Community Organization and Imperial Expansion in a Rural Landscape:

The Mani Peninsula (AD 1000-1821)

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THESIS

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To the people of Mani, past and present

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LIST OF ABBREVIATIONS

DEM	Digital elevation model
GIS	Geographic Information System
LOS	Line-of-sight
SNA	Social network analysis
WSA	World-systems analysis
WST	World-systems theory

LIST OF FOREIGN TERMS

akçe	monetary unit used by the Ottoman Empire
askeri	individuals associated with the Ottoman military or administration
bey	local ruler appointed by the Ottoman Empire
çiftlik	land unit under the Ottoman Empire; in the 15th century AD, a small peasant landholding; in the 17th century AD, a large, privately held, hereditary estate
cizye	poll-tax levied on non-Muslims
defter, icmal	summary version of the Ottoman tax register, used as a guideline for distributing tax revenue among the guards stationed at fortresses within a region
defter, mufassal	detailed version of the Ottoman tax register, used to assess the amount of tax owed by each family unit
defter, tahrir	tax register compiled by the Ottoman Empire
dönüm	unit of land in the Ottoman Empire, equivalent to 919.30 m^2
exoklisi, -ia	church built outside the bounds of a settlement
fuochi	hearths, an enumeration that appears in the 1618 Nevers Catalog
gourna, -es	pecked stone basin used to water animals, often found next to cisterns
hâne	single peasant family, the basic tax unit under the Ottoman Empire
kalderimi, -ia	stone-built or cobbled road
kalivi, -ia	animal hut or sheds built in pasture areas
kamara, -es	barrel vault used to support the roof or upper floor of a building
kapetenoi	powerful local clans imbued with authority by the Ottoman Empire
kastro	fortified area typically associated with medieval hilltop Greek villages
klouvi, -ia	projection without a floor that extended out from a residential structure, often above a doorway
kolopyrgos, -oi	"megalithic" tower in Mani
kolospita, -es	"megalithic" house in Mani

LIST OF FOREIGN TERMS (continued)

koloyisterna, -es	“megalithic” cistern in Mani
laiki	public market, typically held in the *plateia* of a Greek village
liakos, -oi	staircase and landing outside the second-floor entryway of a house
makrinari, -ia	traditional longhouse in Early Modern Greek villages
makroni, -ia	long beam of limestone used to support the floor or roof of a structure
maktu	lump-sum tax paid collectively by a community to the Ottoman Empire
mezraa	fields of abandoned villages now used primarily for grain production, a designation that appears in the Ottoman *defters*
mirologia	traditional Maniate funeral dirges sung by women
palaiomaniatiko, -a	abandoned, “ancient Maniate” villages
petromachos, -oi	covering over a window to protect a person inside and allow them to shoot at an invader
piastres	Venetian tax amount, estimated equivalent of the Ottoman *maktu*
plateia	open square at the center of a Greek village
polemotrypa, -es	“war hole” built into the wall of a building to allow a person inside to shoot at a person outside
pronoia	temporary land grant provided by the Byzantine Empire in return for military service (i.e. a military fief)
reaya	ordinary subjects who paid taxes to the Ottoman Empire, including peasants, farmers, merchants, and craftsmen
sipahi	Ottoman cavalryman
soilida, -es	small but prominent clan or family in Greece
timar	temporary land grant provided by the Ottoman Empire in return for military service (i.e. a military fief)
uomini	combatants, an enumeration that appears in the 1695 Muazzo Catalog
xemoni, -ia	small cluster of houses built on the outskirts of a village

SUMMARY

The process of imperial expansion is complicated, prolonged, and in many ways dependent on the context in which it is taking place. Archaeologists and historians alike have devoted much research to this topic, and their efforts have helped to develop useful theoretical frameworks, such as the core-periphery model and an approach that frames the process of imperial expansion as an interaction between imperial and local agents. More recent scholarship has investigated the creation of "zones of resistance" and "fluid" frontiers that result when empires expand into marginal or rural regions. Still, archaeologists today are ill equipped to talk about the material signatures of imperial expansion into these regions, due in large part to a lack of case studies from places that imperial administrators themselves considered marginal.

This thesis provides an initial framework for understanding how regional settlement patterns and community organization are affected when a rural area is incorporated into an expanding empire. The Mani Peninsula in Greece is an ideal place to study this process because of its location on both the physical and figurative "edge" of several succeeding empires. From the birth of the Byzantine Empire until AD 1462, Mani was under the rule of administrative officials stationed in Constantinople and Mystras. From 1462 through 1821, it was a part of the Ottoman Empire, with the exception of a brief 30-year period of rule (1685–1715) under the Republic of Venice. The peninsula is geographically separated from the rest of the Peloponnese by the Taygetos Mountains, lending the region an "island-like" quality. Today, Mani is known for its unique vernacular architecture (including the war towers and towerhouses that began to proliferate in the late Ottoman period), its blood feuds and funeral dirges, and most of all, its "memory of resistance" against the Ottoman Empire. As with many other areas under Ottoman rule, this "memory" extends back in time to the region's initial incorporation into the Ottoman

Empire. To this day, it continues to dominate the popular narrative of this period in Mani's history.

The goal of this dissertation is to encourage a cross-disciplinary discussion of imperial expansion in rural landscapes by focusing on how the process is embedded in the material record. Based on a review of archaeological case studies and theoretical literature, I develop four models that outline the expected archaeological signatures of (1) regional-scale resistance or integration within an expanding empire and (2) community-scale social organization. I then apply these models to the particular case of Mani, using data collected through a combination of archival analysis, remotely-sensed imagery analysis, extensive survey and ground reconnaissance, and field mapping. At the regional-scale, 252 sites are included in a geographic information system (GIS) database, along with the extensive route network of the *kalderimia* (cobbled roads), walled footpaths, and goat paths that connect them. At the community scale, I analyze the changing organization of the settlements in terms of their public spaces and churches, house layouts, shared storage facilities (especially cisterns), and private space.

The specific analyses chosen for this research are, for the most part, spatial in nature. These include line-of-sight and cumulative viewshed analyses to determine settlement intervisibility and the visibility of certain features on the landscape, statistical measurements of settlement clustering and dispersion, and least-cost path analysis to bays and harbors. Statistical tests are conducted on the resulting data to detect significant patterns and determine how those patterns changed over time. Finally, social network analysis (SNA) is used to model the interconnections between settlements in terms of visual networks and physical routes.

According to the "memory of resistance" that characterizes the modern historical narrative of Mani, one might expect the data to reveal a pattern of resistance immediately after the Ottoman Empire took control of the region. As other case studies have noted, however, the initial transition to imperial rule often preserves the status quo in newly acquired territories. The results of my analyses corroborate this finding: both settlement patterns and community organization were relatively unchanged after the transition from Byzantine to Ottoman rule, while more dramatic changes took place later. During a period of increased warfare and administrative change under the Republic of Venice, the settlements adopted a "resistant" pattern, while they exhibited both "resistant" and "integrated" patterns once Ottoman rule was re-established. This event also coincided with a shift at the community scale from a "community cohesion" model to a "family prioritization" model, reflecting the development of more complex walled compounds and a privatization of storage space, religious space, and defensive facilities.

The findings from this study have implications for how archaeologists detect and interpret the process of imperial expansion in rural landscapes. In particular, this study demonstrates that initial incorporation does not necessarily entail a drastic change to daily life. On the contrary, archaeologists should expect the material record to reflect a maintenance of the status quo. It takes time for empires to establish infrastructure like *kalderimia*, to perfect their taxation regimen, to install leaders from the local community, and to build military installations and fortresses. Once these changes take place, daily life is affected in such a way that it becomes possible to detect those changes in the material record. This study also contributes to a discussion of resistance, particularly in terms of how it is (or is not) embedded in the material record. In addition to the "memory of resistance" that characterizes modern Maniate identity, historical accounts testify to the many attempted rebellions against the powers that ruled the region. Where the archaeological record and these narratives meet is another question entirely. In more recent history, for example, when the Maniates' resistance is said to have been most fierce, the data suggest a more complicated picture that combines elements of both resistance and integration.

1 – INTRODUCTION

… the name of the Mani at once suggests four ideas to any Greek: the custom of the blood feud; dirges; Petrobey Mavromichalis, the leader of the Maniots in the Greek War of Independence; and the fact that the Mani, with the Sphakian mountains of Crete and, for a while, the crags of Souli in Epirus, was the only place in Greece which wrested its freedom from the Turks and maintained a precarious independence. (Fermor [1958] 2004:44-45)

This study investigates the complex processes that take place when empires expand into rural landscapes, using the Mani Peninsula, Greece, as a multi-scalar case study. Research on imperial expansion tends to focus on the relationship between cores and peripheries or, in other words, powerful regions or states and the rural hinterlands that provide them food and other resources (Chase-Dunn and Hall 1997). In this study, on the other hand, I investigate a remote landscape outside the traditional core-periphery dichotomy. Over the roughly 800 years between AD 1000 and the start of the Greek Revolution in 1821, Mani was conquered by the Byzantine Empire, the Ottoman Empire, and the Republic of Venice. Yet while the peninsula enjoyed relative autonomy due to its "island-like nature"—owing in part to a rugged mountain chain that separates it from the Peloponnesian mainland—the proliferation of Byzantine monasteries and churches, the establishment of Ottoman fortresses and cobbled roads (*kalderimia*), and the tax registers compiled by Ottoman and Venetian administrators all testify to the region's involvement in large-scale processes of empire building and expansion.

But to what extent was Mani incorporated into these administrative systems? How did local communities respond to imperial attempts at control and taxation? In short, was integration actively resisted, or perhaps limited to a political or economic sphere? Mani's unique context makes it an important testing ground for theories of imperial expansion, allowing me to use the archaeological record to explore how rural communities responded to the state-building taking place beyond their physical borders. In short, this study provides an initial framework for talking about the material signs of imperial expansion, resistance, and incorporation—or the lack thereof. Focusing in on a region where a centuries-long "memory of resistance" has come to dominate its cultural identity, my goal is to open a cross-disciplinary discussion of how the process imperial expansion takes place, and how we may study its effects in the past.

The Mani Peninsula's relationship to imperial expansion is not totally unique. Over the course of human history, people living in rural landscapes have often found themselves confronted with the powerful military and bureaucratic machines created by empires as they expand into new territories. How local residents respond to (and are affected by) this confrontation has been the focus of some historical and archaeological research. James C. Scott, for example, explored the creation of zones of resistance and refuge on the edges of expanding states in Southeast Asia (e.g. 2009). Galaty et al. (2013) recently proposed a model of "fluid" frontiers, in which frontier regions may oscillate between a strategy of isolationism and interaction when dealing with expanding states. In areas that are more directly incorporated into a state system, power relations between state officials and local residents are equally dynamic, reflecting the changing role of the territory within the broader macro-region—a tendency well demonstrated, for example, in the frontier between the Wari and Tiwanaku states in Peru (Nash and Williams 2004).

The theoretical framework of this study combines theories regarding the material embeddedness of social phenomena and models of state expansion, including the core-periphery model of world systems theory and the territorial/hegemonic spectrum of imperial strategy. I consider the motivations behind imperial expansion and the ideological and/or militaristic strategies used by imperial bureaucrats to bolster their authority in remote territories (Smith and Montiel 2001), while simultaneously approaching this process as a negotiation between locals and foreign administrators (Blumi 2003b; Kardulias 2007; Galaty et al. 2013). These types of approaches are useful for understanding how state expansion affects peripheral regions, particularly in terms of the development of economic and military infrastructure, the solidification of territorial borders, the imprinting of hegemonic ideology, and the economic exchange between cores and peripheries. However, areas that cannot be classified within the strict dichotomy of core and periphery have received less attention. Some work has been done to expand this polar classification: for example, through the use of alternative terms like "frontier" and "margin" that expand the world-systems analysis framework. Mani's central role in the history of the modern Greek state is a prime example of how places outside the core-periphery dichotomy can oscillate between disconnection and prominence in the span of several generations. As a result, this study helps expand the understanding of imperial expansion by emphasizing the spectral nature of regional relationships within world systems and by exploring the effects of state incorporation on the rural landscapes within these systems.

Approaching the study from a multi-scalar perspective meant collecting data at both the regional and community scales, as well as contextualizing those datasets within a macro-scalar perspective. Using the theoretical paradigms above and a wide body of ethnographic literature, I develop four theoretical models that outline the expected archaeological signatures of (1) regional-scale resistance or integration within an expanding empire and (2) community-scale social organization. The collected datasets are not only interpreted according to these theoretical paradigms, but also compared to the rich historical accounts of Maniate society during the medieval and post-medieval periods. At the same time, the cross-cultural relevance of these models reaches far beyond Mani's shores, and may be used to understand the dynamic local–

regional–macro-regional relationships in other peripheral and frontier regions that come under the rule of an expanding empire.

The research component of this study involved a combination of archival analysis, remotely-sensed imagery analysis, extensive survey and ground reconnaissance, and field mapping. Satellite imagery was obtained through a grant to the Diros Project (co-directed by Dr. William Parkinson) from the DigitalGlobe Foundation, historical aerial photographs were purchased from the Hellenic Military Geographical Society (GYS), and a 5-meter digital elevation model (DEM) was provided courtesy the National Cadastre and Mapping Agency, S.A. (Ktimatologio). The goal in combining these methods was to conduct a "full coverage" survey by identifying as many medieval and post-medieval sites as possible. The study region was comprised of the entire southern half of the Mani Peninsula (from Oitylo south)—approximately 350 km^2 in area—and a total of 252 sites from these time periods were identified and recorded. The archival records included six Ottoman *tahrir defters* (tax registers) obtained from the Başbakanlık Osmanlı Arşivi in Istanbul and translated by Dr. Elias Kolovos at IMS-FORTH, as well as five published Venetian and French settlement lists. Together these lists provided insight into toponym identification, population distribution, land management strategies, and agricultural production. The primary archaeological datasets included domestic, religious, and military architecture; and routes including *kalderimia*, walled paths, and goat paths.

After combining these elements in a geographic information system (GIS) database, I conducted a variety of spatial analyses to study the impact of imperial expansion on where the Maniates lived and worked, how they traveled between settlements, how they were connected to the rest of the empire, and how they organized their communities. These methods included least-cost path analysis to determine the realistic distance between settlements and coastal access points, Ripley's K function to assess settlement clustering and dispersion, line-of-sight (LOS) and cumulative viewshed analysis to assess the visibility of different features on the landscape, and social network analysis (SNA) to model the LOS and route networks connecting the settlements at different points in time.

In terms of this study's cross-cultural applicability, the models and methods developed here will be useful for comparative studies of other rural landscapes that have been claimed by expanding empires and states. Few regions like this have been studied in such detail, or with the benefit of high-resolution datasets like the historical archives consulted for this study. Building on the long tradition of archaeological survey in the Mediterranean, I employed a variety of GIS and spatial analyses to investigate long-term changes in the landscape. Combining a study of the visibility and route networks with social network analysis provided innovative insights into the ways that communities may have interacted over time. The theoretical models that I developed, in turn, will be an important contribution to the study of fringe territories that are incorporated into expanding states. As the results of my analyses show, the transition from one empire to the next had relatively little impact on the people living in Mani, at least in terms of the spatial organization of the communities and the distribution of sites on the landscape. This finding has important implications for studies of imperial expansion in other regions of the world. The next step, of course, will be to test these models in other parts of the world, from other frontiers of the Ottoman Empire (e.g. Albania, Croatia, Georgia), to countless other historical periods and locations.

At the regional scale, on the other hand, this study represents the "first" in a number of categories pertaining to Mani: it is the first English-language catalog of medieval and post-medieval settlements; the first mapping of the region's pre-modern route network (including all extant *kalderimia*); the first translation of Ottoman *defters* referencing the region; the first application of GIS technologies and spatial analyses to understand long-term settlement pattern change in the region; and the first combination of historical and archaeological datasets to refine medieval settlement identifications in Mani. In itself, the data gathered for this project—regardless of my interpretation and discussion from an anthropological perspective—will be of value to researchers interested in this very unique and very special part of the world.

1.1 – Chapter Overviews

In Chapter 2, I present an overview of the geology, history, and culture of the Mani Peninsula. The region's island-like nature, as Patrick Leigh Fermor ([1958] 2004:45) once wrote, is "the key to the whole thing." Mani's physical separation from the Peloponnesian mainland and its orientation toward the sea had a dramatic influence on the development of a vernacular architectural tradition, regional cultural practices, its inhabitants' tendency toward piracy and outlawry, and the propagation of tower-towns and blood feuds in its later history. In many ways, this separation lessened the impact of certain systems and processes in the region—such as the widespread development of privately-held estates, or *çiftliks*, under Ottoman administration—but in other ways Mani was at the center of international power struggles and quests to conquer the eastern Mediterranean.

In Chapter 3, I review the theoretical framework of the dissertation, broken down into three scales of analysis: macro scale, medium (or regional) scale, and micro (or community) scale. The macro-scalar theories of world-systems analysis and the interactional approach to imperial expansion are the core components of the overall theoretical framework, used later on to interpret the regional- and community-scale datasets. I review the traditional approaches used by archaeologists to analyze regional datasets (Thiessen polygons, rank-size analysis, graph theory, and central place theory), as well as the more recent developments in defining socially-constituted “communities” from an archaeological perspective. In the key sections of this chapter (3.2.2 and 3.3.3) I present models that can be used to interpret archaeological patterns in regional- and community-scale data, respectively. The regional-scale models deal with the material signatures of resistance to or integration with an empire or state, grouped into three variables: settlement location, settlement visibility, and distribution of the route network. The community-scale models describe the expected material signatures of different forms of social organization, based on two variables: types of integrative facilities and evidence of resource sharing practices. Together with the macro-scalar theoretical paradigm, these models can be used to better understand the complex interplay between local residents and imperial agents in the context of imperial expansion.

In Chapter 4, I discuss the specific historical datasets, archaeological datasets, recording methods, and analytical methods used in this study. Combining all these disparate datasets and methodologies is a GIS infrastructure. The end goal of this research is to approach the study of imperial expansion from a traditional landscape perspective using modern technologies and geospatial analyses. My approach, while not totally innovative, is unique in its combination of several interdisciplinary methods. The historical records, for example, are used to help identify abandoned sites in the field, and plotting the journeys taken by the 16th and 17th-century scribes as they recorded the Maniate settlements helps in the identification of lost toponyms. In terms of the analysis, I use a variety of GIS-based spatial analysis tools to detect subtle changes in settlement patterns and statistical tests to assess the significance of these changes. I also use the more subjective approach of social network analysis to understand how the settlements were interconnected and how these patterns changed over time.

Chapter 5 is devoted to the regional-scale data and the results of my geospatial and social network analyses. I group the results according to the variables in the regional-scale theoretical model presented in Chapter 3. Additional data tables can be found in Appendix B.

In Chapter 6, I offer eleven community case studies, which are chosen to represent the diversity in settlement types in both space and time. Providing detailed descriptions of specific settlements is necessary to illustrate the variability of certain aspects of the Maniate settlements—how they are laid out spatially, how they changed demographically, and how their histories are intricately tied to the local landscape. At the same time, providing these overviews highlights some key similarities and patterns that can be compared with the community-scale theoretical models to understand how Maniate social organization changed over time.

Chapter 7 is divided into two sections: an interpretation of the regional- and community-scale datasets according to the theoretical models presented in Chapter 3, and a discussion of these trends from a macro-scalar historical and theoretical perspective. One of the key findings of this study is that Maniate communities were not substantially changed during the initial transition from Byzantine to Ottoman rule, but rather underwent dramatic transformation when the second period of Ottoman rule was re-established in AD 1715. The chapter ends with a discussion of the potential reasons for these patterns.

2 – REGIONAL BACKGROUND

[Mani's] geographical seclusion, locked away beyond the mountains on the confines of Sparta, and the steepness and aridity of its mountains are the key to the whole thing.
(Fermor [1958] 2004:45)

This chapter provides an overview of the geology, history, and culture of the Mani Peninsula, the central and most southern of the Peloponnese's three main peninsulas (Figure 1). The region is relatively isolated from the mainland due to the prominent Taygetos Mountains, which form a spine along the length of the peninsula. However, Mani is also a strategic location because of its proximity to the Kythera channel, a key route for ships traveling between Greece and the rest of the Mediterranean. These contradictory aspects of its geography give Mani an "island-like" quality (Panagiotopoulos 1996). In some ways it is isolated, but in other ways it is pivotal to the regions around it.

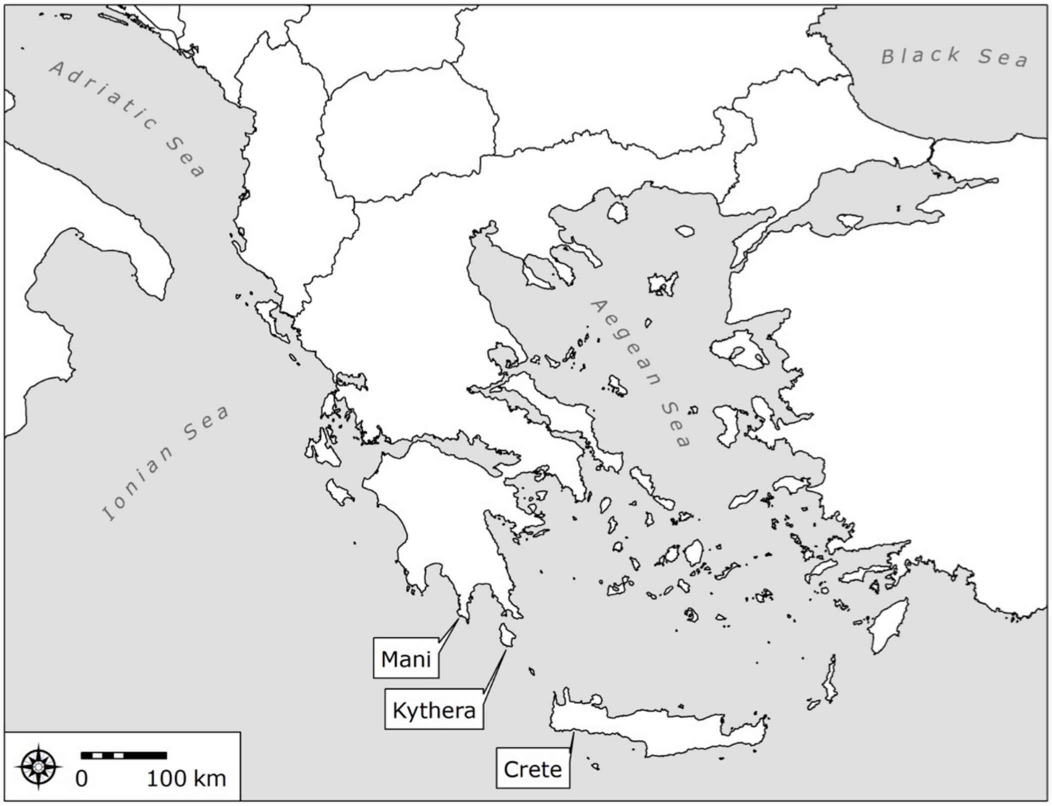


Figure 1. The Mani Peninsula in the context of the Aegean Sea.

Though Mani is now a desolate region, with its abandoned settlements and unplowed fields, its legacy lives on in the writings of travelers and the mythological history of Greece. It is said that the Spartans took refuge in in the region when the power of the city-state waned. One of the Classical-period entrances to Hades was located at Tainaron, and Paris and Helen spent their first night together on the island of Kranai in modern Gytheio. During the reign of the Ottoman Empire, Mani had a reputation for resistance, and local tradition claims that it remained independent even while the rest of Greece fell under Ottoman control. It was made famous in the Anglophone world when Patrick Leigh Fermor published his travelogue, *Mani: Travels in the Southern Peloponnese* in 1958. Today, it continues to be known for its traditions of dirge-singing, feuding, towers, and piracy.

The goal of this chapter is to emphasize the uniqueness of Mani and its “island-like” nature, while also underscoring its importance as an anthropological case study. Thanks to the countless travelers that have visited the region and documented its settlements, people, and culture, there is a wealth of historical sources about Maniate settlements that date back to the 14th century AD. The archaeological data is equally impressive in scope (though largely untapped) because of the number of abandoned settlements and buildings that are still standing. Although the depopulation that took place in the early 20th century has had many deleterious effects on the region, it is one of the primary reasons that the material culture of medieval Mani can be studied today.

2.1 – Geography and Climate

Mani can be subdivided into three regions that correspond to historical, ethnographic, and colloquial boundaries. The northwest region between Oitylo and Kalamata is known as Outer (*Exo*) or Messenian Mani (Figure 2). The southwestern region is known as Inner (*Mesa*) Mani, and it is particularly isolated by the Taygetos Mountains because there is only one major route connecting to the mainland. Finally, the entire east coast from Cape Matapan (or Tainaron) north to Gytheio is known as Lower (*Kato*) Mani. The study region encompasses all of Inner Mani and the southern half of Lower Mani. The western side of the peninsula is comprised of wide, flat plains backed by the imposing mountain chain and bordered by a rugged and steep coastline (Figure 3). The eastern side is much less hospitable, with steep mountains descending rapidly to the sea. Not counting the major harbors at Kalamata and Gytheio, there are six bays deep and sheltered enough to use for mooring small ships. The rest of the bays are relatively shallow and can accommodate only smaller vessels like dinghies and small boats.

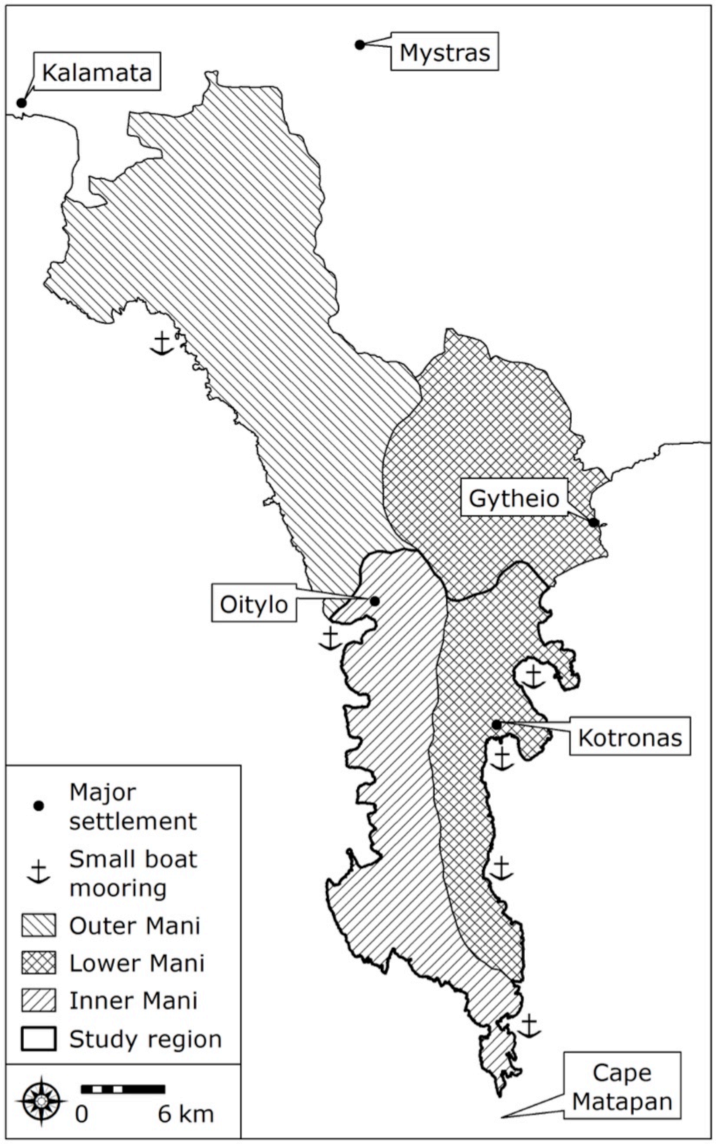


Figure 2. The Mani Peninsula, showing study region, regional boundaries, major settlements, and bays suitable for mooring small ships.

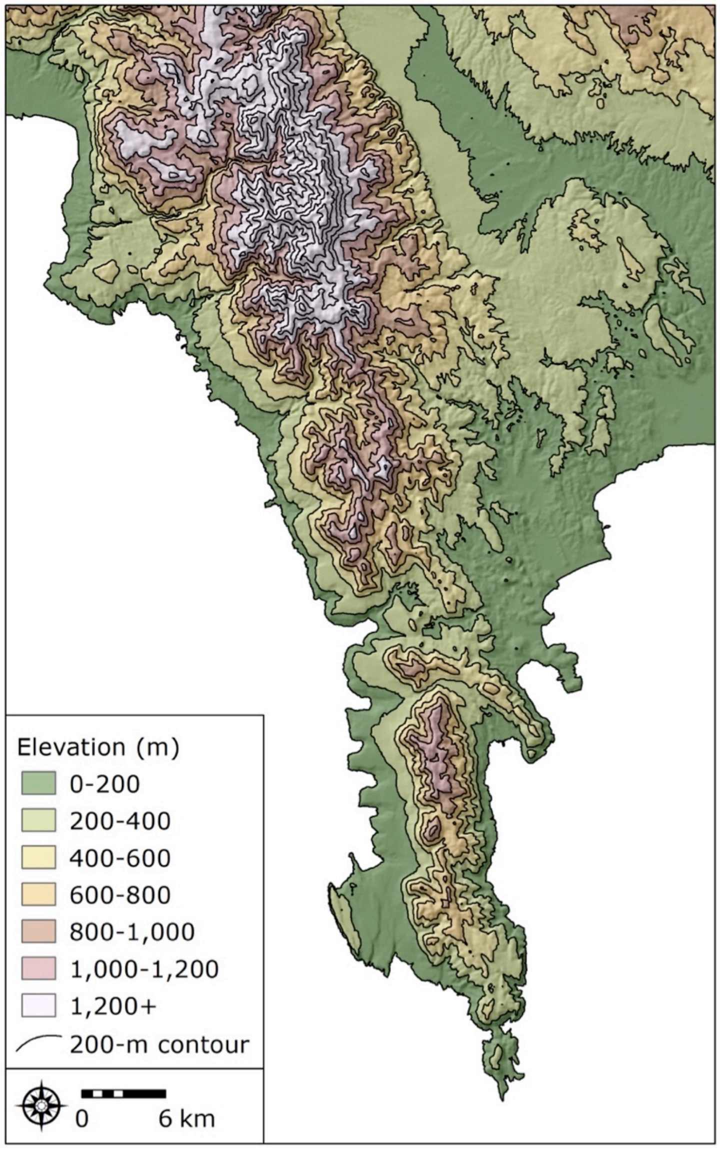


Figure 3. Geography of the Mani Peninsula.

Mani's geographical disconnection from the Peloponnese had important effects on the social and cultural characteristics of its residents. For one, the relative scarcity of overland routes meant that sea travel would have been an important means of communication, trade, and population movement. Mani's southernmost point at Cape Tainaron is 38 km from the island of Kythera and 140 km from Crete (see Figure 1). Throughout history, Mani has played a role in larger trade networks because of its strategic location near the Kythera channel. Beginning in the Bronze Age and continuing through Roman times, it was a source of a unique and highly-prized maroon marble called *rosso antico*, in addition to gray and black marbles (Warren 2012; Kokkorou-Alevras et al. 2009:171). In the medieval period, Mani continued to figure prominently in Aegean trade, but in a more sinister way—it was a natural harbor for pirates who attacked passing seafarers. Mani's location exposed its residents to the influence of other regions, and vice versa. To this day, there is a strong cultural connection between Inner Maniates and the Cretans of the mountainous western villages—oral tradition holds that the two groups came to one another's aid during the Greek Revolution (1821–1829). Historical accounts also testify to the Maniates' movement to other parts of the Mediterranean, such as when Maniate colonies were founded in Italy in the 17th century (Papadopoulos 1982; see also Fermor [1958] 2004:99-108).

Geologically, the peninsula is made almost entirely of crystalline limestone, with colored marbles especially in the upper layers (Institute of Geology and Mineral Exploration 1984). These layers date primarily to the Late Cretaceous and Late Eocene, with some Middle Triassic limestones along the southeastern coast and in the northeastern part of the peninsula. Along the west side of the central mountain spine, there are several areas where rockfall has created large talus cones at the base of the mountain. In the south, there are also concentrated areas of flysch (i.e. schists, shales, and phyllite), mainly along the mountain spine and on the coast around Vatheia and the Matapan Peninsula. Flysch is also the predominant rock type in the valley stretching north from Kotronas. There are small areas of marine or lagoonal marl deposits in Oitylo Bay and Mezapos Bay, and alluvial deposits are concentrated in Oitylo Bay and along the northeast coast.

The geology of the region directly influenced the architectural tradition of the medieval occupants of Mani. Limestone was widely available, especially in the form of rocky outcrops located on the broad plateaus along the west coast. It is not surprising that the medieval standing structures in Mani are built almost entirely of limestone boulders or stones. In only a few parts of the peninsula, metamorphic schists and phyllites were the only available building material. In these places, the typical vernacular style of building (see section 2.4.) was modified to account for the more friable nature of these rocks.

According to climatic data gathered in the first half of the 20th century, average annual rainfall along Mani's coasts is 600–800 mm, while the upper mountain plateau in the central spine of Lower Mani receives 800–1,000 mm (Kayser and Thompson 1964:Map 103). The peninsula receives between 60–80 days of rainfall, with only the very southern tip of Matapan receiving 50–60 days—most of these occur in the winter months. The annual average temperature is between 19–19.5 degrees Celsius, with January averaging between 11–12 and July between 27–28 (Kayser and Thompson 1964:Map 104). According to the De Martonne Aridity Index (Baltas 2007:71), Mani is characterized as having a typical "Mediterranean" climate, and it is somewhat wetter than the neighboring island of Kythera.

In contrast with the agricultural productivity of the rest of the Peloponnese, Mani's landscape is far better suited for pastoral activity. According to the Greek Soil Institute, there is a small area of low-quality agricultural land in the northeastern part of the peninsula, but the rest of the region is considered to have very low agricultural potential and is at a very high risk of desertification (Yassoglou 2004). Kayser and Thompson estimate that about 27% of the land is arable, while 50% of the west coast and 70% of the east coast are best suited for pasture (1964:Map 301, 319). But despite the difficulties posed for agriculture, residents have farmed

Mani's rocky soils over the centuries and built step terraces to extend arable land into the foothills. They practiced dryland agriculture, forgoing irrigation in favor of utilizing natural rainfall. Farmers lucky enough to have a stone-built *kalderimi* cross through their fields cut channels into the path to redirect water to the surrounding plants. For others, springs and cisterns were a crucial source of water in the dry summer months.

To date, the only information about Mani's agricultural output in the past comes from the 18th century and later. Before that, maslin (a mixture of grains, primarily wheat and rye) was likely an important crop in the medieval period, since it is ideally suited for drier, rocky areas like Mani (see Halstead and Jones 1989:50-52). In the 18th century, the primary crops were subsistence foods, such as corn, wheat, barley, and sorghum (Wagstaff 1965:298). To a certain extent, local farmers also participated in long-distance trade, with the primary exports being beans, honey, wax, olive oil, valonea (a tannin derived from acorns), textiles (notably silk), cattle, and salted quails (Wagstaff 1965:300-301). As elsewhere in Greece, olive production surged in the early 20th century and olive oil became a key export. An estimated 1.7 million olive trees were planted in Mani at this time, making it one of the leading areas in Greece in the number of trees planted per acre (Kayser and Thompson 1964:Map 316). Much of Mani's cultivable land in the 20th century was devoted to fodder crops like alfalfa, clover, and vetch (grown on 34% of Inner Mani's cultivable land), which was used to feed the estimated 35,700 sheep and goats, 6,600 cattle, and 4,600 hogs (Kayser and Thompson 1964:Map 310, 320-323). Maslin, millet, sorghum, wheat, and barley were the next most common crops.

Today, the landscape of Mani feels almost empty, its fields given over to brambles and thorns. Wild herbs like thyme and oregano grow on its mountain slopes. An occasional donkey may be heard braying in a village, and untended herds of cows may be seen walking the roads.

Since the Greek Civil War (1946–1949), when residents began moving to larger cities like Piraeus, the agricultural and pastoral output of Mani has dwindled severely. Today, many of the smaller villages are nearly abandoned during the winter months until the families return from Athens for the summer holiday.

2.2 – Historical Overview

Throughout Mani's history, its island-like nature has allowed its residents to manage how much they interacted with the rest of the Aegean. At times, Mani was a central player in vast trade networks like the Neolithic-period obsidian trade (Riebe, in press). The standing menhirs found in many places in Mani have been linked with a broader European prehistoric tradition (Saïtas 1982; Moutsopoulos and Dimitrokallis 1977, 1976-1978). At other times, Mani was isolated from the political and economic maneuverings of the regions around it. The fluctuation between isolation and interaction is a characteristic of other remote regions, such as the Shala Valley in Albania, where the residents "deployed a strategy of isolationism … opening and closing the valley as the need arose" (Galaty et al. 2013:2).

The periods of isolation earned the Maniates a reputation for wild paganism. Constantine Porphyrogennetos, writing in the 10th century AD, claimed that Mani had been Christianized only under the reign of his grandfather Basil I in the 9th century—up to 500 years later than other parts of Greece. Archaeological research has since uncovered at least seven Paleochristian basilicas in Mani, the earliest of which may date to the 5th century (Drandakis 1986:15-16). Yet while the rumor that was popularized by Porphyrogennetos has been disproven, the broader implication—that Mani is a remote place full of wild people—has continued to infuse almost all the historical accounts of the region.

So far, very little of the historical timeline that concerns this study has been verified through archaeological research. Most of these studies have focused on the churches and the *palaiomaniatika* (abandoned villages), with only limited studies of the vernacular architecture of the later Ottoman period. In the 2000s, the Directorate of Byzantine and Post-Byzantine Monuments and the 5th Ephorate of Byzantine Antiquities conducted a survey of Mani to record all the settlements and churches in Mani from these periods (Kalamara et al. 2009). A volume on the settlements was published as part of a project called the "Network of Mani Musuems" (Kalamara and Roumeliotis 2004). However, no systematic analyses were conducted using the GIS data, and as of 2016 the data remains unpublished and inaccessible.

The following sections provide an overview of the historical periods that frame this study: the Byzantine period up until the start of the Greek Revolution in 1821. My goal is to establish the broader context for understanding the specific experience of the Mani Peninsula by reviewing the history of the transition between the Byzantine and the Ottoman Empires.

The periodization of the Byzantine Empire is fairly well established, being divided into Early, Middle, and Late periods. The years following Byzantine collapse, on the other hand, have been referred to variously as the *Tourkokratia* (the Greek word for Ottoman rule), "post-Byzantine," "post-Medieval," or "Early Modern"—there is no scholarly agreement on the matter. What is clear is that, in the words of Davis and Davies (2007:9), "it is a period most easily defined by the struggle for dominion between the Venetian and Ottoman empires." Between 1463 and 1718, there were seven Ottoman-Venetian wars. The Ottomans retained control of the Peloponnese for most of this period, except for a brief hiatus in the late 17th century when the Republic of Venice prevailed. Though this division is not necessarily applicable to all parts of the Ottoman realm, it does follow the general trajectory of the Ottoman administration, which initiated significant changes around this time. Thus, for convenience, this study will take advantage of the hiatus to divide the history into smaller, more manageable periods, referred to here as the "Ottoman I," "Venetian," and "Ottoman II" periods.

2.2.1 – An Introduction to the Byzantine Empire

The Byzantine Empire, a continuation of the Eastern Roman Empire, began officially with the founding of Constantinople in AD 330. Between the 4th and 9th centuries, Christianity became the official state religion, and Greek the official state language. Early Christian basilicas and domed churches were built throughout the empire, and the development of monasticism brought the Christian religion to other parts of the Mediterranean and northern Europe.

Overall, the Early Byzantine period—and particularly the so-called "Dark Ages" of the late 6th and early 7th centuries—were marked by rural depopulation, Slavic invasions and raiding, Arab expansion into Anatolia, and natural disasters (Gregory 2010:160-197; Bintliff 1996:4). In the Peloponnese, a few communities continued to thrive, particularly in southwestern Messenia (Davis et al. 1997:474) and Corinth (Pettegrew 2008; Brown 2010). Contrary to the assumption that Early Christian basilicas were abandoned at this time, Caraher et al. (2010) note that many churches continued to be used as burial grounds and were otherwise maintained by local villagers. The brief period of iconoclasm and its end in AD 843 marked the restoration of the iconographic tradition and the end of the Early Byzantine period.

2.2.2 – Middle Byzantine Period (AD 843–1261)

The Byzantine Empire experienced a period of fluorescence in the 10th and 11th centuries. Church-building reached its apogee and monasteries prospered throughout the empire. Thanks to major military successes, the empire reached its greatest geographical extent in the 10th century, spanning from Sicily at its westernmost point through most of Anatolia to the east.

The 11th century saw the beginnings of political decline, with the first substantial coinage debasements (Laiou and Morrisson 2007:147-155), the gradual encroachment of the Turks into Anatolia, the humiliating Byzantine loss at the Battle of Mantzikert (Angold 1984:21-24), and the First Crusade from 1095 to 1099 (see Komnene 2009). Despite these hardships, the Byzantine economy remained strong, benefiting from agricultural investment, urban expansion, and increased church building (Curta 2006:276-279). Urban areas contributed to the economy as centers of production, particularly of pottery, glass, and textiles such as silk (Laiou and Morrisson 2007:131-133).

The expansion of the *pronoia* system and administrative intervention in land distribution prompted the establishment of estates and the growth and intensification of agriculture. The *pronoia*—a temporary land grant provided by the government in return for military service—became a central component of the Byzantine system of land tenure (Gregory 2010:278-280). Yet while it temporarily stabilized the economy and encouraged agricultural intensification, this system also contributed to the decentralization of the government, the loss of its primary source of power and revenue base (i.e. land), and a major fiscal crisis in the mid-12th century (Laiou and Morrisson 2007:158-160).

By the end of the period, relations had worsened with the seafaring powers of Venice, Genoa, and Florence, forcing the empire to grant additional concessions, including lowered tariffs, that further reduced its revenues (Angold 1984:196-203). This downward economic spiral forced the empire to reduce military spending, ultimately leading to Western intervention against the Turks during the Second (1147–1149) and Third Crusades (1187–1192). The deep political instability caused by these events sparked the Fourth Crusade (1202–1204) and led to the capture of Constantinople by Latin troops.

The Frankish period lasted from 1204 to 1261. During this time, the Peloponnese was divided between the Venetians and various Frankish (or "Latin") crusaders, who referred to the region as the "Morea." The Venetians established relatively stable rule over Messenia and key ports throughout the Morea, while areas granted to the French crusaders became the sites of fierce military contests. As recorded in two primary documents, *The Chronicle of Morea* and *The Conquest of Constantinople*, the Villehardouin dynasty and its allies immediately launched military attacks to expand their territory in Laconia and Mani (Villehardouin 2008; Shawcross 2009). They constructed numerous Catholic churches (Cooper 1996; Coulson 1996) and fortifications throughout the region, including the castles of Chlemoutsi (Skartsis 2009) and Mystras, and in Mani the castles of Vardounia, Beaufort, Passava, and the "Grand Magne" (Figure 4). The location of this latter fortress is still disputed, but may be the site of present-day Kelepha (see Wagstaff 2009; Kriesis 1963; Wagstaff 1991; Burridge 1996). Zarnata also may have a phase dating to this period. Meanwhile, the exiled Byzantine ruling elite founded independent "empires" in Trebizond, Nicaea, and Epiros that competed for the claim to Byzantine religious and political authority.

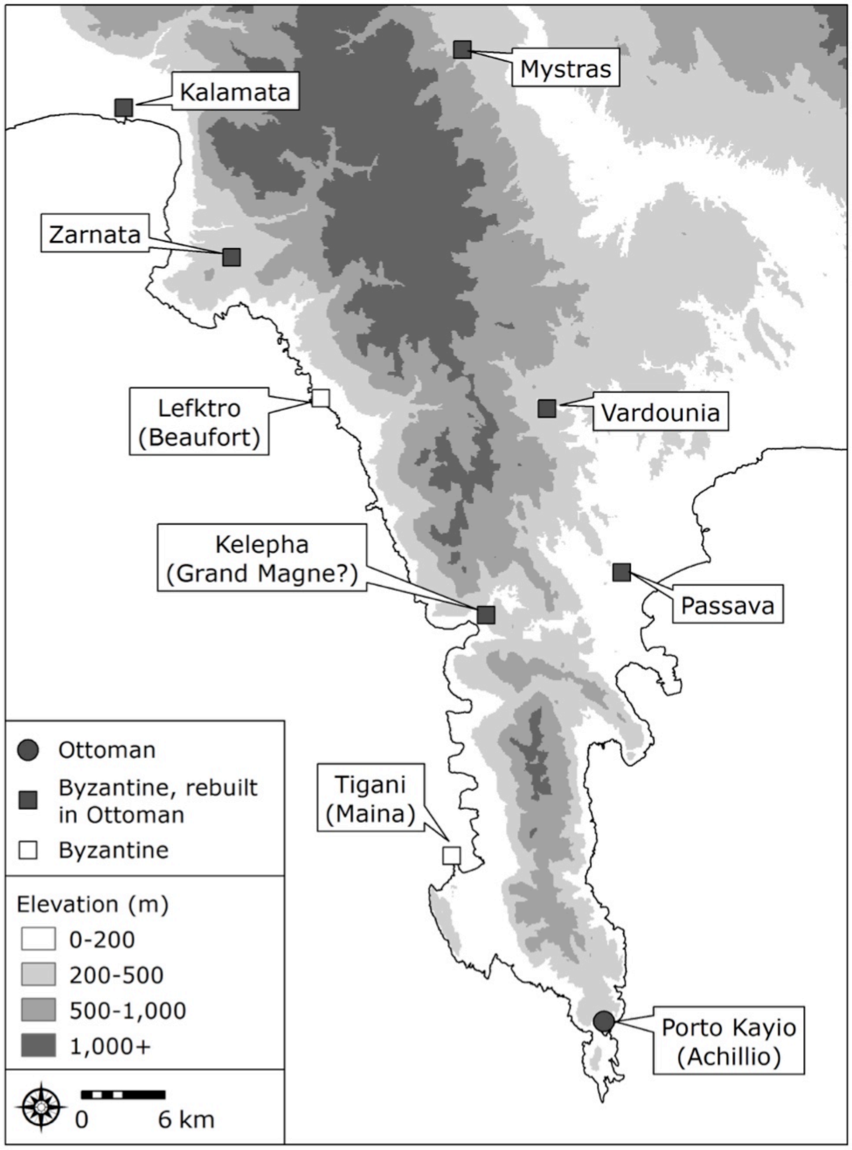


Figure 4. Fortifications in Mani and the periods when they were founded or rebuilt.

