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AN ANTHROPOLOGICAL ANALYSIS OF ANCIENT, HISTORIC, AND
MODERN ANATOLIAN CITIES

by

GENEVIEVE STOURME HALL

A thesis submitted in partial fulfilment of the requirements
for Honors in Research
in the College of Sciences
and in the Burnett Honors College
at the University of Central Florida
Orlando, Florida

Spring Term, 2021

Thesis Chair: Scott Branting, Ph.D.

ABSTRACT

This thesis proposes a model for the comparison of cities as settlement patterns, based primarily on the works of Monica Smith, Michael E. Smith, and V. Gordon Childe. The Tripart Stage-Based Model proposed here examines city proportions, internal specialization, and external specialization, as well as variables within each characteristic. It is intended for use in both the individual study of a settlement's form and function as well as comparative analysis. The Tripart Stage-Based Model operationalizes Monica Smith's triaxial model and creates a progression of analysis beginning with the form of the city before moving through its individual and larger context. This thesis uses the case studies of Kerkenes, Byzantine Constantinople, and Ankara to examine cross-temporal differences in settlement patterns in Anatolia to test the model's utility in comparative analysis. The thesis finds increasing proportions and external specialization in cities across periods and significant variation in potential evidence for analysis. This thesis provides a foundational exploration of the Tripart Stage-Based Model's use in cross-temporal analysis and calls for further application and study into the geographic and cultural variation between cities as settlement patterns in future research.

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CHAPTER ONE: INTRODUCTION

This thesis's primary focus is to create a model that integrates various data sources to interpret settlements across time and space. It focuses on interdisciplinary research on what cities are and how they function and develops a functional model for the temporal analysis of cities, focusing primarily on the Iron Age city of Kerkenes, Byzantine Constantinople, and modern Ankara. Using a stage-based model developed from Monica Smith's triaxial model, this thesis also examines potentially meaningful quantitative and qualitative differences in cities' proportions, internal specialization, and external specialization. While used in this research as a cross-temporal comparative rubric, the model is intended to be used to analyze cities across both time and cultural boundaries.

This research not only aids archaeological research into past cities but also brings together an interdisciplinary understanding of how to look at cities moving forward. Anthropology, urban studies, history, economics, engineering, sociology, and mathematics all grapple with the fundamental aspects of cities explored in this research. While this thesis creates a model useful in identifying cities in an archaeological context, its exploration may help illuminate modern functions and material outputs. The United Nations Department of Economic and Social Affairs reports that 68% of the world's population is expected to live in urban areas by 2050 (United Nations 2018). Therefore, understanding what cities are and how they function is not just crucial for understanding how people have lived in the past but can help inform how cities are conceptualized and designed in the future.

Using a model-based approach to conceptualizing cities allows researchers to approach urbanization from a perspective of finding commonality and differences across settlements.

Instead of only examining a city individually, through the lens of specific and unique cultures, histories, and functions, using a model, while simplifying, shows how they fit into a larger whole as a part of human habitation and cultural patterns. This research in particular examines cross-temporal similarities and differences, providing a perspective of how cities and people have changed, and how they have stayed the same.

This research focuses on the Iron Age city of Kerkenes, Byzantine Constantinople, and modern Ankara for a few reasons. While this thesis aims to provide a method for comparing cities across time and space, it limits significant variables that may confuse the foundational framework of the creation of its analytical model. For these reasons, all three cities chosen are capital cities limited geographically to Anatolia, comprised of modern-day Turkey. In this way, this research may more closely examine the model's functionality in cross-temporal analysis, leaving future work to explore the potential for geographic considerations and disparate cultural histories. Examining three capital cities also limits potential differences in the settlements' internal and external specialization, allowing for the close focus on time as an important factor in the difference between cities as a settlement pattern, rather than overarching function. Later research can and should broaden its scope to include cities with various political, social, economic, and cultural functions. While recognizing the intense debate regarding the qualifications of certain settlements as cities (i.e., M. E. Smith 2011; Smith 2006; McIntosh and McIntosh 1993, 2003), this research also focuses on settlements where there is little question to if they are cities, instead laying a foundation for its model from a place of confidence and allowing further research to expand analytical considerations.

Kerkenes, the largest known pre-Hellenistic settlement in Anatolia (Summers and Summers 1994:3), provides a unique perspective to analyze the Tripart Stage-Based Model

introduced in Chapter Three from an archaeological perspective. Limited in historical records to its potential association with Herodotus' account of the ancient city of Pteria and the limited recovery of Phrygian inscriptions (Herodotus 1:76; Summers 1997; Tuplin 2004; Brixhe and Summers 2006), analysis of the settlement turns instead to ethnographic and archaeological interpretations. Kerkenes was inhabited between 50 to 100 years prior to its burning and abandonment, and resistivity and magnetic survey have provided incredibly clear data of the city's urban plan and buildings (Summers et al. 1996:206-7; Summers and Branting 2004:7; Summers 2006a). Extensive and continual remote sensing surveys of Kerkenes across the city's entirety and ongoing excavation work (Branting 2019) has led to a city that provides both a significant amount of data that is open to interpretation, as well as questions that still require exploring. In this way, using Kerkenes for this research not only allows for the examination of ancient cities in relation to their more recent counterparts, but it also allows for the exploration of the interpretations one may make relating to a settlement with incomplete or limited data.

Byzantine Constantinople is an undeniably massive Medieval city (Harris 2017), with extensive research into its many centuries of inhabitation before and after the Middle Byzantine period. The combination of both primary written documents, which outline the city's legal and economic practices (Mango 2000) and its surviving monumental architecture, such as the Hagia Sophia (Ousterhout 2019; Bjork 2010), present a unique case open to scholarly interpretation. Unlike Kerkenes, with its relatively undisturbed and limited habitation period, Constantinople represents thousands of years of habitation and a more complex record of its inhabitant's behavior. In the context of this thesis, Constantinople serves the purpose of demonstrating the model's utility from both an archaeological and historical perspective, as well as the massive time scale cities have the potential to represent.

The modern city of Ankara provides an exciting exploration of a modern planned city (Kacar 2010; Batuman 2012; Günay 2012) with the benefits of modern statistical and political analysis, as well as recent historical records (World Bank 2015; Türkiye İstatistik Kurumu 2020, 2021; Stockholm International Water Institute 2012). Like Constantinople, Ankara has been inhabited for centuries, and at its height in the ancient world, it housed 100,000 people (Duygu 2010:44), and today is home to millions (Batuman 2012; Türkiye İstatistik Kurumu 2021). Its long history also provides some context to its urban and cultural context in modern times (Kacar 2010:47-8); however, like Kerkenes, its modern incarnation, with its planned urban layout and administration, has only existed for around one century (Duyug 2010; Batuman 2012; Kacar 2010). This distinction bridges the divide in time scales between Kerkenes and Constantinople while also providing a new avenue of evidence to consider in researching a city's characteristics.

But how do researchers and the common person define a city? With a quick web-search, Merriam-Webster defines a city as “an inhabited place of greater size, population, or importance than a town or village.” Turning to urban studies, Wirth (1938) proposes a similar definition, defining cities as large, dense, and permanent settlements comprised of socially heterogeneous individuals. Sjoberg (1965) follows similar considerations, adding on the qualifications of a literate elite and non-agricultural specialists. Childe (1950) proposes a rubric of internal characteristics, expanding even further beyond proportions to include the sciences, art, writing, trade, taxes, and monumentality. Trigger (1972) takes a functional approach, defining a city as a settlement with a specialized function in relation to its hinterland and Blanton (1976) proposes that in societies with a range of hierarchy, cities are the settlements at the top of such hierarchies. Smith (2002) proposes a further qualification for cityhood, arguing that they only exist in state-level societies, an argument very much up for debate (Smith 2006:105).

As seen above, definitions commonly highlight a city's proportions, looking at size and population, although they may include additional characteristics, such as importance and heterogeneity. Other approaches focus less on the physical aspects of a city and more so on what they do. It is also worth emphasizing that the distinctions these definitions draw between settlements will always be arbitrary and vary between societies (Blanton 1976:253). The United Nations (2018) points out another area of ambiguity in the definition of cities, stating that there is no international standardized criteria for determining a city's boundaries. Keeping in mind the arbitrary distinctions embedded in these definitions, the wide range of approaches, and the ongoing debates regarding the necessity of specific characteristics, this thesis provides its own definition, discussed in depth in Chapter Three, incorporating valuable aspects of these types of definitions, distilling out what it considers essential elements.

Conceptions of what cities' functions are as a topic for research and debate in urban studies spans decades. Mumford's (1937) discussion of the city as a "theater of social action" and Childe's (1950) list of ten, to the more recent Smith and Lobos (2019) discussion of political and economic city types and energized crowding, emphasize the social aspect of cities in relation to their physical presence, or their functionality in relation to their form. Another significant area of debate is found in theoretical conceptions and disagreements over the differences between pre-industrial and industrial cities, as can be seen by publications like Sjoberg (1955) and Wheatley (1963). These debates inspire one of the leading questions of this research: what, if any, are the major similarities and differences between cities across time? Lynch (1960) highlighted the importance of visibility, legibility, and perception in a city, and Wheatley (1972) provided a literature review of urbanism, covering ideal types, ecological approaches, trait complexes, centers of dominance, and expedient approaches. Across these publications, a significant

difficulty confronting researchers is cross-cultural comparisons, and agreement in temporal differences, leading this thesis to examine more closely Monica L. Smith's 2006 publication, "The Archaeology of South Asian Cities."

Using Monica Smith's (2006) triaxial model, which interprets quantitative criteria, internal specialization, and external specialization as elements that must all be present in cities, the Tripart Stage-Based Model proposed in this research builds on the considerations of settlement proportions and functions while altering the conceptual approach and operationalizing key variables worth considering as subsections of her proposed characteristics. The Tripart Stage-Based Model proposes a structure of increasing complexity in its analysis, beginning with proportional data, which requires a significantly less detailed understanding than the internal functions of a settlement, which in turn requires a less complex understanding than the settlement's context within its broader geopolitical landscape. In this way, the newly proposed model allows for comparisons between cities relative to specific overarching characteristics and provides a methodology of analysis that builds with increasing complexity on scholarly understandings of specific settlements.

Looking at an archaeological settlement, such as Kerkenes, provides unique challenges to interpretations compared to research into the Byzantine city of Constantinople and the modern city of Ankara. The presence of written records, well-preserved material culture, and ethnographic data provide vital sources of information in proportions unique to every settlement one may come across. For example, whether the settlement's culture includes written language, the inhabitants survive or have cultural descendants, or taphonomic processes have contributed to preserving material culture and resources all represent variables that affect the types and amount of data any researcher can access or expect.

While researchers connect Kerkenes to the city Pteria described by Herodotus (Herodotus 1:76; Summers 1997; Tuplin 2004) and some Phrygian inscriptions have been found (Brixhe and Summers 2006; Summers 2006b), the primary source of data regarding its proportions, internal specialization, and external specialization has come from years of archaeological research (Branting et al. In Review). Years of geophysical and aerial surveys have produced an urban plan, with excavations giving some sense to the use of resources, technology, agriculture, trade, and cultural context, but with more left to be understood by further decades of research yet to come. In comparison, the modern city of Ankara can not only provide useful data through physical observations of both its physical and cultural attributes by anyone alive today, but it also benefits from both written records from the past and present for all future research to come. Constantinople provides both archaeological and historical data for interpretation, bridging two important sources of information.

Despite these differences in data sets and amounts of data available, the Tripart Stage-Based Model proposed by this thesis works to integrate what is available. Whether buildings are still standing, still in use, or toppled, burned, and buried, there is always something to learn and know. For any settlement, any stage may have inadequate data to allow for comfortable analysis; however, when combined and each stage considered, useful analyses may be performed regarding a settlement's character in relation both to itself and other settlements.

Chapter Two of this thesis provides a more detailed introduction and overview of the three settlements under consideration, including their histories as well as relevant research into their functions and forms. From there, Chapter Three lays out the anthropological context of the Tripart Stage-Based Model and its scholarly foundations. In addition, Chapter Three operationalizes the Tripart Stage-Based Model, with an overview of specific variables relating to

the characteristics of proportions, internal specialization, and external specialization. Chapter Four contextualizes the information contained in Chapter Two concerning the variables described in Chapter Three. In addition to the literature review on each of the settlements within Chapters Two and Four, this thesis also contains new research and data analysis, proposing a population estimate for Kerkenes based on recent electric resistivity data and digitization of the city's urban plan.

CHAPTER TWO: CITY BACKGROUNDS

Introduction

Chapter Two introduces the three case study cities examined by this thesis: Kerkenes, Constantinople, and Ankara. Each overview provides a brief introduction to the cities, examining factors such as their political histories, cultural backgrounds, and economic functions. This information, combined with the Tripart Stage-Based Model introduced in Chapter Three, provides the foundation for the analytical portion of this thesis, regarding how to compare and conceptualize cities as settlement patterns.

Kerkenes Overview

In Central Turkey, the 7th and 6th century BCE Iron Age city of Kerkenes was first archaeologically investigated in the late 1920s by the University of Chicago and re-examined beginning in 1993 and continuing to the present day (Schmidt 1929:221; Branting 2019). Since then, new excavations and geophysical surveys have continued to expand and revolutionize the modern understandings of Kerkenes and research methodologies for studying ancient civilizations, particularly through the early adoption of extensive geophysical techniques and experimentation with newly developing technologies, such as 3-D scanning (Branting 2005:3; Branting 2015:101-2; Branting 2019:88-9). Extensive modern research into the urban layout, use of GIS modeling, and research into the settlement's social, political, and cultural nature demonstrates its historical significance and attempts to illuminate the "history and the social interactions" of Kerkenes (Branting et al. In Review).

The settlement of Kerkenes, Anatolia's largest known pre-Hellenistic city, was likely inhabited between 50 to 100 years before being abandoned, burned, and looted (Summers and Summers 1994:3; Summers 2000:60; Summers 2006a:168-9). Archaeologists have associated the settlement with the ancient city of Pteria and its destruction with the Battle of Pteria between Cyrus the Great of Persia and Croesus, King of Lydia, as described by Herodotus (Przeworski 1929; Summers 1997; Tuplin 2004). Croesus reportedly took over the city and enslaved the population, prompting Cyrus the Great into action. The Kerkenes Dağ Project, beginning in 1993, during the early phase of the modern research project, postulated the cities' potential Median origins (Summers and Summers 1994:4). However, the project has since found significant evidence of Phrygian material culture, including statuary, imagery, inscriptions, architecture, and ceramics associated with the settlement, indicating the city's Phrygian connections (Summers and Summers 2003:6-7; Summers 2006a:169-70; Summers 2006b).

Aerial and geophysical surveys have provided extensive data regarding the settlement's proportions. The site covers 271 hectares and is blanketed in urban blocks (Branting 2004:47-8). Electrical resistivity survey and geomagnetic survey data complement each other to provide a clearer image of the settlement's scale and layout. Summers and Summers (2006) use multiple population estimation methods, with estimations ranging from 18,500 to 62,500 people, based on heads per household, heads per 10 m² roof space, and 250 people per hectare models. The authors settle on an estimate of 92 people per hectare and a population of 23,000 people. This figure is derived from an "intuitive guess" of a maximum of 30 individuals per block, rather than six individuals per household or one individual per 10 m² roofed space, which provide a lower and significantly higher estimate, respectively.

Data regarding the internal specialization of Kerkenes is extensive. A significant built environment, a standard variable in this overarching characteristic of cities, has frequently been examined through monumental structures. Osborne and Summers (2014) define a monument as "traditionally understood as a sculpture or building that is large, commemorative, and characterized by longevity" and explores the importance of visibility in relation to a target audience by examining monumental gateways, steles, sculptures, and stone idols. The settlement of Kerkenes features a 7km long defensive wall, as well as seven gates, fortifications, a water collection and distribution system, a Palatial Complex, and walled urban compounds, which suggest centralized urban planning (Summers and Summers 1994). For example, the only excavated gateway, the southeast Cappadocia Gate, has undergone restoration efforts for its 4-meter-high glacis and freestanding walls, and contains five towers, three rooms, semi iconic stele, and large ceremonial stone pavement (Branting 2012:96).

