

EGYPT

The Oxford Handbook of the Ancient State

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Draft

Introduction

In this chapter¹ I survey the history and the institutions of the ancient Egyptian state from roughly 3500 BC to the end of the Ptolemaic dynasty, the last ruling family in ancient times, in 30 BC. That is a lot of ground to cover. But in doing so, I think it becomes clear that Egypt is a very important place in which to study the long run history of a pre-modern state, the development of its institutions, and the role of geography and climate in state building. We cannot fully describe the development of the Egyptian state over the course of its 3000+ years of ancient history. The evidence does not suffice for that. At particular moments in time, however, e.g. the Middle Kingdom, the New Kingdom, the Ptolemaic period, the evidence for the structure and the development of the state is good enough to provide the basis of a general description of each period. Many previous descriptions of the Egyptian state have either been dedicated to one particular phase of Egyptian history (the New Kingdom is the best studied) or to a single institution such as kingship, which was always at the center of state ideology. Long run studies of what Turchin and Nefedov (2009) refer to as “secular cycles” that link demography to trends in climate and institutional change remain to be accomplished for Egypt, but it is Egypt that offers one of the best opportunities to do so. Egyptian history presents four major cycles of centralization (Old, Middle, New Kingdoms, Saite-Persian-Ptolemaic periods) and three cycles of “crisis” (from the point of view of the central state). In both cases, the degree of centralization and fragmentation are probably exaggerated. This article is intended as an overview rather than one that seeks to analyze the secular cycles of Egyptian history directly. I begin with a summary of approaches, before turning to a sketch of climatic parameters. I then summarize the history of the state by period and, finally, end with an overview of the key institutions.

¹ Dates used here are from Shaw 2003:481-89. Sections of this chapter appeared in earlier forms in Manning 2002; 2010. I am grateful to Thomas Schneider for reading a draft and for offering suggestions for improvement.

Current trends in the study of the ancient Egyptian state

Egypt was among the earliest territorial states in the world. The comparative study of the Egyptian state dates back to the Greeks' fascination with Egypt. The observations of Herodotus written in the fifth century BC in Book 2 of his *Histories*, and, in the fourth century BC of Aristotle in his *Politics*, as well as dynastic structure set out by Manetho in the third century BC have all shaped the understanding of ancient Egypt for more than two millennia. Even when Egyptian writing systems had been deciphered by the latter part of the Nineteenth century and ancient Egypt could be understood in its own terms, scholars generally followed the basic framework laid out by classical authors. Royal monuments and central administrative records where they exist have been the primary material evidence for the historical understanding of the state and its development. What has been produced as a result of these emphases on the king and the central state apparatus has often been a picture of the state in which there was very little development, and giving a static quality to the image of ancient Egypt. That view of a changeless Egypt, so often coupled with a vague Orientalism, has changed dramatically in recent years.

There have been three main trends in the understanding of the Egyptian state. The first has been driven by the development of Egyptological research. Philology has dominated the field, with publication and cataloguing of inscriptions, papyri and so on. Archaeological inquiry traditionally has focused on temples, the tombs of elites and art history. The exception was Flinders Petrie who developed more scientific approaches to archaeological work. Egyptian archaeology has been slow, to say the least, to adopt the more sophisticated methods of archaeological survey done elsewhere in the Mediterranean (Parcak 2008). Things are beginning to change, although ancient urban sites with a few exceptions remain under-studied, and broader settlement surveys remains an important desideratum if we are to understand state expansion and economic performance over time (See, for example, the UCLA-Rijksuniversiteit Groningen Fayyum survey project: <http://www.archbase.com/fayum/>.) Studies continue to appear that treat the Egyptian state synchronically (Kemp 2006, with emphasis on the archaeological

evidence) as well as diachronically (Valbelle 1998; Wenke 2009). The origins of kingship and of the Egyptian state have received an enormous amount of attention.

The second trend has been to set Egypt within a comparative ancient civilization framework. This has usually been the approach of Anthropologists and historical sociologists. Bruce Trigger, for example, in a programmatic study in 1979, placed ancient Egypt in a comparative anthropological framework and demonstrated the value of placing Egypt within larger contexts. That work culminated in his magisterial 2003 monograph *Understanding early civilizations. A comparative study*. The use of Egypt as a case study in long-term comparisons with other states continues both by Egyptologists (Baines 1998) and comparative sociologists. Among the most important by the latter has been the first volume of Michael Mann's *Sources of social power* (1986). For Mann Egypt offers an important demonstration of the caging effects of the Nile River on the emergence of social stratification and power networks. Mann's historical-political power model of Egypt suggests that there was "early and rapid" (1986:114) state institutional development and then a stable political equilibrium. While the pharaonic framework was indeed always maintained, and there is widespread agreement about important continuities across between some dynasties and between larger periods such as the Old and Middle Kingdoms, Mann's model neglects both the politically decentralized intermediate periods and the noteworthy institutional adjustments from one centralized period to the next (Kemp 1983). The New Kingdom state, for example, arguably the strongest and largest of the second millennium, is significantly undervalued both in its institutional development and in its legacy by Mann (1986:114).

The third trend in scholarship has been the setting of the Egyptian state within a comparative sociological framework (Weeks 1979 el-Masry 2004). These studies emphasize imperial expansion and world systems approaches (Ekholm and Friedman 1979; Smith 1997). The historical social sciences have long used Egyptian material in discussions of social organization and state power in the development of civilization, although Egyptology has usually ignored these. Such contextualization goes back to Max Weber's study *The agrarian sociology of ancient civilizations*

(1909). Certainly the most important comparative work using the Egyptian state as a major example has been Karl Wittfogel's *Oriental Despotism. A comparative study of total power* published in 1957. In that book Wittfogel articulates his theory of Asian states that connect irrigation to despotic centralized state power. The work has been more influential among Anthropologists and Economists than Egyptologists.

Even if the academic debate is now "closed" on the subject (Briant 2006:344), it is useful to see where we have been if only to get a sense of what is still carried over from earlier scholarship. Typically, it is a kind of shorthand for the (assumed) political economy of Asian states, and the concept fit in well with many scholars' views about the differences between East and West (Cf. Morris 1994:20-21). Beginning with the central contrast between Greece and Persia that is the thesis of Herodotus' *Histories*, and Aristotle's critique of Asian states (*Politics* I.1255b), through the influential writing of Max Weber, the concept of oriental despotism is meant to contrast Asian *monarchies* with *democratic* states of the west. The former was characterized by closed politics, labor tied to the land, an absence of private property, and static societies, the latter by openness, democratic government and individual freedom. A coercive system of labor organization and property relations explained the large public works projects in the ancient river valley states of China, India, Mesopotamia and Egypt. The ruler was without opposition, and was supported by a dependent bureaucratic elite (O'Leary 1989:41).

Wittfogel's monumental treatise (1957) summarized much 19th century historical thinking about the political economy of early states, particularly Asian states, which were associated with irrigation agriculture. His argument is complex, and his attempt to link water management to levels of technology, property rights, the structure of the state and social power was impressive. At its most basic level, the despotic model in Egypt was a "linear causality model", that linked environmental stress to irrigation, the need to control irrigation networks led to the formation of a hydraulic bureaucracy to centralized control of economic resources (Butzer 1976:111). "Hydraulic" agriculture led to "total power" within the state. While there is still much of interest in the book, most assessments have soundly

criticized the general theory as being "overextended," and "undifferentiated," and, among the most important things lacking in the study was an awareness of the intricate social connections established through diffused social networks and land holding patterns created above all by the social interconnections between temples (Mann1986; Butzer 1996; cf. Deng 1999:103-05). Irrigation in Egypt was generally on a small scale, coordinated locally without much state interference. As in China, the state played a minimal role in the agricultural sector, total control in any area was never achieved (cf. Deng 1999:105-06).

Karl Butzer's *Early Hydraulic civilization in Egypt. A study in cultural ecology* (1976), although written by Geoarchaeologist, is perhaps the single most important book written about the pre-modern Egyptian state, stressing the connections between state development, demography, political economy and the Nile flood regime. Therein, Butzer argues convincingly against Wittfogel's theory as it pertained to Egypt, stating that the linkage between "hydraulic agriculture" and the "political structure and society" was indirect (Butzer 1976:110-11).

Models of understanding the Egyptian state

The Egyptian state has been central to debates about the nature and the structure of governance in Asian states since Aristotle's comparative treatment of governance. In drawing contrast between authoritarian rule and open, democratic rule epitomized by fifth century Athenian state. Role of pharaoh, a term used of the king only properly from New Kingdom on by the Egyptians themselves. Before then it refers more broadly to the central state apparatus that was centered on the royal household.

Several models of the ancient Egyptian state have been proposed. The first such model was built in contrast to Greek city-states by Herodotus, Aristotle and others. This model I call the ORIENTALIST or DESPOTIC model. Egypt was regarded as static, unchanging, highly centralized and despotic. This understanding of the Egyptian state may be traced from Aristotle down to Wittfogel's massive study of Asian states in 1957 (Manning 20010:36-45). These views are not altogether incorrect. Even ancient Egyptian stories seem to echo the fearsome power of the Old

Kingdom kings who built the pyramids of Giza. Such ancient stories were later picked up by Herodotus in his *Histories* (Lloyd 1979; Harrison 2003). The model fails to do two things. It does not contextualize royal power with an historical context, i.e. it assumes that all kings were despotic. It fails, secondly, to take account of the political processes involved between the king and other actors, the priesthoods and temples, the military class (for the New Kingdom), and so on.

A second model of understanding the Egyptian state I call the EGYPTOLOGICAL model. It stresses the uniqueness of the environment and the institutional and cultural forms that ancient Egyptian civilization took. The king was at the center of the state, and owned and/or controlled all resources within the state. Periods of strong centralization with an Egyptian ruling family in control, thus the Old, Middle and New Kingdoms, are emphasized. This model, of course, is built upon the evidence of the central state and its elites, emphasizing political history, state cults and so on. After the collapse of the New kingdom in 1069 BC, Egypt was ruled by outsiders, either as part of imperial states (e.g. Persia) or as the center of an empire ruled by Greeks (the Ptolemies). In these cases, outside rule brought in new institutional reforms that changed the fundamental character of the state. Comparisons with other state forms is thus unproductive in such a model.

