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Early Settlement Pattern in South and Eastern Africa

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Abstract
Settlement pattern of human society is a corollary to agriculture. The chapter encapsulates spatially and temporally settlements to settled pattern trajectory of development in South and Eastern Africa. This also revisits the iconic stretch of land in South and Eastern Africa, the simulacra of settlements originating from early Palaeolithic mobile campsites along with Oldowan tools to Middle and Late Stone Age Mesolithic settlement patterns, the cave sites, seasonal camps, stray places of emerging band society. The primary focus is on Neolithic settlement of the hyper-arid desert and linear oasis. The Bantu and Sotho settlements are followed to make a case for African clan settlements. The Mesolithic cultures of Halfan, Qadan, Sebitien and Harifan with their settlement structures are narrated. The neolithic structures of Merimde, Al Omri, Al Madi, Tesien, Badarian cultures invoked to arrive at a pattern of splendid settlement during Pharaohs' period which has impacted entire Africa has been analyzed. The Nubian tradition is discussed. In the countries of Southern Africa the expansion of the cultural traditions are also narrated. Inundation, famines, catastrophes, and tumultuous developments affected the settled pattern is also viewed. Metaphorically it is shown that settlement and agriculture are intrinsically linked. At the end, the modern village settlement pattern to understand graphically intensive arable farmings in South and Eastern Africa is followed over.

Introduction
The journey from settlement pattern to settled pattern in South and Eastern Africa has remained tumultuous. The earliest settlements in Africa emerged with the evolution of Homo sapiens. The places of stay where the band gathered to drink water, taking rest or roast the meat at places have the traces of earliest settlement. This kind of settlement in archaeology are generally branded as a paleolithic settlement. During the time of Mesolithic or the Late Stone Age in Africa one can trace the compact banding of different groups. The population increases enhance the number of members of band. This must have put pressure on the people to make more campsites in different marshy areas of the region. The emergence of real settlement patterns could be traced back around 9000 BC when pastoral neolithic started taking shape in different regions of Eastern Africa. These settlements are more visible in the archaeological reports. However, after 9000 up to 4500 BC there seems to be a huge gap in the settlement archaeology, which is explained differently by the African archaeologists. Many archaeologists argue that there was a phase of decline in the temperature during this period. By 4500 BC, one can trace the clear emergence of Neolithic settlements emerging in Eastern Africa and spreading out to other parts of the Subcontinent **(Shillington 2018)**.

Pastoral villages make up the majority of the Neolithic settlement pattern in South and Eastern Africa. But there are also traces of agricultural communities in this area. There are Neolithic sites in almost every nation in South and Eastern Africa, each with its own unique settlement patterns. There have not been many excavations done at those locations. The fact that dates vary greatly throughout the region is an important factor. In South Africa, the earliest settlements date back to 7,000 BC, and the later settlements date back to the sixth century AD. The kinds of tool technologies that are present in the various regions under study also vary.

The topic of shifting settlement patterns has been covered in more recent work on African settlement, however, the methodology is frequently that of a solitary case study. These studies link certain aspects to change, however they do not take the individual circumstances into account from a broader standpoint of other, comparable cultures. Organizing the variety of settlement forms in terms of regularised change is being suggested here. Next, a comparison will be made between the current resettlement and the regularities seen in the old settlement form. Defining the settlement pattern is crucial before moving on. The arrangement or distribution of discrete settlement components in relation to one another is referred to. It is also important to have some measure of density, which represents the size and frequency of these components in a specific area, in order to complete the description.

It is clear from the literature that two essentially distinct traditions—one in America and the other in England—have contributed to the development of the study of early settlement. The most direct source of the American tradition is found in Morgan's final published book, which was first released in 1881 **(Morgan 1881)**. Here, Morgan raised the important topic of how the social structure of the prehistoric peoples who lived in these dwellings was mirrored in the remnants of Aboriginal residential architecture in North America. It is well known that Morgan's interpretative system is inadequate. However, notwithstanding any critiques that may be leveled at this work, it is undeniable that Morgan made a sincere attempt to address a number of difficult topics that had rarely been raised before and that went unaddressed for almost 40

years after 1900.

Modern settlement pattern research still revolves around these same issues. Mindeleff's 1890s studies in the American Southwest provided a method for reconstructing occupational chronology and settlement composition, but until Steward's 1937 studies, their provocative hypotheses remained unresolved **(Mindeleff 1902; Steward 1937)**. Steward's work significantly improved archaeological study, leading to significant field programs in the 1940s, including the Viru Valley and lower Mississippi Valley surveys, revealing sociological processes.

The Mississippi Valley survey analyzed ceramic stylistic heterogeneity over time, but the Viru Valley study was the first to deduce cultural processes from settlement patterns. Settlement patterns provide a strategic starting point for interpreting archaeological cultures, shaped by cultural needs while the Viru Valley program utilized vertical aerial pictures for site localization and mapping, focusing on thorough sampling and categorizing sites based on surface area, architecture, location, and trash accumulation **(Willey 1947)**.

In the mid-1950s, the Society for American Archaeology conducted seminars on ancient settlement patterns, identifying seven sociocultural stages influenced by settlement layout and subsistence base. This study, though imprecise, influenced later theoretical works on archaeology. In 1956, American archaeologists recognized the importance of settlement pattern research, arguing that settlements reflect social and economic activity, and that settlement data broadens archaeological inquiry **(Gordon 1953: 1)**.

Vogt emphasized settlement pattern research as a platform for geographers, archaeologists, and ethnologists to discuss shared issues, focusing on domestic house types, spatial arrangement, architectural features, and community planning **(Evon Z. Vogt 1956b: 174–75)**. Vogt's three types of interpretations for cross-cultural data include examining living arrangements, social structural inferences, and analyzing change over time to provide generalizations about cultural processes. Sanders studied human habitation distribution, agricultural systems, local specialization, and interregional exchange, distinguishing zonal and communal settlement patterns. He introduced the idea of symbiotic regions in archaeological literature.

After Willey, significant studies on Mesoamerica and the eastern US emerged, with Sanders, Bullard, and Adams conducting comprehensive regional surveys and adding systematic test trenching for occupational density estimation **(Beardsley et al. 1955: 4)**. American archaeologists began using ethnographic analogies in the late 1950s to analyze settlement patterns, starting with Wauchope's 1930s study of modern Maya architecture. Coe and Willey highlighted similarities between ancient Lowland Maya and Khmer habitation patterns**(Adams 1961; Bullard 1960; McIntire 1958; Ritchie 1961; Sears 1961)**. Chang's 1958 study focused on Arctic tribes. American ethnologists gained recognition for their knowledge in ancient settlement patterns after the publication of Prehistoric Settlement Patterns in the New World **(Chang 1958)**. They discovered that people were asking questions about settlement patterning, leading to further research. The settlement system concept and Chang's annual subsistence region contributed significantly to American archaeology, distinguishing between settlement pattern and system **(willey1956)**. Settlement pattern refers to physical and ecological connections within a single culture. The distribution of stylistic features defined a civilization's boundaries, and determining seasonality and activity at sites was crucial for settlement system definition **(James 1949; Le´vi-Strauss 2014)**. Systematic data collection and analysis, including faunal remains, plant species, climatology, and artefacts, were used to measure functional heterogeneity **(Carneiro 1960)**. Vescelius and Binford advocated for rigorous sampling practices to reconstruct settlement patterns and systems, using factor analysis to identify artefact variability in Mousterian tool assemblages. Wilmsen's research on Paleo-Indian sites in the US reveals significant differences in artefact assemblages, suggesting a complex settlement system. Studies at Carter Ranch in Arizona used quantitative methods to study intrasite stylistic variability in ceramic material. Cowgill's work is notable for applying advanced quantitative methodology to a complex society.

American archaeologists have studied complex cultures' settlement patterns in Mesoamerica and Mesopotamia, focusing on regional surface surveys and hypotheses **(McCAdams 1965; Parsons 1971; Sanders 1960)**.. Few studies advance to rigorous testing, like Wright's study of a small Early Dynastic urban system in southern Mesopotamia. American settlement pattern archaeology was introduced to Oceania in the 1960s, particularly in eastern Polynesia. Green's 1963 study introduced a trial model of occupation and settlement, combining historical and semi-legendary material **(Green 1963)**. This led to debate and field experiments. Struever's 1960s studies on the Illinois Valley's cultural shifts suggest adaptive responses to selective factors during the final two centuries BC **(Struever 1968, 1971, 2017)**. His research focuses on understanding the organization, pressures, and changes in settlement systems. Preliminary settlement types are determined by analyzing surface collections, identifying artefact types and features, and sampling the site's surface area. Random test pits and larger-scale excavations are conducted to assess variability and feature association. English archaeologists have studied regional population distribution through surveys and excavations, with no significant fieldwork program for settlement pattern analysis **(A. Fleming 1971; Simpson 1966; Stevens 1966)**. Methodological advancements in archival and historical materials have been most fruitful **(G. R. J. Jones 1960, 1961; C. T. Smith 1967)**.

On Eastern Africa, there are large number of contributions coming from Japanese scholars. The concept of naturalography is utilized to analyse how people obtain sustenance and reorganize the work with their natural environment. Their attempt is to understand human beings in relation to nature. Tanaka has worked on San hunter-gatherers from 1966 onwards. The major argument is that hunterer-gatherers utilize excessive land by frequent migrations. Because of social structures and adaptations to arid environments (Tanaka 1982).

Based on a longer time-line than anywhere else in the world, the hunt for settlement origins begins with the experiences of hominid ancestors. They organised into small bands of adults and their progeny in response to the demands of survival and security. While they were constantly moving in search of food throughout the day, each band seemed to have certain places that it congregated at night. Palaeoanthropologists refer to these now-barely-visible sites as "living floors" **(J. R. Oliver 2008)**. They can be directly descended from to semi-permanent Stone Age camps (some of which may have developed into home bases), proto-communities, and finally full-fledged agricultural villages.

A later phase involved more dispersed homestead-style living arrangements for individual families. They appear to have originated as the norm for settlement in relatively homogeneous sub-humid and semi-arid regions where cattle, in particular, had grown to be significant both economically and socially. Perhaps the last element that made scattered homesteads—as opposed to villages—a feasible settlement choice was a contemporaneous move to social institutions focused on patrilineal decent and patrilocal residence.

The Early, Middle, and Late phases of the Palaeolithic settlement pattern in Africa are distinguished. The earliest technologies and settlement patterns from Akika date to eight lakh years ago. Leaky made the discovery of Olduvai Gorge in 1931 **(L. S. B. Leakey, Evernden, and Curtis 1961)**. The 'Binfordian' paradigm and the paucity of empirical evidence during the 1970s and 1980s resulted in the Oldowan being portrayed as having very primitive technology, similar to that of extant apes **(Binford 1985, 2014; Wynn and McGrew 1989)**. However, in the past several years, fresh findings and a new theoretical framework that highlights the complexity of early human conduct have both had an impact on this approach **(Roche et al. 1999; Semaw et al. 1997; Whiten et al. 2011)**.

Gona, which dates to 2.6 million years ago, West Turkana, and Hadar, which dates to 2.3 million years ago, include the oldest lithic skulls found in Africa. Koobi Fora and Fejej are known to have Oldowan sites, whereas Olduvai is home to the classic assembly. Helen Anderson traced patterns in the Middle Stone Age ochre paintings **(Anderson 2009, 2012)**, the visual culture in relation to vision, learning, memory, and emotions. Given that both tools and settlement patterns have been discovered to have significantly evolved in Africa, the Stone Age does not seem to have been a static period in history. Changes in culture, social structure, and economy. moved on to the following phases. The early colony had tool kits, makeshift camps and hunters, and a workshop for making tools. The campsites might have been beside a lake or stream that was endowed with more lush vegetation. There are animal bones that have fossilised. The majority of the locations for rock shelters feature areas for slaughtering, waste packing and collection techniques, hunting bands, etc.
The first settlements in Southern Africa were found near the coast, specifically at Cape Hangklip, False Bay, Amanzi Springs, which is close to Port Elizabeth, and Cape Macchia. The cave towns near Kabive, Kalambo Falls, and the Cave of Hearths in the Northern Transvaal have been documented. Large game species including pigs, giraffes, hippopotamuses, and elephants surround these caverns, which are close to water resources. Almond-shaped hand axes have been documented from Rooidam, west of Kimberley, the home of the Fauresmith culture. The vast savannah grasslands were home to the Sangoan industrial complexes. The second Intermediate Complexes, sometimes referred to as Magosian and Howieson's Port, are associated with Group II industries and are characterised by stone circles, mounds of bones, and the extraction of haematite pigment. The Second Middle Stone Age includes those villages **(Malan 1949)**.

Pebble tool industries own the sites of Djebel Edjerane, Lake Chad, and Soura. The majority of the Acheulian industries are found in the Libyan desert at the sites of Tihodaine, Admer Erg, Wadi Mathendous, Mazer, beni Abbes, Ekker, Meniet, Avak, EL Beyes, Sherde, Esh Sahe, and Inab Kharga. During this time, the settlement colony consisted primarily of caverns and campsites housing the skeletal remains of various animals, including giraffes, buffalo, wart dogs, rhinoceroses, elephants, and hippopotamuses.

Mesolithic/Late Stone Age Settlement Patterns
In South and Eastern Africa, the Late Stone Age is not the same as the Mesolithic. Nonetheless, a few Late Stone Age sites have striking similarities to Mesolithic tool types and settlements seen in India and other regions of the world. The term "Neolithic site" is used by J. D. Clarke, and it is currently gaining new meaning in Egyptian archaeology **(J. D. Clark 1999)**. Furthermore, the word "mesolithic" has been entirely abandoned by the French archaeologists **(Perrin et al. 2016)**. In this case, both labels are used to comprehend the pattern of habitation that suggests potential areas in South and Southeastern Africa.

The majority of the Late Stone Age settlement were camp sites around lakes, pole-framed houses covered in grass and skin, and rock shelters. The natural hiding places were beneath massive granite boulders, in valleys, or around cliffs. The purpose of the shelter was to protect individuals from the wind and rain without sacrificing light. The locations of the rock shelters were chosen because they provide good game viewing. After a year, some of the shelters were not used as frequently as others. The garbage that is frequently discovered indicates that the sites have been occupied continuously; it includes debris, stone tools, animal bones, and cooking ashes.