The brief period of Frankish rule left lingering effects upon Peloponnesian society. Frankish policies realigned the region socially and politically with the West (Lock 1995; Skartsis 2009). The Franks also imported the European feudalist landholding system, which restricted the rights of the *paroikoi* (peasant tenant farmers), and demoted them to the status of unfree laborers who were bound to their landlord's parcels (Jacoby 1999:538-539).

Archaeological research on Middle Byzantine period settlements reveals an overall pattern of rural and urban recovery, demographic growth, and the intensification of agriculture. The Peloponnese, with its productive agricultural lands and distance from Constantinople, was shielded from many of the political and economic woes affecting the capital. New churches were constructed, and the number of small, relatively dispersed, nucleated hamlets increased in places like Boeotia (Bintliff 1996:4), Nemea (Athanassopoulos 2010, 2004), and Laconia (Cavanagh et al. 2002:353-368). At the same time, the increase in piracy led to a withdrawal from coastal locations (Davis et al. 1997:475) and the use of islands as places of refuge (Rosser 1996).

2.2.3 – Late Byzantine Period (AD 1261–1462)

In 1261, Michael VIII Palaoiologos retook Constantinople and became the new Byzantine emperor, instituting the Palaiologan dynasty that would rule until 1453. Despite its triumphant return to power, the Byzantine Empire was never able to fully regain its political, economic, or military strength. Its territory was limited to the capital city, the region of Thrace, and the Morea. The extant Frankish kingdoms retained control over the rest of Greece, and the Ottoman Turks laid claim to Anatolia. The empire's power continued to wane due to the institutionalization of hereditary *pronoias* and the resulting increase in aristocratic power at the expense of the state (Laiou 1973), Western military threats, religious schisms (e.g. the Arsenites and hesychasts), plagues such as the Black Death, internal dynastic rivalries, and the rapid loss of territory to the Ottomans (Nicol 1993; Harris 2010).

As one of the few remaining Byzantine territories, the Morea became the seat of power for the emperor's brothers, with *despotates* (principalities) established at Mystras and Patras (Nicol 1993:340-347). This fragmentation of power increased social unrest and prevented a concerted defense against violent Ottoman raiding throughout the region, piracy on the coasts, attacks on Acrocorinth and the Hexamilion Wall, and revolts staged by disgruntled landowners and recent Albanian immigrants (Harris 2010:230; Necipoğlu 2009:233-234; Cavanagh et al. 2002:369).

As the Ottoman threat increased, Byzantine citizens began supporting an Ottoman takeover. The Ottomans' demonstrations of military prowess—especially in the merciless siege of Thessalonica—terrified many into submission (Harris 2010:128). They also maintained a policy of religious tolerance, which permitted Christians to practice their faith so long as they paid taxes and accepted the status of lower-class citizens (Necipoğlu 2009:26). Finally, many *pronoia*-holders were granted military fiefs, called *timars*, in return for their cooperation (Necipoğlu 2009:27).

In Mani, the Byzantines were initially unable to restore full power outside the few fortresses in the region. Documents from the 14th century show that a Florentine noble, Niccolò Acciaioli, retained possession of several fiefs in Mani, including Diros, Areopoli (formerly Tsimova, a Slavic toponym derived from the personal name Čimo or the noun *zima*, meaning "winter," see Komis 2005:398), and several more along the western coast of Outer Mani (Longnon and Topping 1969:253-254). However, Byzantine influence clearly extended to the religious arena, with a spike in the number of newly commissioned iconographic paintings in churches. While the majority of these works are rather provincial, a few exhibit a high-quality imperial style. Kalopissi-Verti (1999:195) suggests that these few examples were commissioned by "donors who represent the central authority or are somehow connected to it." Meanwhile, imperial political power and influence grew slowly. In 1415, the emperor Manuel II Palaiologos ordered the dismantling of the fortifications in Mani—an order that has been interpreted as referring to the castles of Beaufort, Passava, and Grand Magne (Wagstaff 1991:147). By the 15th century, the Byzantine fortified settlement and religious center of Karyoupolis had been founded in the main pass between the western and eastern coasts. Local tradition also suggests that Mani was an important refuge area during the turmoil of the late 14th and early 15th centuries, claiming that several famous Byzantine families fled to the region to escape the Ottoman attacks (Vacalopoulos 1980:279-280).

Archaeological data from other parts of Greece reveals a serious economic and demographic decline between the 13th and mid-15th centuries. In the Venetian sector of the Peloponnese (i.e. Messenia), population grew until the 13th century, but it subsequently decreased as a result of raiding, piracy, and disease. Evidence for this regional depopulation includes the Venetians' encouragement of Albanian immigration to the region (Topping 1980), as well as the increase in fortified sites (Topping 1972:68-69). In response to more numerous Ottoman attacks in the 14th century, Venice also actively acquired fortified sites around the towns of Coron and Modon and began constructing additional fortified sites in the 15th century (Hodgetts and Lock 1996). The Frankish and Byzantine areas of the Peloponnese experienced similar trends in the 13th century, with increasing numbers of fortified settlements, population nucleation, and a sharp decline in agricultural productivity (Athanassopoulos 2010, 2004; Cavanagh et al. 2002:369-372). These trends were not limited to the Peloponnese—both Thessaly and Boeotia were largely depopulated by the arrival of the Ottomans in the late 14th century (Kiel 1999).

2.2.4 – Ottoman I Period (AD 1462–1685)

Under Mehmed II, the Ottomans besieged and captured the city of Constantinople in 1453, and the Morea finally came under Ottoman rule by 1462. After centuries of civil strife and economic decline, the introduction of the Ottoman centralized administrative system brought a return to political stability. The population was divided into two general classes: the *askeri*, those associated with the military or Ottoman administration, and the *reaya*, the ordinary subjects who paid taxes, including peasants, farmers, merchants, and craftsmen (İnalcık 1954:112, 1994a:16-17). Older fortresses that occupied strategic locations were renovated and repaired—thereby earning the Ottomans an unfair reputation for "building" outdated fortifications—but new fortresses and small forts were also built especially in frontier regions (Stein 2007:48-54; Pepper 2000:315; Murphey 1999:111-115).

The Ottomans instituted a taxation system based largely on landholdings, the details of which were recorded in registers called *tahrir defters* (see section 4.1.1.). Under the Ottomans, all arable land was considered state property, thereby abolishing any hereditary claims that had existed under previous governments. The primary type of elite landholding was the *timar*, a temporary land grant allotted to Ottoman cavalrymen (*sipahis*) as a reward for their military service, and a system very similar to the earlier Byzantine *pronoia* (McGowan 1981). This type of prebendal system was one of the "mechanisms of control" that allowed the Ottomans to maintain centralized control over its territories (Barkey 1991:704). The *çift-hâne* system, on the other hand, was the basic fiscal and productive unit of the peasant class, and a continuation of the Byzantine *zeugarion-oike* system. According to this system, a *çiftlik* was defined as a unit of land that could be worked by a pair of oxen (*çift*); it was large enough to sustain a single peasant labor family (*hâne*); and its size was based on the quality of the land (Laiou 2007:257; see also İnalcık 1984:106-108). Unlike the military *timariots*, peasants were allowed perpetual tenancy of their plots, along with hereditary rights of possession (İnalcık 1994a:143-145). Tax status was based on the amount of land held and the total labor capacity; thus, a peasant with a full *çift* who was married would pay the full tax, while those with less land or who were unmarried or widowed paid a reduced tax (İnalcık 1994a:149). Other types of taxes supplemented the empire's income, most notably the *cizye*, the poll-taxes levied on non-Muslims, and the *avarız*, or irregular taxes paid either in cash, kind, or service (Darling 1996:27). As the Ottoman Empire expanded rapidly in its early days, it financed its military campaigns through the ever-increasing *avarız*, already placing a higher tax burden on the lowest classes by the end of the 15th century (Lowry 1986a).

Aside from these administrative changes, the linguistic, religious, and cultural status quo were preserved in many parts of the former Byzantine Empire (Lowry 1986b:127, 1986c:259, 1986a:35). As İnalcık observed about the *timar* system, its establishment "did not necessarily mean a revolutionary change in the former social and economic order. It was in fact a conservative reconciliation of local conditions and classes with Ottoman institutions which aimed at gradual assimilation" (İnalcık 1954:103). In some regions, almost half of the newly appointed *timariots* were Christians, showing the extent to which former social structures and hierarchies were retained (İnalcık 1954:113-114). On the whole, daily life did not change drastically when the Ottomans first assumed rule over the former Byzantine Empire in the 15th century.

The period of Süleyman I's rule (1520–1566) is often portrayed as the apogee of the Ottoman Empire. Population boomed during his reign, resulting in a doubling or even tripling of population in the Morea (Kiel 1999:196; Topping 1972:70). However, in the following decades, the empire faced numerous trials that ultimately led to the so-called "17th century crisis." These included population pressure; numerous wars and a corresponding increase in the number of armed forces; banditry in the countryside; deficits in the treasury; monetary depreciation following an influx of European silver; increased taxes that further burdened the *reaya*; and Janissary uprisings (İnalcık 1978; Darling 1996:37; Barkan and McCarthy 1975; İnalcık

1994a:22-25; Faroqhi 1994:413-470). Other scholars, observing a world-wide increase in civil unrest and warfare during the 17th century, have suggested that climate change was at least partly to blame (Parker 2008; Darling 1996). The Little Ice Age and its climax in the Late Maunder Minimum (1675–1715) brought climatic variability to the Mediterranean, with increased rain and snowfall and colder temperatures (Braudel 1972:272-274; Grove and Rackham 2001:138-139; Luterbacher et al. 2001; for critique, see Kelly and Ó Gráda 2015). It is possibly because of this that parts of the empire began to suffer from grain shortage, famine, and plague (Braudel 1972:593-594).

For all these reasons, drastic administrative and financial changes were implemented in the later 17th century. As military technology improved worldwide, the cavalry became obsolete and were eventually disbanded. To replace them, the Ottomans enlisted individually armed infantry and mercenaries and dramatically increased the number of Janissaries. The increasing demand for cash to pay their salaries (as well as to finance a ballooning palace staff) led the Ottomans to look for new sources of revenue, such as raising taxes on the *reaya* and borrowing loans from wealthy individuals (İnalcık 1980:314-327). The Ottomans also began selling state-owned land to wealthy individuals and granting them hereditary privileges, a process that contributed to the eventual destruction of the *timar* system and its replacement with a new system of commercialized tax farming (Cvetkova 1977; Faroqhi 1994:447-452).

By the early 17th century, the term *çiftlik* was now used to refer to large, hereditary, private estates, rather than to the small peasant holdings of the 15th century (Stoianovich 1953:401). These estates were owned by one or more wealthy individuals and farmed by sharecroppers or wage laborers, many of whom had gradually lost their rights to the land through violence, indebtedness, or promises of protection (Laiou 2007:274-275). İnalcık (1984:115) provided this description of what he called a “plantation-like *çiftlik*”: “A *çiftlik* was composed of a manor where the landlord or his agent resided, a number of huts for quartering laborers, a stone tower (a new indispensable element) for defense against rival ayans, the stalls for the animals, storehouses, a bakery, and a smithy.” By 1645, approximately one-third of all the settlements in the Morea were elite-owned *çiftliks* (Balta 2004:59). This privatization of land concentrated power in the hands of local property owners, further reducing the Empire’s income from peasant farming and contributing to its decentralization.

Studies of the *defters* have revealed a sudden decrease in rural population registration in Anatolia at this time—a phenomenon that has sparked much debate over the existence of a so-called “demographic crisis” in the 17th century. Early interpretations suggested that the figures reflected widespread population loss from warfare, famine, and plague. Later critics argued that different factors could be responsible for the disappearance of the rural population, such as increased banditry, tax evasion, conversion to Islam, population movement to urban areas, or enlistment in the imperial army (Özel 2004:189-192; Darling 1996:44; İnalcık 1980:287-288). It is agreed, however, that the disbanding of the *sipahis* and the enlistment of individually armed mercenaries created a large group of armed and dispossessed men who raided the countryside in what are known as the Celali revolts (Barkan and McCarthy 1975:3-4).

While many Ottoman historians have referred to this period as one of crisis and breakdown, more recent scholars have contested this characterization, portraying it instead as a period of shifting strategies and consolidation as the Ottoman Empire grew alongside the mercantilist economies of Europe (Darling 1996:1-8; White 2011:4; Murphey 1993:424-426). Faroqhi (2004:97) argued that “decentralization was not equivalent to disintegration ... Given the enormous distances and heterogeneous political structures involved, a judicious measure of decentralization … may well have strengthened the Empire's coherence rather than weakening it." And despite the struggles at home and on the military fronts, the Ottoman Empire was a central hub of the global trade networks between Europe, Asia, and Africa (Faroqhi 2014).

By the 1670s, the Empire began implementing a series of aggressive fiscal reforms. Officials began keeping better records and collecting taxes more efficiently, abolishing the household poll tax, and implementing a new system of lump-sum tax (*maktu*) paid collectively by a community (İnalcık 1980:333-334; for case studies, see Kolovos 2007; Sariyannis 2011). More broadly, they shifted the tax burden to consumption rather than production (i.e. to the elites rather than the peasants), reduced financial waste, and focused on improving industrial production to compete with Western Europe (Murphey 1993:429-435).

One of the overarching goals of the present study is to determine the extent to which Mani was affected by these macro-scalar events. Until now, scholarly research had given us only a few tantalizing pieces of information about 17th-century Mani. First, the Ottomans built or renovated several fortresses in the region as part of their military conquest of Greece (see Figure 4). They built the fortress of Porto Kayio in 1570 to protect the shipping lane between Mani and Kythera, although it was very quickly captured by the Venetians and destroyed (Coronelli 1687:102-104). In 1670, the Ottomans launched an expedition in Mani to quell revolts (Institute for Neohellenic Research 1993:28); this was also the year they repaired several castles in Mani (including Passava, Porto Kayio, and Kelepha), stationed a galley in the bay of Porto Kayio, and took hostages from several leading families to encourage their submission (Finlay 1866:136-137, 211-212). Second, a network of *kalderimia*, or stone-paved roadways, was laid down at some point, and it is very likely that this took place during Ottoman rule. Although modern residents claim that their ancestors built the roads themselves, the *kalderimia* are typical of Ottoman-period roads elsewhere in Greece and suggest that the Ottomans at least passed on the technology, if not the funding for and oversight of their construction. Third, the Maniates attempted to stage a revolt against the Ottomans in the 1610s, though the endeavor ultimately failed. They continued to pose problems for the Ottoman military by aiding the Venetians in the Ottoman-Venetian war of 1645–1669. Fourth, the Ottomans asserted political control over the region by appointing a local ruler (*bey*) in 1684, a pirate from Oitylo named Liberakis Yerakaris. In the decades before this, he had used Ottoman military backing to persecute his rivals, the Stephanopouloi and Iatranoi (or Medici), who eventually emigrated to Italy as a result (Greenhalgh and Eliopoulos 1985:27; Fermor [1958] 2004:99-108). Yerakaris' reign did not last long before he returned to piracy and was imprisoned by the Venetians. The analysis of several Ottoman *defters* as a part of the present study provides more insight into the relationship between Mani and the Ottoman Empire in this period (see discussion in Chapter 7).

2.2.5 – Venetian Period (AD 1685–1715)

Between 1685 and 1699, the Republic of Venice—with the assistance of the Holy League—launched a campaign against the Ottoman Empire to recapture Crete and conquer the Morea. They succeeded only in the latter endeavor, gaining official recognition as rulers of the Morea in the 1699 Treaty of Karlowitz, and continuing to rule the Morea until the Ottomans retook it in 1715 (Davies and Davis 2007:28-29). This period is sometimes referred to as the "Second Venetian Occupation of the Morea," the First Occupation being the period between 1460 and 1540 when Venice retained several strategic forts in the Morea, including Nafplio and Monemvasia.

The new Venetian administration immediately evaluated the state of its conquered territory. It re-assessed the amount and types of taxes that each village had paid to the Ottomans and conducted censuses of the entire population of the Morea (see section 4.1.2). Part of their survey involved the production of detailed cadastral maps for many parts of the Morea to assess the productive potential of the land (although no cadastral surveys were conducted in Mani). The documents produced by the Venetian surveyors indicate a drastic reduction in population and the abandonment of many settlements. Wagstaff (1978) interpreted the high abandonment rate to be the result of long-term socioeconomic processes combined with a more immediate trigger of warfare (i.e. the Ottoman-Venetian Wars). The Venetians encouraged immigration to the Morea "to fill major gaps in the population of the countryside" (Malliaris 2007:98; see also Topping 1976-1978:123), and they also adopted taxation and land distribution policies to encourage Christian/Greek migration to urban centers and bring support to the new administration.

As Davies (2004) argued, however, these policies did not provide enough incentive for rural dwellers to move. As a result, the overall settlement pattern that had existed in the Ottoman I period remained relatively unchanged during this brief period of Venetian rule, and the eventual return to Ottoman rule did not have a great effect on day-to-day life. One of the most significant changes in terms of local land-holding patterns was that properties once held by Turkish individuals were appropriated and redistributed to Greeks.

Leading up to this brief period of Venetian rule, the relationship between the Maniates and the Venetians was at times cooperative, at others strained. An account from 1576, for example, says that the residents of Oitylo had captured a Venetian captain and were demanding the release of a relative in Venetian custody (Tsiknakis 1990). Only six years earlier, in 1570, a different Venetian captain had come to the aid of the Maniates, attacking and destroying the Ottoman fortress at Porto Kayio in order to remove the "Eye-sore from a People so well inclined to the Republick" (Coronelli 1687:104). It seems that the Maniates were willing to cooperate with the Venetians so long as it suited their political aims. By 1685, the Maniates were fully supportive of a Venetian conquest of their homeland, and they even assisted in wresting the peninsula from Ottoman control. Proof of their cooperation comes from an account of the capture of the fortress of Passava: "Captain General Morosini caused a great Party of Magnotes to make an halt before this Fortress, at the same time that the Turks went out of Chielefa … he sent a Detachment of five hundred Foot … to reinforce the Magnotes, and hinder [the Turks'] design" (Coronelli 1687:92). Judging that the fortress was a "useless place," the Venetians razed it and left it unmanned (Coronelli 1687:93). Over the course of the next 30 years, the Venetians continued to tax the Maniates according to the *maktu* each village had paid to the Ottomans, though the amount was reduced as a reward for the Maniates military assistance (Komis 2005:44-46). When the Ottomans attacked again in 1715, the Maniates in Outer Mani again petitioned Venice for assistance, but their efforts were in vain (Mertzios 1960).

2.2.6 – Ottoman II Period (AD 1715–1821)

The sixth and last Vento-Ottoman war resulted in the Ottoman re-conquest of the Morea in 1715. It was a swift defeat, due in large part to the cooperation of local residents and their apparent dislike of Venetian rule (Balta 2009:188). Just like the Venetians before them, the Ottomans immediately commissioned a full assessment of agricultural productivity and population in the Morea (a practice that followed the conquest of all new regions). This resulted in the production of several *defters* dated to the year 1715 that were used throughout the remaining 18th century as a basis for assessing and collecting tax in the Morea (Papastamatiou 2007:295). Meanwhile, the war in the Morea was just one of several fought by the Ottomans in the 18th century to retain their territory throughout Eastern Europe, Western Asia, and Northern Africa.

At the beginning of the Ottoman II period, the core provinces experienced a period of prosperity, referred to as the "Tulip Age," due in large part to the fiscal changes that had been implemented in the 1680s. In parts of the Empire, such as Southeastern Europe, population recovered steadily from the dip that had been registered at the end of the 17th century (McGowan 1994:646). There was a resurgence in agricultural productivity, the *çiftlik* system grew, and the Ottoman Empire became a major supplier of raw materials (especially cotton) for the growing capitalist world-economy (McGowan 1981:46). Trade with Europe was carried out increasingly via foreign—and especially French—merchant ships. The Greek fleet grew over the course of the century and gradually assumed much of the transport responsibilities, while some Greeks (the Maniates included) benefited from the Mediterranean trade as corsairs and pirates (McGowan 1994:724-728, 737).

One of the most significant administrative changes was the reformation of the tax-farm (*iltizam*) system and the granting of life leases and auctioning off of tax-collection rights. This change benefited the wealthy and contributed to the rise of the *ayans* and *kocabaşis* (provincial elites) at the expense of the state. Papastamatiou's (2007) analysis of a *kocabaşi* from Kalamata showed how the reformed tax-farm system gave provincial elites more power and wealth, in turn allowing them to invest in more property. There were many ways that elites expanded their landholdings, including through the claiming of common land, indebtedness of a village, offering of protection services, or sheer force (see also McGowan 1994:688-689; Laiou 2007:274-275).

These changes in state administration and landholding practices contributed to a loss of centralized control over the provinces (İnalcık 1977). By the beginning of the 19th century, the majority of land in the Ottoman Empire was part of inheritable family estates, rather than owned by the state (McGowan 1994:660). In addition, these changes placed a particularly difficult burden on the *reaya*. Their land was confiscated and redistributed to the elite class, their taxes were raised (McGowan 1981:66-71), their debt increased dramatically, and the legal system increasingly stripped away their rights (Zarinebaf 2005:45). In McGowan's (1994:646) words, "No general measurement can ever be arrived at which will express the great variety of tax burdens and other insecurities borne by the Ottoman peasantries in this century."

The later years of the Ottoman II period were marked by discontent in the provinces, an increasing number of uprisings and revolts, and a rise in pirate and corsair activity. This last phenomenon was worsened by Napoleon's invasion of Egypt in 1798 and the subsequent cessation of commercial relations between France and the Ottoman Empire, which led to a surge in the number of pirate attacks—particularly by Barbary and Maltese corsairs and pirates, but also by Maniates (Harlaftis and Laiou 2008:Note 28).

As peasants fled from these conditions of insecurity and misgovernment, the rural population dwindled. This depopulation was noted by travelers from the early 19th century, including Sir William Gell (1823) and William Martin Leake (1830), who reportedly encountered many abandoned villages and described the landscape as barren or empty. That said, caution is always advised when interpreting their accounts (Bennet et al. 2000; Frey 2008).

Some scholars proposed a "height-zonation" or "demographic retreat" hypothesis—that the rural population withdrew to higher elevations in response to increased conflict and economic instability (Topping 1972; Stedman 1996:181-184). Most now argue that the Ottoman presence did not have an impact on Greek settlement patterns or population levels (Bennet et al. 2000:374-376; Zarinebaf et al. 2005b:211; Frangakis-Syrett and Wagstaff 1992; Forbes 2000; Frangakis and Wagstaff 1987). But still, while low-lying areas may not have been not totally abandoned, Forbes suggests that oral accounts reflect a heightened sense of fear and insecurity during the Ottoman II period (Forbes 2000:218-222). In some places, such as Cyprus, the pressures put upon rural peasants did not lead to flight, but rather “stimulated a rural economic system that was often intensive, efficient and sophisticated … to counter the often punitive taxation by colonial and local elites” (Given 2000:21).

The history of Mani in this period is well known, in part because of the immediacy of the relatively recent past, but also because Mani played an important role in the events leading up to the Greek Revolution. According to oral tradition, the Ottomans never fully re-conquered the region in 1715. Instead, Mani existed in a state of “partial autonomy” (Kostantaras 633), where the *timar* and *çiftlik* systems were never established because of its “peripheral” status in the Ottoman Empire (Sugar 1977:42). History also tells us that Mani was the center of several revolts in the 18th century, including the failed Orlov Revolt of 1770. The Orlov brothers had promised to send Russian military aid in exchange for cooperation in a full Peloponnesian revolt, seemingly with the purpose of making the region a protectorate of Russia (Kostantaras 2013:635). Ultimately, only a fraction of the promised ships and arms arrived, and the rebellion was soon crushed. The Maniates were punished by being forcefully resettled (Institute for Neohellenic Research 1993:27-28), and they were also forced to submit to an Ottoman-appointed *bey*, or local ruler. Although Liberakis Yerakaris had been the first *bey* of Mani in the late 17th century, no one filled his shoes when he left the post. Beginning in 1776, a series of *beys* were appointed once again, first from Outer Mani and then from the Grigorakis clan in Gytheio.

Mani continued to be involved in uprisings that were plotted and backed by the French. According to Komis (1990:217), a 1786 document listing the captains of Mani and its chief exports demonstrates that the French had already begun preparing for an occupation of the Peloponnese by this point. At the end of the century, Bey Zanetos Grigorakis (also known as

Zanetbey), sought an alliance with Napoleon to gain weapons (Wagstaff 1996:279), and between 1797 and 1798, Dimo Stephanopoli and his nephew Nicolo visited Mani to secretly collect information for the French general. In retribution for the Maniates' continued dealings with the French, the Ottomans attacked Gytheio in 1803 and 1807 (Greenhalgh and Eliopoulos 1985:31). Soon, Petros Mavromichalis (or Petrobey) was appointed *bey* of Mani in 1815, but he also continued to conspire with the French to gain weapons, funding, and freedom from Ottoman rule (Kostantaras 2013:643-644).

During the course of the 18th century, the "Greek Enlightenment" had brought intellectual and revolutionary ideas to the Peloponnese. By 1818, the secret organization called the *Filiki Etairia* (Society of Friends) was gaining wide international membership and plotting a revolution to gain independence for Greece. Petrobey and the other clan leaders joined the society in 1818, agreeing to set aside their local conflicts and come to the aid of Greece in the imminent revolution (see Kostantaras 2013:644). On March 17, 1821, a band of armed Maniates—led by Petrobey and in league with the Greek general, Theodoros Kolokotronis—attacked the city of Kalamata and soon liberated it from Ottoman forces (Kapetanakis 2011:509-511). The Greek Revolution had begun, and would continue until 1829 when the First Hellenic Republic was formed.

As the Ottoman II period wore on, "the Russians, the French and the British all had interests in and designs on the Peloponnese, especially the Mani with its strategic position, its fortresses and its battle-hardened warriors" (Institute for Neohellenic Research 1993:42). The historical narrative makes it clear that Mani was the location of state-level power struggles. At the same time, its residents were eager to resist Ottoman supremacy in their lands by providing troops to support the empire's enemies and by negotiating with foreign powers to gain arms and financial support.

2.3 – Society and Identity in the Modern Period

The Maniates may be described as a subculture, or even an ethnicity, within broader Greece. Traditionally, southern Maniates practiced exogamy and patrilocal residence, and blood feuds were both common and violent. Today, Mani is perhaps best known for its 18th and 19th-century towers, which were built as a part of the blood feuding between rival clans (Figure 5). The Maniates developed their own regional cuisine and a rich tradition of funeral dirges (*mirologia*) that were sung only by women (Morgan 1973; Fermor [1958] 2004:53-62). Many aspects of social organization, from the role of women in society to the spatial layout of villages, had to do with the supremacy of the clan, inheritance through the male line, and the male's ability to defend his property and honor (Saïtas 2001:26-28). Many studies of 19th and 20th-century Maniate society have been written in Greek, with a few notable exceptions in English, including two doctoral dissertations based in Kita and Skoutari (Andromedas [1962] 1974; Allen 1974).

Figure 5. The tower town of Vatheia.

Modern Maniate identity has been strongly influenced by the region's history of dissent and revolution, outlawry, and piracy. Its flag boasts the motto "*Niki i Thanatos*" (Victory or Death) as well as the Spartan phrase of war, "*tan i epi tas*" (with your shield or on it) recalling the ancient value system that placed honor and military victory far above the life of the individual. The region has been romanticized and mythicized in countless travelers accounts and histories. Its mountain range, *Kakavounia*, means the "Evil Mountains," and the region is called "the land of Evil Council" (Fermor [1958] 2004:139; Leake 1830:260).

Travelers to Mani in the early 19th century were often disparaging of its residents. François Pouqueville wrote in 1821 (166-167):

> What European would be resigned to live with pirates indulging in robbery, who rely…on the spoils of shipwrecks and the debris of vessels so they may have something

> to trade with their neighbors [?]… They are inhospitable; only the Christianity that they profess offers hope that they will one day belong to civilized Europe, to which they are, to their shame, [nothing but] scum and waste.

In contrast, other travel writers like John Philip Morier idolized the Maniates as remnants of the Roman-era Free Laconians, who were forced into piracy and plundering because they'd been confined in such a barren region (Wagstaff 1996:282), while William Martin Leake emphasized the Maniates' unusual religious fervor (1830:290). The later travel writer, Patrick Leigh Fermor, described the Maniate life as one of "bitter hardship." "The thing that kept the Maniots going," he wrote, "was their fierce sense of liberty, their pride in living in one of the earliest places in Greece to have cast free of the Turks" (Fermor [1958] 2004:70). These varied perspectives illustrate the uniqueness of the Maniate identity and the heritage that is still proudly carried by descendants of the brave heroes of yesterday.

2.4 – Vernacular Architecture

The local architectural tradition is one of the most unique aspects of material culture in Mani. Limestone outcrops are common in the plateau areas in the study region, and their wide availability made it a natural building material. Meanwhile, Mani's "island-like" nature provided a remoteness and isolation that fostered a unique architectural tradition.

Architecture is also one of the most important ways of dating the settlements, thanks to the typological work done on the churches and vernacular architectural styles in the region. Ceramics are rare at the sites (see section 4.2.1.), and historical accounts can only provide insight into specific years when a settlement was in use. Built structures, on the other hand, can be used to date a settlement's earliest phases and its period of use, as well as its abandonment. At present, the only published typology of vernacular architecture is Saïtas' distinction between the pre-Ottoman, Ottoman I, and Ottoman II periods (see 2001:Figures 254 and 255). Architecture built during the brief Venetian period likely followed that of the preceding Ottoman I period. The most common types of pre-Modern built structures in Mani are domestic residences, towers, and cisterns; although other types include animal pens, mills, threshing floors, and cemeteries.

Due to its chronological importance, a brief overview of mortar technology should be mentioned. Lime mortar technology was already well developed by the Roman period. To create a slaked lime mortar, limestone is crushed and burned to form calcium oxide, then combined with sand and water (Nawrocka et al. 2005:110). The Romans also perfected a hydraulic mortar technology by adding a pozzolan, such as brick dust, crushed sherds, or volcanic ash, allowing the mortar to set underwater. In Mani, almost all abandoned cisterns are lined with hydraulic mortar, often in successive layers that hint at episodes of refurbishment. There is no doubt that the medieval occupants of Mani had access to hydraulic mortar technology during the entire span of this study. However, the use of mortar in domestic structures is far less common, and Saïtas (2001:45) even claimed that mortar was "unavailable" in Inner Mani prior to 1830. By this, he may have been referring to Portland cement, an extremely strong and versatile lime-based cement developed in England in 1824 that quickly became the basis for most mortar mixtures. The introduction of this type of mortar to Mani in the early 19th century allowed residents to build taller towers, stronger vaults, and more complex domestic structures. The presence of mortar, therefore, is a strong indicator of a post-1830 construction episode.

But if Maniates were using hydraulic mortar technology in their cisterns, why not use a simpler and less expensive mortar in their domestic structures? One possible explanation is that the Maniates did, in fact, use mortar in above-ground constructions prior to 1830, but that the material has completely dissolved over time. I suggest below that a simple mortar or possibly even daub was used in Byzantine-period constructions, but without excavation, there is no way to know definitively one way or the other. Another possible explanation is that while mortar technology was *known*, it was not necessarily *used* until there was a reason to do so. In this case, the sudden popularity of mortar-built houses around 1830 may hint not at a technological discovery, but at a social transformation that gave an incentive to build taller towers and more complex houses.

2.4.1 – Byzantine Palaiomaniatika and the "Megalithic" Tradition

Pre-Ottoman architecture is found primarily in abandoned *palaiomaniatika* (or "ancient Maniate") settlements, although it may also be found in foundation layers of more recent homes that are built atop older ones (Figure 6). Locals refer to the houses as *kolospites*, towers as *kolopyrgoi*, and cisterns as *koloyisternes* (Saïtas 2001:17, Note 39). The architecture is described in many academic sources as "megalithic," and it is characterized by large dry stone construction with roughly worked limestone quarried from the immediately surrounding area (Saïtas 2001:16-20).

Figure 6. Megalithic house with Ottoman II reconstruction in Chimara (T029F005). The black line shows the approximate division between the two phases of construction.

The most securely dated pre-Ottoman structures are churches, which also happen to be the most widely researched topic in all of Mani. The archaeologist Nikolaos Drandakis excavated some of the earliest churches: Early Christian basilicas dating to the 5th–7th centuries, including Ay. Petros near the Roman city of Kainipolis (modern Kyparissos) and the basilica on the Tigani Peninsula (e.g. Drandakis 1965a; Drandakis and Gkioles 1988). Altogether, he suggested that there may have been up to 8 basilicas in Mani during the Early Christian period (Drandakis 1986:15-16). As these structures are well outside the chronological scope of this study, I will omit a more thorough description of their architectural styles.

Two of the earliest researchers to study the much smaller Middle Byzantine churches were Ramsay Traquair (1908-1909) and H. Megaw, the latter of whom described them as having "megalithic" architecture (1932-33:138). These churches have apsidal chambers, barrel-vaulted roofs, dry stone architecture with large, roughly-worked blocks, and no domes, which appear later (Figure 7). Since then, Drandakis and others have published detailed descriptions of individual churches and continued to refine their chronology using iconography, sculpture, and inscriptions as clues about the churches' foundations and periods of use (e.g. Mexia 2008/2009:140; Saïtas 1982; Drandakis 1986; Gkioles 1982; Drandakis 1982, 1995, 2002).

Figure 7. Megalithic church of Ay. Nikolaos in Polemitas, 14th century (T130F004).

The megalithic residential structures have received less scholarly attention than the churches, but there have still been a number of studies that have attempted to describe the *palaiomaniatika* and date their associated architecture. Moutsopoulos and Dimitrokallis conducted research on the residential structures and cisterns in Kato Boularioi and Pangia (1976-1978) and later in Keria, Kounos, Pyrgos Dirou, and Ochia (1980). They attempted to draw links between the unusual architecture of Mani and the megalithic tradition in Western Europe that they dated to about 2000 BC (Moutsopoulos and Dimitrokallis 1977). As Kourelis (2003:178) noted in reference to similar domestic architecture in the northwestern Peloponnese, ruined dry stone houses tend to appear more ancient than those built with mortar: “For that reason, absence of mortar has misled scholars into misidentifying medieval settlements as ancient. Some medieval settlements have been dated to the Bronze Age simply because they look romantically pre-historic.” Moschos and Moschou commented that the link between the *palaiomaniatika* and a Neolithic architectural tradition is mistaken and unfortunate—the *palaiomaniatika* are actually a continuation of an ancient settlement pattern and are almost certainly Byzantine in date (Moschos and Moschou 1981:3-4, 1982:263). This dating is corroborated by the fact that the settlements are almost always associated with Middle or Late Byzantine churches.

By my measurements, “megalithic” domestic structures are uniformly rectangular, with external dimensions averaging 10.5 m in length and 4.75 m in width. The average internal area of the structures is quite small, at 7.8 m in length and 2.75 m in width, or just under 22 m^2 in area. The walls average 1.0 m in thickness and are double-faced, with rubble fill or smaller stones used to fill any openings (Figure 8). As Saïtas (2001:19) explained:

> The walls are built on two independent facades (inside-outside), the outside ones made with an incline (an escarp – “skarpa”) of 5-10% to make them more stable. The stone blocks are laid in successive rows, more or less regular (level) without any mortar. Small stones and pieces of stone (rubble) fill the core between the two facades and supplement

the joints on the surfaces. Larger blocks are used on the exterior facades and the lower parts and smaller ones on the interior and the upper parts. The dimensions of the average block ranges between 60 x 60 x 70 cm. to 30 x 30 x 40 cm. but other sizes are also used such as 170 x 60 x 70 cm. or 140 x 110 x 110 cm.

Figure 8. Wall section showing double-facing and rubble fill from a megalithic residential structure in Koulouvades (T363F023).

Most of the structures are two stories in height, as indicated by the presence of two doorways: one on the ground level and another above and offset from the lower doorway (Figure 9). A ledge runs along the interior to support a floor for the second story. The floor could have been made from wooden beams (Moschos and Moschou 1982:266), but Saïtas (2001:19-20) suggested that it would have been formed with *makronia*, or long beams of limestone, filled with smaller stones and pebbles and covered with beaten clay earth and manure. The large amount of rubble found in most of these structures is an intriguing phenomenon. Moschos and Moschou (1982:264) suggested that later farmers used the abandoned buildings to store stones collected from the surrounding fields. It is also likely, in my opinion, that the upper walls were built with rubble and held together with a basic mortar or daub material that has since disintegrated. In flat areas, the structures tend to be built parallel to each other, such that the doorways generally face south. Those located on hillsides are built perpendicular to the slope and follow along the contours of the hill. In both scenarios, houses tend to be isolated, but extensions occasionally may be built up against an earlier structure (on either the long or short wall). The doorways are always framed by massive lintels, which are very occasionally decorated with incised crosses or other figures. The doorways would have been the only source of light, since the structures do not have windows. Unfortunately, no roofs have been preserved. Moschos and Moschou (1982:266) suggested they were sloped, but Saïtas (2001:20; Figure 256a) argued that they would have been flat surfaces supported by wooden beams and covered with pebbles, or in some cases covered with tiles or limestone slabs.

Figure 9. Offset, south-facing doorways in a megalithic residence in Soulia (T382F022).

A similar type of medieval domestic architecture was recorded by the Morea Project in the northwestern Peloponnese, in the provinces of Achaia and Eleia. Here, Kourelis (2003:173-181; Figure 92) described similar two-story rectangular structures, with walls averaging 0.7 m in width, made of undressed and unmortared local limestone. As with the houses in Mani, "the inward collapse [of the structures] forms a concave capillary shape contained within the walls. As a result, the ruined houses have become sturdy masonry platforms" (Kourelis 2003:177). He compared the design of the structures with 19th-century *makrinaria*—longhouses built perpendicular to mountain slopes with a ground floor under the first floor for domesticated animals (Kourelis 2003:176; Figure 84). Like the structures in Mani, they also have a low ground floor, and for those built up against a hillside, the ground floor often extends for only half the length of the structure. It is very likely that these spaces were used for animals or storage, as in the case of the 19th-century equivalents.

The other pre-Ottoman built structures, including towers and cisterns, share this megalithic dry stone architectural tradition. The towers tend to be relatively short compared to their later counterparts, with very thick foundations (up to 2 m) and dramatically sloping sides. The subterranean cisterns are also distinct in their use of massive limestone beams (*makronia*) to span the opening, which is in turn covered by smaller stones that help filter water into the cisterns (Saïtas 2001:19). The interior of the cisterns is lined with stones and coated with waterproof plaster (Figure 10). The practice was noted by the traveler Cyriac of Ancona in 1447: “the people in these places observe an ancient practice in a variety of ways, for they all build their houses in the countryside with great polygonal stones put together according to an ancient technique; and, digging out cisterns by hand, each in a long line, they protect them with huge, seven-foot rocks” (Ancona 2003:323).

Figure 10. Partially collapsed megalithic cistern in Korines showing *makronia* construction (T392F016).

2.4.2 – Ottoman I Architecture

During the Ottoman I period, the megalithic tradition gradually disappeared. The most notable change was that massive stones typical of the earlier period became less common, "now used only at the base (and primarily the lower cornerstones)" (Saïtas 2001:38). Tall structures like towers continued to have sloping sides, since mortar was not used and walls needed to be thicker at the base to support the structure's height (Figure 11). Barrel vaults (*kamares*) began to form the roofs of cisterns and churches, as well as the second floors of residential structures. When earlier megalithic structures were reused, the *kamares* rested upon the ledges that had formerly supported the second story (Saïtas 2001:39)—this raised the height of the ground floor and made it more spacious than its earlier counterpart. The ground floor continued to be used for storage, cooking, keeping animals, and at times, collecting rainwater. The second-story doorway could be accessed by a wooden ladder that could be withdrawn for safety, a "rudimentary exterior stone staircase (a simple stone heap that could be easily pulled down)," or by a constructed staircase and landing called a *liakos* (Saïtas 2001:39). Windows began to appear in the narrow ends of the houses, often small and rectangular to admit some sunlight, and other times framed with a carved limestone arch (Figure 12). Small holes called *polemotrypes* were built into the walls of the second story to allow the residents to shoot at enemies outside. Roofs were built either in the flat style as before, or with a slight gable (see Saïtas 2001:Figures 256 and 257). As families grew in size, new rooms or houses were added to the residential complex, either sharing a wall of the original building or located nearby to form a protected courtyard (Saïtas 2001:38-41).

Figure 11. The Ottoman I-period Anemodouras family war tower in Ano Boularioi, dated to the 17th century (T169F005).

Figure 12. Residential structure in Diporo showing typical Ottoman I-period construction, with megalithic cornerstones and a small window on the narrow end (T034F009).

2.4.3 – Ottoman II Architecture

By the 18th century, family residential complexes began to coalesce as new additions and extensions were added to the original houses (Saïtas 1996:Figure 55). Saïtas (2001:112) wrote: "Through the gradual building of typical units of houses and supplementary buildings … the installation spread till it formed a collective shell … corresponding to the increase of the households—members of the clan and the hereditary transfer of the property to the male children." Within larger settlements, family "wards" were formed that could be accessed by private routes, and which had their own cemeteries and churches.

During this period, economic disparity became more apparent in house construction. The institution of the *kapetenoi* (i.e. powerful clan leaders whom the Ottoman Empire recognized as having authority) that had taken root in the northern part of the peninsula by the late 18th century appeared in the south only to a limited extent. The Mavromichalis clan of Limeni and Areopolis was one of the most famous of these powerful families within the study region, alongside the Grigorakis clan of Alika (and later Ayeranos and Gytheio on the east coast). With their relative wealth, these families were able to build elaborate compounds (Saïtas 2001:99-103; 105-109). Smaller local clans called *soilides*, like the Sklavounakos family in Pyrgos Dirou, also built large fortified complexes (Saïtas 2001:110).

Nevertheless, because of the limited use of mortar in Mani prior to 1830, most houses and towers were restricted in size. Ottoman II-period houses of the southern part of the peninsula retained the typical rectangular form at their core and did not increase in length or width, except in rare cases. However, the rectangular plan evolved as attached rooms were added for keeping animals, and features were added to the upper stories to assist in defending the property (Figure 13). Windows were enlarged, but often covered for protection and to allow residents to fire upon enemies with their rifles (a feature called a *petromachos*). *Klouvia*, or projections without a floor that extended out from the structure and often above doorways, allowed residents to shoot at enemies from above. These openings, along with the *polemotrypes* along the walls, provided protection to the households. The *liakos* was enclosed, providing additional protection, and it became a multi-functional space for sleeping, doing chores, cooking, and so on (Saïtas 2001:132). Storage space also increased, with wooden lofts built into the roofs, and *therides*, or cupboards, built into the narrow end of the second story on either side of the window (Saïtas

2001:124). Gabled roofs supported by wooden beams replaced the flat roofs from prior centuries, and the beams were used to hang supplies (Saïtas 2001:125).

Figure 13. Residential structure in Chimara showing typical Ottoman II-period construction, with gabled roof, second-floor doorway accessed by a stairway, a ground floor *kamara* (just below doorway), arched windows, and a defensive *klouvi* (T029F004).

Towers continued to be built without mortar, so they were limited to a height of about 10 m. The small doorways were located either on the ground floor or on the second story. The floors of older towers were supported with limestone *makronia*, and in newer towers, barrel-vaulted *kamares* supported the second story (allowing the ground floor to be used for additional storage) and sometimes the roof, strengthening it so that it could be walked on (Saïtas 2001:138). Each floor was reached via a ladder by climbing up through a small opening in the floor above.

Stone workmanship also improved during the Ottoman II period. Cornerstones were cut, squared, and joined with more precision, and designs were incised into cornerstones and the carved frames (often made of marble) around doors and windows (Saïtas 2001:125). In addition, the practice of inscribing the structure's foundation date on a lintel or cornerstone became much more common. This was also done when a repair was made to the building, or when an upper story was added to an earlier foundation. Datestones like these first appeared in the Peloponnese in the 17th century, alongside the transition from the Byzantine to the Julian calendar system (i.e. from a date system based on letters to the familiar numerical format), and they became much more common in the 19th century (Kourelis 2003:207). During field research, I recorded over 100 structures with inscribed dates from the 18th–20th centuries, with the earliest dating to 1716.

In general, the other built structures—the churches and cisterns—followed these trends. By this point, megalithic construction had been completely phased out, except when building upon older foundations. Cisterns were now built with barrel-vaulted roofs and were often semi-subterranean, with a small access doorway placed above ground.

2.4.4 – Post-Ottoman Architecture

After the Greek Revolution in the mid-19th century, the improvement of mortar technology (especially in the widespread use of Portland cement) had a dramatic impact on local construction styles. The strength of mortar allowed houses and towers to be built without their earlier sloping exterior walls, and *kamares* also became stronger and could be built taller and wider. As a result, built structures grew in both height and width (Saïtas 2001:122), with houses occasionally increasing to three or four stories in height (i.e. "tower-houses"). The towers also increased dramatically in height. Whereas before they were limited to about 10 m, by the post-Ottoman period they could reach 18–20 m in height, or up to 7 stories. I had the opportunity to ascend one of these towers in Briki (Figure 14), a journey that entailed a perilous climb up four unsecured ladders (to which I clung desperately). The elderly host was far more nimble and sure of himself—the result of years of practice. The towers' internal dimensions remained small, however, at about 3–10 m^2 in area (Saïtas 2001:135). As Saïtas (2001:135) wrote: "These tall, narrow and imposing prisms, built at the close of a period, constitute the most insistent and absolute expression of Maniat building." Although the new government attempted to stop new tower-building as a way of curtailing local strife, the Maniates continued this tradition up until the late 19th century (Saïtas 2001:145). *Kamares* became more common to support intermediary floors and roofs, and wooden floors appeared for the first time. The tops of towerhouses and towers were often framed by parapets—sometimes flat, and sometimes as jagged triangles (Saïtas 2001:155). Thus, the presence of mortared construction, structures more than two stories in height, walls perpendicular to the ground, and more elaborate household designs are all indicative of post-Ottoman construction in the southern Mani Peninsula.

