compared to other pyramids such as Meidum, or South Saqqara.

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<sup>266</sup> Lehner and Hawass, *Giza and the Pyramids*, 402-419.

## Early Dynastic:

Activity at Giza existed long before Khufu began construction on his pyramid complex. In 1904, Alessandro Barsanti and Georges Daressy excavated at Giza and found a tomb (later named Mastaba V) with a sealing of the First Dynasty pharaoh Djet.<sup>267</sup> Two years later, Flinders Petrie conducted a more thorough excavation of the area and found 52 subsidiary graves surrounding the mastaba.<sup>268</sup> The existence of this mastaba and its subsidiary burials indicate that the person buried in the mastaba was of great importance during the First Dynasty. As Mark Lehner and Zahi Hawass conclude about the existence of grave goods such as copper chisels and ivory wands with gazelle heads in these subsidiary burials, archaeologists finding similar tombs around niched enclosures of First Dynasty pharaohs and Abydos as well as surrounding large mastabas at North Saqqara indicates a precedent for Mastaba V existing at Giza.<sup>269</sup> While the exact location of Mastaba V and its owner is unknown today, Early Dynastic pottery has been found in the area,<sup>270</sup> its mere existence at Giza shows that Giza was an important part of the Early Dynastic landscape.

During his same excavation, Petrie found what he determined to be a tomb from the date of the Second Dynasty. He discovered five clay sealings belonging to the Second Dynasty pharaoh Ninetjer. While Ninetjer's tomb has been heavily documented at Saqqara,<sup>271</sup> the

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<sup>267</sup> Georges Daressy, "Un edifice arhaïque à Nezlet Batran," in *Annales du Service des Antiquités de l'Égypte*, vol 6, (1905): 99-106.

<sup>268</sup> William Flinders Petrie, *Gizeh and Rifeh*, (London: School of Archaeology in Egypt, University College & Bernard Quaritch, 1907), 3-5 and Plate VI.

<sup>269</sup> Lehner, Hawass, *Giza and the Pyramids: The Definitive History* 48-49.

<sup>270</sup> Jeffreys and Tavares, "The historic landscape of Early Dynastic Memphis," 145.

<sup>271</sup> Lacher-Raschdorff, *Das Grab des Königs Ninetjer in Saqqara: architektonische Entwicklung frühzeitlicher Grabanlagen in Ägypten*.

presence of sealings dating to his reign shows that even roughly 100 years after the reign of Djet and 200 years before Khufu<sup>272</sup>, Giza was still an important site for members of the upper class of ancient Egyptian society. In 1902 and 1903, Dow Covington excavated an area 1,400 meters south of Khufu's Pyramid. Amongst his finds were objects and tombs dating from the First, Third, Fourth, Fifth, Sixth, and Twenty-Sixth Dynasties. Most important for this study though, he found a mastaba which he dated to the First Dynasty.<sup>273</sup> However, Geoffrey Martin argued against the First Dynasty date. He noticed that later research showed that the Saqqara tomb, on which Covington based his dating for the Giza mastaba, was architecturally contemporaneous with the end of the Second to the Early Third Dynasty.<sup>274</sup>

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<sup>272</sup> Hörnung, Wollf, and Krauss, *Egyptian Chronology*, 490.

<sup>273</sup> Lorenzo Dow Covington, "Mastaba Mount Excavations," in *Annales du Service des Antiquités de l'Égypte* vol. 6, (1905): 193-205.

<sup>274</sup> Geoffrey T. Martin, "'Covington's Tomb' and Related Early Monuments at Giza," in *Études sur l'Ancien Empire et la nécropole de Saqqâra dédiées à Jean-Philippe Lauer*, eds Catherine Berger and Bernard Mathieu, (Montpellier: Université Paul Valéry, 1997), 281.



## Giza in the Fourth Dynasty

### Khufu

After Sneferu died building his pyramids at Dahshur and Meidum, Khufu continued the tradition of using new sites to build pyramids complexes which ultimately led to Giza being the final resting place for Khufu. Why Khufu chose a location that was further north than the first pyramid complex ever built at Saqqara and even further north than the pyramids built by his father Sneferu is not completely clear, but there are potential indicators which give a clearer picture. The final volume of stone used for his pyramid at Giza might give a glimpse into why Giza was chosen as a site. At 2,583,283 cubic meters, Khufu's pyramid was by far the largest pyramid built at the time of the Fourth Dynasty.<sup>275</sup> Sneferu built on an unparalleled scale with his pyramids at Meidum, Dahshur, as well as his smaller pyramid at Seila, that culminated in a reign of monumental architecture not yet seen in ancient Egyptian history. It is possible that Khufu planned to build a pyramid bigger than any of his father's pyramids and the Giza plateau might have been the only place within the Memphite region where such a large pyramid was possible,<sup>276</sup> especially if Khufu did not want to build in the shadows of predecessor such as Sneferu or Djoser. A large amount of unoccupied and untouched bedrock was needed to construct a pyramid complex on the scale of Khufu's.

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<sup>275</sup> No subsequent pyramid would pass this mass either.

<sup>276</sup> Mark Lehner, Personal Communication.



Figure 48: Giza Quarry Location Looking North (photo by author).



Figure 49: Inside Cut Mark at Giza Quarry (photo by author).

In looking at the rock that makes up the Giza Plateau, Lehner and Hawass state that the alternating layers of thick hard stone and soft marl stone allowed for the massive building blocks

which Khufu and his architects needed to build a pyramid the size of the Great Pyramid.<sup>277</sup> Furthermore, the Maddi formation contained thinner and looser rock, which crumbles and made it impossible to quarry the large blocks needed for size of Khufu's pyramid.<sup>278</sup> This is different than the limestone found at Saqqara, which was only twenty to sixty centimeters thick and was sandy in nature which allowed limestone from the area to be excavated over a short period of time with the construction crew of the pyramid complexes at Saqqara being able to pull the stone from the limestone beds and bond them into the desired sizes.<sup>279</sup> As shown in Figures 48 and 49, the size and depth needed to extract stones the size of individual blocks used for Khufu's pyramid was extraordinary, especially when compared to many of the blocks used at the pyramids in Saqqara.<sup>280</sup>

The Giza Plateau had a history of important burials prior to Khufu. In addition to these mastabas, Early Dynastic pottery appears on the plateau.<sup>281</sup> However, once Khufu built his pyramid, the site continued to be used as a royal cemetery throughout the rest of the Fourth Dynasty. What might have influenced Khufu to choose this location and not Saqqara, Zawiyet el Aryan, Meidum, or Dahshur? One important aspect to consider is that out of the seven known pyramids built prior to Khufu, only one of them is at a site where there was a previously built

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<sup>277</sup> Lehner and Hawass, *Giza and the Pyramids*, 44.

<sup>278</sup> Lehner and Hawass, *Giza and the Pyramids*, 44.

<sup>279</sup> Klemm and Klemm, *Stone Quarries in Ancient Egypt*, 56..

<sup>280</sup>See Figure 7.

<sup>281</sup> See: Jefferys and Tavares, "The historic landscape of Early Dynastic Landscape at Memphis," 45. They note that the appearance of this pottery is "too obscure to tell whether this was part of a cemetery, or settlement, or indeed was in any sort any meaningful archaeological context."

pyramid.<sup>282</sup> Choosing a new location for a pyramid complex was not unique and Khufu continued the tradition. Furthermore, as detailed below, the association with the sun cult at Heliopolis was a factor as the three pyramids on the Giza Plateau are connected to that site. Based on the topography and existing tombs and pyramids on the western portion of the Memphite nome, the only two places where a pyramid could be built on a relatively fresh site was at either Giza or Abu Rawash. Khufu ultimately chose Giza, while his successor Djedefre built further north at Abu Rawash, which also has connotations to Heliopolis.<sup>283</sup> Giza was not finished as a pyramid site as Khufu's son and grandson built two additional pyramid complexes on the plateau.

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<sup>282</sup> The pyramid of Sekhemkhet. This excludes the Red Pyramid at Dahshur because Sneferu built it alongside the Bent Pyramid and is the owner of both pyramid complexes. With regards to the date of the Unfinished Pyramid, see the above section on Zawiyet el-Aryan.

<sup>283</sup> This notion is discussed on pages 168-170.

## Khafre

Following the death of his brother Djedefre, Khafre took the throne and began the process of finding a suitable location for his own pyramid complex. Instead of constructing a complex on a new site away from previous pyramid complexes, Khafre returned to Giza and built his pyramid complex to the immediate south of his father's complex. The reasons why he did this are not clear as there is no surviving archaeological or textual evidence that gives a definitive explanation on the return to Giza. Potential factors that need to be considered though are the geology of the Giza Plateau, the construction of the Sphinx and the Sphinx Temple, and the relationship between Khafre and the sun cult. These three aspects might only give a small glimpse into Khafre's decision to build next to Khufu's pyramid complex, but they will provide an opportunity in trying to understand the thought processes of Khafre and his engineers on choosing a pyramid location.

As discussed above, the geological makeup of the Giza Plateau was most likely the only area where pyramid complexes the size of Khufu and Khafre's could be built. If Khafre wanted to build another complex the size of his father's complex, or even bigger, returning to Giza was the only option due to the quality of limestone available there. Currently, Khafre's pyramid is 143.5 meters tall, about three meters shorter than Khufu's pyramid.<sup>284</sup> However, Khafre's builders constructed the pyramid on a foundation that is about ten meters higher than the foundation of Khufu's pyramid.<sup>285</sup> As a result, both pyramids look similar in size, and depending on the area where one is standing on the plateau, Khafre's pyramid looks taller than Khufu's

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<sup>284</sup> See Table 2 on page 209.

<sup>285</sup> Lehner, *The Complete Pyramids*, 122.

pyramid. Additionally, as Figure 39 of the reconstruction of the pre-Khufu landscape of Giza shows, there was plenty of room for another large pyramid complex on the plateau.



Figure 50: View of the Sphinx alongside the pyramids of Khufu and Khafre looking Northwest (photo by author).

Another factor to consider is the presence of the Sphinx and the Sphinx Temple to the east of Khafre's pyramid and pyramid temple. Much debate is written about the age and builder of the Sphinx with fringe theories suggesting the monument was carved almost 10,000 years ago,<sup>286</sup> as well as debate amongst Egyptologists arguing for Khufu<sup>287</sup> or even Djedefre<sup>288</sup> as the

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<sup>286</sup> Robert Schoch, "Redating the Great Sphinx of Giza," *KMT: A Modern Journal of Ancient Egypt*, Vol. 3/2 (1992), 52-59 and 66-70.

<sup>287</sup> Stadlemann, *Die ägyptischen Pyramiden: Vom Ziegelbau zum Weltwunder*, 125-126.

<sup>288</sup> Vassil Dobrev has made this claim in numerous television documentaries. For the most recent, see: *Legend of the Pharaohs*, season 1 episode 5, "Secrets of the Sphinx," directed by Alain Brunard and Sigrid Clémente, written by Sigrid Clémente and Christopher Holt, featuring Vassil Dobrev and Mark Lehner, aired February 1<sup>st</sup>, 2021, Smithsonian, 2021.

builder. However, evidence by Mark Lehner and Zahi Hawass, who have both worked on the Giza Plateau since the 1970s, suggests that the Sphinx and Sphinx Temple were constructed during the reign of Khafre.



Figure 51: Sphinx and Sphinx Temple (photo by author).

Lehner and Hawass divide their argument into eight points suggesting the construction of Sphinx and its temple during Khafre's reign. Two of these factors deal with the quality of limestone used to construct the Sphinx Temple and Khafre's Valley Temple. They state that the walls of the Sphinx Temple and Khafre Valley Temple were built with the same style of limestone core blocks with red granite used as casing. In contrast, the remains of the Khufu Pyramid Temple were not built using similar blocks.<sup>289</sup> It is apparent that the Sphinx and Sphinx Temple came from the same quarry and construction sequence as the Khafre Valley

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<sup>289</sup> Lehner and Hawass, *Giza and the Pyramids*, 240.



Temple.<sup>290</sup> Other factors that point to a Khafre date are the similarities of design and dimension of the Sphinx Temple and Khafre's upper Pyramid Temple, as well as the presence of a drainage channel that runs alongside the northern end of Khafre's causeway into the southwestern corner of the Sphinx.<sup>291</sup> If Lehner's map of the pre-pyramid landscape of Giza is correct, the construction of the Sphinx and Sphinx Temple by either Khufu or Djedefre is not practical. As discussed in the Giza quarry section, the bedrock Khufu and his engineers quarried from is located on the eastern side of Khafre's pyramid and extends through what is now the Central Field. If Khufu was the builder of the Sphinx and Sphinx Temple, the bedrock which currently makes up the Khafre Valley Temple, as well as the lower part of Khafre's causeway should have been quarried earlier as it sits too close to both features. Therefore, based on evidence and conclusions presented by Lehner and Hawass, this author also believes that the Sphinx should date to the reign of Khafre.

The final aspect of Khafre choosing a pyramid site is the importance of the sun cult. Beginning with his predecessor Djedefre, a tradition to regularly incorporate the sun god Ra in a pharaoh's prenomen lasted throughout the rest of the Old Kingdom.<sup>292</sup> During the Spring and Fall equinoxes, the sun sets on the southern base of Khafre's pyramid and creates a silhouette merging the pyramid and the Sphinx into one.<sup>293</sup>

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<sup>290</sup> Lehner and Hawass, *Giza and the Pyramids*, 240

<sup>291</sup> Lehner and Hawass, *Giza and the Pyramids*, 240-241.


<sup>292</sup> There are outliers to this statement. The Second Dynasty pharaoh Raneb is the first known pharaoh to incorporate Ra in their name 200 years before Djedefre. Additionally, later Old Kingdom pharaohs such as Shepseskaf, Userkaf, Unas, and Teti do not have any known names where Ra appears.


<sup>293</sup> Lehner and Hawass, *Giza and the Pyramids*, 222.



Figure 52: Digital Vision/Getty Images-Pyramids of Giza, Egypt.

The importance of the sun is also apparent in the image directly above. While the sun is not directly in the middle between the pyramids of Khufu and Khafre, the image is still representing

a literal *ꜥht* .<sup>294</sup> Earlier evidence presented suggests Sneferu's pyramids at Dahshur being

representations of the *dw*  hieroglyph. The continuation of constructing monumental architecture to represent solar aspects of the ancient Egyptian worldview is not uncommon, especially during the reigns of pharaohs who ruled immediately after the death of Sneferu. The

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<sup>294</sup> Lehner observed this notion during his work on the Sphinx in the 1980s. See: Lehner, *A contextual approach to the Giza pyramids,* 141.

importance of the solar cult for Khafre is clearly apparent in both Lehner and Hawass's evidence, as well as the image above. Considering all the evidence presented in this section so far, Khafre's decision to build next to Khufu's pyramid was influenced by the quality of bedrock available at Giza, the construction of the Sphinx and Sphinx Temple, as well as the importance of the sun cult within the ancient Egyptian worldview, especially with regards to the pharaoh. An additional indicator, which will be discussed following the section on Menkaure, is the correlation between the Giza Plateau and the site of Heliopolis.

## Menkaure

The uncertainty as to why Khafre decided to build next to the Great Pyramid is further magnified by the reign of Menkaure. The odd one out of the Giza pyramids, Menkaure's smaller pyramid is near the scale of Djedefre's pyramid.<sup>295</sup> Building it on the Giza Plateau made sense since Menkaure was continuing in the tradition of his father and grandfather. There are some noticeable differences between the pyramid of Menkaure and the rest of the ones on the Giza Plateau. The most obvious is the size difference. The pyramid's base is half of the other two on the plateau and the volume of stone used is ten times less.<sup>296</sup> The pyramid's lack of size compared to the other two has been debated by Egyptologists. For example, Verner states that the size and unfinished state of the pyramid indicates a decline in the Fourth Dynasty.<sup>297</sup> Much like Djedefre's pyramid at Abu Rawash, this is not the case. Granite casing covered at least the lowest sixteen courses.<sup>298</sup>

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<sup>295</sup> It is 65 meters high with a base of 102.2m x 104.6m. See Table 2 on page 209.

<sup>296</sup> Lehner, *The Complete Pyramids*, 17.

