Trigger (2007:44) wrote that "Technology, settlement patterns, art, and architecture can be understood only in terms of the roles they played in materially supporting such institutions, facilitating social interaction, and promoting the ideological objectives of various segments of society".

This essay discusses Trigger's view and demonstrating this using Ancient Egypt's post-unification period.

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1. Introduction

Bruce Trigger (1937-2006), a Canadian archaeologist and anthropologist (McGill, 2006), believed that we must discard monocausal theories and recognize multiple complex theories to understand human behaviours - even if this pluralism results in "theoretical chaos" (Trigger, 2006:254-255).

Trigger theorized, possibly from his studies of Ancient Egypt and Nubia (Trigger, 2006:237-239), that early civilizations must be explained through their "social, economic, and political institutions" as well as the "knowledge and beliefs" which supported their sociocultural complexity (Trigger, 2007:44). Therefore the study of "technology, settlement patterns, art, and architecture" is a mechanism for understanding a civilization's polity and ideology.

Ancient Egypt is an example of the uniqueness of an early civilization and the extensive material-culture, primarily the post-unification period, can be used to demonstrate Trigger's theory.

2. Trigger's Revolution

Archaeologists and anthropologists traditionally resolved the challenge of understanding a civilization's human-behaviours by juxtaposing the material-remains of other ancient peoples at a similar stage of cultural development to construct, or fill-in, the missing parts (Haldan, 2003). During the 1960s individuals recognized that archaeology needed evolution - Clarke critically described archaeology as undisciplined and lacking the methodology needed for "systematic and ordered study" (Tilley, 2009:363). Trigger's pluralistic views shunned traditional theories, which he felt were created by "random eclecticism", as passé. His direction focused on finding a middle-ground that produced quality knowledge and that appreciated multiple theories to more fully understand the complexity of human actions (Williamson et al, 2006:7).

Trigger's work 'Understanding Early Civilizations' demonstrated that civilizations developed independently and, although some features were common, their socio-environment (typically the apex of the society), economies, artistic and architectural styles were unique and a product of cultural, ideological and political needs (Trigger, 2006:251-254). Possehl (1998:291) agreed with Trigger by explaining that complex societies are variable and therefore structured models (Childe for example (Trigger, 2007:43)) are too rigid to successfully represent the depth of sociocultural diversity.

Trigger (2006:252) explained that some common features were random serendipity resulting from human intelligence and critical commonalities included religious beliefs, law and order and agricultural surpluses. He explained, in an interview with Haldane (2003), that "the traditions of what crops you plant are as much a part of culture as are the myths of the gods you create" and that cross-cultural similarities were the result of people coming up with "similar solutions" through eons of evolution rather than inter-cultural exchanges.

3. Ancient Egypt Formation

Fragmentary evidence suggests that sedentary peoples lived along the Nile from c.6000 BCE but gradual environmental change to hyper-aridity, c.3200 BCE, made a nomadic life-style so difficult that it resulted

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in a gradual population migration and growth within riverine settlements (Brewer 2005:24,110; Wengrow, 2009:48,63). Trigger (2001:51) estimates that the Predynastic population was 200,000 and this grew to 2,000,000 by the Early Period and, if Tilley (2009:364) is correct, was a catalyst for change.

There can be no exact date for the beginning of Pharaonic Egypt [see Figure-1] although the unification is a commonly agreed starting-point and this suggests that the preceding distinct cultures - such as Badari and Nagada in the South (Upper-Egypt) and Omari and Ma'adi-Buto in the North (Lower-Egypt) - were displaced or merged. Some authors, such as Emery (1961:39-40) suggested that unification was so radical that the catalyst-for-change must have been an influx of a foreign race. Emery offered burials as evidence to support his theory however I believe that this, possibly nationalistic theory, can be discarded because there is clear evidence of a gradual change to mortuary/ritual/grave-goods practices preceding the unification (Shaw, 2002:61; Wilkinson, 2003:37) - although Weeks (2001:419) does accept that Western Asian cultures may have influenced Egypt. Overall I agree with Trigger (2001:1,3) that unification was a gradual process spanning the Early Period and culminating in the Old Kingdom (Wilkinson, 2003:60-61); some cultural diffusion and influences are visible, for example, from pottery but there is no evidence of invasion or large-scale migrations.