A standard building type at Kerkenes includes two-roomed buildings, with pitched roofs and wide central doorways. Summers (2006) assumes that most buildings were houses, with a few much larger structures, such as the Audience Hall in the Palatial Complex. The author also draws parallels to the city of Gordion and highlights the western, Phrygian characteristics of the architecture of Kerkenes.

Control over labor can be seen in Kerkenes through evidence of centralized planning in the site in the layout of urban blocks and streets, the water management system, and the city wall. Complex political and social structures are also evident in the impressive Palatial Complex (Branting et al. In Review:11). Osborne and Summers (2014) postulate the Monumental Entrance to the Palatial Complex was likely used only by elites and calls for further research into the city's social use of spaces. The author's visibility analysis also further supports the

interpretation of Kerkenes as a city with centralized planning and construction efforts due to the methods of integration of monuments, the use of symmetry, and the monumentality of construction in a single period city. Their isovist and visibility graph analysis of the Cappadocia Gate indicates the use of specific visual properties in the positioning of its three internal monuments.

Early excavations provided evidence of crafts at Kerkenes, such as metalwork, decorated pottery, and glass associated with pre-Classical civilizations (Schmidt 1929). Artistic elements and reliefs from the Iron Age settlement also point to craft specialization and surplus resources. Kerkenes ceramics fall between the periods of the Alişar IV painted tradition and Achaemenid shapes (Draycott et al. 2008:3). Larger constructions, such as the fortifications and walls, were made almost entirely of uncut granite, with the occasional use of sandstone and wood. The granite would have been levered into position from natural outcrops, and stones requiring the use of three to four people were used below shoulder height. Laborers likely used levers and ropes to lower larger stone from above (Summers 2006a:173). Further evidence of specialized labor and tool technology in Kerkenes is evident in the use of clamps in construction and the potential use of carpentry techniques in decorative stone blocks (Summers 2006a:178).

In terms of resources, Kerkenes' walls encompass a sophisticated water collection and distribution system. The city is well located in terms of water access due to surface and subsurface water collected in artificial reservoirs, and Atalan (2006) proposes the city walls serve the purpose of not only providing defense but also allowing for urban water collection.

Archaeobotanical analysis of plant remains at STT5 in Kerkenes has found evidence of primarily free-threshing *Triticum durum/aestivum* grains. Other grains found include a small amount of *T. dicoccum* and *Hordeum vulgare* ssp. *distichum*. Branting and Smith (2014) propose

that they were fully threshed and awaiting further cleaning and processing into flour, given the grains' size. At the Palatial Complex, *Cornus mas L.*, or the Cornelian cherry, endocarps have been recovered, as well as a single *Cerasus cf. avium*, or wild/sweet cherry, endocarp. The former is commonly grown as an ornamental shrub, producing harsh acidic fruit; however, it has been known to be processed into jams and drinks. The authors propose, given the city's location, it may have been sourced with relative ease locally (Branting and Smith 2014:46-9). Marston and Branting (2016) also indicate cereals would have been the primary crop at Kerkenes, outnumbering pulse remains 87 to 1, with bread wheat being the most common of all. Despite limited faunal evidence, the authors also point to the importance of herded animals at Kerkenes, citing iconographic depictions of sheep and goats, evidence of the cultivation of fodder crops, and ethnographic accounts regarding the value of herds in textile production and risk buffering. Based on this evidence, Marston and Branting (2016) propose that agriculture at Kerkenes focused on producing bread wheat and animal fodder, having enough water to produce the cold-tolerant wheat in a short growing season.

Research into the ritual and cultural elements of the city has also taken place. The Cappadocia Gate houses three large cultic sculptures. They include an anthropomorphic Phrygian idol, a granite stele worn smooth on top, possibly from repeated touch, and a large stone plinth, carved with a pair of crouching sphinxes, as the base of what is possibly a smashed life-sized statue of a female figure bearing a resemblance to the Phrygian goddess Matar (Summers 2006b:652; Osborne and Summers 2014:294). The authors propose it may have stood to symbolically protect the city, although they hesitate to comment on other imagery due to limited understanding surrounding Phrygian religion. Another example of potential religious statuary includes the statue of the draped figure, found next to the south platform in the

Monumental Entrance, and proposed to represent a powerful male figure, as possibly a ruler or god (Draycott et al. 2008:11).

In terms of external specialization, Kerkenes provides some key material evidence. Anderson (1903) and Branting (1996) point out Kerkenes' position as the junction of six significant roads and highlight control this would give over the local landscape and passers-through. Kerkenes' location on the mountain and distance from the more fertile fields in the surrounding valleys have led Summers et al. (1995) and Branting (1996) to suggest the city may have relied upon surrounding Iron Age settlements to support its urban population. Summers (2000) argues the position of Kerkenes allows the city to overlook these key routes between the Mediterranean and the Black Sea, explaining its establishment as an Iron Age capital. Summers (2006), looking to the large yellow sandstone and white limestone blocks used in Kerkenes' Palatial Complex, claims these resources would have been sourced from considerable distances away, at a minimum of 5km. Kealhofer et al. (2010) provide evidence, through the neutron activation analysis of Kerkenes ceramics, of possible non-local origins, indicating potential non-local providers of goods to the settlement. Analysis of metal objects, such as copper in the city, has also pointed to non-local sources from the Pontus and Taurus mountains and technologies found in regions far away from Kerkenes (Lehner 2015; Branting et al. 2019).

The city of Kerkenes, despite limited written texts, demonstrates a wealth of characteristics of a city. From its large size, monumental works, and resource gathering and distribution systems, Kerkenes demonstrates clear evidence of large proportions, internal specialization, and external specialization. But can Kerkenes be defined as a city in the modern sense?

Medieval Constantinople Overview

While today known as Istanbul, Medieval Constantinople undeniably represents a large and complex city. Re-founded by Emperor Constantine in the 4th century CE, the city expanded dramatically in Late Antiquity and entered the Middle Ages a mix of Roman and Hellenistic urban planning. Home to spectacular monuments, fortifications, and urban districts, Constantinople represents an amalgamation of both time and history (Ousterhout 1996:37). Bogdanović (2016) argues Constantinople served as a “new prototype of the medieval capital city.” Under the Byzantines, the capital was called The City, a name which was expanded to refer to the entire empire (Bogdanović 2016:100). Primarily documented by historians, Constantinople has only recently undergone more extensive archaeological investigation. Large scale excavations, beginning in the 1960s, have helped reveal settlement patterns, monumental architecture, and material culture (Bjork 2010).

The remarkable size and wealth of Byzantine Constantinople emphasize both its historical significance as well as its complexity. Geographically, Constantinople was strategically located in the empire, with proximity to three continents for political, economic and commercial exchange (Bogdanović 2016:102). Johnathan Harris (2017) provides a look into the 12th century, stating the area enclosed by Constantinople's walls encompassed almost 30,000 hectares, and current estimates put the population within them at around 370,000 people, larger than any other contemporary Christian city. The city's first walls used the rocky outcrop of the peninsula, and were replaced in the fourth century, and eventually encircled the city by the fifth century (Bogdanović 2016:102). The Long Walls of Thrace, built in the sixth century, contained towers, gates, forts, and encircled an elaborate water supply system and agricultural area, forming a “garden city” with an urban core. The city was also protected with sea walls and

protective harbors. From the sea, one could see the cityscape with aristocratic houses, church domes, honorific architecture, and monumental columns (Bogdanović 2016:109-11). Only Rome and Baghdad were claimed to be comparable in their size to Constantinople, through a 1430 account from Bertrandon de la Broquihre and an 1161-2 account from Benjamin of Tudela (Ousterhout 1996:36). An account from King Sigurd I Magnusson of Norway's travels describes Constantinople as a city of great wealth and wonder, with gifts of gold, silver, and precious cloth gifts for his royal procession (Harris 2017:1). The city's suburbs contained thousands of private residences and shops, as well as several open spaces, including open-air cisterns and market gardens (Bjork 2010). The city's large population and architectural achievements was in part supported by its hinterland, such as the monastic centers in Bithynia (Osterhout 2019).

Harris (2017) points out the significant iconography and imprint of political life on medieval Constantinople's urban landscape. For example, statues of past emperors, such as Constantine and Justinian dotted the landscape in churches and other public place. These political figures tended to be associated with divine or religious authority. For example, all emperors and empresses tended to be depicted with halos, and on coins, the emperors were sometimes shown being blessed by Jesus Christ or the Virgin Mary. These depictions denoted the sanctity of political office. Beginning with the rein of Constantine in the 4th century, the concept of God desiring all Christians to be ruled by one Christian ruler was established, setting the framework for later Byzantine thought. The emperor was seen to be appointed by God as His representative on earth, with rightful authority over the Christian world. Major reminders of the emperors' political power were manifested in political buildings. By 1200, the emperor had two palaces in Constantinople, the Great Palace and the Palace of Blachernae. The Great Palace covered 5 square kilometers and was the older of the two palace complexes. It included the

Brazen Gate, the Boukoleon, the Porphyra, and the Dekanneakoubita (Harris 2017). The Great Palace, the Hippodrome, and the Hagia Sophia were maintained at the heart of Constantinople; however, by the 12th century, the primary imperial residence shifted to the northern corner of the city and the Blachernae Palace (Ousterhout 2019).

Medieval Constantinople, in terms of internal specialization and urban organization was incredibly complex. The City contained 14 administrative regions, with monumental architecture and dominant churches connected to its greater political authority (Bogdanović 2016:114). There is some difficulty in ascertaining Constantinople's exact street layout, with researches needing to check against surviving structures such as city walls, churches, aqueducts, and cisterns to deduce possible street system layouts (Berger 2000:161). The urban layout of Constantinople and its districts were heavily regulated and tied to its economic activity (Mango 2000, Michael 1964). Middle Byzantium Constantinople included privately financed public buildings, such as hospitals, orphanages, warehouses, docks, and baths, most frequently made from wood and not stone (Ousterhout 2019).

The foundations for Constantinople's control over water were laid in the early Byzantine period. The first phase of Early Byzantine aqueducts totaled 268 km, and in the second phase 451 km. They discharged into reservoir cisterns. By the 12th century, the city was unable to maintain the long-distance Thrace aqueducts, turning instead to sources which fed the Hadrianic aqueduct, leading to the city receiving less water (Wilson 2012:5-6). Early Medieval Constantinople also dealt in state-supplied food, which may have included oil, wine, dried goods, and lard. Much of its food was imported by sea, through its four harbors (Mango 200:190, 192).

Despite undergoing an economic recession during the "Dark Age," primarily in the eighth century, Constantinople would recover by the 10th century and flourish with commercial

activity, demonstrating both internal and external specialization (Mango 2000). The city controlled the entire economy through strict regulations. Constantinople strictly regulated and arranged manufacturing, marketing and guilds, dictating the location of shops, markets and sales centers. The city also regulated against living and working in the same place. For example, a jeweler could not work in the same place they lived. There were specific areas for skilled craft centers and workshops; for example, silk traders had particular areas for their shops and dwellings (Michael 1964:252). The *Book of the Prefect*, a 912 CE legal document, provides a look into Constantinople's private commerce guilds, regulations over 22 types of guild activity, as well as geographic and architectural regulations. Documentation of food markets in the *Book of the Prefect*, for example, lists specific locations where livestock, fish, and spices were sold, in comparison to the more spread out grocers and bakers (Leo 912; Mango 2000). Leo of Synnada in Pylae describes livestock, such as sheep, pigs, oxen, asses, and horses being imported to the city by ship (Leo 937), and the *Book of the Prefect* describes fishmongers acquiring fish from the local sea beaches and boats (Leo 912; Mango 2000). By 1200, Venetian ships imported and supplied much of Constantinople's food supply (Harris 2017). The *Book of the Prefect* also references specific craftspeople, such as metal workers, soap, and saddle makers within the city, while the *Miracles of St. Photeine*, another middle Byzantine text, describes glass and copper working establishments (Leo 912; Talbot 1994; Mango 2000). The *Book of the Prefect* also outlines two key commercial districts, with food markets to the north at the Strategion and west at the Theodosian and Amastriana fora, and an inner band of luxury markets in the Forum of Constantine, and along the Mese and Portico of Achilles (Leo 912; Mango 2000).

Medieval Constantinople served not only as a massive political and economic center but also as a location of religious significance. When it became the capital of the Christian Roman

Empire, Constantinople came to be known as a sacred capital city, with some sources referring to it as the New Jerusalem (Bogdanović 2016:99-100). The capital was home to an unrivaled collection of Christian relics (mortal remains or items closely associated with saints or holy people), and by 1200 CE 3,600 body parts representing 476 different saints were kept in the city (Harris 2017:6). These items of significance included what was believed to be the Crown of Thorns, shown only to high ranking visitors, and the *Maphorion* of the Virgin Mary, open to visitors and tourists (Harris 2017:6). Hundreds of churches and monasteries dotted the urban landscape of Constantinople, including the famous 6th century Hagia Sophia (Bjork 2010). By 1200 CE Harris (2017) claims there were around 300 monasteries and convents, and 294 churches. These buildings were built with marble facing and brick, most frequently in the shape of a cross, with domes and pillars.

In terms of external specialization, Bogdanović (2016) argues that Constantinople served as an urban and cultural framework from which other medieval Bulgarian, Russian and Serbian capitals copied. Constantinople served as the prototype of the “ideal Christian capital.” One example of architecture which became common among these capitals includes domed churches “done in the Constantinopolitan idiom” (Bogdanović 2016:134-5). These comparable medieval capitals shared features such as Constantinople’s triangular shape, framing by water, enclosing walls, hills, city gates, and prominent monumental buildings (Bogdanović 2016:115).

Medieval Constantinople stands as a continuation of a great Roman city and a precursor to the major city of Istanbul today. Undeniably massive in size, Constantinople also demonstrates both extreme internal complexity in heterogeneity and craft production and external specialization through political influence and trade. Primarily documented through historical accounts and texts, alongside archaeological investigations of significant monuments

and locations, Medieval Constantinople demonstrates a bridging of data sources in the investigation of settlements and their characteristics. Given Constantinople's size and complexity, most would likely find it comparable to cities in a modern sense.

Ankara Overview:

The city of Ankara, located in central Anatolia, has a history dating back to the Bronze Age, from the Hattic Civilization, to the Hittites, the Phrygians, the Lydians, and the Persians. Known as Ankuwash in 1200 BCE by the Hittites, the settlement would be renamed multiple times, and was called Ancyra by the Galatians and Romans. During the Classical, Hellenistic, and Byzantine periods, under the name *Ánkyra*, it served as an important trading center along the Silk Road and reached a population of 100,000 people at its height (Kacar 2010:44). Having declined by the 19th century, and under the Ottoman Empire, however, Ankara was home to less than 30,000 people (Batuman 2012:578).

During the 20th century, Ankara rose in significance once more, serving as an important location during the Turkish War of Liberation as Mustafa Kemal Atatürk's base of operations, housing the new parliament in 1920, and eventually becoming the seat of government in 1923. Ankara also served as a significant departure from previous Ottoman rule in Istanbul and given its already developed telegraph system and rail connection to critical locations, the new Turkish Republic found its capital there (Kacar 2010:44-6). By 1927, the population would rise to 75,000, prompting a need for increased construction and housing. With Turkey seeking to build itself a "modern society," Ankara was intended to become a "modernist capital, similar to its European counterparts" (Batuman 2012:578).

Soon after its inception as the new capital of Republican Turkey, Ankara underwent immense planning and municipal organization, beginning first with Berliner architect Carl Christoph Lörcher's New City plan (Günay 2012:5). Lörcher planned for a population of 25,000, sought to center the district of Yenisehir in the city, and intended to construct public places in the old and new city. German architect, Hermann Jansen, would replace Lörcher in 1928 after the original plan was ultimately rejected. He incorporated contemporary principles of urban planning, designing roads for automobile traffic and developing new neighborhoods, while also enacting his own vision of green neighborhoods and green belts. Ankara's architecture was intended to signify Turkey's modernization, with western-style public space, parks, apartments, schools, factories, and villages (Kacar 2010). Jansen's plan sought to allow for 750,000 by 2000; however, it underestimated and failed to control Ankara's urban growth (Batuman 2012:580).

