

Helwan - A Necropolis of Ancient Memphis

1. Outline of the project

1.1. Introduction

According to some historical sources (e.g. Herodotus, Manetho) the city that later came to be known as Memphis was founded at the beginning of the 1st Dynasty, when the Pharaonic state of Egypt was established. The city's first Egyptian name, of which there were several to follow over the next 3000 years or so, was White Walls (Egyptian: *inb.w ḥd.w*) and is in evidence from around the time of its historically narrated foundation. Other written sources suggest that it soon became the capital of the 1st Lower Egyptian nome, or the 'Memphite nome', which was a district within the overall Egyptian administrative system that was to develop from then on. At least from the time of the early Old Kingdom, and probably earlier, the city became the capital of all of Egypt.

There is indeed some archaeological evidence that would generally provide support to this historical narrative, but to date only the contours of the development of this ancient city are discernible. It appears as if the wider area was inhabited already in prehistoric times, at least from the early Neolithic Period (c. 4500 B.C.E.) onwards¹, which is well explained by its advantageous situation by the river and the then ecologically rich mountainous hinterlands. This location at the meeting point of land and riverine trade routes near the apex of the Nile Delta was of particular benefit to Chalcolithic societies during the 4th Millennium B.C.E., best represented by the large settlement site of Maadi, that engaged in active interregional trade with southern Egypt and the Levant. Interestingly, there is a steep rise in archeological sites and in population density towards the end of the 4th Millennium B.C.E., i.e. during the Proto-Dynastic Period (c. 3300-3100 B.C.E.) (Mortensen 1991). This seems to be accompanied by the emergence of elites and the area's ever increasing significance for interregional exchange indicating that a process of centralization had already started some time before the 1st Dynasty.

Importantly, the development of the city of Memphis is closely interrelated with the emergence of the Egyptian territorial state. Early inscriptional evidence from various sites within and around this area suggests that its inhabitants maintained contacts with several different regional polities prior to political unification (Köhler 2004b). By the time the 1st Dynasty kings had brought the Egyptian Nile Valley under their political control (around 3100 B.C.E.) the region was probably densely inhabited and thus provided the human resources and the degree of infrastructure required to build up and populate the later

¹ Surface finds from the desert near the modern city of Helwan dating to the Epipalaeolithic period suggest that the area may have been occupied even earlier, but little is known about the details of this occupation. Cf. De Morgan 1896; Debono 1979.

primary centre of this new, vast polity that stretched from the 1st Nile cataract in the south down the river to the Mediterranean coast. As the city's population continued to grow it probably further developed in terms of its economic and social complexity, vertically and horizontally. As a result of recent archaeological research, it is increasingly possible to see a rough outline of the urban population of Early Dynastic Memphis as a multi-tiered, complex society comprising aristocratic, religious and bureaucratic elites as well as middle and lower classes (Köhler 2008a). Memphis gained further importance as the kings of the 2nd Dynasty decided to abandon their ancestral royal necropolis in the south at Abydos in favor of the already well-established elite necropolis at Saqqara, a move that laid the foundation for the royal pyramid complexes of the Old Kingdom. It remains to be demonstrated at what point in time the city became the capital of Egypt and royal residence, and how the institutions located here served in the overall central administration and economy of the country.

Table 1: Chronological Table of the Egyptian Nile Valley during the Pre- and Early Dynastic periods

Absolute date in years B.C.E.	General culture-historical phase	Relative chronology	Important sites in the Memphis area
2100 2700	Old Kingdom (Dynasties 3-8)	?	Saqqara, Abusir, Giza, Abu Ghurab, Abu Roash, Helwan
2700 3100	Early Dynastic (Dynasties 1-2)	Naqada IIIC-D	Saqqara, Abusir, Giza, Tura, Helwan
3200	Proto-Dynastic (Dynasty 0 at Abydos)	Naqada IIIA-B	Zawyet el-Aryan, Abu Ghurab, Abu Roash, Tura, Helwan
3300 3800	Chalcolithic	Naqada IIC/D Naqada IB/C-IIB	Maadi, Wadi Digla
4500 5000	Neolithic	Naqada IA/B Badarian El-Omari Merimde Benisalame Fayum A	El Omari

The above aspects, which are crucial to understanding the significance of this project, are also at the core of an intrinsically Egyptological issue: Modern Egyptology is a discipline that finds itself in a balancing act between a diversity of methodologies, including the translation of ancient texts, combined with the interpretation of artistic evidence as well as archaeological data. But over the course of its long history there has always been a strong focus on elite culture. Elite tombs, palaces and temples, associated inscriptions, wall paintings and reliefs, stelae and statuary have provided key evidence about Pharaonic ideology, religion, art and architecture as well as Egyptian political history and its place in the ancient Mediterranean and Near Eastern world. It is only since the last decades of the 20th century that the standards of modern archaeology have made an entry in Egyptology when also more 'modest' areas of evidence were considered as equally important and when excavation methods assumed a more scientific, rather than selective quality. Un-inscribed objects, animal bones or fragmentary artifacts and especially the large body of non-elite data in general (e.g. settlements, provincial sites, non-elite tombs) now complement and, in part, correct the picture of Egyptian culture and society. This changed conception of sources is particularly pertinent to questions surrounding the formation of the early Egyptian state as