Egyptian chronology, constructed from the writings of Manetho and sources such as the Palermo Stone (Trigger, 2001:9) and the Turin Royal Canon (Hayter, 2010), spans a period from c.3050 BCE and lasted until the death of the Ptolemaic Queen Cleopatra in 30 BCE. The unification marks the beginning of the 1st-Dynasty and the subsequent periods have been artificially divided into 32 Dynasties (Brewer, 2005:12) and sub-divided into significant periods (Shaw, 2002:480-482):

Period	Date BCE	Dynasty
Early	c.3000-c.2686	1st to 2nd
Old Kingdom	c.2686-c.2160	3rd to 8th
1st Intermediate	c.2160-c.2055	9th to 10th
Middle Kingdom	c.2055-c.1650	11th to 14th
2nd Intermediate	c.1650-c.1550	15th to 17th
New Kingdom	c.1550-c.1069	18th
Ramessid	c.1295-c.1069	19th to 20th
3rd Intermediate	c.1069-c.664	21st to 25th
Late	c.664-c.332	26th to 31st
Ptolemaic	c.332-30	32nd

Egypt's geography, where the Nile is isolated by desert or ocean, contributed to its self-sufficiency and uniqueness. This uniqueness was continued even when annexed by the Roman Empire; Tacitus (1995:9) described Egypt as "difficult to reach, fertile in corn … and unsettled by strange cults".

4. Social Interaction

Ancient Egypt is an example of the earliest form of society with a hierarchy of horizontal divisions and where the elite controlled the production of agricultural surpluses (Trigger, 2007:44). The unification was made possible by concentration of power and resources under the control of a small number of individuals (Brewer, 2005:109). Between the top and the bottom of the hierarchy, supported by agricultural surpluses, was a complex structure of specialists who controlled the secular and religious administration [see Figure-2] and status was of great concern for most Egyptians (Wilkinson, 2003:28). Trigger (2001:34) suggests that changing funerary customs stimulated a demand for trade-specialists – which encouraged social-complexity and he added that a desire to 'own' international-trade, through eliminating intermediaries, may have stimulated the unification.

Throughout Egypt's long history it remained firmly rooted to agriculture; people of all classes, whether they lived in cities or villages, were intertwined with agrarian-life and the periods-of-plenty or times-of-hardship when harvests failed and the state granaries were emptied.

A larger and more complex society necessitated the formalization of a national administration. From the 3rd-Dynasty the role of Vizier, established from tombs and epigraphic evidence, a blend of administrator and judicial roles, was established (Warburton, 2001:579). The Vizier was the apex of a hugely unequal society and the scribal-class, which comprised only 5% of the population, controlled the majority of resources. As centralized-control increased so did the need for a professional and literate administration (Wilkinson, 2003:112) - the Ramessid didactic text 'The Satire on the Trades' writes of the importance of joining the privileged scribal-class which is said to be better than all other professions and demanding respect because there is "no scribe who is lacking in sustenance" and he is "on the path of God" (Simpson, 1978:334-336). The bureaucracy established during this period persisted, almost unchanged, throughout the Pharaonic Period and was core in supporting the state's economy, ideology and society (Wilkinson, 2003:113).

Local government was sub-divided into administrative districts called Nomes and typically controlled from its principal town/city by a Nomarch. The Nomes had mini-governments, mirroring the national leadership, including General, Treasurer, High-Priest, Overseer of the Granary, and Privy Councilor (Leprohon, 1993:424-433; Warburton, 2001:580). Trigger (2001:58) explained that the King's biannual tour of the country gathering taxation and monitoring his officials would have helped to build a national identity.

Trade was vital to the local and national structures and, because Egypt was a coin-less society (O'Rourke, 2001:288), common measures of corn, beer and bread formed a pseudo base-currency; tomb scenes are often concerned with trading rations (Altenmüller, 2001:445-446). We are fortunate to have the Amarna archive of clay-tablets written in Babylonian cuneiform which reveals the complexity of international-relations and inter-nation reciprocity. Trigger (2001:59) does not believe that the King monopolized international-trade but I disagree and judge that control of this scarce resource would have been fundamental to maintaining the King and the elite (as well as international-relations. Workers outside of the home, primarily men who had the same trade as their father, who produced produce were taxed by the land-holder, typically a royal or temple estate. Women, during the period, were rarely depicted in non-domestic settings, irrespective of class. As urban conurbations grew, and more specialized trades were required, it was necessary to evolve complex networks to trade resources.