According to some arguments, the San group **(Hollmann 2014)** was expressed in paintings throughout Southern Africa. The spoken language came from Tanzanian locations where the San people have historically resided. According to Sadr, a hunter-gatherer community existed from northern Tanzania to the Cape of Good Hope. Over the last 3,000 years, people with "distinct languages, cultures, and agricultural or pastoral economies have arrived in the region, breaking the continuum" **(Sadr 1998)**.

The regional variability in settlement patterns is also evident throughout this time. The Capsian tradition, which originated in North East Tanzania and expanded throughout the Mediterranean region, is unmistakably Mesolithic. It belonged to the Negro aquatic civilization, which spread throughout the eastern Nile Valley and the Sahara Desert in Africa **(Sutton 1974)**. Fish collection and aquatic animals served as the foundation for the settlement layout. Lake Edward and Lake Nukurs are the best examples. Generally speaking, this was a sedentary society that lived near bodies of water.

The Wilton cave site, which is connected to the Smithfield Swap settlement **(Deacon 1972; Wadley 2000)**, is the term used to describe Late Stone Age settlements in South Africa. This tradition is seen in the sites in Namibia, the Orange Free State, and the Transvaal on the south coast. Hearths with white ash and the first bone points were discovered in Zimbabwe's pomogwan, which dates from 9,400 to 12,220 BC. There are reports of new hunting techniques from the Umgazava (Zambia) community of Nelson Bay Cave and Zomba Pata Cave. These cave dwellers explored the sea food. The primary artefacts from these villages are the bone tips, arrow shaft heads, and particularly bows and arrows. Therefore, organised assembly through the shaping and hunting of animals suggests widespread exploitation.

The seasonal availability of water, plant, and animal resources, as well as interactions with nearby groups, were factors in the settlement of people. Various ecological considerations would have determined the band's territorial range; nonetheless, in the western Cape province, there is a San group that lives on sea food (**(J. D. Clark 1960)**). The rock art of the Draken burg Mountains in Zimbabwe and Namibia is evidence that people in the late Stone Ages exploited natural resources for food, including plants and animals.

The southern African late stone age settlement demonstrates metallurgical knowledge as well. These colonists served as the forerunners of Bantu-speaking communities. These communities date to the early Iron Age, which began around 300 BC. Divergent views exist among archaeologists regarding these colonists; some say that they originated from eastern and central Sudan, while others support early Iron Age migrants **(Bandama, Chirikure, and Hall 2013; Childs and Herbert 2005)**. These communities, which may have formed after the turn of the century, were open farming settlements with contemporary characteristics. The pattern of settlement in southern Africa indicates that the evolution of humans and their environment has been largely influenced by high interior plateau regions. The habitat, resources, and behavioural patterns of humans all interacted profoundly to create the colony. Additionally, distinct settlements were formed in the late stone age/Mesolithic by indigenous groups such as the San, Khoikhoi, Berg Dama, Ora Timba, Twa, and Bantu in Southern Africa **(Cole 1954)**.

The post-Aterian industry of Adrar Bous (Niger) in Saharan Africa may be categorized as a Mesolithic habitation pattern. Some evidence of Mesolithic occupation in this area comes from the Capsian type finds at Tadema it. One may refer to the Sabitian village in Egypt as a Mesolithic settlement. Instead of completely rejecting it like French archaeologists did, a more minutely "detailed and layered analysis", together with more clarity and exact dating methodologies, are required to understand epi-Paleolithic sites in this era.

The emergence of Bantu and Sotho settlements can be traced from the Mesolithic period onwards in South and Eastern Africa. There is a connection of metal with Bantu people however, there are very limited evidences of it from Eastern Africa. There is evidence of utilization of sea-food and lake source settlement in the settlement history of South and Eastern Africa. The analysis of range of sites from Ethiopia, Kenya, Somalia and Djibouti suggests that the humans have largely settling down in different open farming areas. The same case is visible in Southern Africa.

Neolithic Settlement Pattern in South and Eastern Africa

The first domesticated cattle, goats, and sheep appear in the Lake Turkana Basin of northern Kenya by approximately 4500 BC, the highly migratory herders remained mostly transitory on the landscape **(Grillo and Hildebrand 2013; Marshall, Stewart, and Barthelme 1984)**. After 3200 BP, a steady trickle of cattle entered the southern Kenyan Central Rift Valley, before the emergence of widespread herding cultures throughout East Africa. Around this time, major domestic sites like Narosura, Ngamuriak, and Hyrax Hill begin to emerge, and there is evidence that bigger networks of communication and exchange are forming **(S. H. Ambrose 2002; M. D. Leakey et al. 1943; Odner 1972)**.

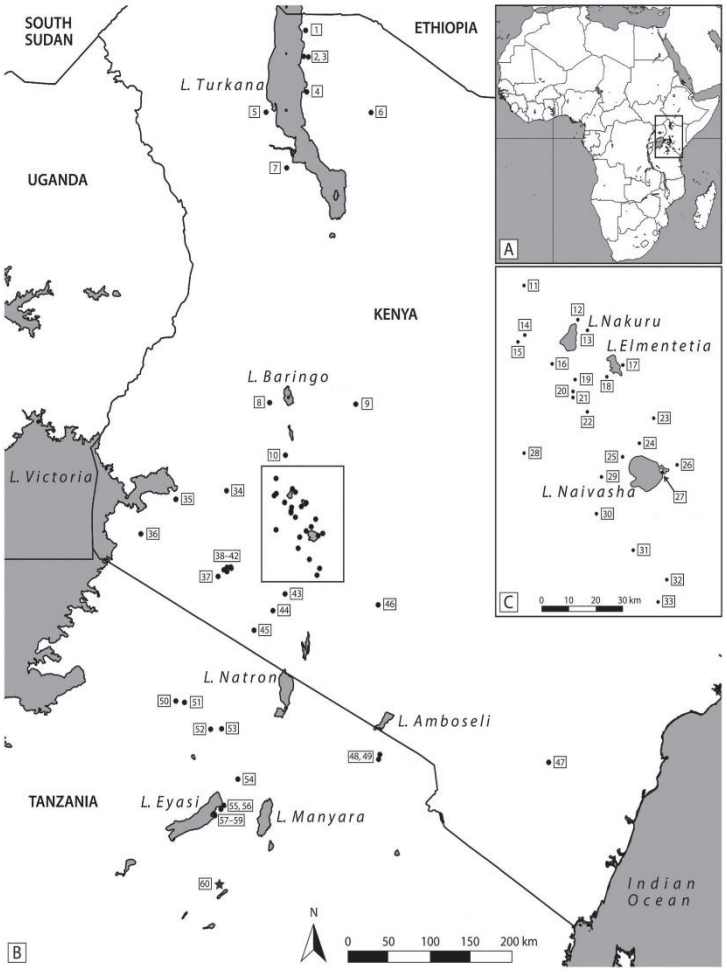
The Savanna Pastoral Neolithic is the first group to exhibit definite evidence of economies centred around domesticated animals. It appears that a variety of ceramic decoration groups, such as Nderit, Ileret, Akira, Maringishu, and especially Narosura ware, are included in the The Savanna Pastoral Neolithic. Different levels of wild animal exploitation, a range of lithic tool shapes and production styles, and the utilisation of several nearby and far-off raw material sources are all present in The Savanna Pastoral Neolithic sites when it comes to the manufacturing of stone tools. The few common characteristics that unite the The Savanna Pastoral Neolithic populations in the southern and western Lake Naivasha basin are "the widespread preference for obsidian sources and cairn burial" **(S. Ambrose 2001; Merrick, Brown, and Connelly 1990)**.

Gidna found Luxmanda in 2011 with lithics and ceramics. Parts of the site have been damaged since it is beneath a number of farm plots; also, prehistoric cultural deposits have been utilised in the construction of new homes. A grid measuring 60 by 100 metres had 24 shovel test pits (STPs) dug in 2012 **(Grillo, Prendergast, et al. 2018)**. The ceramics generated by those STPs bear a remarkable resemblance to the ceramics discovered at the Narosura site in Kenya. This suggests that the material from Luxmanda may also be categorised as The Savanna Pastoral Neolithic **(S. Ambrose 2001; Odner 1972)**. An AMS radiocarbon date of 2855 ± 20 B.P. (3000–2845 CAL B.P.; ISGS-A2367) was found in one sherd containing organic matter (OM). This date fits within the range commonly accepted for The Savanna Pastoral Neolithic settlements in the Central Rift Valley **(Lane 2013)**.

The 78 people (male and female) thought to have been buried at Njoro River Cave, an Elmenteitan burial site, all were buried with a stone bowl, a grinding slab, and a pestle-rubbing stone **(M. D. Leakey et al. 1943)**. At Njoro River Cave, Robertshaw and Collett have even seen a tendency for grinding slabs stained with ochre to be associated with male burials rather than female burials **(Robertshaw and Collett 1983: 72)**. Mary Leakey stated that at the The Savanna Pastoral Neolithic site of Hyrax Hill, in contrast to the gender distribution at Njoro River Cave, all nine stone bowls and three pestle/rubbing stones that were deposited with human remains were connected to female interments **(M. D. Leakey et al. 1943)**. Therefore, in addition to use quantitative descriptions of stone tools to distinguish across communities of grinding technique, one can find value in considering culturally organised depositional practices during the Paleogene era **(Gifford-Gonzalez 2014)**.

The Shaheinab site is located about 30 miles north of Omdurman on the west bank of the Nile, on an old riverbed. It is composed of a low mound situated around half a

Figure 1.1: Neolithic Sites in Eastern Africa



Source: Katherine M Grillo, Mary E Prendergast, et al. (2018). "Pastoral Neolithic settlement at Luxmanda, Tanzania". In: *Journal of Field Archaeology* 43.2, 103

mile west of the current river bank, measuring roughly 200 metres long and more than 30 metres wide. The first Neolithic settlement to be excavated in the Khartoum region was the Shaheinab site, which has demonstrated signs of a food-producing economy **(Arkell 1953)**.

The Islang site is located around 25.5 kilometres north of Omdurman, on a gravel ridge next to a stable water source. The site's topography is identical to Nofalab's. It has a surface size of around 70 by 60 metres. It is clear from this that Nofalab's site is bigger than Islang's. There is just one trench that descended to a depth of 1.05 metres, and the cultural debris in the unaltered squares ranges in depth from 0.40 to 1 metres. The Geili site is located 47 km north of Khartoum and roughly 2 km from the eastern bank of the Nile. Situated on a sandy clay mound, the space it occupies is approximately 150x180m (2700 m2). The mound rises to a height of roughly 4 metres above the plain below. The site's intricate strata attests to its extensive use as a cemetery and town over an extended period of time. The eras of its use must have been separated by intervals, as new human groups frequently destroyed the tombs at the sites **(Caneva 1984: 354–355)**.

Kadero I, situated approximately 18 km north of the junction of the White and Blue Niles and 6.5 km east of the main Nile's channel, is a low, eroded sand mound **(Krzyżaniak, Kobusiewicz, et al. 1984: 309)**. The site spans around 30,000 square metres, with certain areas of its occupied deposits rising to a depth of 1.8 metres. A modern cemetery with hundreds of graves is connected to the hamlet. Approximately 600 metres to the southeast of Kadero I, Kadero II covers an area of roughly 10,000 square metres. Slightly raised on a naturally occurring mound, the location is no higher than 50 cm above the plain below. Haaland concluded that the site was too eroded to warrant a large-scale excavation after surveying and testing it **(Haaland 1987: 230)**.

The *Instituto Italiano per l'Africa e l'Oriente* has been conducting archaeological and geomorphological reconnaissance and excavation in Central Sudan for the *El Salha Archaeological Project*. 160 archaeological sites (graveyards and settlements) from the Early Islamic era to the Lower Palaeolithic were found by the project **(Salvatori, Usai, and Welsby 2002)**. The numerous Mesolithic and Neolithic sites, several of which are larger than 10 hectares, along the Nile and in the interior along the margins of Early and Middle Holocene lagoons or lake-like basins are of special significance. At its greatest length, this broad lagoon extended to the Gebel Baroka slopes in the Early Holocene, some 30 km west of the Nile **(Crippa, Lischi, and Cremaschi 2024)**.

Egyptian human settlements began in 3100 BC, beginning the Neolithic Period. The First Pharaoh Narmer started Egypt's Early Dynastic period, with sedentary culture and Qadan civilization relying on wild grain gathering. Sir Henry Wellcome's 1910-1914 excavations at Jebel Moya and Jebel Tomat revealed lithic artefacts similar to Neolithic sites of Khartoum, with gouges absent **(Gregory et al. 2023)**.

A prehistoric site near Qoz Wad Sheneina settlement features 200m long, 200m wide kms, ceramic sherds from Mesolithic, Late Neolithic, Meroitic, Christian, and Islamic eras, and human bones **(Fernández et al. 2003)**. The people of Libya were closely related to the Sebilian Culture, who migrated towards the Nile valley to merge with the Pre-Pottery Neolithic period B. This led to pastoralist nomadism in the Circum Arabian region, where the Sahara desert continued to develop, resulting in the weaving system and family burial practices.

Between 500-4200 BC, the Merimde culture in Lower Egypt used stone tools, lived in small houses, and focused on ceramics, domesticating livestock, and producing the first life-size Egyptian clay head. The El Omari Culture, Maadi culture, Tasian Culture, and Badarian cultures influenced Upper Egypt, with copper-intensive pottery, cemeteries, and black top-ware, affecting Upper Egypt from 4100-3100 BC. **(Vorster 2016)**.