<sup>297</sup> Verner, *The Pyramids*, 242. Verner is not the first to make this claim. George Reisner, Gustave Jequier, and Maragioglio also attributes these issues to Shepseskaf. Additionally, Ahmed Fakhry supported Reisner's perception and said that the mastaba was a clear sign of conflict and loss of power. More recently, a Smithsonian documentary addresses this as a possibility too. See: Gustave J equier, *Le Mastabat Faraoun: douze ans de fouilles   Saqqarah*, (Cairo: Service des Antiquit es de l' gypte, 1928); George Reisner, *Mycerinus*, 239-254; Ahmed Fakhry, *The Pyramids*, (The University of Chicago Press, Chicago, 1961), 138-139; Vito Maragioglio and Celeste Ambrogio Rinaldi, *L'Architettura delle Piramidi Menfite Parte VI: La Grande Fossa di Zauet el-Aryan, la Piramide di Micerino, il Mastabat Faraun, la Tomba di Khentkau*, (Torino/Rapallo, 1967), 134 and 168; *Legend of the Pharaohs*, season 1 episode 6, "Downfall of a Dynasty," directed by Alain Brunard and Sigrid Cl emente, written by Sigrid Cl emente and Christopher Holt, featuring Mark Lehner and Melinda Hartwig, aired February 8<sup>th</sup>, 2021, Smithsonian, 2021.

<sup>298</sup> Ahmed Fakhry, *The Pyramids*, 138-139.



Figure 53: View of Granite Casing Stones on Menkaure Pyramid (photo by author).



Figure 54: Atop the Granite Casing Stones on Menkaure Pyramid (photo by author).

Klemm and Klemm observed that Menkaure used 15,000 cubic meters of granite to face his pyramid. In comparison, Khufu used roughly 17,000 cubic meters.<sup>299</sup> Perhaps, as Lehner writes, there was not enough room to build a third massive pyramid complex or there needed to be a bigger focus on the temples.<sup>300</sup> These explanations would make the most sense as Menkaure's reign was not short; most experts have put it around eighteen years.<sup>301</sup> Building a pyramid complex Menkaure's size would not have taken the entire time. The notion that the Fourth Dynasty was collapsing reflected by the size of Menkaure's pyramid being the smallest on the Giza Plateau is unfounded. The builders of the Menkaure pyramid complex continued to use large stone blocks in its construction. Prior to Shepseskaf finishing the Menkaure Valley Temple in mudbrick, the architects, engineers, and builders of the valley temple began construction by using massive stone blocks that would serve as the temple's core. The figure below shows what Reisner termed "thieves' hole"<sup>302</sup> in the southwestern portion of the valley temple near where the causeway runs alongside the back of the western wall of the valley temple.

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<sup>299</sup> Klemm and Klemm, *The Stones of the Pyramids*, 247,.

<sup>300</sup> Lehner, *The Complete Pyramids*, 135.

<sup>301</sup> Hornung, Krauss, and Warburton, *Ancient Egyptian Chronology*, 492.

<sup>302</sup> Reisner, *Mycerinus*, 42.



Figure 55: Inside “Thieves Hole” in the Menkaure Valley Temple (photo by author).

While the pyramid itself is smaller than Khufu and Khafre, the granite casing, which might have covered the entire pyramid had Menkaure lived long enough to see the entire complex finished, as well as the foundation of the valley temple shows that the size and scale of the Menkaure pyramid complex does not indicate a decline in the power and influence of the pharaoh following the death of Khafre. In terms of the pyramid complex’s location on the Giza Plateau, as apparent in Figure 39, there was no other place for Menkaure to build his pyramid complex on the plateau besides the southwest of Khafre’s pyramid complex. Furthermore, to keep the Heliopolitan alignment of Khufu and Khafre’s pyramid, Menkaure needed to build his pyramid where it currently sits. To keep this alignment by building on the other side of Khufu’s pyramid was

impossible due to the end of the escarpment, as well as the presence of the floodplain.<sup>303</sup>

Menkaure's only choice was the southwest of the Khafre pyramid complex.

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<sup>303</sup> Lenher, "The Khufu Project," 117.



## Heliopolis Connection

The connection between the three pyramids at Giza and the site of Heliopolis was first proposed by Hans Goedicke during an interview he did in 1983,<sup>304</sup> and has been analyzed numerous times since then.<sup>305</sup> According to Goedicke, the southeast corners of each of the three pyramids at Giza line up to the sanctuary of Re at Heliopolis.<sup>306</sup>



Figure 56: Satellite aerial view of line showing connection between the southeast corners of the Giza Pyramids (October 2021).

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<sup>304</sup> Chip Brown, “A Theory on the Pyramids, Hopkins Professor Tells Why They Were Put There,” *The Washington Post*, November 30, 1983, C8.

<sup>305</sup> Lehner, “A contextual approach to the Giza pyramids,” 142-145; Hans Goedicke, “Giza, Causes and Concepts,” *Bulletin of the Australian Centre of Egyptology*, vol. 6 (1995), 39-40; Hans Goedicke, “Abusir – Saqqara – Giza,” 397-412; Giglio Magli, “Topography, astronomy and dynastic history in the alignments of the pyramid fields of the Old Kingdom,” 59-74; Massimiliano Nuzzolo and Jaromir Krejčí, “Heliopolis and the Solar Cult in the Third Millennium B.C.,” 364.

<sup>306</sup> Goedicke, “Giza, Causes and Concepts,” 39.

Subsequent scholarship took this idea and analyzed it further with most agreeing with Goedicke's initial claims.<sup>307</sup> While there is no textual evidence supporting this claim, the evidence provided by satellite imagery undeniably shows a connection between the three pyramids on the Giza Plateau. With regards to their alignment to Heliopolis though, satellite imagery taken from Google Earth does not provide a clear picture to show if there is a connection between the two places.

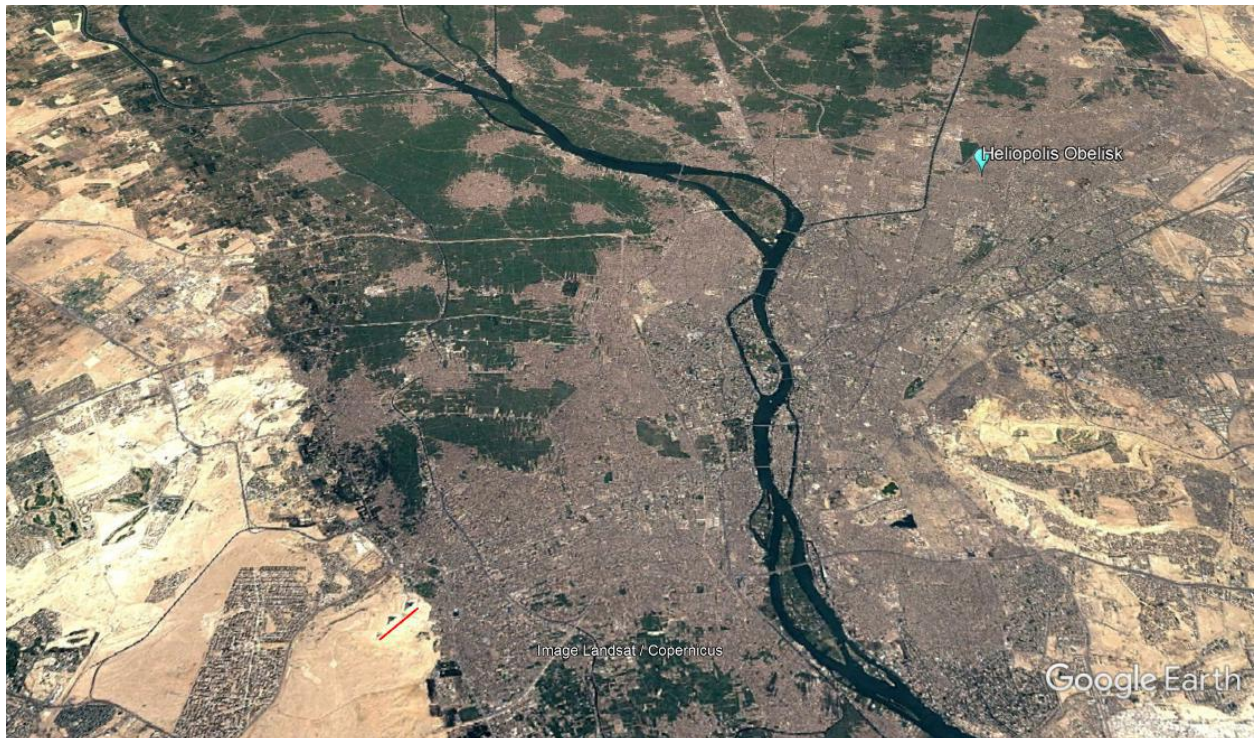


Figure 57: Satellite overview showing Giza pyramids (in red) to Heliopolis Obelisk (indicated by blue marker) (October 2019).

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<sup>307</sup> The sources written by Lehner, Magli, Nuzzolo, and Krejčí mentioned in footnote 397 all agreed with Goedicke. However, Verner and Bruna argue that this connection is only definitive with Khufu and Khafre's pyramid as the southeast corner of Menkaure's pyramid is a few meters off from alignment with the other two. See: Verner and Bruna, "Why was the Fifth Dynasty cemetery founded at Abusir?," 288-289. Verner and Bruna's argument fails to consider the amount of rubble that currently covers the bottom of the southern face of the Menkaure pyramid. It is quite possible that after Shepseskaf finished Menkaure's pyramid complex, that the southeast corner aligned with the other two Giza pyramids.

While the current focal point of Heliopolis is the obelisk of Senwosret I, which was erected roughly 600 years after the construction of the pyramid complexes of Khufu, Khafre, and Menkaure, there is textual evidence that the site was important during the beginning of the Fourth Dynasty.<sup>308</sup> The title *wr m3 Jwnw* (Greatest of the Seers of Heliopolis) first appears during the beginning of the Fourth Dynasty and given to Rahotep and Kanefer,<sup>309</sup> who are most likely sons of Sneferu.<sup>310</sup> Overall though, as the aerial view of Figure 57 shows, it is difficult to say with certainty that the southwest corners of the Giza pyramids precisely align with Heliopolis. While there is a possibility that Heliopolis played a major role in deciding where Old Kingdom pharaohs constructed their pyramid complexes, there needs to be additional research on the matter. However, the importance of Heliopolis during the Old Kingdom is undeniable and factored into the emergence and worship of the sun cult.

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<sup>308</sup> Nuzzolo and Krejčí, “Heliopolis and the Solar Cult in the Third Millennium B.C,” 375.

<sup>309</sup> Jones, *An Index of Ancient Egyptian Titles, Epithets, and Phrases of the Old Kingdom Volume I*, 386.

<sup>310</sup> Nuzzolo and Krejčí, “Heliopolis and the Solar Cult in the Third Millennium B.C,” 368.

## Abu Rawash

The northern most pyramid in Egypt, Djedefre's pyramid at Abu Rawash has historically been compared to the Giza pyramids. Egyptologists from the early 20<sup>th</sup> century argued that Djedefre was part of a secondary branch of Khufu's family and took the throne for himself illegitimately after the death of Khufu.<sup>311</sup> According to Reisner, this was the main reason why Djedefre abandoned Giza and decided to build his pyramid at Abu Rawash.<sup>312</sup> More recent studies have shown that the chronology is more complicated than these initial ideas<sup>313</sup> and that Djedefre constructing his pyramid outside of Giza is not unusual.<sup>314</sup> However, Djedefre's reasonings behind choosing Abu Rawash is more unknown. The following analysis of the geology and topography alongside the area's history prior to Djedefre's pyramid is crucial towards understanding this site further.

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<sup>311</sup> Henri Gauthier, "Notes et remarques historiques, II. Le nom de la pyramide d'Abou-Roasch," *Bulletin de l'Institut français d'archéologie orientale*, vol. 4, (1905): 239; Reisner, *Mycerinus*, 240-241.

<sup>312</sup> Reisner, *Mycerinus*, 241.

<sup>313</sup> Michel Valloggia, *Abou Rawash I : Le complexe funéraire royal de Rêdjedef, Vol. 1*, 5-9.

<sup>314</sup> Apart from the Buried Pyramid of Sekhemkhet, and potentially the Unfinished Pyramid at Zawiyet el-Aryan, each pyramid associated with a different pharaoh was built at separate sites.

## Geology and Topography

Geologically, the region surrounding the pyramid complex of Djedefre consists of two types of limestones. The first type is a gray-white soft limestone with qualities of chalk that exists throughout Abu Rawash and is part of the Maastrichtian Stage of the Upper Cretaceous period. However, there is no evidence of quarrying during pharaonic times.<sup>315</sup> The second type is a dense yellowish-gray limestone from the Wata formation which was used for the core construction of the pyramid.<sup>316</sup>



Figure 58: Entrance to the “Pit” of Djedefre’s Pyramid (photo by author).

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<sup>315</sup> Klemm and Klemm, *Stone Quarries of Egypt*, 40-41.

<sup>316</sup> Klemm and Klemm, *Stone Quarries of Egypt*, 41.



Figure 59: Remains of Superstructure of Djedefre Pyramid (photo by author).

These two types of limestone are part of the larger Gebel el-Madawarah which extends further east and ends near an escarpment which looked over vegetation in ancient times, but now looks over the modern village of Abu Rawash.



Figure 60: Satellite aerial view of Gebel el-Madawarah (October 2019).

Additionally, at the northern edge of Gebel el-Madawarah are the remains of Wadi Qaren. While the full extent of Djedefre's Valley Temple has not been found, the presence of the wadi, alongside the entrance of the pyramid situated on its northern half, indicates that it is most likely that the causeway and valley temple stretched norward from the pyramid entrance. As Old Kingdom valley temples were situated near main harbors for the pyramid site, it is most likely that Wadi Qaren was the main transport hub for the construction of Djedefre's pyramid. It would have been used to transport the basalt and red granite that remains to the east of the pyramid.

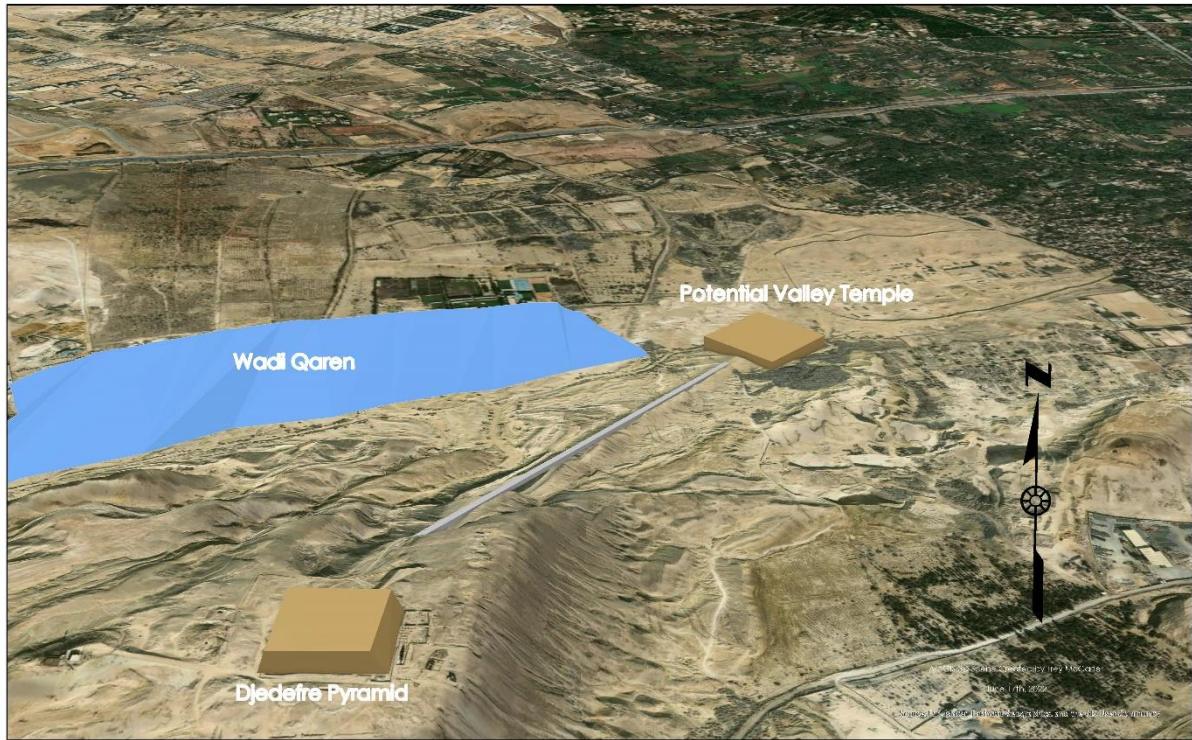


Figure 61: 3D Model reconstruction of Wadi Qaren and potential causeway and Valley Temple location.<sup>317</sup>

Topographically, Abu Rawash is higher than any other Old Kingdom pyramid site as it looks down on Giza from the north.