Material remains, typically from funerary contexts, prove that a wider-range of mass-produced items were available as the number and skill of specialists grew (Trigger, 2001:63-69); non-local items were more common in larger graves and smaller graves continued to have evidence of a consistent material-culture focused on practical and locally made items (Wengrow, 2009:73). As metal-working and technology advanced so did the range of materials that could be mass-produced; for example the potter's wheel, using marl-clays rather than alluvial-clay or bronze chisels producing statues and calcite vases more efficiently than previously possible using diorite stone-hammers.

There is considerable interest in Egyptian 'Art' but this is a perceptual concept and unfamiliar to Ancient Egyptians; to them statues, stela, temple and tomb inscriptions were conceptual and full of magical and functional purpose. Egyptian imagery wasn't intended to be subjective and it followed a rigid Canon of Proportion (Iversen, 1955:15) and presented a perfect image, with the image of the owner significantly larger which emphasised their importance and status (Wilkinson, 2001:301). We can deduce that their ideal concept of the afterlife was one fully-stocked with all of the basic and luxury items they desired (Robins, 1990:11), in an agricultural context (Kemp, 2006:136) and surrounded by their family and servants and with the King's respect (Wilkinson, 2001:301. Its function was to preserve an idyllic eternal life of the owner and in the style of comfort and position that they held in life - but without the effects

of age, illness, famines etc. (see Figure-3). Surviving temple pylons are covered with bombastic scenes of the King smiting foreigners which demonstrated his god-given fitness to rule and preserve Ma'at (Wengrow, 2009:41). Only the top 5% of the community would have been able to view these scenes; festivals exposed iconography to the populous but literacy was low and the majority of the population comprehended the 'message' through verbal means.

When military action was required, which was typically punitive, it was often the King who led the armies. National military forces were typically small and armies were formed temporarily by collecting local forces from Nomarchs (Hayter, 2009).

The nuclear family was a central part of life and strongly emphasized within tombs. Love-of-life was echoed in the tombs which were intended to continue their earthly-lives after death for eternity as a 5th-Dynasty tomb inscription advises "the House of Death is for Life" (Kanawati, 2001:4).

5. Settlements and Urbanisation

Egypt was highly dependent on the rise-and-fall of the Nile (Brewer, 2005:28-30) which provided their life-giving water-source. The Nile's annual inundation brought rich alluvium from the Blue Nile which made agricultural surpluses possible and usually reliable. High or low inundations resulted in poor harvests and the potential for famine and associated social issues such as disease and unrest.

Settlement patterns were commonly the result of geological, rather than social, factors and typically occurred within a natural-basin or floodplain where the maximum benefit of the inundation could be harnessed yet without significant risk of excessive-flooding (Trigger, 2001:10). Most settlements, which were primarily agrarian, changed little in terms of size or purpose throughout the entire span of Ancient Egypt. Settlements were overbuilt many times and typically constructed of reed and mud-brick (Gundlach, 2001:363). Overbuilding and perishable materials, as well as changes to the Nile's course, have made early sites challenging to investigate archaeologically (Brewer, 2005:115,117-119).

Egyptians used the Nile not only for drinking-water, irrigation and fishing but as a very effective means of moving people and goods between settlements - which may explain why there was so limited use of the wheel or plough in Egypt (Wells, 2001:357). The Nile flows from South-to-North and the prevailing wind blows from North-to-South; Egyptian writing used determinative-pictograms of a boat with its sail-up to indicate upstream or sail-down to indicate downstream (Hayter, 2010). Given the importance of water it is not surprising that most settlements shadow the Nile or a small number of oases and the Mediterranean littoral.