Parameters

The physical boundaries of ancient Egypt, while not comprising the whole of the deserts to the east or west of the Nile valley, essentially are the same as the Arab Republic of Egypt. While certain aspects remain in dispute, the general outlines of state expansion suggest that the Egyptian state arose from a southern Egyptian core and expanded northward down the Nile valley to gain control of the Delta, and thus access to routes to the Near East, and southward into Nubia. Both expansions were at least in part driven by the desire to control mineral resources, copper mines in the Sinai peninsula, gold and other raw materials in Nubia and the adjacent eastern desert (Zibelius-Chen 1988). At its height of development, ancient Egypt comprised four basic occupied areas, the Delta, the Fayyum, the Nile valley, and the western oases. The southern political border of Egypt was located, from the Old Kingdom

onward, at modern day Aswan. The Fayyum, never very densely settled, had two peaks periods of development, during the Twelfth dynasty in the Middle Kingdom period, and in Ptolemaic/early Roman times. Various estimates of the population and its development have been proposed. Hassan (1994:170, see fig 4. below) reaches the following estimates, taking into account size of cultivable area, gross and net yield, per capita consumption and the urban/rural population ratio estimates for the population are: Old Kingdom, 1.23 million, New Kingdom, 2.12 million and Greco-Roman, 3.23 million.

Activities of new settlement, of new land being placed under cultivation ebbed and flowed throughout history. Much of the middle Egyptian Nile valley remained unsettled even in Middle Kingdom times (Allen 2004). It is therefore difficult to build a complete political narrative history of the Egyptian state; the nature of the evidence is clumped together around a few important sites in the north, around the funerary complexes of Old Kingdom kings outside of Memphis (Saqqara and Giza principal among them) and in Upper Egypt. Other regions have more fragmented record, the Delta the region of most serious lack, although this has improved in recent years. The emphasis has, as a result of the available evidence and the traditional reliance on written evidence usually been placed on periods of central control of Egypt but these, in the light of the whole of Egyptian history, were exceptional periods. In periods of weak central control, or none at all, Egypt tended to splinter into several smaller political units. The history of the central state is discontinuous in Egypt. This is an important point about Egyptian history. There were four periods of strong centralized political structure in pre-Roman Egyptian history, the Old Kingdom (ca. 2575-2150 BC), the Middle Kingdom (ca. 1975-1640 BC), the New Kingdom (ca. 1539-1075 BC), and then the Saite period down through the Ptolemies (664-30 BC), although there was not a major break in socio-economic structure through the Late Antique period. The historical periods between these phases, called "intermediate periods," are marked by weak central state institutions. The relationship between the central state and local power bases, always present, could be tipped by fluctuations in the average annual Nile discharge (Butzer 1984).

The Nile river, irrigation and the state

In contrast to China's Yellow River, the Nile flooded predictably and, generally, gently. But there were times when the Nile flooded unpredictably and wildly that effected production and demographic trends negatively (Hassan 1994:162-64). The flood flushed salts from the soil and provided nutrients. The intervention of the state, while occasional, was not heavy-handed, even irrigation machines such as the *shaduf* were introduced from the Near East not until the New Kingdom, the animal-driven water wheel *saqiya* not before the Ptolemaic period. The former had little impact on the intensification of production, being restricted generally to small-scale gardening, fruit tree production (Eyre 1994:64 with the literature cited). Water-lifting machines were generally restricted to use in gardens and for "high value or intensive vegetable and orchard crops" (Eyre 1994:58). Canal digging and the creation of new irrigation basins are documented in the Old Kingdom, perhaps going hand in hand with pyramid construction. There is little evidence for an "irrigation revolution" (Schenkel 1978) in the First Intermediate period ca. 2100 BC. Rather, improvements and developments were generally small in scale and gradual in coming.

While earlier scholarship on Asia and the Near East has often noted causal links between "hydraulic" agriculture and centralized power, which led to a "despotic" form of rule, irrigation and production was generally organized at the local level (Bonneau 1993; Butzer 1996). Studies of the documentary evidence and the valuable art historical evidence from private tombs of orchards and plantations, some small some of considerable scale, details the complex interactions between the state (including temples) demography, land reclamation and private initiative (Eyre 1994). The administrative control of agriculture, to quote Eyre (1994:74), was rather more "varied, complex, and ramshackle." There were certainly large-scale state directed projects, the Fayyum in the Middle Kingdom and again under the Ptolemies, and the state's ability to move populations into new areas of exploitation were important but most development should best be characterized as gradual adjustments from the Old Kingdom on, by the building of canals, dykes and so on. In no case was there ever developed a managerial bureaucracy centered on irrigation

or production, there “never was an integrated system of basin or canal management or water allocation” (Butzer1999:382). The fundamental impetus for the creation, maintenance and innovation of such systems was largely local, and were ad hoc responses to demographic and environmental pressures.

The early civilizations of Egypt, the Indus river valley, Mesopotamia, and China were all civilizations based on “alluvial agriculture” (Mann 1986:73-104 for some general sociological considerations). These important river valleys allowed the possibility of the centralization of political and economic power because of the caging effects of the river valley that “captured” a population within a circumscribed territory. The absence of political opposition at the local level in Egypt allowed the king to assert monopoly power over communications along the river as well as over raw materials (principally stone and metals used for tools), and the productivity of Egyptian soil produced large surpluses (Mann 1986:112). This, of course, was the key to state success. There was never any need to develop or control irrigation, not did irrigation lead to despotic control as long as an effective system of tax collection was developed.

The institutions of central governance, arising at the end of the fourth millennium BC and centered on divine kingship, and long before the first attempts by the state to use artificial irrigation, cannot be explained, therefore, as having arisen out of the state’s control of irrigation. Rather, the despotic nature of state ideology was probably a result of the local character of the Egyptian system, and the requirement of the king to be elevated above the diffuse, socially stratified local power structures. Even the Ptolemies, whose intervention in Egypt in the late fourth century BC has unique characteristics, maintained this pharaonic ideology.

According to Gellner’s general model of premodern states, political weakness arose from the relatively small size and social isolation of the bureaucratic elite who were insulated from the communities of agricultural producers (Gellner 1983:9). The underlying structural issue caused by the state’s need for revenue, what economists call the “coordination problem,” meant that it faced high costs in communication and enforcement that were exacerbated by the asymmetric flow of information.

The case of Egypt, with its ancient tradition of powerful kings and a hierarchic bureaucracy, would appear to be an exception to Gellner's model, the natural tendency of political fragmentation and high costs alleviated by the strong "caging effect" (Mann 1986:112-14) of the river valley that achieved nearly a "unitary social system" (Mann 1986:114). But the bureaucracy was limited in its effectiveness, and the pharaoh relied on fostering the loyalty of the local elite through a political system that sanctioned rent-seeking by them in exchange for loyalty to the center, and the requirement of mustering local labor when required. In fact the key to central power in Egypt was the ability of the king, through the local elite, to muster local labor—for military campaigns (before a standing army was organized during the New Kingdom), canal clearance, expeditions to quarry stone—and, of course, to tax and redistribute agricultural production through the local temples. In periods of poor Nile flooding, however, the political structure linking villages, to district (nome) capitals, to the political center, in an "internested hierarchy" of population centers (Skinner quoted in Wilkinson: 2000:5), was often severed. There was in Egypt, to be sure, a "centralising principal" strengthened by the near monopoly of the king on image and text. Phrases such as the "water of pharaoh" (i.e. "public canal") show the extent of royal ideology, but it does not measure royal intervention into local economies. The assignment of rights to land, especially new land, would also have been a royal prerogative, the normal mechanism of which was the gift of land to officials and to soldiers. Inter-village and regional cooperation could also be strengthened by the common practice of split holdings of land and the religious rituals of the temple estates, but there were no central state institutions that can be associated with control of the irrigation network (Eyre 2000; Bonneau 1993).

This political response, as in other irrigation societies, created a bottom heavy or "feudal" social organization. The irrigation of fields was organized around the flood basins. The cleaning of canals, the protection of the dikes, the measurement of the flood, the lending of seed, the survey of the fields, and the payment of rent and tax from the land, were all organized at the local level through local institutions yet with obvious great concern of the king and the organs of the

central state. The state faced no internal rivals, there were no powerful city-states as in Mesopotamia to serve as counterweight to royal power (Ekholm and Friedman 1979).

Pre-history of the Egyptian state

The evidence for early man living in the Nile valley is extensive, dating back to at least ca. 1.5 million years before the present (BP). The Nile river was a major channel in the theory of African origins and the dispersal of early hominids out of east Africa. During the Lower Paleolithic (700,000-250,000 BP), although problems abound with dating of objects and spatial distribution, the presence of early man passing through the western desert plateau living in wetter conditions is clear. Middle Paleolithic, permanent lakes in the western desert allowed humans to exploit fauna and floral resources, in the eastern desert as well. Little is known about the Nile valley proper. A drier climate in Upper Paleolithic began. The earliest burial of an “anatomically modern” human in Egypt (and probably in Africa for that matter) comes from the quarrying site of Taramsa Hill near Qena, Upper Egypt (Vermeersch et al. 1998). Evidence for the permanent settlement of the Nile valley, however, dates back only about 20,000 years. The Late Paleolithic (24,000-10,000 BP) is well attested in Upper Egypt. The Badarian culture is the first evidence of agriculture in Upper Egypt, probably as early ca 5,000 BC but really only confirmed beginning ca. 4400 BC (Hendrickx and Vermeersch 2003:36). It has become increasingly clear that populations in the western desert played a major role in socio-economic development throughout Egypt’s pre-history.

Dynastic cycles in Egyptian history

Mann (1986:110) suggests that once Egypt became a territorially centralized state the state was “well-nigh continuous.” If by “state” we mean that a single king controlling the Delta and the river valley up to Aswan, that is not quite true. Indeed one of the most characteristic features of Egyptian history are the dynastic cycles, centralized states alternating with phases of decentralization. The so-called “Intermediate period” between two centralized dynastic cycles is associated with

demographic decline, a lack of central institutions and thus political fragmentation and little monumental building. Mann's emphasis (1986:161ff) on the weakness of kings and their consequent reliance on elites is correct.