many older, historically oriented studies have very much focused on the iconography and limited inscriptional evidence deriving almost exclusively from royal and other elite contexts and have thereby produced a somewhat biased picture of this period. In recent years, more attention is being paid to the development of social complexity and power structures in prehistoric times, which are areas of central interest to the international conference series *'Egypt at its Origins'*. This meeting of scholars specializing in early Egypt has already caused a veritable quantum leap in the scholarly discussion and research into these issues as the published proceedings document (Hendrickx et al. 2004; Midant-Reynes et al. 2008; Friedman & Fiske 2011; Patch & Adams in press). As a result, it is today understood that the emergence of the early Egyptian state is the consequence of complex and long-term social, economic and political processes in different regions across the Nile Valley, including the Nile Delta, which eventually resulted in territorial integration at the beginning of the Dynastic era, although much research is still needed to reach agreement on the details of these processes (cf. Köhler 2010). Interestingly, even though this area of research bridges the prehistoric and early historical periods in Egypt, there is still a tangible intellectual distinction between 'prehistoric' archaeologists who focus on material remains and the more history-oriented scholars who study textual and artistic sources of early Egypt, although ideally, both should aim for mutual and complementary benefit (Baines 2007:116). This is in part because the earliest written sources do offer such tantalizing insights into early Pharaonic civilization (cf. Dreyer 1998; Helck 1987; Kahl 1994, 2007; Kahl et al. 1995; Kaplony 1963; Wilkinson 1999) and invite close attention, but as a result, research into the social archaeology after territorial integration and beyond the royal court is still developing (some more recent studies also include Naqada III material but primarily focus on social complexity in earlier phases, cf. Ellis 1992; Savage 1995, 2000; Wilkinson 1996 and Wengrow 2006). There is also an underlying tendency in traditional Egyptology to regard the actual moment in history when territorial unification had been finally achieved as the end point of all inquiry into state formation because from then on, Pharaonic Egypt was cast in its final form and could be understood in a continuum with later periods. That this view is probably far from reality can be ascertained by observing the significant sociocultural changes that still took place during the Early Dynastic and Old Kingdom periods (and well into the New Kingdom, for that matter) that clearly warn of generalizing Egyptian culture, society and religious beliefs across the millennia. Such significant concepts as kingship and associated ideologies were especially subject to deliberate transformations as the early state of Egypt developed (e.g. Baines 1995; Kahl 2008). The Chief Investigator (CI) has recently proposed that some of these changes may possibly be part of an independent secondary process of state formation, the primary being the socio-economic processes leading up to the creation of early regional states and complex societies in the Proto-Dynastic Period (Campagno 2002; Köhler 2010). This period lasted for about two centuries until the smaller regional state polities were united into one territorial state, although it is not known yet how their political unity was ultimately achieved, be it through coercion or consensual integration. Nevertheless, the kings of this young Egyptian territorial state saw themselves confronted with entirely new, unprecedented ideological, political, administrative, logistical and economic challenges that demanded finding appropriate solutions to manage the economy and to maintain power and political integrity. That this was no minor task is evident in the course of Pharaonic history of three thousand years when the political

landscape of the Nile Valley saw continued alternation between strong political unity and centralization during certain phases, and fragmentation and regionalism at other times.

Considering that the city of Memphis was eventually established as the primary center and the political, administrative and religious focal point of this new Pharaonic polity, actually very little is known about this city, its social fabric, its material culture, economy, ecology and infrastructure in its formative stage. A major hindrance in gaining a clearer picture of the early city is that there is only very limited archaeological evidence for the actual settlement of early Memphis. Despite intensive archaeological activities, such early layers have not yet been identified in the area of Pharaonic Memphis and although there have been limited excavations of Early Dynastic domestic remains near the western edge of the valley, it is not known where exactly the early city's urban core was located as it seems to be largely buried under Egypt's modern capital, Cairo, as well as under many meters of alluvial sediments (Jeffreys 2012). On the other hand, there are the numerous and large necropolises that were utilized by the city's population (Fig. 1) and which provide ample - albeit implicit - information about the city's occupation. In total, some 13,000 tombs of the Early Dynastic Period have been recorded in this area up to this point. Most of the relevant cemetery sites were excavated in the early 20th century and are thus not adequately published (e.g. Emery 1938-1961) which practically prevents an in-depth scientific analysis for many of them. Of key importance are the cemeteries of North Saqqara and Helwan, as these two areas seem to have served the city's core population. Helwan's significance in this particular context has only been recognized relatively recently (Jeffreys & Tavares 1994). It alone comprises more than 10,000 early tombs making it the largest cemetery of this date in Egypt and taking up 84% of tombs in the Memphite region. The evidence currently suggests that Helwan was the major burial site for the middle and lower classes of Early Dynastic Memphis (Köhler 2008a). This very fact renders this site's investigation extremely valuable for research into non-elite society and state formation in ancient Egypt.

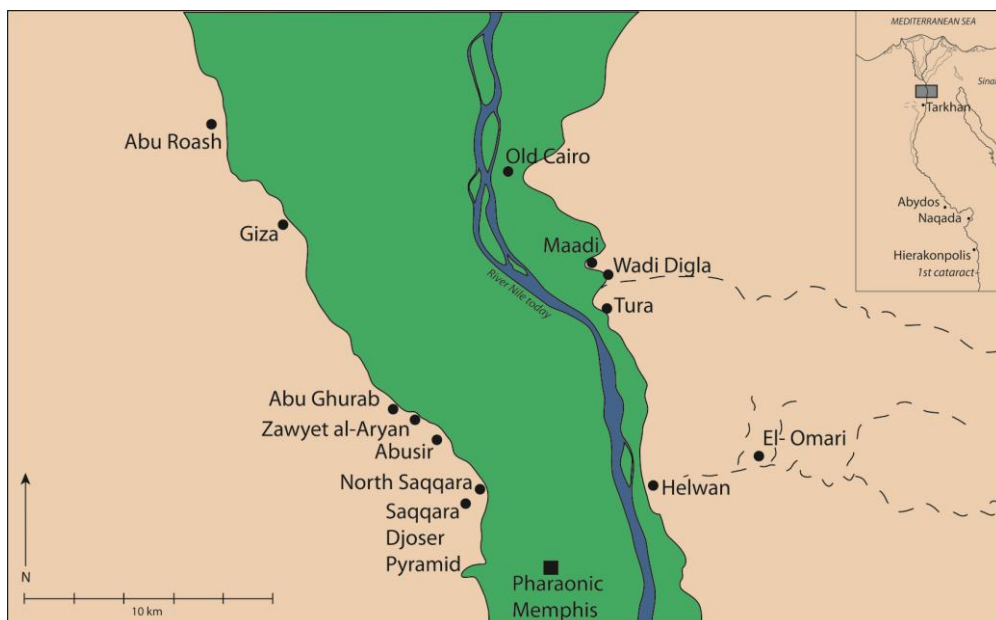


Fig. 1: Map of relevant sites in the region of Memphis

Thus, while it is almost impossible to investigate the early city archaeologically, the many cemeteries in its vicinity offer a wide array of archaeological data to examine at least some of these key points. Of particular interest is the site of Helwan, where the vast majority of Memphites had been buried during the

time just before, at and especially after the historical moment of territorial unification. The fact that portions of this site have been excavated by the CI according to modern archaeological standards means that Helwan holds the evidence to investigate these issues from a modern scientific, non-elite perspective rendering this research both highly innovative and urgent.