The inundation was so critical that irrigation networks were used extensively to harness its benefits (Brewer, 2005:113). Irrigation seems to have been locally managed but required organization and leadership; the Scorpion Mace-Head [see Figure-4], dated to King Narmer and the unification, has a depiction of the King, supported by divine authority, ceremonially opening an irrigation canal –Wengrow (2009:213) alternatively suggests that the symbolism represents the King 'giving life' to the nation.

ḫnti - travel downstream

ḫdi - sail upstream
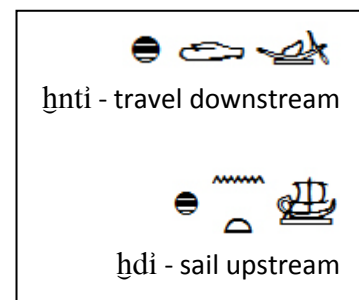
Settlements that grew into towns or cities were a focus for redistribution, often at the start/end of trade routes, and contained a wide range of private and public functions - especially temple and elite cemeteries.

As towns evolved so did the social-elite, which is demonstrated through their houses, estates, and funerary requirements. An example of the changing nature of a settlement is Thebes; during the 2nd

Intermediate period its size and importance began to grow until, in the New Kingdom, it evolved into a city/capital which contained significant political and religious elements such as the temples at Thebes and Luxor, Royal Cultic temples, such as Medinet Habu and the Ramesseum, and royal burials in the Valley of the Kings, elite burials in the Valley of the Queens and the Theban Necropolis (including the workers-village at Deir el-Medina) on the west bank of the Nile.

Alternative city developments were Memphis [White Walls] and el-Amarna [Akhetaten or Horizon of the Aten]; Memphis was formed as a geographically suitable administrative centre for the post-unification nation (Wilkinson, 2003:58) or el-Amarna which was founded by Akhenaten [Amenhotep IV] as a religious centre for his monotheistic cult of the Aten (Shaw, 2002:277).

The cities demonstrate the apex of social-evolution and its stratification; some of these include Buto, Saqqara/Giza, Asyut, Abydos, and Elephantine. Most settlements, of any size, consistently show little town-planning or areas reserved for the elite; housing was densely contiguous and devoid of any organized drainage, sanitation or public spaces - with the exception of temples (Brewer, 2005:118). Of course there are exceptions; Kahun, a town built to house 12th-Dynasty corvée workers constructing Pyramid complexes (David, 1996:3-9), and Buhen, north of the 2nd-Cataract which followed a standard plan for administrative fortresses and which controlled the south-north riverine traffic, overland trade-routes, and control of the Wadi el-Allaqi Gold-Mines (Kemp, 2001:131-132; Morkot, 2000:4; Trigger, 1976:66; Emery et al, 1979:Plate-3).

The majority of the population remained in agrarian communities but all of the evidence points to a gradual but persistent move towards urbanization, starting in Upper-Egypt - this is one of the defining characteristics of a complex society (Wilkinson, 2003:323-324).

6. Ideology

Much of Egyptian Ideology, especially in the Early Period, is understood through the evidence found in temples, cemeteries and architecture (state, religious, social, military) which persisted throughout the Dynastic period and was a reflection of the society and environmental surroundings (Badawy, 1990:1).

The earliest known Ancient Egyptian temple is at Hierakonpolis [City of the Hawk] in Upper Egypt which is a Nagada II structure which pre-dates the unification. It is constructed of simple woven-matting walls, wooden-poles, stood on a raised dais and was surrounded by an enclosure-wall (Brewer, 2005:127-129) - the Scorpion Mace-Head and the Narmer Palette [see Figure-4,Figure-5], which post-dates the temple construction, were excavated here (Wenger, 2009:41,184) and Lehner (2000:73) adds that the palette is the earliest artefact associated with both the King and Horus, the God of Kingship. Brewer stresses that the temple complex demonstrates the existence of centralized leadership and that it was a focus of regional organization and power.

From the 1st-Dynasty the King was considered to be the incarnation of the god Horus who, in an endless-loop, succeeded his father Osiris. The King's regalia included the crook-and-flail, a kilt with bull's tail attached, sceptre or mace, and a number of royal crowns (Brewer, 2005:141,148; Wengrow, 2009:213-214). The King ruled with absolute and divine power and led the religious and secular life of the nation; he was responsible for preserving the actual and spiritual well-being of the nation - a concept (and goddess) known as m3ꜥt [Ma'at].