Figure 14. Post-Ottoman tower in Briki, with a *petromachos* protecting the third-story window, *polemotrypes* above fourth story, and a *klouvi* projecting from the roof (T024F026).

2.5 – Chapter Summary

In this chapter, I provided an overview of the Mani Peninsula's geography, environment, history, culture, and architectural tradition. Following other scholars, I approach Mani as an island-like region that is both disconnected from the mainland and intrinsically linked with others by the sea. Its limited agricultural productivity and semi-arid climate made it difficult for farmers to profit from trade, and these basic facts made life extremely challenging during periods of population growth or when outsiders took refuge in Mani to escape political strife and war. Some Maniates even became pirates or corsairs, profiting from the long distance trade networks that passed through the Kythera channel. Yet despite its remoteness, Mani was a prime bit of real estate—a parcel of land on which succeeding empires staked their claims of domination and control.

In the second section, I traced Mani's history from the Middle Byzantine period through the periods of the Frankish takeover, the return of Byzantine rule to the Peloponnese, the Ottoman conquest, the temporary period of Venetian rule, and the return of Ottoman power before the Greek Revolution. My goal was to provide a broad historical overview of this stretch of time in order to contextualize the specific history of Mani and its relationship with various international powers. One of my goals in this study was to use a wide range of historical and archaeological sources to understand the Maniates' experience, which until now has been largely romanticized through oral history and travelogues.

In the final section of this chapter, I traced the changes in vernacular architecture of the Byzantine, Ottoman I, and Ottoman II periods. Due to the lack of medieval ceramic material on the surface of these sites, architecture is one of the most important sources of archaeological data and chronological information—vital to the task of dating the settlements' foundations, periods of occupation, and final abandonment. The built structures can also provide insight into community organization, as will be seen in Chapters 6 and 7.

3 – THEORETICAL FRAMEWORK

> The poverty of the peninsula turned the Maniots into pirates, and their little ships were the terror of the Turkish and Venetian galleys in southern Peloponnesian waters. (Fermor [1958] 2004:47)

This study is framed within a multi-scalar perspective, wherein the Mani Peninsula is considered a *region*, or the medium scale of analysis. A multi-scalar perspective suggests that focusing on only one scale of analysis cannot provide the fullest picture of what is taking place; therefore, it is essential to consider events that are taking place at different scales, both temporally and spatially. This chapter reviews the most common archaeological approaches to studying each scale of analysis—macro, medium, and micro—and identifies the approaches that are best-suited for studying the case of the Mani Peninsula in the medieval and post-medieval periods. I also propose several models for interpreting the archaeological data: (1) regional-scale models that outline the archaeological signatures of resistance to or integration within an expanding empire, based on the variables of settlement location, settlement visibility, and the route network, and (2) community-scale models that outline the signatures of community cohesion or the prioritization of nuclear families, based on the presence of integrative facilities and evidence of resource sharing.

The works of the *Annales* School, such as those of Fernand Braudel, played a critical role in shaping how archaeologists undertake, interpret, and contextualize archaeological data. Their writings introduced the concept of a multi-scalar approach that allows both time and space to be understood at different scales. One of Braudel's theoretical contributions was to outline three scales of time, which together illuminate the full history of a particular location. As Braudel (1972:21) explained, "Resounding events are often only momentary outbursts, surface manifestations of these larger movements and explicable only in terms of them." Thus, to understand the lifetime of single individuals as recorded in a historical text, one must also grasp the environmental and social trajectories that led to their appearance on the pages of time. Braudel's long term—the *longue durée,* or the history of interaction between humans and their environment—is useful for discussing millennial changes in climate and geology, and the impact of humans on flora and fauna (e.g. Horden and Purcell 2000; Broodbank 2009; Grove and Rackham 2001). The medium-term, or "social history," encompasses the entire duration of civilizations, states, and economic systems. This scale has been used to discuss tribal social organization (Galaty 2002) and the medieval period in the Aegean, particularly for sites that lack historical accounts (Athanassopoulos 2004, 2010). The short term, or "history of events," focuses on individual life trajectories (Braudel 1972:21). Historical and ethnographic data are well suited for this scale of study because of their fine temporal resolution, allowing researchers to study spans of only a few decades, years, or even months. Short-term data include historical documents, construction and abandonment events, or signs of individual identity.

The spatial correlate of the *Annales* approach to time is a geographical model based on three scales of analysis. The macro-regional scale applies to datasets that span several geographical regions, such as Mesoamerica or the Mediterranean basin. Studies that take a macro-regional approach often employ the paradigm of world-systems theory (WST; Wallerstein 1974), from which the concept of the "macro-region" was first adopted (Blanton and Feinman 1984; Kohl 2008; Upham 2000; Parkinson and Duffy 2007). Even critics of WST, however, support macro-regional syntheses of regional and micro-regional data (e.g. Balkansky 2006). The regional scale corresponds to groups of sites within a culturally or geographically bounded area. The number of regional-scale archaeological projects has increased dramatically since the first studies in the 1930s and 1940s, making regional survey and settlement pattern analysis standard approaches for understanding how broader social, political, and economic processes impact individual sites (Kowalewski 2008). In the Peloponnese alone, regional studies have been undertaken in Messenia (McDonald and Rapp 1972; Davis et al. 1997), Laconia (Cavanagh et al. 2002), Nemea (Wright et al. 1990), Arcadia (Forsén and Forsén 2003), and the Korinthia (Tartaron et al. 2006), among others. The micro-region provides the finest geographical resolution, focusing on a single site or community (Yerkes et al. 2009; Parkinson 2006). Most site-based archaeological research, including excavation, takes place at the micro-regional scale.

A multi-scalar approach allows archaeologists to contextualize particular datasets within broader social and environmental movements (Figure 15). Comparing datasets between projects can allow for analysis at the medium- and macro-scales, and in turn, these comparisons can help define the extent, initiation, and conclusion of particular interactional events (Galaty et al. 2009:38-45; Parkinson and Galaty 2009:11-18). Although my primary datasets come from the medium-scale of both time and space (the Byzantine-Ottoman periods and the Mani region, respectively), a multi-scalar perspective demands that they be framed within the broader context. What events took place in Mani prior to the Byzantine and Ottoman Empires? What was happening in the broader Ottoman Empire during these periods? By trying to answer these questions, insight can be gained into the particular experience of Maniates living under imperial rule. On the other hand, the micro-scale is just as important for understanding the regional trajectory. By incorporating travellers' accounts and dated settlement lists, it is possible to gain insight into moments in time. This, in turn, provides the opportunity to compare the trajectories of individual communities to the overall pattern of diachronic community-scale change.

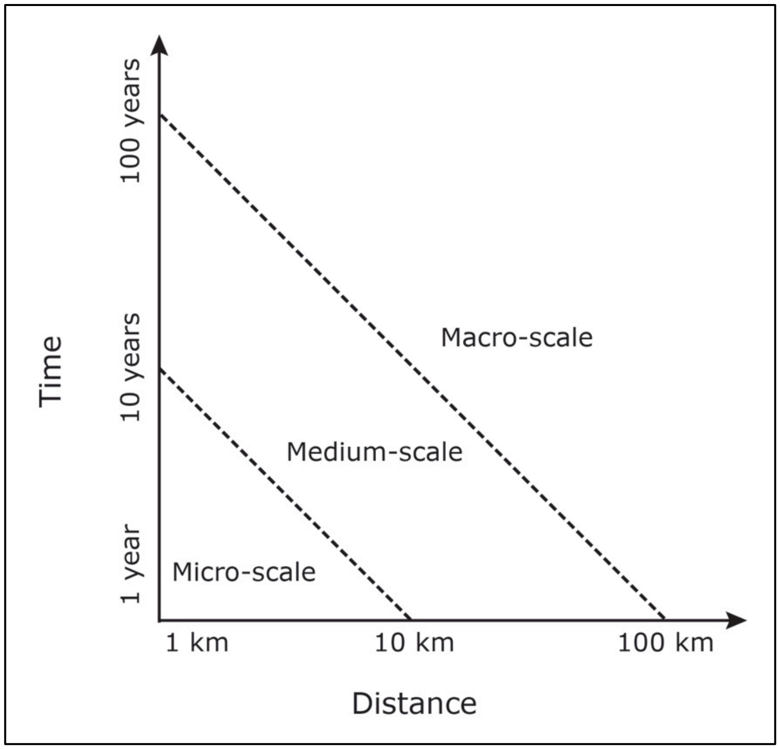


Figure 15. Graph showing the temporal and geographical scales of archaeological analysis (after Parkinson and Galaty 2009:Figure 1).

In this chapter, I discuss each of the three spatial scales—the macro-region, region, and community—and the most common archaeological approaches that are used to study each scale. These approaches lay the foundation for several archaeological models, presented in sections 3.2 and 3.3, that discuss the material patterns that may result when an empire attempts to integrate local communities into its territory and when community-scale social organization changes over time.

3.1 – Macro-regions

One of the fundamental paradigms of macro-regional studies is the concept of "core" and "periphery" areas. Research on state expansion, in particular, has tended to use core-periphery models, like world-systems analysis (WSA), to understand spatial variation in the degree of imperial control. Recently, more processual models have been developed to understand how or why people living in peripheral regions were impacted by the activities of core-states.

3.1.1 – The World-Systems Approach

Immanuel Wallerstein (1974) first developed the concept of the world system to explain the appearance of capitalism in Eurasia. Prior to this point in time, the most stable macro-regional system was what he called a "world empire," a system in which a single political entity governed the entire area. Beginning in the 16th century, Europe was transformed into a capitalist "world economy," which lacked a unifying political entity and yet was completely integrated and self-contained. Members of the world economy are divided into core states, semi-peripheral areas, and peripheral areas, all of which are connected by an extensive division of labor (Wallerstein 1974:348-350). World economies tend to result in the creation of "cultural-national identities," which link heterogeneous groups within a context of overall homogeneity (Wallerstein 1974:349-353). The WST model is meant to describe the current global, capitalist world economy. WST is a useful framework for this study given its focus on the transition to Ottoman rule in the Peloponnese—the very time period in which capitalism appeared in Europe.

Archaeologists also have found the core-periphery dichotomy to be helpful for understanding the interactions between societies with different levels of social complexity—even those predating the appearance of capitalism. Early advocates of WST employed the framework to understand the economic domination of peripheries by prehistoric core areas (e.g. via the requirement of surplus production; Paynter 1981), and the system-wide acquisition of elite power through the exchange of valuable goods (Blanton and Feinman 1984).

However, WST has been critiqued for its inapplicability to non-capitalist systems, and as a result, a more general body of theory called world-systems analysis (WSA) was developed to provide a more nuanced understanding of the core-periphery relationship (Kardulias and Hall 2008; Galaty 2011; Hall 1999; Kardulias 2009; Stein 1999). One of the main critiques of WST was its implication that individuals living in the periphery lack agency in how they interact with the core. Proponents of WSA argued that the periphery is not necessarily bound by the ideology of the core, but instead can be a source of counter-hegemonic attitudes. As a result, the core-periphery relationship may be characterized by a reciprocal process that van Dommelen (1997) called "hybridization." In the case of the Punic colonization of Sardinia, hybridization refers to the mutual influencing between local residents and the colonizers, as well as the counter-hegemonic attitudes Sardinians expressed by maintaining distinct material and behavioral traits. Another common term used to discuss agency in peripheral areas is "negotiated peripherality"—"the willingness and ability of individuals in peripheries to determine the conditions under which they will engage in trade, ceremonial exchange, intermarriage, adoption of outside religious and political ideologies, etc. with representatives of expanding states" (Kardulias 2007:55; see also Chase-Dunn and Hall 1997; Stein 1999; Kardulias 1999:xviii; Hall 1999:10; Kardulias and Yerkes 2004; Parkinson and Galaty 2009; Hall et al. 2011:257).

Other modifications to WST have included expanding the world-system's economic base to include prestige goods and information (Blanton and Feinman 1984; Galaty 2011:9-10); emphasizing that world systems are not truly isolated; accounting for cyclical change and pulsation within the world system (Hall 1999:9; Kardulias and Hall 2008:575; Kardulias 2009:67-71; Hall et al. 2011:240); and finally, proposing alternative models to describe the core/periphery relationship (Stark 1990; Santley and Alexander 1992; Stein 1999; Chase-Dunn and Hall 1997).

While these types of core-periphery approaches are useful for understanding how state expansion affects peripheral regions, areas that cannot be classified within the strict dichotomy of core and periphery have received less attention. This polar classification has been expanded to some extent; for example, the terms "frontier" and "margin" have been offered to expand the WSA framework (Sherratt 1993:43; Lightfoot and Martinez 1995; Schneider 1997:21; Barfield 2001; Schon and Galaty 2006). "Marginal" areas are different from peripheries in that they are "disengaged from processes of struggle and competition, differentiation, and specialization in relation to much older and more developed centers of civilization" (Schneider 1977:21 in Hall 1999:11). In other words, they do not exhibit structural interdependence with the core (Sherratt 1993:43). "Frontiers," on the other hand, are intermediate "zones of cultural contact and production" that are frequently sources of resistance (Galaty 2011:14), and that display variable degrees of incorporation and innovation (Wells 2005). Frontiers can also serve as important sites for cross-cultural trade, places where foreign merchants or smugglers meet to exchange across the boundaries of world systems (see Curtin 1984:1-14).

And yet, there are still spaces that have not been explored by archaeologists—particularly those that are deemed less important to the overall health of the system, are less densely populated, or are located in difficult terrain. Smith and Berdan (2003:29) call these "unspecialized peripheral zones," places that act neither as boundaries, where exchange between different groups of people can lead to innovation, nor as blank spaces upon a map where few events of cultural significance occur. Mani's central role in the history of the modern Greek state is a prime example of how such spaces can oscillate between disconnection and prominence in the span of several generations.

In summary, the core-periphery models, including WST and its adaptations, lay the foundation for understanding macro-regional processes and their effects on specific regions. Events that take place in one corner of a world system may impact people living in another corner, simply because the two places are integrated within a common political or economic system and play a specific role within it. At the same time, critiques of WST have shown that world systems are not black-and-white. The boundaries between core-states and peripheries are not hard and fast, but instead blend into each other, creating a spectrum of margins, frontiers, and unspecialized peripheral zones.

3.1.2 – The Interactional Approach

In order to better understand the sociopolitical processes taking place behind the core-periphery relationship, interactional models were developed to frame the relationship as a negotiation between different sets of actors. Within this negotiation, the different strategies employed by the core-state in its efforts to incorporate new territories intersect with responses by local actors to create varying patterns at the local scale (Morrison 2001; see chapters in Schortman and Urban 1992). These models also emphasized the dynamism of the core-periphery relationship, allowing the actors involved to change positions or strategies over time (Wernke 2013:8-9).

One such model, the territorial/hegemonic spectrum, was developed to describe the Inca Empire, suggesting that empires may take either a territorial approach or a hegemonic approach to integrating remote regions (Hassig 1985; Hastorf and D'Altroy 2001:19-20). Territorial incorporation entails high-control-high-investment strategies, with the core state maintaining a direct military and political presence in its peripheries. This type of strategy tends to be applied to peripheries with high productive or extractive value, such as the Aztec's outer provinces—some of which served primarily economic or tributary purposes—while others were strategically located to act as buffers against neighboring enemies (Berdan 1996; Smith 1996). In this regard, the common imperial practice of detailed recording (e.g. tax registers and cadastral maps) represents a high-investment territorial approach to subjugating the empire's territories. Economic tactics like taxation and the imposition of new land management practices may also qualify as part of a territorial strategy, especially if they required significant investment of administrative labor to enforce them. Hegemonic incorporation, on the other hand, is generally found in less valuable areas and entails low-control-low-investment strategies, with a greater use of coercion and indirect diplomacy (e.g. Braund 1984; Thurston 2001). It is important to keep in mind that the specific strategies employed by core states are not just dependent upon the value of the territory, but also upon the preexisting political administrative system in that area (Schreiber 1992:15; Morris 1998; Lightfoot et al. 2013).

At the same time, modern ethnographic research demonstrates that local responses also play a part in determining the political, economic, and social organization of incorporated territories. Peripheral areas often become sites of contest and resistance, particularly through armed conflict. When this happens, "refuge areas" characterized by tribal forms of social organization and feuding may appear, such as in highland areas that refused to acquiesce to imperial powers, like Southeast Asia, and Albania and Montenegro in the Balkans (Boehm 1984; Schon and Galaty 2006; Scott 2009). Locals may also respond to oppressive administrations and policies via forms of non-confrontational "avoidance protest" (Adas 1981), including participating in unsanctioned activities like banditry and smuggling (Blumi 2003b), fleeing from rural areas (Barkey 1991:703), or tax and census evasion (such as through purposeful misreporting or temporary abandonment of settlements). Given (2007:141) reminds us that the official administrative enumerations were “part of the theater of domination,” and he suggested that Cypriots attempted to evade the Ottoman census-takers by relocating to “unwritten villages” in the mountains or to the forest goat-folds (2007:139-144). Alternatively, individuals in the periphery may assert their difference from the core via ethnic claims. This differentiation may take the form of stylistic differences, such as in architecture, clothing, music, food, and material culture like ceramics. Anthropological research in the former Ottoman territories of Montenegro, Albania, and Crete suggests that complex negotiations between rulers and civilians are still occurring, and thereby shaping the resulting political and social institutions (Herzfeld 1987; Blumi 2003a, 2003b, 2007; Pelkmans 2006; Fargher and Blanton 2007; Blanton and Fargher 2008). In a region like Mani, these kinds of local-scale response—particularly those characterized as “avoidance protest”—undoubtedly played a role in shaping the relationship between the region and the empires that attempted to control it.

3.2 – Regions

The study of regional geography blossomed by the early 20th century, decades before the first regional archaeological studies were undertaken. Richard Hartshorne outlined his theory of regional geography in 1939 (442), defining it as the study of “the manner in which districts are grouped and connected in larger areas, the manner in which these larger areas are related in areas of greater scale, and so on, until one reaches the final unit, the only real unit area, the world.” In a way, regional geography anticipated the later multi-scalar approach to understanding human geography and pioneered the first intensive studies of bounded geographical areas as a way of understanding much larger areas. By the time archaeological surveys began collecting rich datasets about the locations and sizes of ancient settlements, analytical approaches were being developed to describe and understand these settlement distributions.

The first regional-scale archaeological survey projects included Braidwood's (1937) survey in the Plain of Antioch, Syria in 1936; Phillips, Ford, and Griffin's (1951) survey of the lower Mississippi Valley between 1940-1947; and Willey's (1953) survey of the Viru Valley in Peru in 1946. Over the next few decades, settlement pattern studies became much more common (see overview in Parsons 1972:127-132). By the 1960s and 1970s, there was a major push within archaeology to adopt a regional perspective in research design, specifically by using probability sampling to gain an adequate sample size of sites within a region (Binford 1964; Flannery 1976a; Plog 1976, 1978; Rosser 1979). The primary goal of these archaeological surveys was to understand the causes that led to different settlement patterns. As Willey (1953:1) wrote, archaeologists assumed that "because settlement patterns are, to a large extent, directly shaped by widely held cultural needs, they offer a strategic starting point for the functional interpretation of archeological cultures." In order to decipher the underlying causes of particular settlement patterns, different analytical methods were needed to understand why people live where they do.

3.2.1 – Approaches to Regional-Scale Analysis

Four of the most common methods and models in regional-scale analysis included Thiessen polygons, rank-size analysis, graph theory, and central place theory. The Voronoi diagram (Voronoi 1908) was first developed as a method for delimiting the space around a set of points (Figure 16). Haggett (1966:247) summarized the method as follows: "(i) lines are drawn joining a given centre to each adjacent centre; (ii) each of these inter-centre lines is bisected to give the midpoint of the line; (iii) from the midpoint of the line a boundary line is drawn at right angles to the original inter-centre line to give a series of polygons." Alfred Thiessen (1911) first used the Voronoi diagram to estimate regional rainfall averages—hence the term, Thiessen polygons. Its first application in the social sciences was made by Donald Bogue (1949), who used them to identify regional territories in the United States. By the 1960s, Thiessen polygons were being applied in settlement pattern studies as a way of identifying the limits of a site or territory, such as in Renfrew's (1975:12-19) analysis of "Early State Modules." Today, new applications are continually being proposed for Thiessen polygons, and new computer algorithms have been developed to construct them quickly and effortlessly (e.g. Mostafavi 2011).

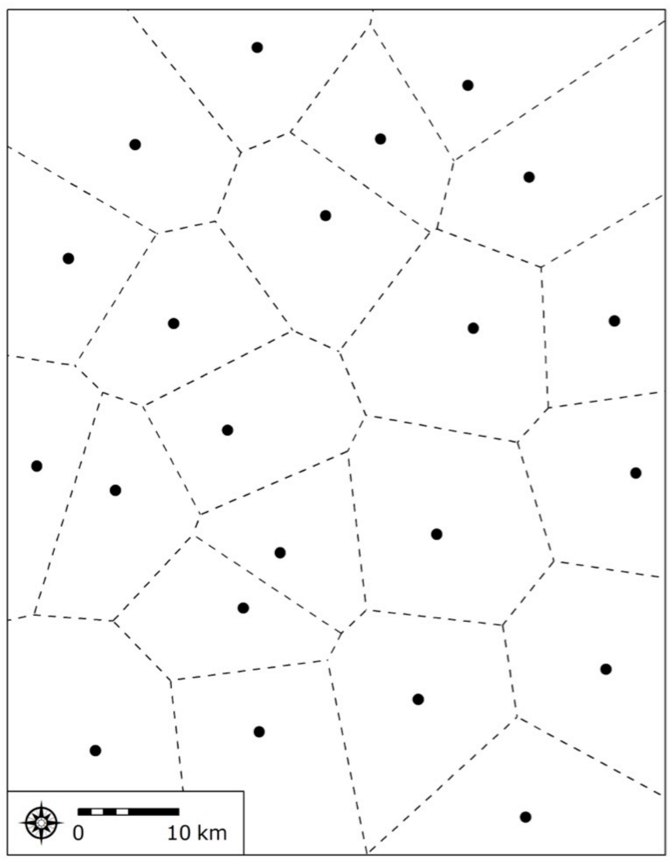


Figure 16. Thiessen polygons around a hypothetical group of settlements.

Rank-size graphs allow archaeologists to compare the size of settlements within a region against idealized models. The method is based on the rank-size rule, which states that the cities and towns of economically developed countries exhibit a linear rank-size distribution (Zipf 1941; for an overview, see Berry and Garrison 1958). In other words, a graph of settlements organized by their physical size and rank within the system (with settlements ordered according to their size) should exhibit a normal log distribution. Deviations from this model include convex, concave, and primo-convex distributions (Figure 17). Convexity—when the majority of settlements in a system are larger than expected—may reflect a low level of system integration (Johnson 1980), or it may characterize open systems in which regulated flow is promoted across boundaries (Kowalewski et al. 1983:38-40). Convexity may also appear when several independent systems are included in the analysis (Johnson 1981:150-151). In systems with a concave, or primate distribution, the main settlement is larger than expected according to the rank-size rule. This pattern may occur when economic competition is minimized, or when the largest settlement is more closely articulated with a network at a larger scale, such as a macro-regional system (Blanton 1976:255-256; Johnson 1981:149-150). Finally, primo-convexity is characteristic of dendritic settlement systems, in which there is a primary regional center but a low level of integration between the lower level settlements. This pattern appears often in colonial contexts, such as the early British Empire (Johnson 1981:173-175). Rank-size graphs continue to be used in archaeological studies, usually alongside other methods, as a way of determining if a particular type of settlement hierarchy is present (e.g. Harrower and D'Andrea 2014; Cavanagh 2009; Drennan and Peterson 2004).

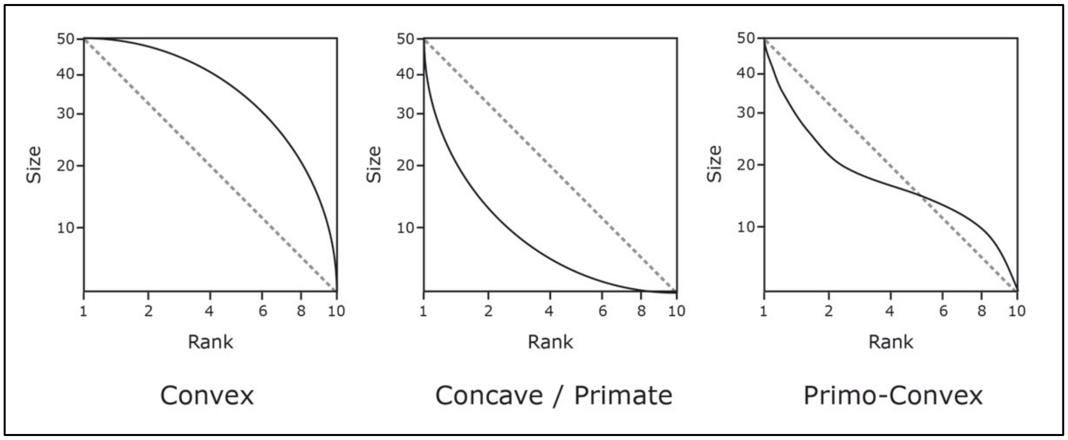


Figure 17. Logarithmic rank-size graphs, with log-normal line in gray dash (after Drennan and Peterson 2004:Figure 1).

Graph theory is a branch of mathematics developed in the early 20th century to allow networks—such as social networks—to be quantified and analyzed. Relationships between nodes (i.e. sites) are illustrated by edges (i.e. connecting lines), and nodes that do not have a relationship are not connected (Figure 18). The resulting graph can be used to identify clusters of interacting nodes, nodes that act as key players in connecting different parts of the network (i.e. “brokers”), isolated nodes, overall connection density, and so on. The applications of graph theory are far-reaching and cross-disciplinary, and its popularity in the social and behavioral sciences has grown exponentially with the development of social network analysis (SNA) in the past two decades (e.g. Harary and Norman 1953; Nystuen and Dacey 1961; for an overview, see Haggett 1966:237-240; Prell 2012).

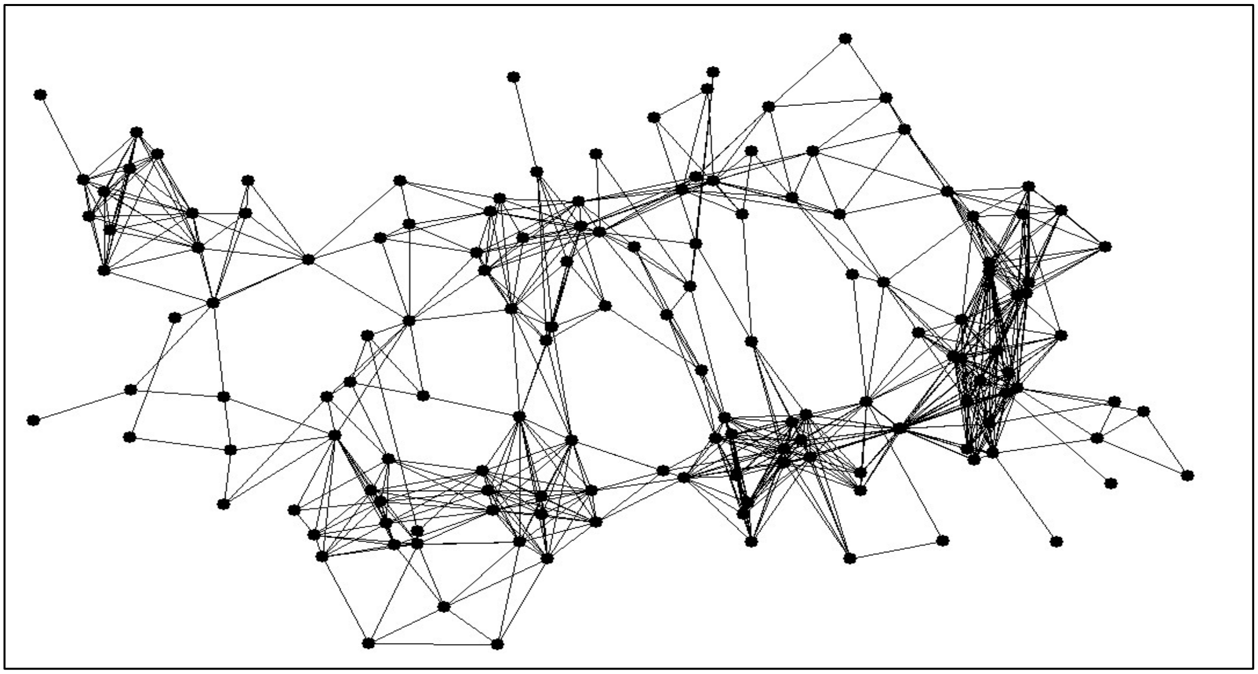


Figure 18. Example of a network connecting sites with similar attributes; in this example, the nodes represent Ottoman II-period sites in Mani, and the edges (or lines) represent the routes connecting them.

One of the most well-known findings of SNA is that almost all networks—both natural and human-made—result in the creation of "small worlds." Small worlds happen because of the "weak ties" that connect local clusters of nodes, reducing the average distance between any two given nodes in the system (Watts and Strogatz 1998). The concept is popularly known as the "six degrees of separation" or even the "six degrees of Kevin Bacon," a reference to an online portal that uses data from the International Movie Database to identify the shortest link between Kevin Bacon and any given actor in Hollywood (Reynolds and Tjaden 1999).

Another discovery from recent research is that many networks—both natural and human-made—are "scale-free," meaning that they have a few hubs with many connections, while most nodes have just a few connections (Barabási 2014:70–71). The importance of scale-free networks is that they are robust and continue to operate even when a large number of the "less powerful" nodes are removed from the system; however, they are vulnerable to failure when the hubs are removed (Barabási 2014:109–122). In terms of a transportation network, this would mean that if any of the most powerful nodes either decided to close off access to others or were attacked and the routes were forcibly closed down, then the entire transportation system would be affected. This is especially true of the hubs that act as bridges to connect local clusters into a single network (Ravasz and Barabási 2003).

Archaeological applications of graph theory first appeared in the 1990s, showing how the approach could be used to understand regional transportation systems (Gorenflo and Bell 1991), or in the example of Cahokia, the location of sites along waterways (Peregrine 1991). SNA continues to be used to model the connections between sites within regions, such as the Bronze Age ports in the Aegean (Knappett et al. 2011; Knappett et al. 2008), the distribution of Iroquoian ceramic decoration as a proxy for ethnic identity (Hart and Engelbrecht 2012), the location of sites along Inka roads (Jenkins 2001), and the development of pathway networks over time (Lee 2013:137-138).

Central place theory is a descriptive model, initially intended to model the distribution of medieval European towns with economies based on a capitalist market system (Christaller 1966; Lösch 1954). The idealized models of central place theory generally have a tiered settlement hierarchy, equidistant spacing, and hexagonal organization, and they are based upon three key principles that affect settlement configurations (Figure 19): (1) the market principle (also known as a K=3 distribution), which minimizes competition between marketing regions because of the equidistant spacing between all settlements, but results in a circuitous transportation route; (2) the traffic principle (K=4 distribution), which maximizes the efficiency of overland transport and thereby results in a linear transportation network; and (3), the sociopolitical separation principle (K=7 distribution), which prioritizes defense and community cohesion due to the fact that lower-order nodes are supplied by only a single higher-order settlement (Christaller 1966:72-80; Blanton 1996:59-60). The distribution names "K=3" and so on refer to the number of settlements within the market area of a higher-order settlement. For a K=3 distribution, where each lower-order settlement is supplied by 3 higher-order settlements, this value is the sum of the central node plus 1/3 of each of the 6 nodes around it, or $K = 1 + (1/3)*6 = 3$. For a K=4 distribution, the value is the central node plus 1/2 of each of the 6 nodes around it, and for a K=7, the value is the center node plus all 6 additional nodes.

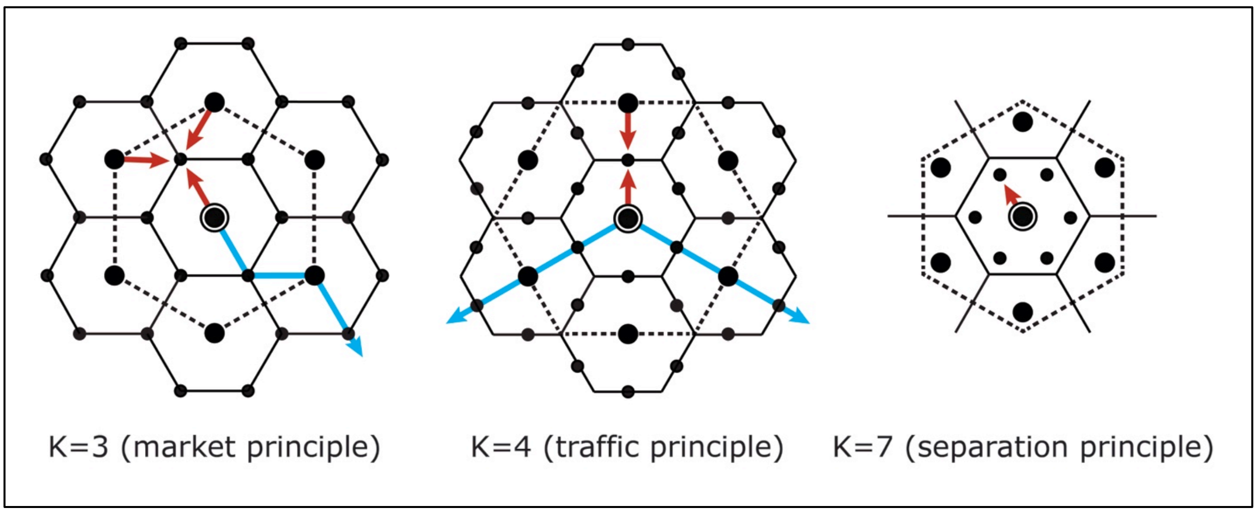


Figure 19. Schematic settlement layouts according to central place theory; red arrows indicate which higher-order nodes supply a given smaller node; blue arrows indicate potential transportation routes.

Central place theory maintains that these three principles are at work in all settlement systems in varying degrees. Deviations from these idealized models that have been documented in the real world have important economic, political, and social implications. As Smith (1977) demonstrated, deviations may persist even when a system is integrated by the market principle. Different patterns result when a center fulfills an administrative role rather than a purely economic one (Earle 1976; Flannery 1976b; Skinner 1977), or when it is focused on exacting tribute from the surrounding hinterland rather than minimizing transportation costs (Steponaitis 1978). The degree of social stratification, the spatial distribution of elites, and the mobility rate also affect the distribution system (Smith 1976), as do transportation constraints posed by mountains, coastlines, and rivers (Johnson 1972). Therefore, it is essential to examine the social context of a system in order to identify precisely why it does not conform to the expected model, and then determine which alternative explanations (e.g. geographic, political, or social) are the causes of the deviation.

Since the 1960s, the issue of how to define a "region" has been a topic of much debate (Haggett 1966:241-247). As Hartshorne first cautioned in 1938, the regional boundary is an arbitrary line that researchers draw in order to focus in on a particular dataset, but in reality, people do not live within such restricted confines. Monica Smith (2007), for example, argued that a more useful way to understand social or political territory is to study corridors of movement and resource acquisition, since boundaries are constantly shifting and are differentially maintained. This issue of arbitrary boundedness limits the utility of statistical methods that rely on a bounded dataset, such as rank-size analysis, graph theory models, and central place theory models. Although these methods and models continue to be applied in archaeological case studies, regional studies now tend to use them alongside other theoretical interpretive paradigms, contextualizing the "region," however defined, within a broader multi-scalar perspective and using more advanced geospatial techniques to measure different aspects of the landscape (for recent overviews of regional studies, see Kantner 2008; Salisbury 2009).

3.2.2 – Regional-Scale Model: Response to Imperial Expansion

In the models presented in Table I, I propose a series of expected archaeological signatures that would result from different region-wide responses to imperial expansion. The models are categorized according to three variables—settlement location, settlement visibility, and distribution of route networks—and are based on the archaeological and ethnographic case studies discussed below. Each of the variables is an imprint on the material record that can be detected through the collection and analysis of archaeological data. At the same time, each is also a clue about how communities were organized in the past.

The first model, "Resistance," reflects a region's active resistance to being incorporated into an expanding empire. Residents would form strong local communities comprised of multiple settlements, allowing them to remain self-sufficient and defend themselves from external threats. Each criterion would reflect this overall pattern of strong, interconnected local communities. The second model, "Integration" reflects the opposite situation—when a region is fully subsumed within the hegemonic or territorial power of an expanding empire. The bonds of local communities would be weaker, and residents would prioritize regional and supra-regional identity and integration with economic and political networks over strong local bonds. In reality, no case study should be expected to fit either one of these models exactly. Instead, they should be thought of as idealized models that can be used to gauge the degree to which communities either resisted or accepted imperial rule.

TABLE I. TWO REGIONAL-SCALE MODELS OF RESPONSE TO IMPERIAL EXPANSION AND THE EXPECTED ARCHAEOLOGICAL SIGNATURES

Variable	Model 1: Resistance	Model 2: Integration
Settlement location	High elevation for increased defense; predominantly dispersed pattern reflects small-scale agriculture, but can be nucleated to prioritize local defense (in these cases, other defensive aspects or features are also present).	Settlement location is not defensive and prioritizes access to trade routes and ports; predominantly nucleated pattern reflects higher labor demands and/or the presence of a landholding elite.
Settlement visibility	Intervisibility between clusters of small settlements, forming visual networks; viewsheds overlap; viewsheds may include local resources, pathways, and places of local significance.	Intervisibility possible between some settlements but no clear visual networks; isolated viewsheds; viewsheds may include places of imperial importance.
Route network	Clusters of smaller settlements connected by dense route networks; built roads are few or non-existent and do not provide access to most settlements; small villages have high centrality scores in the route network.	All settlements are well-connected to built road; administrative centers and fortresses have high centrality scores in the route network.

3.2.3 – Settlement Location

Studying settlement location provides insight into the types of resources available to the residents, their economic priorities, and even their desire for defense or more integrated communication. The traditional approach to studying settlement distributions involved assessing the pattern of settlements and comparing it to specific anthropologically or economically-based models, such those discussed above (section 3.2.1). Models like these offer idealized distributions based on the principles of administrative organization and capitalist economic organization. Their goal is to show how a particular settlement network deviates from the expected pattern, and from there, the researcher can explore the reasons why the network does not align with the model. The problem with these approaches is that they are built upon assumptions about how networks should operate in an ideal world, often making them inapplicable to real-world situations. Christaller's central place theory was meant to describe settlements within the framework of a capitalist economy, but these settlements were also located on an open plain without any geographical barriers. Later researchers attempted to adapt his model to account for alternative economic or political contexts, or for the presence of mountains and rivers that, at times, can serve as either barriers or causeways for communication (Johnson 1972; Earle 1976; Flannery 1976c; Steponaitis 1978).

Models such as these continue to serve as the foundation for archaeological studies of settlement patterns (for a recent overview, see Kowalewski 2008), to say nothing of the myriad sociological studies that model the distribution of modern populations. In recent years, settlement pattern models have been frequently referenced in studies of prehistoric societies (e.g. Carvalho et al. 2011; Wallin and Martinsson-Wallin 2007; Blick et al. 2011; Harrower and D'Andrea 2014; Duffy 2015), and additional settlement pattern studies have been published without explicitly citing these underlying theoretical assumptions (e.g. Nondédéo et al. 2013; Loendorf 2013). There have also been historical settlement pattern studies of more recent time periods, for which administrative records like censuses can be used in combination with GIS software to discuss settlement distribution (e.g. Frantzman and Kark 2013; Levin et al. 2010; Towers 2010). What is not well represented in recent studies is an attempt to bridge the divide between archaeological and historical datasets, with notable exceptions from North America (e.g. Jones 2010). As a result, this project is one of the few historical-archaeological GIS-based settlement pattern studies that has been undertaken.

I use two specific aspects of settlement patterns to understand how communities were organized and how they responded to imperial expansion: (1) the location of settlements within the landscape and (2) the overall degree of settlement clustering or dispersion.

First, the attributes of a settlement's location can tell us much about the priorities of its residents. One of the most commonly discussed spatial attributes is elevation, particularly in terms of its defensive advantage during periods of increased conflict (Borgstede and Mathieu 2007:195-198; Martindale and Supernant 2009; Arkush 2010:35). More specifically, the "height-zonation" or "demographic retreat" hypothesis suggests that people move into more mountainous terrain during times of war (Topping 1972; Stedman 1996; Bennet et al. 2000; Forbes 2000). Although Frangakis-Syrett and Wagstaff (1992) questioned whether Maniates responded to conflict this way, other scholars have noted a pattern of hilltop settlement during the medieval period in the Peloponnese (Kourelis 2005:122; Dann and Yerkes 1994:300), with people occupying low-lying areas only in the mid-18th century (Kourelis 2002:59-60; Kourelis 2003:169; for Mani, see Kalamara and Roumeliotis 2004:54). In Methana, where low-lying areas were not totally abandoned, movement toward higher elevations indicated that locals were experiencing a heightened sense of fear and insecurity (Forbes 2000). Another important aspect of settlement location—discussed in more detail below—is visibility. A site's location may be interpreted as defensive if it has high visibility of fertile land or trade routes or, on the other hand, if it is deliberately obscured by the surrounding topography (Field 1998; Smith and Cochrane 2011:83).

In the model I propose, resistant communities would be more likely to situate themselves in defendable locations, especially in places with high elevation or in areas that are less visible from other points on the landscape. As a result of their physical separation from state centers, I suggest that these communities would also prioritize local needs that must be met in order to remain self-sufficient, including easy access to pasture, agricultural fields, and to some extent, bays and ports. Bays would be especially important for short-distance travel between sites near the coast.

Integrated communities, on the other hand, would be more “plugged in” to the broader economic and political networks. Defense would not be a high priority, particularly if they could rely on imperial forces to come to their aid if the need arose, and so they would be more likely to be located along roads or large harbors. This fact is especially important because of the geography of Mani’s coastline, which is mostly comprised of rocky cliffs that plummet to the sea. There are several accessible ports along the coast where small boats can be docked, but only a few harbors or ports that larger vessels can access. Proximity to these ports would mean a greater potential for engaging in large-volume or long-distance trade, as well as a greater potential for seaborne attacks—both of which would suggest that the communities nearby would be more integrated into a supra-regional polity.

The second aspect of settlement patterns—clustering and dispersion—has implications about how resources are shared between communities and how residents interact with one another on a regular basis. Two very different theoretical ideas are implied by the terms “dispersed” and “clustered.” On the one hand, “dispersed” may refer to small sites that are sparsely populated (e.g. those having fewer than 15 people per hectare; see Drennan 1988:280)—this is the demographic concept. On the other hand, the term may refer to the overall pattern of settlements and how they are distributed across the landscape—this is the spatial concept. According to this definition, dispersed settlements are situated apart from other sites, and their fields are located within a 1–2 km radius (Stone 1991:349; for application, see

Watkinson 2013:124-125). Dispersed settlement patterns are typically associated with subsistence-level intensive agriculture, as they allow for the immediate and frequent availability of labor investment in nearby fields, and for repairing agricultural features like terraces (Drennan 1988:284-287; Stone 1991:350; Von Thünen [1826] 1966). For example, Sanders described the dispersed settlement pattern of the Classical Maya as the result of an "infield-outfield" agricultural system, with the nearest fields producing higher yields and so requiring more labor and fertilization (1981:362-363).

The relationship between distance and agricultural intensity was first identified by Von Thünen ([1826] 1966) and further developed by theorists like Chisholm (1962). Von Thünen's model was based on the idea that distance, and thereby travel time, affects the type and amount of crops a farmer can grow in a given plot of land. The model was intended to explain the spatial patterning of crop intensity around a nucleated town (Figure 20)—and in fact "intensity rings" and the infield-outfield system continue to feature in archaeological models of nucleated towns (e.g. Ur 2009:Figure 9.7; Knapp and Given 2003:314). However, the model is equally useful in explaining why people may choose to live in small, dispersed settlements.

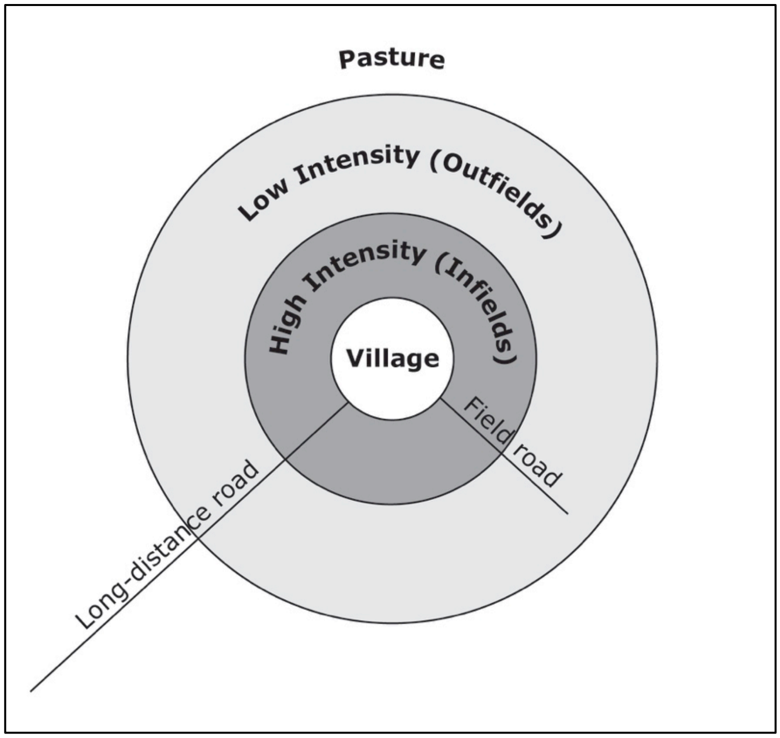


Figure 20. Schematic interpretation of Von Thünen's model of agricultural "intensity rings" (after Ur 2009:Figure 9.7).