The Badarian culture used copper and stone in blacktopware, while the Amratian civilization, also known as Naqada I, produced white-cross-line pottery with closed parallel lines. Ancient Egyptians' settlement patterns were influenced by their ritualistic activities and ecological attitudes, focusing on the land's holy qualities. Despite being among the first to achieve standardized civilization and urban development, Egypt remained a backward, rural society. The Nile River's annual flooding allowed sustainable agriculture and agrarian development **(Butzer 1976; Erman 1971; Herodotus 1928)**

Pyramid Settlements of South and Eastern Africa

The Ancient Egypt Research Associates (AERA) have excavated ancient communities at the base of the Giza Necropolis, southeast of the Great Sphinx and the pyramids belonging to Khufu, Khafre, and Menkaure of the kings of the Fourth Dynasty **(Lehner and Hawass 2017; Lehner and Lacovara 1985)**. To conceptualise Giza as a cumulative architectural landscape project, the majority of the habitation and infrastructure used by the builders of the pyramids was arranged south of the quarries and south of the access route, which passed via a central wadi that divided the nearby Moqattam and Maadi Formation outcrops. In the same spectacular way that they erected their enormous pyramids on the high plateau, they interfered in the floodplain to the east to create water transport infrastructure serving what must have been the principal Nile port of this period **(Lehner 2019)**. About 400 metres to the southeast of the Great Sphinx and south of a wide delivery zone that opened up to the east of the Sphinx is where the so-called "Workers Town" is located. The site's main feature, the 200-meter-long stonewall that borders the northwest portion of the site,

gives rise to the site's Arabic name, Heit el-Ghurab (HeG), which literally means "Wall of the Crow." AERA teams have been excavating homes, workplaces, cattle corrals, bakeries, and harbours for almost thirty years. This was possible because, beginning in the Fifth Dynasty, forces of erosion had carved a horizontal section through the settlement ruins after people left, but before the sand overburden was laid down. The Preclassic Maya site of Noh K'uh, where surface remnants revealed the structure and organisation of the community **(Juarez 2023)**. Seven hectares of the Heit el-Ghurab had been surveyed dug into an upper phase that dates to the era of Khafre and Menkaure, the architects of the second and third pyramids at Giza, and a lower phase that may have originated with Khufu. The Gallery Building discovered in smaller excavation trenches structures resembling workers' houses from other ancient Egyptian sites and periods, with off-axis entries, hearths, and rear domiciles with cooking and baking chambers. The Gallery Complex is surrounded on all sides by buildings used for food production and storage, including dozens of outdoor bakeries buried beneath thick layers of waste made mostly

Figure 1.2: Map of the Heit el-Ghurab site, with Lagoon 1 contour lines reconstructed at elevations of the time of occupation (ca. 2500 BC). Color key: Red = spaces hypothesized as houses; Green = access routes; Tan = areas hypothesized as for cattle

Source: Mark Lehner (2014). "Neighborhood to National Network: Pyramid Settlements of Giza". In: *Archaeological Papers of the American Anthropological Association* 30, 24

of pieces from the unusually large bread pots that the Old Kingdom Egyptians used to bake conical loaves, as seen in offering scenes. This can be interpreted as a blatant indication of increased production of output and waste that goes beyond what is possible in a home or neighbourhood **(Lehner 1992)**. Potters climbed the standard home bread pot, which could be found in each Old Kingdom community, to a height of 35 cm and a diameter of 35 cm here at the pyramid site. There was more bread per unit when the loaves were larger. By multiplying and repeating basic domestic modes of production many times over, the builders of the pyramids intensified production **(Lehner 2007; Rice 2004; Sahlins 1976)**.

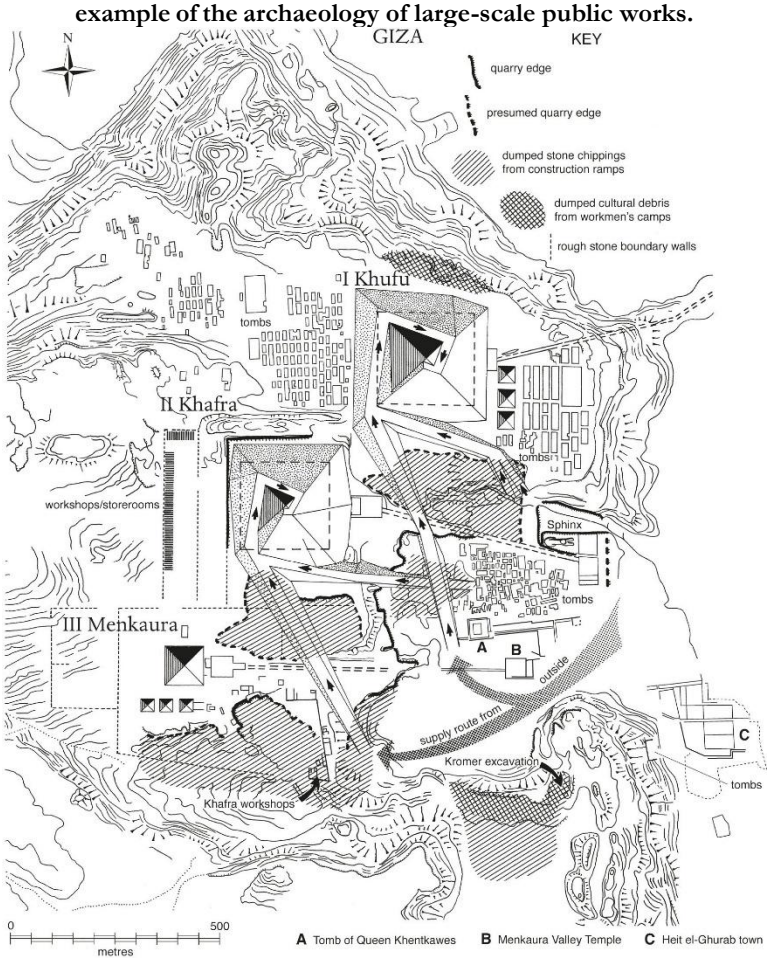
A large enclosure at the settlement's southeast corner, named as the Royal Administration Building (RAB), has a sunken court with large, round silos that are 2.5 metres in diameter. These silos are likely used for grain storage **(Lehner 2007; Lehner and Sadarangani 2007)**. The majority of the bakeries are located at East of the Galleries (EOG), the industrial yard just north of RAB. It can be speculated that the EOG and RAB worked jointly as a production and storage unit. A portion lies on the Eastern Town on the far eastern edge of exposure. It consists of a number of tiny rooms and courts that more closely resemble the self-organization or "organic" order that results from numerous individual decisions and is typical of villages **(Lehner, Tavares, et al. 2010)**. This is where the grinding stones that were used to make flour for the nearby bakers were discovered. People who processed grain into flour for the bread baking industry lived in humble dwellings and small, walled urban estates here **(Lehner, Tavares, et al. 2010)**. Between the Eastern and Western Towns in

the RAB, there are enormous grain storage silos from which they extracted grain. Despite the close vicinity of state storage facilities and bakeries, small family storage silos and individual hearths in Eastern Town were found. These are places where the locals kept grain that was likely provided to them by central authorities.

Larger, elite homes are distinguished by thicker walls **(Lehner, Tavares, et al. 2010)**. The question arises whether dwellings for their head individuals (patrons and administrators) before expanding and filling up the surrounding zones with spaces for subordinates, created the Heit el-Ghurab site similar to the Amarna suburbs. Excavation data points to a household-based structure within the Heit el-Ghurab, albeit one that is more condensed than that of Amarna. So far, four or five sizable "houses" have been discovered, each featuring a long central room with pilasters and niches on the southern ends. These rooms have been recognised on other sites as audience halls for official residences in elite houses **(D. Arnold 1992; Lehner 2015; Ownby, Hartung, and Sowada 2022)**. Due to objects related to weaving, spinning, and grinding, which so far have mostly come from the RAB and Western Town but also from the Gallery Complex **(Mathieson et al. 1997)**, hence can be imagined that men and women, possibly families, living together in the Eastern and Western "Towns". Women may have performed the majority of the work in spinning, weaving, and grinding **(Barber 1991; Barry J Kemp and Vogelsang-Eastwood 2001)**. There is evidence that the majority of the houses in these neighbourhoods were made of houses, where men and women lived in families, as well as the clusters of smaller buildings surrounding larger homes, such as in New Kingdom Amarna, where families resided in large houses with attached smaller homes **(B. Kemp 2012; Lehner 2015: 186–187)**.

There were two cages that opened southward into a bigger enclosure (SWI) farther south, across a dip filled with sand at Lagoon 1. The northeast enclosure (ES2) is home to an exclusive mansion with substantial walls. This appears to be the official dwelling of an administrator **(Lehner 2015: 188)**. The enormous enclosure to the south can be understood as a corral, and it is possible to speculate that the sub-enclosure (ES1) next to it was used as an abattoir **(el-Hadedi and R. Redding 2011)**. Lagoon 1 may have been the remnant of an ancient topographic feature, a potential put-in bay or southern

Figure 1.3: The Giza pyramid plateau displays quarries and construction, together with the possible contours of the partially 'spiral' building ramps for the first and second pyramids, Khufu and Khafra, respectively. This is an example of the archaeology of large-scale public works.



Source: Barry J. Kemp (2018). *Ancient Egypt: Anatomy of a Civilization.* Routledge, p. 187

service harbour for transporting grain and protein (cattle) to the RAB compound on the north and SWI corral on the south, respectively **(Lehner 2015)**.

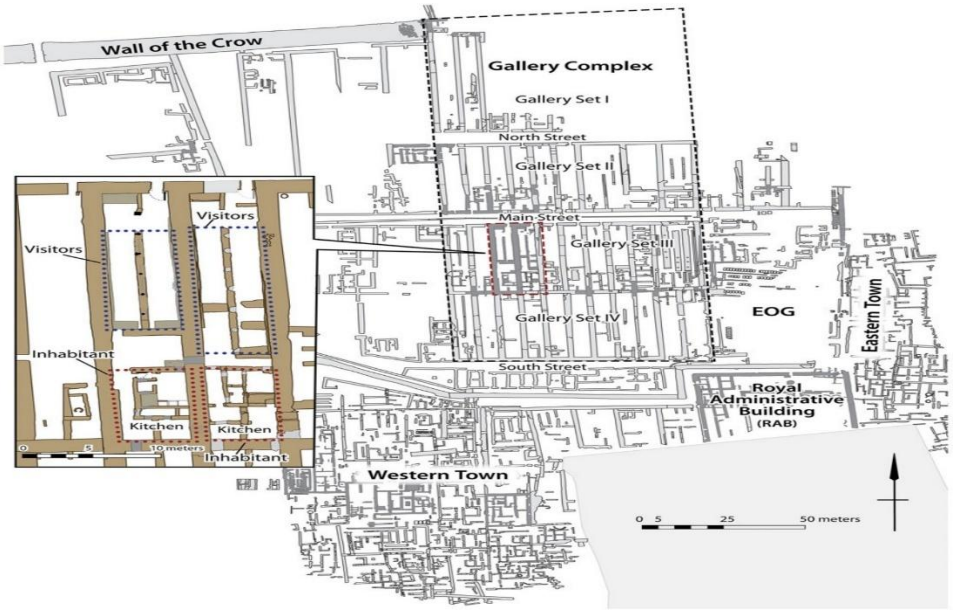
Research is still ongoing at AERA's Giza Field Lab. Floral remnants that had carbonised by flotation were found. Numerous scribal titles of the highest rank associated with the office of the Vizier were imprinted on thousands of clay

sealings from the Western Town's large houses. These titles included "Scribe of the Royal Documents," "Overseer of Scribes of the Tutors of the Royal Children," and "Overseer of Scribes of All the King's Works" **(Hill, P. Jones, and Morales 2013; Nolan 2010)**. Richard Redding, a faunal analyst, discovered proof that the people living in Western Town ate a lot of premium cattle meat **(R. W. Redding 2015)**. When taken together, the seals and animals provide a powerful indication of the privileged status of the western town. The layout of the Heit el-Ghurab site during its final phase indicates that, at this point, there was limited opportunity for residents from the various zones to interact, resulting in isolated and potentially divided communities. Walls, paths, gatehouses, restricted entry locations, and the stratigraphic relationships between these elements demonstrate how authorities limited connection among communities over time. They built a substantial enclosure wall around the Gallery Complex late in the series, perhaps enclosing it from the east as well as the west **(Lehner, Tavares, et al. 2010)**. In the final layout, the majority of the bakeries were contained inside, flanking the barracks, and access to the Eastern and Western Towns, the RAB, and a series of storage enclosures attached on the western flank of the RAB had to be gained from outside the enclosure wall. This was where authorities kept bulk materials and goods. On the one hand, this division can be traced back to the galleries' function of providing housing and food for men, primarily young men, who came and went from the royal works, while older individuals, women, and possibly families resided in the Eastern and Western Towns for longer periods of time **(Lehner, Tavares, et al. 2010)**.

The location where Menkaure, the man who constructed the third Giza Pyramid, ended his rule. The royal family reportedly relocated to Saqqara, 15 km to the south, to construct the royal tomb and mausoleum for Menkaure's successor, Shepseskaf, the final monarch of the Fourth Dynasty, before he finished building his pyramid. The Heit el-Ghurab was mainly abandoned during this shift. On the theory that top-down attempts to overly control and dominate can occasionally occur right before the collapse and absence of the imposing authority **(Lehner, Tavares, et al. 2010; Padgett and Ansell 1993)**. It is implied that authorities tighten social control because they are afraid of things happening to them or that could undermine them. It is agreed that the Fifth Dynasty papyrus archives from Abusir, which date to around 116 years after Menkaure, provide ample evidence of the excessive control, guarding, and monitoring within a pyramid complex and its associated infrastructure **(Lehner and Sadarangani 2007; Posener-Kriéger 1976)**.

The local community structure was used by the pyramid builders to choose phyle members. The locations that supplied labour for the Middle Kingdom pyramids are spread out from the pyramid zone in the Memphis area into the vast provinces of Middle Egypt and the Delta **(F. Arnold 1996: 24)**. Felix Arnold was able to plot these locations from place names in builders' graffiti, which was more elaborate and literate than that of the Old Kingdom. The builders of the Old Kingdom pyramids also drew from nearby and distant centres; this is evidenced by the probability that Merer's phyle originated at Nome 2, which is located directly northwest of Giza **(Tallet and Marouard 2016)**. Graffiti left by Middle Kingdom builders also demonstrates that labour came from a diverse range of establishments, regardless of size: estates and households of officials and noblemen; towns, such as Sais in Nome 5 of Lower Egypt or Hermopolis

Figure 1.4: Giza Gallery as household and compressed neighborhood. Pyramid builders stretched the "normal" house model, open areas for "visitors" (rotating troops) to the front, more private domicile to the rear, stretched it out, width to length 1:7, and replicated it many times over to achieve an economy of scale for accommodating and pulsing people, and a kind of public institutional building in the overall Gallery Complex, where "inhabitants" controlled access and the larger open circulatory spaces, while living in the sub-complexes of the Eastern and Western Towns.