1st and 2nd Dynasty Serekh of Aha (left) and Perisben (right) (Hayter,2010)

The Egyptian's ideology was based on the survival of their Ka [essential spirit in the after-world] which resided in its tomb and was sustained by
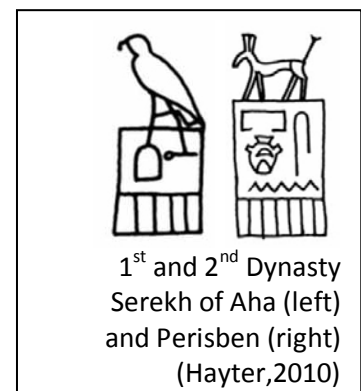
offerings made by the living (Edwards, 1991:18-21). During the Old Kingdom the protection and sustenance of the King's Ka, via the pyramid complexes, was vital for the preservation of Ma'at which was partially maintained by the deified King's mediation with the gods. The King's pyramid, which preserved his Ka, was actually 'shared' by the whole nation. For the elite, funerary stela and false-doors were attached to tombs so that prayers and offerings could be said for the occupant's Ka; conventionally they had an offering formula, ḥtp di nsw, where the King made offerings on the deceased's behalf to gods such as Osiris or Anubis.

From the earliest period of Ancient Egypt the King's authority was symbolized using royal iconography (Brewer, 2005:141); for example the unification was represented symbolically using iconography such as the dual crown (Narmer wears a white-crown and red-crown on different sides of the palette [see Figure-5]), the death-mask of King Tutankhamun (topped by a pairing of the Upper-Egypt vulture goddess Nekhbet and the Lower-Egypt cobra goddess Wadjet (Leprohon, 2001:409)), and temples, tombs, and statues often depicted the entwined representations of the Lotus and Papyrus plants or the hieroglyphs of the sedge-and-bee in the kings title (nsw-bty - Great House [King] of Upper and Lower-Egypt). Interestingly the Serekh, which identified Kings, was a representation of the early temple and this became an "indispensable part of Pharaonic iconography" (Williams et al, 1987:270).

Brewer (2005:114) writes that burials divided into three broad social-groupings; elite, mid-level administrators/artisans and workers. Cemeteries showed an increasing social-stratification; elite and mid-level classes used larger and more complex burials and increasingly contained imported luxury goods (Trigger, 2001:36) and adopted Mastaba or rock-cut tombs with decorated substructures. Old Kingdom Kings were buried in pyramids with complex pyramid texts and correspondingly rich burial offerings - although none have remained intact (Kanawati, 2001:54-59). Interestingly Tilley (2009:331) says that the forces of production can make change to the social organization inevitable and the forces necessary to support their ideology were immense. Worker's burials remained relatively unchanged and continued to be buried in pit-graves (British Museum, 2010), possibly with a few grave-goods. Wenger (2009:82) describes this as the 'Urbanization of the Dead'.

I agree with Brewer (2005:27) that the best extant examples of the post-unification centralized authority, and the extensive organizational capacity, was the pyramid complex which typically including a pyramid, mortuary temple, causeway, enclosure, and satellite pyramids/Mastaba of the royal-family and senior officials. The first true pyramid is the Step Pyramid built for Djoser during the 3rd-Dynasty. The architecture and construction of pyramids climaxed during the 4th-Dynasty and their symbolism of power is unmistakable as Bonaparte recognized when he said, in 1798 to the Armée d'Orient, "Soldiers, 40 centuries are looking down upon you from these pyramids" (Champollion [translated], 2005:105). A pyramid is a statement of the stability and organizational capacity of the society including economy and social stability, command of corvée labour, raw-materials/construction-methods/transportation, and ideological purpose and, taken with other royal-burials, is a barometer of political-change (Wilkinson, 2003:231).

7. Conclusions

Ancient Egypt is an excellent example of how the material-artefacts of a civilization can reveal many of the complex dependencies between the horizontal divisions of a society and that each division is dependent and reliant on the others.

As Trigger said; institutions and social interactions are a mechanism for understanding Ancient Egypt's polity and ideology within societies 'class' structure.