A dispersed pattern may also reflect an avoidance of the social and bureaucratic regulation of land that is typical in nucleated settlements. In medieval England, the farmers who continued to live in dispersed settlements were freed from these "strict communal restraints," allowing them to use the land for more varied purposes, including grain growing and pastoralist activities (Dyer 1990:97-99). As for the relationship between settlement patterns and the formation of communities, a case study from medieval Iceland demonstrates that dispersed and seemingly isolated settlements share in a broader community identity that may be signified by geographical place-names and parish membership (Vésteinsson 2006). This case study is important for the present research because it means that community identity is a critical aspect of social life, even when dealing with dispersed settlements.

Clustered patterns, on the other hand, are characterized by aggregated populations living in villages or towns, and they are usually associated with a system of extensive, communal agriculture (Athanassopoulos 2010:257; Dyer 1990:97-98; Rippon et al. 2006; Davis 1991:139-140). In Greece, nucleated patterns have been linked with the practices of transhumance and bare-fallowing, as opposed to the small-scale, intensive practices of manured annual cropping or rotation with a pulse crop (Halstead 1987:83-84). It is important to point out, however, that nucleated patterns may also be associated with defense. In these cases, the motivating factor in settlement nucleation must be determined via secondary data: the presence of fortification walls or other defensive features would indicate that defense was the driving factor, while evidence of transhumance, bare-fallowing, and extensive or communal agriculture would indicate that land management was the driving factor.

Several archaeologists have pointed to increased labor demands as one of the key factors leading to clustering and nucleation. In Chaco Canyon, for example, the 8th- and 9th-century residents responded to environmental pressure by increasing agricultural production, resulting in a need for more farming land and pooled labor resources (Vivian 1989:107-109; Cordell and Plog 1979:417). In other studies, nucleation is linked with a landholding elite class, which consolidates and organizes labor in order to increase production. Davis (1991:141) argued that this was the case in the Ottoman Cyclades, where the income from extra crops was used "to meet tax obligations, to underwrite an elevated lifestyle for an elite, to develop the infrastructure of the community, to support the bureaucracy, and even in part to purchase supplementary subsistence products." Likewise, Given and Gregory attributed the nucleation of settlements in Cyprus during the medieval period to their need to produce a greater surplus for taxation (2003:294). However, nucleation is not always linked with a community's population or agricultural program—at times, it may be a response to heightened insecurity. In these cases, dispersed settlements and intensified agricultural practices may only appear when those threats are removed (Beresford 1964:13-14; Drennan 1988:283).

According to the proposed model, resistant communities would tend to exhibit a dispersed settlement pattern. This would allow them to prioritize small-scale subsistence farming and pastoralism and avoid land regulation from an imperial administration or a local elite class. It is possible, however, that a nucleated pattern would develop if defense became a greater priority. Integrated communities would be more likely to exhibit a clustered pattern, especially if labor demand increased (e.g. in response to higher tax requirements) or if an elite class controlled the land and managed agricultural and/or pastoral resources. Extensive farming would allow for the production of large-scale crops and communal transhumance. As in the Ottoman Cyclades, total production could be increased by managing the land resources as a whole, despite the lower productivity of individual plots (due to a lack of intensive farming, irrigation, and manuring). In turn, this would allow for the export of agricultural products and integration with imperial trade networks.

3.2.4 – Settlement Visibility

Settlement visibility is another variable that can reflect defensive priorities, as well as have implications about shared identity and cooperation. The visibility of a settlement can be measured in two ways: through its viewshed (the terrain that can be seen from its location), and through the settlements with which it is intervisible. Intervisibility means that a person standing in one location is able to see a person standing in another; in other words, there are no mountains or other features obstructing the view from one settlement to another. As a result, intervisibility between two locations can be interpreted as a potential for communication, and because it is one of the few ways to test the physical relationship between disparate settlements, it is an important criterion for understanding community organization. Specifically, measuring the ability for active communication allows us to understand how people may have interacted with one another and whether cooperative arrangements extended beyond settlement boundaries to incorporate people living within the broader social community. Archaeologists tend to interpret settlement visibility in one of two ways: either as defensive, or as culturally significant.

It has been well demonstrated that visibility is a critical criteria in defense. Intervisibility allows settlements to act as a kind of information-sharing network (Jones 2006:536), and it is particularly important for features that act as watchtowers or beacons (Borgstede and Mathieu 2007; Caraher et al. 2010:409-410). In the Andean highlands, intervisible *pukaras* (hilltop forts) “may have used visual connections to summon nearby allied populations to their aid in times of danger, or to communicate other kinds of information” (Arkush 2010:37-38). Thus, when settlements are situated so that they are intervisible, there is a potential that this arrangement could be utilized to signal and pass information instantaneously to other individuals (Haas and Creamer 1993:26). Viewsheds are also used to argue for the defensive nature of some sites, especially those that incorporate major pathways, natural resources like water sources and mines, or other settlements (e.g. Madry and Rakos 1996; Kardulias 1997; Sakaguchi et al. 2010; Martindale and Supernant 2009). At the same time, several studies have demonstrated that settlements may still be defensive even if they are not intervisible with other settlements (Smith and Cochrane 2011) or if they have a narrow viewshed (Jones 2010:11). In these cases, a site may still have other defensive qualities, such as fortifications, palisades, a protected access point, or a location in steep terrain (Keeley et al. 2007).

There are other cases in which high visibility is more likely to be associated with culturally significant places or with other aspects of community identity. The very ability to be seen often makes a location significant, as in palaces and other elite-sponsored building projects, or in the Andes, where prominent mountain peaks are considered to be *apu* (spirits) are still revered by locals (Williams and Nash 2006). The connection between high visibility and sacred reverence has also been demonstrated in Minoan funerary structures (Déderix 2014) and other kinds of monuments (Wheatley 1995; Ruggles and Medyckyj-Scott 1996; Tilley 1994:204-205). High visibility may also be used to demarcate territory, as in the case of the highly visible ditches on Salisbury Plain, England (Bradley et al. 1994:138-146; but see Llobera 1996), or in the Maya lowlands, where certain key settlements have viewsheds that include an important trade corridor (Doyle et al. 2012:801-802). On the other hand, a consistent lack of intervisibility may also indicate territoriality. This is the case in the Medieval-Modern settlements of Cyprus, whose viewsheds were isolated because they were each located within separate bowls of land (Given and Hadjianastasis 2010:57; Given and Gregory 2003). Similarly, Lock and Harris (1996:224-225) argued that the Neolithic long barrows in the Danebury region, England, were deliberately located so as to avoid intervisibility. They also suggested that the Early Iron Age hillforts in the same region were located so as to maximize their view of nearby farms and field systems, rather than to gain a defensive viewshed (Lock and Harris 1996:232-234).

High visibility may, at times, be a defensive quality; but at others, it can act as a means through which communities relate to their physical landscape and their remembered past. The places that fall within a settlement's viewshed can be significant visual reference points for a community and can include parts of the physical landscape, religious structures, paths, and even other settlements.

In the model I propose, resistant communities—particularly those comprised of multiple settlements—can be expected to maintain the potential for active communication between all of their component settlements, and even with other nearby communities. This potential would allow for messages to be conveyed for defensive purposes. The most defensive pattern would be one that allowed for messages to be conveyed from coastal sites—those with the best view of road networks and ports—to those at higher elevations. Thus, a withdrawn and defendable settlement in the mountains could still be made aware of an approaching ship that was out of its direct line-of-sight. At the same time, other settlements located within a viewshed could be interpreted as significant points of reference for residents, and therefore as places that potentially strengthened the bonds of a local community identity. Thus, viewsheds might be expected to overlap with those of other settlements. Defensive viewsheds would also exist, and would incorporate local resources, local pathways, and places of local significance such as churches. In some cases, settlements may be located so as to be completely isolated from other points on the landscape—an opposite, and yet extremely defensive, situation.

Integrated communities, on the other hand, would have less need of visual communication, since residents would prioritize their membership in a larger, imperial identity rather than their local community identity. Their decisions about where to live would be based on economic and political factors, rather than the potential to maintain intervisibility connections with other nearby settlements. The defensive characteristics described above would be absent. Instead, settlements would have less intervisibility, and their viewsheds may even be isolated from one another, as in the case of the Medieval-Modern settlements of Cyprus. In this case, it would be necessary to investigate the broader context of the settlement's location to determine whether the isolated viewshed is defensive or territorial in nature—such as whether the settlement was situated so as to be completely isolated from others, or whether it was still connected via pathways or ports. Finally, if any features are prominent in the viewsheds, they may include imperial or state-funded monuments.

3.2.5 – Route Network

Another way of discussing community networks is through the physical connections between settlements, which may take the form of unmodified paths, marked trails, or formal roads (Trombold). While paths and trails are found in all types of societies, formal constructed roads are typically interpreted as "hallmarks of the empire" (Hassig 1991:25). Roads require significant investment of labor and allow for the quicker transport of goods and people (including military troops), and as a result, only empires and states tend to build them. Writing in 1894, Cooley ([1930] 1969:42-66) first described the military, political, and economic reasons that states might build a road network. Since then, the political economy approach has built upon this concept (Hassig 1985, 1991; Earle 1991, 2009). According to this view, roads are seen as politically and economically integrative, as they link territories together by allowing for the quicker transport of goods and soldiers (e.g. chapters in Trombold 1991b). Roads also have secondary functions, such as administration or communication. Examples of formal road systems include peripheries of the Roman Empire, such as Britain (Davies 2008; Margary 1967) and Gaul (Dowdle 1987); the Aztec Empire (Santley 1991); Bronze Age Mesopotamia (Ur 2009); and the Khmer Empire (Hendrickson 2007). In prehistoric Hawaii, roads paved with water-worn stones may have been used for trade and tribute collection (Mills 2002). One of the best known examples—the Inka road system—is notable because it varies widely in terms of its construction style in different geographical and environmental contexts; as a case study, it shows that state-funded route networks may incorporate roads of varying width, or sections of unpaved tracks that may otherwise be termed trails or paths (Hyslop 1984). The elaborate pre-modern road network in India is another example of how local geography (e.g. the lack of stone) may influence the construction of roads (DeLoche 1993:113-114).

Hassig (1991) suggests that there should be material differences between the formal roads that were built primarily for military purposes and those that were built for the transport of goods. In other words, the characteristics of a road can help archaeologists interpret the road's primary function. Specifically, roads built for troop movement would be wider, allowing for multiple soldiers to march abreast. They would also be straighter and more direct, connecting only the largest settlements in a region to other central places. Trade roads, on the other hand, would prioritize the overall connectivity of the network; they would be narrower (thereby saving on labor and cost), and they would connect many more settlements than just the larger centers. These types of road networks are referred to as "dendritic," as in the case of the Aztec road system (Santley 1991). It is also important to keep in mind that a road may be used for a different purpose later on. In the case of the primary military Roman road network, new branches were built over time to facilitate trade. Centuries later in the medieval period, the Roman roads were again used for both military and economic purposes (Margary 1967:496),

Roads can, however, have a primary function that is neither political nor economic, but rather ceremonial. Mayan roads, for example, may have been used for formalized, elite-sponsored ceremonial processions (Morton 2012; Keller 2006). While some archaeologists have argued that the roads in Chaco Canyon were built for communication and economic purposes (Mathien 1991; Windes 1991:123-124), others maintain that their primary purpose was ritual in nature, connecting ritual structures like kivas and thereby serving to integrate the different communities in the region (Roney 2001).

Earle (2009:269) suggested that formal road systems reflect one or more of these three categories—political, economic, and ceremonial—which are sources of power that complex societies use to legitimate their authority. As Hyslop (1984:2) wrote about the Inka route network, "To conquered populations throughout the Inka empire, the roads were an omnipresent symbol of the power and authority of the Inka state. There were probably very few individuals subject to the Inka state who had never seen an Inka road, even though many of those individuals had never or rarely seen an actual Inka from the region around Cuzco." The same sentiment could apply to most peripheral regions, where state-funded roads were built to connect local communities; indeed, "Ottomans" could be substituted for "Inka," and the quote could just as easily apply to mainland Greece.

While the majority of studies on the topic of route networks have focused on formal roads, a few have broadened their scope to include the informal paths and trails in a route network (e.g. chapters in Snead et al. 2009). The medieval route network in Britain, for example, incorporated some of the roads built earlier by the Roman Empire, but dirt tracks developed alongside them as goods and people moved between new settlements (Hindle 1998). Other studies have shifted their focus to the local scale, such as Milne's (2015) study of colonial-period footpaths in Natchez County, Mississippi, where a drop-off in the density of paths between Natchez and French settlements reflects a boundary between the two communities (Lee 2014). Both these example underscore the importance of studying all the routes within a route network—not just the formal roads built by empires.

This local-scale perspective is an essential complement to the road-centered approach because of the insight it can provide into local community boundaries. Specifically, clusters of settlements that are highly connected to one another may indicate that people were moving more frequently between those settlements, and so they would be more likely to be a part of the same community. On the other hand, drop-offs in the density of routes between settlements may reflect a break in the social ties between those two areas, and therefore indicate a potential boundary between social communities.

According to the proposed model, resistant communities would prioritize strong, local social networks, which would be reflected in a pattern of settlement clusters, all highly connected by the various pathways. These routes would allow people to easily move between settlements, maintain physical communication, and transport food and animals—all essential for the maintenance of multi-settlement communities. Such physical ties would also be important for holding large public events, which in turn would help to bolster community identity. Resistant communities would also be located relatively far from the formal built road network, as these residents would neither choose to engage in long-distance trade and communication, nor would they want to be exposed to the potential for imperial incursions.

Integration would be reflected in the establishment of a well-built road network, connecting all of the larger settlements and extending to include smaller settlements via walled paths that radiate out from larger settlements. Smaller settlements would not be clustered (i.e. connected by a dense network of pathways), as the social communities would be weakened. Walled paths and goat paths would continue to be used to reach distant fields and pasture, but would be less prevalent between other settlements. If present beforehand, these paths would fall out of disuse or even be blocked off.

3.3 – Communities

The micro-region, as defined in this study, is the community. Theoretical approaches to studying communities have focused on what it means to be a part of the community, or in other words, how to define community membership. While it is relatively easy to identify *settlements* in the archaeological record, it is more of a challenge to define what are essentially social entities that may or may not correspond to physical points on the landscape. This task is made even more difficult because archaeologists have yet to develop a unified approach for moving beyond the initial confusion of sites and communities as the same type of entity (Mac Sweeney 2011:26, 30; Harris 2014). In the past few decades, various studies have shifted away from a geographical understanding of communities by highlighting that they are essentially social constructs (Cohen 1985, 2002; Chaskin 1997:522), or what Anderson referred to as "imagined" (Anderson 1991:6). As Given and Hadjianastasis (2010:43) wrote, "The community is not just the abstract equivalent of the settlement, the 'ghost in the machine'. It operates according to a network of shared activities and meaningful places across the landscape." Yaeger and Canuto (2000:5) defined community as "an ever-emergent social institution that generates and is generated by supra-household interactions that are structured and synchronized by a set of places within a particular span of time." In other words, communities reach across space; they are not necessarily based on residential proximity, but rather on concepts of kinship, religion, political alliance, and other shared social traits (Wernke 2013:22-24; Mac Sweeney 2011:29). Membership in a community is defined by these concepts, and as a result, it cannot be so easily traced to a physical location.

Different approaches have been developed to help archaeologists define communities in the material record. These include defining them based on spatial boundedness, estimates of past population size, and social practices and styles that can be observed in the archaeological record. In section 3.3.2, I apply these approaches to Mani, suggesting how it may be possible to identify the communities that have lived in Mani in the past, and in section 3.3.3, I present a model that can be used to identify different types of social organization at the community scale.

3.3.1 – Approaches to Identifying Community Boundaries

The earliest studies of community equated them with spatially bounded locations, or in other words, settlements. While theory has moved beyond this initial paradigm, it is unwise to totally ignore the spatial components of communities. As the quotations above emphasize, physical spaces on the landscape give structure to what are otherwise imagined entities. Communities may be expected to build certain physical spaces that help to integrate members through communal rituals; they may be bounded by more obvious physical markers, such as walls; or they may surround common spaces used for grazing or farming.

In a recent paper, Lee (2014) suggested that another way to define the extent of a community is through the distribution of paths and roads connecting different settlements—a micro-scale version of Smith's (2007) approach to studying state territoriality. The idea is not new, although it has yet to be explicitly applied in an archaeological context. For example, Wolfe (1962:183-185, Figures 2-3) demonstrated that cultural differences on either side of an internal boundary—such as that between the Canadian provinces of Quebec and Ontario—may manifest in a sharp drop-off in road density. He noted similar disruption in the railroad network along the Canada-U.S. border (although, in this case, the road network was unaffected). A more recent historical case study comes from the colonial-period footpaths in Natchez County, Mississippi (Milne 2015). A spatial analysis of the cadastral maps from 1723 shows that footpaths were most dense within two clusters of settlements—one being predominantly French, and the other Natchez. Between the two clusters, the density of footpaths decreased dramatically. In addition, there were only a few isolated settlements within this "border" region, where residents worked as translators to help facilitate communication between the French and Natchez. Both examples demonstrate the role that local routes play in inter-settlement communication, trade, and travel, and they show how the shape of a route network can be used to understand community boundaries and interaction.

In terms of an archaeological study, it is possible to assess the shape of a route network by mapping the primary/regional roads as well as the secondary/local routes. Primary routes can be used to infer the potential for members of local communities to engage in long-distance trade and travel to important imperial centers, or, conversely, for imperial administrators, bureaucrats, tax collectors, and soldiers to quickly and efficiently travel to those smaller settlements. The secondary routes would include the local paths that would have been used by local residents to reach their fields, lead livestock to pasture, and travel to neighboring settlements for trade or communication (Lee 2014). Drop-offs in the density of secondary routes between settlements may reflect a similar break in the social ties between those two areas, and therefore a potential boundary between social communities. Higher densities, on the other hand, would suggest that people were moving more frequently between those settlements.

Another way of outlining potential community boundaries is through population. Since population levels are partially dependent on social organization (or how the community is organized), estimates of past population can be used to understand the structure of communities and their distribution within and between settlements. In small, tight-knit communities, social ties are strong and act as a cohesive agent. As the community grows larger, the ties may break down or disappear altogether, necessitating either a fissioning of the settlement into smaller, discrete villages or the development of a more complex organization scheme. In other words, there are “scalar thresholds” that, when exceeded, require a community to change how it is organized in order to continue functioning.

The idea of “scalar thresholds” in human group size has been supported by several research studies. Kosse (1990) suggested that the limitations of long-term memory restrict informal information-sharing to groups of 500 (+/-100) individuals. In other words, this is the maximum size of a face-to-face social community (Kosse 1990:291). In a posthumous article, she outlined additional thresholds that correspond to ethnographic social groups: the most basic, intimate group size is 7, followed by small group formations of 25 (+/-5), then 150 (+/-25), 500 (+/-100), and 2,500 (+/-500) (Kosse 2000: Table 1). Johnson and Earle proposed similar scalar thresholds of community populations that corresponded, in their view, with levels of sociopolitical integration (2000:Table 8; for application, see Neitzel and Hantman 2006). Similarly, Gamble (1998:434-436) outlined three scales of personal networks in Paleolithic society: the closest, “intimate” personal networks averaged about 5 people; slightly larger “effective” networks may have numbered up to about 40; and much looser “extended” networks of friends and acquaintances varied between 100–400 people, with an upper limit of about 1,000. Above these maximal limits, information-sharing and decision-making breaks down at the personal level, becoming formalized and hierarchical (Kosse 1990:284-288). In the case of the Late Iroquoian villages, whose populations had reached between 1,500 and 2,000 people, inter-community conflict became more prevalent. This increased conflict likely resulted from the weakening of ties through marriage and trade, and their replacement through a supra-household organization (Birch 2010).

The figure of 150 (give or take) is a key breaking point in terms of group size; after a group exceeds this figure, additional subgroup fissioning is necessary for people to function as a community. The figure has been identified in other sociological studies, as well. Bernard and Killworth (1973:184) identified this threshold as 140 during their ethnographic study of an oceanographic expedition. Dunbar (1993, 2010) suggested that the extended networks of human social relationships, like those of other primates, are limited on average to 150 people—the popularized "Dunbar's number." Hill and Dunbar (2003) then applied these hypothetical limits to modern Western societies, showing that a maximal group size of between 100–200 people can be observed in the distribution of Christmas cards; and the same figure has been observed in interactions through Twitter accounts (Gonçalves et al. 2011).

As Kosse and Gamble argued, there are innumerable examples—both ethnographic and archaeological—of social networks that exceed the 150-person cut-off. The point to stress is not that "effective" networks regularly exceed the limits posited by Dunbar and others, but rather that communities are organized in such a way that they allow for multiple smaller networks to operate within them (see Hill et al. 2008). De Ruiter et al. (2011:558) suggested that "humans have culturally, bureaucratically, and technologically derived solutions to exceed such limitations." One of the most important means of maintaining communities in excess of 150 people is through mass rituals that foster a sense of community belonging and membership. In terms of archaeological correlates, Kosse suggested that signs of these "integrative mechanisms" should be expected in groups larger than 150 (+/-25) people, and would also appear at the level of sub-communities when population exceeds 500 (+/-100) people (1990:295-296). This is exactly where the spatial organization of communities becomes important, as integrative mechanisms could include public rituals, shared public spaces, and shared resources. All of these are critical elements in maintaining community cohesion. From the perspective of population size, these elements are also necessary for people to maintain relationships beyond the hypothetical cognitive limit debated above.

Another way to define past communities using the archaeological record is through evidence of group-defining social practices and style. One of the key ways of reinforcing community membership is through the use of shared social practices that display and embody a sense of group cohesion and draw a distinction with those outside the group (Goldstein 2000:182; Horning 2000). Recent adaptations of this idea suggest that communities must be actively maintained through group participation, or what Yaeger (2000) referred to as "practices of affiliation" and Mac Sweeney (2011) more recently called "enactments of community." Public participation in religious rituals, feasting, or other events help to reinforce a sense of community membership and define external groups. Open public spaces or evidence of resource sharing would be material indications of such identity-forming activities that archaeologists can use to identify community formation and maintenance in the past.

While not directly relevant to this study, another important approach to studying communities has focused on the role of stylistic variation in signaling or reinforcing group membership. Some archaeologists object to the direct correlation of style and identity and present case studies in which the two concepts do not align (MacEachern 1998; Goodby 1998; Hitchcock and Bartram 1998; Welsch and Terrell 1998), but many more have provided convincing evidence that style can be a means of expressing membership in a particular social group, while simultaneously reinforcing the difference of outsiders (Voss and Young 1995; Wiessner 1989; Stark 1998a; Curta 2014:2510-2511). Style is thought to be a means of conveying information, either actively through "emblemic" style or passively through "technological style" (Wobst 1977:329; Wiessner 1983:257; Sackett 1982, 1985). As a result, the more visible items, like architecture and ceramics, tend to be used as a means of marking ethnic identity. In the French tradition, the study of *technologie* explores how cognition and worldviews are embedded in technological sequences (Dobres and Hoffman 1994; Stark 1998b). In short, stylistic variation can often help archaeologists infer social identities in the past.

3.3.2 – Identifying Communities in Mani

Once the notion of *community* is defined, it is possible to move beyond the concept to begin studying how people operated within the social unit—whether there is evidence of social hierarchy, whether people cooperated to benefit the entire unit, or whether another form of identity (such as kinship) was more important in structuring day-to-day activities. However, before this study can proceed to discuss the past community-scale social organization, the *Maniate community* must first be defined.

In Mani, I argue that the communities of the past very often corresponded to the bounded settlements that dot the landscape. Many archaeologists continue to affirm the underlying geographical nature of community (e.g. Kolb and Snead 1997; Mac Sweeney 2011), providing other examples of where clearly delineated settlements likely correspond to social phenomena like communities. Still, as the research discussed above emphasizes, it is important to acknowledge that community is first and foremost a social construct. As Mac Sweeney explained, “For the inhabitants of an area to form a community, they must share a social identity as well as a geographic space, and they must consciously see themselves as a social collective” (2011:19). This approach embraces both the spatial component of communities and the role of individuals in their creation. The very proximity of residential structures and the use of shared communal spaces may actually promote a sense of shared belonging (Mac Sweeney 2011:34).

The relationship between bounded settlements and social communities in Mani is supported by the extensive historical and ethnographic data on settlement names. In cases where neighboring settlements share a common name, residents conceive of themselves as part of a larger network that incorporates each of these locations. One example comes from the settlement cluster of Dimaristika, which is comprised of five separate hamlets. The name, from the Greek word *damari* (quarry), reflects the hamlets' location near a group of ancient marble quarries (Warren 2012:Note 6). While one of these hamlets is called simply "Dimaristika," the other names include a directional preposition: Mesa (Inner), Pera (Beyond), Ano (Upper), and Kato (Lower). When asked about the names of the hamlets, a local resident emphasized that all of these places together were Dimaristika, and only then did he provide their full names. Over the course of the 18th and 19th centuries, families had broken away and founded new hamlets, which in time came to be differentiated by one of the above prepositions. The same pattern of a settlement fissioning into multiple settlements, each inheriting the original name but qualified with a direction, has taken place elsewhere, such as in medieval Iceland (Vésteinsson 2006:104-105). The few historical records available from these periods underscore the relationship between settlement names and personal identifiers, providing further justification for this treatment. Examples include the dedicatory inscription of a church in Polemitas from 1278, listing names like "Eustratios of Kouloumi," "Ioannos of Patzia [Pagia]," and many others (Drandakis 1982). There are also many instances where settlement names are derived from family names: Skyphianika, Porachia, Kechrianika, Kaspotini, and so on.

Other spatial aspects of the landscape—the distribution of roads and paths, intervisibility relationships, shared ports and bays—indicate that the Maniate settlements were extremely well connected to each other. This fact is as much a product of the geography—with relatively limited areas that could support permanent villages—as it is a product of the high population density of the region. There are only a handful of cases (such as Dimaristika, above) where it is evident that multiple discrete settlements shared a single community identity. In the vast majority of cases, it is difficult to detect above-average levels of connection between discrete settlements. In fact, as will be discussed in Chapter 5, the regional-scale analyses do hint at potential sub-regions (such as the broad southwestern plain) within which all the settlements are largely connected.

The discussion of population size is also important for interpreting how settlements may have corresponded to communities within Mani. If effective communities average about 150 people, how do the size of Maniate settlements compare? As an example, we can look at the settlements of Inner Mani enumerated in the 1700 Grimani census, which recorded the entire population of each village (including children and the elderly). Only three of the 29 settlements have more than 250 people—the rest range from 37 to 234 people and average 112 per settlement. According to the discussion of community size above, many of the smallest settlements were probably part of a larger, multi-settlement community. In these cases, population figures can help us identify where potential community boundaries may have existed in the past. The largest three settlements with more than about 250 residents would have been comprised of neighborhoods or smaller communities that would allow people to maintain an effective social network. In turn, the higher population density in these villages could lead to inter-community competition and conflict. Kosse and others all agree that the presence of multiple social communities within the same village requires a higher scale of social organization—this could take the form of a family- or clan-based organization, with social influence held by family leaders, but it could also entail more complex social hierarchies, indicated by ranking, the separation of elites and commoners, and symbolic linking with the ruling power.

These examples show that past communities may have extended beyond the borders of individual settlements or settlement clusters, uniting several archaeologically and etymologically different places. With this caveat in mind, I suggest that it is not necessary to define the specific boundaries of the Maniate communities that existed in the past in order to understand how they changed organizationally.

3.3.3 – Community-Scale Model: Social Organization

What is of greater importance for this study is to understand how the Maniate communities were organized and to determine whether, at any point in time, there was a shift in this organization. Based on ethnographic and archaeological case studies, I developed two models that can be used to determine whether a community was organized in such a way that it promoted community-wide cohesion, or whether the social organization promoted smaller units within the community, such as nuclear families (Table II). Each of the models has distinct material correlates that can be identified by archaeologists. In other words, there are measurable datasets—physical traces on the landscape—that reflect the social aspects of communities. Together, the datasets address how communities may have been organized spatially, and how people living in different settlements interacted or, alternatively, maintained geographical or social boundaries between each other. In short, the datasets can be used to reconstruct a potential narrative about past communities, and so trace changes in community organization over time.

TABLE II. TWO COMMUNITY-SCALE MODELS OF SOCIAL ORGANIZATION AND THE EXPECTED ARCHAEOLOGICAL SIGNATURES

Variable	Model 1: Community Cohesion	Model 2: Family Prioritization
Integrative facilities	Public buildings and "high-level" integrative mechanisms like churches are accessible to all residents in the community; settlements have well defined and accessible common spaces	Public buildings and ritual spaces (churches, cemeteries) are accessible only to some residents; absence of common spaces
Evidence of resource sharing	Settlements oriented so as to limit privacy; storage facilities like cisterns are not protected and can support multiple households; defensive installments protect the whole settlement	Settlements oriented to increase private domestic space; storage facilities are protected for individual household use; defensive installations are private rather than communal

3.3.4 – Integrative Facilities

Public spaces and shared public buildings are critical for the formation and maintenance of community identity, since they are prerequisites of large-scale public events. Such "integrative mechanisms" or "enactments of community," as discussed above, are one of the main strategies that people use to foster a common sense of community membership and define who is a part of the group and who is not. Thus, shared or public spaces are key indicators that such identity-forming activities took place.

In their work on monumental architecture and public spaces in the American Southwest, Adler and Wilshusen (1990) distinguish between low-level and high-level integrative facilities. Low-level facilities are multi-purpose public spaces that serve both secular and ritual needs and that are used by the whole community for everyday activities. Examples of low-level integrative facilities in the pre-modern world include plazas, game arenas like the Hohokam ballcourts

(Wilcox 1991a), community pits like those in the Mimbres Valley (Creel and Anyon 2003), or marketplaces that functioned as periodic gathering places, like the Greek *agora* (Hölscher 2012). The multifunctional nature of structures like these has been well documented. Hohokam ball courts may have been used as marketplaces when not hosting games (Abbott et al. 2007). Chihuahuan ballgames are also associated with fertility and rejuvenation rituals (Skibo et al. 2008), and Mayan kings combined the games with ritual sacrifice as a symbol of rebirth (Schele and Freidel 1991). In medieval England, villages were organized around an open field (Taylor 2002), which may have provided a space for different kinds of social gatherings. The public spaces in 15th-century Swahili towns were also diverse, with some planned areas hosting ritual events, and other less formal areas dedicated to non-elite activities (Fleisher 2014). In the modern world, the *plateia* at the heart of every Greek village is a low-level integrative facility, providing a space for everyday social gatherings, weekly markets, and annual festivals and parades.

High-level integrative facilities, on the other hand, are reserved for ritual use. They are designed to be exclusive, with a floor space that restricts access to only a portion of the entire community (Adler and Wilshusen 1990:136-137). They also tend to be associated with higher community populations (Adler and Wilshusen 1990:142), meaning that as a community grows in size, it is more likely to construct high-level facilities, alongside or in replacement of its low-level facilities. Finally, high-level integrative facilities are frequently used to legitimate elite authority. Examples of such facilities include the Mississippian period mounds, pyramids, and plazas in North America, such as those of Moundville (Knight Jr. and Steponaitis 1998) and Cahokia (Pauketat and Emerson 1997; Trubitt 2000; Alt et al. 2010); Hohokam platform mounds (Wilcox 1991b:267-268; Elson 1998); the temples and theaters of the Seleucid Empire (Ristvet

2014) and the plazas of Mayan cities (Cap 2012; Inomata 2006), both of which were used for elite performances that underscored and legitimated their ritual authority. Broad roadways designed for ceremonial processions may also fall within this category (see discussion of route networks in section 3.2.5).

The great kivas and great houses of the Anasazi are well-studied examples of high-level integrative facilities. Kivas are circular, subterranean or semi-subterranean structures that are found in association with most Anasazi villages (Adler and Wilshusen 1990:138-142). Their small size compared to the total community underscores the exclusivity of the rituals associated with the structures (VanDyke 2007:119), as does their distance from the settlement (Adler and Wilshusen 1990:139). Although archaeologists have not identified the exact activities that took place in ancient kivas, they generally agree that the activities were ritualistic in nature. Great houses, on the other hand, are massive structures divided into individual rooms, which many archaeologists have interpreted as a part of the Anasazi ritual system (Fowler and Stein 2001; Lekson 1991:32-42; see chapters in Kantner and Mahoney 2000). In the case of Chaco Canyon, communities were centered around both great kivas and great houses. Along with the road network and architectural trash middens, these features are interpreted as parts of a broader ritual system that focused the region on Chaco (Stein and Lekson 2001), making it a "center place" and underscoring the importance of Chaco ritual for maintaining the status quo. As a result, these public spaces were an important mechanism for legitimating Chaco authority in the region (VanDyke 2007).

There are, however, monuments that do not fit within the low-level / high-level typology. On the one hand, commemorative monuments and monuments dedicated to the dead also serve to legitimate elite authority, but they may lack the integrative mechanism of recurring rituals. On the other hand, monuments built by egalitarian societies served as integrative mechanisms in the absence of an elite authority, bringing people together every year to expand and repair the structures. Such monuments include the long barrows, causewayed enclosures, and henge monuments of Great Britain (Ashbee 1984; Bradley 1998, 2011); the Archaic period mounds of North America, such as Watson Brake (Saunders et al. 2005) and Poverty Point (Webb 1977; Gibson 2000:79-110), and the Hopewell Mounds in Ohio (Bernardini 2004); and geoglyphs like the "Nasca Lines" in Peru (Silverman and Proulx 163-192; Lambers 2006) and in the upper Amazon Basin (Pärssinen et al. 2009), and the hill figures of Great Britain (Bergamar 2008; Newman 1997).

At the same time, not all communities have the clear archaeological features of low-level integrative facilities, high-level integrative facilities, elite-sponsored monuments, or community-sponsored monuments. The case study of Monte Viudo in northern Peru demonstrates that small communities may function without a defined public space. In this instance, the site lacked any large integrative spaces like monuments or plazas; instead, the open layout of the domestic buildings served to integrate the community. As Guengerich (2014:254) wrote, "community was not created through practices of gathering, amassing, or aggregating, which rely on ample spaces and large structures that can contain or be accessed by large numbers of people. Rather, it was generated by forging connections between different people, places, and practices, bringing these individual parts into a village-wide dialogue."

This brief review of the archaeological study of public space shows the great variety in physical features that are associated with the "enactments of community." This variety is dependent upon the level of complexity of the society in question, as well as the size of the particular community. Archaeological correlates may range from an open community plan without a defined public space to the construction of massive structures dedicated to ritual activity. All of these are signatures of an integrated community.

The most important integrative facilities in the Maniate settlements could be expected to be churches and cemeteries (high-level integrative mechanisms), as well as public spaces, including both open areas and paths and roads (low-level integrative mechanisms). For Christian communities like those in Mani, churches were a central public space that served as a high-level integrative facility. Medieval churches were often publically funded and would have been used by the wider community for frequent religious events. During the course of the Sydney Cyprus Survey, for example, Given and Gregory (2003:292-293) noted that churches were always found in association with villages, and villages always had a church—neither was found without the other. As with the modern Greek *plateia,* the church formed the heart of the pre-modern village. In places that experienced strong Turkish influence, fountains and coffeehouses were additional spaces that served as locations for the enactment of community (Given 2000).

According to the proposed model, settlements organized so as to promote community cohesion would have well-defined and accessible common spaces and public buildings. In such cases, there may be a plaza or open space located near the center of the settlement. Public buildings, especially churches, would also be accessible to all residents, and possibly even located in the central open space. In cases of multi-settlement communities, open spaces would be accessible to multiple settlements. Grazing land and pasture, though not necessarily used for public events, could still foster a sense of shared community membership if residents of multiple settlements were to use it.

On the other hand, settlements whose social organization instead prioritized kinship ties (and especially the nuclear family) would have fewer or no public spaces, or else they would be restricted to only some sectors of a population. Especially in larger towns that are hierarchically structured, certain churches and open spaces may be restricted to members of an elite group, while others may be used by lower classes.

3.3.5 – Resource Sharing

Like the sharing of public spaces and building, the sharing of resources is usually interpreted as a prioritization of the community over individual needs (Coupland et al. 2009:78). Therefore, evidence of resource sharing can be used to infer the potential presence of a shared community identity.

Communal resource sharing is often considered to be characteristic of egalitarian societies, where it acts as a leveling mechanism that ensures no single individual accumulates more resources than his or her neighbors (Woodburn 1982:440-442). However, intra-household sharing is also a critical form of risk management in times of stress (Spielmann et al. 2011). Halstead and O'Shea (1982:4) argued that sharing is one of the key "buffering mechanisms" that people use to counteract resource scarcity: "exchange functions in a fashion similar to storage, in that present abundance is converted … into a future obligation in time of need. If I help my neighbour out of a lean season this year, I have the right to expect the aid to be reciprocated when the situation is reversed." In such a scenario, restricted sharing—when a family first meets its needs before sharing its surplus—is more beneficial to the survival of the community as a whole (Plog 1990:189-190). Among the Yanomami, for example, sharing could occur between allied villages, ensuring that residents of one village were provided for in the event of crop failure (Lizot 1985:126-127). Among the San, sharing of food was so important that "[t]o eat in front of a person who has no food is considered an immoral act" (Tanaka 1980:96). Sharing is most common with resources that exceed the needs of an immediate household, and it is also more common within kinship groups, as demonstrated in the sharing of tools among patrilineal groups in Madagascar (Kelly et al. 2005:413-414). Kelly et al. also pointed out that the practice of sharing is associated with the size and layout of houses within a community. Groups that regularly engage in sharing are more likely to live in closely spaced houses with highly visible workspaces and outside storage (Kelly et al. 2005:414-415). Groups like the San and the Efe Pygmies build their camps in rings, with public space oriented toward the center of the village (Fisher and Strickland 1989; Tanaka 1980). In villages with this layout, people are less able to hide their resources from others, and therefore are more exposed to requests from others to share whatever resources are visible. On the other hand, if houses are built with increased private space (e.g. indoor storage and fences) or they are oriented so that doorways are not highly visible, sharing will be less frequent. Thus, social practices like resource sharing influence the structure of domestic architecture, and vice versa.

In arid landscapes that lack perennial streams, such as Mani, water is a critical resource that influences both settlement location and viability. Whether residents either pooled their water resources or protected them for household use has important implications for understanding how communities functioned and were redefined spatially over time. A recent case study from the colonial-period Dutch Caribbean demonstrates how critical water resources are in determining the viability of settlements in an arid landscape. As in Mani, the villagers of Saba built cisterns to collect rainwater, and in times of drought they shared water with others whose cisterns had run dry. Only in rare cases did an individual hoard his or her water in order to make a profit from its sale (Espersen 2013).

According to the proposed model, resistant communities would be expected to foster a strong sense of communal identity, and as a result, they would be more likely to share resources such as food and water in times of need in order to ensure the survival of all the community members. Evidence for resource sharing can be seen in two ways: first, through the orientation of domestic architecture and the location of storage facilities in relation to houses; and second, in the total storage capabilities of individual households. In this case study, because of the importance of water for settlement viability in Mani, and because of the high visibility of cisterns in the landscape, cisterns will be used as the main proxy for discussing resource sharing. In the first instance, houses would be aligned in such a way that privacy was limited, workspace was viewable to the rest of the community, and cisterns were not protected or kept within the domestic space. In the second case, communities would be expected to build large cisterns that could support multiple households—calculations that can be made using estimated precipitation for past years along with the dimensions of recorded cisterns. In times of drought, residents would be more likely to share their water resources with others, a scenario that can be tested by comparing estimated rates of water consumption with the total storage capacity of the cisterns, following the study by Esperson (2013).

On the other hand, integrated communities with weaker communal identities would be more likely to prioritize individual ownership and control of resources over communal sharing. This scenario would be indicated by private domestic space, protection of cisterns by placing them within residential structures or within walled complexes, and smaller cisterns that could support only a single family.

3.4 – Chapter Summary

In this study, I framed the analysis of Maniate communities within a multi-scalar perspective, allowing the region of Mani to be situated within a broader temporal and geographical framework. First, I reviewed the traditional core-periphery approach to studying regions that come under imperial control, and I suggested that a more nuanced perspective that considers the relationship as a negotiation is the most appropriate framework for discussing the interaction between Maniates and various international powers. Next, at the regional scale, I briefly reviewed the traditional analytical models that have been used to assess settlement distributions, but suggested that a closer look at the community scale is necessary to understand regional patterning. Following recent approaches, I treat the Maniate communities as simultaneously physical locations and social phenomena that require “enactments of community” to reinforce a sense of belonging and membership. I reviewed different ways that archaeologists can identify communities in the material record, then proposed models that outline two potential community-scale responses to imperial expansion—resistance or integration—as well as models that can be used to understand the social organization of communities. Based on archaeological and ethnographic case studies, I proposed several variables that may be compared to archaeological and historical data: settlement distribution, settlement visibility, distribution of route networks, presence of integrative facilities, and evidence of resource sharing. These models form the basis for discussing the data collected in this study, and they will be applicable to other case studies of imperial expansion into rural landscapes.

4 – DATA COLLECTION AND ANALYSIS

With what ease populations moved about in ancient Greek lands, in the world conquered and Hellenized by Alexander, the wide elbow room of Rome and the Byzantine Empire! Undocumented, free and unregimented, people wandered where they liked between the Thames, the Danube, the Euphrates and the upper Nile—anywhere, in fact, that was free of the Barbarian menace, and often beyond. Now everyone is numbered and ringed like a pigeon and held captive in a cage of frontiers. (Fermor [1958] 2004:151)

In order to test the regional- and community-scale interpretive models presented in the previous chapter, I collected data about the Byzantine and Ottoman-period settlements in Mani that included their location, their size, and the distribution of residential structures, public spaces, and storage structures within them. The resulting catalog (Appendix A) is the result of several years' study of previously published maps and historical records (2010–2014), original research on Ottoman historical records (2013–2014), and original field research (2014). It is the most complete list to date of the Byzantine- and Ottoman-period residential sites in Mani.

In this chapter, I describe the specific historical and archaeological datasets used in the study, as well as the methods used to collect and analyze them. The methodology was designed to allow a very small team (often just myself) to record nearly all of the settlements in the study region. First, archival records were analyzed to gain information about past populations and settlement names. Next, field research was conducted to visit the settlements, usually alone, but at times with the help of a field assistant. Field research also allowed me to assess site chronologies via surface finds and domestic architecture, ground-truth the remotely sensed imagery, identify features like cisterns not visible from the air, and record selected settlements in more detail. During the project, I used GIS software to manage the geospatial imagery and identify missing or ruined settlements—many of which are Byzantine *palaiomaniatika*—that do not appear in modern maps. The process also allowed me to associate different place-names that have changed over time and retrieve coordinates for inaccessible settlements.

Each settlement was assigned a unique identifier that links the historical, archaeological, and spatial databases together. This system prevented confusion in case a place-name had changed or was duplicated elsewhere. Data initially were compiled in separate databases: historical data in a Microsoft Excel database, and field data in a FileMaker Pro 12 database that could be loaded onto an iPad and brought into the field. These databases then were combined and integrated with the GIS database of the settlements. Once a full settlement map had been produced and all the data synthesized, GIS again was used to analyze the spatial patterns in the distribution of sites across the landscape. Altogether, the settlement catalog contains 252 individual settlements. An additional 107 were recorded but omitted from the catalog because they were either outside the study region or were established in the Early Modern period or later (Figure 21).

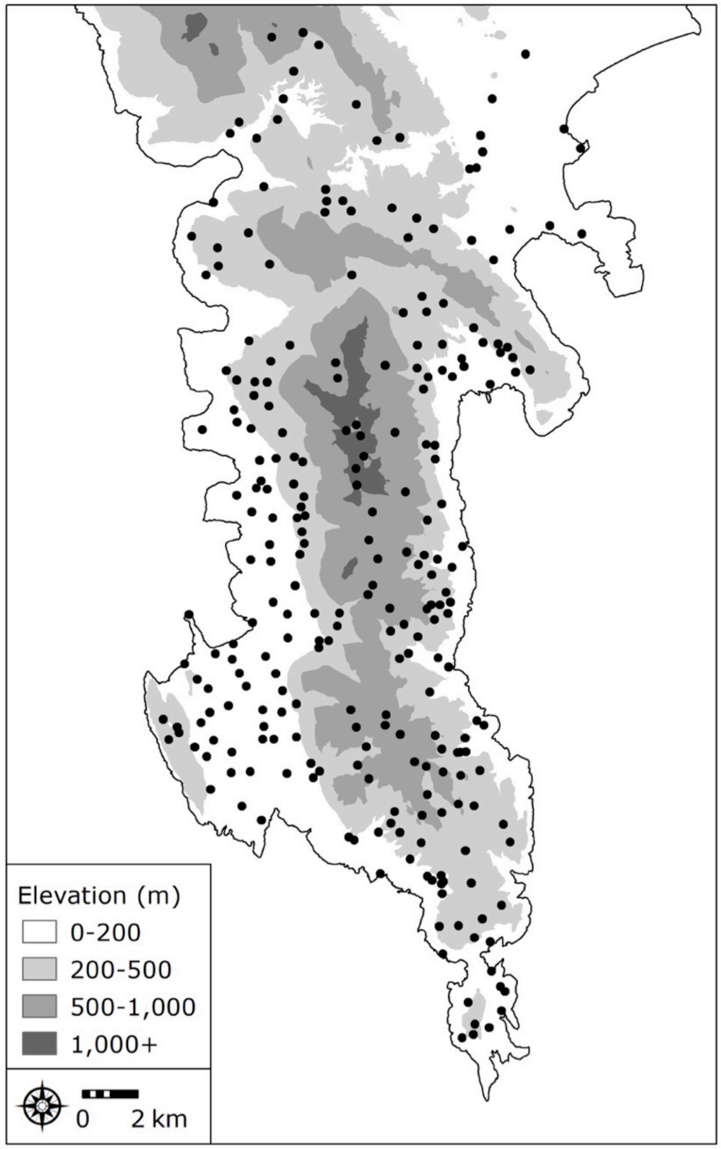


Figure 21. Byzantine to Ottoman II-period settlements in the study region.