Ankara's population has seen a continuous growth from immigration and early economic and social development beginning in the 1930s. By 2010 the population reached almost 4.5 million people (Batuman 2012:579-83). As of 2021, the Turkish Statistical Institute reported Ankara's population at over 5.6 million inhabitants in 2020, the second most populated province in Turkey, after Istanbul, with a population of over 15 million (Türkiye İstatistik Kurumu 2021). In the mid 20th century, given massive population increases outpacing job opportunities and housing availability, squatter houses, or *gecekondu*, integrated into the city, alongside a "second economy" that dealt with small scale services, excess labor, and labor-intensive work. The Ankara Master Plan Bureau, in the 1960s, sought to organize industrial space and direct urban growth outward. New industrial and residential zones were planned to the west, as well as a green belt to buffer the core and periphery of the city. In the 1980s, however, the city's controlled expansion would end, leading to uncontrolled urban sprawl through the 1990s. In 2005, Ankara's

municipal borders had to be expanded to cover a radius of 50 km (Batuman 2012:579-83).

According to a World Bank report, Ankara has a density slightly below the international average in relation to cities with similar population sizes (The World Bank 2015:32). Demographia (2020) puts Ankara's population density at 18,243 people per square mile, which is approximately 70 people per hectare.

In terms of internal specialization and surplus resources, the modern city of Ankara has needed to manage water carefully. The nearby Çubuk Dam has been a historical source of potable water for the city of Ankara, and the nearby wetlands have also become associated with problems like mosquitos and malaria (Evered 2014:478, 481). Turkish "megacities," such as Ankara, deal with shortages of adequate available water in part due to industrial and agricultural pollution (Düzen & Özler 2013:5). Groundwater is both saline and scarce, and climate change has made rainfall less abundant or predictable. The program Every Drop Matters, a United Nations Development Programme, has contributed to improving water collection, storage, and irrigation across Turkey (SIWI 2012).

The Atatürk Forest Farm (AFF) is another critical resource not only for Ankara but the country of Turkey as a whole, established by Mustafa Kemal Atatürk. The AFF was designed as an agricultural farm and associated industrial facilities near the historic center of the city of Ankara. It was intended to model an ideal Turkish village, producing food, supporting the economy, and improving methods of agriculture. To start, it encompassed 5,000 acres, rising to 38,000 in 1937, and as of 2017 contains 8,150 acres (Bilgi 2017:29-30). Historic buildings from the AFF still stand and operate today, such as the MKEK factory and elementary school, while others have been modified, such as the brewery functioning now as a potable water facility (Bilgi 2017:33).

In terms of craft production, specialized labor, and economic activity, Aksoy (2007), points to Ankara's OSTIM Organized Industry Region, which contains around 5,000 enterprises that represent 100 market sectors, dealing in, for example, metal processing, machinery production, plastics, electricity and electronics, medical products, vehicle product, and defense (Aksoy 2007:1074). During the second half of the 1950s, Ankara would turn from agricultural export to industrialization (Batuman 2012:581). 19.9% of Ankara's population has at least a high school education or higher (World Bank 2015:37). In terms of industrial concentration and construction, using the Herfindal-Hirschman index, Ankara has a score of 0.24 in terms of number of housing, and a score of 0.21 in terms of the total worth of projects. The index measures industry concentration, with the closer a score it to 1 the closer a market is to monopoly, and a score over 0/1, or 10%, indicating concentration. Ankara's scores indicate a high concentration of construction companies, similar to other large cities like Istanbul (World Bank 2015:49). Ankara also has the second highest share of household consumption expenditures in Turkey, at 7.6%, after Istanbul with 24.4%. This consumption expenditure includes housing, rent, food, non-alcoholic beverages, and transportation (Türkiye İstatistik Kurumu 2020).

Since the incoming immigration boom of 1950 Ankara has undergone significant change to increase the efficiency of its public transit. The dolmuş system, for example, uses informal taxis for multiple customers for urban transportation. In 1997 the construction of a 14.64 km subway system was completed, on top of a 7km light rail system running east-west through the city's center (Batuman 2012:582-3). 93 pedestrian overpasses were built between 1994 and 2009, as were 109 vehicle bridges and tunnels. By 2009 the number of private cars reached 887,703, or about 191 private cars per 1000 people, which was the highest rate found in Turkish

cities (Batuman 2012:584). As of 2015, there were 194 cars registered per 1,000 people. 69% of all trips were by public transport. In addition, there were 23.4 kilometers of metro and light rail transit, 1,973 municipal buss, 2,453 minibuses and dolmuş, and a commuter rail (World Bank 2015:68).

Ankara, not just the home to political, industrial, and residential buildings, also contains religious buildings or mosques. One of the Turkish Republic's foundational principles was secularism, and it was not until 1973 that an Islamist party, the National Salvation Party, would be elected to office, winning 48 parliamentary seats. (Lust 2017). Replacing a religious monarchy with a secular regime, Turkey promoted government ministries for education, health, shelter, and culture, replacing the mosques in terms of public social functions (Özaloglu & Gürel 2011:341). Despite this political secularization, Ankara is home to many mosques, including the Turkish Parliament Mosque. Designed by Behruz and Can Cinici, the Parliament Mosque breaks tradition, replacing its minaret with a cypress tree and using a stepped pyramid instead of a typical dome over the main prayer hall (Özaloglu & Gürel 2011:337-8). The Kocatepe Mosque, another major mosque in Ankara, combines 20th-century technology and 16th-century Ottoman aesthetics and is meant to hold 2,000 people (Sü & Yilmazer 2007:21-22).

In terms of external specialization, as the seat of government for the modern state of Turkey, Ankara is the home of the country's electoral democracy (Lust 2017). Turkey's four constitutions have all had strong military influences, particularly the 1961 and 1982 constitutions resulting from military coups (Cengiz 2014:687). The 1961 reform established an upper chamber to the Senate to counterbalance the majority parliament GNA, and in 1982, the Senate was abolished, returning to a unicameral GNA, while keeping the Constitutional Court and Higher Appeals Court. In 2007, constitutional reform through referendum allowed the president, instead

of being elected by a 2/3 majority in the GNA, to be elected via a popular vote while also reducing the presidential term from seven to five years (Lust 2017). Beyond its borders, the Turkish government has also been seeking membership to the European Union since 1999 (Cengiz 2014:688). The city of Ankara is also one of Turkey's top five provincial exporters (The World Bank 2015:39).

Ankara represents a centrally planned, modern, capital city in Anatolia. Despite having been inhabited since the Bronze Age, Ankara's intentional modernization and increased construction in the 20th century into a city providing residency from tens of thousands to millions of people marks not only a shift in its intended symbology to the state but also its political and economic restructuring as a capital city of a modern republic. The city's population and size, as well as its industrial, commercial, and residential sectors, emphasize its proportions and internal specialization as a city, on top of its undeniable external specialization as a capital city with interconnected transportation and industrial production.

Conclusion

Chapter Two introduced brief overviews of Kerkenes, Constantinople, and Ankara, providing a foundational understanding of their histories, political, cultural and economic backgrounds, as well as their physical forms. It examined, for example, their sizes, populations, political and social structures, monumental features, urban plans, and trade. This chapter set up further discussion regarding these factors as they relate to the Tripart Stage-Based Model discussed in Chapter Three.

CHAPTER THREE: THE MODEL

Introduction

Chapter Three introduces the Tripart Stage-Based Model proposed by this thesis to allow for the classification and the comparison of cities as settlement patterns. Using the research of Monica Smith, Michael E. Smith, and V. Gordon Childe as inspiration, Chapter Three outlines the theoretical foundation of the Tripart Stage-Based Model, and operationalizes the three overarching characteristics of proportions, internal specialization, and externalization. Each characteristic is defined by sub-variables through which they may be analyzed, and each variable described. This process outlines the methods for comparison and analysis of cities, laying the foundation for further considerations on the three settlements discussed in Chapter Two.

Background

The Tripart Stage-Based Model created in this research project draws strongly from the works and research of Monica L. Smith, V. Gordon Childe, and Michael Smith. Monica L. Smith's (2006) model provides the backbone of the Tripart Stage-Based Model, while Smith and Lobo (2019) and Childe (1950) provide critical background for variable considerations.

In "The Archaeology of South Asian Cities" Monica L. Smith proposes three characteristics of cities: internal specialization, external specialization, and quantitative criteria. The first characteristic, quantitative criteria, has typically referred to population size, density, and areal extent in urban studies and scholars have typically used these variables to differentiate settlements types, such as the difference between a village, town, or city. However, these factors

become complicated in cross-cultural comparisons, where the differences between settlement types may vary (Smith 2006:101). Internal and external specialization, on the other hand, are qualitative criteria under Smith's classification. Smith references Gordon V. Childe's List of Ten as an example of a qualitative based definition, looking at: increased size and relative density to previous settlements, the presence of full-time specialists supported by surplus, taxes to a central authority, monumental public buildings or monuments, a ruling elite supported by surplus, a recording system and science, writing, art, surplus for trade, and resident specialist craftspeople under political authority (Childe 1950:9-16; Smith 2006:101). On its own, internal specialization is challenging to examine when sites are not thoroughly investigated, the necessary data is not preserved, or the type of data varies between sites, as is the case in archaeological investigations. External specialization examines the role of the site in relation to surrounding settlements and habitations. Michael E. Smith (2002) explores these potential roles as ritual, cultural, economic, and political entities. This data and analysis, while useful, also requires a strong understanding of the surrounding area and settlements of the potential city in question (Smith 2006:104).

To be defined as a city under Smith's triaxial model, a settlement must rank highly on at least one variable and contain elements of the other two variables. Monica Smith's model provides the benefit of counterbalancing all three criteria' weaknesses with the other two characteristics. Lacking substantial data for one axis does not automatically disqualify a settlement, nor do different patterns due to cultural needs or adaptations. This model also allows for the definition of a city to be decoupled from the state and allows for a multicultural analysis less burdened by strict criteria (Smith 2006:105, 107). While useful in determining if a settlement is a city, this model may also help determine different types of cities.

Michael Smith provides another key source of inspiration for the Tripart Stage-Based Model, particularly in the paper “Cities Through the Ages: One Thing or Many?” co-authored with José Lobo. This paper in part inspired the central question of this thesis: how do cities differ through time? In this paper, Smith and Lobo (2019) propose that cities function as one thing, a place of energized crowding, and many things, as economic or political cities. The paper also points out a fundamental difficulty in cross-temporal comparison this thesis attempts to address: the smaller proportions of “early urban settlements” in comparison to modern cities. In response, Smith and Lobo (2019) highlight the functional approach to cities, in which a city interacts with its hinterland. This framework, in conjunction with McIntosh and McIntosh (2003) focusing on what a city does, not what it is, provides an important philosophical framework for this thesis. Cities act not only as physical spaces of populations and extent, but also functions and social interactions. Smith (2002), “The Earliest Cities,” also provides insight into the ritual, cultural, economic, and political functions of cities (M. E. Smith 2002:13-7; M. L. Smith 2006:104) which this thesis will incorporate as variables into the characteristics of internal and external specialization. The Tripart Stage-Based Model incorporates these concepts in an attempt to provide a framework which facilitates comparison of cities and their functions through time, and eventually space.

V. Gordon Childe’s (1950) paper “The Urban Revolution” provides a significant foundation for the considered variables in all three characteristics examined in this thesis. His list of ten cross cuts all three stages and, in particular, considers Egyptian, Mesopotamian, Indus, and Central American cities (Childe 1950:8-9). As stated previously, this list is comprised of increased size and density, full time specialists, tithes or taxation, monumental public buildings, a ruling class, recording systems, sciences, art, long distance trade, and resident specialist

craftspeople under a political authority (Childe 1950:9-16; Smith 2006:101). Childe claimed his ten traits “exhaust[ed] the factors common to the oldest cities that archaeology [...] can detect,” with no specific element of town planning being provable in all cities (Childe 1950:16). While a useful starting point, critiques of Childe’s model demonstrate the need for further development of modeling to better understand and research cities. Smith (2006), for example, points out that Childe overemphasizes the hierarchy of social organization, limiting its potential application in understanding the workings of cities (Smith 2006:102-4).

This thesis will use a stage model based on Monica Smith's triaxial model concerning internal specialization, external specialization, and quantitative characteristics (Smith 2006). The reformulated Tripart Stage-Based Model modifies Smith’s (2006) model to be taken in stages when analyzing a site while also recognizing the ongoing debate over if site can be discrete and how human activity is dispersed through the fabric of a landscape (Dunnell 1992). These stages may include data which could be classified as either qualitative or quantitative and this thesis attempts to move away from such a binary.

First, the Tripart Stage-Based Model examines what Smith (2006) would classify as quantitative measures, or proportions, such as the areal extent, population size, and density. These variables allow for a basic analysis to give hints to a site's purpose, particularly when little excavation has been done. From there, internal specialization is examined, looking at, for example, labor, social structure, and cultural expression. Then the first two stages are analyzed in conjunction to recategorize the settlement. Finally, external specialization is considered, which requires an understanding of not just the settlement itself but its surroundings and connections to analyze factors such as trade, political, and religious connections. In this final stage, all three stages are considered, and a more confident categorization can be reached while not abandoning

the original model's intent to allow for variation. This stage-based model will enable researchers to make preliminary estimations about a settlement and refine their conceptualizations as more data is gathered. This reorganization and conceptualization of Smith's (2006) Triaxial model into a Tripart Stage-Based Model assists in the analysis of limited data and basic determinations of settlement patterning and function when data for all three characteristics are not all available. While Smith's model allows for such analysis, the visual metaphor becomes lost in such circumstances. The Tripart Stage-Based Model also refines the approach of analysis, beginning with simple internal proportions, and working through internal functions, before moving to analyzing larger spatial and cultural relationships of a settlement. In doing so, the Tripart Stage-Based Model operationalizes the foundational work proposed by Smith (2006) for research and classification.

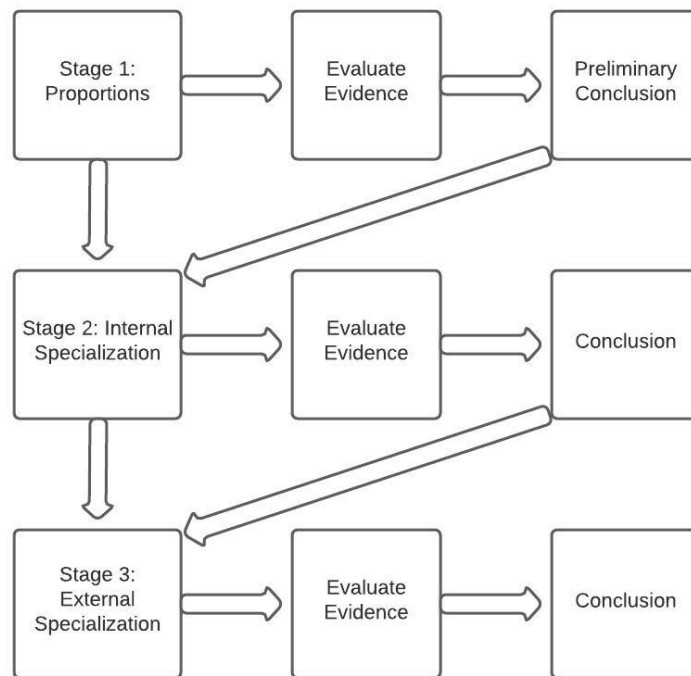


Figure 1: Tripart Stage-Based Model

Table 1: Characteristics and Variables of the Tripart Stage-Based Model

Stage 1: Proportions	Stage 2: Internal Specialization	Stage 3: External Specialization
Areal Extent	Surplus Resources	Administrative Influence
Population Size	Significant Built Environment	Economic Influence
Population Density	Heterogeneous Labor and Craft Specialization	Cultural Influence
	Complex Political and Social Organization	Conflict
	Economic Division	
	Control of Labor	
	Cultural Expression	

Proportions

Introduction

Quantitative criteria, which I have reclassified in this text as proportions, in urban studies are typically examined through factors such as population size, density, and areal extent. Scholars typically use these factors to differentiate types of settlements within a society, such as the difference between a village, town, or city. However, these factors become complicated in cross-cultural comparisons, where the differences between settlement types may vary (Smith 2006:101). As Smith (2006) points out, in the modern world, differentiating cities from towns varies between countries in an arbitrary fashion, making any generalized and concrete statements regarding a city's specific qualitative characteristics difficult. For example, the definition of urban in Argentina includes populated centers of 2,000 or more people, while in China, it includes cities with a population density of 1,500 per square kilometer (Storey 2020:5).