The necropolis of Helwan consists of a series of cemeteries that stretch along the eastern edge of the Nile Valley over an area of c. 100 hectares. Tombs have been investigated here since the early decades of the 20th century and in particular by the Egyptian archaeologist Zaki Saad who was responsible for uncovering more than 10,000 tombs over 12 years (in summary Saad 1969). Although Saad probably did his best at the time to record this vast amount of archaeological material, the number of excavated tombs alone suggests that excavation and recording methods were rather basic (Köhler 2007b). His research was also cut short by the first Egyptian revolution of 1952 and much of this work could not be published at all, which left behind a substantial gap in evidence. The site was not systematically investigated again until 1997, when the CI (then based at Macquarie University in Sydney) received permission from the Supreme Council of Antiquities (SCA) in Egypt to continue archaeological research in this area which was funded by the Australian Research Council and Macquarie University. The early years of this work focused on the re-excavation of select tombs from Saad's era (Operations 1-3, Fig. 2 left) and the recording of his artifacts then stored in the Egyptian Museum in Cairo in order to better contextualize and complete the little information published thus far (Köhler 2002, 2004d; Smythe 2004, 2008)². But in 1998, the project's research design had to be broadened when it became clear that the archaeological site as a whole was under severe threat from modern urban development. There was particularly one area (Operation 4), where no previous archaeological work had been conducted that was already being subjected to modern house construction and in danger of being obliterated without archaeological documentation.

This area (Fig. 2 right) then became the primary focus of investigations and 13 seasons of excavation of archaeologically intact cemetery area covering some 7,000 square meters have been conducted since (Köhler 2000, 2003b, c, 2004a, b, c, 2005, 2007a, 2008a-c, 2009, 2012, 2014). Because of the great pressure of urban construction, the mission operated as a rescue excavation over eight years and most of the effort during the field seasons was invested in archaeological excavation and recording. Although any artifacts and bio-archaeological remains arising from this work were subjected to primary processing and conservation during each field season, all of the material was placed in SCA storage without detailed documentation or examination. The situation was later helped when the Institute for Bioarchaeology provided the funds to build an on-site storage and work facility, the *Facility for Archaeological Research at Helwan (FARAH)*, whose first construction stage was completed in 2003 which then enabled the mission to start analysis in tandem with excavation. Parallel to that, the SCA finally agreed to permanently protect the archaeological remains at Helwan by building a site protection wall in 2006, which obviously changed the dynamics for the project's work strategies and time management. Also, the CI's acceptance to take up a professorship at the University of Vienna in 2010 has led to a review of the

² The CI has been able to obtain a large number of Saad's unpublished field records which are very valuable for our analyses.

project's general research strategy. After 17 years of intensive archaeological work, the major research questions have now largely been addressed, excavations have ceased and the project is nearing its completion.