Intensive survey is now a common method for survey projects, especially in the Mediterranean region. Intensive survey is characterized by a strategy of regularly spaced field walkers (usually 10 to 15 meters apart), covering tracts defined either arbitrarily or by field boundaries (Cherry et al. 1991c:16-20; Davis et al. 1997; Bintliff and Snodgrass 1985; Cavanagh et al. 2002:38-54; Bintliff 1996:1-2). The teams collect artifact counts for the entire surface of their study region, allowing them to record smaller sites, verify where sites did not exist, and record off-site scatters that could be important for understanding land use and agricultural exploitation.

For this project, I decided that intensive survey was less time- and cost-efficient than extensive survey supplemented with the analysis of historical texts and satellite imagery. The reasons for this include the large size of the study region (about 350 km^2), the availability of historical records to obtain information about settlement chronology, and the high visibility of standing archaeological remains in Mani, such as stone-built houses, that are easily identifiable in the field and aerial imagery. Furthermore, an intensive survey conducted between 2011 and 2013 in the area of Diros Bay did not reveal any medieval or post-medieval artifact scatters outside of those associated with standing architecture (Pullen et al. in press).

This break from the commonly practiced methodology of intensive survey allowed me to avoid or overcome some of the difficulties faced by traditional survey projects. Debates about intensive survey methods have focused on two issues: (1) the definition of a "site" based solely on ceramic distributions, and (2) the illusion of "total coverage" survey.

I avoid the first issue—defining what constitutes a "site"—by incorporating maps and settlement lists that clearly define settlement names and extents. Informal conversations with local residents supplemented these data and provided information about local toponyms and perceived settlement boundaries. When even this information was missing, standing architecture was used as the key indicator of a settlement location. Projects that rely upon ceramic distributions cannot draw such firm conclusions; as many archaeologists have argued, spikes in ceramic density do not necessarily indicate the presence of an occupation site (Alcock et al. 1994; Cherry et al. 1991b), but may instead reflect manuring practices (Bintliff and Snodgrass

1985:131; Snodgrass 1990:123-124; Alcock et al. 1994; Cherry et al. 1991b:50) or even a "noisy" background of low-density ceramic distributions (Bintliff et al. 1999:158; Pettegrew 2001). On the other hand, one of the drawbacks of this project's methodology is that it inherently precludes the detection of "off-site" activities, such as temporary habitation sites, farming outposts, animal sheds (*kalivia*), processing sites, and so on. As a result, the dataset accumulated here would be inappropriate for discussing regional economy, agrarian practices, or other topics dependent upon "off-site" data.

The second issue—the illusion that intensive survey produces "total coverage" of a landscape—is more relevant to the current project. While data-recording technology has improved dramatically with the introduction of smart tablets and other technology, the overall practice of field-walking remains limited by human capability (Schon 2002). In reality, field walkers will always miss artifacts, either because of the space maintained between their lines or because of the low visibility of surface debris. The issue of "total coverage" is important because of the impact it has on the statistical reliability of regional datasets. The methods used to analyze survey datasets assume that the datasets are complete, or in other words, that every site that has ever existed in the study region has been recorded. As a result, any sites that go unnoticed or unrecorded can drastically affect the results of spatial analyses, population reconstructions, and the overall conclusions about settlement patterns. I addressed this issue by conducting a rigorous visual inspection of aerial imagery, which allowed me to identify a number of abandoned settlements that cannot be seen from roads or paths on the ground. Nevertheless, the lack of a true intensive survey approach means that a few unidentified settlements may remain hidden under maquis (scrubland vegetation) and olives. It is essential to keep this caveat in mind when assessing the results of the project, or when using the settlement catalog in future research.

One of the goals of most survey projects is to produce a list of past settlements and, often, to estimate their size. This goal formed the backbone of the current project's attempt to investigate the past communities of Mani. The first step in this process was to assess the available historical records of the region to develop an initial list of settlements occupied in the past.

4.1 – Historical Datasets

One of the contributions of this project is the inclusion of archival records and settlement lists as a primary source for place-names and population size. This particular facet of the project could have formed the basis for an entire dissertation, but out of necessity its role in the project was limited to providing supplementary information about the individual settlements. As a result, this is the only place within the text where the historical records are discussed in detail.

Altogether, six Ottoman tax registers (*tahrir defters*) and six European settlement lists are discussed. There are many more historical letters and accounts that refer to Mani, but these 12 lists are the most thorough and complete. Also, it is important to highlight that the *defters* were acquired and translated for the first time for this study—to date, no Ottoman records of Mani have been published. For consistency, the term "register" is used to refer to the settlements lists that are taxation records, while "catalog" is used for all other lists.

A fuller discussion of the records, their potential errors, the bias of their authors, and so on, is beyond the scope of this work. It is left to future researchers to treat these issues with the attention they deserve and complete a deeper analysis of the *defters*. Yet at the same time, the potential flaws of the historical records are not taken lightly. Historical settlement lists and censuses—and especially those intended for bureaucratic purposes like taxation—are inherently biased toward the interests of the state, rather than the local population. As Given (2007:139) reminds us, these records “represent the intrusions of the state into local communities.” People did not always welcome tax-collectors or other bureaucrats, and they had at their disposal a number of means of bypassing or subverting the official systems placed upon them, including smuggling, tax evasion, false reporting, or even hiding from the census-takers (e.g. Blumi 2003a; Scott 2009; Barkey and Van Rossem 1997:1347-1348). For all these reasons, the historical data are treated with caution and used as an aid in the interpretation of archaeological remains. Ultimately, by combining the study of archival records with that of more traditional archaeological datasets, I hope to demonstrate the value of an interdisciplinary approach for understanding the reorganization of past communities.

4.1.1 – Ottoman Imperial Tax Registers

The most detailed sources of historical data about Mani are the *tahrir defters* of the Ottoman Empire. These documents were compiled at regular intervals of between 5 and 40 years to assess taxes on military fiefs, called *timars* (Lowry [1990] 1992:124, 1992:7-8). Unlike the European lists discussed below, the *defters'* purpose is very straightforward. They were compiled explicitly for financial purposes: to estimate the type and volume of crops that would be produced by each settlement, and to assess a tax based on that output (for more on the survey process, see İnalcık 1954:110-111).

There are two types of *tahrir defters*: *mufassal* and *icmal.* The *mufassal defters* are the detailed versions of the tax information, used to assess the amount of tax owed by the villagers. Each entry begins with the settlement name, then lists each of the taxpayers by name—these include the male heads of *hâne* (family households), as well as the names of bachelors and widows living on their own (Figure 22). This systematic format makes it easy to count the total number of households in each settlement. The *mufassal defters* record invaluable information about local toponyms, agricultural output, the number of families living in each settlement, and the names of adult male taxpayers. The *icmal defters* are summary registers, used as guidelines for distributing tax revenue among the guards stationed at fortresses within each region. These registers include only the amount of tax revenue that was expected from each settlement, and they list the names of the *timar*-holders rather than the taxpayers. However, because they are copies of the *mufassal* version, they are more likely to contain scribal errors (Lowry 1992:9-10). For this reason, the detailed *mufassal* registers are generally preferred for research purposes.

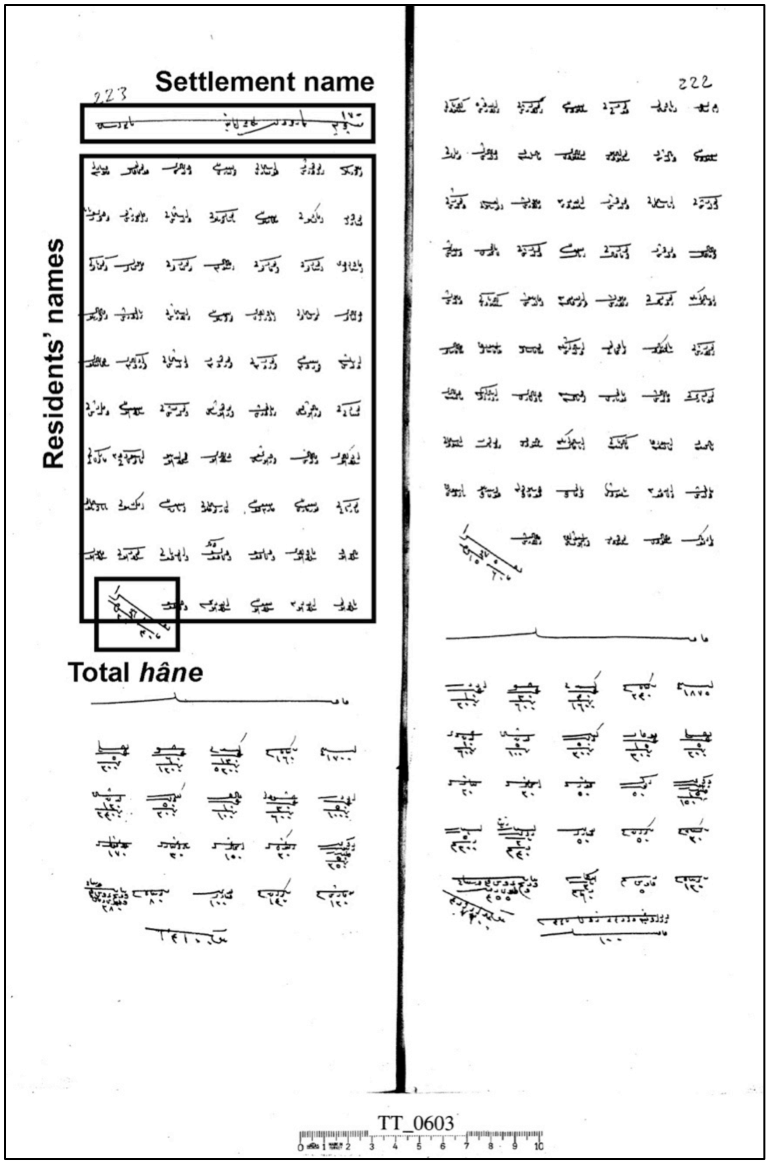


Figure 22. Photocopied page from *mufassal defter* TT603, highlighting the settlement of Tseria with a total of 68 male heads of households and bachelors. Image courtesy the Başbakanlık Archives.

Since the mid-20th century, Ottoman historians have been working on translating and analyzing the *tahrir defters*. Enough work has been done in the field of defterology that several schools of thought have arisen in regards to how to interpret the documents or apply the data—these debates have been largely restricted to historical and demographic applications (for different approaches, see Lowry 1992:3-5). More recently, archaeologists have begun taking advantage of the depth of knowledge about Ottoman imperial records and their increasing availability. Several recent projects have demonstrated the utility of using the *defters* alongside archaeological research (e.g. Cosgel 2002; Kiel 1999; Zarinebaf et al. 2005a). Following their lead, I supplemented the European censuses that had been published previously by acquiring and studying six Ottoman *defters* from Mani.

In the present study, I treat the *defters* primarily as a source of topographical or topnoymic data, but I also use the quantitative data to extrapolate information about settlement population. In early work, such as that of Ömer Lütfi Barkan, a simple multiplier of 5 people per household was used to convert the *defter* data—which recorded the number of households per settlements—into population statistics (see discussion of population multipliers, above). This practice is no longer supported, primarily because of the issues that have been raised about the ways in which the *defters* were recorded. The first issue has to do with their intent: the *defters* were meant to record the income derived from timars, not the population of a region. If a settlement had a different financial arrangement with the Ottomans, then it would not be included in the register (Lowry 1992:7-8). As a result, a scholar cannot assume that a single *defter* represents a complete list of inhabited settlements in one year. The second issue has to do with their reliability. *Defters* recorded in the early Ottoman years are considered to be reliable sources (Lowry 1992:14). However, those recorded in the mid-16th century or later are more likely to be copies of earlier registers, as fewer surveys were undertaken by the Ottoman administration (Lowry 1992:11; Darling 1996:34-35). There is even a case of this from Mani: *tapu tahrir* 715 (TT715), a mufassal *defter* from the year AD 1613, is an exact copy of TT603 from the year AD 1583. For this reason, Lowry (1992) recommended using a series of *defters* from the same region so that the settlements could be crosschecked, and so that later copies could be identified.

Altogether, six *defters* were acquired from the Başbakanlık Osmanlı Arşivi in Istanbul (the Ottoman Archives of the General Directorate of State; from here, Başbakanlık Archives). At the time of my research, these were the only known registers that pertained to Mani. As part of the Başbakanlık Archives' ongoing efforts to digitize its collection, the registers were scanned and a summary of their contents were published in 2007 (Başbakanlık General Directorate of State Archives 2007; for a discussion of the digitization of Ottoman archives, see Gratien et al. 2014:37-42). The digital photocopies were ordered in person at the Başbakanlık Archives in the summer of 2013. Between 2013 and 2014, they were translated by Dr. Elias Kolovos of the Institute for Mediterranean Studies – Foundation of Research and Technology, Hellas (IMS-FORTH). It is possible that there are additional *defters* about the Maniate settlements in the Başbakanlık Archives in Istanbul or in Ankara at the General Directorate of Land Registry and Cadastre or the National Library of Turkey; however, at the present time, these six registers are the only *defters* about Mani that have yet come to light. The earliest *defter* from the Peloponnese, TT10 (AD 1460/63), does not refer specifically to the Maniate settlements, though it has received a fair amount of scholarly attention and so is an important source of information about the broader region (see Alexander 1978; Liakopoulos, in press).

The Mani *defters* were recorded between AD 1514 and 1715 (Table III). The earliest known record that refers to the Maniate settlements is TT80 (1514). This register was commissioned during the reign of Selim I (1512–1520), and overall, it is the most detailed Ottoman register of the Peloponnese (Zarinebaf et al. 2005a:xvi; see also Beldiceanu and Beldiceanu-Steinherr 1980). In regards to Mani, the register covers only the southwestern part of the peninsula, which is included within the subdistrict (*nahiye*) of "Megali-Mani." It records a total of 38 settlements, of which only 26 can be deciphered due to poor preservation and the low quality of its digitization.

TABLE III. *TAHRIR DEFTERS* FOR MANI IN THE BAŞBAKANLIK ARCHIVES

Tapu tahrir	Type of *defter*	Hijri date	Gregorian date
TT80	Mufassal	920	1514
TT603	Mufassal	991	1583
TT677	İcmal	991	1583
TT715	Mufassal	1022	1613
TT878	Mufassal	1127	1715
TT884	Mufassal	1127	1715

At present, TT603 (1583) is the earliest settlement list of Mani that completely covers the region, predating the first European list (the 1618 Nevers Catalog) by 35 years. This register refers to the area within the catchment of the fortress of İmanya (i.e. Passava) and is a "detailed register of the military estates and their revenues from the villages of Mani." It records five *mezraas*, or fields of abandoned villages that are now used primarily for grain production (see İnalcık 1994a:162-164), along with 12 additional villages that comprise the military estates. Its companion is an *icmal defter* from the same year (TT677). This document is based upon the detailed *mufassal defter*, and it lists the guards in the fortress of İmanya in the district of Mystras and various other military units. After each group of guards' names is a list of the *timars* whose revenues they shared. A total of 54 Maniate villages are listed. As mentioned above, *icmal defters* are not ideal sources of information due to their abbreviated nature. However, this otherwise repetitive document provides insight into the nature of Ottoman-Maniate relations, due to two notes added by a scribe nearly 90 years later in 1671. The first note refers specifically to the fortress of Passava (Figure 23). The scribe writes, “In the past, the guards of [Passava] … were granted military estates within the borders of Mani. However, since Mani was rebellious, nobody was left in the fortress.” He then goes on to describe how revenues from nearby villages should once again be distributed to the military leaders of the rebuilt fortress (TT677, p. 95). A second note from the same year lists several villages that were not rebellious—all of these, however, are located outside the borders of Mani, closer to Mystras (TT677, p. 101). Together, these records demonstrate that the Maniates were actively resisting Ottoman rule in the 17th century, and that the Ottomans responded in kind—by rebuilding the fortresses and attempting to quell the resistance with military reinforcement. The next available *defter*, TT715 (1613), is an exact copy of TT603 (see above for discussion of *defter* copying).

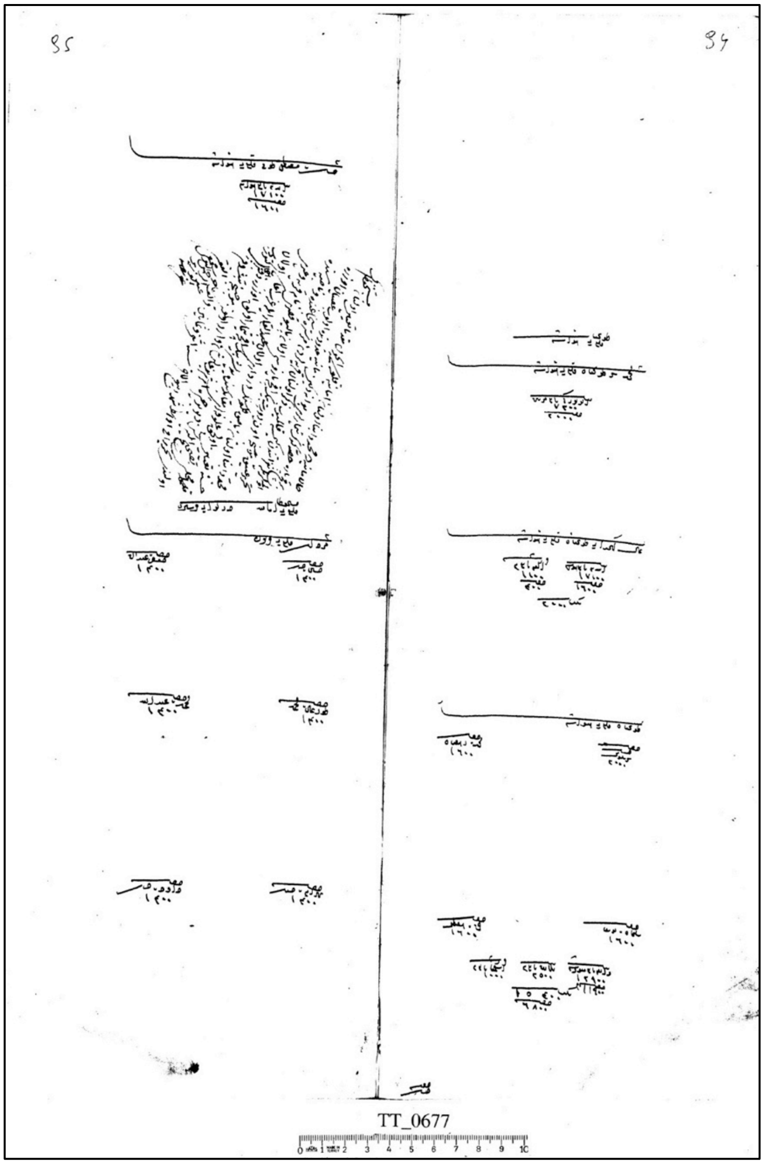


Figure 23. Photocopied page from *icmal defter* TT677, showing a note added by a scribe in AD 1671. Image courtesy the Başbakanlık Archives.

TT878 (1715) is notable among the *defters*, since it is the most thorough and detailed register for Mani. Considering its timing, this comes as no surprise. The Ottoman Empire had lost control of the Peloponnese to the Venetians 30 years prior, and a new survey was commissioned upon reconquering the area in 1715. As Lowry (1992:13) pointed out, the post-conquest *defters* are by far the most detailed, a fact that holds true for Mani. This document records 79 settlements within the district (*kaza*) of Manya. The first few pages of the document refer specifically to *çiftliks* (hereditary, private estates; see Laiou 2007; McGowan 1981:58-73; Zarinebaf 2005:29) and *mezraas* outside the fortress of Passava, while the majority of the document lists the other settlements in Mani and their expected taxes. Several pages of TT878 are copied in another *mufassal defter* (TT884) from the same year, which refers to the districts of Passava, Zarnata, and Mani.

The potential archaeological applications of datasets as rich as the *tahrir defters* are vast. Mining the records for basic topographic, toponymic, and population information merely scratches the surface of what can be done. As demonstrated by landmark publications like that of Zarinebaf et al. (2005a), the *defters* can be used to examine intricate aspects of Ottoman landholding practices, the socio-economic status of peasants, and so on. I also suggest that the *defters'* focus on the household scale allows for a discussion of community interaction and pooling of resources (such as water, labor, and agricultural space). It is my hope that additional research with the Mani *defters* will allow for even more insight to be gained into the communities of the past.

4.1.2 – European Settlement Lists

Out of the dozens of reports, travelogues, and official documents compiled by European powers about Maniate settlements, there are six Venetian and French records from 1618–1829 that stand out in terms of their length and breadth of coverage (Table IV; see Komis 2005; Seifried 2015:Table 1). Three of the records—from the years 1618, 1695, and 1813—are assessments of the number of soldiers that Mani could rally to wage war against the Ottoman Empire. Specifically, they estimate the number of fighting-age men in each village or settlement.

Additional records from the years 1692, 1700, and 1829 were compiled for other purposes—the first two by the Venetians in the interest of assessing taxes, and the last by the French as part of their joint scientific and military expedition to the Peloponnese. These records have been the main focus of the historians and demographers working in Mani. In 1985, Panagiotopoulos published (among other records) the entire Venetian census of the Peloponnese from 1700. In 1995 (with a second edition in 2005), Komis republished this 1700 data, along with all of the other known French, Venetian, and Greek sources that pertained specifically to Mani. Both authors attempted to correlate the settlement names as they changed from record to record, allowing them to trace the development of population in each location over the course of several centuries.

TABLE IV. EUROPEAN SETTLEMENT LISTS FOR MANI

Year	Short name	Author	Number of settlements	Type of data
1618	Nevers Catalog	Pierre de Medici	125	Hearths
1692	Zeno Register	Unknown scribe	70	Tax
1695	Muazzo Catalog	Francisco Muazzo	90	Combatants
1700	Grimani Catalog	Francesco Grimani	87	Families, age groups, total population
1813	Roussel Catalog	Joseph Jean-Baptiste Roussel	111	Male combatants, soldiers
1829	Expédition Catalog	Expédition Scientifique de Morée	192	Households

The catalog from the year 1618 has received a great deal of scholarly attention, since—until now—it represented the earliest and most thorough list of Maniate settlements (see the previous section for an earlier Ottoman register from 1583). The 1618 record (from here, the

“Nevers Catalog”) was compiled during the negotiations between the Maniates and Charles II, the Duke of Nevers. It is part of a larger archival record of Nevers’ documents held in the National Library of Paris (Komis 2005:41, Note 15). The Duke was a descendent of the Paleologos family—the last ruling family of the Byzantine Empire—and in the early 17th century he was seeking to reclaim the lands that had been conquered by the Ottoman Empire (Buchon 1843:253). Judging from other dated letters in the archive, it seems that the Maniates had been corresponding with the Duke by at least 1612, requesting military assistance and financial support to stage a revolt against the Ottomans (Buchon 1843:269-270). A Maniate named Pierre de Medici (in Greek, Petros Medikos or Petros Iatros) was an active participant in these negotiations. The Medici family had moved from Florence to Athens prior to the Ottoman conquest, and then sought refuge in Mani once Athens had been conquered (Buchon 1843:276-277). Likely because of his Italian heritage, Pierre de Medici was contracted to act as a negotiator and assess the Maniates’ ability to stage a revolt. The letter he wrote to the Duke in 1618 was a result of these efforts.

The Nevers Catalog is a section of this letter, and it was submitted to the Duke by another envoy, Philippe de Lange Châteaurenault (Buchon 1843:283-286). It lists 125 settlements in Mani and an estimate of the number of *fuochi* (hearths) in each one. At the end of the list, Medici estimates the total number of soldiers—both armed and unarmed—in the region. This information was intended to help the Duke decide how much financial and military support to provide. In the end, “it was another false hope. Twelve years of plotting came to nothing” (Greenhalgh and Eliopoulos 1985:26). The Duke never sent the promised military support and the Maniates remained subjects of the Ottoman Empire (Kassis 1979:29-30). Wagstaff suggested that the original source of these data was an earlier Turkish census. Presumably, there was no other way that Medici could have gained the information either on his own or through his personal network (Wagstaff 1977:200). This hypothesis is strengthened by the facts that the settlements fall within the traditional administrative boundaries of Mani and that the recording of "hearths" was typical for early Turkish *tahrir defters*.

The French historian J. A. Buchon published many of the letters in the archive, including his own translation of the Nevers Catalog (1843:241-295). Daskalakis (1923:71-72) republished a section of the Nevers Catalog in Greek. Later, two additional scholars attempted to map the settlements in the Nevers Catalog, with Wagstaff relying upon the French publication, and Kapetanakis upon the Greek (Komis 2005:41). However, both faced serious challenges that prevented them from successfully identifying all of the locations. For one, the Italian toponyms can be very difficult, if not impossible, to connect with modern Greek toponyms. This is especially true when the Italian name includes an ambiguous description like *Bragia*, which refers either to a "cape" or to a Venetian term for an area of land (see Komis 2005:345-347). A second challenge is that the French publication lists the settlements in the wrong order. In the original letter, the settlements are listed horizontally across the page, by row, but Buchon copied the names by column, from top to bottom (Komis 2005:41-42, Note 16). This recording error disrupted the original order of the settlements and made it even more difficult to locate settlements whose toponyms had changed drastically. Komis overcame this challenge by consulting the original letter, which he republished in the correct order (Komis 2005:41, Note 15, Appendix 3.1).

The second major European settlement list is a Venetian tax register dated 10 May 1692, from here, the "Zeno Register" (see Komis 2005:43, Note 27, Appendix 3.4). It was written by an unnamed scribe and signed by Antonio Zeno, the *Provveditor General di Morea* (Governor-

General of the Peloponnese) from 1690 to 1694. It lists 69 settlements in Mani and the amount of tax that each had been expected to pay to the Ottomans, as well as the amount that was reassessed by the Venetians in 1685 when they temporarily wrested control of the Morea from the Ottoman Empire (Komis 2005:43).

This document—along with other Venetian records from this period—indicates that the Maniates had been obliged to pay an annual flat tax (*maktu*) under the Ottomans (for more on the maktu system, see Papastamatiou 2007; Goffman 1982; Komis 2005:44, Note 31; İnalcık 1980:333-334). The Venetians maintained this system during their 30-year reign, but reduced the amount as a reward for the Maniates' military assistance during the war (Komis 2005:44-45; Finlay [1877] 1970:205). According to the Zeno Register, the tax was reduced from 5,551 *piastres* (the Venetian estimate of the Ottoman *maktu*) to 3,171.50 *piastres* per year (Komis 2005:44-45, Note 32). There is evidence that the Maniates attempted to evade taxation from both the Ottomans and the Venetians, but they were not always successful (Komis 2005:46, Notes 34-36).

The catalog from 1695—the "Muazzo Catalog" —is a count of the number of *uomini* (combatants) in Mani. It was compiled by Francisco Muazzo, a colonel in the Venetian army (Moatsos 1976-1978), and it refers to a total of 75 settlements in Mani and 15 in the neighboring region of Vardunia. The original document is kept in the Marciana Library in Venice, along with two copies (see Komis 2005:46-47, Note 38, Appendix 3.5).

In addition to the Zeno Register of 1692 and the Muazzo Catalog of 1695, the Venetian administration also undertook several censuses of the Peloponnese to assess the state of its new territory. Each census was conducted under the oversight of a Provveditor General of the Morea: Giacomo Corner (1688–1690), Francesco Grimani (1698–1701), and a third that was undated.

Two more Provveditor Generals—Angelo Emo (1705–1708) and Marco Loredan (1708–1711)—attempted to undertake their own censuses, but were unsuccessful (Topping 1976-1978:122-125). Of all of these attempts, the "Grimani Catalog" of 1700 is by far the most complete (Topping 2000:32-34). For Mani especially, it represents the most thorough count of the population that was ever undertaken in pre-Modern times. It tallies the entire population of each settlement according to six age groups for men, and five for women. It also provides insight into the Venetian administrative zones, including the division of the territory of Mani into *Bassa Maina, Alta Maina,* and *Vardunia.* This level of detailed demographic data cannot be found in any other record.

Yet despite its precision, Topping (1976-1978:123-124) suggested that the total population count for the Peloponnese (176,844 people) was an underestimate, and Grimani himself estimated the total population to be around 200,000. Both agree that local residents did not trust the administration, and probably tried to conceal their true numbers. The desire to evade taxation, underreport themselves, or "abandon" villages before census officials arrived were all tactics employed by local residents in the face of imperial attempts to enumerate them. The Maniates likely resented the imposition of an annual flat tax by the new Venetian authority, and may have responded using some of the tactics described above. Another possible reason for the Venetians' undercount is a lack of administrative familiarity with the newly acquired territory of the Peloponnese. Although the Venetians had corresponded with Maniates earlier in the 17th century to tally the available soldiers, the omissions in the Grimani Catalog indicate a lack of local knowledge of the settlements and topography of the region. Generally, the Venetians struggled to adjust to the landholding system of the Ottoman Empire and to manage both the native and immigrant populations that they had inherited (Malliaris 2007:98-99).

The original manuscript of the Grimani Catalog is held in the Archivio di Stato in Venice (Panagiotopoulos 1976-1978:206-207). In 1985, Panagiotopoulos published the entire document in Greek, along with his own thorough statistical analysis of the data. Komis (2005:Appendix 3.7) later republished the section of the Grimani Catalog that refers to Mani.

The next record from the European sources is a catalog from 1813 entitled, "*État du Magne* (State of the Mani)," from here, the "Roussel Catalog." This is a statistical table in the archives of the French Foreign Ministry (see Komis 2005:52, Note 82). The table was included with a letter dated 15 November 1813, written in French by Joseph Jean-Baptiste Roussel, the French consul in Patras from 1810 to 1814 (d'Arcier 2007:235). He had received the information from another agent in Pyrgos Ileias, who had copied the original Greek document: a list compiled by a Maniate chief to assess the number of military recruits in each of the villages in his domain (Komis 2005:52, Note 84). Other letters by Roussel suggest that the Maniates were being recruited by the British (Komis 2005:52-53, Note 85). In 1826, a portion of the data from Roussel's letter was published by Pouqueville (a later consul of Patras), but his version has some errors from clerical mistakes made while copying (Panagiotopoulos 1984:20-21). The first full and correct copy of the data was published by Kremmidas (1984) and republished by Komis (2005:Appendix 2, Table 6).

The final major settlement list compiled for Mani—excluding the later, modern censuses conducted by the Greek government—is the catalog of the Expédition Scientifique de Morée, or the "Expédition Catalog" (Bory de Saint-Vincent 1834:89-92). The Expédition Scientifique was a joint military and scientific mission to the Peloponnese, comprised of botanists, geographers, cartographers, architects, and other scientists. Their goal was to record the state of the entire Peloponnese, including every detail of its flora, topography, ancient remains, and—most importantly—its people (see Frangakis and Wagstaff 1987:170-171). The data from the Expédition were published in a number of volumes, one of which, entitled “Géographie,” contains a catalog of all the settlements of the Peloponnese and the number of households in each. The majority of the data were collected in 1829, but local rebellions in Mani delayed the completion of the team’s work there until 1831 or 1832 (Frangakis-Syrett and Wagstaff 1992:441), and the volume was first published in 1834.

Komis traced the development of the Expédition Catalog to two earlier documents. The first is stored in the Historical Archive of Corfu and is entitled the “Summary of the excerpted statistical knowledge for the Government of the Local Authorities and Special Commissions in the Peloponnese in the years 1828, 1829, and 1830” (Komis 2005:54). The data from this report were published by Belia (1977). The second is held by the archives of the French Foreign Ministry and is entitled the “List of cities, towns, villages, monasteries and several rural possessions in the Peloponnese” (Komis 2005:54, Note 96). These two earlier documents—one of which is probably a copy of the other—differ from the Expédition Catalog in that they are missing data from the western part of Mani. Some of the population figures also differ for individual settlements, though the totals do seem to agree. What is most interesting is that, in addition to giving total number of households in each settlement, they also provide the total number of individuals—data that is omitted in the Expédition Catalog (Komis 2005:54-55, Table 7.1).

4.1.3 – Toponym Identification in the Historical Records

One of the most important contributions of the settlement lists is that they provide insight into the longevity and evolution of place-names. For settlements that are no longer inhabited or that cannot be identified, the lists can also provide clues about their whereabouts. The order in which the settlements are recorded can reflect the path taken by an author as he traveled through a region (Wagstaff 2009:124, Figure 6.3), at times making it possible to pinpoint the location of an unidentified settlement. This particular fact is extremely useful in regions like the Peloponnese, where settlement names have changed—sometimes dramatically—as power has changed from Byzantine to Ottoman or Venetian hands.

The starting point for incorporating the settlement lists with the archaeological record was the body of toponyms that are still known today, or in other words, place-names that may correspond to settlements, hamlets, single residences, or even empty areas of the landscape. However, because the lists were written over many centuries and often in several different languages, toponyms were not always constant. Scholars like Komis (2005), Panagiotopoulos (1985), and Vagiakakos (e.g. 1957) have been able to trace the evolution of most of the toponyms from Mani and associate older toponyms with certain positions on the landscape. I have made additional identifications based on the archaeological remains that I recorded during field research. For this task, I referred to Komis' (2005) work correlating the European lists, as well as Pikoulas' (2001) lexicon of settlement names, which identifies the ancient toponyms of modern settlements in Greece. A 1:50,000 atlas of the Mani Peninsula (Matsouka 2009) was used to identify modern settlement names and other toponyms. While in the field, road signs and informal interviews provided additional information about the local toponyms, as opposed to the bureaucratic or official names. Together, these sources allowed me to develop an initial settlement catalog. It should be noted that Wagstaff's identification of the settlements in the Nevers Catalog of 1618 (see discussion below) was limited mainly to extant settlements (e.g. Wagstaff 1977:207-208). Other scholars, such as Komis, took the *palaiomaniatika* into consideration, but even then only limited information about these ruined settlements was available.

The toponyms in Mani seem to have been fairly continuous over time, as most of them persisted from the earliest records to the modern day (Table V). Some of the modern settlement names (e.g. Oitylo) are even found in Homer's Catalogue of Ships. Even for many of those that changed over time, it was still possible to suggest tentative correlations based on clues about the settlement's location, size, or relationship to other settlements. For some settlements, the archaeological data helped to shed light on the missing toponyms, as several abandoned settlements were recorded that did not have a known historical toponym. In these cases, I suggest potential links between the missing toponyms of the records and the physical places that I recorded.

TABLE V. COUNTS OF IDENTIFIED TOPONYMS IN THE HISTORICAL RECORDS

Year	Historical source	Total toponyms within study region	Toponyms without modern equivalent: tentative identification		Toponyms without modern equivalent: unlocated	
			Count	Percent	Count	Percent
1514	TT80	38	—	—	12	31.6
1583	TT603	1	—	—	—	—
1583	TT667	49	6	12.2	2	4.1
1618	Nevers Catalog	71	15	21.1	—	—
1692	Zeno Register	48	6	12.5	—	—
1695	Muazzo Catalog	48	3	6.3	—	—
1700	Grimani Catalog	48	4	8.3	—	—
1715	TT878	53	5	9.4	8	15.1
1813	Roussel Catalog	61	—	—	—	—
1829	Expédition Catalog	106	—	—	2	1.9

The 1514 *defter* was particularly difficult to read due to a combination of poor preservation and poor digitalization, with 32% of the toponyms being illegible and therefore unlocatable. For the rest of the lists, there was a high success rate for correlating the toponyms with actual points on the landscape. My work represents a significant improvement upon previous efforts (e.g. Wagstaff 1977; Komis 2005), for which many of the settlements were not sufficiently identified—particularly in the challenging Nevers Catalog, in which many of the toponyms had been substantially modified to reflect Italian interpretation or had been recorded as geographical or familial descriptions.

Another important contribution from the toponym identification research came from mapping the settlement lists. The resulting maps indicate that the early *defters* and the 1618 Nevers Catalog were the product of a physical journey through the region (Figures 24–26). In other words, the order of the toponyms suggest that the scribes visited the sites in person, rather than obtained their information from a third party. Meanwhile, the later lists—including the 1700 Grimani Catalog and the *defter* from 1715—recorded the toponyms in seemingly random order, suggesting that the scribes did not, in fact, visit the area in person (Figures 27–30). Thus, the early lists could be used in the identification of unknown toponyms by providing physical anchor points on either side of the unknown name, whereas the later lists were unsuitable for this purpose.

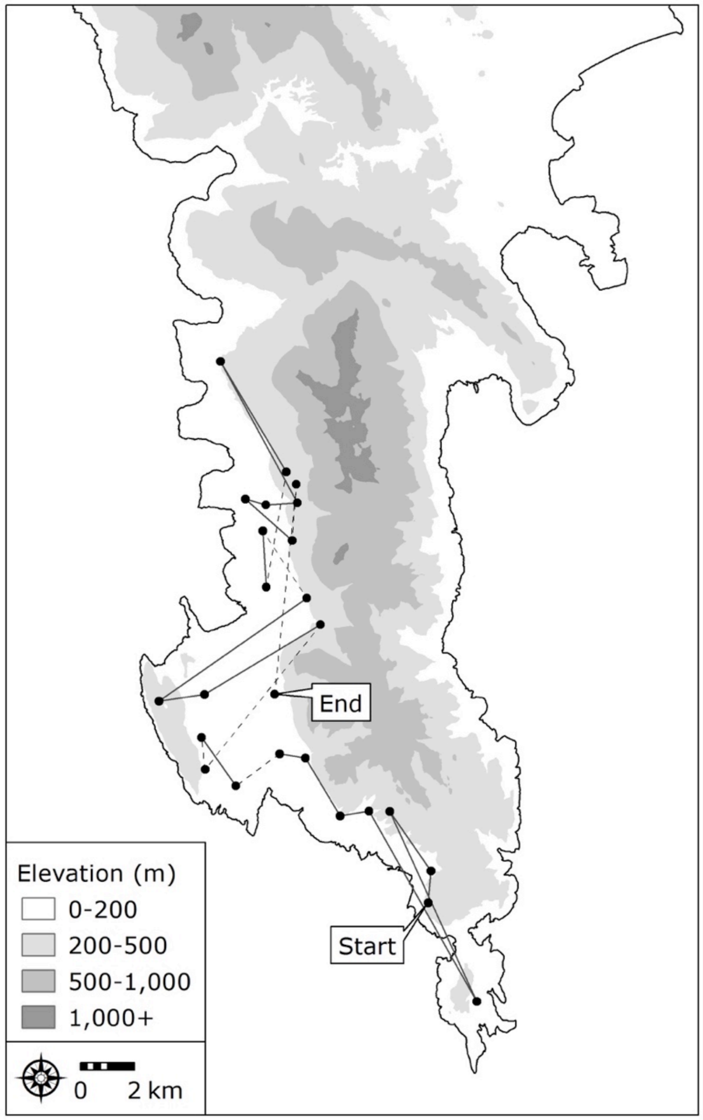


Figure 24. Map showing the order of the settlements in the 1514 *defter* (TT80), with dotted lines indicating that an unidentified toponym has been skipped; the list is generally random but may reflect a journey from the southern tip of the peninsula north to Kita.

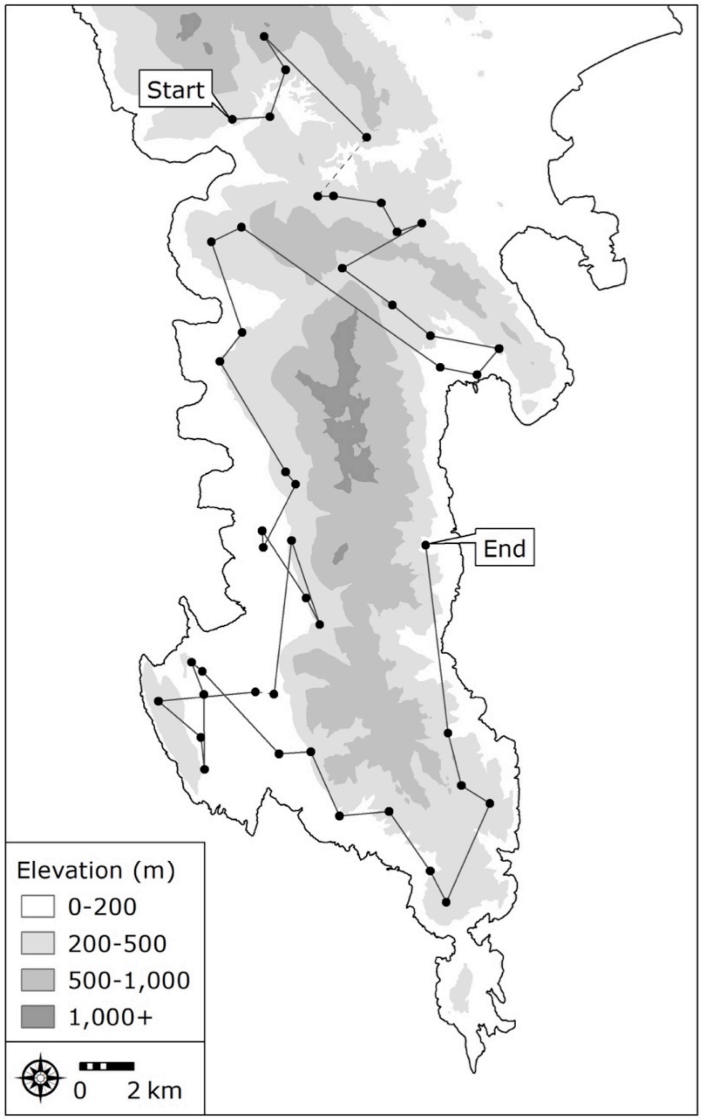


Figure 25. Map showing the order of the settlements in the 1583 *defter* (TT677), with dotted lines indicating that an unidentified toponym has been skipped; the list reflects a journey from Oitylo east across the peninsula to Kotronas, back across the pass to the west coast, then south along the west coast and up the east side to end at Nyphi.

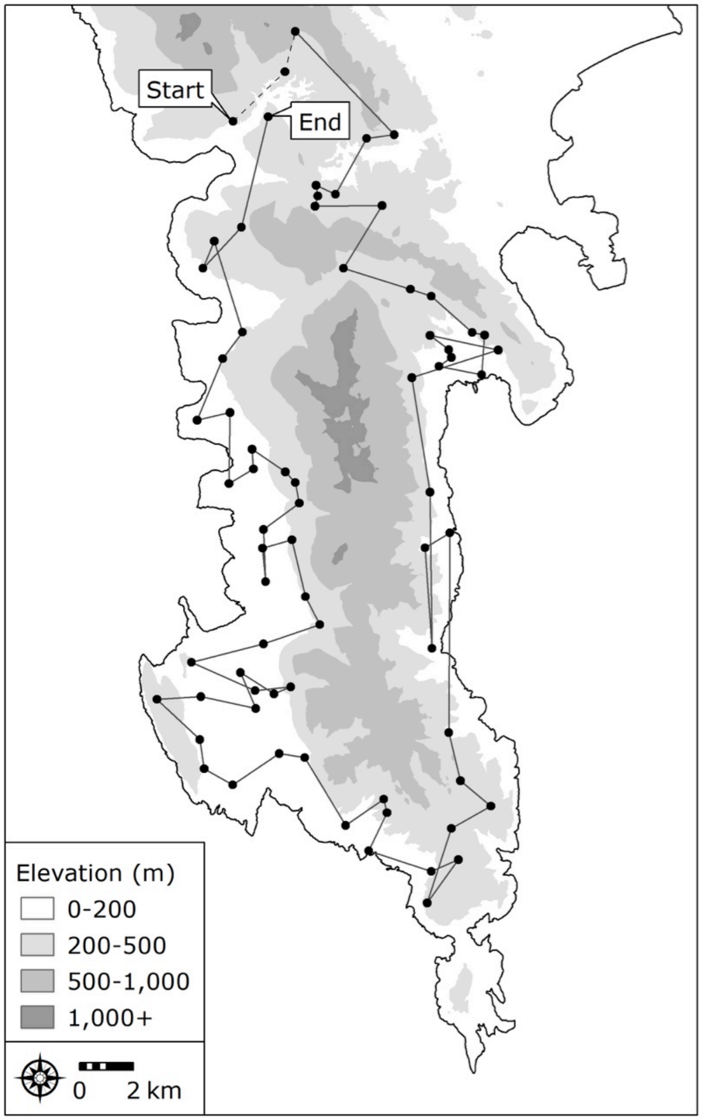


Figure 26. Map showing the order of the settlements in the 1618 Nevers Catalog, with dotted lines indicating that an unidentified toponym has been skipped; the list reflects a journey from Oitylo south along the east coast, then up the west coast to return to Oitylo.