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<sup>317</sup> Information taken from Valérie Pichot and Sylvie Marchand, “Le complexe funéraire royal d’Abou Rawash après l’Ancien Empire Forges et tessons du IV<sup>e</sup> s.av. J.-C.,” in *Bulletin de Liaison de la Céramique Egyptienne*, 26, (2016): 263.





Figure 62: View of Giza Pyramids from atop Djedefre's Pyramid (photo by author).

This drastic difference in elevation presents a unique pyramid site, especially in terms of the pyramid's construction as Djedefre and his engineers used the bedrock to construct the inside of the pyramid.

### Quarry

The stone used in the 1st Dynasty tombs at Abu Rawash was sourced from quarries<sup>318</sup>The site for Djedefre's pyramid at Abu Rawash is interesting for a couple of reasons. A first glance of the pyramid shows that it is built at a higher elevation than the ones at Giza.<sup>319</sup> Additionally, the

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<sup>318</sup> Angela Sophia La Loggia, "Engineering and construction in Egypt's Early Dynastic Period: a review of mortuary structures" (PhD Dissertation, Macquarie University, 2012), 88.

<sup>319</sup> While Figure 61 is from atop of Djedefre's pyramid, as Figure 58 shows, the remains of the superstructure of the pyramid is roughly thirty feet high.

variety in size of remaining limestone blocks, as well as the existence of a gigantic pit similar to the Unfinished Pyramid at Zawiyet el-Aryan gives a good visual representation of the construction process of the pyramid.



Figure 63: Entrance into Djedefre Pyramid (photo by author)

As Figures 57 and 62 above shows, the construction of Djedefre's Pyramid consisted of quarrying through the existing rock at the site to create a massive rectangular pit, as well as quarrying from other nearby areas to create the superstructure of the monument. The varying sizes of limestone blocks and their fragments (Figure 65) clearly show that they were quarried from another source, transported, and then put in place. The subsequent question is where were these blocks quarried from in the first place? Klemm and Klemm note that there are no recognizable quarry areas in the nearby vicinity of the pyramid and used a study from Valloggia

which stated the quarry was 1.8 kms to the northeast.<sup>320</sup> Valloggia's comprehensive study of Abu Rawash concluded that between 195,000 and 215,000 m<sup>3</sup> of stone was quarried from Gebel Madawarah.<sup>321</sup>



Figure 64: Limestone block from Djedefre's pyramid.

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<sup>320</sup> Klemm and Klemm, *The Stones of the Pyramids*, 106.

<sup>321</sup> Valloggia, *Abou Rawash I : Le complexe funéraire royal de Rêdjedef*, Vol. 1, 16. See Figure 60.



Figure 65: Smaller limestone blocks from Djedefre's pyramid.

The variations in stone appearing in Figures 63 and 65 show that the pyramid was clearly constructed from limestone that originated outside of the large pit that remains (Figure 64). The size of the individual limestone blocks varies drastically as some appear to be the size of the stones at Giza (Figure 64), while others are similar to the stones at the Step Pyramid (Figure 65).

## Early Dynastic Period



Figure 66: Satellite aerial overview of First Dynasty Mastabas at Abu Rawash (June 2022).

Prior to the construction of Djedefre’s pyramid complex, the site of Abu Rawash was used as a cemetery during the First Dynasty.<sup>322</sup> The location of these First Dynasty mastabas is similar to that of the mastabas at Saqqara. Both are situated on the desert escarpment above nearby cultivation areas. Wilkinson argued that these mastabas were built due to insufficient space at Saqqara,<sup>323</sup> but as Tristant correctly points out, mastabas were continually built at Saqqara throughout the rest of the Early Dynasty period.<sup>324</sup>

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<sup>322</sup> For a thorough historiography on the excavations of the tombs, see Yann Tristant, “Les tombes des premières dynasties à Abou Roach,” in *Bulletin de l’Institut Français d’Archéologie Orientale*, 108, (2008): 327-348.

<sup>323</sup> Wilkinson, *Early Dynastic Egypt*, 63.

<sup>324</sup> Tristant, “Les tombes des premières dynasties à Abou Roach,” 345.

## **Fourth Dynasty**

As mentioned above, Djedefre and his pyramid complex is not the first pharaoh or complex people imagine when the Fourth Dynasty is discussed. Part of this is due to the complex being seemingly isolated from the rest of the Giza monuments. Reisner's theory about Djedefre killing his older brother Kawab and usurping the throne was first dismissed in 1955.<sup>325</sup> Verner concludes that the archaeology's story was a little different and that the unfinished product of this pyramid complex might have been destroyed in later times.<sup>326</sup> This theory is supported by the presence of Roman tombs to the north of the pyramid complex that were found in 2007 by an Egyptian team led by Zahi Hawass.<sup>327</sup> Furthermore, its relatively modest size compared to Sneferu, Khufu, and eventually Khafre does not indicate a family turmoil, a sign of significant resource depletion of stone and labor, or the beginning of the end for the Fourth Dynasty as there are piles of large worked red granite and basalt to the east of the complex, as well as in the pit of the pyramid which makes up most of the surviving portion of the Djedefre pyramid complex.<sup>328</sup>

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<sup>325</sup> Valloggia, *Abou Rawash I*, 5; Louis A. Christophe, "Les quatre plus illustres fils de Chéops," *Cahiers d'Histoire égyptienne*, Vol. VII/4-6 (déc 1955): 213-222.

<sup>326</sup> Verner, *The Pyramids*, 221-222.

<sup>327</sup> Zahi Hawass, "The Excavations at Wadi el-Qaren," in *A River Runs Through It: Studies in Honor of Professor Fekri A. Hassan on the Occasion of his 75<sup>th</sup> Birthday*, eds Aloisia de Trafford, Geoffrey J. Tassie, Okasha El Daly, and Joris van Wetering, (London: Golden House Publications, 2018), 8-20.

<sup>328</sup> Klemm and Klemm, *Stones Quarries of Egypt*, 247.



Figure 67: Group of worked limestone, red granite, and basalt east of Djedefre Pyramid (photo by author).

The presence of the large quantity of worked exotic stones, such as basalt and red granite, indicates that the complex's final form would have been of similar quality to the tombs of previous pharaohs.

Aside from its physical traits, comprehending Djedefre's pyramid location might be able to give a better picture of pyramid location in general. Djedefre's pyramid name of

⊙ 𓆎 𓆏 𓆑 𓆒 𓆓 𓆔 𓆕 *dd-f-rꜥ shd.w* has been translated as "Djedefre's Starry Sky,"<sup>329</sup> "Djedefre is a Sehed-Star,"<sup>330</sup> and "Djedefre's pyramid which shines like a star."<sup>331</sup> While each of these

<sup>329</sup> Verner, *The Pyramids*, 217.

<sup>330</sup> Lehner, *The Complete Pyramids*, 17.

<sup>331</sup> Bennett, "Pyramid Names," 175.

scholar's translations may differ in semantics, the overall meaning that the glyphs portray were to highlight this pyramid as having a star-like quality. Ideologically, stars have always been an important aspect of ancient Egyptian mythology and Djedefre further proves this by building his pyramid the furthest north and building it on a significantly higher elevation than any of the Early Dynastic and Old Kingdom pyramid complexes. While he did not foresee his pyramid building successors never building further north for pyramid construction, the importance of building the most northward pyramid at the time most likely played a role in the location of this pyramid.



## South Saqqara

Unlike Saqqara/Abusir, Zawiyet el-Aryan, Giza, and Abu Rawash, there is no evidence suggesting any elite burials older than the *Mastaba al'Fir'aun* at South Saqqara. The modern-day boundaries of South Saqqara begins with the pyramid complex of Pepi I, which is roughly one and a half kilometers to the south of the Step Pyramid complex, and ends with the Mastaba al'Firun of Shepseskaf, which is a little over three kilometers from the Step Pyramid.<sup>332</sup> From the end of the Fourth Dynasty until the end of the Sixth Dynasty, five pharaohs: Shepseskaf, Djedkare-Isesi, Pepi I, Merenre, and Pepi II, chose this site as the location of their pyramid complexes.<sup>333</sup>

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<sup>332</sup> It should be mentioned that it is possible that South Saqqara was seen as a continuation of the Saqqara necropolis during the Old Kingdom in the same way that Abusir and Saqqara were connected. There is no surviving evidence to support this claim.

<sup>333</sup> The Eighth Dynasty pharaoh Qakare-Ibi also built his pyramid complex at South Saqqara. It is located to the north-west of the Pepi II complex. For a general overview, see: Gustave Jéquier, *La pyramide d'Aba*, (Cairo: Excavations at Saqqara Service des Antiquités de l'Égypte, 1935).

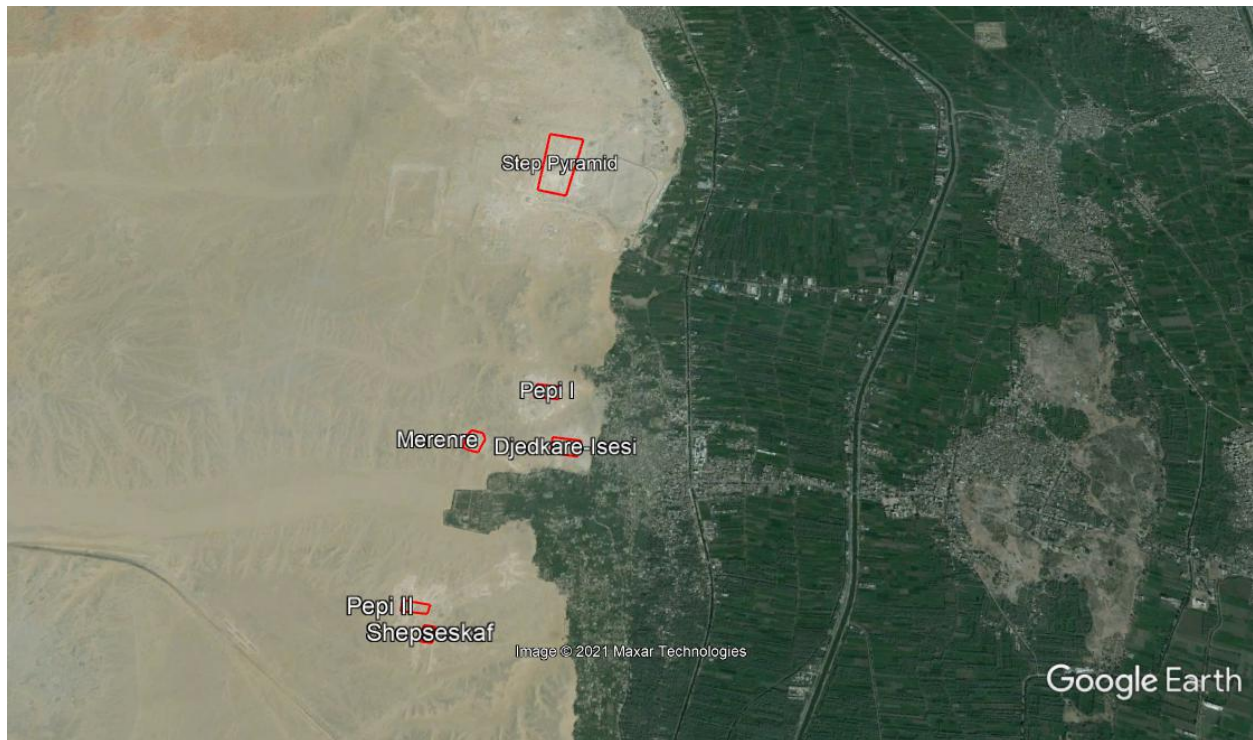


Figure 68: Satellite aerial View of Saqqara and South Saqqara (February 2008).

### Geology and Topography

Geologically, the area incorporating South Saqqara, especially the outcropping rock formations, is an extension of the area that stretches from Abusir to Dahshur.<sup>334</sup> The rock units consist of two different colored limestones: yellowish-grey, which feels like fine-grained sandstone, and grey-white whose feel is similar to marl limestone.<sup>335</sup> Additionally, there is the presence of a wadi which separates the pyramids of Djedkare-Isesi, Pepi I, and Merenre from the *Mastaba al'Fir'aun* and the pyramid of Pepi II.

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<sup>334</sup> Klemm and Klemm, *The Stones of the Pyramids*, 136.

<sup>335</sup> Klemm and Klemm, *The Stones of the Pyramids*, 137.

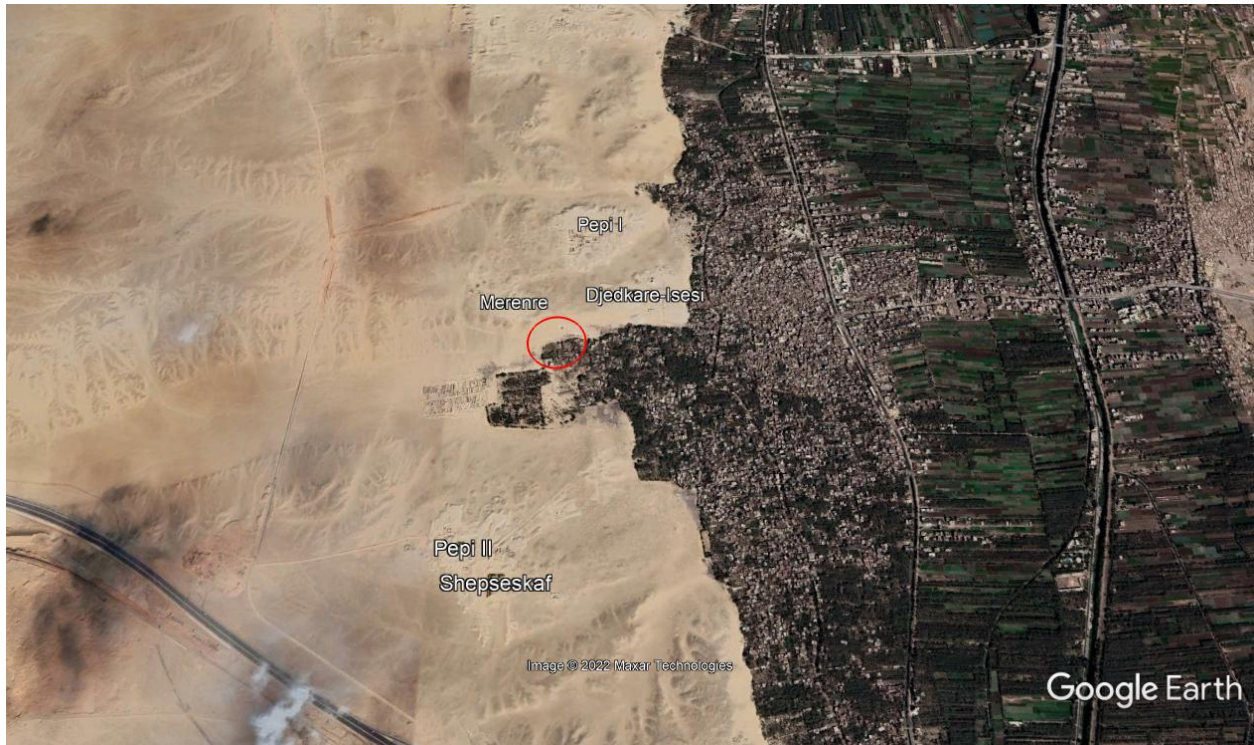


Figure 69: Satellite aerial view of South Saqqara pyramids and Wadi Tafla (February 2022).

While the ancient boundaries of Wadi Tafla are unknown, the presence of the wadi close to the pyramid complexes of Djedkare-Isesi and Merenre indicates that it would have been used in a similar manner to the wadis that were present in other locations such as Saqqara and Dahshur.<sup>336</sup> Until more research is done, the full scope of the wadi's influence on the area is mere speculation.

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<sup>336</sup> See Figure 13 and Figure 31 for Saqqara and Dahshur respectively.

## Quarry

The potential quarries for the royal tombs at South Saqqara spread out across the area going south towards the Red Pyramid in the case of the *Mastaba al’Fir’aun*, as well as to the immediate east in the case of the complex of Djedkare-Isesi. Not every quarry is known though as the definitive source of the stone used for the pyramids of Pepi I, Merenre, and Pepi II have yet to be found.<sup>337</sup> As for the tombs of Shepseskaf and Djedkare-Isesi, the quarry sites have possibly been confirmed.