Population Size and Density

Using population size and density as a variable in examining the proportional characteristic of a settlement, while common, can provide difficulties for a researcher, given inconsistent application. For example, in the United States, the minimum populations for a city vary across state lines (Smith 2006:101). Taking an exact or strict stance on population size is not the only way to determine a city, however, and Childe (1950) instead proposes that ancient cities need merely be "more extensive and more densely populated than any previous settlements," despite their smaller size than modern settlements. This thesis attempts to follow in the spirit of Childe's definition while acknowledging other characteristics and variables.

Settlements such as those found in the Classical Lowland Mayan civilization and West and Sub-Saharan Africa, for example, provide a staging ground in the arguments regarding the significance of these variables and the overarching characteristic of proportions. These low-density cities are characterized by "spatial clustering in the distribution of houses" and large open spaces between them (Smith 2011:54). Smith (2011) argues that despite the low-density nature of urban settlements in the Maya Lowlands, they function as urban neighborhoods, adding credence to interpreting these settlements as cities. Lewis Mumford's (1937) analysis of the social aspect of cities supports such conclusions, claiming that absolute figures regarding population or area are less important than size as a function of social relationships.

One must also consider the issues in attempting to describe population size and density in pre-industrial cities. In a sample of 425 pre-industrial cities, Storey (2020) describes the average population size as 70,000 people, with a population density of 16,661 people per square kilometer; however, he rightfully points out that prior to the 1800s and reliable census data, estimates come from a variety of less reliable methods, such as historical reports from travelers

and modeling (Storey 2020:23-4). For example, Summers and Summers (2006) estimate the population of Kerkenes by using the calculated total roof area and an assumed population density of people per urban block to arrive at their estimation.

Areal Extent

When considering the areal extent for both modern, historical, and ancient cities, a researcher must pay close attention to both their data and decisions. For example, archaeological sites' areal extent can prove problematic on occasion compared to those still standing. Schiffer (1987) points out, for example, that site formation processes can erode an archaeological site's visibility by obscuring or eroding deposits, and Wilkinson (1982) demonstrates the size of a site can be overestimated due to cultural activities such as "manuring" fields with household waste and increasing the extent of the artifact scatter found. This paper attempts to avoid using the term site uncritically, instead referring to settlements and recognizing that sites are based on contemporary observation, that the ability to observe sites change, post-depositional process modify the spatial relationship between features and artifacts, and formal definitions of sites can rely on subjective criteria (McCoy 2020:18).

Regarding modern cities, the United Nations' Report on The World's Cities in 2018 aptly points out that "no standardized international criteria exist for determining the boundaries of a city and often multiple boundary definitions are available for any given city." When considering a modern city, one must also consider whether only to include the city proper or also to include what one might call the urban agglomeration or metropolitan area. The city proper describes an administrative boundary; the urban agglomeration describes a contiguous urban area; and the metropolitan area includes economically and socially connected areas, linked through commerce

and commuting. These decisions will affect not only the areal extent data used but also the population size and density of the settlement in question (United Nations 2018:1).

Internal Specialization

Introduction

One of the two qualitative criteria proposed by the Monica Smith's (2006) model of cities, internal specialization, refers to those aspects of a city such as economic specialization, administrative control, and social organization. Smith (2006) argues that examining the internal specialization of settlements is well suited to the field of archaeology, due to excavation strategies of large sites usually providing enough data to positively identify internally specialized activities. On its own, internal specialization is challenging to examine when sites are not well investigated, the necessary data is not preserved, or the type of data varies between sites. (Smith 2006:104)

Surplus Resources

A significant factor in cities' existence and their ability to perform internally and externally specialized functions comes from surplus resources. Additionally, the proportional characteristics, such as population size, rely on the accumulation of surplus. English economist Thomas Malthus recognized in his 1798 essay on population that population growth is kept in check by subsistence; the former grows geometrically, and the latter arithmetically. Population growth must, therefore, be supported by increased subsistence production (Donald 2007:213-4). Almost every one of Childe's (1950) ten criteria for cities relies on the foundation of surplus

resources, from increased population size, to supporting non-food producing laborers, taxation of surplus, non-laboring classes, and trade. Surplus resources can be examined in the archaeological record through a few means, through both written records and material remains. For example, works and constructions, as well as crafts requiring skilled labor, point to not only access to raw materials (Smith 2006:102) but also a surplus of food to supplement non-food producing labor.

Significant Built Environment

A settlement's built environment can give many clues to a city's role and function and has been a common consideration in cities' classification through time. The built environment as a consideration in anthropology dates to at least the 19th-century theories of cultural evolution and evolutionary stages. In a broad sense, the built environment includes any human alteration to the physical environment, but more specifically relates to built forms such as buildings, bounded spaces, and landmarks. These features can include specific dwellings, compounds, plazas, shrines, and even spatial divisions within them (Lawrence and Low 1990:454). Childe's (1950) list of ten criteria for a city, for example, includes monumental architecture, which not only serves to distinguish the settlement from villages but also the concentration of social surplus. McAnany's (2010) exploration of early monumental pyramid construction in Lowland Maya population centers highlights an important conception of monumentality, considering not only their immense scale but also how the constructions represent a desire for transformation and engineering a cultural topography. While modern cities benefit from having visible built environments, archaeological reconstruction of built environments occurs through multiple lines of evidence. Textual resources, when available, and excavation, when possible, are not the only

methods. Magnetometry and geophysical survey assist in detecting buried structures, and aerial and satellite imagery are useful in determining the extent (Attema et al. 2020).

A settlement's built environment cannot be examined independently; one must also consider the relationships that both create and are influenced by it (Lawrence and Low 1990:454). One major category of modern urban studies looks at urban centers' built environment as a "constellation of socially significant symbols." A famous example of this includes Wheatley's (1971) interpretation of ancient Chinese cities as cosmograms that mimicked the heavens' divine order. Lewis Mumford (1937) argues that the built environment must be subservient to a city's social needs as their geographic plexus. Lynch (1960) proposes that the built environment provides the backdrop to socially significant meanings through his analysis of legibility, imageability, structure, and identity. Smith and Lobo (2019) also highlight the importance of the built environment as a space to facilitate face-to-face, social, and economic interactions that contribute to a city's more complex functions. Other considerations to consider when examining a settlement's built environment include the necessary resources, labor, and time necessary for construction. This can be done by using ethnographic or textual resources and considering the necessary power to marshal resources (Osborne 2015:9).

Heterogeneous Labor and Craft Specialization

Heterogeneity of labor and production has been another common factor in urban studies regarding cities' exceptionality compared to other settlement types. It comes second on V. Gordon Childe's (1950) list of ten, citing a population with classes who do not procure food but instead act as full-time specialists, merchants, or officials supported by the food production labor of others. Wheatley (1963) critique of both Childe classifications and Sjoberg's *The*

Preindustrial City: Past and Present highlights their similar considerations of fulltime specialists and elite, and emphasizes a warning against placing too much emphasis on one factor like writing or a literate elite, which this thesis takes to heart (Wheatley 1963:165-6). Smith (2006) argues that the recovery of labor-intensive crafts provides evidence of economic specialization, though the inherent needs of time to create certain types of goods. In her analysis of the archaeology of South Asian Cities, Smith (2006) examines this criterion, finding support for Indus cities in the archaeological remains of crafts including breadmaking; for cities in the Early Historic period through textual records of guilds and archaeological remains of the mass production of goods such as coins and beads; and in the Medieval period through temple records and reports from foreign visitors. The types of goods produced and how has led some scholars to differentiate not only cities from other settlement types but also cities through time. For example, Sjoberg (1955) argues that preindustrial cities lacked the fragmentation of specialized work seen in industrialized cities and factory works, as well as the organization and inanimate power sources used, requiring a distinction between types. In part, this thesis attempts to examine this theoretical approach in its analysis of cities through time to sort out meaningful differences such as these.

Complex Political and Social Organization

Perhaps the broadest category under internal specialization, political and social complexity may be examined in multiple ways. For example, evidence of both internal hierarchical and heterarchical social and political structures and class and social differentiation are essential factors. Wright (2016) examines power that is exclusionary, monopolized by leaders, and corporate power, and shared among groups in society, as proposed by Richard

Blanton, to examine Indus collective action. From textual evidence to artifacts and the built environment, power, and social complexity can be examined through multiple lenses.

The broad nature of the social aspect of cities is not a new concept, nor is its inclusion in urban studies. Once again, returning to Childe (1950), aspects of social and political complexity are worked into several of his criteria. His fifth criterion points to a ruling class, which could include roles such as priests, officials, and civil and military leaders, who were supported by concentrated surplus. Criteria ten highlights the subservience of specialists and craftspeople below state organizations, temples, or courts. Lewis Mumford (1937) wrote that a city is a “theater of social action,” emphasizing the face-to-face interaction used in Smith and Lobo’s theory of energized crowding nearly a century later (Mumford 1937:93, Smith and Lobo 2019). Smith and Lobo (2019) claim that cultural and socioeconomic heterogeneity facilitate these interactions that give urban life a distinct character.

Part of how heterarchy and hierarchy can be analyzed is through the expression of power within a settlement. Kong (2008) defines power through its transformative ability, and that can control both material distribution and human activity. Ethnographic and written records can provide textual evidence of such complexity, but when dealing with archaeological remains, Kong points out, a significant way power is expressed and maintained is through the manipulation and control of the landscape. An example of this can be seen in colonial urbanism and segregation through both explicit and implicit methods, creating visible symbols of cultural and economic separation (Kong 2008:4). Another way power can be expressed is through prestige goods. These high-value goods have been linked to demonstrations of political strength and have symbolic value (Smith 1999:116).

Economic Division

When examining economic division, one can consider both labor, access to resources, and displays of wealth. One could also turn to levels of economic activity within the settlement, ranging from household to market level economic activity. For example, Mesopotamian settlements in the 3rd millennium have specialist produced and non-standardized pots in all households, indicating non-elite households actively participated in “the material component of the social system” (Smith 1996:119). One could also examine the structure of labor practices. V. Gordon Childe (1950), for example, points to a ruling class absorbing the surplus produced by food-producing laborers. Smith and Lobo (2019) emphasize the concentration of power and wealth in cities and a small number of its inhabitants. Sjoberg (1955) points to the concordance with economic and class structures, for example, looking at handicraft workers whose goods and services primarily benefit the elite, producing schisms in rank. Peterson and Drennan (2018) propose using Gini coefficients as a metric to observe social, economic, prestige, wealth, health, and productive differentiations in archaeological contexts, measuring the unevenness of distributions across a population. Smith et al. (2018) argue a more nuanced examination and re-evaluation of assumptions about wealth concentration differences between small scale and complex polities, highlighting some small-scale societies exhibit considerable wealth concentration while some complex polities demonstrate surprisingly low wealth inequality. Keeping these arguments on mind, one should be reminded that none of these variables are diagnostic in isolation or are necessarily present in all cases.

Control of Labour

Control over labor has the potential to demonstrate political, economic, and social authority of the city over its inhabitants. Control over labor may be demonstrated through laws and regulations, as well as evidence of centralized planning and monumental architecture. In terms of written records, the Code of Hammurabi, the longest known collection of laws from Mesopotamia, provides evidence of legal control over laborers in its regulations for the payment of specific types of labor, such as agriculturalists, hired laborers, artisans, builders and doctors, to name a few (Rositani 2017:47). Turning to the physical environment, Joyce and Barber (2016) point to the urbanization of Oaxaca as a result of social changes including “the mobilization of labor for the construction of monumental architecture.” An important resource, they argue, was labor provided by nearby communities and the inhabitants of Monte Albán, the concentration of which facilitated tribute collection and labor mobilization (Joyce and Barber 2016:44). Doyle (2012) highlights the monumentality of the architecture of the Middle Preclassic Maya as evidence of the large mobilization of labor and links it to the larger considerations of authority and the landscape in following Maya groups. Smith (2006) points out, however, that one should be wary of overemphasizing the control of craft production by political elites, and that the majority of urban economic activity is driven by household consumption not elite control.

Cultural Expression

V. Gordon Childe’s list of ten includes many aspects of cultural expression as criteria for a city. For example, a writing system, the sciences, and artistic expression are all mentioned (Childe 1950:14-5). While the extent of these specific types of cultural expressions in each settlement may differ, it can give a greater insight into the political, social, and economic ties a

settlement has to its surrounding contexts, as well as the specific functions and behaviors occurring within the settlement. Doyle (2012) exemplifies this with their exploration of “E-Groups” in the Preclassic Maya Lowlands and the cultural purpose of their monumentality. The introduction of ceramic production, long-distance trade, and the settlement of communities, Doyle argues, could represent new networks of cooperation that contributed to shared customs exhibited in the archaeological record (Doyle 2012:357). Other areas of cultural expression Doyle points out as indicating sociopolitical complexity include mural paintings, hieroglyphic writing, architectural sculpture, and caches of greenstone axes (Doyle 2012:355). One can therefore use material culture or remains to provide context for larger functions and processes in a settlement, recognizing the entanglement of culture with economic, political, and social landscapes. Keeping this in mind, one should also consider Wheatley’s (1963) important critique of urban studies in regards to examining cultural expression. Speaking specifically about urban elites, Wheatley (1963) argues that it is the fact that elites achieve hegemony and solidarity, not how they do so, that is important to “the creation of city life” (Wheatley 1963:166). Researchers must be careful to avoid turning specific cultural practices or material culture into necessary components for urban life, and should instead merely recognize their role within the context of the settlements under study.

External Specialization

Introduction

The second of Monica Smith’s (2006) qualitative criteria, external specialization examines the role of the site in relation to surrounding settlements and habitations. Michael E.

Smith (2002) explores these potential roles and categorizes them into ritual, cultural, economic, and political cities. This data and analysis, while useful, also requires a strong understanding of the surrounding area and settlements of the potential city in question (Smith 2006:104).

Administrative Influence

The role of a city exists not just in its influence over its internal population and resources, but also in its hinterland. This section explores the direct political control and influence that cities through time may have over surrounding settlements and populations. While a long line of researchers, such as Michael E. Smith (2002), have proclaimed cities exist solely within state-level societies, this paper follows the approach taken by Monica Smith (2006), decoupling the concept of city and state while still acknowledging their frequent coincidence.

One should consider both heterarchical and hierarchical structures as part of a city's relationship with its hinterland. Hierarchies follow pyramidal chains of command, through which power flows both up and down. Heterarchy looks to unranked elements relative to one another or elements ranked in multiple ways given various conditions. In such conditions, there may be both potential competitions between settlements and organizations or stable relationships and interactions between polities (Smith 2006:105-6). Recognizing and placing a city within these contexts, while less challenging with the plethora of data surrounding modern settlements, is significant to recognizing an archaeological settlement's place within the larger social landscape of its time and context.

Textual records, such as laws or written accounts and other such documents detailing the political and social context of a settlement, while undoubtedly helpful, are not always available. One must, therefore, turn to other sources of information. One such analysis method comes from

applying Central Place Theory, which analyzes settlements geographically through time and energy optimization. This approach proposes a hierarchy of settlements ranging from high rates of high-order functions within the settlement to low rates of functions, with cities at the top of the hierarchy (Blanton 1976). Blanton (1976) claims that any settlement that functions as a central place is a city or town, regardless of considerations like form or population, based on the context of the society's hierarchy they reside in. Following Central Place Theory, these ranked settlements follow particular geographic patterns, dependent on various economically relevant locational principles, minimizing time and energy expenditure between them (Blanton 1976:254-5). With sufficient survey data and an understanding of surrounding cultural landscapes, scholars can better operationalize and understand cities' economic and administrative roles as central places. Such a perspective also allows for the analysis of what cities do, rather than specifically quantifying what they are (Smith 2006:104).

Economic Influence

Cities as a center for economic exchange is another long-standing idea in urban studies. The extraction of resources from the hinterland and long-distance trade are two significant aspects of some cities' function. Childe's (1950) list of ten criteria of cities, for example, looked to surplus resources to pay for the importation of raw materials and regular foreign trade. Returning to the idea of Central Place Theory, high order settlements like cities were also expected to supply goods and services to lower-order settlements (Wheatley 197:614-5).