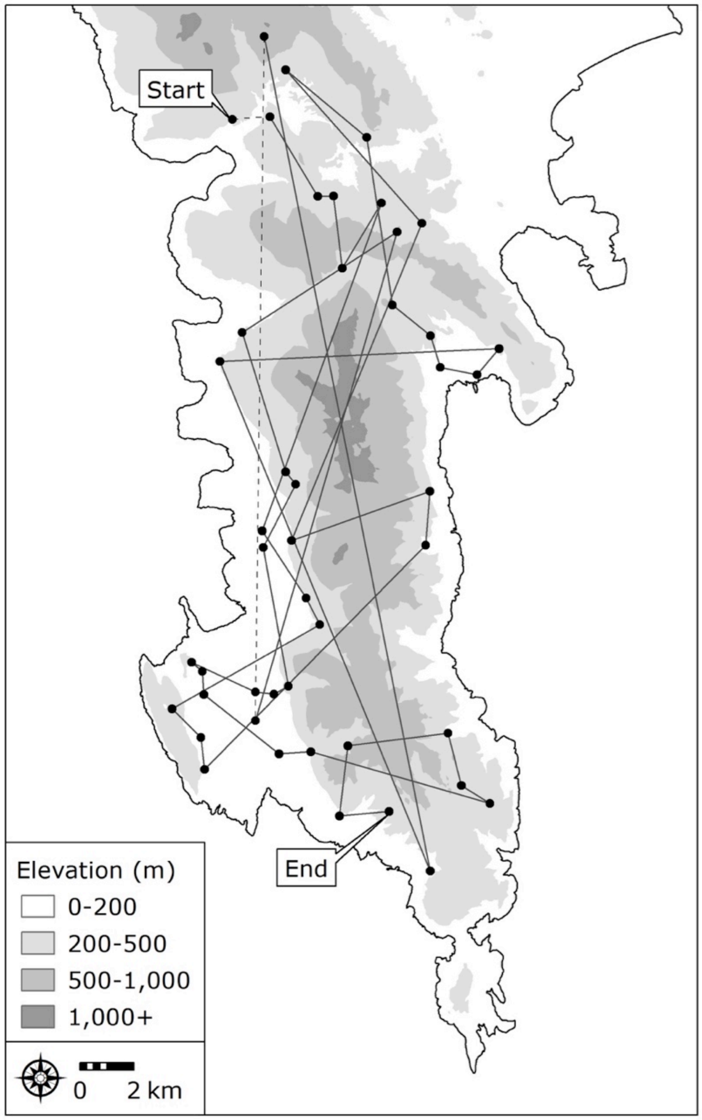


Figure 27. Map showing the order of the settlements in the 1692 Zeno Register, with dotted lines indicating that an unidentified toponym has been skipped; the beginning of the list may reflect a geographical progression through the north of the region, but most of the settlements are listed in random order.

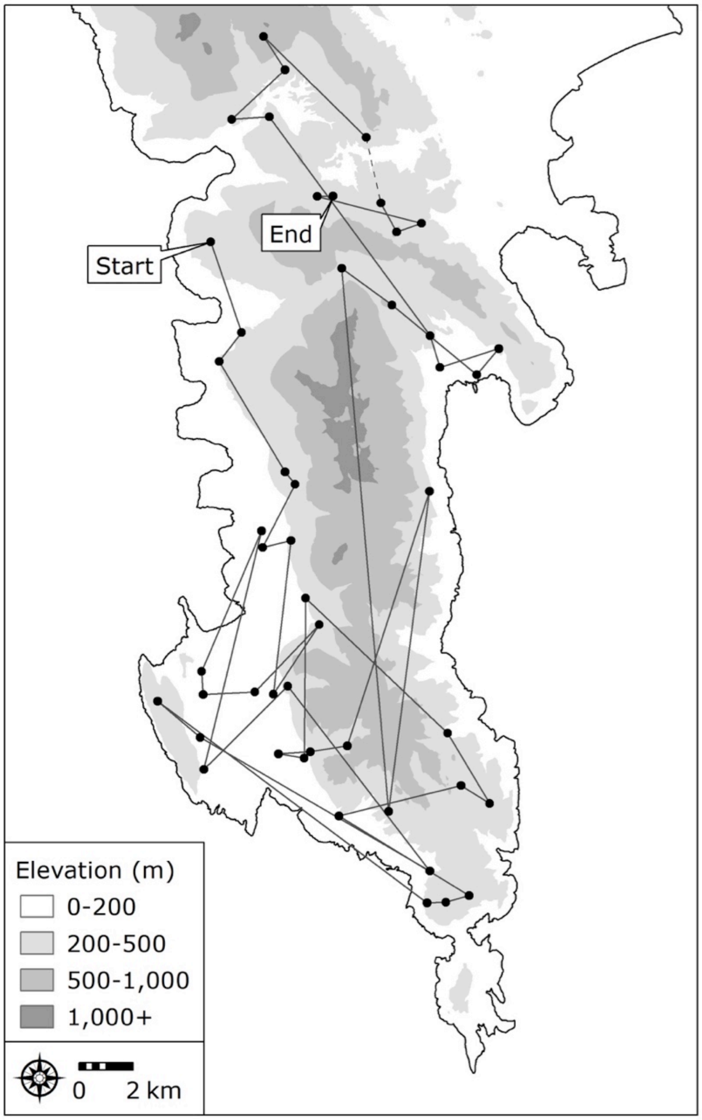


Figure 28. Map showing the order of the settlements in the 1695 Muazzo Catalog, with dotted lines indicating that an unidentified toponym has been skipped; the beginning and end of the list may reflect a geographical progression through the north of the region, but the settlements in the south are listed in random order.

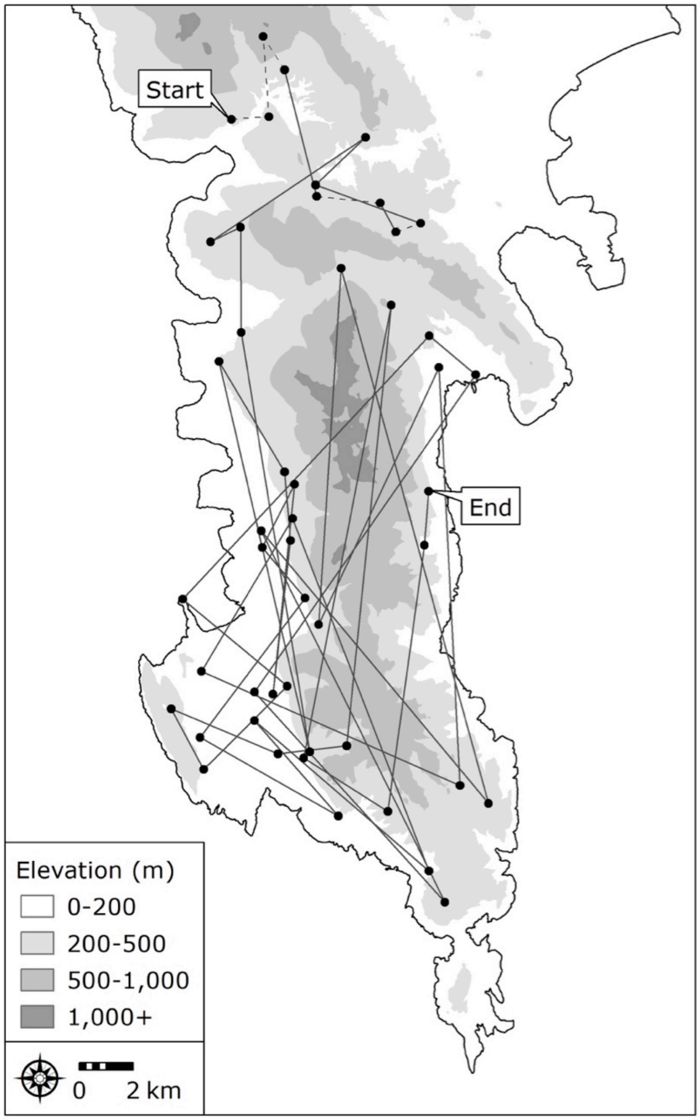


Figure 29. Map showing the order of the settlements in the 1700 Grimani Catalog, with dotted lines indicating that an unidentified toponym has been skipped; the beginning of the list may reflect a geographical progression through the north of the region, but the settlements south of Areopoli are listed in random order.

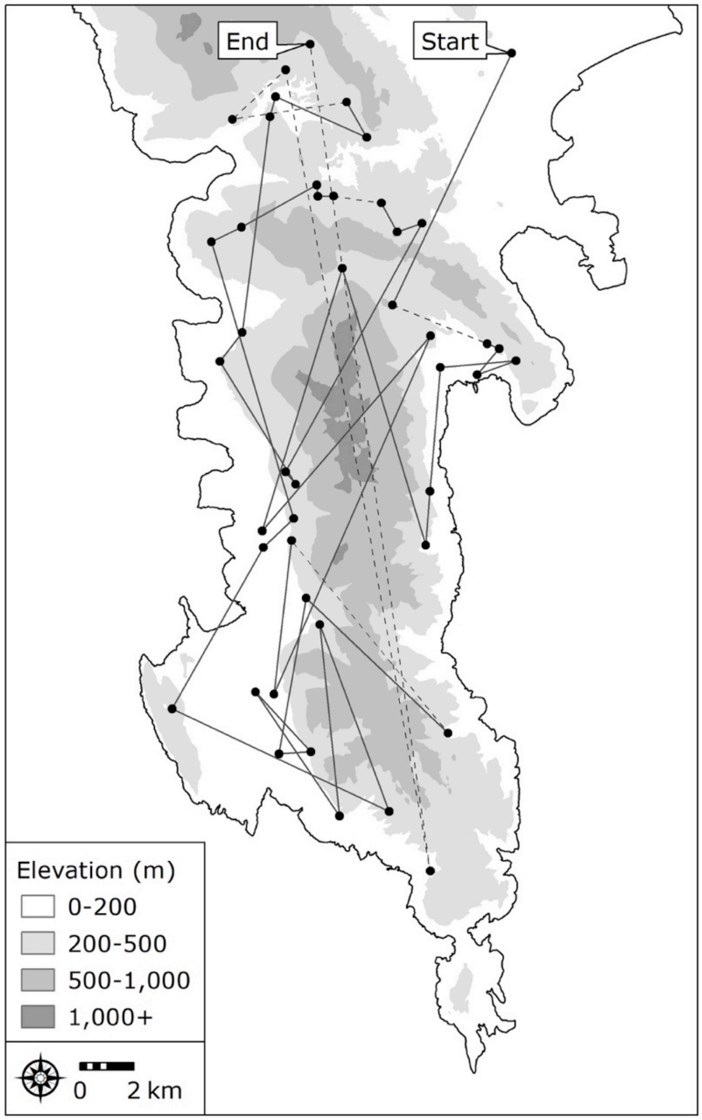


Figure 30. Map showing the order of the settlements in the 1715 *defter* (TT878), with dotted lines indicating that an unidentified toponym has been skipped; the list may reflect a geographical progression through the north of the region, but the settlements in the south are listed in random order.

4.1.4 – Population Trends in the Study Region

Another important aspect of the lists is that they provide an estimate of past population size at the settlement scale. This information can be obtained several ways—either directly, from figures provided by first-person accounts or full censuses; or indirectly, by extrapolating an estimated population based on known variables, such as average family size per household. This latter approach entails the use of "population multipliers," figures adopted from a known ethnohistorical context and applied to another to estimate the total population. Using population multipliers is a challenging task, but it is essential if the data from these lists are to be useful in any way, since the available lists record different types of information that cannot be meaningfully compared in their raw form. As we will see, these categories include the number of "hearths," "households," "heads of household," "combatants," and "armed men" in each Maniate settlement. Another reason to use multipliers is to allow for a comparison between those settlements that are listed in the records and those that are not—in other words, to be able to compare archaeological remains with historical accounts.

The first scholars to work with Ottoman-period archival records used standard multipliers—typically a value of 5—to convert their data into total population figures based on an assumption of average family size (e.g. Barkan 1957:18-21). Also referred to as "habitation coefficients," multipliers were also used by archaeologists working with preserved residential structures (e.g. Zorn 1994; Kolb 1985). In general, archaeological surveys tended to assume that average family household size is somewhere between 4 and 5 (Cherry et al. 1991a:Table 17.13; Jameson et al. 1994; Kayser and Thompson 1964:Map 302).

However, while population multipliers may be useful when working with physical remains, there are several reasons why applying a standard multiplier to archival records may not produce accurate results. First and foremost is the issue of demographic variability. Average household size does not remain stable over time, even in the same region. For Mani, the most precise data about past demographic composition is the full Venetian census from 1700, which records both the total population (broken into age and sex groups) and the number of households.

This list gives an average of 4.1 people per household in Mani in the year 1700. Another estimate comes from Colonel William Leake, who travelled through Mani in 1803. He estimated the total population of the region to be about 4,500 families and 30,000 people, for an average of over 6.5 people per household (Wagstaff 1996:284). Finally, the 1829 Expédition Scientifique de Morée estimated the average household to be 4.75 people (Bory de Saint-Vincent 1834:89). Even if these figures were accurate, they would not necessarily be appropriate for the generations prior to or following those points in time. And if we look to other regions in the Ottoman world, even more variability is found. In the mountainous region of Albania, for example, average family size ranged from 6 to 9 people and more than one family could live in a single house (Lee et al. 2013:75-76, 80)—facts that may be attributed to a variety of cultural factors.

Another problem with using standard habitation coefficients is that the type of data provided in settlement lists is not always applicable to this kind of multiplication. Even the categories that seem to represent family households, such as *hâne* (heads of household), cannot be assumed to represent a nuclear family living in a single residence. In actuality, these categories pertain to a select portion of the population: males over 15 years of age who could bear arms and be taxed. Erder (1975:291) emphasized that this was especially true for fiscal surveys like the Ottoman tax registers, which:

> … were not intended to be an exhaustive count of the population for purely statistical purposes. The fiscal survey, or *tahrir* was a count to determine the tax revenues the treasury might expect from each area … Unlike a census the fiscal surveys were selective; they listed only the taxable population, the head of household whether male or female and taxable adult males, covered only areas subject to the tax, and were not taken regularly or universally.

Erder explained that the settlement lists compiled by the Ottoman Empire in the form of *defters* give us the male population of each settlement, and the same is true of several of the European lists. For this reason, an alternative method for estimating total population must be used when dealing with these lists. McGowan (1981:82) suggested rather broadly that a multiplier of 3 might be used, since adult males tend to represent one-third of the population of preindustrial societies. However, Erder's effort to use age pyramids provided a more precise figure between 3 and 4, depending on the assumed rates of population growth and mortality (Erder 1975:Table 4).

For this study, two multipliers were used to calculate total population estimates (Table VI). A multiplier of 3.75 people per adult male was used to derive total population figures for most of the settlement lists, which recorded the fighting-age male population. This figure assumes that the lists accurately represent the male fighting-age population in each year. The multiplier is derived from the 1700 Grimani Census, which gives the male population in Bassa Main between 16 and 60 years of age as 1,771, and the total population as 6,641. According to Erder's estimates, this multiplier fits within the expected range for populations experiencing a modest rate of increase (between 0.5 and slightly more than 1 percent), depending on the mortality rate. A second multiplier of 4.07 people per family was used for the 1618 Nevers Catalog and the 1829 Expédition Catalog, and this value was derived from the 1700 census (there were a total of 1,630 families recorded in Bassa Maina). It should be noted that the authors of the 1829 Expédition Catalog themselves used a slightly higher multiplier of 4.75 people per family, which would be more appropriate when including Alta Maina, which had a higher ratio of people per family, as well as more fighting-age men in proportion to the general population.

TABLE VI. TOTAL ESTIMATED POPULATION OF ALL SETTLEMENTS IN THE STUDY REGION DERIVED FROM THE SETTLEMENT LISTS

Year[a]	Historical source	Total count of raw data	Unit of raw data	Multiplier	Total estimated population
1514	TT80	879	males	3.75	3,296
1618	Nevers Catalog	3,054	hearths	4.07	12,430
1695	Muazzo Catalog	3,918	males	3.75	14,692
1700	Grimani Catalog	9,089	people	—	9,089
1715	TT878	1,635	males	3.75	6,131
1813	Roussel Catalog	8,333	males	3.75	31,248
1829	Expédition Catalog	3,149	homes	4.07	12,816

[a] The tax registers from the years 1583 and 1692 are omitted because they do not contain population data.

It is immediately apparent that the value derived from the 1813 Roussel Catalog is far too high to be realistic, and as a result it is omitted from further analysis. It is possible that the raw data in the list was already subjected to a multiplier, or that it was derived from faulty sources. Either way, it is known from other parts of the Venetian-controlled Peloponnese that the data from this list is problematic (see discussion in Davis et al. 2005:168-169).

A brief consideration of the population estimates from the rest of the settlement lists indicates that the trajectory of Mani's population differed to some extent from that of other parts of the Balkans. For comparison, Figure 31 shows the population trajectories of the Ottoman administrative districts of Agrafa in Thessaly, Boeotia and Atalanti/Talanda in Central Greece, Izladi/Zlatitsa in Bulgaria (Kiel 1999:Figures 15.8, 15.10, 15.12, 15.16) and Anvarin in Messenia (Davis et al. 2005:Tables 4.1 and 4.3). Overlaid on the graph are the total population estimates derived from the settlement lists in Table VI.

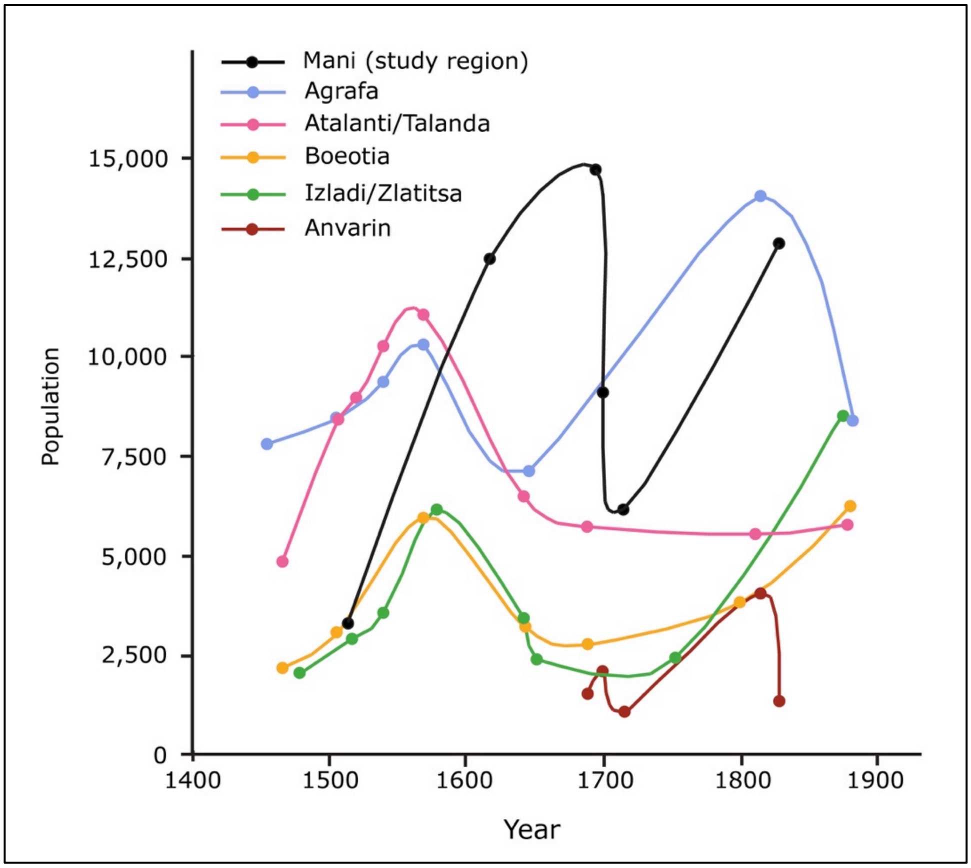


Figure 31. Total population estimates of all settlements in the study region compared with other Ottoman districts: Agrafa in Thessaly, Boeotia and Atalanti/Talanda in Central Greece, Izladi/Zlatitsa in Bulgaria (Kiel 1999), and Anvarin in Messenia (Davis et al. 2005). All raw data were converted to population estimates using a multiplier of 3.75, except in the case of Anvarin where a multiplier of 4 was used (as per the authors' analysis of the data).

In general, the other districts share a similar trajectory. Around roughly 1570–1580, the registers (mainly Ottoman *defters*) record a peak in population, with a steep decline following in the 1640s. The 1680s reflect similar low levels, with gradual recovery into the early 1800s (with the exception of Atalanti/Talanda). After this point, most of the districts continued to grow through the first few decades of the 1800s.

The very first record from Mani is incomplete (it covers only the southwestern part of the peninsula), and s a result, it is not possible to know at this point whether there was a similar peak at the end of the 16th century. Yet by the early 17th century, it seems that the population in the study region was continuing to grow even though the other regions were experiencing a rapid decline. The region's population decreased during the Venetian period (as registered in the 1700 Grimani Catalog), but what is most surprising is the continued apparent loss of population through the year 1715, when the Ottoman Empire retook control of Mani. In Anvarin, located in the neighboring peninsula of Messenia, a similar decline was registered: from an estimated 2,111 people in 1700 to 1,124 in 1716. This apparent loss is especially surprising considering that most scholars believe the 1700 Grimani Census to be an underestimate of the population in the Morea (see discussion above). After this point in time, Mani appears to follow the trajectory of the other case studies, with a gradual recovery of population into the early 1800s.

4.2 – Archaeological Datasets

The archaeological datasets compiled for this project can be broken into two groups. The first group is the settlements themselves, including the structures within them. As discussed in section 2.4, the vernacular architecture is one of the most important sources of chronological information about the settlements' foundation and duration. In addition, recording the built structures within each settlement provided a high-resolution, community-scale dataset that could be used to understand the changing social organization of the Maniate communities. The second major dataset includes the built roads (*kalderimia*) and paths that crisscross the landscape. Together, these two regional-scale datasets are used to assess the model presented in the previous chapter. All of these data were obtained through a combination of field research and remote sensing analysis methods, discussed in the next section.

4.2.1 – Settlement Locations and Dates

The initial goal of this project was to locate all of the settlements in the study region and determine when they were in use. The first part of this task was relatively straightforward. I used a combination of modern maps, historical maps, aerial imagery, and firsthand field research to identify all of the settlements in the region and obtain coordinates for them. The aerial imagery also made it possible to identify individual features like domestic structures and churches within each settlement. The end result of this work included GIS shapefiles corresponding to the settlement boundaries and the features within them.

Assigning dates to the settlements was a much more difficult task. The archival records were one source of chronological information, but they indicated when a settlement was in use, not necessarily when a settlement was built or abandoned. A second source were the built structures, including domestic structures and churches (see section 2.4). Domestic architectural styles can be dated to broad time periods, and because the churches have been studied rigorously in Mani, most of them can be dated to very specific spans of time. The final source of information was the small group of diagnostic ceramics encountered in the field. Tile was also encountered and recorded, but is notoriously difficult to date due to the lack of research on medieval tile (Kourelis 2003:211-213).

Traditionally, survey archaeologists use ceramics as the primary source of chronological information about a site, but in Mani, diagnostic ceramics from the medieval period are rarely encountered on the surface of sites. This was the case not just for the current study, but also for the intensive survey project—the Diros Project—that surveyed the valley north of Pyrgos Dirou between 2011 and 2013 (Pullen et al. in press). One of the reasons for this lack of surface material was low visibility. Except in areas where goats were still allowed to graze on a daily basis, visibility was extremely limited and vegetation often obscured the ground surface. This problem is due partly to the fact that Mani has become less and less populated since the 1940s as residents migrated to urban areas like Piraeus for work. Over the past 70 years, land that was once tilled or cleared by goats and sheep has developed into fields of thorny bushes and grass.

The apparent lack of medieval ceramic material may, however, reflect a real lacuna in the archaeological record. Sanders argues that people living in poorer regions during this time period would have been less likely to invest in breakable and relatively expensive household items, namely pottery. Instead, they would have been more likely to use dishes and utensils built of more durable material, such as wood or even metal (Sanders, in press). Other intensive surveys in the Peloponnese, such as the Eastern Korinthia Archaeological Survey, noted a remarkable dearth of medieval material. There, only 19 items could be dated to the Ottoman/Venetian period, accounting for only 0.6% of the total assemblage (Gregory 2007:182-184).

In the rare cases when diagnostic ceramics were found, they were photographed and compared with other published examples (Figure 32). However, the only comparanda of medieval ceramics from the Peloponnese are highly localized, due to the relatively recent focus on the post-Roman periods in Greece (Gerstel 2008:227). These include Sanders' publications of the Late Byzantine and Frankish material from Corinth (1987, 1997, 2001) and Sparta (1993), and Skartsis' (2009) publication of the ceramics from the Frankish castle of Chlemoutsi in the northwest Peloponnese. So far, no studies of ceramics from the southern part of Mani have been published.

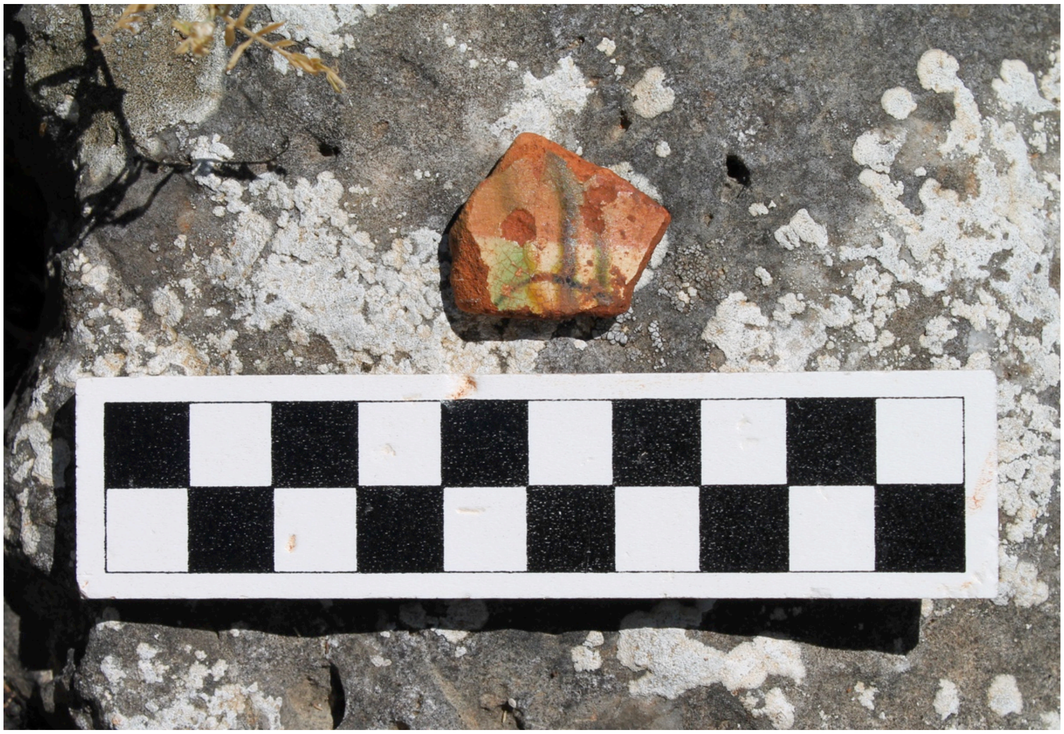


Figure 32. Example of a diagnostic sherd encountered during field research: archaic imitation Italian painted sgraffito from the 14th century or later (T375F036).

The most recent and comprehensive descriptions of Late Byzantine and Ottoman ceramics are based on material from Boeotia and the Cycladic islands, where Vroom (2003:Table 6.8a, 187) identified 8 diagnostic wares for the Late Byzantine period, 12 for the Ottoman period (of which three are specific to the Ottoman II period), and 10 for the Early Modern period. According to Vroom (2003:72), the early and later Ottoman-period ceramic assemblages are distinguishable due to a decline in large amphorae, a decrease in medieval decorations, and an increase in glazed wares (from 35-40% to 60-80%). More recently, Vionis (2012) published a comprehensive typology of the post-Roman glazed wares from the Cyclades. To supplement these published resources, I was granted access to the collection of Late

Byzantine and Frankish ceramics at Corinth in 2013 in order to gain familiarity with medieval ceramics from that part of the Peloponnese.

Due to the relative lack of research on medieval ceramics, or perhaps because of the isolation of Mani itself, only a few ceramics were identified in the field that could be linked with these comparanda. Of the surface material identified in the field, only a small number were diagnostic. Sanders has had much better success identifying ceramic bowls embedded into the facades of Byzantine churches (personal communication), many of which are still preserved. Yet despite the difficulties in using ceramics to date the sites, it was possible to assign the sites to different periods of use based on architectural styles and their representation in the historical records (Figure 33).

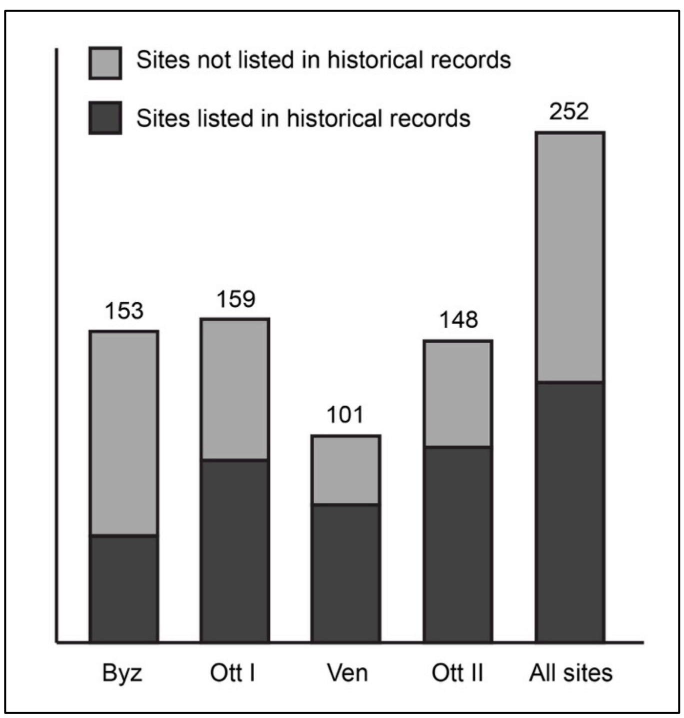


Figure 33. Number of settlements dated to each time period (Byzantine to Ottoman II), showing their representation in the historical records.

4.2.2 – Kalderimia and Other Paths

The second major archaeological dataset includes the goat paths, walled footpaths, and formal built roads (*kalderimia*) surrounding the settlements. The goat paths are unwalled dirt paths that are primarily used by shepherds as they move livestock into the mountain pastures. Goat paths are included in the analyses because they are critical avenues for connecting people to places that could not be reached via the more formal walled footpaths and *kalderimia*. Of course, the goat paths that are still preserved today may not have been the same goat paths that were used in the past, but including them in the analyses is important for assessing the total connectivity of the region. The footpaths in the immediate vicinity of the settlements are almost always bordered by walls on both sides, clearly delineating the fields on either side and providing an obstacle-free way of traveling from the settlement to more distant fields and pasture. Because of their design, they are very easy to identify in remotely sensed imagery and while walking around in the field. The *kalderimia* also tend to be walled, making it difficult to differentiate them from simpler paths when looking at them in aerial imagery. Their key difference is that they are paved with "cobbles"—long, roughly shaped stones placed perpendicular to the ground and filled in between with earth. The edges are lined with stones laid on their long sides, creating a wide, flat surface. As Moschos and Moschou (1982:264) noted, it was nearly impossible to pass through a settlement except by the walled paths and *kalderimia*.

It is generally not possible to date goat paths and walled paths, except in cases where they are built around pre-existing structures that themselves can be dated. As for the *kalderimia*, there are at least a few typological characteristics that can be used to distinguish the Ottoman-period stone-built roads from those of the earlier Byzantine or Roman periods. Pikoulas (2008/2009) argued that earlier roads tended to be constructed in straight lines, without transverse steps to reduce the slope, and with large flat paving stones. Ottoman-period roads, on the other hand, were built for crossing slopes directly. They were narrower, had very tight, Z-shaped turns and steps, and used smaller natural stones as "cobbles" rather than as flat paving stones (Figure 34). While there are still some extant fragments of ancient cart roads (see Pikoulas 2012), by and large the *kalderimia* are remnants of the Ottoman-period paved road network.

Figure 34. *Kalderimi* leading downhill from the Ottoman fortress of Kelepha, showing Z-shaped turns (K0029S08).

At the height of the Ottoman Empire, villagers living along the roads were required to help maintain them, as well as to tend to passing troops (Ágoston 2011:128). Documentary evidence shows that either the Ottomans built new roads, or they renovated older sections in order to transport soldiers more efficiently. For example, Evliya Çelebi wrote in the 17th century that the Ottomans had prepared to attack Mani by “clearing all the roads along which the armies and cannon were to pass” (Kalamara and Roumeliotis 2004:186). The *kalderimi* network was so robust that most modern Greek villages have traces of the roads all around them. In Arcadia, Forsén (2003:72) described the typical village as “the hub of a wheel from which *kalderimia* radiate out in all directions,” and the same description can be applied to many of the settlements in Mani (for example, see the case study of Charouda in section 6.1).

However, there is reason to suspect that some parts of the *kalderimi* network in Mani were built by local villagers without Ottoman oversight. For one, modern Maniates vehemently deny that the Ottomans had a role in the *kalderimia* construction. This claim is not surprising, given the modern attitudes toward the Ottoman past. However, there is also the fact that several of the *kalderimia* sections appear to serve purely local transit needs—leading to withdrawn, mountainous settlements; radiating out from settlements and ending in fields; and so on. In other words, the *kalderimia* in Mani appear to have been multifunctional. At times they acted as paths used primarily by a single settlement, but at others they acted as trails that connected settlements to one another. In still other cases, they acted as formal roads that were used to transport Ottoman military forces.

4.3 – Recording Methods

Two methods were used to record information about the archaeological datasets described above. The first method was extensive field reconnaissance and field recording, which allowed me to take photographs of individual features, record their locations with GPS points, and record any pertinent information about dimensions, appearance, and associated ceramics.

The second method was the analysis of remotely-sensed imagery, which allowed me to identify features and settlements that were not accessible or visible in the field.

4.3.1 – Field Recording

Field recording took place between March and August 2014. Of the 252 settlements in the catalog, 168 were recorded in person (66.7%)– the remaining 84 were identified only in the remotely sensed imagery. Each of the former settlements was visited to verify its location, assess its phases of occupation via ceramics and built architecture, and record associated paths. Any structure with evidence of pre-modern phases was recorded individually with a handheld GPS and a FileMaker Pro form on an iPad. The iPad could also be used to record a second GPS point directly in the form (Figure 35, upper right corner). Photographs were taken of the feature to allow for reassessment once fieldwork was completed, and to compare the architecture with published descriptions from other regions (Figure 36). Any diagnostic pottery found in the vicinity was photographed for future reanalysis, if necessary. Finally, all visible pre-modern paths were walked, photographed, and recorded on a separate form, with the goal of distinguishing cobbled *kalderimia* from more typical walled field paths (Figures 37 and 38).

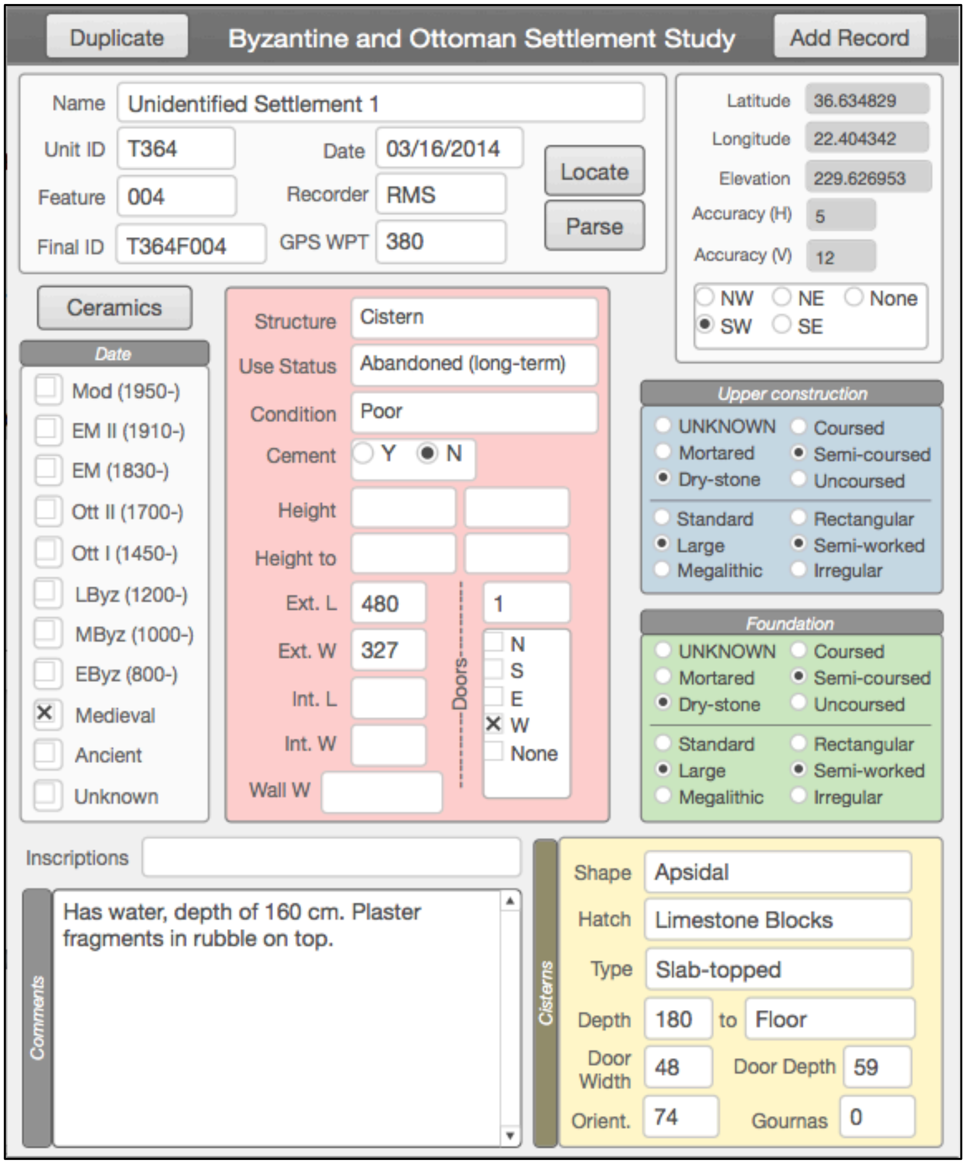
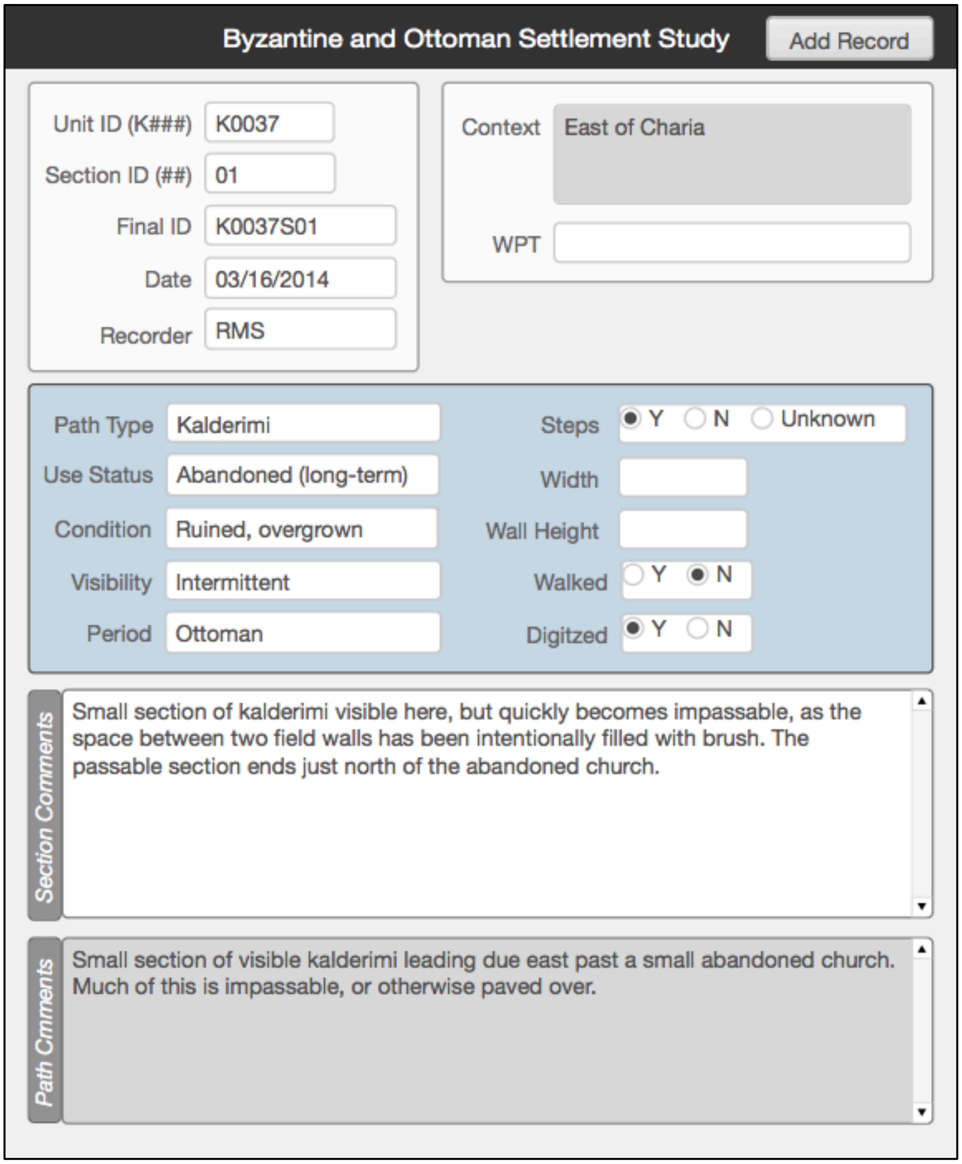


Figure 35. Feature recording form showing feature T364F004, a cistern.

Figure 36. Photograph of feature T364F004, looking northeast.



Byzantine and Ottoman Settlement Study | Add Record

Unit ID (K###)	K0037	Context	East of Charia
Section ID (##)	01	WPT	
Final ID	K0037S01		
Date	03/16/2014		
Recorder	RMS		

Path Type	Kalderimi	Steps	◉ Y ○ N ○ Unknown
Use Status	Abandoned (long-term)	Width	
Condition	Ruined, overgrown	Wall Height	
Visibility	Intermittent	Walked	○ Y ◉ N
Period	Ottoman	Digitzed	◉ Y ○ N

Section Comments: Small section of kalderimi visible here, but quickly becomes impassable, as the space between two field walls has been intentionally filled with brush. The passable section ends just north of the abandoned church.

Path Cmments: Small section of visible kalderimi leading due east past a small abandoned church. Much of this is impassable, or otherwise paved over.

Figure 37. Path recording form showing *kalderimi* K0037S01.

Figure 38. Photograph of *kalderimi* K0037S01.

The abandoned settlements received more intensive treatment, since they tended to be overgrown and difficult to assess remotely. For these, a research assistant was enlisted to complete a systematic survey of the area. All residential structures, cisterns, and churches were recorded individually and digitized with GIS software, producing a rough plan map of the settlement. A total of 34 settlements were recorded in this manner.

The field research component of the project was also important for investigating the "empty" spaces around the settlements. While traveling between sites by foot or car, I looked for evidence of structural ruins that may be obscured by vegetation and are therefore invisible in the aerial imagery. In several instances, this extensive reconnaissance allowed me to identify settlements that cannot be seen in the aerial imagery due to poor contrast with surrounding rocky outcrops or obscuration by wild vegetation.

4.3.2 – Remotely-Sensed Imagery Analysis

The second recording method used in this study was the analysis of high-resolution satellite imagery and historical aerial photography. The goals of this analysis were to identify missing settlements, determine their extent, and identify associated paths or scatters of ruins. For modern imagery, high-resolution QuickBird satellite imagery was obtained from a DigitalGlobe Foundation imagery grant to Dr. William Parkinson of the Diros Project. This image was captured in September 2011, and it has a panchromatic (black-and-white) resolution of 0.6 m and a multispectral resolution of 2.4 m. Historical aerial photographs were purchased from the Hellenic Military Geographical Service (GYS); these range from 1:15,000 to 1:42,000 in scale and span the years 1945-1973. Because of the recent depopulation of the region, wild vegetation has increased substantially in the past few decades, so the earlier aerial photographs are useful for identifying some settlements that are less visible today. In addition to these sources, a 1:50,000 modern road atlas (Matsouka 2009) and a 1:200,000 historical map (Expédition Scientifique de Morée 1832) were used to identify modern and historical toponyms.

A non-systematic strategy was adopted for analyzing the aerial imagery. I conducted an initial inspection of the entire region prior to field research and identified several key targets for further investigation on the ground. I continually inspected the imagery throughout the period of field research, resulting in the identification of several more previously unknown settlements (Figure 39). For the most part, the sites identified were abandoned residential clusters. As with the previously identified settlements, each newly identified settlement was assigned its own unique identifier in the database. At times, it was possible to draw tentative connections between ruined settlements and unidentified place-names in the historical lists.

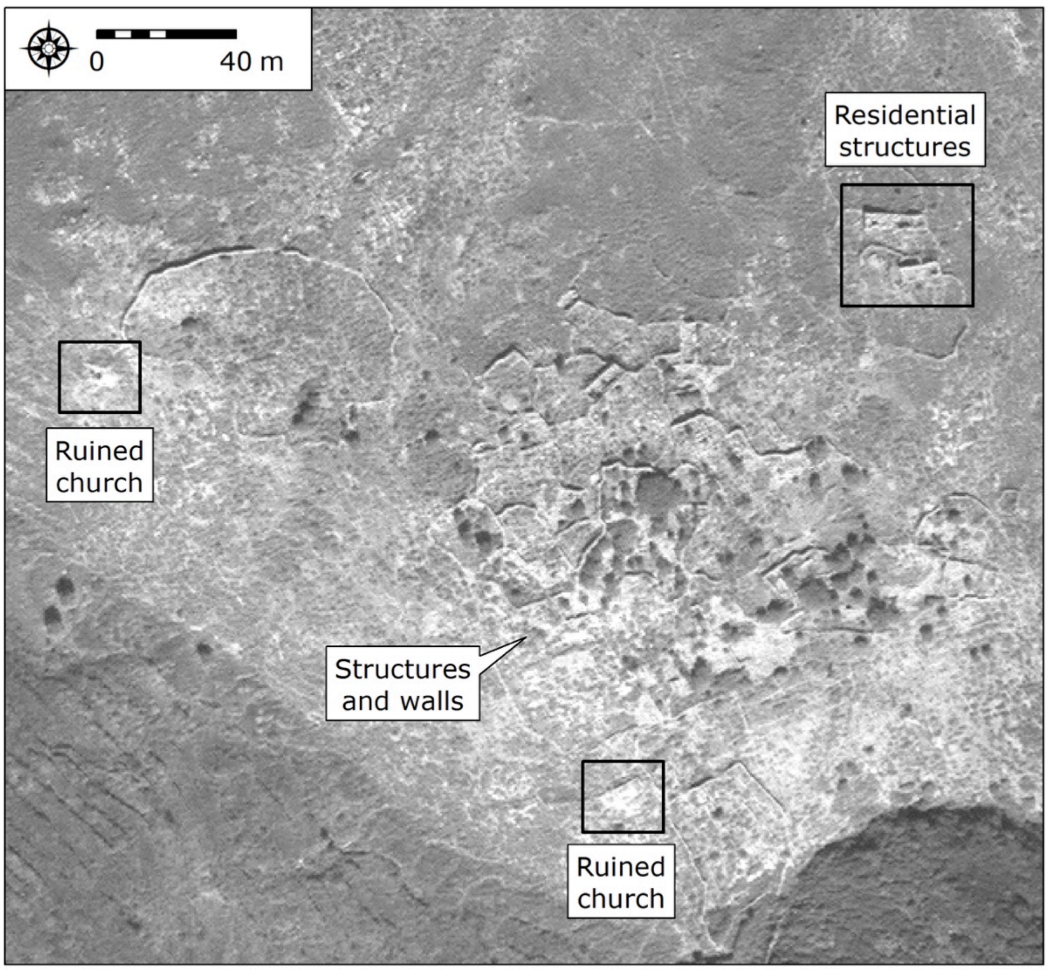


Figure 39. Site T360 (Proskephalia) identified in WorldView-2 satellite imagery.