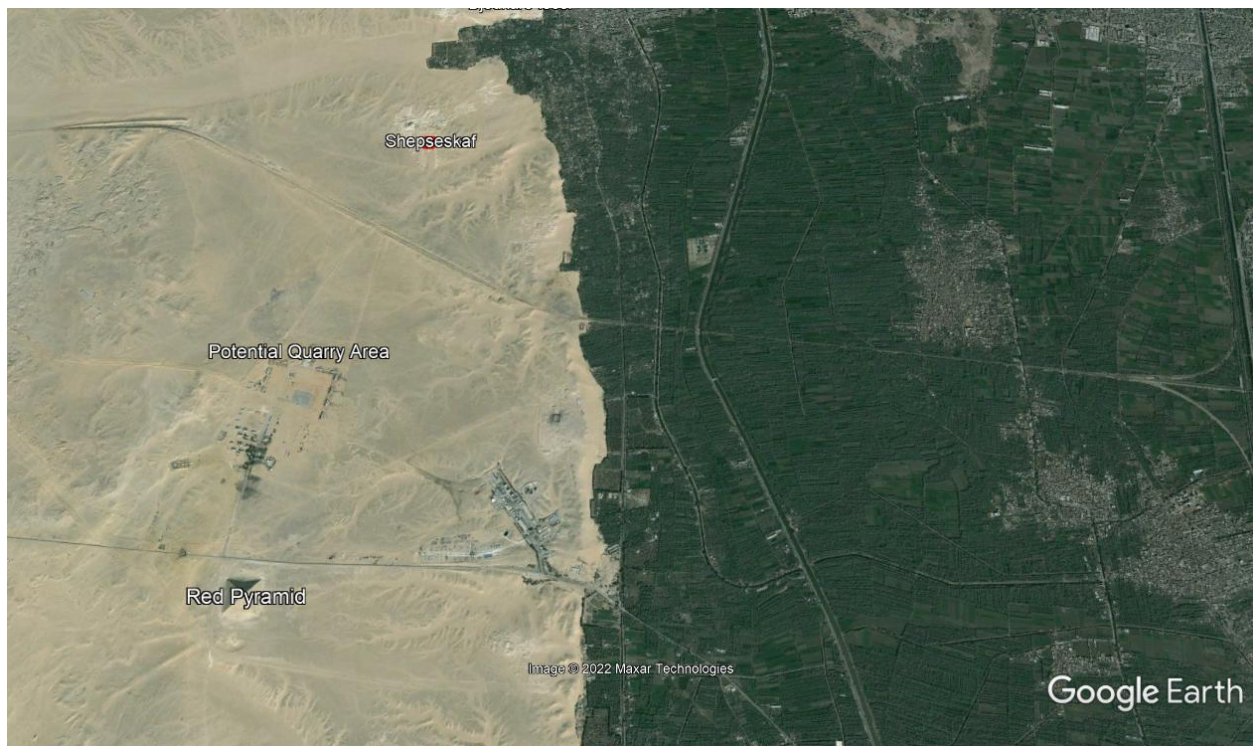


Figure 70: Satellite aerial view of potential quarry area for *Mastaba al’Fir’aun* (February 2008).

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<sup>337</sup> Klemm and Klemm, *The Stones of the Pyramids*, 152 and 154.



Figure 71: Satellite aerial view of remains of drag ramp for *Mastaba al'Fir'aun* (February 2008).

In their analysis of the stones at *Mastaba al'Fir'aun*, Klemm and Klemm were unable to inspect the source of the stones used to build the mastaba due to the quarry area being in a restricted military zone.<sup>338</sup> They indicated that a drag ramp still existed (represented by the arrow in the figure above) that extended 2.3 kilometers downwards from the southwest corner of the mastaba to the potential quarry area.<sup>339</sup> The stone is a combination of reddish-brown sandstone and sandy shell rich limestone that is similar to the stones used for the Red Pyramid.<sup>340</sup>

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<sup>338</sup> Klemm and Klemm, *The Stones of the Pyramids*, 108.

<sup>339</sup> Klemm and Klemm, *The Stones of the Pyramids*, 108.

<sup>340</sup> Klemm and Klemm, *The Stones of the Pyramids*, 108 and 109.



Figure 72: Satellite aerial view of potential quarry area for Djedkare-Isesi pyramid complex (February 2008).

As stated above, the quarry sites for the pyramid complexes of Merenre and Pepi I are unknown. Klemm and Klemm postulate that the stone for the Pepi I complex might have come from the escarpment of the plateau shown in the figure immediately above, while the quarry for the complex of Merenre might be to the southeast of his pyramid and causeway.<sup>341</sup> With regards to the complex of Djedkare-Isesi, the probable quarry was first sampled in 1986 and is located on the escarpment of the plateau next to Wadi Tafla, which is in the near vicinity to Djedkare's complex.<sup>342</sup>

<sup>341</sup> Klemm and Klemm, *The Stones of the Pyramids*, 152 and 154.

<sup>342</sup> Klemm and Klemm, *The Stones of the Pyramids*, 136.



Figure 73: Satellite aerial view of potential quarry area for Pepi II pyramid complex (February 2008).

Although the Pepi II complex is situated right next to the *Mastaba al’Fir’aun*, the possible quarry is not in the same region. Klemm and Klemm point out that the quality of the core limestone found at the Pepi II complex is poorer compared to the Shepseskaf mastaba and potentially came from an area close to the quarry for the Djedkare-Isesi complex.<sup>343</sup> While this location is not definitive, it provides a practical location due to its proximity to Pepi II’s Valley Temple.

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<sup>343</sup> Klemm and Klemm, *The Stones of the Pyramids*, 156.

## Fourth Dynasty

Parallel to the sites of Dahshur and Meidum, there has been no evidence that South Saqqara was used as a burial site prior to the construction of Shepseskaf's *Mastaba al'Fir'aun*. The final pharaoh of the Fourth Dynasty, Shepseskaf has been an enigma for Egyptologists since Gustave Jéquier excavated and published his work on the Mastaba el-Faraun in the mid-1920s.<sup>344</sup> Much of the literature focused on Shepseskaf's potential relationship to the rest of the Fourth Dynasty or even the Fifth Dynasty with Userkaf, as well as the fact that he abandoned Giza to build his tomb at South Saqqara.<sup>345</sup> According to the scholarship, this abandonment indicated strife within the royal family not only because Giza was not the location for his tomb, but because Shepseskaf wanted a mastaba instead of a pyramid.<sup>346</sup> However, none of the previous scholarship addresses why Shepseskaf chose South Saqqara in the first place. The answer to this question can potentially be found in the investigation of the Menkaure pyramid complex.

Menkaure's pyramid temple was first excavated by George Reisner from 1908-1910.<sup>347</sup> Selim Hassan excavated the northeast portion of the Valley Temple in 1932-1933<sup>348</sup> and Mark

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<sup>344</sup> Prior to Jéquier's excavation, this tomb was attributed to Unas, the last pharaoh of the Fifth Dynasty. See Verner, *The Pyramids*, 254.

<sup>345</sup> This discussion dominated Egyptological literature throughout the 20<sup>th</sup> century and into the 21<sup>st</sup>. See: Maragioglio and Rinaldi, *L'Architettura delle Piramidi Menfite Parte VI: La Grande Fossa di Zauiet el-Aryan, la Piramide di Micerino, il Mastabat Faraun, la Tomba di Khenkau*, 134 and 168; Rainer Stadlemann, "Userkaf in Saqqara und Abusir: Untersuchungen zur Thronfolge in der 4. und frühen 5. Dynastie," in *Abusir and Saqqara in the Year 2000*, 529-542; Silke Roth, *Die Königsmutter des Alten Ägypten von der Frühzeit bis zum Ende der 12. Dynastie*; Roman Gundacker, "Ein Beitrag zur Genealogie der 4. Dynastie, Teil 2: Die späte und ausgehende 4. Dynastie," *Sokar* 20: 30-44; Miroslav Bárta, *Analyzing Collapse: The Rise and Fall of the Old Kingdom*, 107-108.

<sup>346</sup> See: Gustave Jéquier, *Le Mastabat Faraoun: douze ans de fouilles à Saqqarah* and Selim Hassan, *Excavations at Giza: Volume IV, 1932-1933*, 63-67

<sup>347</sup> George Reisner, *Mycerinus*, (Cambridge: Harvard University Press, 1931).

<sup>348</sup> Hassan, *Excavations at Giza: Volume IV, 1932-1933*, 63-67.



Lehner and his AERA (Ancient Egypt Research Associates) team continued excavations at the Valley Temple in 2011, 2019, and 2020.<sup>349</sup> During Reisner's initial excavations in 1908, he found fragments of a royal decree dating to the reign of Shepseskaf in one of the porticos of Menkaure's Pyramid Temple.<sup>350</sup> This royal decree is not only crucial for understanding the construction of the Menkaure Pyramid Complex, but for the chronology of the Late Fourth Dynasty as well. Reisner found the decree in scattered pieces<sup>351</sup>, but it clearly shows that Menkaure died before he completed his complex and Shepseskaf finished it. A portion of the decree states: *jr.n-f m mnw-f* "he made it as a monument."<sup>352</sup> Interestingly, in his 2005 dissertation, Hratch Papazian restores part of the text to include "[for] (the king of Upper and lower Egypt *Mn-k3-Rc*)"<sup>353</sup>

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<sup>349</sup> For an overview of the 2011 season see "Shareholders: The Menkaure Valley Temple Occupation in Context," in *Towards a New History for the Egyptian Old Kingdom: Perspectives on the Pyramid Age*, Peter Der Manuelian and Thomas Schneider (eds), (Leiden: Brill, 2015), 227-315. For the 2019 and 2020 seasons, see: Mark Lehner, "Return to the Menkaure Valley Temple," in *AERAGram*, vol. 15 no. 1 (Spring 2019), 2-10; Mark Lehner, "Menkaure Valley Temple Season 2020," in *AERAGram*, vol. 20 no. 1 & 2 (Spring-Fall 2020): 2-10.

<sup>350</sup> Reisner, *Mycerinus* 15.

<sup>351</sup> Reisner, *Mycerinus*, Plate 19.

<sup>352</sup> Sethe, *Urkunden I*, 160.

<sup>353</sup> Hratch Papazian, *Domains of Pharaoh*, 305.

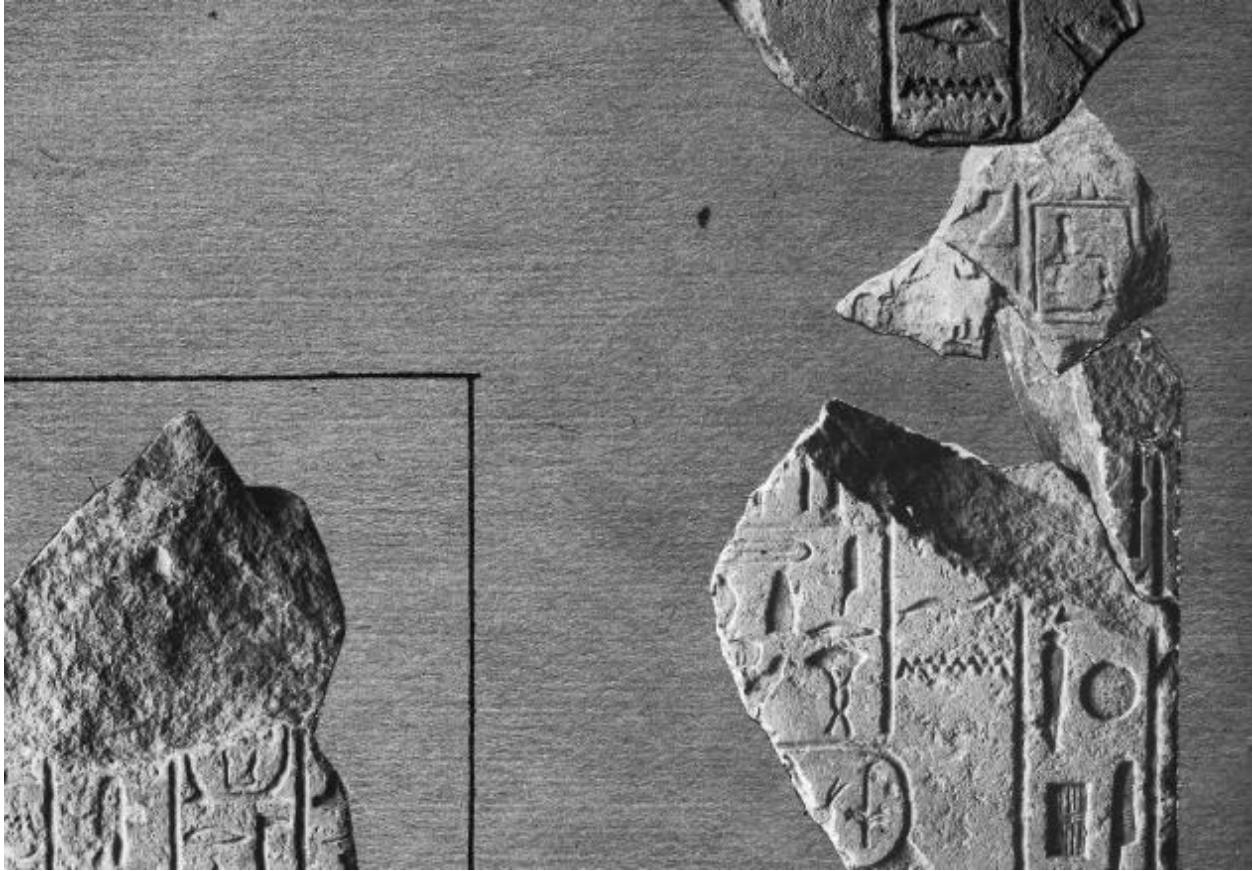


Figure 74: MFA-Shepseskaf stela from Menkaure pyramid temple, room K (= portico 7): 07-1-3 (rephotograph of B42, C284, C285, C286).<sup>354</sup>

This restoration is plausible since Shepseskaf finished Menkaure's complex as indicated by using mudbrick to finish the pyramid complex (especially in the Valley Temple), as well as the decree which states that the "monument" was set up as a *pekher* offering for the pyramid of Menkaure.<sup>355</sup> By doing this, Shepseskaf legitimized his own rule. Furthermore, if Shepseskaf was the son of Menkaure, it makes sense for him to finish his father's tomb, especially if

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<sup>354</sup>HUMFA\_B2076\_NS, *Shepseskaf stela from Menkaure pyramid temple, room K (= portico 7): 07-1-3* (rephotograph of B42, C284, C285, C286), Harvard University-Boston Museum of Fine Arts Expedition, September 1913, <http://giza.fas.harvard.edu/photos/25709>

<sup>355</sup> Sethe, *Urkunden I*, 160; Nigel Strudwick, *Texts from the Pyramid Age*, (Society of Biblical Literature: Atlanta, 2005), 97-98.

Menkaure was unable to go to the afterlife with an unfinished complex. This is more indicative by Menkaure's Valley Temple.

The Menkaure Valley Temple began under the reign of Menkaure, but he died early on in its construction. This is most evident by the relatively small number of core blocks that exist throughout the temple.<sup>356</sup> Khafre's builders built his valley temple from the local limestone so it can be assumed Menkaure would have done the same. Instead, the valley temple was quickly constructed using crude mudbricks.<sup>357</sup> This form of construction makes sense because even though Shepseskaf finished Menkaure's monuments, he still needed to construct his own tomb. However, the construction of the valley temple does not give any insight on why Shepseskaf moved away from Giza and went to South Saqqara. Chronologically Egyptologists agree that Shepseskaf reigned immediately after Menkaure based on evidence from the Menkaure pyramid complex as well as royal king's lists such as Turin, Abydos, and Saqqara.<sup>358</sup> As mentioned previously, scholars attributed the lack of a pyramid at Giza, as well as the construction of a mastaba, to family dysfunction or a drain on the state's economy, which I argue is completely unfounded.<sup>359</sup> The answer might be a combination of lack of space at Giza, in the locations of the pyramids at Dahshur, Djoser's Step Pyramid, and the fact that Shepseskaf may not have wanted a pyramid at all.

At first glance the location of the *Mastaba al'Fir'aun* seems out of place. It is almost seventeen kilometers from Menkaure's pyramid on the Giza Plateau and twenty-five kilometers

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<sup>356</sup> Mark Lehner, "Return to the Menkaure Valley Temple," 2-10.

<sup>357</sup> Reisner, *Mycinerus*, 102.


<sup>358</sup> See: Hornung, Krauss, and Warburton, *Chronology*, 491; Roman Gundacker, "The Chronology of the Third and Fourth Dynasties according to Manetho's *Aegyptiaca*", 144, 150.