Cities serve an economic role in relation to their hinterlands through the extraction of resources. While some cities like Teotihuacan were home to farmers, who left the city to farm, and others contain gardens and fields with them (Smith 2002:14), others must pull resources

such as food and building material from surrounding settlements and trade. Written records, such as accounting records, detailing trade or taxation, while clear signs of economic interactions with a hinterland, are not always available to research. Keister (1963) points to the examples of surviving records from Mesopotamian cities, such as receipt tablets that recorded the goods exchanged, the people involved in the transaction, and the date, as important examples of early commercial record keeping. One particular example highlighted includes an expenditure tablet of a tax collector seeking an advance for the purchase of a donkey and flour (Keister 1963:374).

One of these methods of determining economic contact with a settlement's hinterland can come from recognizing and analyzing the source of materials found there. This can in part be done through the examination of the transmission of cultural styles, such as the spread of intercultural style chlorite vessels across Central Asia and Mesopotamia or double spiral-headed pins through Central Asia and Anatolia (Altaweel and Squitieri 2018:162). One can also draw conclusions based on what is not there. For example, at the Indus sites of Mohenjo Daro and Harappa, the surrounding region is devoid of stone resources, meaning raw materials and finished products would need to have been imported (Smith 2006:114).

Cultural Influence

Alongside political and economic influence, cultural influence on surrounding settlements and areas of contact marks a significant area of external specialization. The spread of material culture traditions, architectural practices, as well as religious beliefs and practices represent some ways in which a city may influence both its hinterland and neighbors. The spread of culture can occur through local innovation, the independent invention of a trait by differing communities, cultural diffusion, the spread of a trait through social learning, and demic

diffusion, the spread of a trait through the spread of human communities (Fort et al. 2015:141). Some factors one could consider include the distribution of tool technologies or architectural styles, or religious or cultural centers.

Conflict

Conflict within and between settlements may be seen through a variety of evidence. For example, bioarchaeological evidence can provide direct evidence of the results of conflict through the trauma presented on human remains. Some lines of evidence Thorpe (2003) proposes include examining weapons, depictions of war, and skeletal remains. In terms of weapons, one must be careful to discern if their use was intended to cause harm, or if the objects may be used as tools for other functions, such as knives and daggers. One must also take care in interpreting skeletal remains to consider possible causes of trauma outside of human violence (Thorpe 2003:150-1).

Gaither and Murphy (2011) look to the remains of 242 subadults in Late Horizon Peru and the frequencies of cranial and post cranial trauma to determine a statistically significant increase in trauma Postcontact. The authors propose these injuries were the result of increased conflict between the Incan Empire and Spain during the 16th century, due to an increased rate in lethal perimortem injuries, particularly to the cranium which are inconsistent with accidents or abuse (Gaither and Murphy 2011:473). Another method of examining conflict between settlements comes in the form of the written record. Ridley (1986), for example, lists numerous instances of correspondence, histories, and first-hand accounts of the destruction of the city of Carthage, such as the lost books of Diodorus and Appians account of the weeks of street fighting. Later historical accounts, such as those written by Florus and Orosiu speak of the fires of

Carthage burning for 17 days and prisoners being sold as slaves, providing specific details of the events of the conflicts (Ridley 1986:140-1).

Conclusion

This chapter introduced the Tripart Stage-Based Model, its theoretical foundations, and the characteristics and variables considered by this thesis. Based primarily on Monica Smith's (2006) triaxial model, the Tripart Stage-Based Model examines proportions, internal specialization, and external specialization. Each sub-variable of the three overarching characteristics explored represent specific attributes of the forms and functions cities may take on. The variables described do not individually create a diagnostic test for a settlement's cityhood, instead providing a list of features, that when taken in conjunction, characterize cities. Using the model explored in Chapter Three, and the cities of Kerkenes, Constantinople, and Ankara described in Chapter Two, this thesis moves on to apply the model in relation to three case studies.

CHAPTER FOUR: THE APPLIED MODEL

Introduction

Chapter Four merges the topics discussed in Chapters Two and Three, placing the functions and forms of Kerkenes, Constantinople, and Ankara in the context of the Tripart Stage-Based Model. This chapter proceeds through each characteristic stage and subsequent variable, providing available evidence and context relating to the three settlements. This chapter provides support for each settlements cityhood and its structure allows for easy comparison across the three settlements, variable by variable. This chapter also produces a new population estimate for Kerkenes using geophysical data and GIS analysis.

City Proportions

Population Size, Density, and Areal Extent

Kerkenes

Analyzing the populations and proportions of archaeological settlements can occur in a few different ways. Summers and Summers (2006) use and critique a few of these methods in relation to Kerkenes. Using data from one urban block, containing 4 two-roomed buildings that researchers believe to have been houses, with a total roofed area of 446 m². Summers and Summers propose multiple population estimates. In one method, they assign an arbitrary 6 people per household and in another they assign one person per 10 m² roof space. The first method led to a density estimate of 24 people per urban block or 74 people per hectare. The second method results in an estimate of 11 people per household. Using the total area of the

urban block in question, 3,250 m² and a frequently used estimate of 250 people per hectare, the method results in an estimate of 81 individuals in the urban block and a total city-wide population of 62,500 (Summers and Summers 2006:79-80). Using a blanket estimate of people per hectare may be inappropriate in Kerkenes, however, due to surveys revealing open spaces within some walled urban blocks (Branting et al. In Review:9). Summers and Summers (2006) also propose a figure of 24 people within the urban block, resulting in a total population of 18,500 in the city based on a total area of 250 hectares. They also use a guess of 30 people per urban block, giving a total population of 23,000 people (Summers and Summers 2006:80).

Building on Summers and Summers (2006) work, this paper turns to Naroll's (1962) method of analysis with an expanded data set, using ten urban blocks. Naroll (1962) proposes a method using floor area to determine population, based on 18 societies across North America, Oceania, South America, Africa, and Eurasia. The method proposed defines a dwelling area as "the total area under roof of dwellings." Using this definition, Naroll proposes that prehistoric settlements' populations may be roughly estimated to be equal to 1/10 of the floor area of dwellings in square meters (Naroll 1962:588).

This thesis uses data acquired at different stages of the Kerkenes Projects research and digitization of survey data to derive its own population size and density estimate. Early digitization work of remote sensing data has outlined urban blocks across the settlement, and more recent, and incomplete digitization work in the Kerkenes Mapping Project has outlined specific structures. Using the urban blocks as a guide, ten urban blocks have been randomly selected that overlap with the digitization of the buildings in the Kerkenes Mapping Project, and their dwellings counted and measured. Using this data, this thesis will extrapolate an average dwelling roof area per urban block, and from there, the population size and density of the entire

settlement, through estimations of the rough number of urban blocks present. At Kerkenes, dwellings are identified as “small two roomed buildings,” a common form throughout the Mediterranean, prehistoric Anatolia, and archaic Greece (Langis-Barsetti 2013:84). Summers (2006) describes these buildings as freestanding, with wide central doorways and pitched rooves.

An important note to discuss, given the application of the urban block and Kerkenes Mapping Project data sets, is that given the time between their creation, the urban block magnetometry data does not correspond perfectly with the more recent and accurate electric resistivity data, and more recent considerations of larger urban blocks recognize they were likely made up of multiple blocks instead (Personal Communication with Dr. Branting). Using a random number generator, the urban blocks selected include: 49, 80, 114, 182, 244, 279, 328, 337, 394, and 439. A special thank you to Dr. Scott Branting, and Dominique Langis-Barsetti, who during the analysis of the intersections of these data sets, assisted with the identification of dwellings and highlighted discrepancies between previous urban block estimates and ongoing research and considerations. For example, urban block 244 is now thought to consist of two urban blocks, and 182, two to three urban blocks. Keeping this discrepancy in mind, this thesis will use the northern most “sub” urban block of these two urban blocks. Urban block 279, similarly, does not accurately depict current estimations of the actual urban layout, and therefore, this thesis combines elements from neighboring urban blocks in its consideration of its area and the dwellings contained within.

Table 2: Kerkenes Urban Block Data

Urban Block	Number of “Dwellings”	Urban Block Area Meters ²	Total Roof Area of “Dwellings” Meters ²	Average Dwelling Roof Area Meters ²	Proportion Roof Area to Urban Block Area

49	8	6,032.80	554.20	69.30	9.19%
80	3	761.78	102.70	34.23	13.50%
114	8	4,274.87	581.70	72.71	13.61%
182	4	1,205.88	205.93	51.48	17.08%
244	5	1,235.58	169.40	33.88	13.71%
279	8	3,197.70	416.32	52.04	13.02%
328	3	801.60	233.00	77.67	29.07%
337	4	1,357.14	185.01	46.25	13.63%
394	19	7,773.34	727.02	38.26	9.35%
439	5	2,723.78	289.52	57.90	10.63%

Using ArcGIS, the area of each dwellings, as well as the area of the either previously defined urban block or the newly defined urban blocks were calculated into the above table. The average area, in square meters, of the roof space of the dwellings per urban block is 346.48 meters². Based on the urban block data previously supplied, the total number of urban blocks in the city is 758. Extrapolating based on the average from the random sample, the estimated total area of the roof space of dwellings in Kerkenes is 262,631.84 meters². As the Kerkenes Mapping Project continues, and as further excavations illuminate the nature of housing structures, more accurate estimates to the total area of dwellings at Kerkenes may be derived in further research. A larger sample of the total number of urban blocks would also likely provide a more accurate estimation. Based on the Naroll's (1962) equation, the estimated population of Kerkenes is approximately 26,263 people. The estimated population density is approximately 97 people per hectare.

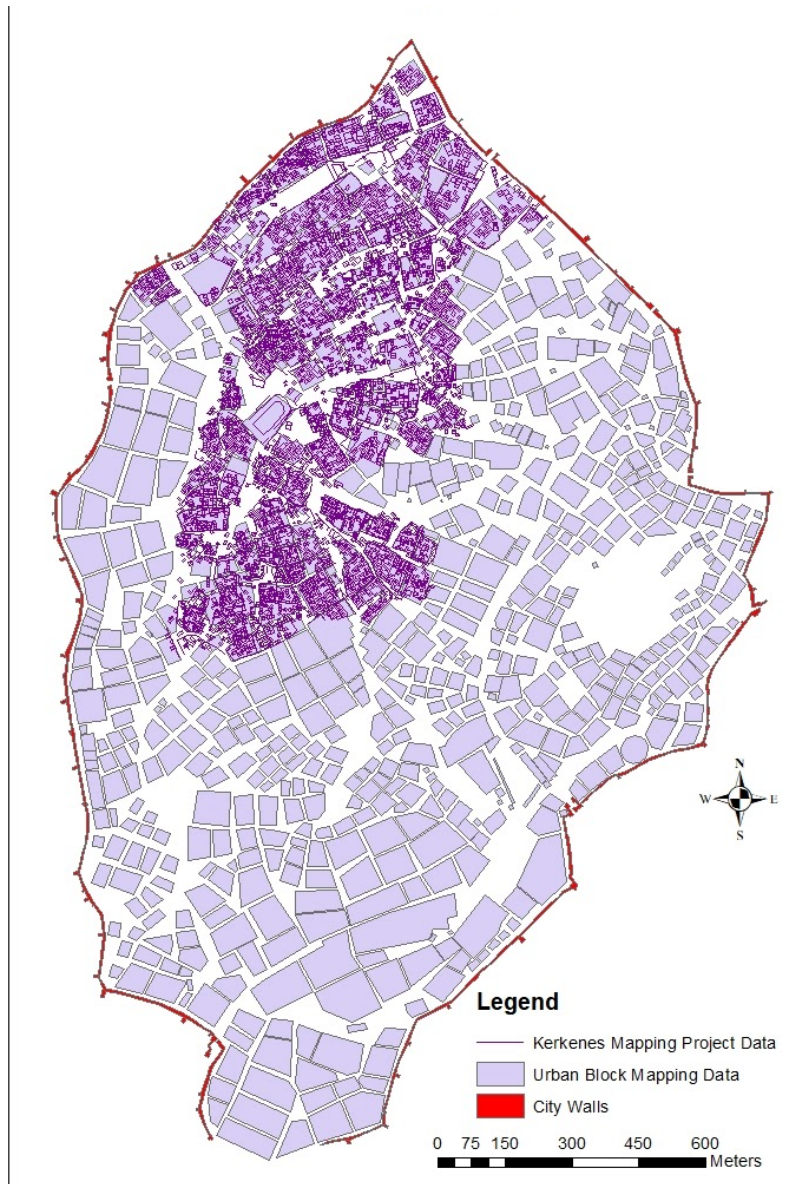
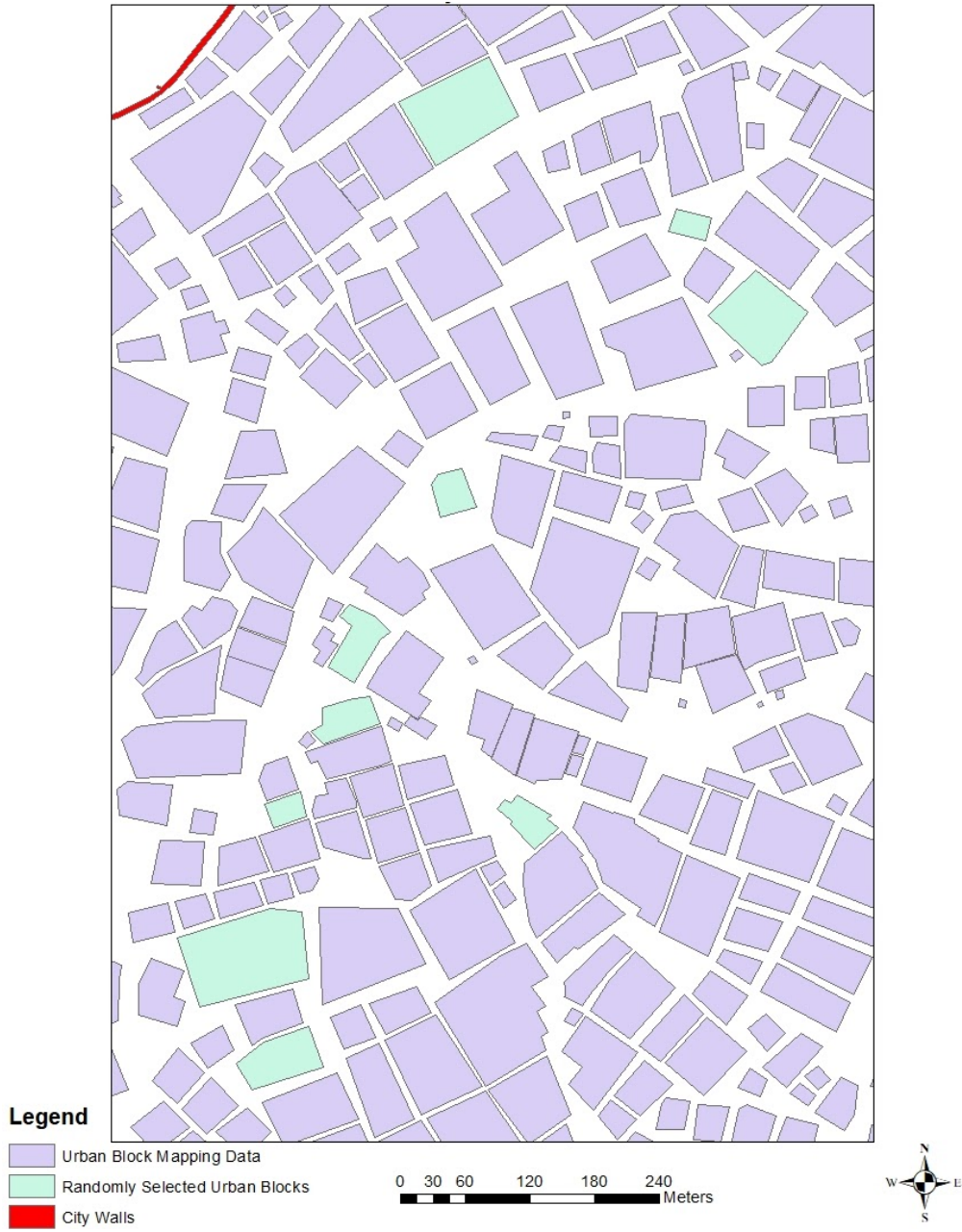