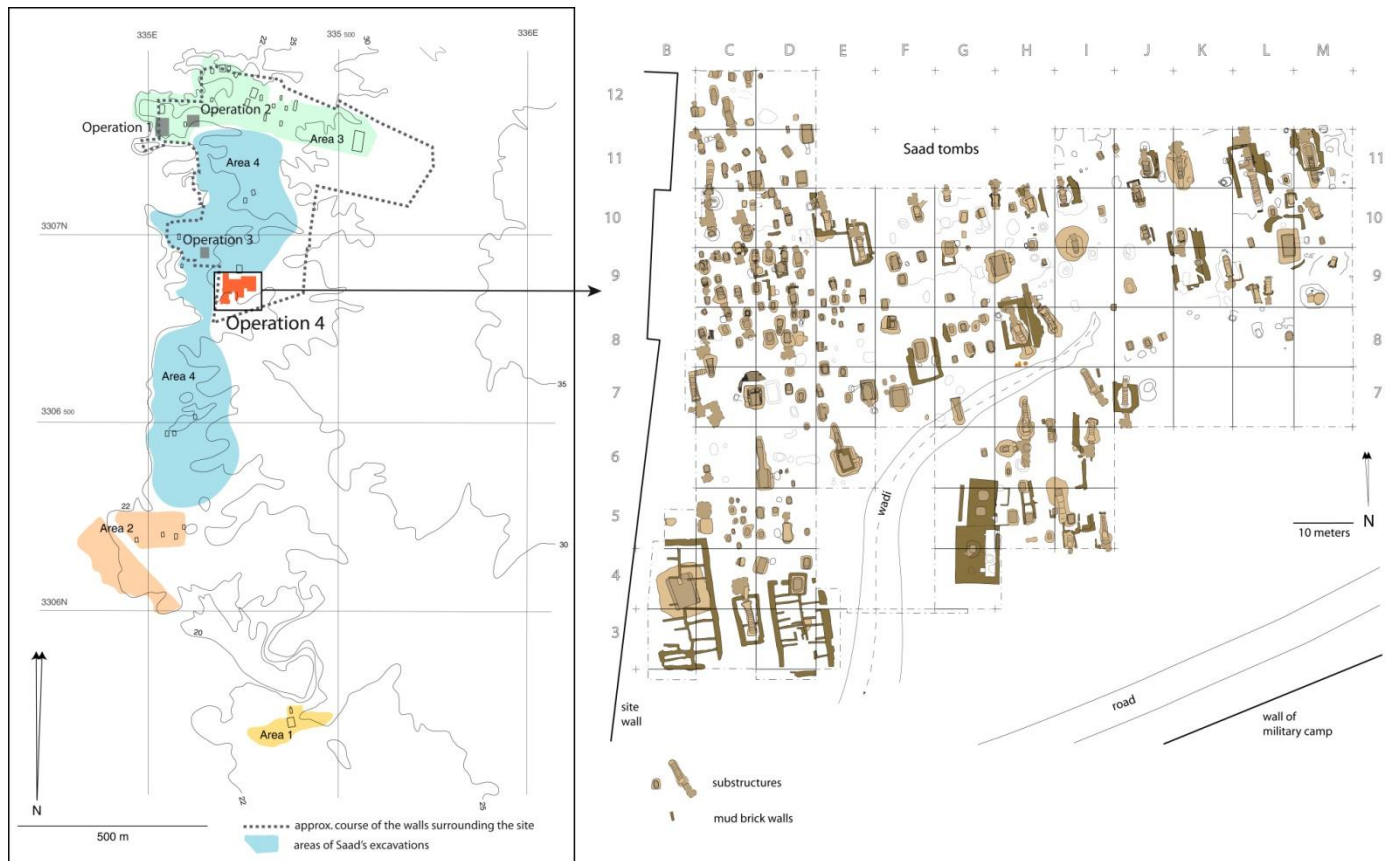


Fig. 2: Helwan site map (left) and plan of Operation 4 (right)

What has been achieved thus far is substantial: several of Saad's tombs have been re-excavated and a catalogue of some 3,500 artifacts from Saad's work has been completed. Also, the team has discovered 218 archaeologically intact tombs with secure contexts in Operation 4 which date to the Early Dynastic and early Old Kingdom periods. These comprise a variety of architectural solutions to providing space for a burial ranging from small pit graves to relatively large and complex subterranean structures, sometimes including superstructures (*mastabas*). These tombs yielded over 2,200 diagnostic non-ceramic artifacts, an estimated 150,000 classifiable pottery fragments, plus hundreds of complete vessels, and a vast amount of bioarchaeological data (from human, botanical and faunal remains) through modern, scientifically controlled excavations. Post-excavation processing has now intensified in order to bring the project to a final conclusion through a comprehensive analysis of all the data acquired to date and a publication series, which has already generated three major monographic reports and dozens of research articles (see Bibliography). Because the Helwan Project has produced so much data and because it is one of the very few modern archaeological investigations of non-elite tombs in the Memphite area (the French mission at Abu Roash (Tristant 2012) and the German mission at Saqqara (e.g. Dreyer 2007) being the other major projects of interest for the period), the modern scientific approach to archaeological excavation and analysis render this research immensely important.

1.2. Aims and Objectives

This research is concerned with early Egyptian mortuary practices as a field of study in its own right, as well as with mortuary data as a source of information from where conclusions about the society and culture of the early city of Memphis can be derived. Although it has often been correctly critiqued that the value of mortuary data for such purposes has been overstated, especially in Egyptian archaeology (but see Baines & Lacovara 2002; Meskell 1999; Richards 2005; Seidlmayer 1990, 2001 and Smith 1992, to mention but a few significant recent contributions), it is currently the only viable data available to solve the questions at hand. Modern research into the general validity of such data has shown that mortuary archaeology indeed has its potential for investigating a variety of aspects of past human existence as long as the inquiry operates on a solid foundation of scientific methods, primary data and well-argued theories. Being empirical and archaeological in nature, this research will apply low level theoretical approaches, i.e. Middle Range Theory in the Mertonian sense (cf. Smith 2011, 2012: 324-325), in order to provide a scientifically grounded approach to our interpretations without intending to contribute to theoretical archaeology, simply because it aims to analyze primary archaeological data. But this project builds upon decades of theoretical work following researchers such as Lewis Binford with his seminal cross-cultural study on mortuary variability (1971) as well as Josef Tainter's conclusions concerning energy expenditure in funerary contexts and their potential relevance for the archaeology of social complexity (1978). Also, what has been termed 'the social anthropology of death' by Mike Parker Pearson (2003) and his suggestions as to the challenges and benefits arising from mortuary data in modern archaeology have long been integrated into this project's theoretical tool-box. The amount of modern literature on this topic, especially on mortuary archaeology, bioarchaeology, identity and gender, social complexity, state formation and urbanization is rapidly increasing and the project always aims to maintain currency on relevant topics without subscribing to any particular intellectual trend in archaeological theory, be it processual, postprocessual or otherwise. This can be illustrated with the project's main research objectives and some preliminary results achieved to date.

We have noted earlier that there is some historical evidence that informs on certain aspects of the early city of Memphis and its place in the formation of the early Egyptian state. But it is very important to treat such historical evidence with caution. Pharaonic and later written sources largely represent the view of Egyptian history that was accepted at the time of writing and that was therefore the result of interpretation and modification, not rarely for the purpose of propaganda and decorum. Additionally, early Egyptian textual evidence contemporary to state formation provides a far more fragmentary picture of the period than textual evidence of later periods. Given that the development of hieroglyphic writing is contemporaneous with state formation, early inscriptional evidence tends to be rather abbreviated in nature (the earliest full sentence is only from the late 2nd Dynasty) and generally amounts to short notations. Most of the inscriptions point to certain events (e.g. religious festivals), economic institutions (e.g. royal estates), certain individuals or a combination thereof, such as the name of a king together with the name and titles of an official inscribed on a cylinder seal, and therefore often fulfill an administrative purpose. But they cannot convey full explanations or describe the narratives behind such statements.

Their correct interpretation therefore requires a detailed contextual analysis that goes well beyond the information actually provided (see also Baines 2007: 95-145). If only inscriptional evidence, of which there is indeed plenty, were to be consulted, the conclusions derived would only apply to a small segment of the city and its society, namely the king and his court, which will obviously not suffice by modern standards. The vast majority of Memphites are not covered by this evidence; in fact written sources are an exception, rather than a regular category of evidence in non-elite contexts of this time. This research therefore has certain limitations in comparison to archaeological investigations of later periods aiming to contextualize and interpret non-elite archaeological data on the background of Egyptian history, religion and society, as was so successfully achieved with the village of Deir el-Medina in the New Kingdom (Meskell 1999). Our conclusions must therefore largely be derived from the archaeological record.