<sup>359</sup> See pages 150-155.

from Djedefre's pyramid at Abu Rawash.<sup>360</sup> It appeared that Menkaure was running out of space on the plateau when constructing his pyramid complex at Giza, so Giza may not have been a practical option.<sup>361</sup> However, if Shepseskaf did not want a pyramid built, moving away from the area where his immediate predecessors spent almost fifty years constructing the largest pyramids was most feasible. Shepseskaf spent time building on the Giza Plateau because he finished the Menkaure pyramid complex, but he wanted to construct a legacy of his own; albeit the monument he built connected to pharaohs who were long dead. A theory posed by astrophysicist and archaeoastronomist Giulo Magli relates Shepseskaf's monument with Sneferu's pyramids at Dahshur.

I believe that the choice of the building site and the design of the monument were planned together in order to harmonise the project with the pre-existing Snefru-built landscape, with the aim of preserving order – Maat – in the already-old sacred ground. Indeed, if a line is traced from the point located at half the distance between the two Snefru pyramids to the centre of Shepseskaf's tomb (Photo 5.2), the same line prolonged to the north crosses the Saqqara central field in the "entrance" area located near the Teti pyramid. As a result, anyone reaching the summit of the ridge would have seen (and still can see) the king's tomb – due to its "bench" aspect – forming a sort of regular baseline for the double-mountain symbol created at the horizon by the two giant pyramids of Snefru (Magli 2009b). On the other hand, it can be easily seen that the position of the monument is not dictated by the morphology of the territory; it has its foundation on an artificial terrace and is relatively far from the ridge of the plateau. We can thus conclude that, in placing his tomb exactly where he did, the king "completed" the landscape of power built by Snefru, establishing in this way his own power and conveying a message of order and a return to the old, pre-solar traditions.<sup>362</sup>

Magli's interpretation is that the *Mastaba al'Fir'aun* is a representation of the sun in the *ꜥḥt*

hieroglyph . This explanation poses a few problems. First is the shape of the mastaba: it is

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<sup>360</sup> These measurements are taken from the northwest corner of the mastabas and go through the desert instead of the modern outer roads to each site.

<sup>361</sup> See pages 150-155.

<sup>362</sup> Giulo Magli, *Architecture, Astronomy and Sacred Landscape in Ancient Egypt*, (New York: Cambridge University Press, 2013), 123-124.

not round and does not resemble the sun. Secondly, the lack of Ra in the throne name of Shepseskaf is significant. Djedefre is the first pharaoh of the Old Kingdom to associate himself with the god Ra and this continues with Khafre, Menkaure, and the pharaohs of the Fifth Dynasty.<sup>363</sup> It has been said that family dysfunction caused Shepseskaf to abandon Ra in his throne name. In turn, this led to assumptions that Shepseskaf abandoned the cult of Ra entirely.<sup>364</sup> The third problem is the viewpoint of the mastaba in-between the Red and Bent Pyramids. As Figure 38 on page 125 shows, it also appears that the pyramid of Pepi II creates an *ꜣht* hieroglyph as well with the Mastaba appearing to the left of Pepi's pyramid. The literal representation of the *ꜣht* for the Mastaba and Sneferu's pyramids only shows in a specific area.

Rosanna Montanaro notes that the inner aspects of the mastabas become the blueprint for the architecture of the Fifth Dynasty sun kings.<sup>365</sup> While this alone does not prove Shepseskaf's connection to Ra, Montanaro also notes that in ancient times, the Greek name for Shepseskaf was *Sebercheres*; the suffix *res* referring to the sun.<sup>366</sup> Additionally, she proposes that Shepseskaf's full name was Shepseskaf(ra), but there is no archaeological or textual evidence to support this claim. As individual proposals, these three aspects are weak on their own, especially considering that the ancient Egyptian textual records do not support these claims, nor does the monumental architecture record in the case of Shepseskaf's mastaba being the visual representation of the sun. In combination with each other, they provide an interesting insight into

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<sup>363</sup> Sans Userkaf and Unas.

<sup>364</sup>See footnote 389.

<sup>365</sup> Rosanna Montanaro, "Il Faraone Shepseskaf: spunti per una nuova lettura del suo ruolo storico tra la IV e la V dinastia," in *Il futuro nell'archeologia: il contributo dei giovani ricercatori: atti del IV Convegno nazionale dei giovani archeologi: Toscana; 12-15*, 159.

<sup>366</sup>Montanaro, "Il Faraone Shepseskaf: spunti per una nuova lettura del suo ruolo storico tra la IV e la V dinastia," 157. Montanaro takes this information from Jürgen von Beckerath's 2000 "Die IV Dynastie Ägyptens in der griechischen Überlieferung" in *Biblische Notizen 102*, (München, Manfred Görg 2000), 115.

both Shepseskaf and his funerary complex. However, there is one potential explanation that neither Magli nor Montanro notice.

The *Mastaba al'Fir'awn* is located between both Dahshur and Saqqara. Interestingly, it is situated almost exactly halfway between Djoser's Step Pyramid and Sneferu's Red Pyramid. The northwest corner of the Mastaba is about 3.3 kilometers from the southwest corner of Djoser's Step Pyramid complex, while the southwest corner of the Mastaba is also about 3.3 kilometers from the northwest corner of the Red Pyramid complex. At first glance this seems like a coincidence, but there might be a more plausible solution, especially when comparing the superstructures of all three monuments. The Step Pyramid, Red Pyramid, and *Mastaba al'Fir'awn* all represent the evolution of the superstructures of royal monuments throughout the Early Dynastic and Old Kingdom periods. Of course, it is impossible to currently know if Shepseskaf purposely built a mastaba for this reason because there is a lack of supporting evidence, but the location of his monument, which is situated between the first pyramid ever built in Egypt and the first completed "true" pyramid, creates these possibilities. Visibility of monuments played a crucial role in displaying pharaonic power, especially during the Old Kingdom, and it continued a long-standing tradition of history as well. As shown with the vessels of Second Dynasty pharaohs found underneath the Step Pyramid,<sup>367</sup> pharaohs were conscious of their own past and went to great lengths to add to their own legacies, as well as continuing legacies of previous generations. In the case of Shepseskaf, he was able to finish his predecessor's pyramid complex and construct his own tomb in less than ten years. He legitimized himself by finishing Menkaure's complex and added to his own legacy by connecting his tomb to the Step Pyramid of Djoser and the Red Pyramid of Sneferu. As

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<sup>367</sup> See footnote 164

discussed below, the legacies of both Shepseskaf and his predecessor Menkaure extended long after both men died.

### Fifth Dynasty

Following the death of Shepseskaf, the area known today as South Saqqara was not used for a royal burial for approximately eighty years until the death of Fifth Dynasty pharaoh Djedkare Isesi.<sup>368</sup> Why Djedkare Isesi declined to build his pyramid complex at Abusir is unclear.<sup>369</sup> Stadlemann thought that there was still enough space for three to four more pyramid complexes at Abusir,<sup>370</sup> while Verner argues that Djedkare ran out of room at Abusir due to the inability to build on the Abusir-Heliopolis axis.<sup>371</sup> Mohamed Megahed agreed with Jaromir Malek's earlier proposal and thought that development of the city of Memphis moved further south and the area surrounding Djedkare's pyramid complex was part of the new development of the city.<sup>372</sup>

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<sup>368</sup> See Table 1 on page 208.

<sup>369</sup> As mentioned in the discussion on Unas above, Djedkare's predecessor Menkauhor is most likely the owner of the pyramid to the northeast of Teti's complex at Saqqara.

<sup>370</sup> Stadlemann, *Die ägyptischen Pyramiden : vom Ziegelbau zum Weltwunder*, 180.

<sup>371</sup> Miroslav Verner and Vivienne G. Callender, *Abusir VI: Djedkare's Family Cemetery*, (Prague: Czech Institute of Egyptology, Faculty of Arts, Charles University, 2002), 105.

<sup>372</sup> Mohamed Megahed, "The Pyramid Complex of Djedkare-Isesi at South Saqqara and its Decorative Program," (PhD diss., Charles University Prague, 2016), 55. This idea originated from Malek's belief, but he wrote that this change happened during the reign of Pepi I. Megahed suggests that it occurred earlier during Djedkare's reign. For Malek, see: "The temples at Memphis. Problems highlighted by the EES survey," in *The Temples in Ancient Egypt. New Discoveries and Recent Research*, 92-93.



Figure 75: Satellite aerial view of Abusir-Axis pointing towards Heliopolis (February 2008).

Verner's assertions about the Abusir-Heliopolis axis have already been discussed in greater detail in this study,<sup>373</sup> but his claims about Djedkare not building at Abusir due to the axis is not well supported. As Figure 75 above clearly shows, not all the pyramids at Abusir lined up to create an Abusir-Heliopolis axis. The pyramid of Niuserre is to the immediate northeast of his father Neferirkare's pyramid. Furthermore, based on the above image, as well as previous discussion of potential quarry locations for the Abusir pyramid field and Abusir Lake,<sup>374</sup> it was possible for Djedkare to build another pyramid complex to the southwest of the unfinished pyramid Neferefre. In this case, Stadelmann was correct in his assessment on the potential for

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<sup>373</sup> See section on Userkaf's Sun Temple.

<sup>374</sup> See pages 73-85.



further pyramid complexes at Abusir. With regards to Megahed's speculation that Memphis potentially moved further south at the time of Djedkare's reign, this is also a possibility.



Figure 76: Satellite aerial view showing Abusir pyramid field to Shepseskaf's mastaba (February 2007).

It is also possible that Djedkare wanted to establish his own legacy further by building in an area away from his immediate predecessors. While this will be discussed in further detail below, Wadi Tafla separated the area between Djedkare's complex and Shepseskaf's mastaba. As shown in Figure 76, the current separation line between the two royal tombs is the remains of a modern-day cultivation area.<sup>375</sup> The natural separation between the two tombs might have caused Djedkare to think of the area surrounding his pyramid complex as completely different from

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<sup>375</sup> Similar to what has occurred at the remains of Dahshur Lake, continual building on the cultivated separation line has severely eroded the area over the past fifteen years.

Shepseskaf's mastaba and Djedkare was building in a completely new site. Unfortunately, there is no surviving evidence to support any claims made by previous Egyptologists or the current author, especially when the ancestry of Djedkare is as hazy as the reasons for choosing his pyramid site.<sup>376</sup>

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<sup>376</sup> Megahed, "The Pyramid Complex of Djedkare-Isesi at South Saqqara and its Decorative Program," 55-57. Megahed postulates that either Menkauhor or Niuserre could have been the father of Djedkare.

## Sixth Dynasty

Traditionally known as the last pharaoh of the Old Kingdom, Pepi II ruled for over sixty years<sup>377</sup> and built the last pyramid of the Sixth Dynasty. Located at South Saqqara, Pepi II continued the tradition of his immediate predecessors Merenre and Pepi I in building at this location. However, Pepi II's pyramid complex is roughly one kilometer further south from Merenre's complex, and one and a half kilometers from Pepi I; it is essentially on top of Shepseskaf's *Mastaba al'Fir'aun*.



Figure 77: Satellite aerial view of Pepi II complex and Shepseskaf's Mastaba (February 2008).

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<sup>377</sup> Bárta, *Analyzing Collapse: The Rise and Fall of the Old Kingdom*, 165-166. Here, Bárta discusses the arguments that have been made for the duration of Pepi II's reign. He mentions an inscription on Elephantine Island, as well as an inscription discussing the second anniversary of Pepi's *sed* festival, which would put his reign between sixty-two and sixty-four years. The Turin Canon says Pepi reigned for ninety years and Manetho says ninety-four. Bárta concludes that it must have been only a little over sixty years.

This image leads to an important question: Why did Pepi II build his pyramid complex right next to the mastaba of Shepseskaf? At first glance, this location appears strange for a couple of reasons. First, Shepseskaf ruled 200 years before Pepi II was even born and secondly, Shepseskaf did not build a pyramid. However, the answer to the question posed above is potentially answered by the Menkaure pyramid complex. Shepseskaf finished the construction of Menkaure's complex after Menkaure died; this included the Menkaure Valley Temple. Based on George Reisner's initial excavations of the valley temple in 1910, as well as the excavations I joined with Mark Lehner's AERA team in 2019 and 2020, it appears that the valley temple was built in multiple phases over the course of the Old Kingdom.<sup>378</sup> It is certain that Shepseskaf constructed the initial mudbrick phase of the MVT. As the cult of Menkaure diminished and the temple proved to have no cultic purpose in the immediate years after Shepseskaf, it was rebuilt sometime in the Fifth Dynasty with housing units scattered throughout.<sup>379</sup> After this rebuilding phase, Reisner insinuates that Pepi II rebuilt the valley temple to serve as a cultic purpose once more because a flood swept through the back of the western wall and destroyed much of the earlier temple.<sup>380</sup> In the course of rebuilding the temple, Pepi II's builders reinforced the back western wall with limestone blocks to prevent future flooding.<sup>381</sup>

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<sup>378</sup> Reisner, *Mycerinus*, Plate VIII. This colored plate illustrated by Clarence Fisher shows the outlines of the various phases of the Menkaure Valley Temple.

<sup>379</sup> Reisner, *Mycerinus*, Plate VII.

<sup>380</sup> Reisner, *Mycerinus*, 44-45.

<sup>381</sup> Reisner, *Mycerinus*, 46-47.

THE VALLEY TEMPLE OF KING MYCERINUS

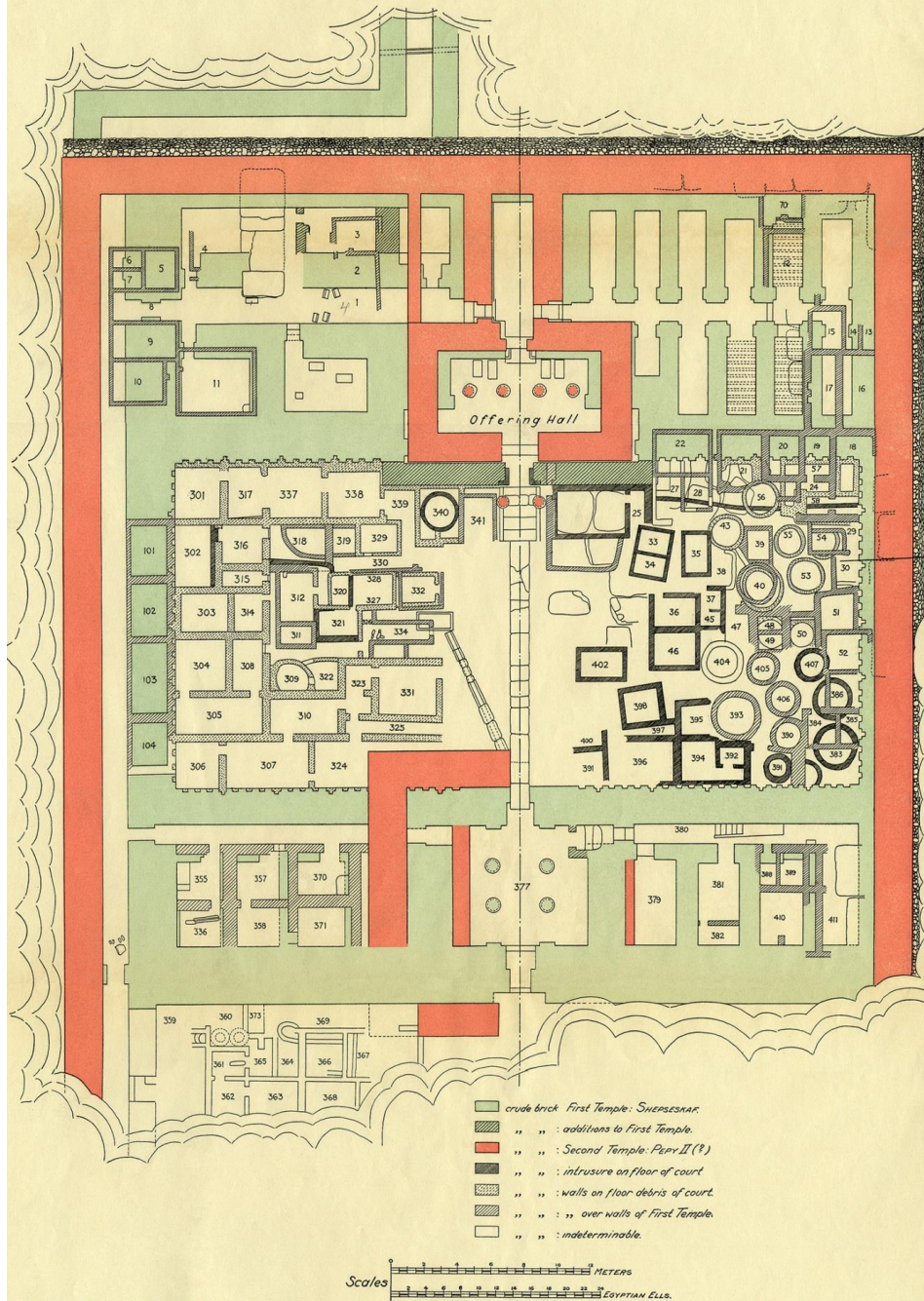


Figure 78: Reisner: The Valley Temple of King Mycerinus.<sup>382</sup>

<sup>382</sup> Reisner, *Mycerinus*, Plate VIII.