Source: Mark Lehner (2014). "Neighborhood to National Network: Pyramid Settlements of Giza". In: *Archaeological Papers of the American Anthropological Association* 30, 24

in Nome 15 of Middle Egypt; the Ptah Temple in central Memphis; and administrative districts of large towns, such as "the provisioning quarter of the divine offering of Heliopolis" and "the second district of Heliopolis," as well as general areas of the Delta and Middle Egypt **(F. Arnold 1996)**.

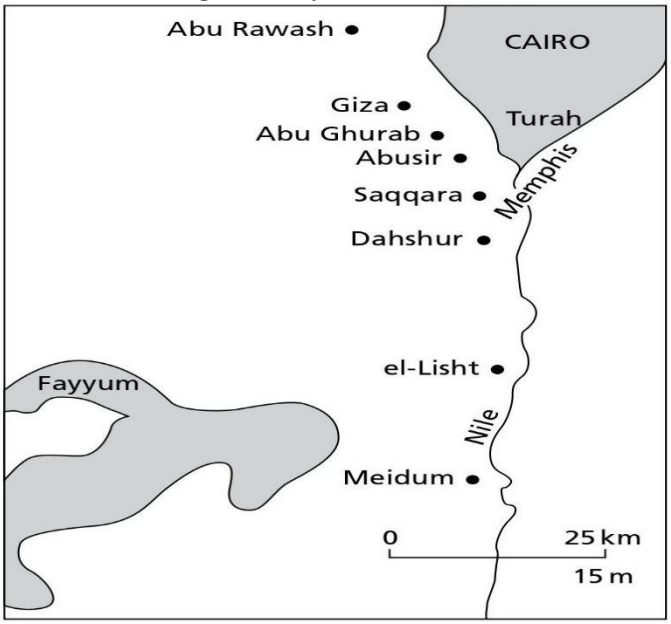
The late Old Kingdom's royal decrees demonstrate how central power permeated all the way down to the village level. One of the several directives given to Koptos (Koptos B) residents has been interpreted as demonstrating the procedures for hiring specific labour **(Eyre 2015: 18–19)**. The directive is sent to a hierarchy of officials, comprising all the Chiefs of the Koptite Nome, and Overseers of the Phyles of Upper Egypt **(Eyre 2015)**, beginning with the Overseer of the Pyramid Town. Families bearing the name of Koptos are designated by another decree **(Garc´ıa 1998; Goedicke 1967: 206–213, 81, 120)**. The Koptos decrees and other texts citing town rulers or village chiefs make references to a national network that may have been in place by the end of the Third Dynasty, just before the massive pyramid projects of the Fourth Dynasty. These references suggest that the mechanics of conscription came down to the nome, village, estate, and possibly household and family level. For national undertakings, the mechanics must have been comparable, even though the effort ordered up in these decrees is local and much smaller in scale than that of the pyramids of the Fourth Dynasty.

It is also likely that neighbourhood mobilisation had an effect on the construction of the pyramids. Egyptians who were conscripted for missions outside of their local neighbourhoods and communities had connections to wider national networks as well as possibly to areas such as Sinai, the Red Sea, the Levant, the far Western Desert, Aswan and the Upper Nile, and the Red Sea **(Kuhlmann 2011; Reimer 2014)**. During the Fourth Dynasty, ethnic diversity may have resulted from immigrants from source countries that specialised in the acquisition and transportation of exotic products, such as granite from Aswan, timber, wine, and oil from the Levant, and particularly from Byblos **(Bietak 1988)**. Provincial Egyptians made connections with these peoples from far away, as well as, formally and subserviently, with elites who lived in office houses in this royal company town and were native to their respective districts. Members of the social hierarchy were brought close together during the construction of the Giza Pyramids in new, artificial neighbourhoods like as that at Heit el-Ghurab, although living in separate compounds divided by walls. People living in these transposed neighbourhoods encountered aspects of life both outside of Egypt and outside of their own neighbourhoods.

Heit el-Ghurab thus became a component of a "proto-city." Because social contacts become more frequent as population density rises, complex systems theorists have lately dubbed cities "social reactors" **(Ortman, Cabaniss, et al. 2015)**. "Stars, which burn faster and brighter (superlinearly) with increasing mass" is how Luis Bettencourt described cities **(Ortman, Cabaniss, et al. 2015)**. The metaphor illustrates how cities tend to see an increase in social contacts relative to population growth in both number and rate **(Geoffrey 2017; Ortman and Coffey 2015)**.

Authorities at Heit el-Ghurab placed individuals in the Gallery Complex, a limited—possibly gender-specific—institute of mandatory service. Members of the team must have returned to their villages and neighbourhoods assimilated from contact with national and interregional social networks, whether or not they maintained teams based on their home districts, towns, and neighbourhoods. In this way, the Heit el-Ghurab site operated as a "social reactor" similar to cities, despite gender-based limitations on social contact and intra-site mobility **(Ortman, Cabaniss, et al. 2015)**.

Figure 1.5: Pyramid locations



Source: Marc Van De Mieroop (2001). *A History of Ancient Egypt.* Columbia University, p. 53

The massive pyramids of the Fourth Dynasty were purposefully built to achieve economies of scale in terms of both people and goods. In other words, they attempted to reduce their input—that is, the cost per unit of bread—by expanding the production scale, such as the quantity of bakeries and the size of the bread moulds. They started to notice a growing return on scale. Additionally, they grew their output at a pace faster than their input, as seen in the production of stone blocks relative to the number of quarry workers. In construction projects like building pyramids, it is frequently observed that larger corvée labour groups perform more work per person and per unit time than smaller groups **(Ortman, Cabaniss, et al. 2015: 4)**, particularly when coordinated in close-order, rhythmic drill **(Ortman, Cabaniss, et al. 2015: 4)**, especially when synchronized in rhythmic, close order drill **(McNeil 2002)**. The productivity of each social interaction rises with the quantity and pace of interactions; output in both modern and ancient cities increases disproportionately to population growth **(Geoffrey 2017)**.

Bantu Settlement Pattern in East and South Africa

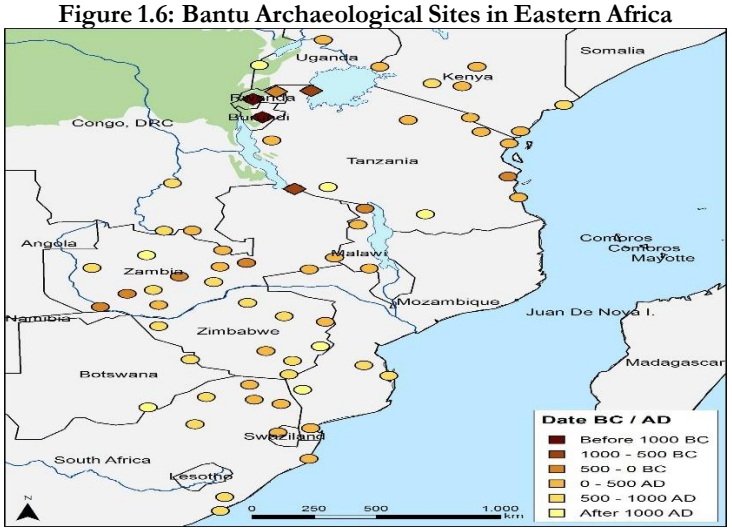
African archaeological research has long been discussing the expansion of Bantu settlements in South and Eastern Africa. A great number of archaeologists have also taken into consideration their association with those who used iron. One of the primary concerns of African archaeologists and historians is the date of Bantu migrations in various regions of South and Eastern Africa.

A stage in the spread of the Pela and Pembele languages with a stage in the spread of the so-called Early Iron Age or Dimple base-Channelware traditions serves as the basis, which correlates specific linguistic eras with specific sets of archaeological findings attributable to Bantu-speaking peoples. Sites of such traditions first occur in the early centuries AD in the Bantu settlements of Pela and Pembele. By 300 AD, they were dispersed in a variety of forms from Kwale on the Kenyan coast to Zimbabwe in the south. The apparent speed at which artefacts have dispersed throughout those specific areas of eastern and southeast Africa closely resembles the speed at which Pela and Pembele dissemination are necessary for merely the same regions with linguistic evidence.

Chang has made a significant contribution on the Bantu settlement patterns in Africa **(Chang 1958, 1962)**. Skinner's study of market hierarchies and settlement distribution in traditional China and Chagnon's analysis of the relationship between Yanomamo warfare patterns and settlement size and distribution has been utlized for the studies on Bantu settlements in Africa by other scholars **(Chagnon 1968; Skinner 1964)**. One can also utilize Campbell's ethnographic reconstruction of a traditional Eskimo settlement system to study Bantu settlement patterns **(JM Campbell 1968)**. Campbell's work highlights that living people's straightforward systems provide the ethnographical and archaeological data which can be used for the study Bantu settlements in the past.

Several of the Bantu sites can currently be found in Eastern and Southern Africa. The study of Northern Okawango region's representative sites thinly dispersed bands of Proto-Khoe-Kwadi speaking herder-foragers lived in the drier forested grasslands and wetlands of northern Botswana before groups speaking Western Bantu moved in from the north and Eastern Bantu moved in from the east. Among the native San hunter-gatherers who spoke Ju-uHoa languages were Khoe-Kwadi and later Western Bantu immigration. By the end of the previous millennium BC, at least some of the forager-herders were using pottery that they had either made on the spot, brought from sources like the East African "Pastoral Neolithic" or acquired through trade with Western Bantu farmers like those in Angola's Benfica and Quibaxe. The use of pottery would have made it possible to cook fish, meat, bones, and plant meals while preserving more of their nutrients. It might also be used to preserve sour milk and tiny amounts of water, in addition to skin bags. All populations along the Cubango, Okavango, and Boteti river systems depended on fish and other riverine resources to augment their diets to differing degrees.

Figure 1.6: Bantu Archaeological Sites in Eastern Africa



Source: Neus Isern and Joaquim Fort (May 2019). "Assessing the importance of cultural diffusion in the Bantu spread into southeastern Africa". In: *Plos One* 14.5

The pottery from the Divuyu site, which dates from the seventh to the ninth century, are among the oldest found in the sandveld west of the Okavango and are part of an Iron Age tradition that originated among Western Bantu speakers in central Angola to the north. Situated atop the "female hill" in Tsodilo, 70 kilometres west of the Okavango, the site is home to numerous carbonised mongongo nuts (*Schinziophyton rautanenii*), a crucial wild plant food source for the local foragers, farmers, and small-stock herders. Even though no more plant remnants were found, the stable isotopic study suggested that nearly all of the diet was made up of domesticated plants. Animal protein came from a mixture of domestic sheep and goats, game, and tiny amounts of fish, birds, and tortoises. At Tsodilo, fishing has a long history dating back to the Middle Stone Age at White Paintings Shelter. Jewellery and metal tools, such as chisels that would have been used to mine or prepare specular hematite—a material that was traded extensively in the past—were frequently utilised at Divuyu. It was powdered into a shimmering blue colour and applied as a cosmetic to the body and hair. The scarcity of lithics found indicates that there was minimal communication with hunters who used stones during this period.

Clumps of carbonised sorghum and a similar mixture of domestic and wild animals were found in the eighth–twelfth century site of Nqoma, which is located on the lower plateau of the female hill **(Harlan and Wet 1971)**. The animal sector of the economy was dominated by cattle, then small-stock and hunted wildlife. At Nqoma, in comparison to Divuyu, even more iron and copper jewellery was found, along with a sizable quantity of lithics that comprised scrapers and formal segments. The difference with Divuyu points to more contact with hunters from the Later Stone Age who may have delivered food, game, or hides to the location. It's possible that later Stone Age inhabitants were forced to work in the massive specularite mines at Tsodilo **(Robbins and Murphy 2011)**. The archaeological evidence suggests that some peoples of Later Stone Age ancestry may have been drawn to and integrated into these towns, while others may have lived in nearby rock shelters with limited access to metal, ceramics, and domesticated plants and animals. Social stratification is based upon this spatial and resource division **(S. H. Ambrose 1998; Tryon and Faith 2016)**.

Through flotation techniques, carbonised remnants of pearl millet, a cucurbit seed, wild Grewia seeds, and domesticated sorghum were discovered from the 9th–12th century Matlapaneng site outside of Maun on the southern fringe of the Okavango ecosystem. Cattle remains accounted for 31% of the faunal composition in this place, with goats and sheep (caprines) coming in second at 23%. The remaining fauna was composed of a range of wild species. Despite excellent preservation and the site's proximity to the Thamalakane River, no fish remains were found. Fish remains have been found in small amounts at Nqoma in the Tsodilo Hills, and in rare instances at Kalundu Tradition sites in the Victoria Falls region of southwest Zambia. These ceramics establish a cultural connection between Matlapaneng and these two locations. The about 35 centimetres of sterile sand that cover the narrow occupation layer at Matlapaneng do not signify sequential occupations, but rather a multiethnic occupation of Bantu speakers who are gathered from various sites to the west and east of the Okavango.

There are traditionally different kinds of Bantu routes and the emerging settlements according to the regional locations is discussed by the African scholars now. There are generally four routes being by Bantus, one of which led towards the east. Wherever the Bantus went in Africa, they created agglomerations of settlements adjusting with the local settlement histories. The Bantus followed the north-western and the western routes. The eastern route of Bantus is significant for us. "From the originating homeland at the confines of Cameroon and Nigeria, the Bantu populations undertook the conquest of the rain-forest of the Congolese basin, heading to the east and the south along the northern and western edges of the basin. Some continued eastward to the country of the Great Lakes (cf. infra); others, circumventing the denser and more humid zones of the Great Forest, took an eastern route in a southerly direction until they reached, in the south, the spaces of the wooded austral savannahs. This circumvention, begun in the 2nd millenary B. C., was completed in the first centuries of the Christian era" **(Gazel 2021)**. The eastern route led the Bantus to reach Eastern Africa which has a beginning of settlement during this period.