Further, this project does not primarily aim to arrive at a historical account or narrative of the development of the city of Memphis as the capital of Egypt, but to provide a comprehensive picture of a variety of aspects and processes involved in forming this early city, of course not neglecting written sources and elite data, but in particular encompassing the evidence of non-elite urban society. This will be possible because the tombs in the cemeteries around Memphis belong to individuals who once lived in this most important of cities at a time when the lower Nile Valley was undergoing significant social, political and economic transformations, when the world's first territorial state was being created. In lieu of archaeological evidence for the city itself, the cemeteries offer crucial insights into the material culture, architecture, religious beliefs, social structure, organization and demography of this urban society, as well as information about the living conditions and subsistence seen from the bioarchaeological perspective of the human, faunal and botanical remains found therein. Although the elite tombs at Saqqara provide information about the upper layers of the social pyramid, including the royal court and the bureaucracy, it is in particular the evidence from the non-elite burials at Helwan, which make up 84% of Memphite tombs, and our results achieved to date that will eventually allow us to complete the picture of urban, complex society of that time. In addition to their significance for research into socio-economic complexity, these data also offer other interpretive avenues of inquiry, such as into gender identities, the religious significance of funerary rituals performed at the grave site as well as a means to solidify our knowledge of early Egyptian material culture, its relevance for chronology, craft specialization, technology, interregional trade and exchange, subsistence, economy and materiality. A selection of topics will be discussed here to illustrate the enormous potential of our work, but it must be remembered that these, here separated for the purpose of structure, are strongly and dynamically interrelated.

1.2.1 Social Complexity and Urbanization

The area around the later city of Memphis has the highest concentration of sites and tombs of the Early Dynastic Period in comparison to any other region in the Nile Valley. This statistical fact is the leading argument to enable this project to speak of urbanism and the city of Memphis, but it is not the only one. In addition, this region at this time also exhibits archaeological evidence for a high degree of social differentiation as well as economic centralization, both also supporting the notion of an urban population. Particularly in the context of state formation, urbanization and social complexity are closely related topics, although it remains important not to reduce either of these to a subordinate role as Osborne has

recently (2005) critiqued in association with urbanization in modern theoretical archaeology. And although this project cannot make use of comprehensive archaeological data usually used to elucidate patterns of ancient urbanization, such as representative settlement remains, urban design and architecture, spatial development or regional surveys, this concept does play an important role in this project, nevertheless. This is notably so since modern approaches to preindustrial urbanization have allowed for better insights into the interrelation of centralized society with agricultural and political economy, redistribution, craft specialization, commercialization, trade and exchange, demography and social organization (Storey 2006; Smith 2011³) which can all be investigated through the data from Helwan. For the purpose of this section, they are combined, but the CI wishes to emphasize that this is only one of many possible combinations.

Preliminary analysis of the archaeology of the graves at Helwan shows that on the one hand there is probably scope for a whole range of socio-economic groups to be ascertained on the basis of variability in expenditure. On the other hand, there was also a great degree of consistency because all burials had a relatively standardized orientation in a tightly contracted position and were provided with a relatively restricted range of grave goods. These details seem to reflect a common belief in an afterlife, but importantly, their variability seems to express the intention to preserve an individual's identity and status, which is not different from later periods, and which is why especially Egyptian funerary culture offers so much potential for analysis (Meskell 1999). Funerary practices at Helwan exhibit great variability over time and probably also across and within social strata, which would allow for insights into the levels of social inequality and complexity. The theoretical background for the assumption that there probably is a social correlate of funerary expenditure, i.e. social differentiation, is based upon Tainter's principle work on the topic and that of his later followers and critics (summarized in Parker Pearson 2003:72-75; Richards 1998, 2005; Seidlmayer 1988). The archaeological evidence to be analyzed in this particular context lies, for example, in the grave size (i.e. volume of the substructure⁴). Of the 218 tombs recently excavated in Operation 4 the size varies considerably between very small and very large tombs; 44% of graves represent very small pits of less than 2 m³ volume, 20% range between 2-5 m³, 16% 5-10 m³; 13% 10-20 m³, 3% 20-30 m³ and in total only 4% of graves are large tombs between 30 and 73 m³. This statistic suggests that there was a great degree of variation in the expenditure of energy afforded to build the tombs and causes us to examine if this variation reflects socio-economic differences, if so what social ranks might then be represented in this sample, if general observations relating to specific burial practices in each social group can be derived and if there are any changes to these over time. Also, in combination with the artifacts found in the graves (quantity, quality, any inscriptional evidence) it may be possible to interpret these data on the background of the social structure and organization of that time. These are the preliminary general conclusions to date: small and very small burials represent the large majority (64%) of tombs in this sample. The smallest graves, which exhibit very few or no grave goods at all, in all

³ Smith's outline of City Size Theory and related aspects, as well as theories derived from anthropological political economy and institutional economics seem particularly worthwhile pursuing in this context.

⁴ Because not all graves had preserved superstructures, the substructures provide a more objective and representative sample for statistical purposes. Where superstructures are preserved, they have the potential to complement the analysis.