The organization of Egyptian history into ruling families or "dynasties" derives from the Ptolemaic Egyptian priest Manetho whose account of Egyptian history written in Greek ca. 270 BC survives in fragments. There were three main centralized phases in Egyptian history: The Old Kingdom, comprising four dynasties, lasted 526 years, the Middle Kingdom, three dynasties, lasted 405 years, the New Kingdom, three dynasties lasted 481 years. Each centralized political phase controlled a larger territorial base.

The correlation between long term flood inter-annual variability of the Nile river and centralized governance has been summarized by Bell (1971, 1975) and Butzer (1980): decline in flood volume (roughly estimated at -30%) between Dynasties 1 and 2; Dynasty 7-8 and the First Intermediate period, Dynasty 13 and the Second Intermediate Period, and Dynasty 20 and the early Third Intermediate Period. There were other factors, dynastic disputes, long-lived monarchs (Pepi II at the end of Dynasty 6), institutional weakness and external threats. But it seems clear from the flood records that the relationship between centralized phases of Egyptian political history and optimal flooding of the river, producing surplus grain, was correlated, and thus that the politically fragmented periods of Egyptian history are also associated with Nile flood deficiencies.

Development of the Egyptian state

The 4th millennium BC

Several theories have been advanced regarding the rise of the state, from circumscription theory (expansion through demographic pressure), to irrigation, trade and ideology (Summarized by Wilkinson 2000a). Circumscription theory has largely been discredited. The causal link between irrigation and hegemonic state power has long since been refuted, although the river was a powerful force for social stratification and state formation. The river valley, in Mann's (1986:108) famous phrase, had a "caging effect," on population as well as a stimulus to population

growth. Developing irrigation led to a rise in population, social stratification, at least in the most densely populated part of the river valley in southern Egypt, and the emergence of a centralized state.

The control of trade routes through Nubia and Palestine also appear to have had a major effect. Trade connections to both areas appear in the archaeological record very early, and especially impressive is the large amount of aromatic oils imported from the area for royal burials (Bard 2003). The development of the control of trade, and its administrative apparatus, accounting, writing and so on, and the formation of ideological structures of political legitimation both further extended and accelerated state centralization processes.

The period when small city-state emerged in the south is now referred to as Dynasty 00; dynasty 0 refers to attested kings not part of the received tradition. Dynasty 1, kings from Thinis (Abydos) who ruled Egypt from Memphis sets the stage for the rest of ancient Egyptian history. Foundations of bureaucratic structure, with a “vizier” and taxing mechanism were in place, administrative districts, known conventionally as nomes (after the Greek), were established by Dynasty 2.

Regional differences are characteristic of Egypt from the Paleolithic record on, the result of cultural differences as well as geographical factors. Upper Egypt in the 4th millennium shows more competitiveness, social stratification, more advanced ceramic technology, and mudbrick architecture of elites. The ideology of kingship was developed by certain Upper Egyptian centers (Naqada, Hierakonpolis, Abydos, and Qustul in Lower Nubia) ca. 3500 BC. Hierakonpolis (Nekhen) played an especially important role in state formation and the development of the royal ideology (the cult of the hawk god Horus was developed here and remained the most important symbol of legitimate royal power through history). Small objects in tombs at Abydos already prove “large scale” trade connections with Syria-Palestine and as far away as Afghanistan (lapis lazuli). Writing, at the earliest stages exist in the form of labels but is already enough to demonstrate an early conception of the state and its (growing) territory.

First phases of state centralization

Royal ideology was already well developed by Dynasty 1 and is documented in the monumental buildings and grave goods at the royal cemetery in Abydos. Very little evidence for bureaucratic structure beyond titles, most of which appear to have been honorific, and for agents of revenue collection. The king, and thus the political center, was mobile, and taxes were directly collected during royal visits to the provinces.

Old Kingdom (2686-2160 BC)

Much remains mysterious about the history of the Old Kingdom and the functioning of the Old Kingdom state. The history of the period is a history of the royal families and the archaeology of the royal necropoleis. Very few administrative documents survive from the Old Kingdom. The key features of the state in this phase are the large monuments built as royal mortuary complexes at the end of Dynasty 3 (Djoser's Step Pyramid complex at Saqqara) and the complexes of Dynasty 4 kings on the Giza plateau. At the end of the Old Kingdom phase, important political developments are reflected in the smaller size of royal monuments viz-a-viz the new solar temples at Abu Sir, and the rock cut tombs of local elites in Upper Egypt. Both of these features are thought to indicate the rise in importance of both the solar cult and its priesthoods and of provincial governance in Upper Egypt (Kemp 1983:96-112). Trade expeditions into Nubia are well documented in tomb biographies dating to the end of the Old Kingdom. The Palermo Stone records expeditions into western Asia

As a territorial state, Egypt was characterized by its bureaucratic administrative organization (Trigger 2003:209-11). Along with China, Egypt was one of the two "great examples of 'classical' bureaucracy" (Hicks 1969:20). The state managed to mobilize labor through a bureaucratic chain of command that connected it to the provinces. With very few external threats until the Hyksos of the Second Intermediate Period, warfare seems to have been more about royal prestige than defense (Gnirs 1999:78). Foreign troops appear to have been a standard feature of

the military from the Old Kingdom onward, and the navy was the main fighting force down to the New Kingdom. The 5th dynasty inscription known as the Palermo Stone (Wilkinson 2000b) records large-scale quasi-military expeditions, suggesting, as with pyramid building, that the central state, while taking the numbers in ancient texts *cum grano salis*, had a capacity to organize and mobilize upwards of 20,000 men for particular projects. Warfare was “totalizing; enemies were utterly defeated and eliminated or removed (Gnirs 1999). Landed estates, royal temple and in private hands which were taxed. Religious institutions and so-called “pious foundations” were a prime mover in local economies. They were centered around tax free land and focused on local cults of the king and local elite. A biennial cattle census is documented and it probably documented both real assets beyond cattle ownership as well the occupation of individuals. The principal agent of the administration is called by modern scholars the “vizier,” an office documented for all phases of central state history in Egypt. Later two viziers held office simultaneously, one responsible for northern administration of the bureaucratic system, including law, and one for the south (Van den Boorn 1988).

The Old Kingdom is characterized by its royal monuments built in stone, the largest stone structures in the world until the great wall in China, and profound examples of the use of “architecture as political statement” (Kemp 2006:99). The building of such large-scale monuments such as the Great Pyramid were deemed “futile” by Mann (1986:109). But we should not, of course, underestimate the belief system of those who built the monument nor the employment function of the state and the rank hierarchy enforced by such monumental statements. Such efforts led to impressive bureaucratic control of the project, and also to state expansion into Nubia seeking material and human resources (Bietak 1979:130). Beyond the efforts of building monumental stone structures on behalf of the ruler, however, the building projects demonstrate the organizational capacity of the early state to mobilize resources, the building itself over many years must have influenced the development of state institutions themselves. Throughout the Old Kingdom the king’s residence is associated with building projects, and mobility was a key feature of kingship. 20,000 men over 30 years, in a population estimated to have been 1.5

million in Dynasty 4 times. Centralized political authority of the Egyptian king may have reached a peak at this time. A modicum of administrative control over the countryside probably during dynasty 3. Memphis was established as the political center of the state. Nomes or administrative districts were established with the appointment from the center of an official in charge of collecting taxes in the district. Other officials emerge in the record, estate managers, temple officials, governors of new towns, all linked to the center. Increased use of writing in the administration. Specialized agents only emerge by the end of the Old Kingdom (Butzer 2008 with literature).

In the early Old Kingdom the emphasis was on the king and his family. Royal mortuary complexes are probably best understood first and foremost as the centers of ancestor cult, thus forming the basis of dynastic and thus of state continuity (Kemp 1983:85). A new type of temple, dedicated to the sun god, appears and is thought to reflect a change in the political institutions of the state, the king now sharing power with the rise of the priesthoods. The political capital was established and remained established at Memphis, characterized by the “white walls” of the royal palace complex which is reflected in the Djoser’s funerary complex at Saqqara. The details in the evolution of state institutions during the Old Kingdom are far from numerous, and much of the material documents Upper Egypt, but the correlations between smaller pyramids and the development and growth of provincial administration appear to be well founded.

The end of the Old Kingdom (i.e. the end of royal court culture) is marked by the long reign of Pepi II, perhaps the longest reigning monarch in world history although the actual length of his rule is disputed (64 or 94 years). Based on the biographies of officials from the later Old Kingdom, it appears that an administrative system and a bureaucratic structure outside of the royal family was developed no doubt already in the great age of pyramid construction (Strudwick 1985). Much remains in doubt about state collapse (Müller-Wollermann 1986). A combination of factors, the growing power of provincial elites, perhaps combined with poor flooding conditions, are the likeliest reasons for the end of the Old Kingdom.

The First Intermediate Period (2160-2055 BC)

The collapse of the Old Kingdom, and for the other periods of centralization, is generally attributed to a combination of factors (Kemp 1983:174-82). O'Connor (1993) stresses the inherent instability of the political system itself. Political instability was no doubt exacerbated at certain times by other factors that led to central state collapse inter alia poor Nile river flooding and external threats. Scholars have usually sought a change in Nile flooding patterns as the main reason for the collapse of the Old Kingdom state (Bell 1971). The end of the Old Kingdom and the rise of First Intermediate Period, lasting about a century, was a period during which drier more arid conditions prevailed throughout the Middle East (Issar and Zohar 2004:132-46), and indeed there is good evidence, both in tomb depictions and in literary descriptions, of famine in the First Intermediate Period. But the failure to make political adjustments in the evolving relationships between the king and local power bases were perhaps the most important factor in the collapse of the central state. The return to regionalism in part was the natural political equilibrium of the Nile valley. Importantly, these so-called "intermediate" periods were times of creativity that led to the reemergence of a central state with new characteristics and a new image of kingship. It is in the next phase of centralization that we can see both a major change in funerary practice and an expression of the ideal state in literary texts for the first time.