Why did Reisner conclude that Pepi II rebuilt the MVT? Found in the vestibule near the entrance into the temple, a decree bearing the name of Pepi II indicated the temple was important enough to have a royal decree, and to be rebuilt.

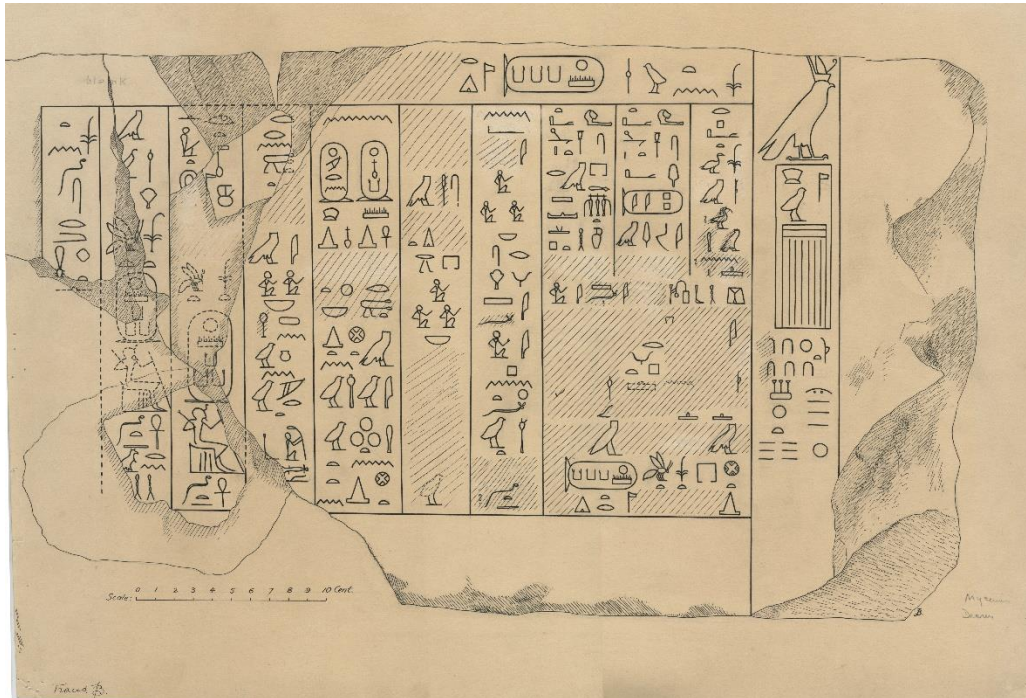


Figure 79: Drawing of Pepi II royal decree<sup>383</sup>

In his book *Texts from the Pyramid Age*, Nigel Strudwick translates the decree as the following:

- (1) Horus Netjerykhau. Year of the thirty-first occasion, third month of the Akhet season, day 6. 106 Royal Decrees text.qxd 8/8/2005 4:45 PM Page 106
- (2) A royal decree to [the overseer] of the pyramid town of Menkaure ... , (for the benefit of) • (3) the iry pat, eldest king's son, Nemtyemzaf: (his) altar; • (4) the haty-a, sole companion, charmed of arm, Imapepy: (his) altar; • (5) the haty-a, sole companion, overseer of the khenty-she of the Great House, Khnumhotep: (his) altar. (6) (With regard to) the lector priest, scribe of the phyle, Ishefi, 14 (7) he is the [overseer of the pyramid town (?)] and responsible for (?)] • (8–9) ... in the pyramid town • everything which is reckoned with regard to the broad hall and the festival (?) • the distribution of the divine offerings and ... in the pyramid town of Menkaure. (10) No man has a right relating to it except for the aforementioned 15 Ishefi in accordance with this decree for ever. (11) You do not have the authority to permit men of this troop (12) of the

<sup>383</sup> Reisner, *Mycerinus*, Plate. A. Accessed from <http://giza.fas.harvard.edu/drawings/48982/full/>.

pyramids of Neferkare and Merenre and of these chapels (?) to go forth to remove property from the aforementioned pyramid town. My majesty has ordered the exemption and protection of this pyramid town (13) so that the property thereof should not be taken by any man. (My) majesty has done this (?) particularly in relation to the (ordinary) priestly duties and the monthly priestly duties (14) [to offer] incense and the sealed things of the god [in the temple of Menkaure (?)], may he live for ever, (15) according to the command of the king of Upper and Lower Egypt Neferkare, may he live for ever and for eternity. (16) Sealed in the presence of the king himself ...<sup>384</sup>

Reisner admits that this decree does not completely prove that Pepi II rebuilt the MVT because the people who lived in the housing units in the central portion of the temple wanted the temple rebuilt.<sup>385</sup> This could have happened at any time between the destruction of the first temple and the housing units sometime in the Fifth Dynasty until the reign of Pepi II at the end of the Sixth Dynasty. Nonetheless, Reisner's assumption that the decree by Pepi II was in conjunction with the later phase of the MVT is plausible based on the location of Pepi II's pyramid complex. For some unknown reason, Shepseskaf was important to Pepi II. He would have known that Shepseskaf completed the original temple after Menkaure's death. Rebuilding the original temple connects Pepi II and Shepseskaf together. Building a pyramid complex next to Shepseskaf's mastaba connects the two even further. While the exact reasons are unknown, Pepi II's decision to build his pyramid in the immediate vicinity of the *Mastaba al'Fir'aun* indicates a reverence for a distant ancestor in Shepseskaf for Pepi II. Pepi II's rebuilding of the Menkaure Valley Temple shows that he had a reverence for Menkaure as well. However, as discussed at length above, it is highly plausible that Giza did not have enough room for another pyramid complex. The inability to build at Giza left Abu Rawash and the area surrounding the *Mastaba al'Fir'aun*

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<sup>384</sup> Strudwick, *Texts from the Pyramid Age*, 106-107.

<sup>385</sup> Reisner, *Mycerinus*, 54.

at South Saqqara as the only options to build if Pepi II wanted to be associated with Khufu's direct lineage.



## Chapter 4: Conclusion

Throughout this study I examined the ideological and logistical factors that Early Dynastic Period and Old Kingdom pharaohs considered when choosing a site for their pyramid complex. As mentioned in the historiography, Miroslav Bárta's article "Location of the Old Kingdom Pyramids in Egypt" concluded that there were two overarching factors that determined the location choices for the pyramid complexes of the Old Kingdom: practical and religious.<sup>1</sup> My contribution is a reassessment, test case, and expansion of Bárta's article as I analyzed every pyramid site from the reign of Djoser in the Third Dynasty to Pepi II in the Sixth Dynasty. With regards to Bárta's conclusions, I agree with them. However, labeling the factors that went into a pharaoh's decision to choose a location for a pyramid complex went beyond labels such as practical and religious. The use of the terms "practical" and "religious" are too vague as logistical and ideological are clearer terms to use. Furthermore, we may classify the factors determining the location of pyramid complexes in the Old Kingdom into four broad categories: access to stone and waterways, building within the nome of *Jnbw-Hd*, constructed on the western side of the Nile River on a desert escarpment, and near earlier royal burials and ancestral cemeteries. It must be noted that others likely existed, and this is not a definitive list. Additionally, while these four categories will be discussed in greater detail below, special attention must be made to each one here. The first category fits clearly within the "practical" or logistical categorization. For example, factors such as the presence of bodies of water such as Abusir and Dahshur Lake alongside wadis that were filled during the annual inundation or after heavy rainfall affected the decisions that went into choosing a site for a pyramid complex.

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<sup>1</sup> Bárta, "Location of the Old Kingdom Pyramid Complexes in Egypt," 177.

Additionally, other environmental factors such as quality and availability of limestone factored into the decision as pyramid complexes evolved and changed over time.

The final two factors listed above fit into the ideological category. While divided into two distinct groups, the western side of the Nile on a desert escarpment, as well as near an earlier royal burials and ancestral cemeteries, these factors cannot exist without one another.

Constructing a royal tomb on the western side of the Nile on a desert escarpment began early on in ancient Egyptian Dynastic history with First Dynasty burials at Abydos. This trend continued throughout the Early Dynastic Period and Old Kingdom with a major difference emerging as the appearance of the superstructures of the tombs changed. Beginning with Djoser, the superstructures changed from mastabas to pyramids. On an ideological level, the West acted as a gateway to the underworld and burial there was a traditional cultural practice. Constructing a pyramid complex near earlier royal burials or ancestral cemeteries also coincides with an ideological influence. While not near his immediate predecessor, Djoser's Step Pyramid complex at Saqqara is to the immediate north of his Second Dynasty predecessors Hotepsekhmwy and Ninetjer. Pharaohs such as Niuserre and Neferirkare continued the family cemetery at Abusir which was started by their ancestor Sahure. Outliers such as Khufu and Djedefre, whose tombs are not near a royal ancestor, are surrounded by an Early Dynastic Tomb and a First Dynasty cemetery respectively.

In terms of the second category which states that the pyramid complexes were within nome of *Jnbw-Hd*, it is a combination of both ideological and logistical.<sup>2</sup> From the onset of Dynastic Egypt, *Jnbw-Hd* was an important location as the first pharaoh Narmer established the city of Memphis within the nome. The city of Memphis, and subsequently the entire nome,

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<sup>2</sup> Meidum is the one outlier in this case as it is not within *Jnbw-Hd*. More research on this topic is needed.

shifted in importance as the royal residence most likely moved to the area permanently sometime during the Second Dynasty. The continual use of the nome to build pyramid complexes for close to 500 years from the reign of Djoser down to Pepi II shows a larger ideological trend that the area was important for these pharaohs. It also serves as a logistical trend because the Meidum pyramid complex is the only time from the Third to Sixth Dynasties that a pyramid complex was constructed outside of the nome. As pyramid complexes were centralized within the nome, larger organizational systems involved in pyramid complex construction such as access to building materials, proximity to the capital, and even housing for workers, expanded and evolved over time. For example, the construction of the Fourth Dynasty tombs at Giza saw the emergence of a complex city to the southeast of the plateau that existed for the duration of Khufu, Khafre, and Menkaure's reign. By using these four factors, alongside the data established in Chapter 3, I show that there were larger diachronic trends that existed with regards to the location choices of pyramid complexes from the Third to Sixth Dynasties.

### Access to Waterways and Stone

A significant aspect that factored into the decision for a pyramid location was the natural environment of ancient Egypt. This includes aspects such as the Nile River and its surrounding canals, wadis that were filled during flooding, and limestone bedrock which could be used to create the pyramid complexes. While the Nile was unquestionably the most important body of water for the ancient Egyptians, the annual inundation, as well as other components such as wadis, canals, and even lakes in the case of Abusir and Dahshur, allowed for the engineers and workers of the Old Kingdom pharaohs to use and shape the desert environment to the pharaoh's needs. Chapter 3 details that each pyramid site was topographically unique. Beginning with the most northern pyramid complex at Abu Rawash, it is situated atop Gebel el-Madawarah, which

is higher than any other Old Kingdom pyramid complex. The northern side of the gebel slopes down into Wadi Qaren. Due to the wadi being on a significantly lower elevation than Djedefre's pyramid, the nearby cultivation area would have flooded into the wadi during the inundation (Figure 59). Moving further south to Giza, the combination of the wadi that sweeps through the area in-between the Khentkaus town and the Menkaure Valley Temple, as well the surviving pathway near the Khafre Valley Temple, heavily implies that Khufu, Khafre, and Menkaure used the Nile flooding to their advantage by building their complexes on demarcation point between the desert and the cultivated area (Figure 39). In the case of Zawiyet el-Aryan, there is no definitive area for a harbor or a wadi. Instead, Lehner proposes that a slope to the northeast of the Layer Pyramid is similar to the wadi that stretches through the northern part of Saqqara.<sup>3</sup> Abusir Lake separated Abusir and Saqqara from one another, and in conjunction Lake, combined with the wadi that stretches from the southwest of the lake and wraps around the area surrounding the Gisir el-Mudir enclosure and pyramids of Sekhemkhet and Djoser, provided a waterway which allowed for goods and materials to be transported to the pyramid complexes. South Saqqara also provided a large wadi in Wadi Tafla. While the dimensions of the wadi are unknown, it is possible that it was the ancient division line that the pyramids of Djedkare-Isesi, Merenre, and Pepi I from the *Mastaba al'Fir'oun* of Shepseskaf and the pyramid of Pepi I.

The presence of Dahshur Lake, as well as evidence of wadis and numerous ancient canals indicates a diverse landscape which was used in the building of the Red and Bent Pyramid complexes. With regards to Meidum, to date there is not any evidence of an ancient lake or wadi that sweeps through the site. However, as Figures 3 and 4 show, it is highly likely that both the Nile and its channels were further west than they are today. In turn, this would make the Meidum

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<sup>3</sup> Lehner, "Z500 and The Layer Pyramid of Zawiyet el-Aryan," 510.

pyramid complex closer to the channels. Overall, the presence of ancient waterways such as canals, channels, and lakes provided a logistical importance for transporting materials such as Aswan granite, Tura limestone, personnel, agricultural products, and other goods.

Another critical environmental aspect is the presence of suitable limestone bedrock which served as perfect building material for pyramid complexes. Egypt was not lacking suitable limestone bedrock during the Early Dynastic Period and Old Kingdom, but there were various factors that contributed to a pyramid site such as quality and quantity. The quality of limestone varied from site to site, especially when comparing Giza's gigantic limestone blocks, which were used in the construction of all three pyramid complexes, to the smaller size blocks used in the complexes at Saqqara. Taking into consideration the size of the core blocks in their pyramid complexes, Khufu, Khafre, and to some extent Menkaure, could only build at Giza.<sup>4</sup> Moreover, this aspect was also important when factoring in the notion that oftentimes pharaohs wanted to surpass the achievements of their predecessors. Khufu might not have wanted to build more pyramids than his father Sneferu and decided that he only needed to build a bigger pyramid to outdo Sneferu. Additionally, when looking at Shepseskaf's *Mastaba al'Fir'aun*, the quantity of limestone is important as well. It is highly probable that there was not enough room to build another royal tomb at Giza following the reign of Menkaure and Shepseskaf had to choose another location. Both the quality and quantity of limestone bedrock undoubtedly played a critical role in choosing a location for one's pyramid complex.

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<sup>4</sup> Mark Lehner personal communication. It should be noted that there are core blocks within the "pit" of Djedefre's pyramid at Abu Rawash that are comparable in size to Giza. However, they are far less numerous and were carved in the immediate vicinity as Djedefre's pyramid was literally carved from inside the bedrock.

### Building within the Nome of *Jnbw-ḥd*

Early on in this study there was a discussion on the extent of the capital city of the Old Kingdom: Memphis. I decided that Memphis was too ambiguous of a name due to its unknown boundaries, as well as its earliest attestation coming from the pyramid name of Pepi II. Instead, *Jnbw-ḥd* was a better term to use because it was an established nome by the time of Djoser. Out of all known pharaonic tombs from the Third to the Sixth Dynasties, the pyramid complex at Meidum is only one that does not reside within the limits of *Jnbw-ḥd*, or the first nome of Lower Egypt.<sup>5</sup> The shift in royal burials from Abydos to Saqqara during the Second Dynasty unquestionably played the biggest role in the emergence of *Jnbw-ḥd* as the center of power for the pharaoh throughout the late Early Dynastic Period and Old Kingdom.<sup>6</sup> With Djoser continuing to use Saqqara as the *de facto* royal cemetery and constructing his Step Pyramid, each subsequent pharaoh who built a pyramid complex (including Sneferu) built within *Jnbw-ḥd*. In some ways it became a requirement to build within the nome due to its importance as the epicenter of pharaonic administration from the time of Ninetjer and Hotepsekhemwy, who built their mastabas at Saqqara, to the general end of the Old Kingdom with Pepi II. As discussed below, building one's pyramid complex within *Jnbw-ḥd* is another critical aspect that shows a larger diachronic trend that existed for royal mortuary complexes from the Second to Sixth Dynasties.

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<sup>5</sup> It is possible that the twentieth and twenty-first nomes were combined into a single nome during the time of Sneferu. See; Wolfgang Helck, *Die ägyptischen Gaue*, (Wiesbaden: Verlag, 1974), 122-126.

<sup>6</sup> See pages 31-34 for a detailed discussion.