probability belong to members of the lowest social ranks whereas the middle and upper ranks are represented by the few medium and large sized tombs. The latter are architecturally also far more complex; they not only have sizable substructures often containing large numbers of variegated grave goods, but sometimes also rectangular mud brick superstructures comprising a specially built offering place for a mortuary cult, where inscribed limestone relief slabs would have been frequently installed. These buildings and their offering place represent the antecedents of Old Kingdom *mastabas* with richly decorated mortuary chapels and 'false doors', which would justify interpretations such as Baines' and Lacovara's 'mausoleum culture' (2002:7), which aimed at preserving the tomb owners' privileged identities. There is a corpus of over 40 relief slabs with early hieroglyphic inscriptions from Helwan, the largest corpus in the Memphite region, which provides useful information about the tomb owners' names and identities suggesting that lesser members of the royal court as well as bureaucrats, specialists and priests were buried here and had their identities remembered and materialized architecturally (Köhler & Jones 2009). Given the small number of relief slabs and the large number of contemporary tombs in this cemetery, however, it is obvious that having such a tomb indeed was a great privilege. A comparison with other Memphite sites supports the notion that the owners of the largest tombs at Helwan still had lesser rank and status than most contemporary tomb owners at North Saqqara and it has been suggested that these Helwan individuals could represent the middle class of Memphite society (Köhler 2008a; Köhler & Jones 2009). The final analyses of such data will not only assist in clarifying the validity of mortuary data for an assessment of social complexity in early Egypt⁵, answer outstanding questions on the social structure and organization of the cemetery population at Helwan as a sample of Memphite society, but also shed light on any patterns in the burial practices across and within different social strata. Although only a small sample of tombs has been excavated by modern standards, i.e. under controlled scientific supervision, they provide very precise qualitative and quantitative data and a unique window of opportunity, or anchor rather, to contextualize the rich mortuary data from Helwan on the background of this large sample of 13,000 excavated early tombs in the Memphite region. Our results may assist in finding ways to overcome the methodical shortcomings of the older publications by comparing our observations with other, non-elite cemetery sites on an intraregional level. This can be done in order to potentially arrive at patterns and conclusions about the social structure elsewhere and thereby achieve a more comprehensive picture of the complexity of the urban settlement system of Memphis and its hinterlands (cf. Storey 2006:8).⁶ Ultimately, this is one more key area where our findings will implicitly (i.e. from a mortuary perspective) contribute to questions pertaining to urbanism and the formation of the Pharaonic state.

⁵ The methodological issues are currently being investigated by B. Janulikova, DPhil candidate at the University of Cambridge, co-supervised by the CI.

⁶ Another interesting avenue of approach would be the question to what extent there is evidence for the so-called 'urban graveyard effect' resulting from greater population density and causing increased propensity to endemic and epidemic diseases (cf. Storey 2006:5-8), but since there is too little comparative osteological data from cemeteries in the rural hinterlands of the region, this may be difficult to investigate.

1.2.2. Demography and Identities

Although the large majority of the burials were disturbed, some by later burials involving architectural alterations, but most others by ancient tomb robbers, it is possible to state that each tomb was initially built to accommodate one person and that this so created space was meant to be sealed indefinitely. This can be interpreted towards an expression of mortuary identity, be it in a religious, social, socio-economic or gender context. This is evident by the tombs' size, architecture and construction; the small pit graves were just large enough to hold one primary burial, usually covered with mud, wooden twigs and branches and backfilled up to the surface, whereas the larger tombs had refined security mechanisms including mud brick walls and large, irremovable stone slabs which sealed the entrance. The human remains found therein, which are all skeletonized and show no evidence of artificial preservation, amount to over 200 individuals of all ages and are being examined by the project's physical anthropologist Christine Marshall of the Institute for Bioarchaeology. These osteological analyses will eventually allow for precise scientific findings pertaining to biological sex, age at death, overall health and pathologies, physical activity patterns and division of labor and provide important metric biological parameters for this population sample (Marshall 2014). These all will be of major importance because there is no other site in the region of Memphis of this period that provides such a density and precision of data. Of particular interest will be the interrelation between biological sex, age and the inventory of grave goods and architecture. Given a previous lack of genuine interest in skeletal analysis of the tomb owners (Gowland & Knüsel 2006:IX), sex determinations in older studies in the area tend to be methodically unreliable or based almost entirely on the distinction if a burial contained jewelry (female) or not (male).⁷ A more accurate, statistically viable analysis of such data will allow for observations of patterns in sex- or age-based variations of mortuary practices and their potential to draw conclusions about gender, age, status, group or any other identities (cf. Hollimon 2011:150).⁸ A preliminary result of our analyses is that in terms of grave size, most males and females received the same effort in energy expenditure which is significant because in later periods, such as during the later Old Kingdom, this does not seem to be the case as females often did not receive a tomb of their own and were buried with their husbands. If they did receive a separate tomb, it tended to be much smaller (Janosi 1999; Seidlmayer 2001:214; Köhler - Jones 2009:79). It is possible that this trend may be typical of elite culture as in later periods (Meskell 1999) and therefore may also find its reflection in the Helwan burials, but this has not been fully investigated yet.⁹ It will be necessary to determine if this also applies to the elites of earlier periods and if there is indeed a development which can be explained on the background of possible changes to social differentiation in time and over time. Another interesting, possibly related question in this context, is why females seem to be statistically underrepresented in this population sample. In a 'normal' cemetery

⁷ We acknowledge the large body of modern literature on sex, gender, age, identity, personhood and embodiment, and although we generally follow relevant previous conclusions pertaining to ancient Egypt in that gender identity appears to be binary (male/female, cf. Meskell 1999; Savage 2000), we do take other views into account as well, cf. Sofaer 2006.

⁸ The child burials have already been analyzed by Ronika Power as part of an unpublished PhD thesis at Macquarie University of 2011, co-supervised by the CI.

⁹ A study by Savage (2000) on Predynastic mortuary remains at Naga ed-Der revealed that women and men had equal status.

population males and females should take up approximately equal parts, but at Helwan, as far as the analyses allow us to say at this point, there are almost twice as many males as females among those remains that could be sexed, which requires explanation. A number of possibilities have already been taken into consideration, including gender-based selection of the burial site¹⁰, greater male mortality, a greater presence of males reflecting immigration from the country-side in search of work (as observed through census data in Roman Egypt, cf. Bagnall 2006), or differential archaeological preservation because a large number of individuals could not be sexed at all due to damage. This damage can be caused by mineral salts on the one hand which does affect most burials, but it does not explain why female skeletons should have suffered more than males. Or it is due to tomb robbery which especially targeted female burials, and thereby caused disturbance and damage, as they may have contained objects more valuable to ancient robbers. None of these possibilities has been discarded as yet, and other potential bias factors will be considered in order to reach an explanation (see also Bello & Andrews 2006:9-10; Jackes 2011), but this will be pending final analysis. Importantly, our research will engage in quantitative statistical analysis of as many variables as possible in order to investigate to what extent the graves and the associated funerary practices may indeed have been a canvass to reflect social identities and socio-economic status as part of the overall 'burial system' (Smith 1992:196). Conversely, the project is also interested in examining the qualitative aspects of well-preserved tombs and the possible avenues to identify and interpret individual variability, following Meskell's example with the Deir el-Medina population (Meskell 1999:139).