Middle Kingdom (2055-1650 BC)

The Middle Kingdom arose from the ashes of civil war between a Theban family and a northern family that comprised Manetho's Dynasties 9 and 10. The emergence of the Middle Kingdom is associated with a Theban military family who conquered the north. The town of Thebes rose to prominence. This was a great age of Egyptian culture, refined art and literary achievement, but also a period in which a more articulated bureaucracy was developed and extended over wider areas of Egypt and Nubia (Grajetzki 2006). Administrative centers were established in key towns and

were headed up by "nomarchs" personally responsible, in theory at least, to the king himself. Later reforms of Sesostris III of Dynasty 12 divided political control between northern and southern officials. A standing army under a separate administrative structure was developed, at least by the latter half of the period. Campaigns into western Asia and Nubia expanded state influence. A more permanent presence of the Egyptian state outside of its traditional borders was established along the Nubian Nile river by series of fortified towns designed in the main to control river traffic and trade. A defensive posture toward the rising Kerma state in Nubia may also have contributed to the Egyptian expansion (Gnirs 1999:81). The military was based in the provinces, mobilized when needed, and Nubian soldiers (the so-called Medjay people from the eastern desert) were also employed. The period, particularly Dynasty 12, is characterized both by a more developed bureaucratic structure and strong provincial families. A new sector of royal administration appears to have been in charge of forced labor (Hayes 1955).

Second Intermediate Period (1650-1550 BC)

The end of the Middle Kingdom was a confused period of Egyptian kingship known conventionally as Dynasty 13. This was often not included in standard chronologies of the Middle Kingdom, but the continuity between the 12th and 13th dynasty is now well established. The number of kings is debated, but it seems clear that there were more than 50 many of whom reigned for very short periods of time (Ryholt 1997). In this period, viziers were often in control. Egypt became divided by the coming of the Hyksos ("foreign kings" probably comprised of several different tribes from Palestine) rulers that led to a division into two spheres of political control. The Delta and the Nile valley down to Cusae near Hermopolis were controlled by Hyksos kings. Six Hyksos kings governed the north from their capital at Avaris for a little over 100 years. The Hyksos also apparently controlled the western oases routes down to Nubia (Bourriau 2000:188). A ruling family from Upper Egypt controlled the Thebaid and were based at Thebes. A long period of struggle, lasting some thirty years, was initiated by the Theban rulers to expel the Hyksos from Egypt. The aftermath of Hyksos rule in Egypt left both psychological trauma, at least as it finds

expression in New Kingdom royal ideology, and several important technical innovations of western Asia that were adapted by Egyptians. The composite bow, the chariot, and the horse, are the most significant of these and all of which would be combined to great effect in the next phase of central power (Shaw 2001).

New Kingdom (1550-1069 BC)

The ancient Egyptian state reached its peak territorial, bureaucratic and overall demographic size during the New Kingdom, to be surpassed only in the Ptolemaic/early Roman period (Kemp 1978; Frandsen 1979; Gnirs 1996; Smith 1997). The New Kingdom, the “mature state” (Kemp2006:247) in Egypt’s ancient history, was one of the world’s first imperial states, formed part of a large “international system” (Van de Mieroop 2007:129) of interlinked states in the eastern Mediterranean basin. Clearly state expansion into Nubia and western Asia was more extensive and more permanent than earlier. Material culture, particularly as it expressed royal power in the temples and in festivals had changed significantly from earlier periods. The performance of royal power was increasingly emphasized especially as it pertained to military prowess. The king was now by and large defined as a military man of action. State institutions became more formal, the major temples richer in terms of resources and more powerful with respect to the performance of kingship. Thebes became a “ceremonial city” (Kemp 2006:264) in which elaborate state religious ritual stressing military conquest on behalf of the god Amun-Re “king of the gods,” occurred. The New Kingdom pharaohs built large mortuary temples dedicated to their perpetual memory on the west bank of the Nile which were linked to festivals at the main temples on the east side. A standing professional army was established with its own ethos and its own bureaucratic chain of command. In general soldiers were established as farmers in a type of kleruchic system, mobilized when required. Foreign mercenary soldiers, primarily from Libya but also from traditional areas in Nubia, were also extensively. Many estimates of the size of the Egyptian army have been proposed, mainly on the basis of the descriptions of battles, which are unreliable. Most estimates seem to settle on a figure of ca. 20,000 men (Spalinger 2005:149, 202-04) for Dynasty 18, somewhat

higher in the Ramesside period (Dynasties 19-20, 1295-1069 BC) with the incorporation of foreign troops. Interestingly, this level of mobilization would be in line with massive state projects in other periods, i.e. pyramid building in the Old Kingdom and land reclamation in the Ptolemaic period.

Nubia became a province of the Egyptian state and administered by a “Viceroy” called “the king’s son of Kush.” Control of resources in the Nubian river valley, including gold was a major reason for state expansion into the region (Klemm and Klemm 1994). Smith (1997:72) has understood the nature of the Egyptian Nubia as “equilibrium colonialism”. During the Middle Kingdom Lower Nubia was administered as part of Upper Egypt (“the head of the south”). The pattern was continued into the New Kingdom (Smith 1997:82). Archaeological studies at sites such as Askut (Smith 1995) have suggested the strong continuity of occupation by Egyptian administrative families from the middle to the early New Kingdom (Smith 1997). The Nubian Nile valley was settled, temples built agriculture expanded. This expansion was clearly, at least in part motivated by the desire to control resources and trade flows, gold and other luxury items such as animals skins, ivory and ebony. Agriculture was also intensified in Lower Nubia.

New Kingdom state activity in western Asia Minor was of a different and even less permanent nature than in Nubia, and territory there was less directly exploited. Initial expansion into western Asia in the early New Kingdom was attributed to establishing a defensive buffer zone between Egypt and the Hyksos, whose expulsion from Egypt was the driving ideological force for Theban expansion northward during the 17th dynasty. The Egyptian faced major states with large armies (Hittites, Mitanni) and a network of city-states that had long-established relationships. New Kingdom pharaohs established a networks client sates and at least a small number of bureaucrats in charge of assessing and collecting tribute.

Usually scholars rely for a picture of the character of the empire, and the motivation for it, in the ideological texts and images recorded in the New Kingdom temples. Texts such as the Annals of T. III provided a fulsome account of the king’s military conquests in Asia Minor for example. The depiction in private temples of the presentation of tribute, and the ideology of the king as tamer of foreign lands

were both part of a wider development of ideology that legitimized empire and the role of the king and elites within the imperial system. But, as Kemp has stressed, such texts offer only highly tendentious accounts of the New Kingdom empire and cannot be relied upon to reveal motivations of expansion or the realities of the empire. Scholars have stressed both ideological and economic reasons behind state expansion (Kemp 1978; Smith 1997:69). Control of territory was no doubt aided by the advanced technology of the Egyptian chariot (Littauer and Crouwel 1996; Sandor 2004) but Helck's thesis that expansion was driven by the politics and military of early 18th dynasty society are no doubt overdrawn (Helck 1939). Akhenaten's (1352-1336 BC) attempt to redefine the king's position as the center of the state ended in complete failure and a decline of Egyptian influence abroad. The following Ramesside period again reveals substantial changes to the conception of kingship, which was based on a concept of "elective succession" (Gnirs 1999:88). Military conquest in Asia was a key to royal legitimacy, and led to a drawn out conflict with the Hittite empire that ended in a peace treaty. The following dynasty faced multiple problems including the incursions of Libyans and the so-called "sea peoples" (Dothan and Dothan 1992) and internal political struggles. The New Kingdom ended with Egypt again divided into two halves.

Third Intermediate Period (1069-664 BC)

The New Kingdom and its empire collapsed in 1069 BC with the death of Ramses XI. The Egyptian state was transformed in the first millennium BC. The political ideal of the unity of Upper and Lower Egypt became a distant memory, with the control of Egypt divided into as many as eleven political centers. The main centers were at Tanis, in the eastern Delta, Thebes under the control of warlords who carried priestly titles associated with the great Amun temple at Thebes (Kitchen 1986:16-23). A lack of centralized political control led to the rise of powerful local families in the major urban centers in the Delta and throughout the Nile valley, summarized famously by Herodotus (2.147) as the rule of the "dodecarchy." The towns are the important centers well known in Egyptian history: Sais, Sebennytos, Memphis, Herakleopolis, Thebes among them. It is no accident that so many of the official and

literary texts produced during the first millennium BC are concerned with the selection and behavior of legitimate kings and connections to the past (Gozzoli 2006). Egyptian scribes and priests perhaps found their influence underscored because it was they who were the transmitters of (theological) history that lay at the foundation of political stability.

Libyans, probably in the main from Cyrenaica, increasingly dominated politics, and the army, in the north (Leahy 1985). This continued a trend seen in the later New Kingdom. Their political and cultural institutions differed substantially from Egyptian ones, yet they dominated the north of Egypt for nearly four centuries. The southern stretches of the Egyptian Nile valley were controlled by both the traditional authority of priesthoods centered on the Amun temple at Thebes, and by soldiers. Both institutions were effectively combined in the “great army commanders,” descendants of the warlord Herihor, who held sway in the south. Eventually Upper Egypt was split into two polities, centered at Thebes and Herakleopolis.

The involvement of the New Kingdom kings in Syria-Palestine and Nubia also shaped events in the first centuries of the first millennium BC, as Egypt was invaded from both. The Nubian king Piye, having already nominal control of the Theban region through his sister’s installation as “God’s wife of Amun” in Thebes, invaded Egypt to check the halt of the northern ruler Tefnakhte’s advances south. The result, the 25th dynasty, was a halting Nubian control of Egypt, and a turn to very ancient features of Egyptian civilization to attempt political control over the whole of Egypt. Nubian expansion northward met the Neo-Assyrian imperial expansion against the Babylonians in 701 BC northwest of Jerusalem. The Assyrians eventually invaded Egypt briefly, and established an accord with local rulers in the Delta. It is from that agreement that the important Saite dynasty sprang.

The Saite restoration (664-525 BC)

Psammetichus was a ruler of the city of Sais and an Assyrian client. He successfully established a new ruling dynasty, known as Dynasty 26 or the Saite period, in 664 BC and consolidated his rule by 656 BC. The details of the centralization process

remain largely a mystery, but it is certain that the consolidation was the result of both military power and an acceptance of strong political and cultural traditions (Lloyd 2003).