4.4 – Analytical Methods

Once the archaeological datasets were recorded, the final component of the project involved assessing the spatial distribution of the features and settlements using GIS software. Unless otherwise noted, all spatial analyses were conducted with ArcGIS 10.2 software. GIS provides quick and easy-to-use tools that allow researchers to contextualize features within their geographical landscapes and visualize how their distributions change over time. Such spatial analyses can generally be done with minimal additional cost, due to the availability of free GIS software alternatives (e.g. GRASS GIS) and low- or no-cost digital elevation data from various government agencies (e.g. ASTER).

The primary goal of using GIS in this study was to test the regional-scale interpretive models presented in Chapter 3. The specific methods used to assess each criterion are listed in Table VII and discussed in more detail below.

TABLE VII. ANALYTICAL METHODS USED TO ASSESS THE REGIONAL-SCALE VARIABLES

Variable	Criterion	Analysis method
Settlement location	Elevation	Extraction from DEM
	Nearness to bays	Least-cost distance
	Clustering and dispersion	Ripley's K function
Settlement visibility	Connection to visibility network	Social network analysis
	Settlement intervisibility	Line-of-sight
	Features visible to settlements	Cumulative viewshed
Route network	Connection to route network	Social network analysis

Elevation data were taken from a 5-meter digital elevation model (DEM) created by the National Cadastre and Mapping Agency, S.A. (Ktimatologio) and provided to this study at no cost. The DEM was created by synthesizing aerial photographs from the 1990s and 2000s, so as a result, it reflects the heights of natural features like trees and man-made features like buildings, road surfaces, and quarries that would have been included in the photographs (Figure 40). As with most DEMs, the Ktimatologio DEM does not reflect the actual ground surface of the region—a fact that impacted the parameters of the visibility analyses.

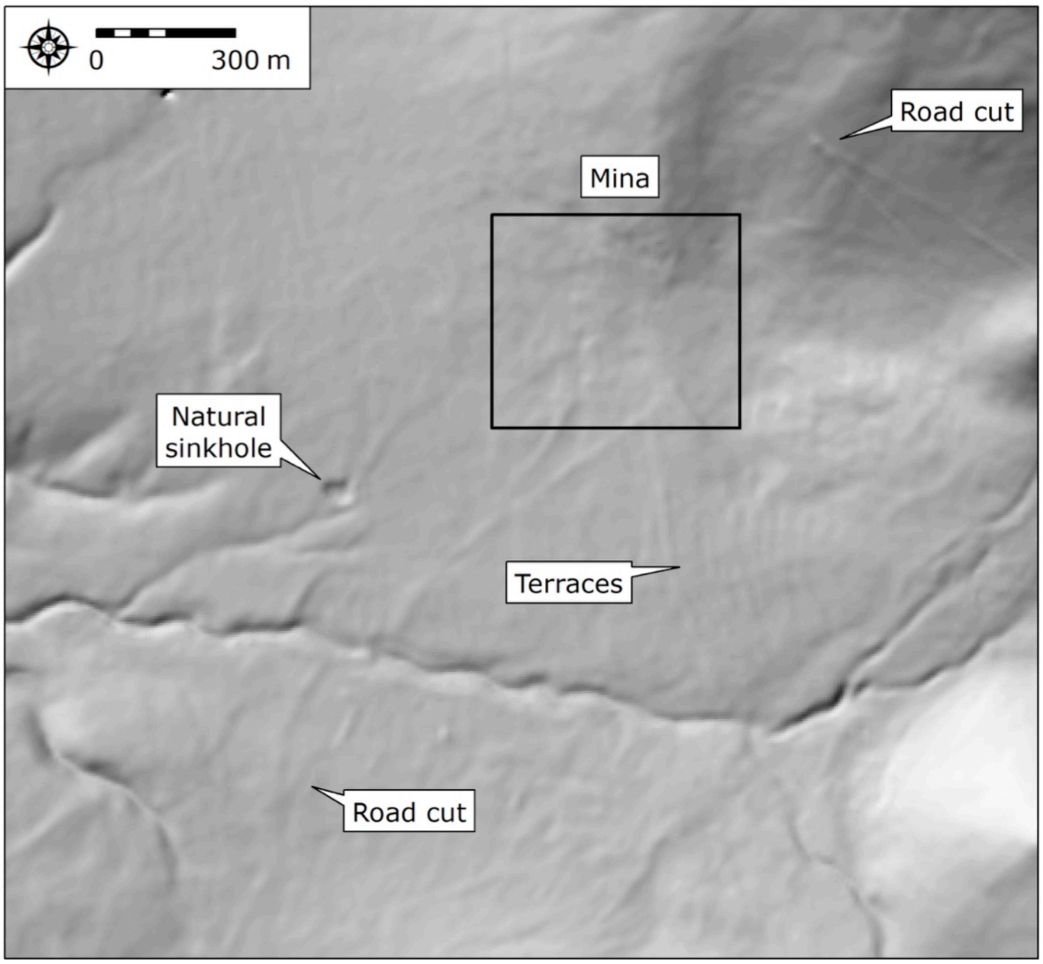


Figure 40. Hillshade of the Ktimatologio DEM showing visible man-made features, natural features, and the rough “texture” of the DEM within a village.

4.4.1 – Least-Cost Distance

Another one of the criteria for assessing settlement distribution is the nearness of settlements to ports and bays. The coastline of Mani is very rugged, with few natural bays that would allow boats to be docked. Thus, the location of natural ports may have influenced where settlements were located, especially if residents relied on seafaring for travel, trade, piracy, or fishing.

To assess the distance between each settlement and the nearest bay (i.e. where a small boat could be docked), least-cost path (LCP) analysis was conducted to determine (a) which bay was the closest, and (b) the distance along each path. LCP analysis is used to identify the "least costly" paths between two or more points on a landscape, where "cost" is defined by variables like slope, traveling time, energy expenditure, vegetation, obstacles like rivers, and so on (for more on least-cost-path analysis, see de Smith et al. 2007:150-154).

The cost raster developed for this test was based partly on slope (weighted at 1/3 importance) and partly on known routes (weighted at 2/3 importance; Table VIII). First, a slope raster was calculated based on the DEM and reclassified according to the one-way energy costs given in Minetti et al. (2002:Table 2) for values between -45 and 45 degrees. In order to model movement both to and from the source site, the energy costs were totaled for each slope value, a methodology modified from Alex R. Knodell and Sylvian Fachard (personal communication). A second raster was created with weighted values for the route network, with *kalderimia* being weighted as least costly, followed by walled paths, goat paths, and no paths. Finally, these two rasters were combined to create a single cost raster. When used with the cost-path toolset in ArcGIS (Esri 2012a), the cost raster produced reliable LCPs that followed known routes and rarely deviated from them to stray across fields—behavior that closely follows real patterns of movement across the Mani landscape.

TABLE VIII. VALUES USED TO BUILD THE COST RASTER FOR THE LEAST-COST PATH ANALYSIS

Route category	Reclassified Value (Weight = 0.66)
Kalderimi	0.01
Walled Path	2.64
Goat Path	3.96
No Path	6.60

Slope (%)	Reclassified Value (Weight = 0.33)
0	0.12
0-10	0.68
10-20	1.02
20-30	1.36
30-40	1.70
40-50	2.04
50-60	2.38
60-70	2.72
Above 70	3.40

The current least-cost-path algorithms, including that used in Esri's ArcGIS software, have been critiqued for producing idealized pathways that do not always correspond with known paths. The most important limitation of the algorithms is their failure to model anisotropic landscapes, meaning that they do not account for the direction of movement (Conolly and Lake 2006:252-257; Llobera et al. 2011:849-850). In other words, the algorithms are meant to simulate the movement of water flowing downhill, and this is why they do not always produce paths that a person would choose to walk across a landscape. In addition, the current algorithm allows for only one origin point per iteration, meaning that that the resulting least-cost paths may differ when choosing a different origin point (see Connolly and Lake 2006:254-255). One of the ways that researchers have overcome this limitation is by running multiple iterations and comparing the results (e.g. Bevan and Wilson 2013:Figure 1).

For this particular study, building the road network into the cost raster forced the LCP results to follow actual paths, as well as to preferentially select for the easiest paths to walk on. Although it is still possible for people to have chosen different routes, the LCP results provide a realistic minimum distance that would need to be traveled in order for a person to reach his or her destination.

4.4.2 – Ripley's K Function

Ripley's K function is a type of descriptive statistic that can be used to assess the distribution of points within a given area and to determine whether those points are relatively more clustered or dispersed than would be expected in a random set (Dixon 2002; Conolly and Lake 2006:162-168; Orton 2004:301-303). Specifically, it compares the expected number of points in a given radius (based on a random distribution) to the observed number of points in a dataset. It iterates this process at increasing radius intervals, allowing it to identify non-regular settlement patterns at various distances.

In this case, I used the tool to test whether the overall settlement patterns were disbursed or nucleated, one of the criteria for the variable of settlement distribution. Distance bands were defined in increments of 200 m up to 6,000 m, with a confidence envelope constructed based on 99 random distributions of points. To limit the effect of boundary-related phenomena, the study area boundary was defined, and a boundary correction method ("Simulate Outer Boundary Values") was applied. These steps ensured that points located along the edges of the study area—for which no neighboring settlements were digitized on the other side of the boundary—were not undercounted during analysis.

4.4.3 – Social Network Analysis

Social network analysis (SNA) is a type of analytical tool based on graph theory (see Chapter 3 for a more extensive discussion). Graphs produced from different types of relational data contain nodes, which represent people, and lines or edges, which represent variably defined relationships. However, it is also possible to use SNA to assess other kinds of networks, such as transportation networks (e.g. Gorenflo and Bell 1991). In this case, the nodes would represent settlements and the lines the physical pathways that connect them. For this study, SNA was used to test both the visibility and route networks in Mani. The analysis was conducted using the freely available UCINET software (Borgatti et al. 2002), although other options are available, such as NodeXL (a free add-on for Microsoft Excel).

There are numerous types of tests that can be conducted within the network analysis environment. The first group, "cohesion measures," allows researchers to compare different networks to one another. The most basic measurement, "density," represents the percentage of all possible ties that are actually present in the network. "Average degree" is the average number of links per node, and it is another way of understanding density; the value is calculated by the equation: Average Degree = Density * (n – 1). "Average distance" refers to the average number of connections it takes to connect any two nodes in the network. "Diameter" refers to the greatest distance between a single pair of nodes in the network. "Components" refer to the number of isolated sub-networks within the total network; each component is either a single node or a group of connected nodes that cannot be reached by others in the network. Finally, "fragmentation" is the percentage of nodes that are unreachable; a graph with a single component has a score of 0, while a graph of all isolates has a value of 1.

The next group of tests, “centrality measures,” allows a researcher to assess the importance, or “power,” of specific nodes within a network and determine which are most crucial to the functioning of the overall network. “Degree centrality” is a simple count of the number of connections each node has, and as a result it is considered to be a measure of that node’s involvement in the network (Prell 2012:97-103). “Closeness centrality” measures each node’s relative independence, such that the closest nodes are those with the shortest distance (i.e. the least number of connections) to all the other nodes. These nodes can be reached most quickly, so they are considered to have better access to the information flowing through the network, and they may also have more power and influence (Prell 2012:107-109). “Betweenness centrality” measures how often a node is located on the shortest path, or “geodesic,” between two other nodes (Prell 2012:103-107). It identifies those nodes that are most often the critical bridges (or “brokers”) between other nodes in the system, meaning that these nodes have the most potential to control the flow of people and goods through the network. In SNA, betweenness centrality is considered to be a good measure of influence, since removing these key nodes may result in the fragmentation of the network.

There are a number of specific analyses within each of these centrality measures. For the purposes of this study, the following were chosen: Freeman’s degree (based on the number of connections a node has), Freeman’s betweenness (based on the number of times a node is located on a geodesic between two other nodes), and Freemans’ closeness (based on the total distance from a node to every other node).

A final analysis was conducted to assess the overall shape of the network, and specifically to find out how many clusters, or “cliques,” existed in the transportation and visibility networks. The Girvan-Newman algorithm was used to identify cohesive subgroups and then produce color-coded diagrams. Specifically, the algorithm calculates betweenness values for all the connections (i.e. "edges") and then removes the links with the highest values one by one to reveal how the network begins to collapse (Prell 2012:160-161). This process can quickly identify any clusters present in the network, which in turn may be used to understand how people or information traveled between the different settlements in Mani.

4.4.4 – Visibility Analyses: Line-of-Sight and Cumulative Viewshed

Two types of visibility analyses were conducted: line-of sight (LOS) and viewshed. LOS was used to assess settlement intervisibility, or whether people standing on two different points on the landscape could see each other. In other words, it is a quick way of testing whether there are any topographical barriers that stand between two points on a landscape. The actual process of running an LOS analysis is relatively simple: tools built into ArcGIS are used to (a) construct sight-lines between all the points in the shapefile and (b) determine whether there were obstructions (such as mountains or buildings) that would have interfered with visibility along that line (Esri 2012b). These tools show which points are intervisible, generally by representing the intervisible relationships as a line.

Cumulative viewshed analysis was used in order to assess the visibility of features on the landscape (roads, churches, fortresses, and ports/bays), as well as the settlements themselves, from all the contemporaneous settlements in each of the four time periods. Basic viewshed analysis determines which parts of a landscape (or specifically, which pixels in a given DEM) can be seen from a specified observer point (Esri 2012c). Cumulative viewshed analysis combines the viewsheds of multiple observer points into a single raster. A cumulative viewshed was produced for each time period using the settlements as observer points and the 5-meter DEM as the elevation raster. The end result was a raster file that enumerates how many settlements could "see" each 5-meter grid cell on the landscape.

A randomly generated viewshed was also produced to test the visibility of each point on the landscape given a random distribution of settlements. The randomly generated viewshed was calculated by averaging 10 cumulative viewsheds, each of which was derived from a random distribution of 150 points in the study area—roughly the same number of settlements occupied in the study region at any given time. Comparing the randomly generated viewshed to a viewshed of known settlements can show whether the given point is more or less visible than expected; in turn, this information may be used to understand the actual settlement distribution and the location of features (roads, churches, etc.) on the landscape.

For both the LOS and cumulative viewshed analyses, it was necessary to define the height at the observer locations as a parameter. For this study, the observer location was defined as the grid cell within each settlement with the maximum elevation value, identified using the "Zonal Statistics" tool. This was necessary because the DEM was made from modern aerial photographs, meaning that it records very precise changes in elevation due to man-made structures like buildings. Using the maximum value prevented other buildings within the settlement from interfering with the visibility analyses by falsely obstructing sight lines. Next, a value of 1.5 m (the height of an average person) was added to the pixel value in order to simulate a person standing on top of this point in the landscape. It should be noted that this extra step made a sizeable difference in the results. For example, without adding the additional 1.5 m, the number of total intervisibility links in the Byzantine period was 144; but with the 1.5 m added in, the number of connections was 995. While the methods described here may not necessarily reflect the ideal location of a pre-modern observer, it does provide a more accurate assessment of visibility relationships between different points on the landscape.

One of the considerations that must be taken into account when running these types of visibility analyses is the potential limitation to visibility beyond that of natural obstructions. Specifically, the atmosphere, the color and pattern of surrounding vegetation, or personal visual ability may all decrease an individual's ability to see a point on the landscape that the GIS analyses show as visible. Based on personal experience in Mani, a person with 20/20 vision can see Messenia, the peninsula west of Mani about 50 km away, only on the very clearest of days. However, distances up to about 35 km can be seen almost every day, except in the most severe weather. Since all of the settlements in the study region are within a distance of 35 km, it was not necessary to limit the line-of-sight results to account for a potential drop-off in visibility. However, the results do assume that the observers have perfect vision and that the vegetation was not so tall as to obscure the sight lines.

4.4.5 – Statistical Analyses

Once the data had been gathered from each of these tests, the final step was to use statistical tests to determine whether any significant changes had taken place over time. The statistical tests used to assess the results of the viewshed analyses were the Kruskall-Wallis H test, the Mann-Whitney U test, the Friedman test, and the Wilcoxon Signed-Rank test (Table IX). All four are nonparametric tests. The first two are used to compare samples comprised of different individuals. The Kruskall-Wallis H test compares three or more independent samples, and the Mann-Whitney U test compares pairs; thus, the latter is often used as a post-hoc test if the former identifies a significant difference between several groups. For this study, for example, the road features were broken into independent groups (goat paths, paths, and *kalderimia*), and their relative visibility was compared to each other within a single time period. The Friedman test, on the other hand, compares three or more matched samples, and the Wilcoxon signed-rank test compares pairs; again, the latter is often used as a post-hoc test. As an example, the *kalderimia* may be treated as a single sample in which the members stay the same, and their relative visibility can be compared across time periods. In summary, the features are treated as the sample members, and the number of settlements visible from the feature's location are the values that are being compared.

TABLE IX. STATISTICAL TESTS USED IN THIS STUDY

Sample type	Tests 3 or more groups	Tests 2 groups
Independent: members differ; comparison within same time period	Kruskall-Wallis H	Mann-Whitney U
Matched: members are the same; comparison across time periods	Friedman	Wilcoxon Signed-Rank

When conducting the post hoc analysis, a Bonferroni correction was used to deal with the issue of multiple comparisons of data. This method sets the required significance level according the equation p = (required significance level of each test) / (number of comparisons). Thus p = 0.005 if each test has a significance level of 0.05 and 10 comparisons are being made.

4.5 – Chapter Summary

In this chapter, I reviewed the multidisciplinary datasets used to study the medieval and post-medieval settlements in Mani, as well as the methods used to collect and analyze those datasets. I analyzed historical records—including tax registers (*defters*) from the Ottoman Empire and other Venetian and French archival records—to develop a preliminary list of historical settlements and to gather past population data. In many instances, I also used the records to identify ruined settlements. The archaeological datasets included the settlements themselves (structures, locations, and chronological information obtained from architecture and surface ceramics) and the *kalderimia* and paths. Both are regional-scale datasets that can be used to test the interpretive models presented in Chapter 3, specifically by measuring how settlements are distributed and organized, how visible they are, how connected they are to the primary road network, and most importantly, how these variables change over time.

Next, I reviewed the methods used to record the datasets. I conducted extensive field research to verify settlement locations, assess their phases of occupation, and locate less visible features like cisterns. To complement this and provide better coverage of the study region, I also used remotely sensed imagery, including satellite imagery and historical aerial photographs, to identify settlement locations and conduct a remote survey of inaccessible areas. Together, these techniques allowed for the identification of 252 settlements in the study region, spanning the Byzantine through Ottoman II periods. The site catalog is presented in Appendix A. In the final component of the research project, I conducted specific spatial analyses to assess the regional- and community-scale variables discussed in the previous chapter, and these techniques are discussed in detail in the final section of this chapter.

5 – REGIONAL-SCALE VARIABLES

The hamlets of the Mani were scattered across the mountains like scores of hornets' nests permanently at odds with each other, a discord which, as we have seen, only the Turks could resolve … (Fermor [1958] 2004:48)

In this chapter, I present the results of the regional-scale analyses conducted to assess the spatial distribution and interconnection between the settlements in Mani. In most cases, analyses were conducted four times—once for the Byzantine-period settlements, and again for the Ottoman I, Venetian, and Ottoman II periods—to allow for a diachronic comparison of each spatial variable. For more detail about the methods used, see Chapter 4.

The results are grouped according to the variables discussed in Chapter 3: settlement location, settlement visibility, and distribution of route networks. These variables were chosen as the best means of assessing settlement patterns and the relationships between settlement location, visibility, and interconnectivity via the route network. The ultimate goal is to use these results to understand the effects of imperial integration on the everyday lives of the residents of Mani, specifically in terms of where they chose to live on the landscape. For further interpretation and discussion of the results, see Chapter 7.

5.1 – Settlement Location

Three aspects of settlement location were assessed. Elevation and nearness to ports both have to do with the location of settlements on the landscape. Elevation has implications for visibility and defense, while bays would have been essential points of access for Maniates to leave the peninsula, as well as for outsiders to reach the settlements of Mani. The third aspect—the degree of dispersion or clustering in the settlement pattern—has implications for security, land management, population, and social hierarchy.

5.1.1 – Elevation

I assessed settlement elevation through three statistical tests (for elevation data, see settlement catalog in Appendix A). The first test was to observe whether average elevations changed over time. The second was to look more closely within each period to determine whether people abandoned some places to live in others with a significantly different elevation. The third and final was to test the "height-zonation hypothesis"—the idea that people retreated to the safety of higher elevations during periods of conflict or warfare.

For the first scenario, a Kruskal-Wallis H test was used to compare the mean ranks of settlement elevations between the four time periods. This test is used to compare independent samples with a quantitative variable and a non-parametric distribution. The null hypothesis was that there were no significant differences in settlement elevation between periods, either when considering all sites, or when limiting the analysis to permanent villages (excluding monasteries and seasonal pastoral sites). The test showed that there was no difference between the time periods, whether considering all sites ($\chi^2(3) = 5.775$, $p = 0.123$) or only permanent villages ($\chi^2(3) = 4.977$, $p = 0.174$). The null hypothesis could not be not rejected.

For the second scenario, a Kruskall-Wallis H test was used to determine whether people in a given time period had relocated to higher or lower elevations compared to the previous period. The Byzantine period was necessarily excluded because the prior settlement period was unknown. The null hypothesis was that there were no significant differences in elevation of abandoned sites, newly founded sites, and/or continuously occupied sites in a given period. In other words, any abandoned sites would be at roughly the same elevation as those that were newly founded or those that people continued to occupy. The analysis was conducted once for all sites, and again for only permanent villages.

For the Ottoman I period, the test showed that there were no significant differences between abandoned sites, newly founded sites, or continuously occupied sites, either when considering all sites ($\chi^2(2) = 0.156$, $p = 0.925$) or only permanent villages ($\chi^2(2) = 3.099$, $p = 0.212$).

For the Venetian period, the test showed that there was no significant difference when analyzing only permanent villages: $\chi^2(2) = 3.939$, $p = 0.140$, but there was a statistically significant difference when considering all sites: $\chi^2(2) = 13.978$, $p = 0.001$. A Mann–Whitney U test was used to conduct post hoc analysis and locate the significant differences, based on a Bonferroni correction of $p < 0.017$. The test revealed one significant relationship: the elevation of continuously occupied sites was significantly higher than that of abandoned sites (Table X). Only three settlements were newly founded in the Venetian period, and so they did not constitute a large enough sample size to give any meaningful results when compared with the other categories. This test showed that settlements abandoned in the Venetian period tended to be low-lying, while those that remained occupied were at higher elevations. In other words, people seem to have been abandoning settlements in low-lying areas nearer the coast.

TABLE X. RESULTS OF THE MANN–WHITNEY U TEST COMPARING THE ELEVATION OF CONTINUOUSLY OCCUPIED AND ABANDONED SETTLEMENTS IN THE VENETIAN PERIOD

Ranks

	Category	N	Mean Rank	Sum of Ranks
Elev.	Occupied	98	90.65	8884.00
	Abandoned	61	62.89	3836.00
	Total	159		

Test Statistics[a]

	Elevation
Mann-Whitney U	1945.000
Wilcoxon W	3836.000
Z	-3.698
Asymp. Sig. (2-tailed)	.000

[a] Grouping Variable: Category

For the Ottoman II period, the test showed that there was a statistically significant difference between abandoned sites, newly founded sites, and continuously occupied sites. The test was significant for all sites ($\chi^2(2) = 36.096$, $p = 0.000$) as well as for permanent villages ($\chi^2(2) = 21.817$, $p = 0.000$). A Mann–Whitney U test was used to conduct post hoc analysis and locate the significant differences, based on a Bonferroni correction of $p < 0.017$. For both datasets (all sites and permanent villages), the test revealed one significant relationship: the elevation of continuously occupied sites was significantly higher than that of newly founded sites (Tables XI and XII). In other words, this test showed that settlements newly founded in the Ottoman II period tended to be low-lying, while those that remained occupied were at higher elevations. Whereas in the previous period people had abandoned low-lying villages, now they were actively re-occupying or founding new settlements at significantly lower elevations.

TABLE XI. RESULTS OF THE MANN–WHITNEY U TEST COMPARING THE ELEVATION OF CONTINUOUSLY OCCUPIED AND NEWLY FOUNDED SETTLEMENTS IN THE OTTOMAN II PERIOD, ALL SITES

Ranks

	Category	N	Mean Rank	Sum of Ranks
	Occupied	94	90.07	8467.00
Elev.	New	54	47.39	2559.00
	Total	148		

Test Statistics[a]

	Elevation
Mann-Whitney U	1074.000
Wilcoxon W	2559.000
Z	-5.831
Asymp. Sig. (2-tailed)	.000

[a] Grouping Variable: Category

TABLE XII. RESULTS OF THE MANN–WHITNEY U TEST COMPARING THE ELEVATION OF CONTINUOUSLY OCCUPIED AND NEWLY FOUNDED SETTLEMENTS IN THE OTTOMAN II PERIOD, PERMANENT VILLAGES ONLY

Ranks

	Category	N	Mean Rank	Sum of Ranks
Elev.	Occupied	62	69.16	4288.00
	New	50	40.80	2040.00
	Total	112		

Test Statistics[a]

	Elevation
Mann-Whitney U	765.000
Wilcoxon W	2040.000
Z	-4.595
Asymp. Sig. (2-tailed)	.000

[a] Grouping Variable: Category

For the third and final scenario, I used a chi-square goodness-of-fit analysis to test the idea that people moved to higher elevations during periods of conflict or warfare. This test compares a set of observed values to a set of expected values and determines whether the difference between the two is significant. The test was based on an experiment conducted by Frangakis and Wagstaff (1987), in which census data from the years 1700 and 1829 were used to assess the "height-zonation hypothesis" in the Morea. The authors compared the number of permanent settlements within 200-meter height zones to the number of expected settlements based on the percentage of land that the height zone represented. If, for example, the height zone represented 20% of the land area, they expected to find that 20% of the settlements were located in that height zone. Frangakis and Wagstaff (1987:184) determined the difference between the observed and expected values was significant, in part because there were more settlements within the 200–400 m zone and fewer in the upper elevations in the province of Lakonia. They also noted a "downward movement of people" that had begun sometime during the Ottoman II period (Frangakis and Wagstaff 1987:188), as there were more "new" settlements in the 0–100 m zone than expected. The authors concluded that the significant relationships they identified must have been due to some other geographical factors, and that in the Morea as a whole, the number of settlements within the 0–100 m height zone aligned with the expected figures and that "no *substantial* retreat of settlements seems probable" (Frangakis and Wagstaff 1987:188).

My goal was to use the much more refined data from this study—including more accurate settlement locations and dates and more precise elevation values—to test the same hypothesis. However, I made some important modifications to the experiment to give a more reliable calculation of the actual inhabitable landscape. These modifications allowed me to exclude all parts of the landscape that would not have reasonably supported permanent villages before calculating the area of each zone. In effect, this increased the weight of the critical 200–400 m zone, where in Lakonia at least, Frangakis and Wagstaff noted a higher-than-expected number of settlements. The first modification was to use 100–m elevation zones to increase the resolution of the experiment (the authors used 200–m zones), but grouping together the higher zones in order to provide the minimum expected values for the chi-square test (see Table XIII). Second, I also excluded all land with a slope of over 55% grade. Based on the collected settlement data, there are almost no residential structures built on slopes above this value, although residents did occasionally build on extreme slopes up to this value. Third, I excluded the low-lying, fertile area in the northeast corner of the study region. I found almost no evidence for occupation in this area prior to the Ottoman II period, suggesting that either evidence of those earlier settlements has not been preserved, or that it was a real lacuna that must be explained by some other means. I excluded the area from this experiment so that it would not overly weight the lowest height zone (0–100 m), where Frangakis and Wagstaff noted fewer settlements than expected.

TABLE XIII. PERCENTAGE OF INHABITABLE AREA (EXCLUDING LOW-LYING NORTHEAST AREA) REPRESENTED BY EACH HEIGHT ZONE

Height Zone	Percentage of Inhabitable Area	Percentage of Inhabitable Area (excluding zones above 600 m)
0–100	15.39	17.23
100–200	27.64	30.95
200–300	21.34	23.89
300–400	12.58	14.08
400–600	12.36	13.84
600 +	10.69	—

A chi-square goodness-of-fit analysis was conducted for each time period, comparing the observed number of permanent settlements within each height zone with the expected number of settlements based on the zone's area (see Table XIII). The distribution of permanent villages across the height zones was significant for each time period (Tables XIV–XVII). In each case, the number of permanent settlements above 600 m is far lower than would be expected based on the area of land this height zone represents. While there are a number of dispersed settlement areas in this mountain zone, they are seasonal installations organized not around community, but around the activity of pasturing animals. There are also fewer settlements below 100 m, and more between 200–400 m. This analysis confirms the patterns first identified by Frangakis and Wagstaff.

TABLE XIV. RESULTS OF THE CHI-SQUARE GOODNESS-OF-FIT TEST COMPARING OBSERVED AND EXPECTED NUMBERS OF PERMANENT SETTLEMENTS ACROSS ALL HEIGHT ZONES IN THE BYZANTINE PERIOD

Height Zone

	Observed N	Expected N	Residual
0–100	8	19.7	-11.7
100–200	44	35.3	8.7
200–300	37	27.3	9.7
300–400	23	16.1	6.9
400–600	15	15.9	-.9
600 +	1	13.7	-12.7
Total	128		

Test Statistics

	Height Zone
Chi-Square	27.309[a]
df	5
Asymp. Sig.	.000

[a] 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 13.7.

TABLE XV. RESULTS OF THE CHI-SQUARE GOODNESS-OF-FIT TEST COMPARING OBSERVED AND EXPECTED NUMBERS OF PERMANENT SETTLEMENTS ACROSS ALL HEIGHT ZONES IN THE OTTOMAN I PERIOD

Height Zone

	Observed N	Expected N	Residual
0–100	11	19.6	-8.6
100–200	47	35.1	11.9
200–300	33	27.1	5.9
300–400	20	16.0	4.0
400–600	15	15.7	-.7
600 +	1	13.6	-12.6
Total	127		

Test Statistics

	Height Zone
Chi-Square	21.823[a]
df	5
Asymp. Sig.	.001

[a] 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 13.6.

TABLE XVI. RESULTS OF THE CHI-SQUARE GOODNESS-OF-FIT TEST COMPARING OBSERVED AND EXPECTED NUMBERS OF PERMANENT SETTLEMENTS ACROSS ALL HEIGHT ZONES IN THE VENETIAN PERIOD

Height Zone

	Observed N	Expected N	Residual
0–100	4	10.6	-6.6
100–200	22	19.1	2.9
200–300	23	14.7	8.3
300–400	10	8.7	1.3
400–600	10	8.5	1.5
600 +	0	7.4	-7.4
Total	69		

Test Statistics

	Height Zone
Chi-Square	17.057[a]
df	5
Asymp. Sig.	.004

[a] 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 7.4.

TABLE XVII. RESULTS OF THE CHI-SQUARE GOODNESS-OF-FIT TEST COMPARING OBSERVED AND EXPECTED NUMBERS OF PERMANENT SETTLEMENTS ACROSS ALL HEIGHT ZONES IN THE OTTOMAN II PERIOD

Height Zone

	Observed N	Expected N	Residual
0–100	10	15.5	-5.5
100–200	38	27.9	10.1
200–300	28	21.6	6.4
300–400	12	12.7	-.7
400–600	13	12.5	-.5
600 +	0	10.8	-10.8
Total	101		

Test Statistics

	Height Zone
Chi-Square	18.405[a]
df	5
Asymp. Sig.	.003

[a] 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 10.8.

When all settlements are tested, however, the distribution of villages across the height zones is significant only for the Byzantine and Venetian periods (Tables XVIII–XIX). The distribution is not significant for the Ottoman I ($\chi^2(5) = 6.646$, $p = 0.248$) or Ottoman II periods ($\chi^2(5) = 6.086$, $p = 0.298$), in large part because the number of seasonal settlements in the upland zone aligns with the expected values. In both the Byzantine and Venetian cases, there are fewer settlements below 100 m than would be expected. In the Byzantine period, the number of settlements is greater within the 100–400 zone, but nearly at the expected levels in the mountain zone above 600 m. In the Venetian period, however, there are actually more settlements than would be expected in this mountain zone. This particular pattern can be attributed to the fact that these upland settlements may be overrepresented in this period, as there is no way to judge whether some of them fell into disuse during this period of lower overall population.

TABLE XVIII. RESULTS OF THE CHI-SQUARE GOODNESS-OF-FIT TEST COMPARING OBSERVED AND EXPECTED NUMBERS OF ALL SETTLEMENTS ACROSS ALL HEIGHT ZONES IN THE BYZANTINE PERIOD

Height Zone

	Observed N	Expected N	Residual
0–100	9	23.3	-14.3
100–200	47	41.7	5.3
200–300	38	32.2	5.8
300–400	23	19.0	4.0
400–600	18	18.7	-.7
600 +	16	16.2	-.2
Total	151		

Test Statistics

	Height Zone
Chi-Square	11.336[a]
df	5
Asymp. Sig.	.045

[a] 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 16.2.

TABLE XIX. RESULTS OF THE CHI-SQUARE GOODNESS-OF-FIT TEST COMPARING OBSERVED AND EXPECTED NUMBERS OF ALL SETTLEMENTS ACROSS ALL HEIGHT ZONES IN THE VENETIAN PERIOD

Height Zone

	Observed N	Expected N	Residual
0–100	6	15.4	-9.4
100–200	25	27.6	-2.6
200–300	25	21.3	3.7
300–400	10	12.6	-2.6
400–600	16	12.4	3.6
600 +	18	10.7	7.3
Total	100		

Test Statistics

	Height Zone
Chi-Square	13.187[a]
df	5
Asymp. Sig.	.022

[a] 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 10.7.

Finally, I reran the chi-square test on permanent settlements after removing all land above 600 m and recalculating the percentages for the lower zones (see Table XIII). This allowed me to determine whether the distribution of permanent settlements would still be significant even if the underrepresented highlands were excluded, as the Maniates used this area for pastoral activity rather than permanent settlement—a fact owing more to the geographical characteristics of the peninsula than to any social or political phenomena. The results of the chi-square goodness-of-fit test show that the distribution of permanent villages is significant only for the Byzantine period when excluding land above 600 m in elevation (Table XX); the distribution is not significant for the Ottoman I ($\chi^2(4) = 7.755$, $p = 0.101$), Venetian ($\chi^2(4) = 7.834$, $p = 0.098$), or Ottoman II periods ($\chi^2(4) = 5.591$, $p = 0.232$).

TABLE XX. RESULTS OF THE CHI-SQUARE GOODNESS-OF-FIT TEST COMPARING OBSERVED AND EXPECTED NUMBERS OF PERMANENT SETTLEMENTS ACROSS HEIGHT ZONES BELOW 600 M IN THE BYZANTINE PERIOD

Height Zone

	Observed N	Expected N	Residual
0–100	8	21.8	-13.8
100–200	44	39.4	4.6
200–300	37	30.4	6.6
300–400	23	17.9	5.1
400–600	15	17.5	-2.5
Total	127		

Test Statistics

	Height Zone
Chi-Square	12.587[a]
df	4
Asymp. Sig.	.013

[a] 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 17.5.

In other words, when considering only the area where Maniates actually built permanent settlements, the distribution of settlements across height zones can be explained by random chance in most periods. In the Byzantine period, however, there were significantly fewer settlements below 100 m and more between 200–400 m.

In summary, settlement elevation did not vary greatly over the 800 years in question, though a few subtle patterns could be detected. In the Byzantine period, settlement distribution across height zones was non-random, with fewer below the 100 m line, and more between the 200–400 m lines. Centuries later, in the Venetian period, settlements at lower elevations were abandoned, while those at higher elevations remained occupied. In the Ottoman II period, people founded or re-occupied settlements at lower elevations. In all four time periods, there were fewer permanent settlements in the mountain zone above 600 m than would be expected based on the area of land this height zone represents.

5.1.2 – Nearness to Bays

To assess the distance between each settlement and the nearest bay (i.e. where a small boat could be docked), least-cost path (LCP) analysis was conducted to determine (a) which bay was the closest, and (b) the distance along each LCP. The results can also be used to suggest groupings or clusters of settlements that all shared a nearest bay (Figure 41; for data, see Table LVI, Appendix B).

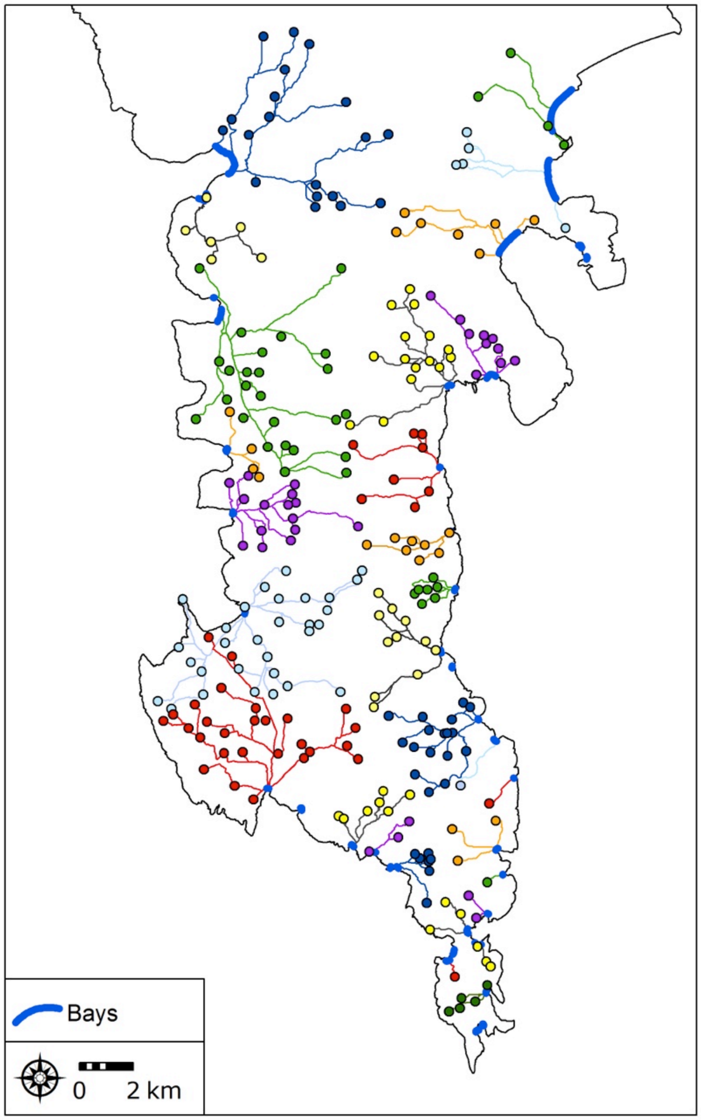


Figure 41. Least-cost paths from each settlement to the nearest bay. Colors indicate groups of settlements that share the same nearest bay.

A Kruskal-Wallis H test was used to compare the mean ranks of the LCP distances between the four time periods. The null hypothesis was that there were no significant differences in LCP distances between periods, either when considering all sites or when limiting the analysis to permanent villages. The test showed that there was no difference between the time periods when considering all sites ($\chi^2(3) = 5.960$, $p = 0.114$) or permanent villages ($\chi^2(3) = 3.153$, $p = 0.369$), so the null hypothesis could not be not rejected.

When looking at the distribution of distances in histogram and box-plot form (Figures 42 and 43), it is evident that there are no significant changes over time. In each period, the average distance between settlements and the nearest bay was approximately 3 km. In other words, although settlement locations did change over time—some were abandoned and others newly founded—the overall pattern of access to bays did not change significantly. Most people living in Mani throughout the entire period of study would not have had far to walk to reach a bay where they could dock a small boat.

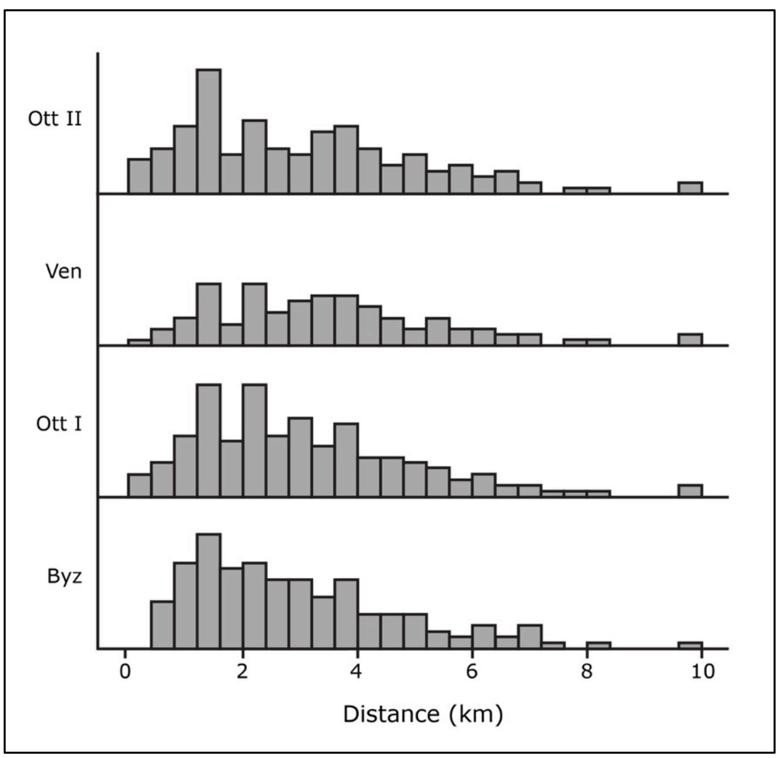


Figure 42. Histogram of the LCP distances between settlements and the nearest bays.

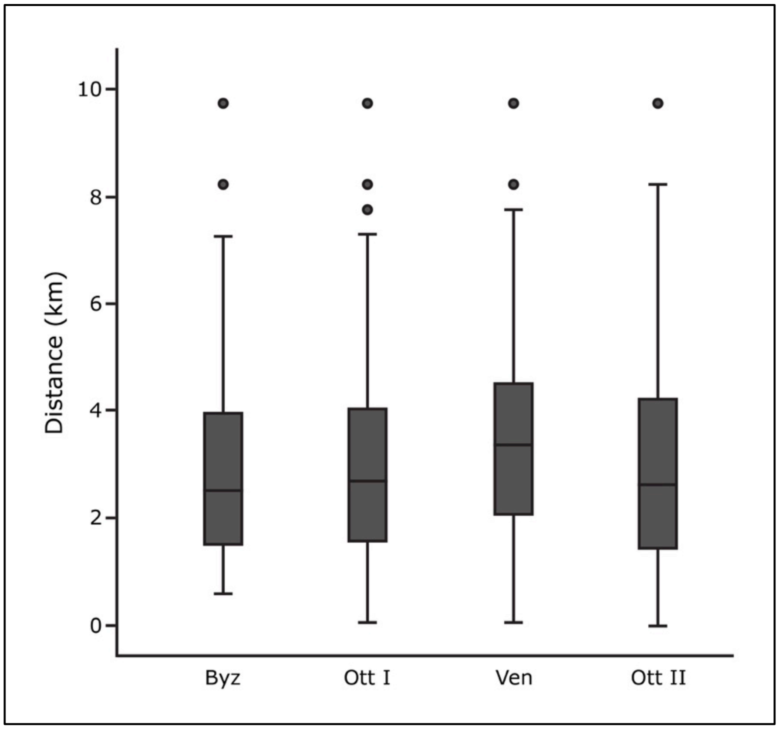


Figure 43. Box plot of the LCP distances between settlements and the nearest bays.

5.1.3 – Clustering and Dispersion

The Ripley's K function was used to test the distribution of settlements within the study area. The test was run once for each time period based on all occupied sites (for results, see Tables LVII–LX, Appendix B). For the Byzantine period, the observed K values were lower than the Lower Confidence Envelope at distances of 200 and 400 m (Figure 44). The observed K values were higher than the Upper Confidence Envelope beginning at 1200 m. These results indicate statistically significant spatial dispersion at distances of 200 and 400 m, and statistically significant clustering at distances of 1200 m and greater. For the Ottoman I period, the observed K values were higher than the Upper Confidence Envelope beginning at 3200 m, meaning that there was statistically significant spatial clustering only at distances of 3200 m and greater (Figure 45). For both the Venetian and Ottoman II periods, the observed K values were within the Confidence Envelope at all tested distances, meaning that the settlements were not significantly clustered or dispersed. As a result, the graphs of the Ripley's K results are not included these two periods.