## Western Side of the Nile River on the Desert Escarpment

The importance of the western side of the Nile for burials started long before the Old Kingdom as ancient Egyptians were buried on the western desert edge during the Badarian Period (c.a 5,000-4,000 B.C.E).<sup>7</sup> This tradition continues throughout the rest of pharaonic history and even into Late Antiquity.<sup>8</sup> However, cemeteries and burials were not only located near the western side of the Nile on the desert's edge as places such as Helwan were on the eastern side and used as a cemetery during the Early Dynastic Period and Old Kingdom.<sup>9</sup> Due to the First Dynasty pharaohs being buried on the western desert edge at Abydos, the subsequent pharaohs of the Early Dynastic Period and Old Kingdom who built pyramids had their tombs on the western desert escarpment as well. As noted in each individual pyramid site, almost all the Old Kingdom pyramid complexes are located on the edge that separates the desert and the cultivation areas; although there are outliers for a variety of reasons.<sup>10</sup> On a logistical level, constructing a pyramid complex on the edge between the desert and cultivation seems obvious. Building pyramid complexes deep into the desert is impractical as moving building materials, people, and food requires more preparation and large-scale coordination than what was needed to build them on the desert escarpment.<sup>11</sup> Additionally, due to ancient Egyptian society existing

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<sup>7</sup> Stan Hendrix, "Predynastic—Early Dynastic Chronology," in *Ancient Egyptian Chronology*, 55-60.

<sup>8</sup> James Quibell *Excavations of Saqqara (1908-9, 1909-10): The Monastery of Apa Jeremias*,

<sup>9</sup> E. Christina Köhler, "The Helwan Cemetery," in *Archeo-Nil*, 18, (2008), 113-130. Additionally, Helwan's location on the opposite side of the Nile from Saqqara may have played an important factor for choosing Saqqara as a royal cemetery in the Second Dynasty.

<sup>10</sup> Abu Rawash, the Saqqara cluster of Djoser, Userkaf, and Unas, and Dahshur are the most apparent outliers when viewing the sites from an aerial view. This is due to the underlying topographies which incorporate higher elevations, as well as wadis which sweep through the areas. See: Geography sections of Saqqara, Dahshur, and Abu Rawash, pages 33-46; 109-118; and 159-167.

<sup>11</sup> Of course, the logistics and planning needed to construct massive stone monuments on the desert escarpment was already significant. However, it would have been significantly greater if any pharaoh wanted to build deeper into the desert.

alongside the confines of the Nile River and its various tributaries, canals, and lakes, there was no need to build royal mortuary complexes deep in the desert. Therefore, with the combination of the western side of the Nile River, as well as on the escarpments that separate the desert and the cultivation, the topographies of each Old Kingdom pyramid site proved to be an important factor in choosing an initial pyramid site.

### Early Dynastic Burial Sites and Near Ancestral Tombs

Early Dynastic burials were found at almost every site prior to the construction of the first pyramid complex.<sup>12</sup> Out of all the Old Kingdom pyramid sites, Saqqara is the most studied when it comes to Early Dynastic occupation as royal mastabas line the northeast escarpment of the plateau. By the beginning of the Second Dynasty, pharaohs shifted their burial location from Abydos to Saqqara as evident by the tombs of Ninetjer and Hotepsekhemwy. Both Abu Rawash and Zawiyet el-Aryan also show clear evidence of First Dynasty occupation. Abu Rawash has remains of First Dynasty mastabas near the edge of Gebel el-Madawarah, while Zawiyet el-Aryan has traces of at least twenty-seven burials from the Early Dynastic Period prior the building of the Layer Pyramid and Mastaba Z500.<sup>13</sup> The site of Giza also shows early activity prior to Khufu constructing his pyramid on the plateau as tombs bearing sealings from the reign of the First Dynasty pharaoh Djet and the Second Dynasty pharaoh Ninetjer were excavated in the early portion of the 20<sup>th</sup> century.<sup>14</sup>

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<sup>12</sup> South Saqqara and Meidum are the outliers as there are no evidence of earlier elite burials existing in the immediate vicinity of the sites.

<sup>13</sup>Dunham, *Zawiyet el-Aryan The Cemeteries adjacent to The Layer Pyramid*, 1-26.

<sup>14</sup> See pages 136-137.



Tracing Early Dynastic burials to the remaining pyramid sites are more difficult. While the area surrounding the Fifth Dynasty pyramid complexes at Abusir yielded no definitive proof of Early Dynastic burials, the region to the north of Niuserre's Sun Temple shows evidence of a First Dynasty cemetery. The lack of surviving Early Dynastic burials in Abusir is not an insurmountable stumbling block though, especially since it was highly likely that the ancient Egyptians of the Old Kingdom saw Abusir and Saqqara as a single entity divided by Abusir Lake.<sup>15</sup> In the case of Dahshur, the evidence is more ambiguous, but it is possible that Senwosret III's pyramid to the northeast of the Red Pyramid was built on top of an earlier Third Dynasty structure.<sup>16</sup> There are two outliers in the case of Meidum and South Saqqara. While Meidum is surrounded by important Early Dynastic cemeteries such as Gerzah and Tarkhan, there has been no evidence of earlier burials in the immediate vicinity of the Meidum pyramid complex. The area of South Saqqara is similar if one is to take it as a separate site from Saqqara. There is no evidence of earlier burials near the *Mastaba al'Fir'aun* and pyramid complex of Pepi II or the pyramid complexes of Djedkare Isesi, Merenre, and Pepi I, which are a little over a kilometer to the north of the Shepseskaf mastaba and Pepi II complex. Yet, notions made by Czech Egyptologists Miroslav Bárta and Jaromir Krejčí indicating that Abusir and Saqqara were possibly the same site in antiquity might hold true for Saqqara and South Saqqara as well.<sup>17</sup>

Based on the information provided on Table 1 below, there is a link which connects determining a location for one's pyramid complex with being buried near one's predecessor. For example, Sekhemkhet built his pyramid next to his predecessor Djoser, while Giza, Abusir, and

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<sup>15</sup> See page 84.

<sup>16</sup> Dieter Arnold, *The Pyramid Complex of Senwosret III at Dahshur*, 107-108.

<sup>17</sup> See page 84.

South Saqqara were also sites that were used from one generation to another. This continued the trend of being buried next to one's immediate predecessor that began during the First Dynasty at Abydos. Not only would being buried near previous royalty legitimize the pharaoh's power on earth, but it would legitimize his power in the afterlife as well. This legitimization of power came because of the connection the current pharaoh had with his ancestors. On the other hand, this distinction is not always clear once Dahshur, Khufu at Giza, and Abu Rawash are considered since there is no known immediate predecessor buried at these three sites. Additional excavations and research are needed at these three areas, but the presence of earlier cemeteries was most likely not a mandatory factor in determining a pyramid site, yet possibly played a critical role for some pharaohs.

### Diachronic Trends

These four factors are part of the logistical and ideological reasons why pharaohs from the reign of Djoser to Pepi II chose specific locations for their pyramid complexes. While they oftentimes overlap with one another and can be placed within either a logistical or ideological category, they help show a larger diachronic trend that began with the construction of Second Dynasty mastabas at Saqqara down to the final pyramid complex of the Sixth Dynasty with Pepi II at South Saqqara. Beginning with the reigns of Hotepsekhemwy and Ninetjer during the Second Dynasty, a new royal necropolis at Saqqara was founded. For the next 600 years, this area was the main royal necropolis for pharaohs (Figure 79). Taking into consideration that the modern-day distinctions of Saqqara, South Saqqara, and Abusir were possibly part of the same region, there were only a few outliers who shied away from constructing their royal tombs in the manner

that was established during the First Dynasty as Abydos.<sup>18</sup> The key to why the pharaohs of the late Third Dynasty through the Fourth Dynasty struck new ground for royal necropolises starts with Zawiyet el-Aryan. Unfortunately for Egyptologists, its modern use as a military base does not allow for excavations in the same way as the other seven sites discussed in this study. It is possible that these pyramids were built with an idea of isolating one's pyramid complex from others in mind.<sup>19</sup> This becomes more apparent with the sites of Meidum, Dahshur, Giza (before Khafre), and Abu Rawash as Sneferu (and possibly Huni), Khufu, and Djedefre built pyramids at new sites free from any previous royal burials. Khafre and Menkaure's return to Giza continued the tradition of constructing tombs next to one's predecessors and ancestors which continued throughout the Fifth and Sixth Dynasties. The pharaohs at the end of the Third Dynasty and into the beginning of the Fourth Dynasty are the true outliers as the notion of building next to a deceased pharaoh to legitimize one's rule was ignored. Instead, it can be concluded that by building pyramids at new sites was in a way surpassing the accomplishments of their predecessors. There was a recreation of the *zp-tpj*, or first occasion by striking out new sites for pyramid buildings. This notion is taken one step further with regards to Sneferu and Khufu who had their pyramids built larger than any previous pyramid. A combination of new sites and large pyramids to exceed previous ones legitimized pharaohs such as Sneferu and Khufu in the same way Djoser was legitimized by having his pyramid complex next to the Second Dynasty mastabas at Saqqara.

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<sup>18</sup> As mentioned in footnote 31, the idea of sacred space and its meaning and function with regards to the ancient Egyptian worldview goes beyond the scope of this study. However, it needs to be mentioned here that it is possible that tombs built on the western desert edge spanning from Abu Rawash to even Abydos during the Early Dynastic and Old Kingdom periods might have been considered the same area as part of the larger desert, or *dšr*. More research into this topic is needed, but for the purposes of this study and larger point, Saqqara, South Saqqara, and Abusir can be connected into one individual site.

<sup>19</sup> This is especially true if the Unfinished Pyramid is datable to the Third Dynasty before construction of the Layer Pyramid as the owner of the Layer Pyramid (Khaba) would have been isolated from other completed royal tombs.

Overall, the Third to Sixth Dynasties saw an innovation and evolution of royal mortuary complexes with the advent of the Step Pyramid of Djoser at Saqqara to the pyramid complex of Pepi II at South Saqqara. Over the course of 450 years, pyramid complexes were the dominant form of constructing tombs for pharaohs, and as I have pointed out throughout the study, their locations changed based on a multitude of factors. As the owners of the first two pyramid complexes in ancient Egyptian history, Djoser and Sekhemkhet located their tombs at Saqqara with other Second Dynasty pharaohs. While many aspects of the pyramids and pharaohs at Zawiyet el-Aryan are unknown, their presence at the site indicates a drastic change in choosing a location for a pharaoh's pyramid complex since they moved away from the new established royal cemetery of Saqqara. This trend lasted into and throughout the Old Kingdom. Beginning with Sneferu (and possibly Huni) and ending with Pepi II, nineteen pharaohs built their pyramid complexes (and mastaba in the case of Shepseskaf) at the new sites of Meidum, Dahshur, Giza, and Abu Rawash. In the case of Giza, Khufu's descendants Khafre and Menkaure returned to Giza after Khufu's successor Djedefre built his pyramid complex at Abu Rawash. With regards to the modern-day sites of Abusir and South Saqqara, modern Egyptology now views these two sites as an extension of Saqqara; this notion is shared by the current author (Figures 80 and 81). The trends discussed at the beginning of this chapter, indicates that the eight sites covered in this study: Saqqara, Abusir, Zawiyet el-Aryan, Meidum, Dahshur, Giza, Abu Rawash, and South Saqqara were all part of larger logistical and ideological factors considered by pharaohs from the Third to Sixth Dynasties.

Future research and publications will undoubtedly shed new light on the subject, but these initial findings show that choosing a location for one's pyramid complex during the late Early Dynastic Period and Old Kingdom was a crucial decision for pharaohs. Not only did they

have to think about the economic impact of constructing monumental tombs, but they had to think of the larger socio-religious picture as well. The construction of pyramid complexes legitimized the pharaoh's rule, but by associating oneself with a deceased predecessor remembered in the same vein as their predecessors in both the earthly realm, as well as the afterlife. This is indicated by the superstructures of the pyramids alongside other factors such as stone vessels from the tomb of Ninetjer being found in the underground galleries of the Step Pyramid. Complex logistical and ideological considerations were considered when a pyramid site was chosen. Oftentimes, as shown in pyramid complexes located on the western desert escarpment, logistics and ideology polymerized with one another; there was not always a clear indicator of these two overarching factors. Nevertheless, these decisions spanned an almost 500-year period and influenced generations of pharaohs beginning with Djoser in the Third Dynasty to Pepi II in the Sixth Dynasty.

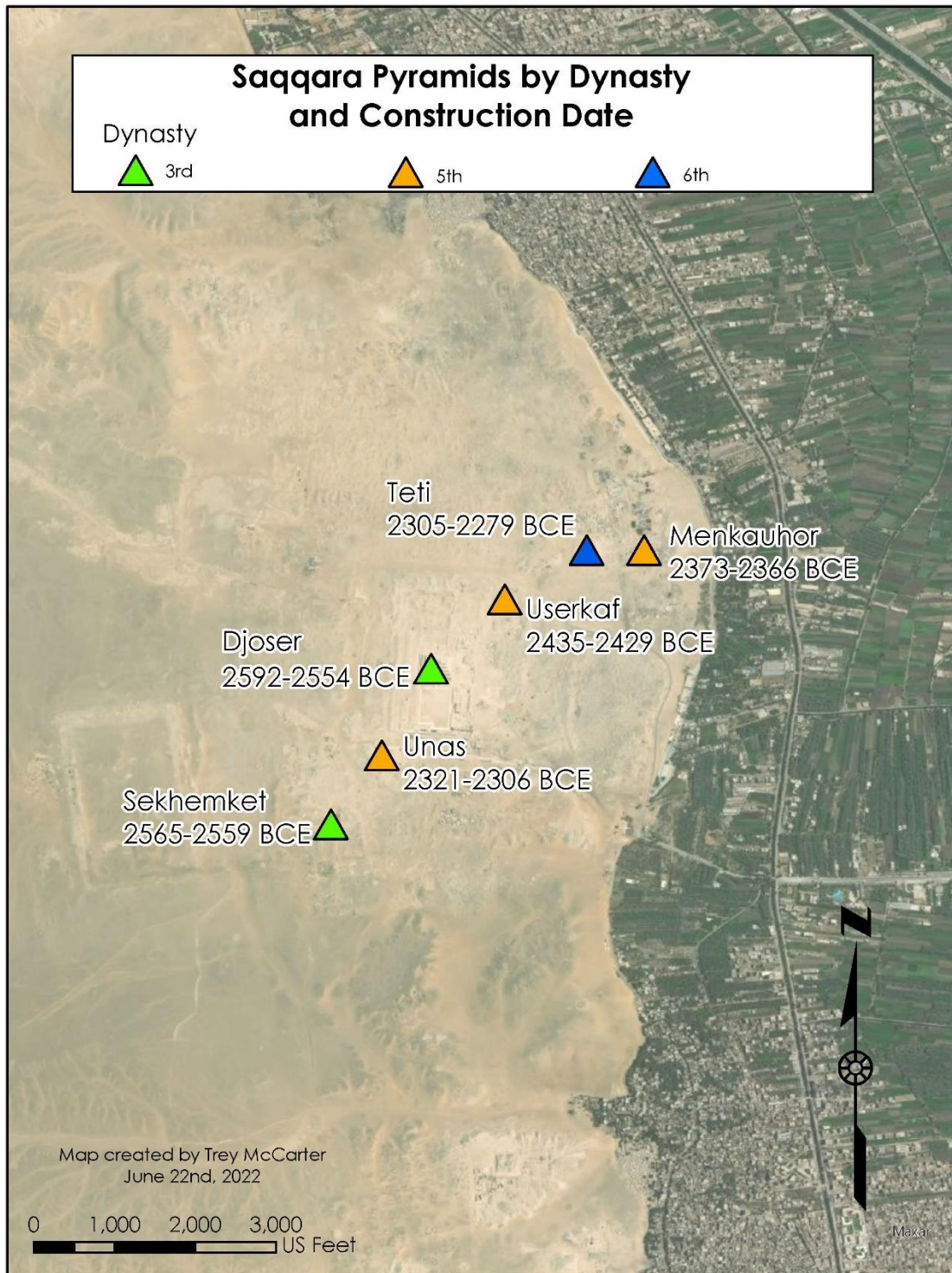


Figure 80: Third to Sixth Dynasty Pyramid Complexes at Saqqara and Their Construction Dates.