The use of Ionian and Carian mercenaries was key for the consolidation of political power, especially in the Delta, and the (gradual) imposition of the demotic Egyptian script throughout Egypt was crucial in establishing greater administrative uniformity. Egypt from the seventh century BC was fully engaged in the Mediterranean in many contexts beyond literary imagination, not all of them are as well documented as some. Influence flowed in both directions. Greek culture had an impact on Egypt, and Herodotus' treatment of Egypt served as one important bridge between the Saite kings and the Ptolemies. Archaic Greek art certainly is one visible sign; Necho II's exploration of the African coast with Phoenician sailors shows how engaged the Saite kings were with other cultures of the eastern Mediterranean and beyond.

Psammetichus I, rather than conquering Upper Egypt by military force, annexed it by successfully having his daughter Nitocris adopted by Shepenwepet II, the God's Wife of Amun, just as the Nubian king Piye had done earlier (Gozzoli 2006:87-92). The text that documents this political solution, erected within a temple context and therefore overtly pious in its tone, shows how carefully the king couched the move in religious terms, acknowledging the tradition of the Theban theocratic state that arose out of the ashes of the collapse of political authority at the end of the New Kingdom. The adoption of his daughter into the powerful, effective rulers of the Theban region must also have involved more than the simple acceptance of his daughter although we are ignorant of details. His daughter came with a large endowment of land from the north. The delicate political maneuver by Psammetichus shows the continuing economic and political power of the temple of Amun, and the civil authority, Montuemhat, was. It marks the reassertion of a unified political state by one ruler through the medium of priestly authority in the south.

The administration of the south of the country appears not to have been much disturbed. The incorporation of the Theban region was a purely political maneuver,

although it was no doubt backed by threat. Whatever the case, the majordomo Montuemhat, of Nubian descent, was left in charge of Thebes and little seems to have changed. From this period on, Egypt became part of the wider Mediterranean world, and followed trends seen elsewhere. The formation of the Saite state in Egypt coincided with major adjustments to climate change during the early first millennium BC seen throughout the Mediterranean and beyond (Bokovenko 2004). Around the year 650 BC through the Hellenistic period there was a significant shift to wetter conditions in the eastern Mediterranean (Issar 2003:24; cf. Hdt. 3.10), and this must have been a factor in state expansion/consolidation throughout the Mediterranean at this time.

The Saite kings quite intentionally stressed through the use of image and language their deep connection to Egypt's ancient history and their Egyptian origins (Lloyd 1983:289). The naval power of the Saites, and an apparent Mediterranean policy, was especially notable under Necho II, and both Greek advice and pro-Greek policies particularly under Amasis, are notable features of the age (Lloyd 2000). The Saite kings were also involved in military campaigns into Nubia.

The founding of the trading colony (*emporion*) at Naukratis by Psammetichus I was a major opening up of Egypt to Greek trade (Bresson 2005). The use of iron, although it was not widespread apparently, was introduced here. Within a couple of generations, that is by the death of Psammetichus in 610 BC, Egypt was again a strong force in the eastern Mediterranean, and was a unified state from the Delta to Aswan. How this was accomplished we are badly informed, but we can make some educated guesses. Without doubt this period, and the following Persian period, was dominated by military presence throughout the country, as the fascinating graffiti recorded in 591 BC on the famous monument of Ramses II at Abu Simbel attests (Bernard and Masson 1957). Up river, in the home of the influential and independent temple estates, particularly that of Amun-Re, power was consolidated more indirectly, by the use of local elites as a counterweight to the priesthoods.

Memphis was established again as the political center of the country; extensive settlement of foreigners here including Greeks and Carians in Memphis (Thompson 1988:82-105). Trade, not easily measured in exact terms but clearly increased in

volume over previous dynasties, not doubt came along with the influx and created new wealth among the capital's elite seen in the tombs. The rise of the cult of Isis and of animal cults would also continue, in reaction to increasing presence of foreigners, through the Ptolemaic period.

Much has been made of the increase in private documentary records in Egypt beginning with the reign of Shabako and continuing through the Saite period (James 1991:739). Whether we can discern real reforms or major adjustments, there was no doubt an increase of economic activity brought about by Egypt's opening up to the Mediterranean and to the Red Sea. The rise and the diffusion of demotic Egyptian script, carrying with it its distinct legal traditions, and the changes brought about by new legal forms of texts, was no doubt one of the most important and long-lasting changes set in motion by Psammetichus I.

Building, always associated in Egypt with periods of strongly centralized state control, was renewed. Greeks are first settled during this period, both as soldiers and as traders in the Delta town of Naucratis, and perhaps elsewhere, the money economy, however widespread it actually was, began-although the economy in coin is not the same as monetization, Egypt had long been monetized by several media of exchange which had fixed values relative to each other. The main medium of exchange was grain, and the new demotic language, a cursive form of hieroglyphic used primarily to record business and legal contracts, spread throughout the country and aided in the consolidation of political power. Administrative structure appears to have been traditional (Lloyd 1983:332-33 provides a brief summary). The main political divisions of the country into administrative districts or nomes and governed by nomarchs were responsible to the king primarily for fiscal and to a lesser extent judicial matters.

The Saite dynasty, especially during the reign of Amasis (570-526 BC), was one of the great periods in Egyptian history. The projection of Saite economic and political power in the Mediterranean and in the Red Sea and into Syria-Palestine, was supported by a navy (Lloyd 2000). Amasis' alliance with Polykrates of Samos is especially noteworthy and reveals how connected Egypt was to the Aegean. In large part this was a reaction to the Persians, but it was also a continuation of the second

millennium BC inter-state competition for the control of trade flows through Syria-Palestine.

It was also in this period that Carian and Ionian Greeks, Phoenicians and Jews began to be settled in large numbers. Many in these diverse communities of immigrants assimilated to Egyptian culture to a remarkable extent during the Late Period (Ray 1994:54-59). Coinage, however spread it actually was, began to be used. As part of the consolidation, the Delta-based kings established a condominium with the Theban priesthoods and generals, and appointed loyal city “governors.” Here again the traditional pattern emerges of administering Upper Egypt as a distinct region, with caution applied because of the sensitivities, and the great influence of the Theban temples. The Saite period was indeed very influential (Gozzoli 2006:108-09) and the cultural continuities between the Saite and Ptolemaic kings were strong.

Persian rule (525-404, 343-332 BC)

Persian intentions and preparations for the invasion of Egypt came to fruition in 525 B.C., perhaps aided by some defections from Amasis’s forces (Hdt. 3.4). This marked the first time in history that Egypt became part of an imperial state system, although the Assyrian and Nubian invasions were short-lived and unhappy precursors. Cambyses, despite the nasty personal reputation reported by Herodotus, tied himself into the Egyptian royal and religious traditions. Where possible, the Persians attempted a synthesis between Persian and Egyptian traditions of kingship, but the two systems were largely incompatible (Gozzoli 2006:111-25). The Persians were not especially interested in governing Egypt. They saw it, in the main, as territory through which valuable trade out to the oases and across north Africa flowed.

Persian imperial rule of Egypt continued the well-developed state and local administrative organization and practices (Johnson 1994; Briant 2002:413-21). “In general,” Ray (1987:79) concludes, “the Persians seem to have governed Egypt with as light a hand as possible, relying on strategically placed garrisons and a good network of intelligence.” Given the size of the Persian empire, a basic continuity of

institutions and traditions is unsurprising. Memphis served as the seat of the satrap and the state treasury, the overseer of which was at least at times an Egyptian (Lloyd 1983:334). The Persian tributary system relied on the local elite to raise the required tribute. Darius seems to have centralized the tributary system to great effect (Briant 2002:413-15).

One of the texts recorded on the verso of the *Demotic Chronicle*, an important historical source for the period, reports Cambyses' attempt at limited restructuring of some temples' finances, a move paralleled later by Xerxes and widely unpopular among the priesthoods (Felber 2002). It may have been little more than an attempt at centralizing revenue, but the reaction to it, at least the literary reaction to it, was harsh. Cambyses, deservedly so or not, had a bad press that in later traditions became synonymous with foreign invasion and reflects how bitterly the Persian invasion was viewed by at least some elements of the Egyptian priesthood (Devauchelle 1995). Put in broader historical terms, Egyptians generally despised Asiatic rulers in control of the Nile valley, and the Persians were no doubt viewed by some as merely the latest in a line that begun with the Hyksos invasion in the 18th century BC and continued by the brief Assyrian incursion in the seventh century and, finally, the invasions of Cambyses and Artaxerxes. The Ptolemies would learn the lesson of the value of a good press by the use of pharaonic imagery and behavior and surely played off of this anti-Persian feeling.

Persian governance relied on the Saite fiscal structure, and Memphis remained the seat of governance. Donations to the temples continued, and Darius' respect toward Egyptian kingship and the Egyptian gods is demonstrated in the famous biography of the Egyptian official Udjahorresnet (Verner 1989), in the Tell el-Maskhuteh stela recording Darius' construction of a canal (Bresciani 1998; Lloyd 2007:99-104), and in the pious donation of land to the Horus temple at Edfu (Manning 2003:74-79). In other respects, Persian rule left Egyptian institutions in tact. The Persian king granted land to soldiers and administrators throughout Egypt (Briant 2002:417-18), an ancient practice that would also be continued by the Ptolemies.

Persian rule in Egypt may have been broadly accepted, but there were revolts throughout the period. These were probably the result of Greek involvement with certain elite families in Egypt that made for good bedfellows in opposition to Persian rule. Others may have merely been opportunistic.

The Ptolemies (332-30 BC)

The Ptolemaic state was the longest lasting of the Hellenistic “successor” states. The territorial size of the Ptolemaic state, including external possessions, was roughly equivalent of the New Kingdom at its height. Demographic levels are disputed, but it seems a reasonably good supposition that the population in Egypt reached its height in Ptolemaic and early Roman times, concomitant with intensification of production and new irrigation machines.

At its height in the early third century BC, the Ptolemies controlled a “maximum stable territory” (Taagepera 1979) of slightly under one-quarter that of the Seleukid empire, and had a population of, perhaps, a little more than one quarter the Seleukid kingdom at its height. The bureaucracy that was established in the third century BC built on ancient administrative practice, although the shift to the use of the Greek language at all levels of the bureaucracy was an important change. The new administrative framework was not simply imposed from above in a single moment, but, rather, evolved over the course of a century out of the specific aims of the new Ptolemaic kings sitting in Alexandria. The Ptolemies looked to the New Kingdom pharaohs, the great military conquerors, for inspiration. Egyptian history was used to justify, and to broadcast, Ptolemaic rule.