8. **Figures**

Figure-1: Map of Ancient Egypt
(Baines and Malek, 2003:33)

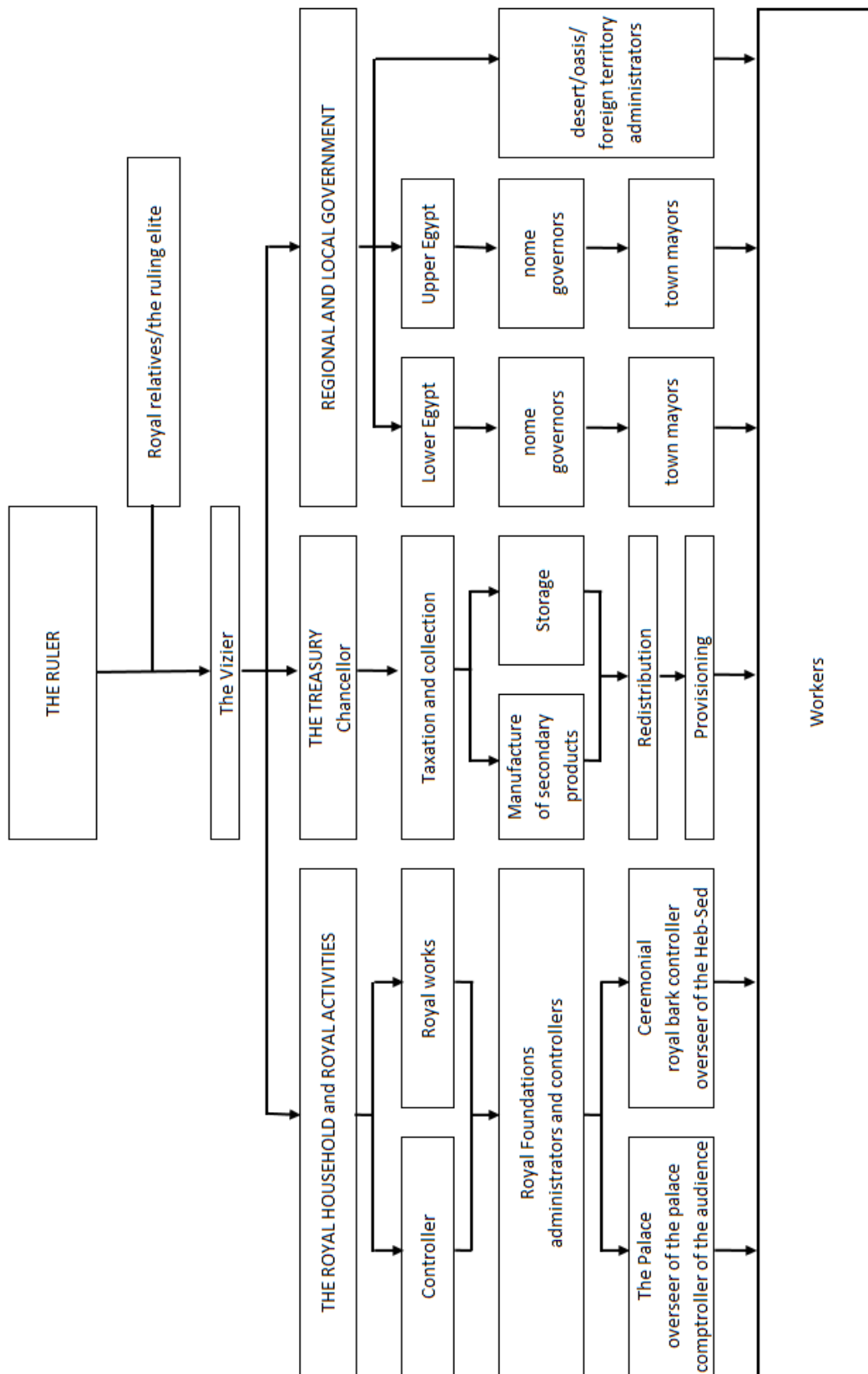Figure-2: Structure of Early Dynastic administration
(Wilkinson, 2003:145)