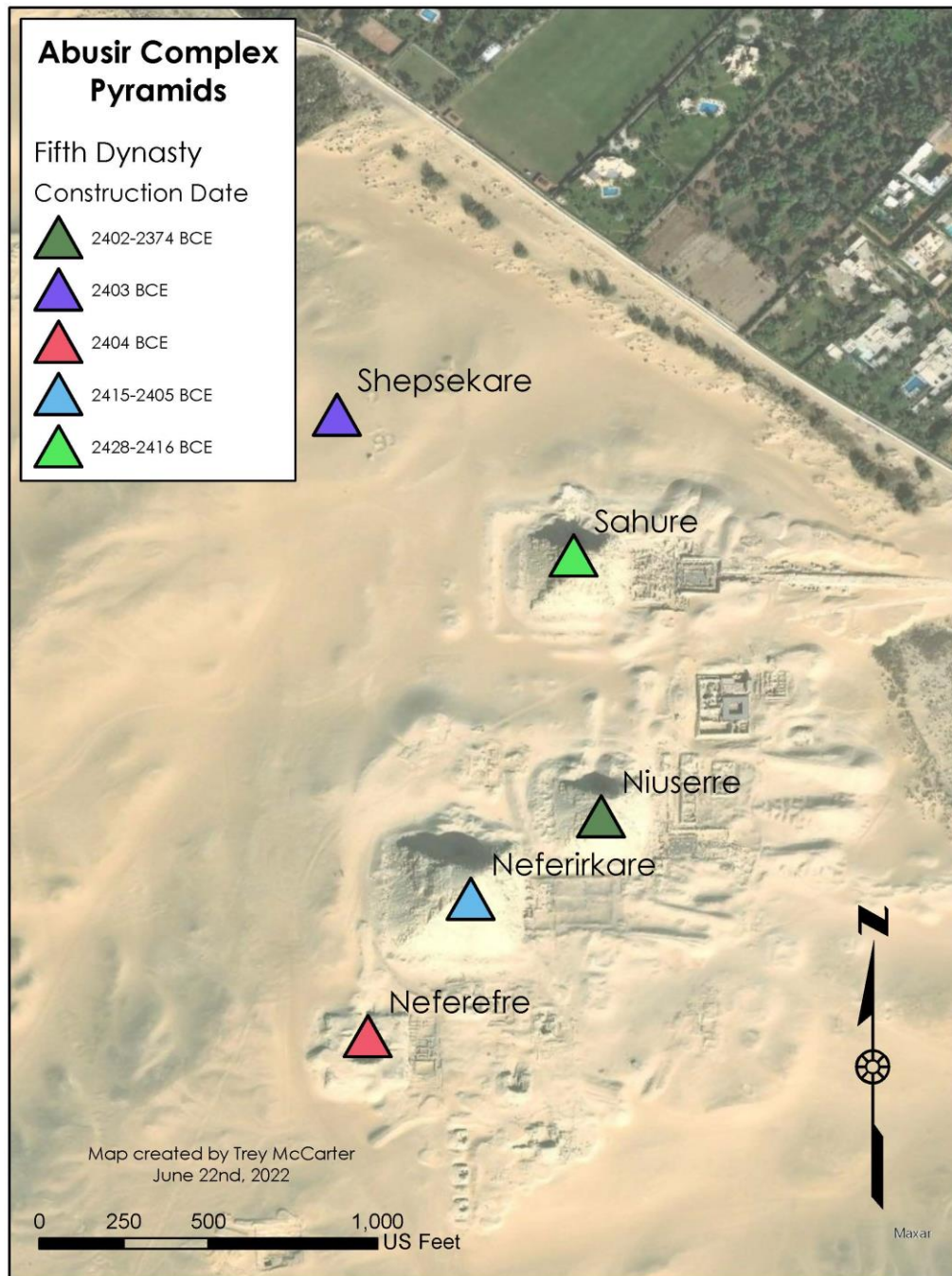


Figure 81: Abusir Pyramid Complexes and Their Construction Dates.

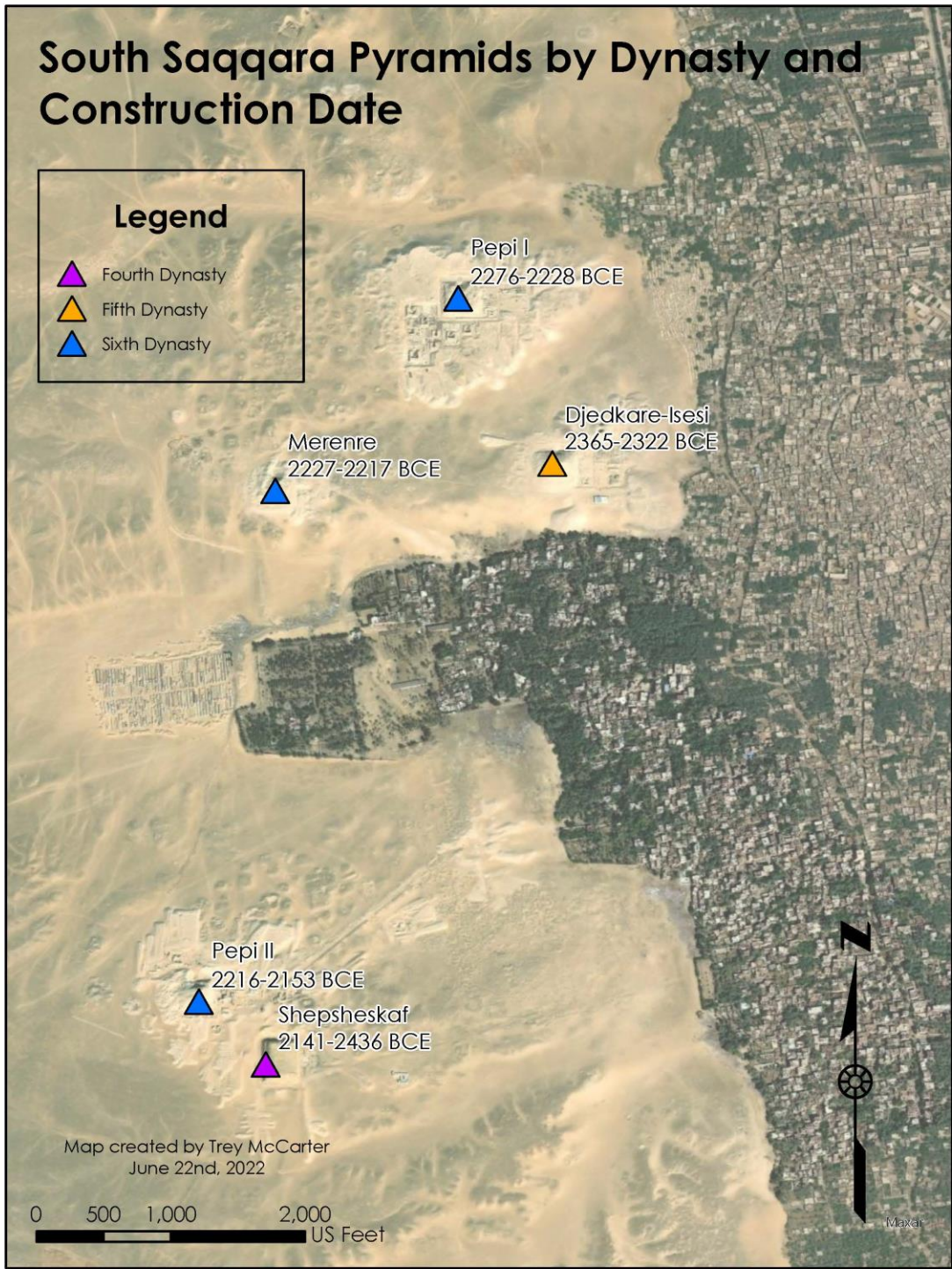


Figure 82: South Saqqara Fourth to Sixth Dynasty Pyramid Complexes by Their Construction Date.



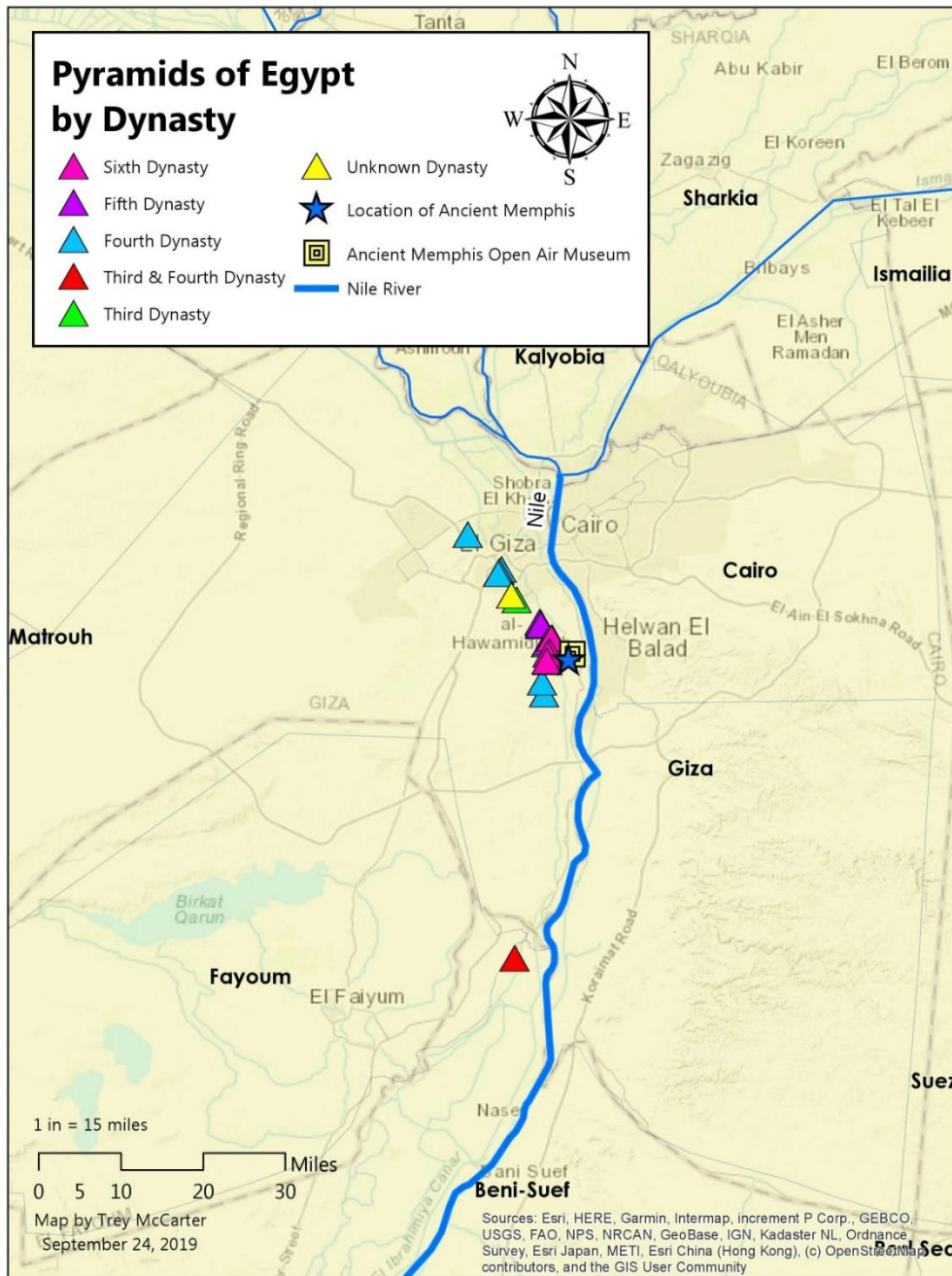


Figure 83: Overview of Third to Sixth Dynasty Pyramid Complexes.

Tables:

Table 1: Old Kingdom Pharaohs and Their Pyramid Locations.<sup>497</sup>

Dynasty/Pharaoh/Reign (B.C.E)	Pyramid	Location	Isolated/Cluster of Earlier Elite Tombs	Isolated/Cluster of Pyramid Complexes
<b>3<sup>rd</sup> Dynasty</b>				
Djoser (2592-2544)	Yes	Saqqara	Clustered	Isolated
Sekhemkhet (2565-2559)	Yes	Saqqara	Clustered	Clustered
Khaba (2559-?)	Possibly	Zawiyet el-Aryan	Isolated	Isolated
Nebka (?-?)	Potentially	Zawiyet el-Aryan	Clustered <sup>498</sup>	Clustered
Huni (?-2544)	Potentially	Meidum	Isolated	Isolated
<b>4<sup>th</sup> Dynasty</b>				
Sneferu (2543-2510)	Yes	Meidum/Dahshur	Isolated	Isolated
Khufu (2509-2483)	Yes	Giza	Isolated	Isolated
Djedefre (2482-2475)	Yes	Abu Rawash	Isolated	Isolated
Khafre (2472-2448)	Yes	Giza	Clustered	Clustered
Menkaure (2447-2442)	Yes	Giza	Clustered	Clustered
Shepseskaf (2441-2436)	Mastaba	South Saqqara	Isolated	Isolated
<b>5<sup>th</sup> Dynasty</b>				
Userkaf (2435-2429)	Yes	Saqqara	Clustered	Clustered
Sahure (2428-2416)	Yes	Abusir	Isolated	Isolated
Neferirkare (2415-2405)	Yes	Abusir	Clustered	Clustered
Neferefre (2404-2404)	Yes	Abusir	Clustered	Clustered
Shepseskare (2403-2403)	Yes	Abusir	Clustered	Clustered
Niuserre (2402-2374)	Yes	Abusir	Clustered	Clustered
Menkauhor (2373-2366)	Yes	Saqqara	Clustered	Clustered
Djedkare Isesi (2365-2322)	Yes	South Saqqara	Isolated,	Isolated,
Unas (2321-2306)	Yes	Saqqara	Clustered	Clustered
<b>6<sup>th</sup> Dynasty</b>				
Teti (2305-2279)	Yes	Saqqara	Clustered	Clustered
Pepi I (2276-2228)	Yes	South Saqqara	Clustered	Clustered
Merenre (2227-2217)	Yes	South Saqqara	Clustered	Clustered
Pepi II (2216-2153)	Yes	South Saqqara	Clustered	Clustered

<sup>497</sup> Dates taken from *Ancient Egyptian Chronology*, 490-491.

<sup>498</sup> This deals with the unknown date of the Unfinished Pyramid at Zawiyet el-Aryan that is discussed on pages 90-93.

Table 2: Old Kingdom Pyramids and Their Dimensions.<sup>499</sup>

Pharaoh and Pyramid	Location	Height (meters)	Base (meters)	Volume (Cubic meters)
<b>3<sup>rd</sup> Dynasty</b>				
Djoser (Step Pyramid)	Saqqara	60	121x109	330,400
Sekhemkhet (Buried Pyramid)	Saqqara	7	120	33,600
Khaba (Layer Pyramid)	Zawiyet el-Aryan	20	84	47,040
Nebka (Unfinished Pyramid)	Zawiyet el-Aryan	Unfinished	200	Unfinished
<b>4<sup>th</sup> Dynasty</b>				
Huni/Sneferu (Meidum)	Meidum	92	144	638,733
Sneferu (Bent Pyramid)	Dahshur	105	188	1,237,040
Sneferu (Red Pyramid)	Dahshur	105	220	1,694,000
Khufu (Great Pyramid)	Giza	146.59	230.33	2,583,283
Djedefre	Abu Rawash	67	106	131,043
Khafre	Giza	143.5	215	2,211,096
Menkaure	Giza	65	102.2x104.6	235,183
Shepseskaf ( <i>Mastaba al'Fir'aun</i> )	South Saqqara	18	99.6x74.4	148,271
<b>5<sup>th</sup> Dynasty</b>				
Userkaf	Saqqara	49	73.3	87,906
Sahure	Abusir	47	78.75	96,542
Neferirkare	Abusir	72	105	257,250
Neferefre	Abusir	Unfinished	65	Unfinished
Shepseskare	Abusir	Unfinished	Unfinished	Unfinished
Niuserre	Abusir	51.68	78.9	112,632
Menkauhor (Headless Pyramid)	Saqqara	?	?	?
Djedkare Isesi	South Saqqara	52.5	78.75	107,835
Unas	Saqqara	43	57.75	47,390
<b>6<sup>th</sup> Dynasty</b>				
Teti	Saqqara	52.5	78.75	107,835
Pepi I	South Saqqara	52.5	78.75	107,835
Merenre	South Saqqara	52.5	78.75	107,835
Pepi II	South Saqqara	52.5	78.75	107,835

<sup>499</sup> These are the dimensions based on their current state and are not a definitive indicator of their measurements as they were completed. With regards to the unfinished pyramids, the measurements are their current state as well. These numbers are taken from *The Complete Pyramids*. See Lehner, *The Complete Pyramids*, 17.

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