Ptolemaic strategy was similar to that of other “bureaucratic empires.” It sought to decrease independent power, and thus reduce “committed resources” that were embedded within traditional social structures (Eisenstadt 1993:118). It is difficult to directly compare mobilization during the New Kingdom and the Ptolemaic period, war was a major part of state activity in both periods. At the same time, it sought to increase the surplus the king could control, to create, in other words, what Eisenstadt has called “free-floating resources.” Much of it was spent on external wars, particularly during the third century BC. The diversion of resources

away from local needs to central state ones, among which war making must count as the major driver in the third century BC, caused resistance and rebellion that at least on one occasion posed a major threat to Ptolemaic sovereignty within Egypt.

A different political dynamic obtained within the Ptolemaic state, driven by (1) a new bureaucratic structure, administered in Greek, (2) a professional army installed on the land throughout Egypt, and (3) the growth of Greek urban centers. Temples remained in nominal control of their temple estates, and land holding within the estates continued (Manning 2003). The priesthood and temple of Ptah at Memphis was the main center of state religious life, even after the court moved to the new capital at Alexandria. For this reason, it was the location of several Egypt-wide synods (Thompson 1988). In Upper Egypt, several important temples were completely rebuilt, beginning with that of Horus of Edfu in 237 BC. Egyptian temples continued to be important institutions that were actively supported by the new regime throughout the state. Settlement patterns and the founding of new towns reflect the economic and political aims of the new Greek regime (Mueller 2006). A household census was established, although it is uncertain what its frequency was (Clarysse and Thompson 2006).

Kingship and administration

Ancient Egypt was a king-centered state, but there were other power holding institutions such as temples that were part of the state. One of the hallmarks in the history of the Egyptian state is its flexibility as well as the persistence of royal ideology and symbolism (Assmann 2000). The king remained at the center of state ideology, and political power, down through the Ptolemaic period. The king was the font of law by royal decree and the center of state religion. The institution was personal, the king being always mobile, and enforced control over state institutions by his relationships with officials throughout the country (Kemp 1983:215). Beneath the surface forms of royal image and ritual, however, lay tremendous change in royal practice that reflected real social change. We rarely hear of political disturbances or revolts until the first millennium BC. Their absence may simply be due to the nature of the stylized, state-centered evidence. The periods of famine and

violence in the intermediate periods that are described in later literary texts are, also no doubt, exaggerated state-centered expressions of the ideal Egyptian polity. There were considerable adjustments to state institutions forced by the varying demands placed on local production caused by state centralization cycles (Kemp 2006:334; Butzer 1980). The king as military leader and conqueror during the New Kingdom, for example, reflects the needs of imperial conquest as well as its associated ideological framework.

State intervention in local structures, village governance for example, was probably minimal (Trigger 2003; Lehner 2000). Mann's explanation (1986:110) for the formation of centralized control is that there were no "overlapping" social networks, a product of the Egyptian Nile geography that generated local networks around basin irrigation systems. There was very little opportunity for coalitions to form that could serve as a counterweight to the king. Revolts against the state in periods of central authority are virtually unknown.

The pharaonic state was flexible and adaptive to the dynamic environment caused by a variable water supply (Butzer 1980). The large amount of local autonomy, as Trigger (2003:208) correctly stresses, was cheaper in terms of enforcement costs than a highly centralized system but it came at the price of potential political fragmentation, and it left the ruler dependant on the flow of accurate information from a bureaucratic elite who were not always loyal. Religion was a two-edge sword, providing the ruler "access to local society" (Crone 2003:79) but also creating "horizontal linkages" (Crone 2003:71) that could potentially undermine state authority. The division of the state into administrative districts called nomes was an important link between villages and the royal court. By the New Kingdom, it was standard to administer the country by divided it into two administrative halves, centered at Memphis and Thebes. The Ptolemaic pattern of governance mirrors this, but with two Greek poleis, Alexandria and Ptolemais.

The biennial cattle census was established in the Old Kingdom, and was used as the basis of state taxation. Information on the process of census taking is slight until the Ptolemaic period when the household census, of unknown frequency, was established. It is clear that land and animals as well as persons, by occupation, were

probably counted on some kind of regular basis. Land was surveyed each year once the conditions of water and the crops were known. A cadastral survey of land was performed when changes to the landscape after a disruptive flood for example, occurred. Local records offices based in the nome capitals kept track of the ownership of land and nome officials were responsible for assessing and collecting land taxes.

Trigger (2003) distinguished two types of control in territorial states. The first type, delegational (or “segmentary”) systems, were those that placed an official and his associates in charge of a region. In bureaucratic systems, the second type of governance structure, a hierarchy of officials was put in charge of specific portfolios. Egypt has been generally thought of as a bureaucratic state, but there were also elements of the delegational system as well. There was considerable evolution. Bureaucracy evolved from a system that was staffed by members of the royal family in the Old Kingdom and designed to support the royal household and the maintenance of power to a much larger institutionalized structure by the New Kingdom. Controlling, recruiting and maintaining the loyalty of officials remained problematic in Egypt as in other ancient bureaucracies. It is interesting to note that, as far as we know, Egypt never developed a civil service examination system, with its complex hierarchy, as was done in China or in British India, nor, apparently, did Egypt develop an ideological “code of conduct” (Deng 1999:121) equivalent to Confucianism by which the scribal elite were bound together.

Urbanization

Egypt has often been considered unique among early states in lacking cities, with the capital at Memphis being the only significant city before Thebes became an important place in the Middle Kingdom and an imperial center in the early New Kingdom. That view was driven by the examination of the textual evidence (Wilson 1960). This is no longer the accepted point of view, although the “urban character of Bronze Age Egypt is not unanimously acknowledged.” (O’Connor 1993). The issues remain complex in Egypt with respect to the role of towns, their typology, their characteristics, and even their location. To be sure Egyptian towns should not be

imagined as nucleated settlements in the manner of medieval European towns (O'Connor 1993). The divide between "urban" and rural was never as sharp. During periods of strong centralization, the state no doubt had an effect both negative and positive on the decline or growth of towns. Some old urban centers declined with the rise of the centralized state, particularly those that arose at trade nodes. Bietak (1979:129) noted the effect in the eastern Delta.

On the other hand, state-directed construction, at the Old Kingdom pyramid sites for example, or at the new capital at Amarna built in the early New Kingdom, was stimulated by state activity. At times nomarchs may also have been involved in "urban development." Renewal of interest in urban archaeology since 1972 has provided good data for the character of Egyptian urbanization (O'Connor 1993, Bietak 1993). Archaeological survey work has, however, confirmed the existence of many other significant-sized towns already in the early Dynastic period (Naqada, Hierakonpolis), and many towns throughout the Nile valley of 2000 ± 500 persons are documented. Some urbanization has been missed because they were part of temple complexes, Medinet Habu in western Thebes in the New Kingdom being a well-documented example. In other cases, ancient towns lie underneath modern ones, thus creating lacunae in the archaeological evidence (Bietak 1979).

The important geographic divisions of the country were the "nomes" or districts that functioned as centers as the centers of tax collection, local administration and the center of labor mobilization. There were, ideally, forty-two such nomes, 20 in the Delta and 22 in Upper Egypt. The actual number varied over the course of Egyptian history. Each nome had a capital town averaging between 2-3,000 persons. Up to half of local grain production was sent through these administrative centers to the capital (Hassan 1993), producing a distribution of wealth as follows: inhabitants in the capital: 7-15 times that of an agricultural producer, and 2.5-5 times that of a nome official (Hassan 1993:565). The number of nomes, and the ability of the king to appoint loyal nomarchs at the head of each district varied over time. These officials were part of local families that wielded much independent power. The establishment and location of nome centers was an important aspect of centralized control of rural production. The nome centers were

founded at a certain distance from each other, on average about one day's donkey walk it appears (Hassan 1993:566). Important urban centers were often located around the major temples. Such temple towns, perhaps distinctive to Egypt (Bietak 1979:131), were major centers of administration and economic activity. We don't have to conclude, therefore, that the "state" took the place of "cities" as the main motor of the economy. Rather, the temples, as an integral part of the state, were the main motor of the economy, at least in centralized periods of control.

Temples

Egyptian temples were a key development of economic and ideological power in the state. Although debates have raged over the legal status of temples, they were in fact part of the state (O'Connor 1995). Ptolemaic activity to incorporate temples into the new state shows how important it was that temples, their priesthoods and their assets continue to function as a major sector of the state. By the New Kingdom the larger temples controlled vast tracks of land and large numbers of personnel attached to these estates. The storage capacity of the major temples were crucial aspects of local economies, allowing surplus to be stored up and distributed when needed. The pattern continued through the Ptolemaic period but it is doubtful that the redistributive economic function of the temples, apart from the priesthoods receiving income, obtained in the first millennium BC. Other aspects of the temples, their strategic locations, market activity, the administrative function contained in them, their grain storage capacity suggest that temples were the most important local forces not only of state ideology and legitimizing religious ritual and annual festivals (some of which were massive and took place over the periods of weeks annually) but also of economic activity. Temples drew income from production on their endowed lands, and from other activities such as cloth manufacture and pasturage. These products were initially "donated" as offerings to the local gods but were in turn divided into "shares" to be consumed by temple personnel (Haring 1997:79-81).

It is not easy to describe a history of temples across the periods covered in this article, it is the New Kingdom and Ptolemaic temples that offer the best

evidence. An important aspect of the New Kingdom temples is that they received a large portion of war booty from the military campaigns of the kings as offerings. The main state temple of the New Kingdom, that of Amun-Re at Karnak the imperial divinity par excellence, received the bulk of this booty, and became so dominant in its region that it developed into the center of a theocratic state after the collapse of the New Kingdom. The enormous landed estates of temples like Amun-Re were in part, during the New Kingdom, farmed by prisoners of war, and in part leased out to state servants, from priests to soldiers, including foreign mercenaries, and scribes. There was no equivalent, no state imperial deity, in the later periods of Egyptian history. The Ptolemaic state took over many of the economic functions of the temple by creating state banks and state granaries.