Figure-3: Conceptual 'Art'
Tomb inscriptions from the 5th-Dynasty tomb of Ptah-Hotep which is located next to the Step Pyramid at Saqqara (after Davies, 1900:Plate-XXI).
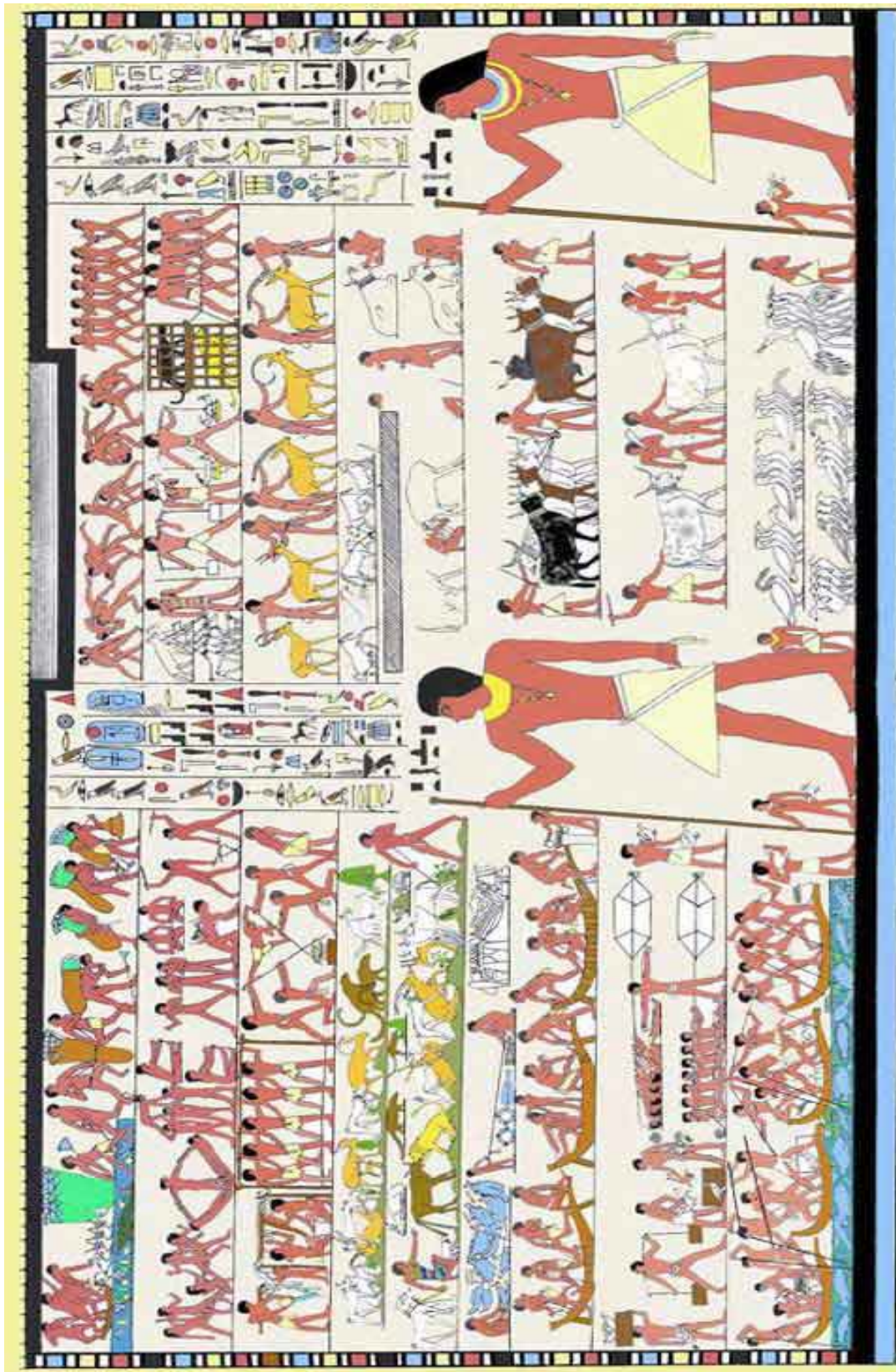
Figure-4: Scorpion Mace-Head
King Narmer, or Catfish, wearing the White-Crown of Upper-Egypt (Southern Egypt) and