Figure 2: Kerkenes Mapping Data



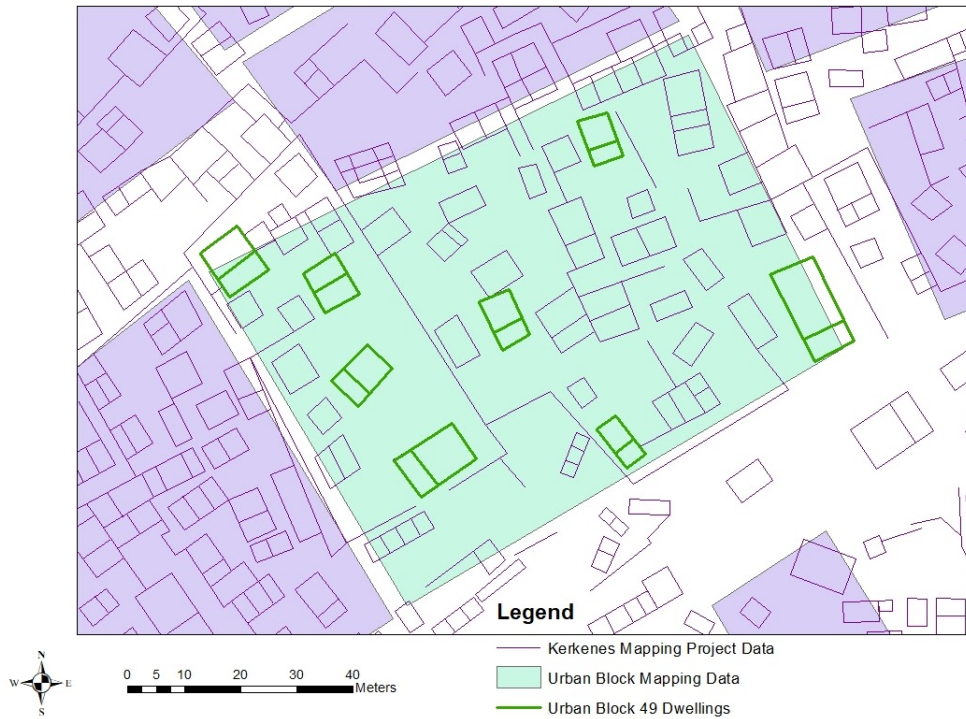


Figure 4: Urban Block 49

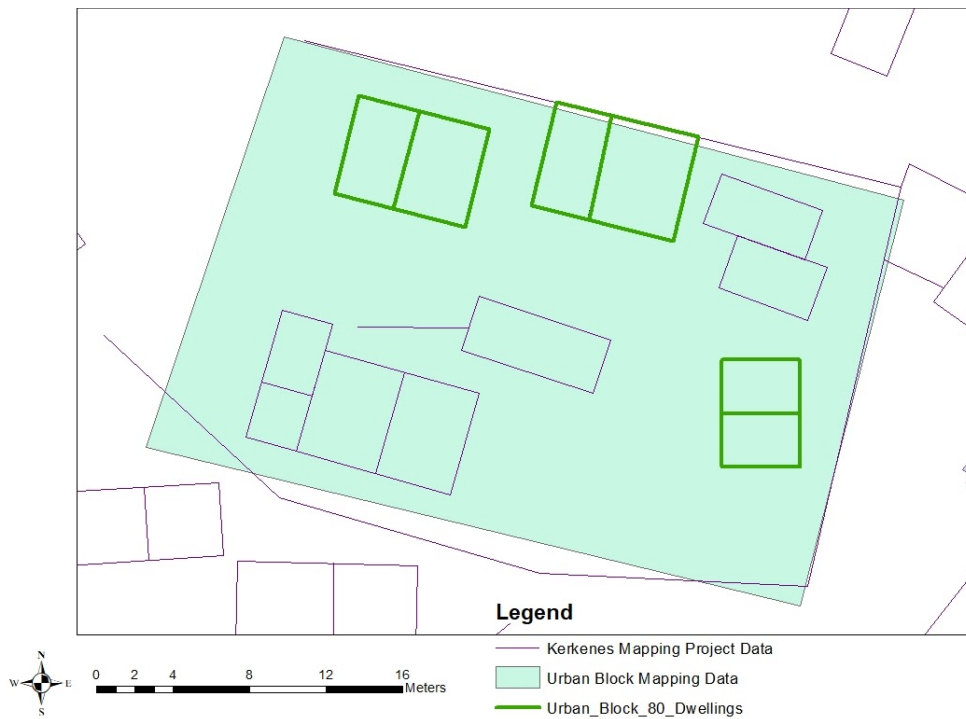


Figure 5: Urban Block 80



Figure 6: Urban Block 114



Figure 7: Urban Block 182



Figure 8: Urban Block 244



Figure 9: Urban Block 279



Figure 10: Urban Block 328

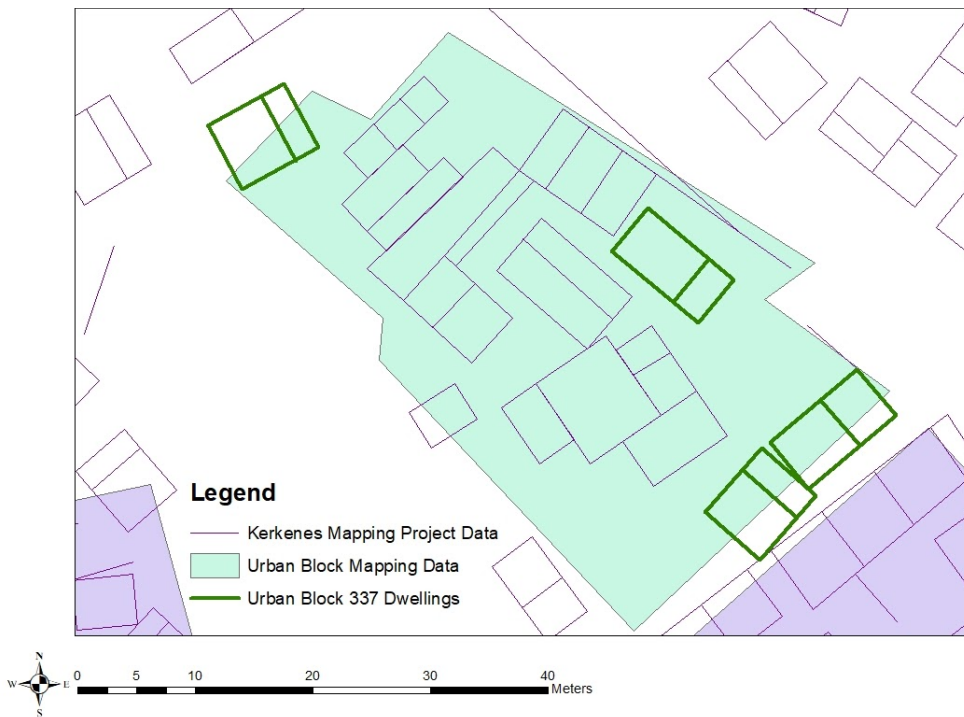


Figure 11: Urban Block 337



Figure 12: Urban Block 394



Figure 13: Urban Block 439

Kerkenes is Anatolia's largest known pre-Hellenistic city, containing 271 hectares within its walls (Summers and Summers 1994:3; Branting 2004:47). Taking into consideration Childe's (1950) claim that ancient cities should be "more extensive and more densely populated than any previous settlements," Kerkenes may fail to match the sheer size and scale of its later Anatolian capitals, however, its extent in comparison to contemporary and earlier settlements highlights its remarkability as an ancient Anatolian city.

Constantinople

Johnathan Harris (2017) estimates the population size and density of 12th century Byzantine Constantinople to have been 370,000 people, enclosed within 30,000 hectares. Ousterhout (2019a) goes so far as to suggest a population of 400,000. While this estimate would suggest a low population density, of approximately 12 to 13 people per hectare, one should consider Constantinople's wall encompassed both an urban core and an agricultural area and water management system (Bogdanović 2016:109). Therefore, the area encompassed by Constantinople's walls, while under the dominion of the city, does not necessarily reflect the population density of the settlement. As mentioned previously, the area encompassed by Medieval Constantinople's walls included 30,000 hectares, comparable in size only to contemporary Rome and Baghdad (Harris 2017; Ousterhout 1996:36). Following the considerations of Childe (1950), Constantinople undeniably meets the criteria for significant proportions.

Ankara

The Turkish Statistical Institute reports that as of 2020, Ankara was home to over 5.6 million inhabitants and was the second most inhabited province in Turkey (Türkiye İstatistik Kurumu 2021). Based on data from a 2008 report and Urbanization Review Team, the World Bank reports Ankara's density is slightly below the international average in comparison to cities with similar population sizes (The World Bank 2015:32), with a population density of 18,243 people per square mile, or approximately 70 people per hectare (Demographia 2020). Ankara's population growth, since its inception as the capital of Turkey, has frequently outpaced estimates (Batuman 2012; Kacar 2010). The population rose from around 75,000 in 1927 to over 4,400,000 by 2010 (Batuman 2012:581). As of 2005, Ankara's municipal borders covers a radius of 50 kilometers (Batuman 2012), and Demographia (2020) puts its built-up land area at 259 square miles or 67,080.7 hectares.

City Internal Specialization

Surplus Resources

Kerkenes

Surplus at the city of Kerkenes can be seen through its crafts, water management, and archaeobotanical remains. For example, Draycott et al. (2008) highlights artistic reliefs and ceramics, the types of specialized crafts and skilled labor Smith (2006) points to as evidence of access to raw materials. They also suggest enough surplus food for non-food producing labor. The granite, sandstone, and wood construction work on Kerkenes' fortifications and walls also point to surplus resources, having been drawn from nearby natural outcroppings (Summers

2006a:173; Summers and Summers 2013:53). Electrical resistance surveys have also provided strong evidence of water reservoirs along the northwest city wall (Langis-Barsetti 2013:78), and Atalan (2006) emphasizes that water inside the city walls were intentionally included within the city's boundaries to allow for urban water collection. Evidence of surplus food resources can be found in the archaeobotanical remains recovered at the settlement, including cereal grains and cherries, as well as artistic and ethnographic accounts of important herd animals such as sheep and cattle (Branting and Smith 2014; Marston and Branting 2016).

Constantinople

Historical legal documents and written accounts of Constantinople highlight its plethora of surplus resources. Using evidence of significant non-food producing labor as evidence of surplus resources, one can turn to legal documents such as the *Book of the Prefect* and the *Miracles of St. Photeine*, which describe the location, regulation, and types of private commercial guild activity occurring in Middle Byzantine Constantinople, including glass and copper working, silk trading, and food markets (Leo 912; Michael 1964:252; Talbot 1994; Mango 2000). In terms of surplus food, *The Book of the Prefect* provides accounts regarding grocers, specific animal markets for sheep, pigs, and lamb. The text also refers to local fish markets acquiring their catches from local beaches such as the those on the Golden Horn (Leo 912; Mango 2000:199-200). Accounts from visiting travelers describe the great wealth of the city, with gold, silver, and precious cloth being provided to King Sigurd of Norway and his royal procession during their visit to the city (Harris 2017:1). This written evidence of non-food producing specialization as well as highly regulated commerce and trade all point indirectly to a plethora of surplus resources. Archaeological evidence also points to sophisticated water

management, including long distance aqueducts reaching lengths of 451 km in length during the Early Byzantine period, before eventually downsizing due to upkeep needs in the 12th century, contributing to decreased water supplies for the city (Wilson 2012:5-6).

Ankara

Similar to Kerkenes, and Constantinople, one can point to industry and specialized labor as indirect evidence of surplus resources including metal processing, plastic production, electronics, and vehicle manufacturing (Aksoy 2007:1074). One may also turn to the Atatürk Forest Farm (AFF), designed to produce and support the economy of Ankara, encapsulating around 8,150 acres of land as of 2017 (Bilgi 2017:29-30). Another line of indirect evidence for Ankara's surplus resources can be seen in its immense population, particularly in a Malthusian sense of population versus resource limitations (Donald 2007). Ankara, along with other modern Turkish "megacities," suffers from water shortages. Factors such as industrial and agricultural pollution, as well as water salinity and climate change have contributed to this issue, resulting in programs such as Every Drop Matters to improve water collection, storage and irrigation (SIWI 2012; Düzen & Özler 2013:5).

Significant Built Environment

Kerkenes

When considering the built environment in Kerkenes, one should immediately look to its 7 km long defensive wall, 7 gates and fortifications, water collection system, walled urban blocks, and Palatial Complex as significant features (Summers and Summers 1994). The city

wall is primarily composed of uncut granite, with periodic towers and glacis fortifications (Lehner 2015:122). Osborne and Summers (2014) examines monumentality at Kerkenes through the viewshed examination of two monumental pathways which have been excavated, the Cappadocia Gate and the Monumental Entrance to the Palatial Complex, arguing that they provide evidence for centralized planning and construction efforts. Both entrances include carvings, granite steles, idols, and relief sculptures. The Cappadocia Gate, one of Kerkenes' 7 gates along its monumental city walls, has its high glacis and freestanding walls, after restoration efforts, standing around 4 meters in height (Branting 2012:96), although the ancient construction may have been much taller. The Monumental Entrance to the Palatial Complex's includes an inclined, broad, paved, court flanked by two large platforms, around 10 meters in length each, with smashed stone idols (Summers and Summers 2008:64, 66).

Constantinople

Constantinople's monumentality and built environment can be assessed through the many iterations of its wall, as well as its palaces and churches. The 12th century palace complexes, the Great Palace and the Palace of Blachernae include multiple buildings, with the Great Palace covering 5 square kilometers (Harris 2017). Other major monumental structures include the Hippodrome and the Hagia Sophia (Ousterhout 2019a). The city included many architectural features, including hundreds of churches and monasteries (Bjork 2010), hospitals, warehouses, docks, and baths (Ousterhout 2019a). By the 12th century, Constantinople was relying heavily on the monumental Hadrianic aqueduct as a major source of water, and had a history of incredibly long, impressive aqueduct systems hundreds of kilometers in length (Bono et al 2001; Wilson 2012:5-6). Ousterhout (2019a) also emphasizes that many of the great monuments from the 4th to

6th centuries survived into the Middle Byzantine period, such as the large main streets, triumphal monuments, basilicas, and public buildings.

Ankara

A particularly interesting aspect of Ankara's built environment comes from its planned nature, designed to represent a modern capital city (Batuman 2012:578). The city includes green neighborhoods and green belts, as well as developed public spaces like parks, apartments, schools, and factories (Kacar 2010:53). The city has also developed an extensive urban transportation system, with 23.4 kilometers of metro and light rail transit (World Bank 2015:68), as well as hundreds of bridges, tunnels and pedestrian overpasses built around the turn of the century (Batuman 2012:582-4). Like Constantinople, Ankara is home to impressive religious buildings as well, including the Parliament Mosque and the Kocatepe Mosque (Sü & Yilmazer 2007:21-22; Özaloglu & Gürel 2011:337-8).

Heterogeneous Labor and Craft Specialization

Kerkenes

Turning once more to the evidence of craft production, construction, and architectural design, it is difficult to argue there was not some form of craft specialization in Kerkenes during its 50 to 100-year life span. Summers (2006), for example, outlines the monumental constructions of the city's fortifications and walls, made almost entirely from granite, which while levered into position would require three to four people per block during construction of the base of the wall. Further tool technology is evident in the use of swallow-tailed and dove-

tailed clamp cuttings used for the Monumental Entrance to the Palatial Complex. These clamps would have been used to tie stone blocks together and to timber frames (Summers 2006a:178). Excavations at the Monumental Entrance of the Palatial Complex have also turned up 151 metal objects used primarily for architectural support and decoration (Lehner 2015:125). Excavations also show ceramics dated between the Alişar IV painted tradition and Achaemenid shape ceramics. Unfortunately, due to looting and “treasure hunters,” the full extent of what “splendors” that may have been taken from the city are only hinted at by what remains (Draycott et al. 2008:3, 5-6).