Law and legal institutions

An overview of the Egyptian legal traditions deserves its own volume (Lippert 2008). There was no independent judiciary in Egypt, and no distinction between administrative and legal functions of state officials was made. Ideals of justice were well established in literary texts, in the tomb biographies of officials and in the expressed ideology of kingship as protector as “justice.” The “Duties of the Vizier” recorded in the tomb of the New Kingdom official Rekhmire provides a detailed account of the expectations of royal administration and the meting out of justice. To a certain extent the practice of a state official overseeing justice must have existed in earlier periods, the actual origins of the “Duties of the Vizier” dates back to the Middle Kingdom. A hierarchy was developed by the New Kingdom that divided the country into two halves, with lower “councils” responsible for local affairs, both criminal and civil disputes.

Obtaining justice for private wrongs, however, was contingent, depending on patronage of an official and often a large dose of patience. Private disputes were often settled informally in the village by elders, or between representatives of the families involved. Throughout Egyptian history, enforcement remained a serious problem, and confession to a crime an essential element of guilt finding.

The use of private written instruments to conveyance of property, by will or by sale began to be developed in the Old Kingdom. The concept of private property existed in all periods. In the first millennium there evolved significant changes to the law of contracts (Menu). The demotic language and script was developed and spread in the 7th and 6th centuries BC. With its use came a wide array of private contract types. Local registry offices recorded the private holding of land as well as private agreements.

Sources Cited

Allen, James P. (2004). *The Heqanakht Papyri*. Publications of the Metropolitan Museum of Art Egyptian Expedition, vol. 27. New York:Metropolitan Museum.

Aperghis, G.G. (2004). *The Seleukid royal economy. The finances and financial administration of the Seleukid empire*. Cambridge:Cambridge University Press.

Assmann, Jan (2002). *Herrschaft und Heil. Politische Theologie in Altägypten, Israel und Europa*. Munich:Carl Hanser.

Baines, John and Norman Yoffee (1998). "Order, legitimacy, and wealth in ancient Egypt and Mesopotamia," in *Archaic states*. Ed. Gary M. Feinman and Joyce Marcus. Santa Fe:School of American Research Press. Pp. 199-260.

Barkey, Karen (1994). *Bandits and bureaucrats. The Ottoman route to state centralization*. Ithaca:Cornell University Press.

Bell, Barbara (1971). "The dark ages in ancient history I. The first dark age in Egypt," *American Journal of Archaeology* 75:1-26.

_____. (1975). "Climate and the history of Egypt: The Middle Kingdom," *American Journal of Archaeology* 79:223-69.

Bernard, A. and O. Masson (1957). 'Les inscriptions grecques d'Abou Simbel,' *Revue des Études grecques* 70:1-20.

Bietak, Manfred (1979). "Urban archaeology and the 'town problem' in ancient Egypt," in *Egyptology and the social sciences*. Ed Kent Weeks. Cairo:American University in Cairo Press. Pp. 97-144.

Bokovenko, N.A. (2004). "Migrations of early nomads of the Eurasian steppe in a context of climatic changes," in *Impact of the environment on human migration in Eurasia*. Ed. E.M. Scott et al. Dordrecht:Kluwer Academic Publications. Pp. 21-33.

Bonneau, Danielle (1993). *Le Régime administratif de l'eau du Nil dans l'Égypte grecque, romaine et byzantine*. Leiden.

Bourriau, Janine (2000). "The Second Intermediate Period," in *The Oxford History of Egypt*. Ed Ian Shaw. Oxford:Oxford University Press. Pp. 172-206.

Bresciani, Edda (1998). "L'Egitto achemenide:Dario I e il canale del mar Rosso," *Transeuphratène* 14:13-11.

Bresson, Alain (2005). "Naukratis:de l'emporion à la cite," *Topoi* 12-13:133-55.

Briant, Pierre (2002). *From Cyrus to Alexander. A History of the Persian Empire*. Winona Lake, Indiana. Trans. Peter T. Daniels. Originally published as *Histoire de l'Empire perse de Cyrus à Alexandre*. 2 vols. Achaemenid History, vol. 10. Leiden:Nederlands Instituut voor het Nabije Oosten, 1996.

Butzer, Karl W. (2008). "Other perspectives on urbanism. Beyond the disciplinary boundaries," in *The ancient city. New perspectives on urbanism in the old and new world*. Ed. Joyce Marcus and Jeremy A. Sabloff. Santa Fe:School for Advanced Research. Pp. 77-92.

_____. (1999). "Irrigation," in *Encyclopedia of the archaeology of ancient Egypt*. Ed. Kathryn A. Bard. London:Routledge. Pp. 381-82.

_____. (1996). "Irrigation, raised fields and state management:Wittfogel redux" *Antiquity* 70:200-4.

_____. (1980). "Long-term Nile flood variation and political discontinuities in pharaonic Egypt," in *The causes and consequences of food production in Africa*. Ed. J. Desmond Clark and Steven A. Brandt. Berkeley. Pp. 1-36.

Charles, R.H. (1916 [2007]). *The chronicle of John, Bishop of Nikiu. Translated from Zotenberg's Ethiopic text*. New ed. Merchantville, N.J.:EvolutionPublishing.

Clarysse, Willy & Dorothy J. Thompson (2006). *Counting the people in Hellenistic Egypt*. 2 vols. Cambridge Classical Studies. Cambridge:Cambridge University Press.

Crone, Patricia (2003). *Pre-Industrial societies. Anatomy of the premodern world*. Oxford:One world Publications.

Deng, Gang (1999). *Premodern Chinese economy:structural equilibrium and capitalist sterility*. London:Routledge.

Devauchelle, Didier (1995). "Les sentiments anti-perses chez les anciens égyptiens," *Transeuphratène* 9:67-80.

Dothan, Trude & Moshe (1992). *People of the Sea: The search for the Philistines*. New York: Scribner.

Eisenstadt, S.N. (1993[1963]). *The political systems of empires*. With a new foreword by the author. New Brunswick:Transaction Publishers.

Ekholm, K. and J. Friedman (1979). " 'Capital,' imperialism and exploitation in ancient world systems," in *Power and propaganda. A symposium on ancient empires*. Ed. Mogens Trolle Larsen. Mesopotamia vol. 7. Copenhagen:Akademisk Forlag. Pp. 41-58.

El-Masry, Ingrid (2004). *Die Soziogenese des altägyptischen Staates in komparativer Perspektive. Ein Beitrag zur politische Ökonomie gesellschaftlicher Herrschaft*. Europäische Hochschulschriften Reihe 31. Frankfurt am Main:Lang.

Eyre, C.J. (1994). "The water regime for orchards and plantations in pharaonic Egypt," *Journal of Egyptian Archaeology* 80:57-80.

Felber, Heinz (2002). "Die demotische Chronik," in *Apokalyptik und Ägypten. Eine kritische Analyse der relevanten Texte aus dem griechisch-römischen Ägypten*. Ed. A. Blasius and B.U. Schipper. Orientalia Lovaniensia Analecta, vol. 107. Leuven:Peeters. Pp. 65-111.

Frandsen, Paul John (1979). "Egyptian imperialism," in *Power and propaganda. A symposium on ancient empires*. Ed. Mogens Trolle Larsen. Mesopotamia 7:167-90.

Gellner, Ernest (1983). *Nations and Nationalism*. Ithaca: Cornell University Press.

Gozzoli, Roberto B. (2006). *The writing of history in ancient Egypt during the first millennium BC (ca. 1070-180 BC). Trends and perspectives*. London:Golden House Publications.

Gnirs, Andrea M. (1999). "Ancient Egypt," in *War and society in the ancient and Medieval worlds. Asia, The Mediterranean, Europe, and Mesoamerica*. Ed. Kurt Raaflaub and Nathan Rosenstein. Washington:Center for Hellenic Studies. Pp. 71-104.

_____. (1996). *Militär und Gesellschaft. Ein Beitrag zur Sozialgeschichte des Neuen Reiches*. Studien zur Archäologie und Geschichte Ägyptens, vol. 17. Heidelberg:Heidelberger Orientverlag.

Grajetzki, Wolfram (2006). *The Middle Kingdom of ancient Egypt. History, archaeology and society*. London:Duckworth.

Haring, B.J.J. (1997). *Divine households. Administrative and economic aspects of the New Kingdom royal memorial temples in western Thebes*. Leiden:Nederlands Instituut voor het Nabije Oosten.

Harrison, Thomas (2003). "Upside down and back to front:Herodotus and the Greek encounter with Egypt," in *Ancient perspectives on Egypt*. Ed. Roger Matthews and Cornelia Roemer. London:UCL Press.

Hassan, Fekri A. (1994). "Population ecology and civilization in ancient Egypt," in *Historical ecology. Cultural Knowledge and Changing Landscapes*. Ed. Carole L. Crumley. Sante Fe:School of American Research. Pp. 155-82.

_____. (1993). "Town and village in ancient Egypt:ecology, society and urbanization," in *The Archaeology of Africa. Food, metals and towns*. Ed. Thurstan Shaw, Paul Sinclair, Bassey Andah & Alex Okpoko. London:Routledge. Pp. 551-69.

Hayes William C. (1955). *A Papyrus of the Late Middle Kingdom in the Brooklyn Museum*. New York:The Brooklyn Museum.

Helck, Wolfgang (1939). *Der Einfluß der Militärführer in der 18. Ägyptischen Dynastie*. Leipzig

_____. (1971). *Die Beziehungen Ägyptens zu Vorderasien im 3. und 2. Jahrtausend v. Chr.* Ägyptologische Abhandlungen Vol. 5. 2d ed. Wiesbaden:Harrassowitz Verlag.

Hendrickx, Stan and Pierrre Vermeersch (2003). "Prehistory: from Palaeolithic to the Badarian Culture (c. 700,000-4,000BC)," in *The Oxford history of ancient Egypt*. Ed. Ian Shaw. Oxford:Oxford University Press. Pp. 16-40.

Hicks, John (1969). *A theory of economic history*. Oxford:Oxford University Press.

Horden, Peregrine and Nicholas Purcell (2000). *The corrupting sea. A study of Mediterranean history*. Oxford:Blackwell.

Issar, Arie S. (2003). *Climate Changes during the Holocene and their Impact on Hydrological Systems*. Cambridge:Cambridge University Press.

Jansen, H. Ludin (1950). *The Coptic Story of Cambyeses' Invasion of Egypt*. Avhandlinger utgitt av Det Norske Videnskaps-Akademie i Oslo. II Hist.-Filos. Klasse

1950 no. 2. Oslo.