It can be concluded that from 1000 BC onwards there has been Bantu migrations all over South and Eastern Africa. The settlements with certain exceptions seems to be migratory and multi-ethnic in nature. Sorghum and millets were main cereals with cattle forming their mainstay.

The Swahili Settlements at the East African Coast

The emergence of agricultural settlements and their villages on the coast and hinterland of East Africa in the first millennium AD is found at the northern Swahili coast and hinterland. It focuses on the northern coastal strip, roughly corresponding to the area that lies between two and five degrees South and falls under the borders of modern Kenya. The relationship between the hinterland and the early Swahili communities on the islands and along the coast is the important aspect of African settlement. The hinterland is typically described as being between 70 and 100 km wide, but in the Tana valley, it extends upriver two or three times that distance. The distribution and date of Early Iron Age sites belonging to the Kwale tradition, as well as those sites on the coast and inland with distinctive pottery commonly referred to as Tana tradition pottery, are particularly significant to study Swahili settlement, specifically to investigate whether the latter is connected to the pre-Iron Age pottery found in the Rift Valley and the highlands, which is referred to by some archaeologists as the Pastoral Neolithic **(S. H. Ambrose et al. 1984)**. This is commonly attributed to speakers of Southern Kushitic languages. The settlement pattern dates back at least two millennia in the pastures of the elevated stretch of the Rifz and the flanking plateaus, and it shows signs of cultural continuity into the Iron Age in these high grasslands in the late first millennium CE.

The predominant languages of the coastal and hinterland people are Swahili in the towns and villages along the shores and islands, Pokomo in the Tana river and delta, and, to their south, the collectively known as Miikend occupying the hinterland of Malindi and Mombasa and stretch to the Tanzanian border and beyond. Together, these groups form what is now recognised as the Sabah group of the North-East Coast division of Bantu **(Nurse and T. Spear 1985)**. This region has speakers of cushitic languages as well, particularly in the inland and northern areas that border the dry interior. Spoken by the Orma pastoralists, who are mostly descended from the Oromo (or "Galla") expansion in southern Ethiopia and northern Kenya in the middle of the second millennium AD, they are primarily from the Eastern division of the Cushitic family. A few tiny, now significantly smaller hunter-gatherer groups in the hinterland speak Eastern Cushtic languages as well, in part because of their long-standing ties to Orma and other pastoralists who came before them in that divide. Dahalo is one language of these groups, and they speak a Southern Cushitic language. This may indicate an even older relationship to the "Pastoral Neolithic" of the interior, maybe dating back two millennia or more **(Ehret 1974; Heine 1978)**.

The Bantu-speaking people in this area are mainly farmers, though they still own small livestock and cattle. They live in the more fertile areas of the area, which include the lower Tana valley (Pokomo), the more immediate hinterland (Mijikenda), and the coast itself (Swahili). This is the current title for these "nine villages" (or groupings, also referred to collectively as "Nyika"), who are undoubtedly part of the region's older population and who share a clear degree of cultural and linguistic kinship.

The nine people remembered as Shungwaya share a common ancestor, according to their recorded traditions from this century. This is typically believed to have been north of their current area of occupation, with the lower Sabaki river serving as its current limit. Its ultimate abandonment is typically dated to the sixteenth century **(Werner 1915)**. Without a doubt, this Shungwaya tale oversimplifies the procedures meant to elucidate Mijikenda history and the interrelationships among the nine factions **(Nurse and T. Spear 1985; T. T. Spear 1974)**. Examining the traditional sites (Kaya, Makaya), which are crucial to the nine tribes' current occupied regions, reveals a lengthier and most likely more intricate history of Mijikenda habitation. These show evidence of activity, albeit not necessarily permanent settlement, dating back at least a millennium in certain cases. Mutoro highlights the age of these kayas as well as the early varieties of locally produced Tana tradition ceramics found in those sites where excavations have taken place **(Mutoro 1987)**. These should be from the latter part of the first millennium AD, indicating the Mijikenda people's antiquity and the presence of a settled agricultural hinterland prior to the establishment of the early Swahili harbor-towns on the coast and islands.

It is possible to differentiate the Swahili people from the Mijikenda not only by language but also by culture. They are primarily Muslim and somewhat urban in nature, and they have connections with other Swahili in every town and harbour along the entire coast, from southern Somalia to northern Mozambique, as well as in Pemba, Zanzibar, and other islands. Due to their trade links abroad, their Islamic faith, and the introduction of some Arabic terminology into the (Ki)Swahili language, there was a tendency up until recently in both popular and even scholarly circles to view the Swahili and their history differently.

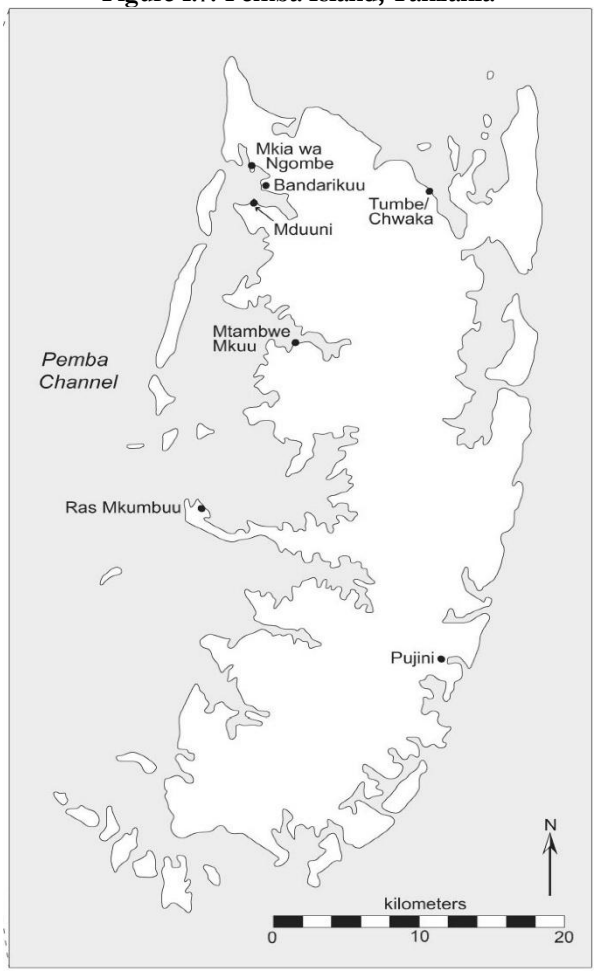
Archaeological study, particularly at Manda in the Lamu archipelago, has shown that the Swahili culture and some of the towns date to the late eighth or early ninth century AD **(Chittick 1984)**. This is in line with this tendency. As evidenced by trade items, these settlements–which include Kilwa Kisiwani on the southern end of the Swahili–were in contact with the Persian Gulf and other foreign lands. They also engaged in farming and fishing on the islands as well as on the nearby mainland. Interestingly, despite their familiarity with international trade and cultural currents, the ancient cities of Pate, Manda, and Lamu islands each have ancestral farming grounds designated on the mainland that demonstrate their historical orientation towards the African side.

There is documentary evidence for contacts between the East African coast and the Red Sea as early as the first century AD **(Casson 1989)**, despite the fact that the lowest archaeological layers of these ancient Swahili island and seashore settlements date to the Abbasid period of the Islamic heartlands, when Indian Ocean trade opened up with its focus initially on the Persian Gulf. Nevertheless, there is a paucity of continuous documentation for these encounters during the late Roman and Sassanid eras, as well as the first two centuries of the Islamic era; likewise, there is little, if any, archaeological evidence of these centuries on the shore and on islands.

Over the course of the 12 documented centuries that the island was occupied, Pemba appears to have been a particularly prosperous and integrated coastal region, based on the archaeology. When Garlake stated that Pemba had higher site densities than any other coastal region, he was referring only to stone-built sites that are still discernible from the surface **(Garlake 1966: 7)**. The northern portion of the island is 164 square kilometres in size and includes a ten-kilometer radius around each settlement. This territory lies between two recognised town sites on either coast: Mkia wa in the west and Tumbe/Chwaka in the east, which dates from the seenth to the fifth century **(Horton and C. M. Clark 1985; LaViolette and J. Fleisher 1995)**, and in the west, Mkia wa Ngombe and Mduuni, eleventh to fourth century towns. There are five bigger towns on Pemba, and two of them are Chwaka and Mkia wa Ngombe. These settlements have tombs, ruins of elite stone mansions, and sizeable congregational mosques. Eight other towns on the island are comparable to Mduuni in terms of size and area of their ruins. Mduuni is a minor town, less than half the size of any of the larger cities. Tumbe, the

oldest and biggest village on Pemba to date, is part of Chwaka's settlement history **(LaViolette 2000; LaViolette and J. Fleisher 1995)**. This site can be likened to the equally early and huge site of Unguja Ukuu on Zanzibar **(Juma 2004)**. It dates mostly

Figure 1.7: Pemba Island, Tanzania



Source: Jeffrey B. Fleisher (2010). "Swahili Synoecism: Rural Settlements and Town Formation on the Central East African Coast, A.D. 750–1500". In: *Journal of Field Archaeology*

35.3. (Visited on 03/19/2024)

to the eighth–tenth centuries AD, with some evidence of seventh century occupation. Similar to Unguja Ukuu, Tumbe was reportedly abandoned towards the end of the tenth century. The early eleventh century AD saw the founding of Chwaka, which is located barely 200 metres farther south along the peninsula.

The Sotho setlement pattern in South East Africa is key to understand the settlement in Africa. These settlements emerge after first century AD and continued till today with major alleviations during the colonial period. It is also important to compare Swahili settlement with Bantu and other different settlements emerging in this area.

Sotho Settlement Pattern

From Early Iron Age sites in the Transvaal, Swaziland, and Natal, the dates can be pushed back a millennium, to about the fifth century AD **(Dart and Beaumont 1969;**
Mason 1973). Based on recent evidence, it is more likely that Early Iron Age settlement was restricted by the Highveld environment **(Maggs 1976: 518)**. Thus, extensive Iron Age settlement may not have occurred until the fourteenth or fifteenth century. Since then, communities have been situated above or along the sides of relief features created by resilient volcanic intrusions into the softer sedimentary rocks of the Karroo.

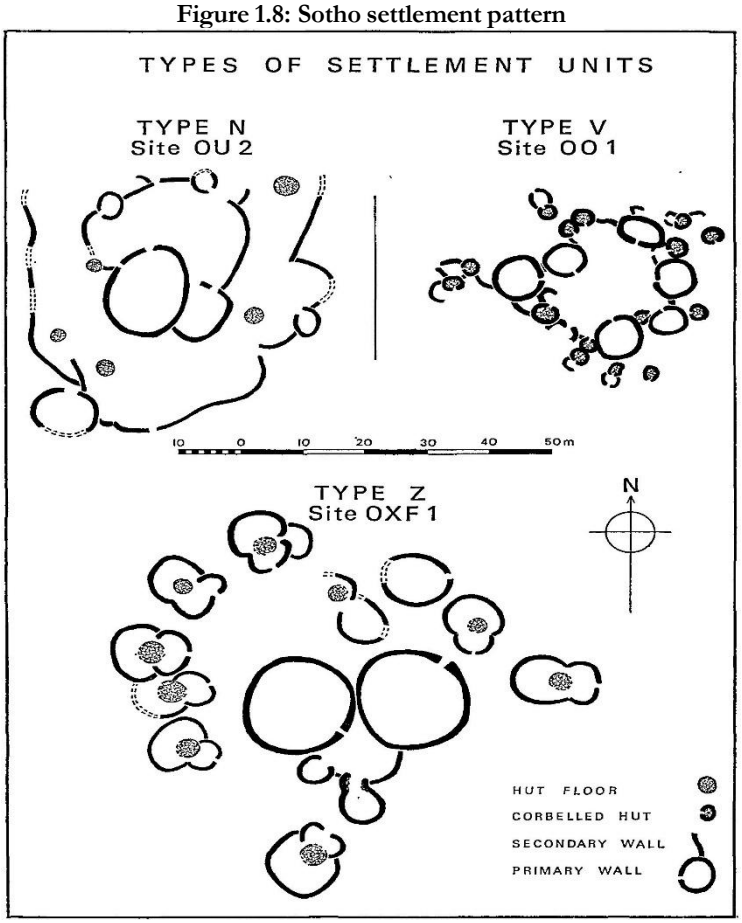
The Sotho settlement unit had an enormous secondary enclosure in the centre that the entrances entered into, formed by a collection of primary enclosures organised in a ring and connected by secondary walling. Around the edge of the ring were huts that appeared to be constructed of mud and reeds. An encircling wall, occasionally with one or two small primary enclosures added, surrounded the entire town unit. This arrangement kept the animals away from the living space surrounding the huts while allowing them to be confined in the core of the unit. The ends of the surrounding wall met the central ring, creating a funnel-shaped entrance on some settlement units. This was the only entry to the core group of enclosures. The dwelling area was bounded by the outer wall, which was presumably only of marginal, if any,

utility for defence and instead functioned to define the unit's boundaries and regulate animal movement. In the smaller communities, the apartments were occasionally adjacent to one another, connecting by encircling walls. Settlements were more widely dispersed and possibly bigger on average than in later years; several have more than 100 settlement units, indicating a population of at least 1,500 **(Maggs 1976)**.

Another distinctive feature of the Sotho Settlements is their ceramic assemblage, which sets them apart from other Iron Age sites. The majority of vessels are spherical to bag-shaped pots and open bowls; some have short, erect necks, but most lack necks altogether. A row of pendant triangles or a horizontal band of coarse comb stamping predominate when it comes to decoration, which is found on a comparatively small percentage of vessels. There may also be a few other types of embellishment, like finger pinching, applied bands, and rim notches.