Constantinople

As mentioned previously, one may turn almost immediately to the historical record and written documents for examples of Constantinople’s heterogenous labor and craft specialization. The states strictly regulated manufacturing and marketing guilds, as well as their locations (Michaels 1964:252). The *Book of the Prefect*, written in 912, covers regulations governing 22 types of guild activity and establishes the sale and manufacture of goods such as precious metals, textiles, saddles, soap and candles (Leo VI 912; Mango 2000:199, 201). The *Miracles of St. Photeine*, another Middle Byzantine text, describes glass smelting workshops and copperworkers, incidentally providing historical evidence in the debate over whether medieval Byzantium imported or produced its own glass (Talbot 1994; Mango 2000:202).

Ankara

An administrative and industrial city, Ankara transitioned from agricultural to industrial exports during the 1950s (Batuman 2012:581). As of 2007, the Organized Industry Region (OSTIM), a 5,000,000 m² area, represented around 5,000 enterprises and 100 market sectors. The majority of these companies worked in machine production, metal processing, medical products, plastics, electronics, work vehicle production, and defense products and services (Aksoy 2007:1074). After the 1990s investments and heavy growth occurred in electronics and military industries in Ankara, and by the mid-1990s Ankara was one of the leading Turkish cities in terms of industrial patents (Batuman 2012:582).

Complex Political and Social Organization

Kerkenes

While there is little in the way of written remains at Kerkenes, one can infer political and social organization from its urban layout and artistic remains. Despite the uneven topography of the settlement, the regular outlines of the urban blocks and its open areas indicate Kerkenes was likely planned by some form of central authority (Summers 2000:58-60; Langis-Barsetti 2013:78). Lehner (2015) points to the radially aligned compounds and streets as clearly demonstrating centralized planning, which this thesis argues also demonstrates some form of power hierarchy. Summers and Summers (2013) argue, given the parceled public complexes and urban blocks, Kerkenes likely has a ruler with “extraordinary vision” to turn the mountain into a capital city, capable of commanding both labor and resources. This hierarchy is supported not only by the massive Palatial Complex, but also the artistic representations left behind. For

example, the statue of a draped figure, described by Draycott et al (2008), likely represents a powerful male figure, such as a ruler or deity.

Constantinople

Similar to Kerkenes, evidence of complex political and social organization can be seen in monumental structures dedicated to powerful political figures. Harris (2017) argues the political authority of the Byzantine emperor was manifested in political buildings, such as the Great Palace and the Palace of Blachernae. The landscape was also dotted with statues and monuments to past emperors, associating political authority with religious authority. Established early in Constantinople's history, the position of emperor was thought to be appointed by God with a rightful authority; a framework which carried into the Middle Byzantine from Roman times. At a local level, the city itself was divided into 14 administrative districts (Bogdanović 2016:114). One can also see complex political and social organization through the strict legal regulations discussed throughout this thesis regarding commercial behavior in the city, emphasizing political control over economic activity, including where goods could be manufactured and sold (Mango 2000).

Ankara

Ankara's complex political and social organization is built into its very framework as a planned and designed capital city. Continuing to explore Kong's (2008) point that one way power is expressed is through manipulation and control over the landscape, one can turn to the numerous attempts at centralized municipal and urban planning, beginning first with Lörcher's

New City plan (Günay 2012:5), followed by Hermann Jansen in 1928 (Kacar 2010). Up until the 1980's Ankara followed controlled expansion, which would devolve into a more uncontrolled urban sprawl by the 1990s, with continued attempts at urban planning into the present day (Batuman 2012).

Economic Division

Kerkenes

Using the presence of a ruling class as evidence of economic division, one may turn immediately to Kerkenes' Palatial Complex and nearby public buildings in comparison to the two room dwellings of the majority of the population (Summers 2006a). Considering Childe's (1950) criteria, and Smith and Lobo's (2019) discussion of the concentration of power and wealth in cities, the Palatial Complex serves as a striking feature on the urban landscape both in its size and material remains. However, on a broader scale, Summers and Summers (1994) remarks on the lack of internal systems of defense, with nothing separating the royal quarters or creating internal barriers in the city, and Summers (2006) speculates that while the walls around urban blocks may have served this purpose, the limited demarcation is striking in comparison to other Iron Age Anatolian cities. This apparent unity may represent civil, political, or ethnic unity (Summers and Summers 1994:10), despite clear evidence of the division of power and wealth in the royal quarter versus the rest of the city.

Constantinople

Economic division in Constantinople is demonstrable through the archaeological evidence of its massive palatial complexes, its written legal regulations regarding various areas

of commerce, and its preserved green spaces and walled in agricultural areas, demonstrating various levels of economic production and concentration of wealth. Bjork's (2010) discussion of the city's open-air cisterns, suburbs, and market gardens, in comparison to Bogdanović's (2016) discussion of agricultural areas, aristocratic houses, churches, and monumental buildings highlight this variety in economic activity and concentration of wealth. As discussed previously, Harris (2017) remarks on the concentration of royal wealth and the magnitude of the 12th century palaces, which contrasts starkly with descriptions of the regulations on the location and types of manufacturing processes in the city by craft specialists and laborers (Mango 2000).

Ankara

Ankara's history as a rapidly growing city, with industrial and economic opportunity, perpetrates the vast differences in wealth and class in the city. During the mid-20th century, *gecekondu*, or squatter houses, sprung up and were integrated into the city as its massive population increases outpaced housing and job opportunities. This in part led to a secondary economy consisting of small-scale services and excess labor (Batuman 2012:579). Early planning and development in the 20th century led to modernization projects such as leisure parks, apartments and private residences, banks, factories, villages, and schools (Kacar 2010:53). Ankara also experiences economic division in the layout of its urban landscape, with its central business district, state led industrialization sectors, and OSTIM (Aksoy 2007; Batuman 2012).

Control of Labor

Kerkenes

Control over labor at Kerkenes is seen through the construction and monumentality of the city. Summers and Summers (1994), for example, discuss an artificial, stone lined, reservoir which headed an elaborate and centrally organized water control and distribution system, and Dominique Langis-Barsetti (2013) points out these constructions could have occurred over an extended period of time, rather than necessarily having been completed by a large labor force over a short period of time. Summers and Summers (2013) similarly argue the public complexes and urban blocks prove the existence of a ruler capable of commanding both resources and labor.

Constantinople

Given the interconnectedness of all of these variables, the same piece of evidence or history can provide evidence for multiple complex topics and functions within a city. In the case of Constantinople, control over labor is most obvious in the strict regulation in the location and activity of guilds, markets, and manufacturing discussed throughout this thesis. Mango (2000) outlines key areas the 912 legal text, the *Book of the Prefect* (Leo VI 912), which regulated 22 types of guild activities, and assigned areas within the city.

Ankara

One method that Ankara uses to direct labor is in the form of state funded and led industrialization, which was a significant driver of urban growth until the 1980s. In the 1960s, the Ministry of Reconstruction and Resettlement, in Ankara, worked to organize new industrial zones, expanding the city outwards and directing new industrial and residential projects

(Batuman 2012:580-1). Examining directed project management, urban planning, and construction of monuments and architecture as evidence of control over labor, one can see evidence of political control over the development and construction of the urban environment in the modern city of Ankara. One can also examine larger scale economic policies to explore control over labor. Erman (2011), for example, points to economic liberalization policies in the 1980s, emphasizing a shift from national developmentalism to an economy and labor force influenced by global capital, foreign consumption goods, and new industrial production sectors. Prior to this transition, national economic policy directed labor towards rapid industrialization and construction of infrastructure (Erman 2011:74).

Cultural Expression

Kerkenes

Since 1993, the Kerkenes Dağ Project has found significant evidence of Phrygian material culture at Kerkenes, including ceramics, statuary, architecture, and inscriptions which indicate its Phrygian connections (Brixhe and Summers 2006; Summers 2006b). The debate over Kerkenes' cultural connections dates back to its early explorers, with early attributions to the Hittites, and later the Medians (Branting et al. In Review:13, 15). However, Phrygian cultic imagery and paleo-Phrygian inscriptions and graffiti indicate Kerkenes was a Phrygian cultural center (Brixhe and Summers 2006; Summers 2006b). For example, the Cappadocia Gate features multiple Phrygian artistic elements, including a statue of an individual that Summers (2006b) associates with the Phrygian mother goddess Matar. Inscriptions found at the Monumental entrance to the Palatial Complex also include Old Phrygian inscriptions (Brixhe and Summers

2006; Summers 2006b:648). In addition, Summers (2006a:178) points to the close parallels between the architectural features of the Monumental Entrance and Phrygian Highlands of central Anatolia during the 6th century BCE.

Constantinople

A clear-cut example of cultural expression in Byzantine Constantinople may be seen in the religious constructions spread throughout the city. Since the reign of Constantine in the 4th century, the city of Constantinople was seen as an important Christian city, with some calling it the New Jerusalem, and others seeing it as an ideal model of a “Christian capital” (Bogdanović 2016; Harris 2017). Harris (2017) states that by 1200 C.E., the city was home to nearly 300 monasteries and convents, and nearly 300 churches. He also emphasizes the city’s reflection of the importance of religion and its relation to political authority through descriptions of common iconography such as past rulers depicted with halos or being blessed by Jesus Christ or the Virgin Mary.

Ankara

In contrast to Constantinople, one can see significant cultural expressions through the historical lack of emphasis on religious architecture and symbology. The previous capital of the region, Istanbul, was associated with the Ottoman Empire, its government, and Islamic rituals the Atatürk regime rejected in its government. This resulted in cultural signifiers of these traits associated with Ottoman traditions, social orders, and identities being intentionally left behind (Kacar 2010:44, 46). Built into the fabric of the urban landscape and its planned development is the intentional reference to “modernist” Western culture (Batuman 2012:578). The Jansen plan

for the development Ankara, approved and implemented in the 1930s, sought to emphasize pre-Ottoman history as a focal point of the city, building around Ankara Castle, built by the Hittites, and later associated with the Phrygians, Lydians, Persians, Galatians, and Celts (Kacar 2010:47-8). Western style public spaces also became major focuses of attraction as features in Turkey's intended modernization project (Kacar 2010:53).

City External Specialization

Administrative Influence

Kerkenes

While the extent of Kerkenes' political and administrative influence on its hinterland is not entirely clear, it may have been the capital of its own regional kingdom. Since the beginnings of archaeological research at Kerkenes, scholars have recognized the city was likely a capital, with a wider region of control than its immediate catchment area. While further research is necessary to clarify the inner administrative and military power of the city, decades of research have confirmed Kerkenes was a city, not a ceremonial or military center, that would not necessarily have to depend on imperial organization for the access to the network of resources inhabitants had available to them (Branting et al. In Review:12). As mentioned previously, Kerkenes' location within the local landscape could also speak to its power, with Anderson (1903) and Branting (1996) pointing out that Kerkenes is located at the junction of six significant roads. Summers (2000) also suggests the position of the city on top of the mountain allowed it to overlook key routes between the Mediterranean and Black Sea, along the Cappadocia plain,, making it a prime location for the capital.

Constantinople

Similarly, to Kerkenes and Ankara, Constantinople serves as the capital city, more particularly to the Byzantine Empire. The religious overtones to Constantinople's construction of political authority, as discussed by Harris (2017), demonstrates the concept of the city of Constantinople, and by extension the Empire, as being ruled by an emperor with rightful authority over the entirety of the Christian world. In terms of the city's relationship to its empire, Bogdanović (2016) explains, the Byzantines referred to both their capital and the empire as a whole as "*the City*," tying their conception of the Empire more so to the capital itself than the Empire's territory or ruling dynasty. The capital's political authority covered a radius of 100 miles (Mavridis and Vatalis 2015:376). Ousterhout (2019c) discusses how during the Middle Byzantine period, Constantinople used religion as a part of political negotiations, exporting their intertwined culture and politics, while competing with the pope in Rome for prominence in the larger geopolitical landscape. In relation to the broader world, Constantinople was strategically located in close proximity to Europe, Asia, and Africa, by land and sea, facilitating commercial, economic, and political exchange (Bogdanović 2016:102).

Ankara

Ankara is the capital of the modern state of Turkey, becoming the seat of parliament in 1920 under Mustafa Kemal Atatürk, and the capital in 1923 (Kacar 2010:44). The city functions not only as a seat of government with political authority over a country, but also as a seat of government to a country which participates in multinational organizations. A member of the

United Nations, the Turkish government has also been applying for membership in the European Union since the turn of the century, which has resulted in numerous political changes. As of 2014, the Turkish Parliament had amended the constitution 103 times to better comply with European union conditions for membership (Cengiz 2014:688). Lust (2017) and Cengiz (2014) both highlight the governmental changes and constitutional political reform Turkey has undergone over the last century, two of which resulted from military coups in the mid to late 20th century.

Economic Influence

Kerkenes

Kerkenes' economic influence on its surrounding landscape is demonstrated through the non-local materials found. Branting et al. (In Review) argue that Kerkenes' inhabitants likely had access to resources from a larger region than its immediate catchment, though it was not necessarily dependent on imperial organization. For example, decorative bronze sheet metal found in Kerkenes, Lehner (2015) argues, is indicative of the long-distance trade of pure tin as a commodity. Kealhofer et al. 2010, in a neutron activation analysis of ceramic samples from Kerkenes, found that they came mostly from non-local source, given that no local sources of clay for them were identified. This indicates that Kerkenes relied on a network of both local and non-local providers of goods. Similarly, isotope analysis of copper demonstrates non-local sources from the Pontus and Taurus mountains (Branting et al. 2019). John G.C. Anderson, during the early 20th century, remarked on the importance of Kerkenes' location near a significant trade

route intersection, the nexus of which would have given Kerkenes control over both its local landscape and passers through (Anderson 1903).

Constantinople

As discussed previously, Bogdanović (2016) emphasizes Constantinople's strategic location in the larger socio economic and geopolitical landscape in terms of economic and political exchange. Using historical accounts, one can look more specifically at certain aspects of trade Constantinople was involved in, as well as the importation of resources. For example, an account from Leo of Synnada describes the importation of pigs, sheep, asses, oxen, and horses from the settlement of Pylae to Constantinople (Leo 937; Mango 2000:199). Examining regulation also points to interregional and international economic exchange, for example, highlighting the importation of Syrian precious metals and fabrics, which were sold in different areas of the city than goods like raw silk (Mango 2000:202). The examination of material remains, such as those done by John Hayes, can also give clues to importation practices, in this instance demonstrating the importation of oil and wine through the study of amphorae (Hayes 1992; Mango 2000).

Ankara

The city of Ankara serves an important economic function for its broader hinterland and the state as a whole. According to a 2015 World Bank study, Ankara is part of Turkey's top five provincial exporters (World Bank 2015:39). The city also provides an important manufacturing center for defense services and products (Aksoy 2007:1074). In the broader context of

international economic infrastructure, one can also look to Ankara, as the capital of Turkey, and its economic relationships with the European Union. Nas (2018) examines the customs union as both a bilateral trade relationship and a trigger for Turkish alignment to EU rules regarding economic infrastructure and production standards. In this regard, Ankara not only influences its hinterland, but is itself influenced through economic means.

Cultural Influence

Kerkenes

In terms of cultural influence, one can turn to the brief historical record of Kerkenes as the possible city of Pteria described by Herodotus and the cultural affiliation of Kerkenes with Phrygian culture. Herodotus briefly mentions the city of Pteria, describing the military encounter between Croesus of Lydia and Cyrus the Great (Herodotus 1:76). While the association of Kerkenes with ancient name Pteria gives some context to its history, very minimal information about the city is actually provided outside of a brief description of the battle which led to its abandonment. Continuing excavations and surveys at Kerkenes have increasingly confirmed the settlement's Phrygian cultural connections and links to regions like the Phrygian Highlands, overturning previous considerations of Median cultural affiliations (Summers and Summers 1994:4; Summers and Summers 2003:6-7). Phrygian inscriptions, iconography, and associated architectural patterns all contribute to this analysis (Brixhe and Summers 2006; Summers 2006a, Summers 2006b)

Constantinople

Constantinople was culturally influential not only in its significance as a religious holy center, but also as a capital city that other cities emulated. Early in Constantinople's history, it was recognized for its religious significance, dating to its days as the capital of the Roman Empire, referred to by some as the New Jerusalem (Bogdanović 2016:99-100). During the 12th century, the city housed thousands of Christian holy relics and body parts from nearly 500 different saints. The city also laid claim to housing the Crown of Thorns and the *Maphorion* of the Virgin Mary, making it a pilgrimage site for both high ranking visitors and tourists alike (Harris 2017:6). Bogdanović (2016) also highlights that the city served as a cultural and urban framework for other medieval capitals, including Bulgarian, Russian, and Serbian. Constantinople became a model or prototype for the "ideal Christian city," with other capitals sharing features such as its triangular shape, proximity to water, walls, city gates, and monumental architecture patterns (Bogdanović 2016:115, 134-5).