Janssen, Jac. J. (1975). "Prolegomena to the study of Egypt's economic history during the New Kingdom," *SAK* 3:127-85.

Kemp, Barry J. (2006). *Ancient Egypt. Anatomy of a civilization*. 2d ed. London:Routledge.

_____. (1983). "Old Kingdom, Middle Kingdom and Second Intermediate Period, c. 2686-1551 BC," in B.G. Trigger, B.J. Kemp, D. O'Connor and A.B. Lloyd, *Ancient Egypt. A social history*. Cambridge:Cambridge University Press. Pp. 71-182.

_____. (1978). "Imperialism and empire in New Kingdom Egypt (c. 1575-1087 BC)," in *Imperialism in the ancient world*. Ed. P.D.A. Garnsey and C.R. Whittaker. Cambridge Classical Studies. Cambridge:Cambridge University Press. Pp. 7-57.

Klemm, R. and D.D. Klemm (1994). "Chronologischer Abriss der antiken Goldgewinnung in der Ostwüste Ägyptens," *MDAIK* 50:189-222.

Klotz, David (2006). *Adoration of the ram. Five hymns to Amun-Re from Hibis temple*. Yale Egyptological Studies, vol. 6. New Haven:Yale Egyptological Seminar.

Kraus, Jürgen (2004). *Die Demographie des Alten Ägypten. Eine Phänomenologie anhand altägyptischer Quellen*. Ph.D. dissertation, Georg-August-Universität Göttingen.

Leahy, Anthony (1985). "The Libyan period in Egypt:An essay in interpretation," *Libyan Studies* 16:51-65.

Lehner, Mark (2000). "Fractal house of pharaoh:ancient Egypt as a complex adaptive system, a trial formulation," in *Dynamics in human and primate societies. Agent-based modeling of social and spatial processes*. Ed. T. Kohler and G. Gumerman. Oxford:Oxford University Press. Pp. 275-353.

Lichtheim, Miriam (1980). *Ancient Egyptian Literature*. Volume 3. The Late Period. Berkeley:University of California Press. Reissued in 2006.

Lippert, Sandra L. (2008). *Einführung in die altägyptische Rechtsgeschichte*. Einführungen und Quellentexte zur Ägyptologie, Vol. 5. Münster: LIT Verlag.

Littauer, M.A. & J.H. Crouwel (2002). *Selected writings on chariots, other early vehicles, riding and harness*. Ed. Peter Raulwing. Leiden:E.J. Brill.

_____. (1996). "The origins of the true chariot," *Antiquity* 70:934-39.

Lloyd, Alan B. (2007). "Darius I and Egypt:Suez and Hibis," in *Persian responses:political and cultural interaction with(in) the Achaemenid empire*. Ed. Christopher Tuplin. Swansea:The Classical Press of Wales. Pp. 99-115.

_____. (2003). "The Late Period (664-332 BC)," in *The Oxford History of Ancient Egypt*. Ed. Ian Shaw. New paperback edition. Pp. 364-87.

_____. (2000). "Saite navy," in *The sea in antiquity*. Ed. G.J. Oliver, R. Brock, T.J. Cornell, S. Hodkinson. British Archaeological reports international series 899. Oxford:Hadrian Books. Chapter 8.

_____. (1988). *Herodotus Book 2*. Vol. 3. Leiden:E.J. Brill.

Mann, Michael (1986). *The sources of social power*. Cambridge:Cambridge University Press.

Manning, J.G. (2010). *The last pharaohs. Egypt under the Ptolemies 305-30 BC*. Princeton:Princeton University Press.

_____. (2003). *Land and power in Ptolemaic Egypt. The structure of land tenure*. Cambridge:Cambridge University Press

_____. (2002). "Irrigation et État en Égypte antique," *Annales, histoire, sciences sociales*, 57/3 (May-June 2002): 611-23.

Meeks, Dimitri (1972). *Le grand texte des donations au temple d'edfou*. Cairo:Institut français d'Archéologie orientale.

Mueller, Katja (2006). *Settlements of the Ptolemies. City foundations and new settlement in the Hellenistic world*. Studia Hellenistica vol. 43. Leuven:Peeters.

Müller-Wollermann, Renate (1986). *Krisenfaktoren im ägyptischen Staat des ausgehenden Alten Reiches*. Ph.D dissertation University of Tübingen.

O'Connor, David (1995). "The social and economic organization of ancient Egyptian temples," in *Civilizations of the Ancient Near East*. Ed. Jack M. Sasson. Peabody, MA:Hendrickson. Pp. 319-29.

_____. (1993). "Urbanism in bronze age Egypt and northeast Africa," in *The Archaeology of Africa. Food, metals and towns*. Ed. Thurstan Shaw, Paul Sinclair, Bassey Andah & Alex Okpoko. London:Routledge. Pp. 570-86.

_____. (1983). "New Kingdom and Third Intermediate Period 1552-664 BC," in B.G. Trigger, B.J. Kemp, D. O'Connor and A.B. Lloyd, *Ancient Egypt. A social history*. Cambridge:Cambridge University Press. Pp. 183-278.

Parcak, Sarah H. (2008). "Site survey in Egyptology," in *Egyptology today*, ed. Richard H. Wilkinson. Cambridge:Cambridge University Press. Pp. 57-76.

Posener, Georges (1936). *La première domination perse en Égypte*. Bibliothèque d'Études, vol. 11. Cairo:Institut français d'archéologie orientale.

Ray, John (1988). "Egypt 525-404 B.C.," in *CAH*, vol. IV. 2d ed. Cambridge:Cambridge University Press. Pp. 254-86.

Ryholt, Kim S. B. (1997). *The political situation in Egypt during the Second Intermediate Period*. Copenhagen:Museum Tusculanum Press.

Sandor, Bela I. (2004). "Tutankhamun's chariots: secret treasures of engineering mechanics," *Fatigue & Fracture of Engineering Materials & Structures* 27/7:637-646.

Scheidel, Walter (2001). *Death on the Nile. Disease and the demography of Roman Egypt*. Leiden:E.J. Brill.

Schenkel, Wolfgang (1978). *Die Bewässerungsrevolution im Alten Ägypten*. Mainz:Verlag Philipp von Zabern.

Shaw, Ian (2001). "Egyptians, Hyksos and military technology:causes, effects or catalysts?" in *The social context of technological change. Egypt and the Near East, 1650-1550 BC*. Ed. Andrew J. Shortland. Oxford:Oxbow Books. Pp. 59-71.

Smith, Stuart Tyson (1997). "State and empire in the Middle and New Kingdoms," in *Anthropology and Egyptology. A developing dialogue*. Ed. Judith Lustig. Sheffield:Sheffield Academic Press. Pp. 66-89.

_____. (1995). *Askut in Nubia. The economics and ideology of Egyptian imperialism in the second millennium BC*. London:Kegan Paul.

Spalinger, Anthony J. (2005). *War in ancient Egypt. The New Kingdom*. Oxford:Blackwell.

Strudwick, Nigel (1985). *The administration of Egypt in the Old Kingdom. The highest titles and their holders*. London:Routledge and Kegan Paul.

Taagepera, Rein (1978). "Size and duration of empires: Growth-decline curves, 3000 to 600 BC," *Social Science Research* 7:180-96.

_____. (1979). "Size and duration of empires:growth-decline curves, 600 BC-600 AD," *Social Science History* 3 3/4:115-38.

Thompson, Dorothy J. (1988). *Memphis under the Ptolemies*. Princeton:Princeton University Press.

Tilly, Charles (1981). *As Sociology meets History*. New York:Academic Press.

_____. (1990). *Coercion, capital, and European states, AD 990-1990*. Oxford:Blackwell.

Trigger, Bruce G. (2003). *Understanding early civilizations. A comparative study*. Cambridge:Cambridge University Press.

_____. (1979). "Egypt and the comparative study of early civilizations," in *Egyptology and the social sciences*. Ed. Kent Weeks. Cairo:The American University in Cairo Press. Pp. 23-56.

Turchin, Peter and Sergey A. Nefedov (2009). *Secular Cycles*. Princeton:Princeton University Press.

Valbelle, Dominique (1998). *Histoire de l'Etat pharaonique*. Paris:Presses Universitaires France.

van den Boorn, G.P.F. (1988). *The duties of the vizier. Civil administration in the early New Kingdom*. London:Kegan Paul International.

Van de Mieroop, Marc (2007). *A history of the ancient Near East ca. 3000-323 BC*. 2d ed. Malden, MA.:Blackwell.

Vermeersch, P.M., E. Paulissen, S. Stokes, C. Charlier, P. Van Peer, C. Stringer, and W. Lindsay (Sept 1998). "A middle palaeolithic burial of a modern human at Taramsa Hill, Egypt." *Antiquity* 72: 475-85.

Verner, Miroslav (1989). "La Tombe d'Oudjahorresnet et le Cimetière saïto-perse d'Abousir," *BIFAO* 89:283-90, pls. 36-39.

Warburton, David (1997). *State and economy in ancient Egypt. Fiscal vocabulary of the New Kingdom*. Orbis Biblicus et Orientalis vol. 151. Fribourg:University Press.

Weeks, Kent, ed. (1979). *Egyptology and the social sciences*. Cairo:The American University in Cairo Press.

Wenke, Robert J. (2009). *The ancient Egyptian state. The origins of Egyptian culture (c. 8000-2000 BC)*. Cambridge:Cambridge University Press.

Wilkinson, Toby A.H. (2000a). *Early dynastic Egypt*. London:Routledge.

_____. (2000b). *Royal annals of ancient Egypt. The Palermo Stone and its associated fragments*. London:Kegan Paul International.

Wilson, John A. (1960). "Egypt through the New Kingdom:civilization without cities," in *City invincible*. Ed C.H. Kraeling and R. McC. Adams. Chicago:Oriental Institute. Pp. 124-36.

Wittfogel, Karl (1957). *Oriental despotism. A comparative study of total power*. New Haven:Yale University Press.

Zibelius-Chen, Karola (1988). *Die ägyptischen Expansion nach Nubia. Eine Darlegung der Grundfaktoren*. Beihefte zum Tübinger Atlas des vorderen Orients, Reihe 78. Wiesbaden:K. Leichert.