This eastern region saw a substantial shift starting in the sixteenth or seventeenth century. The formation of numerous new settlements between the older ones and the continuous occupancy or reoccupation of the former, with the Sotho settlement units being either plundered or transformed into the new Sotho pattern, appear to have boosted the population density. The new stimulus stayed under clearly defined environmental bounds but expanded across a considerably wider area, particularly towards the south. The Highland Sourveld, which traces the crest of the Drakensberg Escarpment and has acid soils and poor nutrient levels for fall and winter grazing, is where the Type V settlements ended east of it **(Acocks et al. 1953)**. Only approximately the 1,450-meter contour was reached by settlement to the west, perhaps due to declining soil fertility and rainfall. The Themeda and Cymbopogon-Themeda grassveld and

Figure 1.8: Sotho settlement pattern



Source: Tim Maggs (1976). "Iron Age patterns and Sotho history on the southern Highveld: South Africa". In: *World Archaeology* 7.3, p. 321

prairie soils, together with the best arable and grazing lands **(Acocks et al. 1953; Van Dijk 1982)**, are closely correlated with the distribution of Type V.

Type V shares many similarities with Type N, both overtly in terms of ceramic typology and settlement pattern as well as more deeply in terms of the social and economic patterns that these archaeological phenomena must reflect. This kind of Sotho settlement unit is composed of a secondary enclosure encircled by a ring of primary enclosures connected by secondary walling. Once more, the main enclosures open onto this centre area, from which there is only one way out. The primary distinction is that the cottages strewn around the middle ring are now open, and there is no longer an exterior wall around them. Except for a few massive, elongated settlement units located only in the northern half of **(Maggs 1976)**, funnel-shaped entrances are nonexistent. The corbelled stone hut **(Van Riet Lowe 1944)** was an important development that appears to have occurred in the centre of the Sotho range. These huts can be considered an

environmental adaptation because they are primarily found in the treeless northeast, while Stow **(Walton and Stow 1965: 21, 26, 31)** attributes their existence to lion protection. Although corbelled huts are rare on settlements other than Sotho settlement, they are not a diagnostic feature even in this case because other types of huts are relatively common, especially in the south where corbelled huts are absent. The Type N reed and mud huts were still being constructed, and as they were also hemispherical in shape, it is likely that they served as the model for the stone cottages. Although there are typically some that are disconnected outside the ring, corbelled huts were frequently integrated among the main enclosures of the central ring. In front of the latter is often a little semicircular patio. There's little evidence of their courtyards, but the reed homes were always detached. Similar to Type N, grain was clearly stored in huge, spherical baskets with a diameter of around one metre. These sites, which are still in use in some Sotho settlements, range widely in size from a few settlement units to over a hundred. Once more, the unit organisation resembled Type N, albeit the units are typically dispersed along a ridge or scarp crest rather than being contiguous. Once more, there is no discernible hierarchy or specialisation among the units, though occasionally a very large one surrounded by smaller ones may indicate the residence of a headman or chief.

The ornamentation that most distinguishes pottery connected with Type V is characterised by a few regular kinds, even if it incorporates a wide range of methods and patterns. Although vessel shapes can vary as well, they often correspond with surface treatment and decoration. Comb-stamping is a technique that is finer in execution than Type N and is found on spherical or sub-spherical vessels. It is typically accompanied by a red ochre burnish. The majority of the design is made up of several imprints, such as notches, finger impressions, and different stylus impressions, on or just below the rims. These take place on rougher, unfurnished, typically bag-shaped containers. Another typical theme is applied clay bands pinched into a series of points, while small spherical containers frequently have finger impressions painted on majority of their surfaces. Usually, necks are either nonexistent or underdeveloped. There are flat and round bases.

There are other communities in the Caledon Valley that are farther south than Type V and share many characteristics with Type V in terms of their material culture. Though their pottery assemblages span a smaller range, they do not appear to have such a well defined settlement pattern. The remaining decorations are shared by Type V, but comb-stamping and a few others are omitted. They are referred to as Caledon Valley sites informally since they are less widely recognised. According to Maggs, they seem to be from the seventeenth century **(Maggs 1976)**.

There is a unique collection of sites in North-West that are located to the west and span about the sixteenth through the seventeenth to the nineteenth centuries. These feature a very distinctive settlement pattern and pottery typology; the historical consequences of this dichotomy are noteworthy. A collection of sizeable primary enclosures, often numbering three to eight, with distinctly thicker walls on either side of their entrances, form the core of a Type Z village unit. They are occasionally connected by secondary walling to a smaller primary enclosure, but secondary walling is not always present. The homes are set in a rough circle around these huge stock cages. Known as bilobial houses, they are constructed in a unique pattern where each hut is surrounded by semicircular courtyards at both the front and rear **(Maggs 1977)**. Based on the available archaeological and ethnological data, the dwellings were shaped like a cone on a cylinder. Their conical thatched roofs were mostly held up by a circle of poles extending from the hut's mud wall, which functioned as a curtain wall. A low wall was frequently added between the poles to create a verandah in the covered space between the wall and the line of poles. Some of the hut entrances had sliding doors, and they faced the front court yard wall entry of the residence. There was a fireplace next to the entry, usually on the right. There was an aperture on one side of the hut that led to the rear courtyard. The rear courtyard, which housed grain stockpiles and was strewn with trash, differed functionally from the orderly front courtyard where meal preparation was done. Though both might have been in use, it appears that the difala was utilised instead of the *sesiu*. The *difalais* is a huge earthen drum, approximately two metres high, covered with thatch if it were placed outside **(Schapera 1943: 84)**. Its foundation is frequently elevated above the ground on a ring of stones that is only left standing on the archaeological sites and has a diameter of one metre. The number of units in a Type Z community might range from one to several hundred. Compared to Type V sites, the larger instances have a significantly higher density, with structures occasionally packed so closely together that any patterns are hard to discern. Not only are settlements more crowded, but they also seem to have supported significantly bigger populations in the past.

There is evidence that the populations had more livestock and were comparatively less dependent on cultivation, and the environment is marginally drier than the eastern locations. The fact that Type Z communities are limited to regions with at least some patches of forest and shrub marks another significant distinction. Without a supply of poles to support the roof, the distinctive huts could not have been constructed, and this requirement appears to have had a significant impact on site location and overall distribution. Compared to Sotho, the ceramics are substantially more uniform. The necks of the spherical pots and subspherical bowls are either short and erect or tapered. The primary decorative element is a grooved or ochre band, typically used in combination with horizontal bands, pendant triangles, arcades, and chevrons as motifs. Additionally, the manufacturing, selling, and delivery processes were different from those of the eastern sites **(Maggs 1977)**.

Although Type Z and V are clearly distinguished from one another, Type Z and the towns of the Tswana peoples in the south appear to share certain similarities. They encompass almost all of the previously mentioned ceramic and architectural features. Understanding Type Z settlements is especially aided by Schapera's description of Tswana settlement morphology in terms of its social structure **(Schapera 1943)**. The same elements have been discovered, and their arrangements are comparable. An exact match exists between the archaeological settlement unit and the 'ward,' the fundamental social, economic, and administrative division of a Tswana town. The biggest similarity is with the southernmost Tswana peoples, the Rolong and Tlhaping, who continue to build somewhat modified bilobial homes. The pre-Difaqane capital of the Seleka Rolong, Thabeng, has archaeological sites nearby that have been found to have Type Z **(McCarthy 1978)** pottery and similar houses. The people who live in the Type Z villages and the Tswana peoples, especially the Rolong who have resided in the nearby territory north of the Vaal for several centuries, must thus have a close relationship.

James Denbow's new archaeological research in Botswana, the question of the Bantu expansion's devastating climate two millennia ago can be addressed. Because the cattle kraals and middens of these villages were covered in a particular grass (*Cenchrusciliaris*), which could be clearly distinguished, Denbow was able to find hundreds of Iron Age sites on aerial images **(James R Denbow 1981; James R Denbow and Wilmsen 1986)**. Two of the areas must be especially looked into: at Gaborone, generally considered to be a part of a stylistic tradition created by Bantu-speaking agriculturalists who had been living in the interior since the fifth century AD, Iron Age sites from the tenth and eleventh centuries in this area contain assemblages belonging to a widespread ceramic unit called Eiland **(Evers and Hammond-Tooke 1986)**. Since the 'Eiland people' have a long history of interacting with their dry environment, the environmental school suggests that their villages should be combined. The majority of the Eiland sites in the Gaborone region are scattered and about equal in size **(Caister 1982)**. Even the largest are not particularly remarkable; Moritsane **(James R Denbow 2016)**, one of the largest, has space for only fifteen to twenty houses **(James Raymond Denbow 1983)**, and a medium-sized cow byre (approximately fifty metres across). This settlement hierarchy points to a poor petty chiefdom degree of organisation at the ward head manor level.

The second sector, a hundred-kilometer triangle with Serowe at its heart, had more intricate settlement hierarchies. Denbow discovered four sizable Toutswe villages in this area that date from the tenth to the thirteenth century (as part of the Gokomere Tradition): Mmadipudi, Bosutswe, Shoshong, and Toutswemogala **(James Raymond Denbow 1983)**. These sites range in size from 48,000 to 70,000 square metres, making them five to seven times larger than Moritsane. The only five miles distance between Mmadipudi and Bosuts could be the consequence of capital shifts. Apart from that, these sizable towns are roughly 100 miles apart and serve as the hub of three distinct territories because they are encircled by numerous locations that are both twice as huge as Moritsane and many times as large. Around Toutswemogala, the most thoroughly surveyed area, Denbow discovered 145 small communities and 18 in the middle group within a 60-kilometer radius. To the south, in the Shoshong Hills, a similar settlement pyramid was discovered **(James R Denbow 2016)**. Given that the tiny and middle groups blend together, the large sites were most likely the capitals of comparatively strong petty chiefs, while the middle category most likely included the settlements of wealthy family heads and ward head men. It's possible that Toutswemogala, the biggest of these capitals, served as the home of a fourth level senior to the other two. Still, it is enough to mention that most of the settlements are small and scattered, much like in the Gaborone region. There was a sizable population in this area from the tenth to the twelfth century, according to excavations at one of these small sites that produced seventeen dwellings **(James R Denbow and Wilmsen 1986)**. Notably, the Ngwato capitals of Shoshong, Old Palapye, and Serowe were all located in this region, making it one of the most densely populated and concentrated settlement patterns in recorded history. Given the rational ramifications of the environmental hypothesis, it is even more detrimental to discover so many minor sites situated at the base of the settlement hierarchy in this area 800 years ago.

Upon closer inspection, the majority of 'pure' Ngwato dwelt in the main Ngwato towns, while most non-Ngwato subjects, like the Kalanga, resided in smaller, more dispersed communities **(Mackenzie 1871)**. This could lead one to infer that Sotho-Tswana people have a cultural preference for living in large settlements. The Eil and Toutswemogala instances from the eleventh century do not refute the second common theory because it is quite likely that Sotho-Tswana people did not live in these settlements.

Comparing the cultivated area makes it clear how village organisation and settlement pattern affect agricultural activity. While the nucleated settlement type in the Diobu area is accompanied by shrines, the scattered settlement in the Umu Ocham area of Aba Division is paralleled by the small blocks of cultivated land. Plantations, mostly made of oil palm, are a more modern invention as a result of European influence. Wasteland includes places with barren soils, steep hills, and swamps. It is evident that the majority of the classified land in each of the locations shown is farmland, with the majority of it being fallow. In Umu Ocham, the fallow season often lasts three years, but in eastern Diobu, it lasts six to seven years. Therefore, in any given year, only a small part of the farmed area is productive. The result of farming from several centres is exemplified by the uncertainty surrounding fallow and farmed land in Umu Ocham.

This confusion is exacerbated by the evolution of land ownership and inheritance-based fragmentation.

Settlement Pattern at East African Coast: The Case Study of Takwa

On the East African coast, there are around 116 sites from Mogadishu in North to Vumbakuu in the Kenya-Tanzania border. There are large number of hamlets, villages, towns and community settlements in this area. The major factors for the settlements in this area remain soil fertility in minerals, building materials, trade routes, safety, kinship, political allegiance influencing the settlement size and patterns in this area. T H Wilson did a spatial analysis of settlement patterns of this region. Both synchronic and diachronic stratigraphy and chronological controls are utlized to study the median size settlements of Swahili in this region. Wilson supposed that protection was the main factor for the emergence of the coastal Swahili settlements. The site of Takwa has remained one of the milestone study for the spatial analysis of settlements in this region.

Over time, the focus of Sato's study evolved from its original goal of examining the ecological consequences of human life to distribution and trade concerns. Despite being contained within the framework of ecological thinking, this gave rise to research patterns that identified a significant preference for socioeconomic theory over socio-ecological theory **(S. Sato 2001; T. Sato et al. 1999)**. The application of development plans and sedentarization policies, as well as the societal transformation they brought about, have been the subject of several studies since the 1980s. There was no sign of a bright future for nomads, and far less focus was placed on nomadic activities as the foundation of people's existence. Sun Xiaogang examined the ambitious practices initiated in recent years of communication between local communities, nation-states, and global cultures in regard to the sustainability of life, drawing on Sato's cumulative study on the Rendille **(Sun 2001)**. Sun discovered that right after the 1980 drought, there were more camels in the study region overall, and there were more camels per family. He made a strong case for the Rendille people's ability to bounce back from calamity and restore the herd. Between 1993 and 2003, there were four times as many cattle per home that could be turned into a monetary economy.

The unique fusion of the local and the global has also been clarified by socio-economic theories based on ecological anthropology. These theories also offer a framework for defining the skills necessary for pastoralists to survive in their communities while receiving humanitarian aid. In order to make the most of everyday items provided by humanitarian organisations for their refugee lifestyles, Konaka detailed the inventiveness with which internally displaced people from pastoral communities have incorporated those supplies into their local building techniques **(Konaka 2017)**. Sun studied the Rendille community, to whom the World Food Program of the United Nations provided food assistance every two weeks during a severe drought, discovering that, despite the fact that food distribution is limited to so-called "fragile households" that have been verified in accordance with international norms, the villagers gathered the whole amount of food that had been provided and divided it among all the households once the relief agency employees had departed **(Sun 2017)**. Maintaining social bonds in the face of ongoing food shortages and the unpredictable danger of natural disasters is critical to existence. As a result, the villagers were readjusting themselves to prevent an imbalance in the distribution of relief food from bringing down their collective life defence system.