Ankara

While the political and administrative center of Turkey, Ankara has primarily fallen behind Istanbul as the center for cultural and intellectual life (Batuman 2012:580). With that in mind, however, one can examine how ideals regarding westernization, urbanization, and cultural attitudes shifted away from Ottoman and Islamic rituals in the early 20th century, shaping the cultural landscape of Ankara (Kacar 2010; Batuman 2012). As Turkey moved towards secularization, for example, the mosque's social functions were reduced, replaced by government ministries for education, health, and culture (Özaloglu & Gürel 2001:341). As mentioned previously, one may also look to the early urban plans for Ankara, such as the Jansen plan, which

intentionally included urban features such as western-style public spaces and open areas (Kacar 2010), aligning the city with the cultural ideal of a “modern society” comparable to its European counterparts (Batuman 2012:578).

Conflict

Kerkenes

There is significant evidence of violence at Kerkenes in its short period of inhabitation through archaeological and historical records of its end. Considered to be the city of Pteria referred to by Herodotus, Kerkenes is reported to have been the location of the Battle of Pteria between Cyrus the Great of Persia and Croesus King of Lydia, (Przowski 1929; Summers 1997; Tuplin 2004). Croesus is said to have taken over the city of Pteria and enslaved its population (Herodotus 1:76; Tuplin 2004). Archaeological evidence of fires from burnt debris and geophysical survey are also present, with the majority of the wood beams and timbers used in construction having been burnt away completely (Summers and Summers 1996:3-4). Analyses of granite and sandstone at Kerkenes, some of which had vitrified, indicate the fires reached temperatures over eight hundred to one thousand degrees Celsius. The city was systematically looted and put to the torch, and the entirety of the stone defenses thrown down, leaving the site to be abandoned (Summers 2000:60; Branting 2004). Excavations indicated that some rooms were cleared of portable materials, suggesting the city was looted or the populace fled in advance prior to the fire. Evidence also suggests the city wall was intentionally damaged through considerable force and effort (Branting 2004:52). However, only two bodies have been recovered, killed by the collapsing Cappadocia Gate (Branting 2012:98).

Constantinople

Geography and sophisticated military technology provided Constantinople a unique advantage in terms of military conflict. For example, the triangular shape of the city, as well as being flanked on two sides by sea, meant that any land force attacking the city would be forced to attack along a narrow and easily defended strip of land (Harris 2017:43). The Theodosian land walls served as Constantinople's main defense for over one thousand years, standing 12 meters tall and five and a half meters thick, with ninety-six defensive towers. In addition, Constantinople was protected by Sea Walls, which while not as formidable as the Land Walls, dramatically limited the area in which ships could reach the city, therefore also limiting the ability of ships to get close enough to shore to launch an assault (Harris 2017:46). During the 12th century, the Blachernae section was rebuilt and strengthened, made even thicker than the still existing Theodosian Walls (Harris 2017:53).

Ankara

The history of the foundation of Ankara as the capital of Turkey is rooted in war, serving first as the base for Mustafa Kemal Atatürk's Turkish War of Liberation. Ankara's important role in the war came due to geographic, logistical, and political factors. The city had a railway, telegraph, and loyal inhabitants. (Kacar 2010:44). Lust (2017) points to the Balkan Wars of 1912-1913, World War I, and the resulting treaties as substantial causes for Atatürk's rebellion, with his new parliament fleeing Allied forces in Istanbul before convening in Ankara in April

1920. By October 1922, the war was won, and Lausanne peace treaty signed, resulting in the creation of the modern state of Turkey (Lust 2017).

Conclusion

Chapter Four provided a variable by variable analysis of Kerkenes, Constantinople, and Ankara through the Tripart Stage-Based Model, drawing on archaeological, historical, and modern evidence, research, and analysis. The information contained within provides the foundation for the comparison of the three settlements explored in Chapter Five and lays out the first application of the model. It contextualized Chapters Two and Three in relation to each other, and lays the foundation for critical analysis in Chapter Five.

CHAPTER FIVE: CONCLUSION

The Tripart Stage-Based Model, while allowing for the consideration of specific variables and characteristics of cities, is also intended for their comparison across settlements. Using the model to examine proportions, internal specialization, and external specialization, the significant differences between Kerkenes, Constantinople, and Ankara in their different time periods, include increasing proportions, increasingly specific and direct evidence of internal specialization, and increasingly distant areas of external specialization. Other significant differences between the settlements in the Tripart Stage-Based Model's application include the directness of evidence for each variable and the increasing ability to utilize written records as sources of data.

Examining proportions, apparent differences across time are evident between Kerkenes, Constantinople, and Ankara. This thesis proposes a population for Kerkenes of approximately 26,263 people, which in comparison to Constantinople's 400,000 (Ousterhout 2019a) and Ankara's 5.6 million (Türkiye İstatistik Kurumu 2021), appears incredibly small. However, the areal extents of Kerkenes and Constantinople, in relation to contemporary settlements, were much more extensive (Summers and Summers 1994; Harris 2017), demonstrating these small populations in relation to a modern city are not indicative of their lack of cityhood, merely characteristic of the periods within which they were found. Kerkenes and Constantinople represent massive physical features on their respective geopolitical landscapes, with Kerkenes being the largest pre-Hellenistic settlement in Anatolia (Summers and Summers 1994:3) and Byzantine Constantinople being rivaled only by Rome and Baghdad (Ousterhout 1996:36). Comparatively, Ankara does not represent the largest city in its political sphere, falling behind

Constantinople's modern iteration, Istanbul (Türkiye İstatistik Kurumu 2021). However, it too represents a trend in increasing the physical size of cities throughout time. These trends follow those pointed out by Childe (1950), who articulated that while ancient cities lacked the same scale as their modern equivalents, their scales relative to contemporary settlements were much larger.

Following the Tripart Stage-Based Model, looking only at the proportional variables of population size, density, and areal extent, all three settlements follow what most urban studies scholars, anthropologists, and historians consider a city. Examining Kerkenes and Constantinople, this thesis examines their size through the context of their city walls, which places them at 271 hectares and 30,000 hectares, respectively (Branting 2004; Harris 2017). Based on Childe's (1950) considerations of proportions followed by this thesis, both of these sizes indicate their cityhood. The city of Ankara similarly follows the definition proposed, with the second-largest population in the state of Turkey (Türkiye İstatistik Kurumu 2021), and a population density of around 18,243 people per square mile, or approximately 70 people per hectare (Demographia 2020). In comparison Constantinople, has a proposed density of approximately 13 people per hectare, and Kerkenes a proposed density of roughly 97 people per hectare. While Constantinople's population density considerably differs from both Kerkenes and Ankara, one should consider both that its walls encompass agricultural areas inside of the city (Bogdanović 2016) and that the two other variables under proportions demonstrate significant enough differences from contemporary settlements to undeniably recognize Constantinople's cityhood based purely on proportions. Low-density urban centers, in particular, are an area of intense discussion in urban studies and anthropology, as seen in M. E. Smith (2011), M. L. Smith (2006), and McIntosh and McIntosh (1993; 2003). Looking at Kerkenes and Ankara's

differences, it is important to note the population estimate and density for Kerkenes is derived through extrapolation from a small and incomplete data set, and this thesis counted all buildings as dwellings when there was uncertainty. This potentially inflates the population size and density proposed. Ankara's density, like Constantinople, is also reduced by intentionally included green areas within the city limits, as part of its urban design (Kacar 2010; Batuman 2012). For a modern point of reference, the city of New York represents an extremely high-density city, with a population of 8,336,817 and a density of 277,012.5 people per square mile, or a little over 104 people per hectare (US Department of the Census 2019).

Considering internal specialization, all three cities provide some evidence of their complexity and function as urban landscapes. However, while Ankara and Constantinople benefit from direct and plentiful surviving evidence regarding political, economic, and cultural roles within their boundaries, including legal texts and primary source documents, research at Kerkenes has relied upon the interpretations of scholars looking at the results of perceived hierarchies, political control, and economic activity (Summers 2000; Langis-Barsetti 2013; Summers and Summers 2013; Lehner 2015). However, historical records of centralized planning and control over labor through political power and hierarchies of control in Constantinople and Ankara lend some credence to the interpretations at Kerkenes. For example, records of government-sponsored urban planning at Ankara and their resulting embodiment in the urban landscape (Kacar 2010; Batuman 2012; Günay 2012), and the legal texts describing the zoning practices of Constantinople (Leo VI 912; Michael 1964; Mango 2000) represent the ideas expressed by Kong (2008), wherein power is manifested in the physical environment. While these types of records are unavailable in Kerkenes, the results of these types of political and economic practices and expressions of hierarchy and control are present in its planned landscape

and monumental architecture (Summers 2000:58-60; Langis-Barsetti 2013; Summers and Summers 2013; Lehner 2015).

Stage Two of the Tripart Stage-Based Model, for all three settlements, provides clear evidence of their cityhood. Their populations and preserved monumental construction projects speak to surplus resources across all three settlements. Kerkenes' internal water management system (Atalan 2006; Langis-Barsetti 2013), locally sourced stone construction projects (Summers 2006a), and archaeobotanical remains (Branting and Smith 2014; Marston and Branting 2016) point to access to surplus resources. Comparatively, Constantinople's legal texts, such as the *Book of the Prefect* and the *Miracles of St. Photeine* (Leo VI 912; Talbot 1994; Mango 2000) provide context regarding the city's surplus resources, control over labor, complex social and political organization, heterogeneous labor and craft specialization, as well as levels of economic division. Monumental architecture and urban constructions across all three settlements point to aspects of cultural expression and complex political and social hierarchies, including, for example, the Palatial Complex of Kerkenes (Summers 2000; Summers and Summers 2008; Osborne and Summers 2014), the palaces and churches of Constantinople (Harris 2017; Ousterhout 2019a), and the westernized and governmentally zoned city of Ankara (Kacar 2010; Batuman 2012). Despite less direct evidence for Kerkenes than Constantinople or Ankara, scholarly research into all three settlements provides clear examples of every variable considered under the characteristic of internal specialization. Taken in conjunction with evidence supporting significant proportions for each settlement, Stage Two of the Tripart Stage-Based Model indicates all three settlements function as cities.

When looking at differences in external specialization across time, a significant factor to consider between Kerkenes, Constantinople, and Ankara is the evidence for the scales of

interaction and the distance of their influences. While Kerkenes provides some evidence of expanded contact in the Anatolian peninsula (Lehner 2015; Branting et al. 2019), Constantinople represents a meeting place of economic, political, and cultural exchange between three continents, influencing multiple contemporary capital cities across eastern Europe (Bogdanović 2016). Ankara takes such expansions in influence even further, as the capital of a country represented in the United Nations, an international organization with transnational policies and ideologies, such as the Universal Declaration of Human Rights, with the intent to maintain global peace and security (Amrith and Sluga 2008:254, 260). An important aspect worth considering in this trend of increasing connectedness to farther and farther away locations includes factors of globalization and transnationalism, which represent the intensification of relationships between global localities (Kearney 1995:548). Research in recent decades has led to the classification, particularly of global and world cities, forming transnational communities and identities, participating in a global economy, accumulating capital, providing intense social and economic interaction, and participating in a global hierarchy (Low 1996:393).

Stage Three: external specialization, as an overarching characteristic, is represented in all three cities to varying degrees. While Kerkenes likely enacted some form of political or economic control over its hinterland, these interpretations come largely from its size and geographic position and less so from direct evidence of interactions with other settlements (Anderson 1903; Branting 1996; Summers 2000; Branting et al. In Review). Isotopic analysis of material remains indicates some form of economic exchange from as far away as the Pontus and Taurus mountains (Lehner 2015; Branting et al. 2019). However, in comparison to the recorded accounts of diplomatic visits of kings, records of the importation and exportation of goods, and the massive physical remains of resource extraction from its hinterland found at Constantinople

(Mango 2000; Bono et al. 2001; Wilson 2012; Harris 2017), the disparity in evidence becomes apparent. Similarly, in comparison to the massive scale of global international political involvement based on Ankara's government participating in the United Nations, Kerkenes and Constantinople have far smaller reaches. Despite the disparity in scale, evidence of external specialization is apparent at least to some degree in all three cities, and given all three settlements are capitals, one would find it difficult to argue they failed to function in relation to their hinterlands. Taking all three stages of the Tripart Stage-Based Model into consideration, then, each city represents significant evidence of all three overarching characteristics and demonstrate both the functionality and form of cities.

An important note in considering the trends proposed by this research is the small sample size considered. Examining only three cities across the entirety of human habitation of even only one geographic region provides only the tiniest fraction of an understanding of human settlements' overarching patterns. Further research into cities in Anatolia, across the globe, and across time is necessary to pinpoint any trends of differentiation between cities and any potential universal commonalities. In the future, in order to better understand trends across time in Anatolia, an increased sample size for each general time period would be necessary to determine how each settlement differs not only from cities in those different time periods, but also from their contemporaries. This exploration would enable a conversation about if these differences speak to unique expressions of culture or if the cities are representative of their time. Since this model also seeks to examine cities on the whole, and to further expand research into differences across time globally, further research would need to be expanded outside of the Anatolian peninsula. Just as an in depth understanding of the broad nature of settlement patterns is necessary to determine temporal differences in Anatolia, so too would a comprehensive

understanding of the context of other cities be necessary for broader and more accurate comparisons under the Tripart Stage-Based Model. While knowing the full extent of the settlements and behaviors of past peoples is impossible, the Tripart Stage-Based Model becomes more and more applicable as research continues.

Additionally, while this thesis intentionally limits its study of comparison geographically and by city function (i.e.: capital cities), further research is necessary to test the model's applicability to cities with varying functional and cultural backgrounds. For example, Smith and Lobo (2019) propose a model of economic and political cities, and Smith (2002) proposes ritual and cultural centers as well. As mentioned previously, one must also consider debates regarding what settlements count as cities, and how such settlements would fall under the Tripart Stage-Based Model. Given these varying functions a city may take on, further exploration in the Tripart Stage-Based Model's applicability to these types of cities is critical before making universal statements about the defining characteristics of cities as a settlement pattern.

The scope of this thesis also provides only a shallow dive into the three city case studies, and further research and exploration into Kerkenes, Constantinople, and Ankara would provide a more complex picture of their place in the larger context of human settlement patterns. Ongoing research at Kerkenes (Branting 2019) continues to uncover new aspects of the city, and continuing historical, sociological, and economic research on Constantinople and Ankara can provide new perspectives regarding the characteristics and variables explored in this thesis. Cities are also not static, and while Kerkenes may have been inhabited for only a brief period of time, Constantinople was inhabited for centuries, and Ankara continues to home millions of people to this day. Continuing explorations of the changes these cities have both undergone and

continue to go through will only continue to highlight the complexity of human existence and the histories of the people and places associated with them.

This thesis asked, “what is a city?” and while many researchers and the common person alike will have a wide range of definitions, the Tripart Stage-Based Model utilizes common themes and important considerations within them, creating a complex and more well-rounded definition. Many definitions have based cityhood on the question of proportions (Merriam Webster; Wirth 1938; Childe 1950; Sjoberg 1965), while others have focused more heavily on function and inter-relationships with other settlements (Trigger 1972; Blanton 1976; Smith 2002). The Tripart Stage-Based Model incorporates aspects of all of these approaches, and emphasizes the philosophy embodied by Monica Smith’s (2006) triaxial model; no one feature or specific aspect of a settlement can determine cityhood. A Settlement must be examined holistically and with an understanding of context.

The Tripart Stage-Based Model proposed in this thesis provides a useful framework with which to perform analyses, through time, and with further applications, across cultural and geographic boundaries. Exploring the characteristics of proportions, internal specialization, and external specialization, as well as their subsequent variables through the lens of the ancient city of Kerkenes, the Medieval city of Constantinople, and the modern city of Ankara, this thesis provides a foundational work in outlining a new model for the exploration and comparison of cities which should continue to be explored in future research.

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