1.2.3. Bioarchaeology

This project does not discriminate between archaeological techniques or theories and biological data as being of different importance or ability to elucidate aspects of early Egyptian society; quite to the contrary, it has a strongly bioarchaeological focus that understands the evidence from early Egyptian tombs in a holistic and dynamic approach aiming to unite 'the physical with the social body' (cf. Gowland & Knüsel 2006:XI). The significance of the study of the human remains from the site has already been demonstrated in the previous section. The analysis of the human data will ultimately provide insights into the demography and overall condition of human, non-elite life experiences in early Memphis as well as key biological parameters for this ancient population sample which can be used as a benchmark for the study of contemporary populations at other sites in Egypt. The animal and plant remains from the site, which are preserved in great numbers, also need to be accurately analyzed in order to draw conclusions about the subsistence and ecology of the Memphite region, its significance for agriculture and animal husbandry and its place in the subsistence and political economy of the period. For example, many of the pottery vessels contained large quantities of plant remains. Preliminary analysis of 30 vessel content samples from only 10 tombs produced almost 27,000 plant macro remains which have already been assorted and identified by species. The result points to a prevalence of domesticated barley, followed by emmer wheat as the main source of plant food, but other species, including fruit and legumes, have been

¹⁰ As has been suggested for a Pharaonic population on the island of Elephantine where females are overrepresented because the males were buried in the elite cemetery on the mainland; Rösing 1990: 106; Seidlmayer 2001:218.

identified as well. In addition, the large variety of field weeds in this sample is interesting and provides opportunities to examine the possible crop-processing strategies during this time (Ali 2010). Since the plant remains are so substantial in quantity and representativeness, their further examination is of utmost importance to this project. The same goes for the faunal remains, e.g. animal bones, snails, mollusks etc., which already point to the notion that domesticated cattle, sheep, goats and pigs represented the chief sources of animal protein, complemented by a variety of fish, fowl and some other wild animals (Abd El Karem 2014)¹¹. For example, one of the medium-sized tombs already processed belonged to an adult male and contained two hind limbs of a butchered hare, presumably food offerings, which is unusual as it suggests that some non-elite Memphites also consumed wild game. Hunting of wild animals during the Pharaonic Period, however, is understood to be a pastime of the elites and it will be interesting to examine if the consumption of hunted animals was a matter of choice or a necessary contribution to the subsistence of commoners and therefore indicative of poor economic redistribution. This is where the information from the human skeletons will provide complementary data pertaining to diet and nutrition. Another tomb, this time of a relatively wealthy adult female, contained deliberately destroyed stone vessels buried together with large quantities of articulated cattle bones in the descent to the burial chamber. These, together with the analysis of butchers' marks and the selection of certain parts of the slaughtered animals, allow for detailed insights into funerary rituals performed for and at the grave, which are aspects that are still largely understood only from the study of the decoration of Old Kingdom elite tombs, but rarely on the basis of such well recorded archaeological evidence in non-elite contexts.

1.2.4. Rituals and funerary practices

Our careful excavation method allowed us to observe evidence for the performance of certain rituals at the grave site and thereby provides avenues of approaching the significance of funerary rituals in early Egyptian society. It has been suggested previously that the ancient Egyptian treatment and burial of a corpse may entail aspects of a rite of passage following A. van Gennepe's early definitions (van Gennepe 1909; Lloyd 1989), and it is very possible that associated rituals were also performed in early Egypt (Köhler 2003a). In general, the burial itself may be considered a ritual in its own right because of the deceased's orientation and position within the grave, which suggest a degree of deliberation (Parker Pearson 2003: 6). About three quarters of burials at Helwan were placed in a contracted position along the north-south axis on the left side facing either east (51%) or west (23%), and the remainder of burials were found in any other position including the right side. In addition, the deceased usually received grave goods which were placed in specific areas of the grave and served different functions, be it food and drink for sustenance, personal items, tools and toiletry articles or objects which convey certain symbolic meaning, such as so-called 'dummy vessels' which only appear to be vessels in shape but are made from solid limestone. Some vessels were intentionally placed upside down or were even deliberately destroyed and scattered all over the tomb. Their active destruction may be part of a bereavement or separation ritual. Sometimes, there are the remains of meals found in the upper layers of fill or within the superstructure,

¹¹ It should be noted that animal remains at Helwan can not only be found as grave goods, but also in the form of individual burials since two of the graves in Operation 4 contained a dog and a young sheep/goat, respectively. Cf. Saad 1969: pl. 120-121 for more animal graves.

i.e. spatially clearly separated from the burial, possibly suggesting that food was consumed at the funeral. Conversely, accumulations of food deposits right next to the coffin inside the burial chamber may be interpreted as food for the deceased. In one case, the deceased's right hand was positioned in front of the face and held an organic substance, which could easily be interpreted as a perpetual food offering, but in another burial the hand in the same position held a potsherd and that potsherd was the only grave good. Such instances need to be examined very closely as they can be interpreted on the background of other known Egyptian funerary practices and religious beliefs, but they also have the potential to challenge existing paradigms, especially in comparison with later periods (Baines & Lacovara 2002). This can already be exemplified with the observation that many early tombs in the Memphite region bear little or no evidence for one of the most significant religious concepts of later periods, i.e. the notion of the west being the place and eponym of the netherworld materialized in the location of cemeteries, tomb architecture, burial orientation and religious texts. A preliminary analysis of 1st Dynasty tombs and their orientation, however, suggests that it was the local landscape and topography, rather than religious concepts that decided on the location and orientation of tombs in the Memphite region and that a change to this pattern was only gradually generated when the kings of the 2nd Dynasty started to build their tombs at Saqqara and thereby influenced the religious landscape of this region (Köhler 2012). There is every probability that similar observations can be drawn from other areas of evidence as well once appropriate attention has been paid to all the evidence and all data have been analyzed.