is depicted ceremonially opening or founding an irrigation canal. Photo (Heritage-Key, 2010) and Line Drawing (Smith, 1998:12).
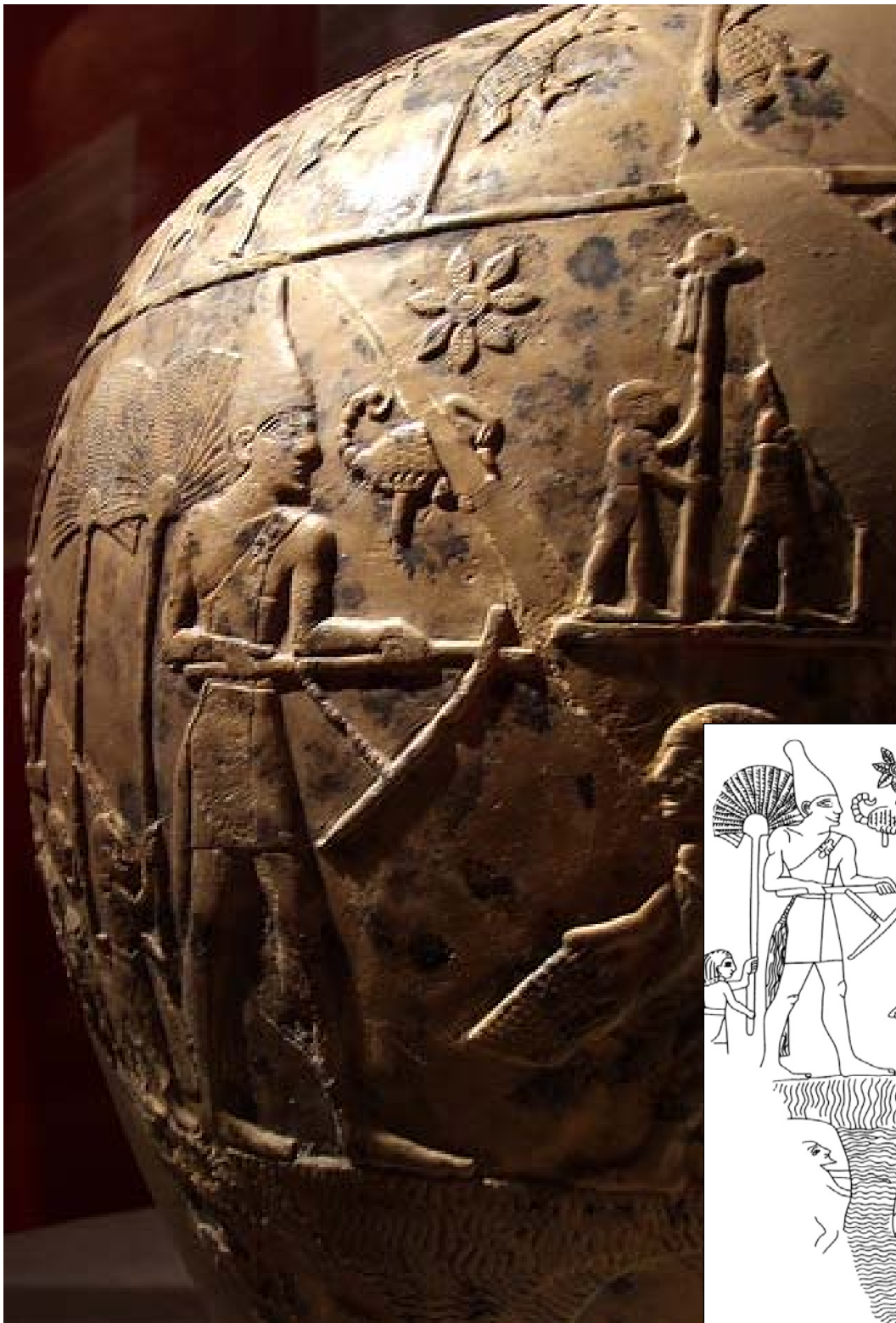

Figure-4: Scorpion Mace-Head

Figure-5: Narmer Palette
(White, 2009: 2-3)

Figure-5: Narmer Palette

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