The term "symbiosis" used by biologists describes the coexistence of two organisms that do not cause harm to one another. Livestock, which are domesticated animals, and pastoralists coexist in separate bodies but are integrated into a single system of interaction. Based on the naturalographic attitude, researchers analyse the connection between human subjectivity and this silhouette, preventing the "psychologization" of putting subjectivity into animals. They then focus on the core of relationships across human/animal borders and pose the pertinent practical question of whether the "preconceptions" of both livestock and pastoralists are acceptable for maintaining the connection. According to the naturalographic perspective, relational behaviour in the pastoral environment is driven by the "preconceptions" that pastoralists and cattle have about one another (Ohta 2017; Tani 2017).

Rural Settlements in South and Eastern Africa

The majority of agrarian scholars view Africa as an exceptional situation that defies standard classification. It is believed that three specific myths encapsulate these unique traits of African rural civilization. First, there is a reluctance to call people who live in rural areas "peasants." While the term is used to refer to small farmers in South and Southeast Asia, the peon of Latin America, the fellahin of the Middle East, and African tribesmen, cultivators, or husbandmen, it is exotically applied to Africans **(Allan 2004; Fallers 1961)**. It seems that discussing African peasantries goes beyond the conventional definition **(Shanin et al. 1971)**.

African peasant families are not so different from other peasant families to merit a unique word, any more than African states, nations, or linguistic groups are deserving of the term tribes. It has been demonstrated that the latter phrase lacks an objective definition because it is not regularly used to refer to a political, cultural, or territorial unit. Furthermore, the use of a subjective criterion in terms of one's own self-perception raises questions about the concept's modern and ideological roots when one considers how few words there are for it in many African languages. Similarly, the idealised belief that all of Africa was made up of tiny, independent groups devoid of social tension and exploitation, where the tribe owned the land and animals, is more a product of racial notions of the noble savage than it is of historical fact. It disregards every empire, state, chiefdom, and the growth of trade, political centralization, and roles in society that were unproductive that characterised them. However, even the societies that were not influenced by these trends were neither uniformly egalitarian (even though antagonistic relationships of production only characterised the division of labour between sexes or

age groups) nor "communal", where land was free or available to all but did not belong to the "tribe" and was worked individually. Furthermore, although South and Eastern African rural cultures formerly had unique structural characteristics, most notably the lack of landowners, these societies are no longer uniform and equal.

Approximately two million Kikuyu people live on the slopes of Mount Kenya and the Aberdares, north of present-day Nairobi. Due to lineage founders clearing land to construct an estate, they had colonised this area (*githaka*). The expanding family units within the lineage (*mbari*) would get land that is under the leadership of a leader selected to follow the founder, but it is not 'owned'. Some of those with less priority to land (younger sons, *athoni* [pl.], *ahoi* [pl.]) would be pushed out to found new *mbari* as the *mbari* grew to become more of a sub-clan through successive generations and other men marrying into it (*muthoni*) or asking for the use of land (*muhoi*). Rich soils and high altitude allowed for a type of smallholder farming that included the more or less permanent herding of goats and a small number of cattle in addition to the cultivation of bananas, millet, and various other crops. Nevertheless, this resulted in neither individual land claims nor any hierarchical superstructure other than a loose network of age-grades and councils that sliced across the *mbari* kinship network.

The Maasai people have been seen with a mixture of romanticism and irritation due to their semi-nomadic lifestyle of walking across a vast expanse of steppe between Kenya and Tanzania **(Davis 1971; Hedlund 1971; Jacobs 2018)**. They were mostly left to their own devices for both of these reasons, though this did not stop early settlers and subsequent farming neighbours from driving them off the more productive portion of their otherwise unproductive territory. Other than close relatives and localised clans, which were divided by an age-grade system, there was no formal class or state structure. However, the animals they relied solely on were privately owned, and not in an equitable manner either. The literature highlights the societal responsibility affluent men with herds—sometimes numbering in the thousands—have to support their families, their marriages, and the future of younger men with fewer cattle. It also mentions the custom of lending out livestock. However, these structures do represent, in essence, dependent, unequal relationships.

Conclusion

The question of origins would seem to be especially pertinent to research on the various connections between patterns of settlement development because all of the settlements that we currently live in have their roots in historical events. They are the outcome of choices made about where and with whom to live in order t o address two key problems: the most effective use of available environmental resources and the most beneficial arrangements for social life.

Molecular biology research suggests that our hominid lineage dates back around five million years **(Sibley and Ahlquist 1984)**. The earliest members must have been quite similar to the australopithecines that exist from less than a million years ago, even though definitive skeletal remains from this period have not yet been discovered. The variety known as *Australopithecus anamensis* is currently thought to be the oldest, having lived approximately four million years ago. However, much more is known about its likely descendent, *Australopithecus afarensis* **(M. Leakey, Ungar, and Walker**
1995). *A. afarensis* was a rather diminutive animal, with an average height of just over
one metre and a weight of roughly thirty kilogrammes. Its brain was only slightly bigger than that of current and ancient apes, a few cubic centimetres larger **(Lambert 1985)**. Probably in chimpanzee-like units, members of this species grouped together for protection to make up for their lack of any distinguishable physical characteristics. It seems that this behaviour was essential for survival. Although the primary functions of chimpanzee armies are protection and reproduction, it seems that *A. afarensis* may have also organised into groups for the purpose of sharing food **(Toth et al. 1993)**. If this is the case, sharing food would be the first act that is uniquely human and would go hand in hand with bipedalism—the first anatomical trait that is uniquely human which enables people to hunt across great distances and then transport food to a prearranged location to be shared with others.

This explanation sheds some light on the emergence of the australopithecines. A species that could have moved freely between the woods, woodlands, and more open environments that made up South and Eastern Africa five million years ago would have had a competitive edge over less mobile species. Specifically, band members could harvest what the open country had to give during the day and then seek refuge in the forests' greater security to eat with others and sleep at night, most likely in trees. However, bands limited their visits because a prolonged stay at any one location would have increased the chance of drawing in ferocious predators like hyenas and big cats.
However, some of the locations where people gathered over longer periods of time have been saved for the historical record. The gathering tendency at the core of human settlement experience is confirmed by these living floors.

Homo populations evolved to arrive around 2.5 million years ago, around the start of the Stone Age. Stone tools and their associated waste are the only way to differentiate the living floors of Homo habilis, the first exemplar, from those of *A. afarensis* and all subsequent australopithecines. Although raw materials for creating tools may have been stockpiled at preferred locations that were frequently visited, there is no evidence of any prolonged period of residency **(Potts 1984)**.

On the other hand, Homo erectus and later Homo sapiens are associated with evidence of longer-term habitation on living floors, which may be considered as transitory camps **(Klein 1992)**. The key event that most likely made this possible was the harnessing of fire at a location, Caves and rock shelters may be occupied thanks to fires, and in more open

territory, a nighttime fire could help ward off predators. Moving became necessary eventually due to the accumulation of wastes and seasonal variations in food availability, although staying in one location for several months at a time became possible. Eventually, as these camps developed, they turned into fully functional home bases where people went to socialise and meet partners or exchange knowledge **(Isaac 1978)**. Even if it was just temporary, everyone in the group could congregate there in comfort and with a modicum of protection. Population sizes for the living floors/camps appear to have been mostly between thirty and fifty, which is consistent with the overall numbers seen for the gatherer-hunter groups that have survived **(DeVore, Lee, and De Vore 1968)**. The comparisons from such survivors, the majority of camps would have included a variety of family groupings, maybe including siblings, with the precise makeup likely shifting regularly as a result of weddings, divorces, and individual preferences.

There was little variation in the habitat of African gatherer-hunters during a period of several million years. They remained concentrated in more open country with plenty of animals and a changing array of fruits, nuts, pods, and tubers to supplement the diet generated by the seasons. Denser woodlands and tropical rain forests may have been occupied to some extent 50,000 years ago, but such habitats were significantly less desirable than open terrain because to the relative scarcity of easily attainable plant and animal feeds. Selecting a specific location for a camp required weighing the advantages of being close to water, a resource that was always necessary, against the necessity for protection. The need for land access for foraging also meant that camps had to be kept far apart, unless they occurred during periods of greater abundance. Seldom did the ensuing population densities exceed one person per ten kilometres square.

The first truly notable changes in settlement happened at a number of riparian areas; the oldest known example is Wadi Kubbaniya in Upper Egypt, which is located immediately north of Aswan. Excavations have demonstrated the existence of a highly developed, all-encompassing mode of hunting, fishing, and gathering that could sustain a sizable population, possibly even year-round **(Harris and Hillman 2014)**. Due to the extreme aridity of the era, people living in and near the Sahara were gradually forced to the few surviving fruitful areas, such Wadi Kubbaniya.

For about 8000 years, there is no archaeology, but this more sedentary settlement pattern must have been spreading. It dates back around 10,000 years, and observations of it have been made at several locations along the Nile, in eastern Africa, across the Sahel, and along the southern edges of the Sahara desert **(S. K. McIntosh and R. J. McIntosh 1986; Sutton 1974)**. A pluvial period had commenced, resulting in an increase in the size and quantity of lakes, bogs, and rivers. For example, Lake Chad and the lakes of Nakuru and Elmenteita in the rift valley were much larger than they are now, and they also held far fresher water than they do now. In order to sustain expanding and more sedentary people, a variety of technological innovations—such as bone harpoons, hooks, grinding tools, basketry, and pottery—combined with an abundance of fish and other aquatic food supplies, including many roots and grasses. While the Kom Ombo complex in Aswan may contain the remnants of multiple permanent communities, Ishango on Lake Edward and Old Khartoum appear to have been inhabited for extended periods, at least seasonally **(Phillipson 2000)**.

These riparian-oriented societies quickly turned to agriculture along the Nile in Egypt; the earliest documented sites date to approximately 7000 years ago in the Fayum depression. There is little agreement that this complex originated in southern Asia, as evidenced by the crops that were grown nearby, which included barley, einkom wheat, chickpeas, lentils, and flax, in addition to caring for cattle, sheep, goats, and pigs. As shown by the fully sedentary farming villages at Merimde astride the Nile delta and at El Omari near present-day Cairo about 5500 years ago, its adoption only served to encourage pre-existing settlement inclinations. Many more settlements appeared in a few centuries, foreshadowing the Egypt of the Pharaohs **(Trigger et al. 1983)**.

Events in other parts of the continent progressed more slowly and unevenly. The climate had returned to a dry phase around 8000 years ago, but another wet phase that restored lakes, marshes, and streams occurred a thousand years later. Results from palaeobotany and historical linguistics indicate that crop domestication was occurring over a wide area, from the Ethiopian highlands to the upper reaches of the Niger River. The following were listed: ensete among vegetatively propagated species, sorghums, pearl or bulrush millet, African rice, fonio, eleusine, and teff among grains and yams **(Harlan 1971)**. Whether or not events had progressed to the point where it could be said that full-fledged agriculture was being practiced at this period would require more investigation. Still, it appears very obvious that somewhere in and around the Sahara a herding economy centred on cattle, sheep, and goats had developed. Rock art, animal bones, and cultural artefacts from the Khartoum region and the highlands of Dar Fur, Tibesti, Air, and Ahaggar provide the evidence **(Newman 2019)**. This kind of agrarian activity is not possible without the possible emergence of settlement pattern in these areas.

The pattern of desert, Sahel, and savanna because dry climate conditions reappeared about 5000 years ago. The pressure of a declining ecosystem caused nomads to start moving out of the Sahara. The earliest known farming sites and settlements in Africa south of the Sahara date from soon after this, though it cannot be concluded that their presence and the region's growing aridity were the direct causes. Dhar Tichitt, in what is now southern Mauritania, is the oldest known site of this kind. Originally, this settlement was made up of several fishing communities beside the lake. About 3500 years ago, the subsistence inventory was expanded to include domesticated cattle, and then pearl millet cultivation. Together with the production of crops and cattle, there was a rise in the number of communities and their migration from the lake basin to an adjacent escarpment. The surrounding stone walls imply that the site's modifications were motivated by defensive concerns, which were now focused on other people rather than on wild animals. Sedentary

inhabitants and encroaching nomads could have posed a threat. Around 2500 years ago, these nomads and the region's ongoing aridity put a stop to Dhar Tichitt's agricultural developments **(Munson 1976)**.

There is documentation of a quite comparable series of events close to Lake Chad. A mixed economy including fishing, hunting, gathering, herding, and cultivation—this time primarily of sorghums—was present at least 2500 years ago, according to excavations of earthen mounds along the western bank of the lake at Daima **(Connah 1981)**. Here, too, civilization had arranged itself into villages, with populations varying from 100 to 500, depending on where they were located. While the smaller ones were located on less fertile sandy soils and exhibit less permanency, the larger ones have been found on rather productive clay plains and appear to have been occupied for many years.

A third region stretches from central Ghana to neighbouring Ivory Coast and Togo along the border between tropical rain forest and savanna. It is known by the name Kintampo and is made up of a number of villages that are quite similar to modern ones, with the potential for housing reserved for artisans like potters and knappers. The largest site to be excavated to yet is more than 20,000 square metres, and the oldest dates back to about 3800 years ago. Although only cow-peas and dwarf (n'dama) cattle and goats have been positively recognised, yam farming may have been performed **(Andah, Anquandah, et al. 1988; Flight 1976)**

Because of this, the agricultural village appears to be a direct descendant of the living floors and camps of the Stone Age, with the main distinction being one of size due to the shift in sustenance from hunting, fishing, and gathering to cultivation. The alternate kind of settlement, which eventually extended throughout Africa, was the scattered homestead, which was made up of a number of homes inhabited by a man, his wife or wives, and the families of their married sons. The fields around the homestead, or just a short distance away. In many regions, the gap between the fields of individual homesteads was progressively filled in by population development; but, at first, uncultivated ground, whether virgin or undergoing some sort of regrowth, tended to keep homestead units apart.

It is likely that the exact dates, locations, and—more importantly—reasons for homesteads' initial popularity as a settlement type may never be fully known. However, one can present a tenable scenario to encourage additional research. It is composed of three interconnected elements: (1) livestock, particularly cattle, which play a significant role in the subsistence economy; (2) habitation of agricultural environments with relatively low potential and little internal variation in resources; and (3) adoption of a social structure based on patrilocal residence and patrilineal decent.