1.2.5. Material Culture and Economy

This area of study will benefit from Smith's definitions of 'archaeological political economy' (Smith 2004) and their application in the context of state economy, especially since this project is concerned with an area that became the primary centre of a relatively large territorial state, and because the material evidence from the tombs at Helwan is extremely rich. For example the amount of pottery uncovered and documented in our excavations is unsurpassed in the region and can only be matched by the material coming from the contemporary royal necropolis at Abydos. The first 100 tombs in Operation 4 have already been fully analyzed (Köhler 2014, forthcoming); they produced over 65,000 classifiable ceramic fragments and hundreds of complete vessels. This pottery is not only the backbone for the relative chronology, but also offers insights into the functional aspects of grave goods. It appears as if some vessels had a specific primary function to serve food at the grave site, as can be suggested for example on the basis of ceramic bowls containing the bones of cooked ducks placed next to the coffin. Others may have served in a secondary function as in the case of vessels normally considered beer or wine jars, but containing large amounts of ash mixed with charred plant remains and animal bones. Our study of the combination of vessel shapes, their materials, contents as well as the technology involved in their manufacture will assist in reconstructing the material variability of such funerary pottery. Although the majority of vessels were hand-made of locally available Nile silt, many were also made of clays that were not local to the Memphite region, suggesting that the vessels had been imported, both from within the Egyptian Nile Valley as well as outside, such as from Upper Egypt, Nubia and the Levant (for Levantine imports cf. Köhler & Ownby 2011). The vessels themselves therefore offer conclusions about the

resources and technologies of their manufacture, the scale and mode of production, level of craft specialization and their place in the manufacturing industries, overall economy and redistributive system of the time (cf. Köhler 1997, 1998a for relevant findings from contemporary pottery in the Nile Delta). One question that is particularly pertinent to the development of Memphis as a primary centre is if there is evidence for a change in the supply of raw materials or of manufactured products over time, if the city's industries catered for its own needs or if certain commodities had to be imported. Conversely, it will be necessary to investigate if the city had developed local industries that supplied other parts of Egypt with commodities. Similar conclusions can be drawn from the detailed study of materials other than pottery, like the many stone vessels carved from a variety of soft and hard stones, copper objects and bodily adornments, also made of materials which were largely not local to the Memphite region. Because of their greater value, many of these were therefore key targets to ancient tombs robbers, who evidently looted many of the graves very soon after the funeral, which is in itself an interesting area of study in regards to the acquisition of resources. Whilst the secondary manipulation of graves, be it for additional burials or as part of looting, may be regarded a bothersome, and often unrecorded detail in traditional Egyptian archaeology, it is an equally welcome and documented aspect significant to the taphonomy and transformation processes of archaeological contexts on the one hand and their conclusions about the use of space and the exploitation of resources in ancient times on the other.

1.2.6. Chronologies

The Helwan cemetery was occupied over a long period of time. Although there are scattered artifacts from the prehistoric period, the earliest tombs recorded date to the Naqada IIIA or Proto-Dynastic Period (c. 3300 B.C.E.). The greatest density of occupation was during the subsequent Naqada phases IIIC and IIID, roughly corresponding to the 1st and 2nd Dynasty in historical terms (Hendrickx 1996, 2006), and the number of tombs then significantly drops in the later Old Kingdom. Thereafter, the site was used as a cemetery less frequently, and only in certain areas, but until well into the 1st Millennium B.C.E. (Köhler 2005; Knoblauch 2012). Those 218 tombs uncovered in our recent excavations date primarily to the main period of occupation (late Naqada IIIC until early Old Kingdom), i.e. covering some 300-400 years, which is important for two reasons. Firstly, there is as yet no reliable relative chronology in all of Egypt for the historical period between the 1st Dynasty and the Old Kingdom (or for the entire Pharaonic period, for that matter, cf. Köhler 2011) and in fact it is not known if and how the relative chronological Naqada phases, which were primarily developed for the Predynastic Period, ought to be continued. As two thirds of our tombs fall just into this phase, their correspondence analysis and seriation, as well as our careful analysis of the depositional history, stratification, pottery, non-ceramic artifacts and architecture now allows us to observe the precise sequence of tombs and thereby assists in building the foundation for a relative chronology of this time (Köhler & Smythe 2004; Köhler, Smythe & Hood 2011; Köhler 2013). There is currently no other site in Egyptian archaeology that has the potential to achieve this. Further, the CI has recently been appointed director of the German royal tombs project at Abydos and thereby has privileged access to historically dated ceramics of this period, which will assist in fine-tuning the relative chronology of the later Naqada period and beyond. Only on the basis of this solid relative chronological

framework, an absolute chronology can be attempted which has not been possible until this point. A new radiocarbon chronology for Pre- and Early Dynastic Egypt has recently been proposed by scientists at the University of Oxford (Dee et al. 2013), which is indeed an important contribution to this topic. But the problem with these data is twofold: the sample series and historical scope of the analyses end with the 1st Dynasty and therefore do not extend into the main period of occupation in Operation 4. An earlier Radiocarbon study by the same group of authors (Ramsey et al. 2010) focused on the period starting with the 3rd Dynasty, but the results from the Old Kingdom are difficult to contextualize archaeologically. Further, the samples used for both these scientific analyses entirely derive from old excavations, which operated with little scientific control, meaning that one of the key Waterbolk criteria (Waterbolk 1971), concerning the security of the archaeological context of such samples, could not be guaranteed. The Helwan Project was able to extract 30 radiocarbon samples from secure archaeological contexts in Operation 4 dating primarily to the period between the 1st and 4th Dynasties. Together with the results from the relative chronological analysis of the tombs where the samples come from, these will provide the foundation upon which a more precise chronology for the period can be built.

The areas of inquiry mentioned here only represent a small sample which is indicative of the wealth in archaeological information and of the significance the cemetery of Helwan already has for the reconstruction of the many facets that made up the early city of Memphis. Many more aspects could be cited here but are omitted to due space restrictions, and many other patterns will only arise once all the data have been fully documented and analyzed. Ultimately, this project aims to collect, evaluate, analyze and interpret all archaeological and bio-archaeological data uncovered during the excavations at Helwan and bring these to publication.

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