Starting with the role that cattle play is one way to get started. Wherever illnesses, particularly trypanosomiasis, posed little to no harm to livestock survival, livestock became crucial to the farm economy **(Chiripanhura, Katsamudanga, and Manasa 2022)**. On the other hand, opinions about how crucial cattle will eventually be to people's survival plans varied widely. Cattle raising, while widespread in western Africa at the time, was mostly a secondary occupation when compared to fishing and collecting, and then to crop production. Cattle owners undoubtedly benefited from having them, but farmers could get by quite fine without them. Furthermore, as the Fulbe (Fulani) demonstrate, caring for cattle frequently evolved into a specialised field of work **(Stenning 1957)**. Through the development of symbiotic exchange ties with herders, a number of farmers were able to obtain animal goods without actually being the owners. Rich farmers, on the other hand, might employ Fulbe or someone else to manage their cattle.

The environment in newly settled areas of Africa, cattle's role grew increasingly significant. Farmers frequently encountered naturally low fertility soils originating from the ancient Gondwanaland coastline shield as they spread over the continent's enormous interior plateaus. Moreover, a lot of these same regions had semi-arid to sub-humid temperatures, which made crop harvests extremely unpredictable. Occasionally, a severe drought causes harvests to fail entirely. In these conditions, cattle gave farmers a substantially wider range of possibilities for subsistence and hence settlement. Men herded, women cultivated. In addition to providing milk and meat for the diet, cattle also made it possible for networks of duty and reliance to be established through loan and marriage exchange. In fact, Herskovits (1930) and others recognised cattle as the real focal points of culture and society due to their importance in many African communities **(Herskovits, Cameron, and H. Smith 1931)**.

The Sudan and Sahel regions of western Africa shared much of the same soil and climate, but the opportunities for irrigation, especially along the Niger River and its tributaries and in the Lake Chad basin, lessened their effects. Moreover, compared to the soils on the interfluves, the corresponding lacustrine and alluvial soils had substantially higher natural fertility. Furthermore, early ruralized populations were primarily sustained by these relatively wealthy locations. However, in less favourable conditions, where cattle-keeping was significant and farmland was more homogeneous, communities were not the most practical type of settlement. This could have happened for at least two reasons: (1) the potential for rapidly depleting adjacent food sources, which would have required ever-longer treks to find new sources; and (2) the insufficiency of most watering sites to sustain frequent visits by large numbers of animals. Dispersed homesteads were the more ecologically conscious choice in such circumstances.

But there was still one more thing that had to be in place: a social structure that combined patrilocal residence with patrilineal decent and inheritance laws. This combination seems like an almost "natural" fit for economies centred around cattle, and in fact, patrilineality may have its roots in the early days of pastoralism, some 10,000 years ago **(L. Fleming,**

Mitchell, and Ribot 2019; Waller 2000). The new division of labour, which gave males, as the herders, the first truly important means of collecting wealth and its eventual conclusion, power, is a possible reason for this.

By giving cattle directly to sons, they were able to sway social ties in their favour **(Lander and Russell 2018)**. The male lineage had developed the ability to subjugate the female one; among farming peoples, this typically meant patrilineal ties taking precedence over bilateral or matrilineal decent systems. In turn, patrilocality was created by patrilineality, and this may have contributed to the establishment of scattered homesteads. It created a pool of mature men who could provide regular defence and labour demands, and these men all had a stake in the family's overall well-being. Men could therefore disperse across the terrain, yet sometimes close links to extended families ensured that the village hierarchy persisted.

On the other hand, in a matrilineality/matrilocality system, each man's primary allegiance was to his own matrilineage rather than to his wife, and the number of adult males in a household was determined by the marriage of its daughters. Villages solved the problem of adult male numbers by combining multiple matrilineages, but matrilocality would have made living in scattered homesteads a risky endeavour.
The Central Sudanic-speaking peoples in the broad forest and savanna country of the Central African Republic, southern Chad, and southwest Sudan are one promising place to look. Approximately 4,000 years ago, the riparian-style gatherer-hunter-fisher folk transitioned to an agricultural economy with cattle, leaving behind their proto-villages in favour of patrilineally/patrilocally organised homesteads **(Ehret 2008)**.

Luckily, there is a second, better-documented example—the Bantu. About 5000 years ago, their ancestors left their original homeland near the Cross River valley, which is now the border between Nigeria and Cameroon. They lived in matrilineal/matrilocal villages and survived by gathering, hunting, fishing, and cultivating yams **(Vansina 1990)**. This fundamental structure of settlement organisation was kept by those who travelled southward into the equatorial rain forest and later on across the enormous stretches of dry brachystegia (miombo) forests. In any case, trypanosomiasis and other livestock diseases were common in both ecosystems, so even if their ancestors had raised cattle at some point in the past, they would have been of little consequence.

Different socio-economic systems were formed by the Bantu who took more easterly routes. About 2500 years ago, they left behind severely forested and wooded land and joined the savannas of the interlacustrine region west of Lake Victoria, which were comparatively free of tsetse. Here, they came across other farmers who were most likely Central Sudanic in origin. A number of factors led to the dominance of Bantu identity, and migrations spread out east and south from this new centre **(Ehret 2008; R. A. Oliver and Fage 1962)**. Linguists have discovered the northern boundary of the Bantu family of languages, where this path is now readable. It may also be seen on maps showing the occupancy of areas that are based on satellite imagery. It shows up in Africapolis agglomeration dispersion.

Bantu languages are spoken in five states: the Democratic Republic of the Congo, Uganda, Kenya, Cameroon, and the Central African Republic. The hardest type of savannah is found in the south of the western portion, where grass replaces trees and nomadic agriculture replaces agro-pastoral farming. The first Bantu route's population reached 22.5 million in 2010, with 70% living in rural areas. The agro-itinerant logic is still strongly represented, with over seven million people living in metropolitan areas along the north-west Bantu route in 2010. Agglomerations have grown significantly, with Douala and Yaounde´ alone having over half the population.

Bantu peoples conquered forested space through north-south penetration, passing through Cameroon, Equatorial Guinea, Congo, and Angola, establishing settlements in southern savannahs and the Great Forest. In 2010, the population of central and eastern Africa reached nearly 30 million, with 54 agglomerations and a high rate of urbanization, compared to 21% in the 1960s and 24% in the Sahelian corridor. Bantu populations conquered Congolese basin rain-forest, reaching Great Lakes and austral savannahs.

Circumvention began 2nd millenary B.C., completed first centuries of Christian era. The north-eastern route of the Congolese forest, which connected Zambia and Angola, saw a significant increase in population from 2.2 million in 1960 to 9.7 million in 2020. The urban population reached 2.7 million, with Kananga and Mbuji-Mayi, the city of the diamond, being the main agglomerations. The agro-itinerante logic of the forested spaces reverts to agro-pastoral practices.

The migrants penetrated the types of plateau environments previously mentioned, with the exception of a few locations, particularly highland areas like the slopes of Mount Kenya and Kilimanjaro; however, cattle do not appear to have played a major role at this point. Cropping was augmented by hunting and, in certain cases, fishing, and antecedent matrilineal/matrilocal customs persisted. All of this started to alter around 1000 years ago with the start of the New Iron Age. A significant concomitant was the growing focus on cattle rearing, which brought about a transition to social structures based on patrilocality and patrilineality.

In other places, the situation remained favourable for villages. The communities first arose in areas of scattered homesteads throughout the eighteenth and nineteenth centuries, mostly in response to the necessity for protection. Undoubtedly, the presence of warriors and the extremely violent times contribute to the explanation of the enormous

Tswana and Zulu villages and kraals. Due to the ease with which anyone living on a homestead could be taken prisoner, the slave trade led to the construction of many stockaded villages throughout eastern and central Africa.

Two distinct traditions of studying prehistoric settlement patterns—one American and one English—are mentioned in literature. American archaeologists have not reached a consensus on the appropriate scope of investigations on settlement patterns or their possible significance in prehistory. From the time that valuable information was scarce for making sound sociological conclusions to the present, a sizable body of material is available to assist in offering at least a provisional reconstruction of important cultural processes in some areas. Perhaps even more importantly, archaeologists now have a solid conceptual framework within which to organise settlement data and serve as a foundation for fieldwork tactics targeted at supplying particular types of information to shed light on particular questions and issues. This is made possible by the introduction of the settlement system concept and its growing familiarity. The interest of historians and cultural geographers in the ethnic affiliation of ancient field systems and settlement types in the late nineteenth and early 20th centuries indirectly gave rise to the English tradition. Since Fox's work in the early 1930s, archaeology has been able to investigate settlement patterns. Historical source material and settlement pattern analysis have always been closely related. There has not been much fieldwork dedicated to addressing issues with settlement patterns.
The most comprehensive outcomes have been obtained at the settlement (community) level when small nucleated sites of brief occupation with easily distinguishable settlement and architectural unit boundaries have been subjected to rigorous sampling and advanced quantitative analysis before intensive excavation. In certain instances, there has been noteworthy progress in deducing the purpose of a room and indicating the location and arrangement of living quarters. For even basic mapping and sampling, more complex locations have needed geometrically larger time and financial investments. Regional research have mostly stayed in the early stages up until now. With a few notable exceptions, their primary goals have been to characterise the structure of regional settlements, identify problem areas, and produce theories that can guide future research.

An assessment of some of the most pressing issues and requirements facing settlement pattern archaeology now would be a fitting way to close this review. These can be divided into two primary categories: conceptual and methodological. The former is simpler and includes the associated issues of functional interpretation, sampling, revised chronology, and palaeoenvironmental construction. For many studies on settlement patterns, the sampling has been insufficient. Proper description and division of structures, settlements, and areas is essential for surface survey, surface pickup, test excavation, and large-scale excavation programmes. At that point, conclusions drawn from relationships and correlations between variables can be confidently made to be representative. The ability to measure the entire range of regional variation in several important variables, such as environmental and archaeological aspects, is a prerequisite for adequate sampling. This entails, among other things, reconstructing the availability, productivity, and distribution of essential resources for different historical eras, with the current state of affairs frequently providing a baseline from which to project historical data. Seldom is there sufficient information available, even for contemporary conditions.

It is clear that our current understanding of the chronological arrangement of archaeological features is limited. A settlement system can only be sufficiently defined by providing a convincing proof of contemporaneity amongst things, rooms, houses, and communities. Many important demographic phenomena can only be adequately examined by separating the generations. Maybe the most basic issue in settlement pattern archaeology is the ability to infer the function of artefacts and artefact classes of all kinds (e.g., tools, structures, and sites).The entire utility of the settlement system notion is based on this.

The conceptual requirements of settlement pattern archaeology are a result of anthropologists' general inability to create sufficient models from historical and ethnographic data that can be used to formulate new questions and problems, help structure the known archaeological record, and help design new research programmes intended to offer some fresh perspectives on these issues. Long ago, Willey and Vogt emphasised that tight interactions between archaeologists and ethnologists were necessary for studying settlement patterns in prehistory **(Gordon 1953; Evon Z Vogt 1956a)**. This common ground has been largely ignored since Chang's original efforts **(Chang 1958, 1962)**, despite some very significant contributions. Archaeologists need to more systematically incorporate studies like Skinner's study of market hierarchies and settlement distribution in traditional China and Chagnon's analysis of the relationship between Yanomamo warfare patterns and settlement size and distribution into their research on settlement patterns **(Chagnon 1968; Skinner 1964)**. Finding gaps in the archaeological record of the settlement site in the same area was made possible by Campbell's ethnographic reconstruction of a typical Eskimo settlement system **(John Campbell 1815)**. One of the study's greatest advantages is that it focuses on a straightforward system that is so current that living people can serve as valuable informants. While most other scenarios will present much more challenging issues, Campbell's work offers a useful example of one type of ethnographic and archaeological data integration that has a lot of potential for settlement pattern archaeology in South and Eastern Africa.

The first evidence of human settlement in South and Eastern Africa dates back to the Early Palaeolithic Period, when people first began to live in rift valleys. seaside locations, hilltops, and cave communities. Other seasonal villages that humans may have resided in for three to six months began to appear with the Mesolithic Pattern. Pastoralism increased, mobility was restricted, and locations where seasonal settlement may have occurred were noted. Even if the areas of the

settlement pattern stayed the same, settlement in South-Eastern Africa dates back to the Late Stone Age or Mesolithic Period. It is also possible to suggest that the introduction of particular crops, such as sorghums, and the Neolithic settlement pattern began about 7,000 BC. As we descend farther into antiquity, about 5000 BC, a number of sites appear in Egypt as well as other regions of South and Eastern Africa. The patterns of site settlement point to a more sedentary way of life for the populace.

From 4000 BC onwards, a significant number of smaller village settlements can be observed emerging as we approach the pre-Dynastic period. Large-scale constructions such as pyramidal structures, temples, and locations of gods and goddesses with careful planning may be identified from the archaeological records that are available to us throughout the Pharaoh dynasty. The formation of Pyramidal villages itself suggests that the architecture of the Pyramids took many years to evolve. Massive constructions favoured by the kings and queens of the Pharaoian dynasty emerged as a result of careful planning, the selection of land and locations, river resources, and areas of surplus productivity. In order to illustrate the pinnacle of architectural settlement in South and Eastern Africa, the Pyramids of Giza are examined in depth.

The Bantu villages provide evidence for the movement of people throughout the continent of Africa. The Bantus' migratory habits demonstrate that they were continuously on the move, carrying with them their unique language and culture. When they stayed for an extended length of time, they had a normal habitational size. This also implies the pattern of clan settlement across Africa. Due to their own migration from one region of Africa to another, the Sotho clan group is similarly significant. They had their own clan and set of cultural values, and they moved continuously as a society. The employment of non-stone implements for pastoralism and horticulture by the Sothos is fascinating. While it is evident that their primary source of sustenance was pastoralism, they also engaged in some form of shifting cultivation wherever they established themselves.

The massive early pyramids were built by the use of a national and interregional network, which eventually turned into the goal in and of itself rather than the means. Following the Fourth Dynasty of Giza, pyramids began to shrink and adopt more conventional shapes. As a result, the state, which was now bureaucratized and extended beyond the members of the royal family, made greater investments in the network and its potential to benefit the Egyptian people.

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