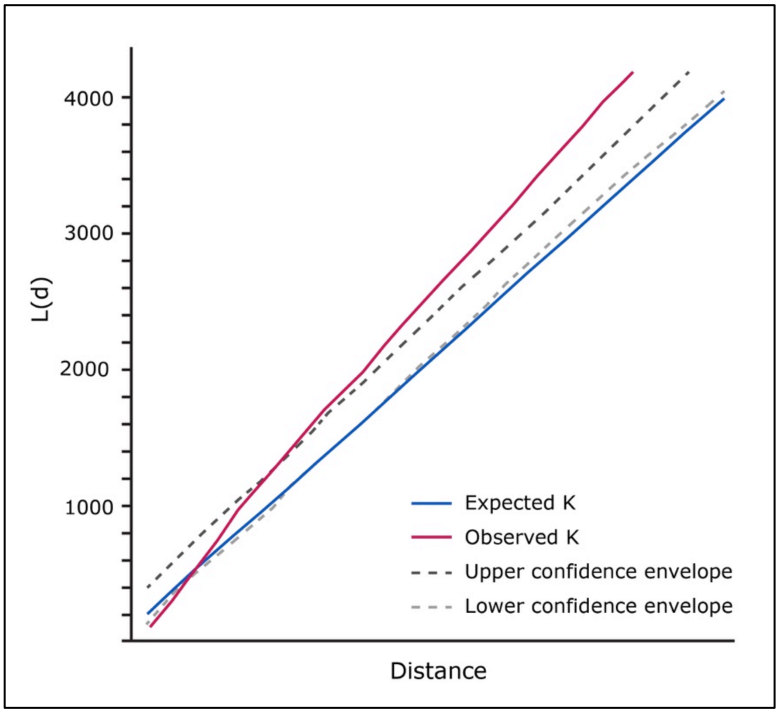


Figure 44. Graph of the Ripley's K results for the Byzantine-period sites.

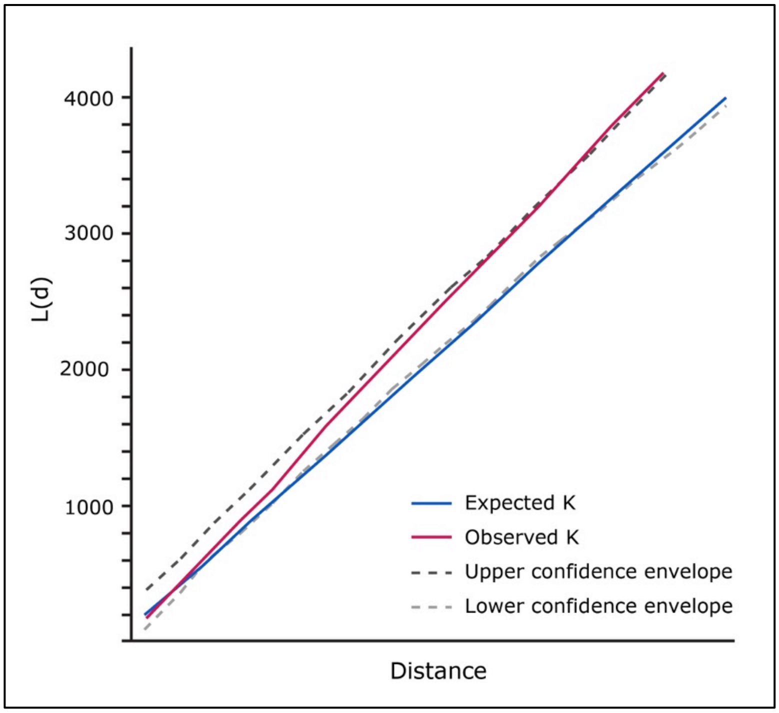


Figure 45. Graph of the Ripley's K results for the Ottoman I-period sites.

5.2 – Settlement Visibility

To assess settlement visibility, two analyses were used: line-of-sight (LOS) and cumulative viewshed. Both tools provide a way to measure the potential for visible communication between settlements and other points on the landscape, including pathways, churches, fortresses, and bays. In some cases, visibility may have defensive implications, but in others, visibility is more culturally significant (e.g. places of cultural importance may be highly visible or, conversely, hidden). The visibility results were approached from two angles: first, using social network analysis to assess and interpret the overall visibility network, and second, using statistical analyses to test the significance of the perceived patterns.

5.2.1 – Social Network Analysis of Line-of-Sight Relationships

The LOS analysis was conducted between the highest points in each settlement, as determined by a 5-m digital elevation model provided by Ktimatologio. In some cases, a point was chosen that lay outside the settlement boundaries, but which would have been used as a lookout position. The results of this analysis show that there was a rich intervisibility network in each period (see Figures 49–60 below).

The LOS results also allowed for a basic exploratory analysis using social network analysis software. Analyses were made of eight LOS graphs altogether: one from each time period including all settlements, and one from each time period including only permanent villages. The potential for intervisibility between each node pair was coded in a binary adjacency matrix and analyzed using UCINET 6 software. Note that because of the size of the matrices, these data are not reported in table form. The goals of the exploratory analysis were to determine the relative ease with which people may have communicated visually throughout the entire network and to locate any particular "hubs," or nodes (i.e. settlements) with an unusually high degree of "power," as measured by the degree, betweenness, and closeness centralities.

The summary table below (Table XXI) reports the cohesion measures for each LOS network overall. The density and average degree values indicate a major shift after the Venetian period, when the density of the network decreased. On average, nodes had fewer visual connections than they did in earlier periods. In the Venetian period, the decrease in average degree can be attributed to the fewer number of sites inhabited at the time (total n = 101), but although this number returned to 148 total settlements in the following period, the average number of connections did not. The average distance and diameter values show that the Venetian period had the "closest" network, both in terms of average distance and diameter, and that the

Byzantine and Ottoman II were the most “spread out.” The number of components and the fragmentation scores indicate that for the Byzantine and Ottoman I periods, there was little difference between the full network and the permanent-villages-only network. For the later periods, however, the permanent networks were much less fragmented overall.

TABLE XXI. COHESION MEASURES FOR THE LOS NETWORKS FROM EACH TIME PERIOD

	Byzantine	Ottoman I	Venetian	Ottoman II
Density	0.086[a] 0.104[b]	0.084 0.106	0.085 0.129	0.065 0.083
Average Degree	13.007 13.481	13.195 13.738	8.495 9.194	9.541 9.461
Average Distance	3.326 3.670	2.935 3.070	2.755 3.026	3.252 3.765
Diameter	9 10	8 9	6 9	7 10
Components	14 12	18 12	15 6	14 7
Fragmentation	0.163 0.189	0.225 0.244	0.276 0.160	0.169 0.102

[a] Top values are for the networks of all settlements.

[b] Bottom values are for the networks of only permanent villages.

Over time, sites gained and lost “power” depending on their position within the network. In terms of an LOS network, a high degree of centrality indicates that the node had many potential communication partners and could have been an important source of information to its local network. A high closeness centrality indicates that a node could be reached more quickly. Finally, a high betweenness centrality indicates that a node was often a key bridge (or “broker”) between other nodes, meaning that a visual message must have passed through it in order to continue on to other parts of the network. Figures 46–48 show the distribution of these centrality scores among the permanent settlements (for full results, see Tables LXI–LXIV, Appendix B).

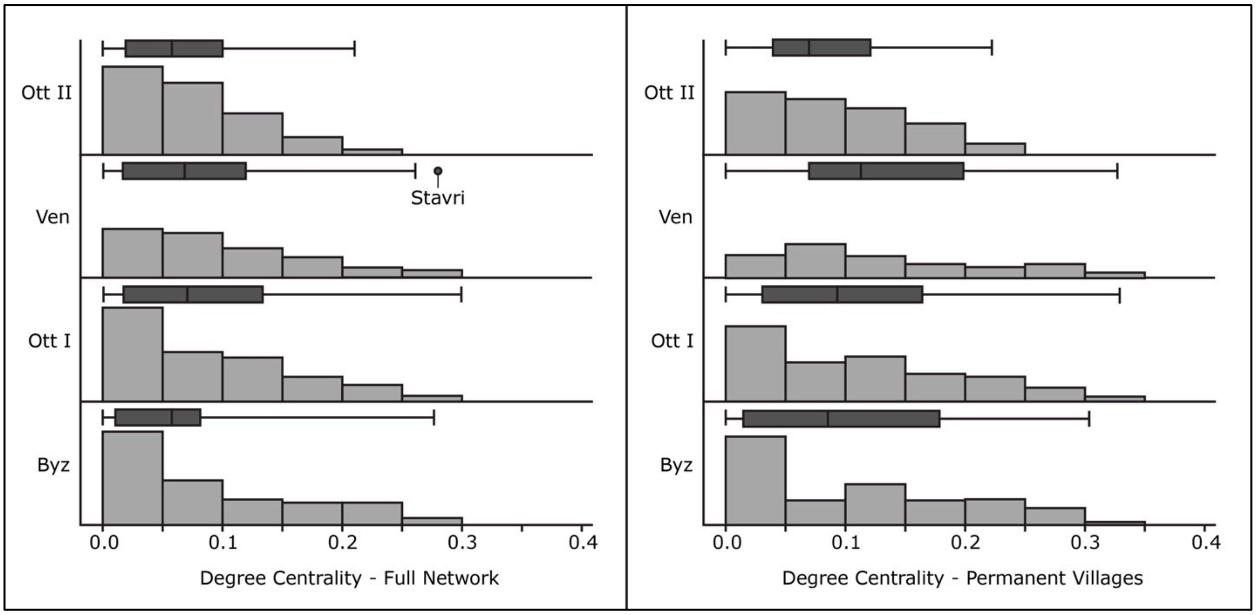


Figure 46. Distribution of degree centrality scores in the LOS networks: full network (left) and permanent villages only (right); highest ranking outlier nodes are labeled.

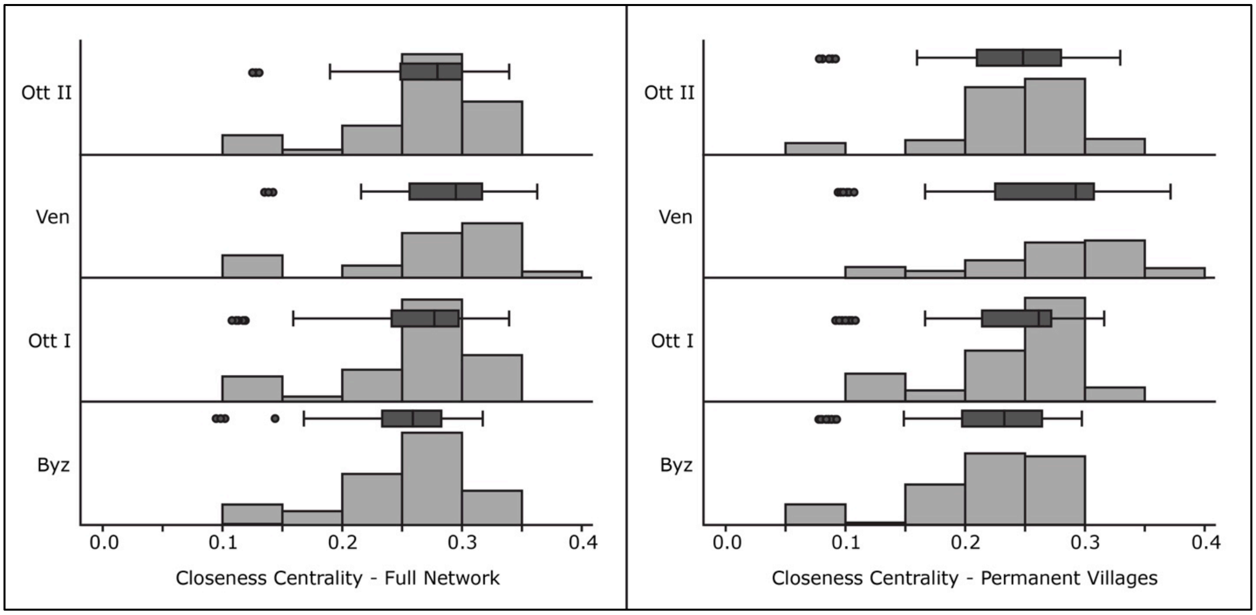


Figure 47. Distribution of closeness centrality scores in the LOS networks: full network (left) and permanent villages only (right).

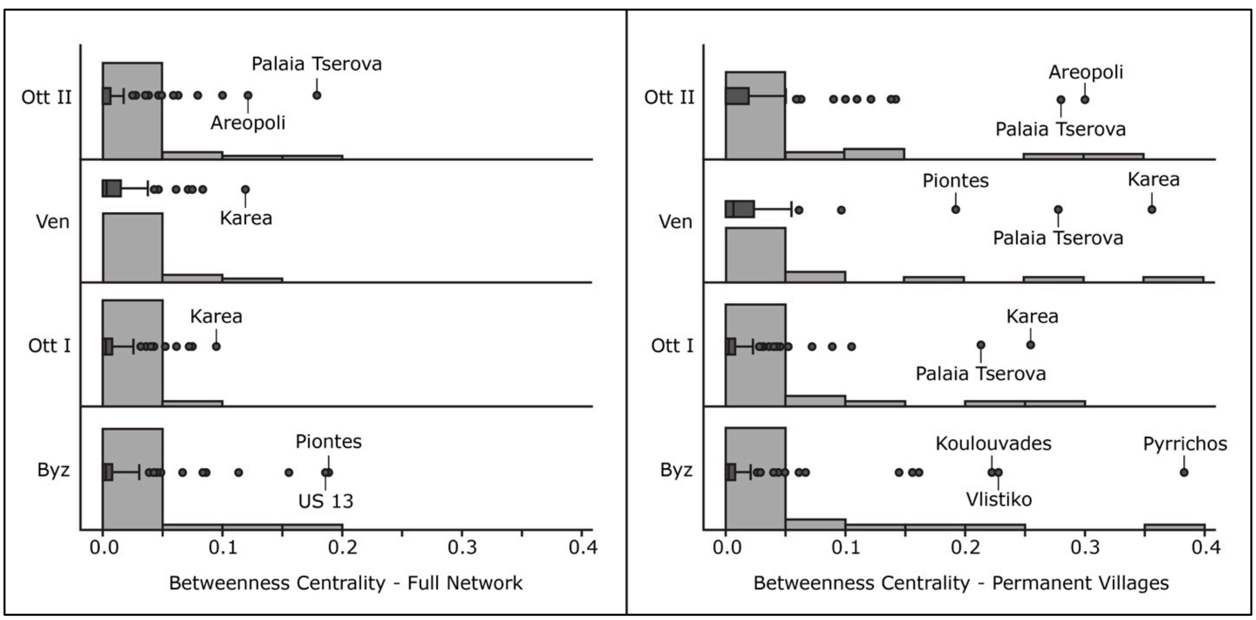


Figure 48. Distribution of betweenness centrality scores in the LOS networks: full network (left) and permanent villages only (right); highest ranking outlier nodes are labeled.

Focusing on the permanent settlements, the distribution of degree centrality shows that most of the settlements in the network had only a few potential communication partners, and only a few settlements had many. The most "powerful" nodes in terms of degree were almost all located on the broad southwestern plain, where visibility is extremely high. The slight decline in the Ottoman II period compared to the earlier periods reflects the fact that this area of the peninsula was less densely inhabited.

The distribution of closeness centrality, likewise, is not terribly surprising. There was a slight shift toward higher closeness scores in the Venetian period, reflecting the fact that the network itself was smaller (i.e. it had fewer nodes), and so a message from any given settlement could reach any other with fewer intermediary steps. The outliers on the lower end of the centrality score histograms are the isolates—those without any connection to the main network.

The betweenness scores were the most dramatically different. The histogram above shows that in each period there were outliers with significantly higher betweenness scores than most other settlements. These outliers with high betweenness centrality scores are summarized in Table XXII.

TABLE XXII. OUTLIER SETTLEMENTS WITH HIGH BETWEENNESS CENTRALITY SCORES (ABOVE 0.100) IN THE LOS NETWORKS

Period	Full network			Permanent villages only		
	Unit ID	Name	Score	Unit ID	Name	Score
Ottoman II	T301	Palaia Tserova	0.181	T020	Areopoli (Tsimova)	0.296
	T020	Areopoli (Tsimova)	0.118	T301	Palaia Tserova	0.277
	T490	US 80	0.102	T079	Kryoneri	0.143
				T342	Kato Karea (Konakia)	0.141
				T035	Dry	0.124
				T028	Charouda	0.118
				T154	Spira	0.106
				T138	Pyrrichos (Kavalos)	0.105
				T029	Chimara	0.103
Venetian	T054	Karea	0.117	T054	Karea	0.354
				T301	Palaia Tserova	0.277
				T013	Piontes	0.193
Ottoman I	T054	Karea	0.094[a]	T054	Karea	0.253
				T301	Palaia Tserova	0.213
				T013	Piontes	0.104
Byzantine	T013	Piontes	0.185	T138	Pyrrichos (Kavalos)	0.383
	T396	US 13	0.182	T414	Vlistiko	0.226
	T456	US 54	0.154	T363	Koulouvades	0.224
	T044	Gonea	0.108	T028	Charouda	0.162
				T013	Piontes	0.157
				T029	Chimara	0.148

[a] This is the highest-ranking node in the Ottoman I-period full network.

Graph theoretic diagrams are also helpful in depicting the distribution of power throughout each network (Figures 49–60). In these diagrams, a Girvan-Newman algorithm was used to identify and color-code cohesive subgroups. This process identifies the connections (i.e. “edges”) with the highest betweenness scores and gradually removes them to create isolated clusters of connected nodes. In other words, these clusters are groups of nodes that are most closely connected to each other in terms of the LOS network. The procedure calculates group membership for any number of groups, and it is left to the researcher to decide which number of groups fits best with the data. In the diagrams that follow, I chose the smallest number of groups that produced the highest best-fit score.

In addition to highlighting the most powerful nodes, the diagrams can also be used to compare the overall shape of each network. For example, when comparing the full Byzantine-period LOS network with the network of permanent villages (Figures 49 and 50), it is immediately obvious that Pyrrichos was a critical “broker” among the permanent villages—it acts as the sole connection between the western (light blue) and eastern (yellow) parts of the peninsula. If seasonal settlements are included in the analysis, the network appears to have been better connected—there were many more options for visual communication between the two halves. In both cases (and, in fact, in all the diagrams), the Girvan-Newman analysis confirms that there is a major division between the western and eastern halves of the peninsula. The northern sector (generally corresponding to nodes in black) is also highlighted as its own subgroup. In other words, the Girvan-Newman subgroups based on LOS connections tend to correspond with known geographical and cultural regional divisions.

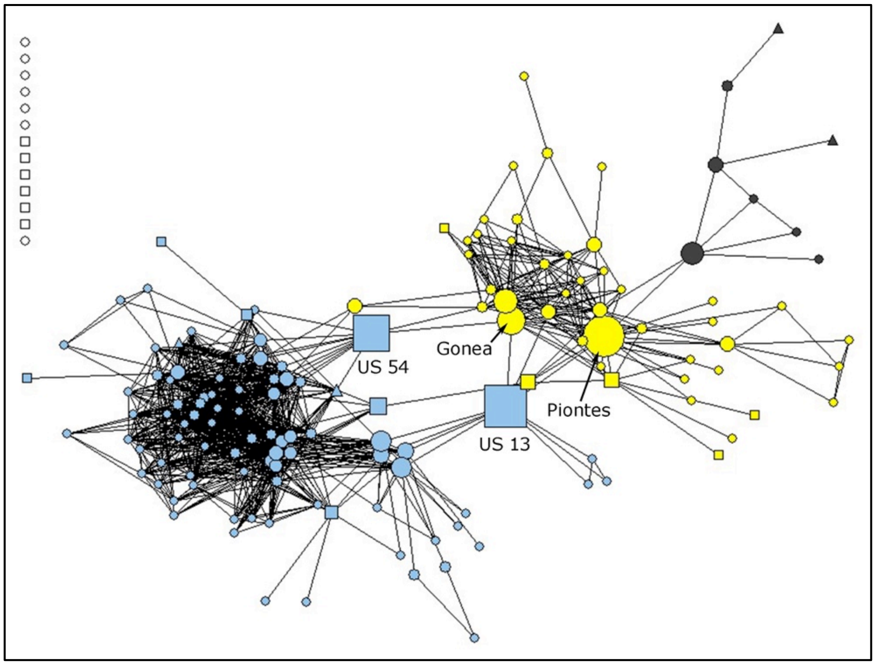


Figure 49. All sites in the Byzantine-period LOS network, with node size reflecting betweenness centrality. Isolates are in white. Circles represent permanent villages, squares seasonal settlements, and triangles monasteries.

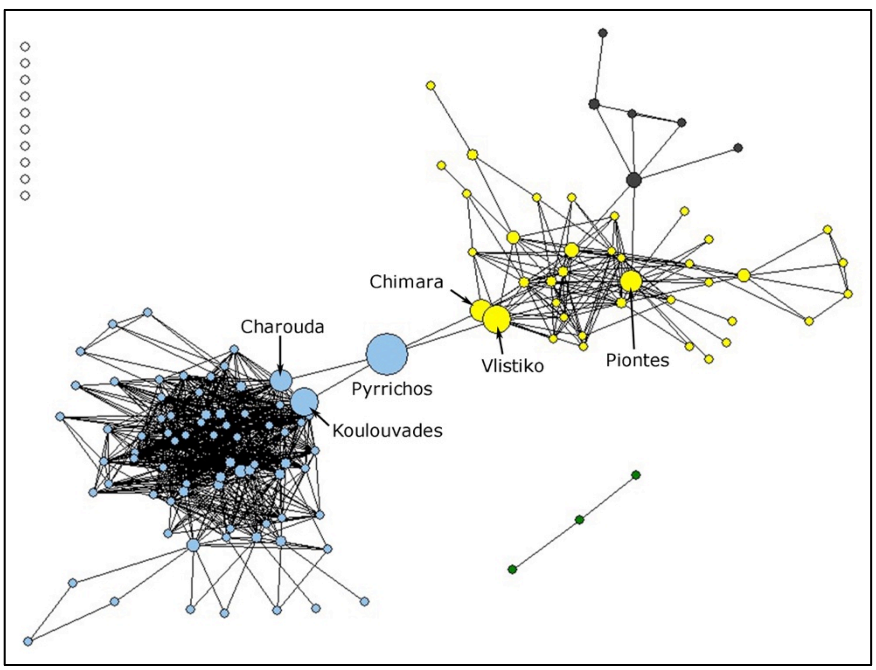


Figure 50. Permanent villages in the Byzantine-period LOS network, with node size reflecting betweenness centrality. Isolates are in white.

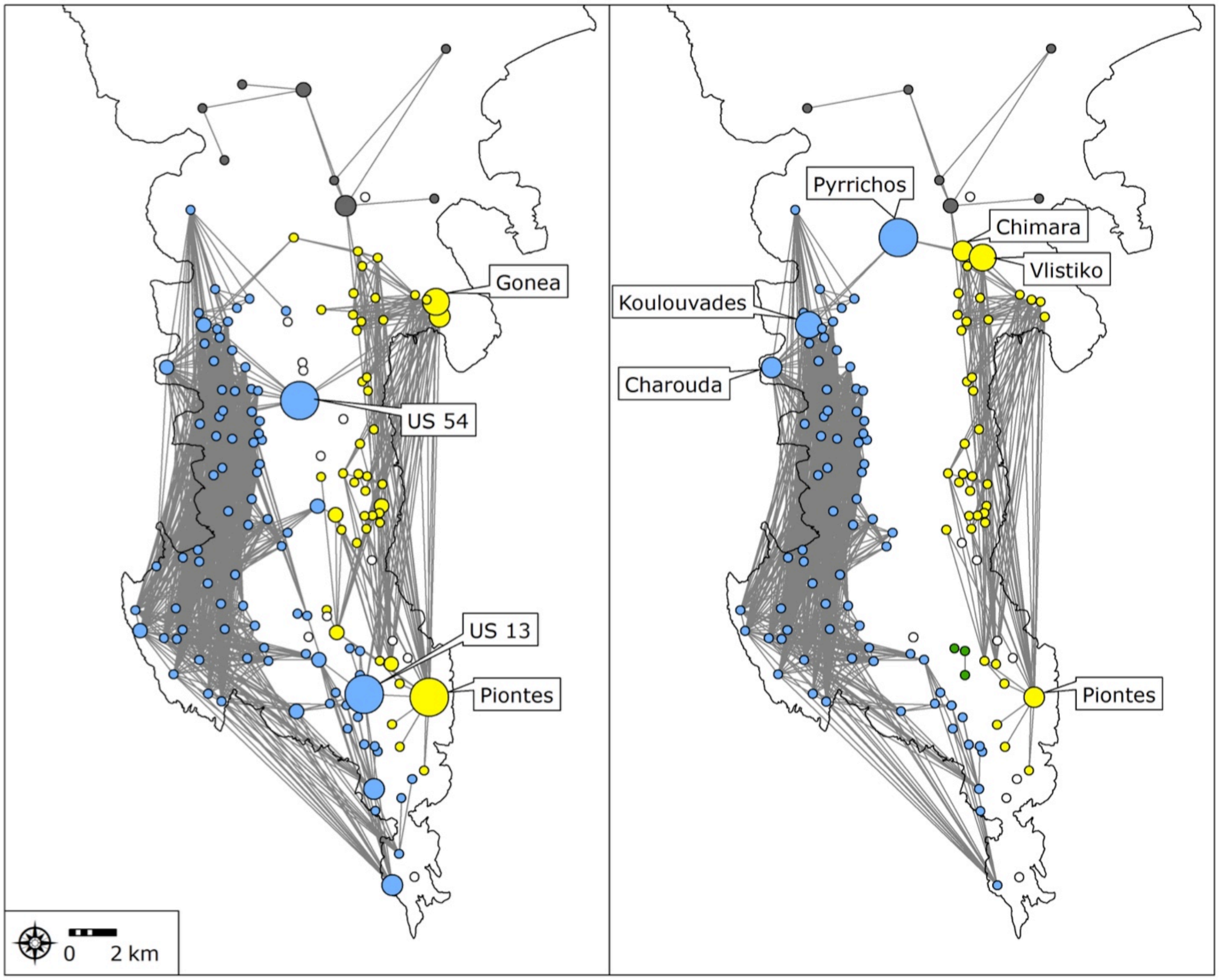


Figure 51. Spatial display of the Girvan-Newman clusters for the Byzantine-period LOS network: (left) full network (GN=3); (right) permanent villages only (GN=4).

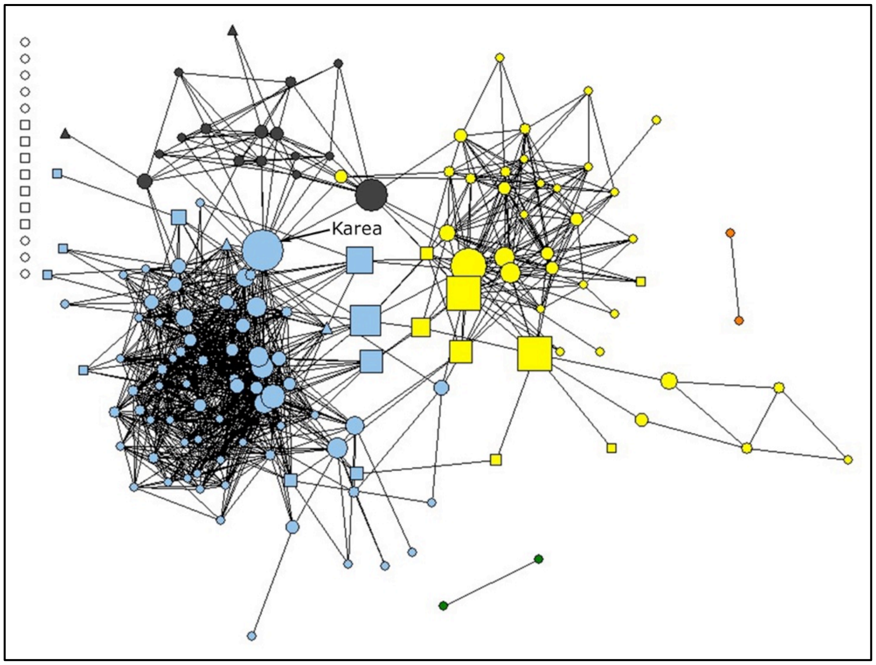


Figure 52. All sites in the Ottoman I-period LOS network, with node size reflecting betweenness centrality. Isolates are in white. Circles represent permanent villages, squares seasonal settlements, and triangles monasteries.

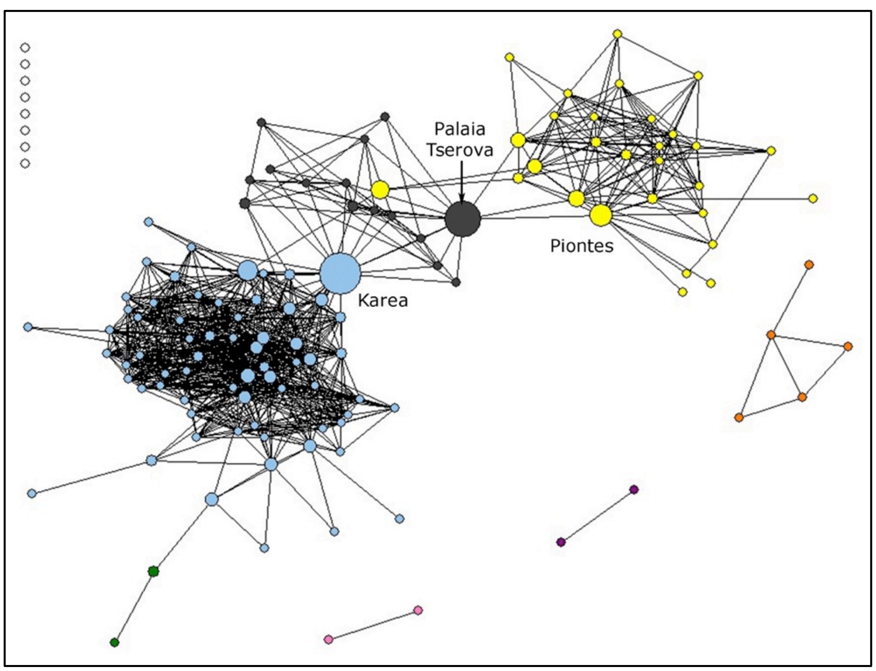


Figure 53. Permanent villages in the Ottoman I-period LOS network, with node size reflecting betweenness centrality. Isolates are in white.

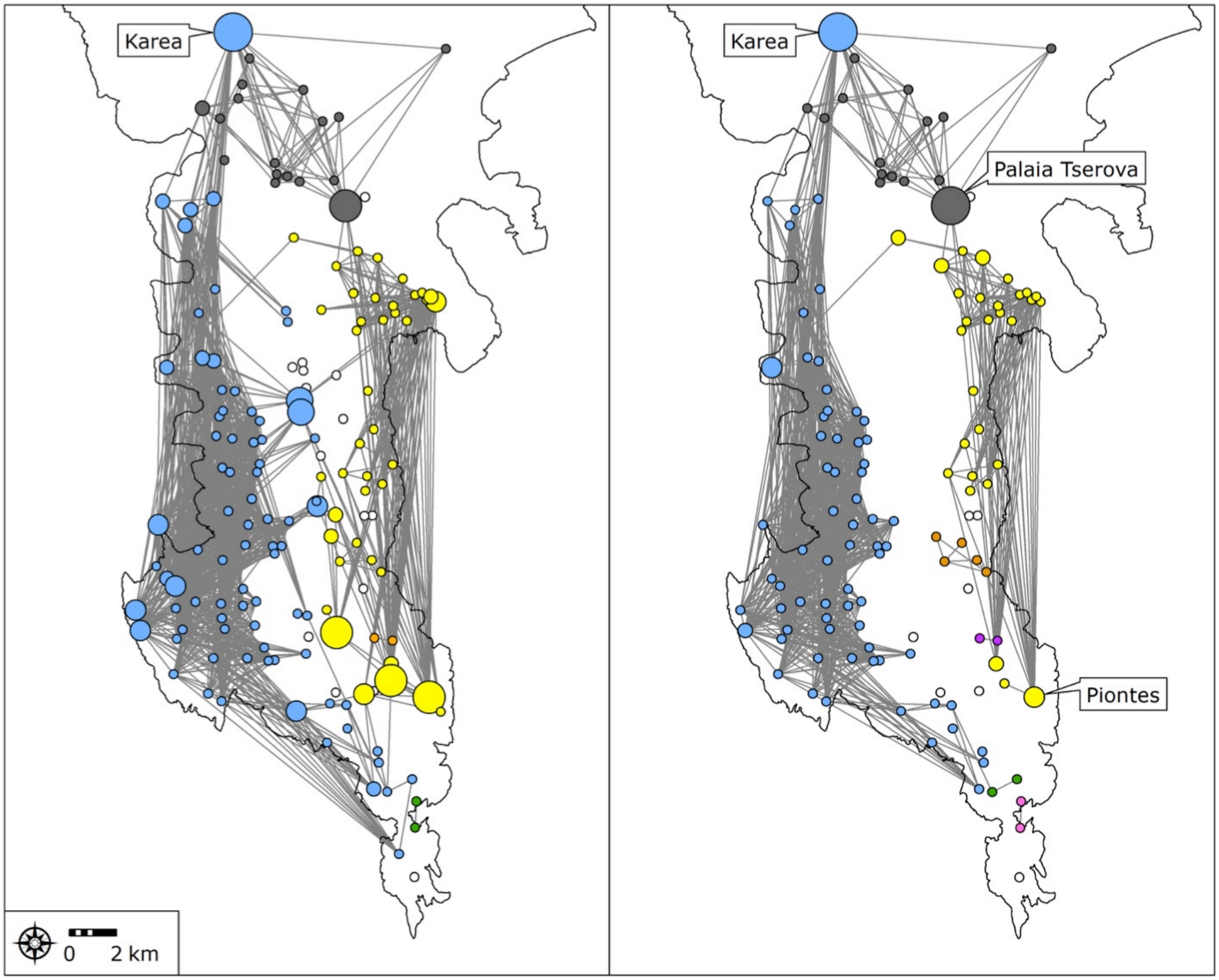


Figure 54. Spatial display of the Girvan-Newman clusters for the Ottoman I-period LOS network: (left) full network (GN=5); (right) permanent villages only (GN=7).

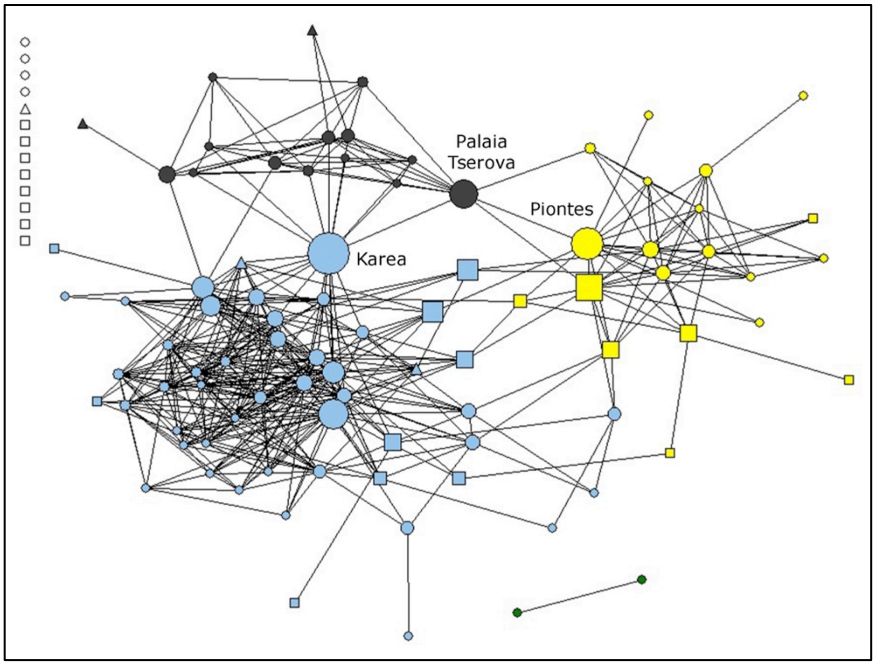


Figure 55. All sites in the Venetian-period LOS network, with node size reflecting betweenness centrality. Isolates are in white. Circles represent permanent villages, squares seasonal settlements, and triangles monasteries.

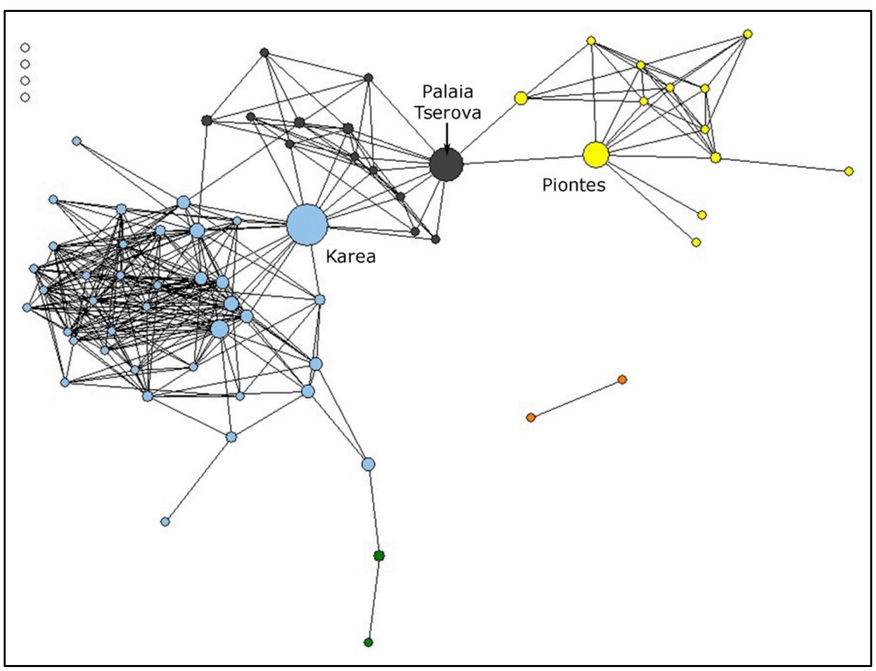


Figure 56. Permanent villages in the Venetian-period LOS network, with node size reflecting betweenness centrality. Isolates are in white.

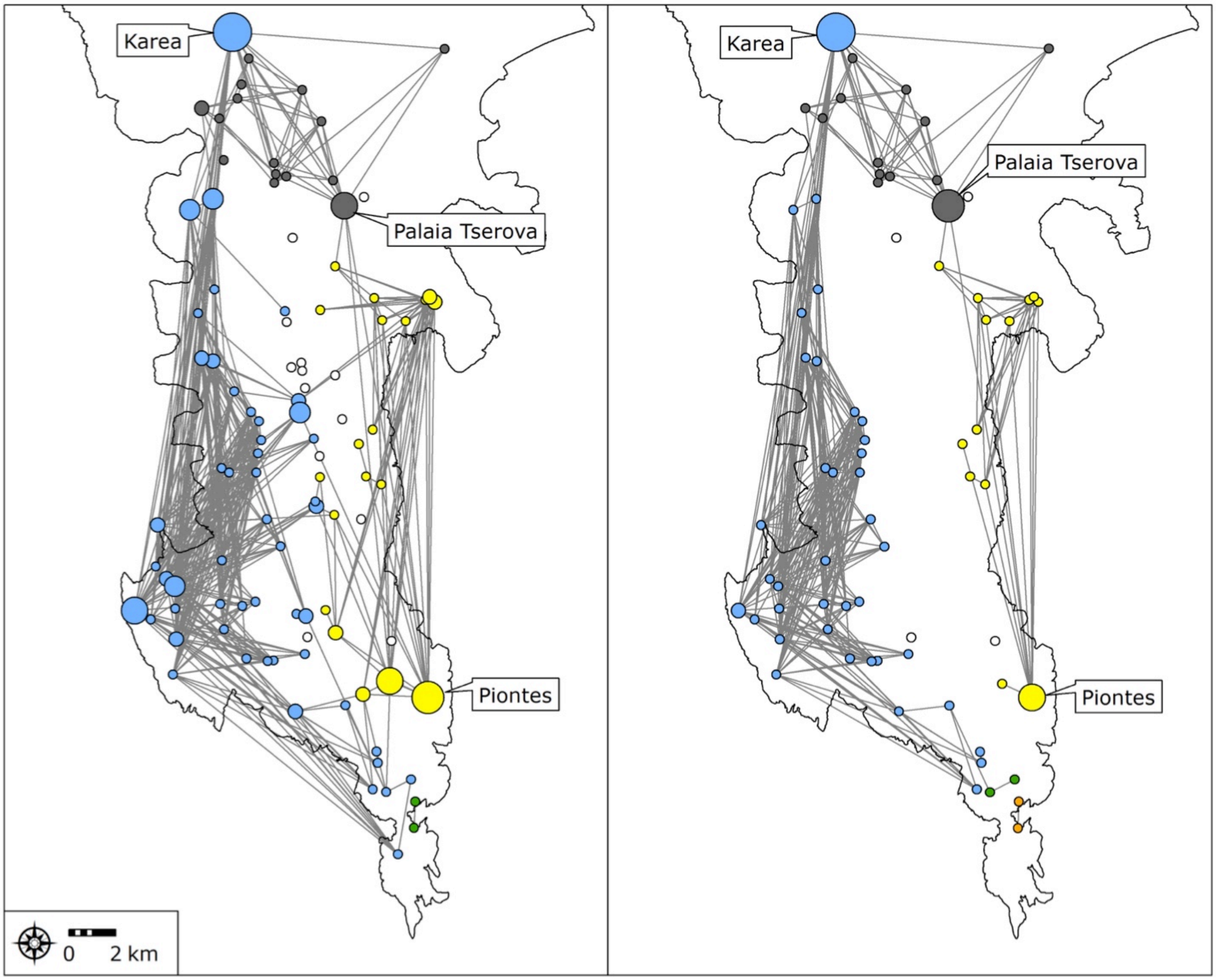


Figure 57. Spatial display of the Girvan-Newman clusters for the Venetian-period LOS network: (left) full network (GN=4); (right) permanent villages only (GN=5).

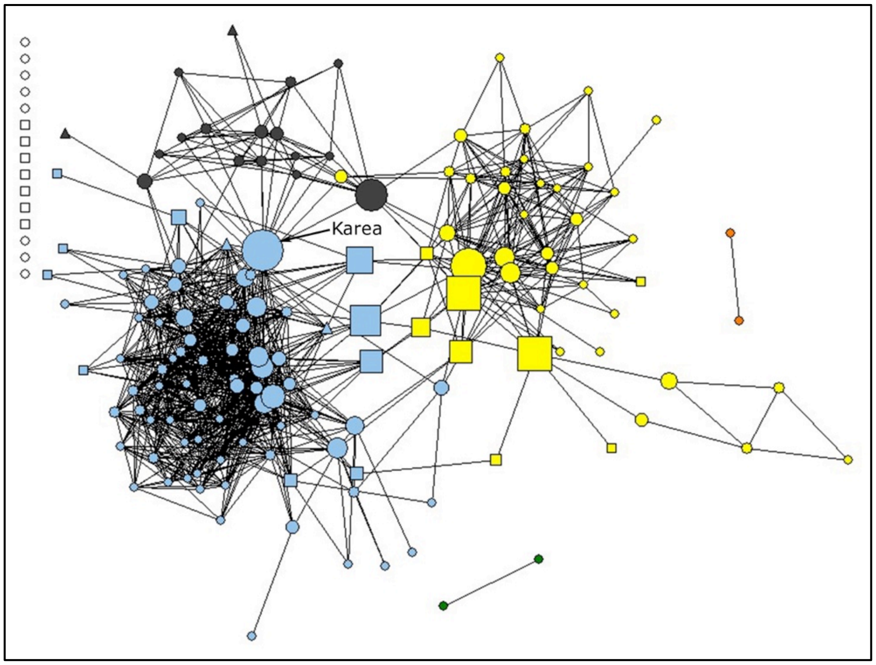


Figure 58. All sites in the Ottoman II-period LOS network, with node size reflecting betweenness centrality. Isolates are in white. Circles represent permanent villages, squares seasonal settlements, and triangles monasteries.

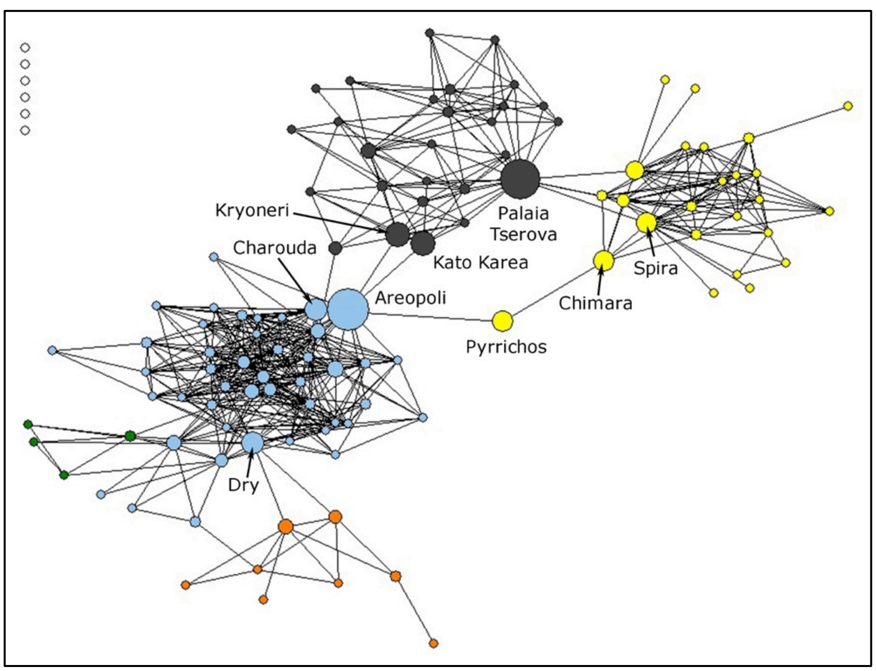


Figure 59. Permanent villages in the Ottoman II-period LOS network, with node size reflecting betweenness centrality. Isolates are in white.

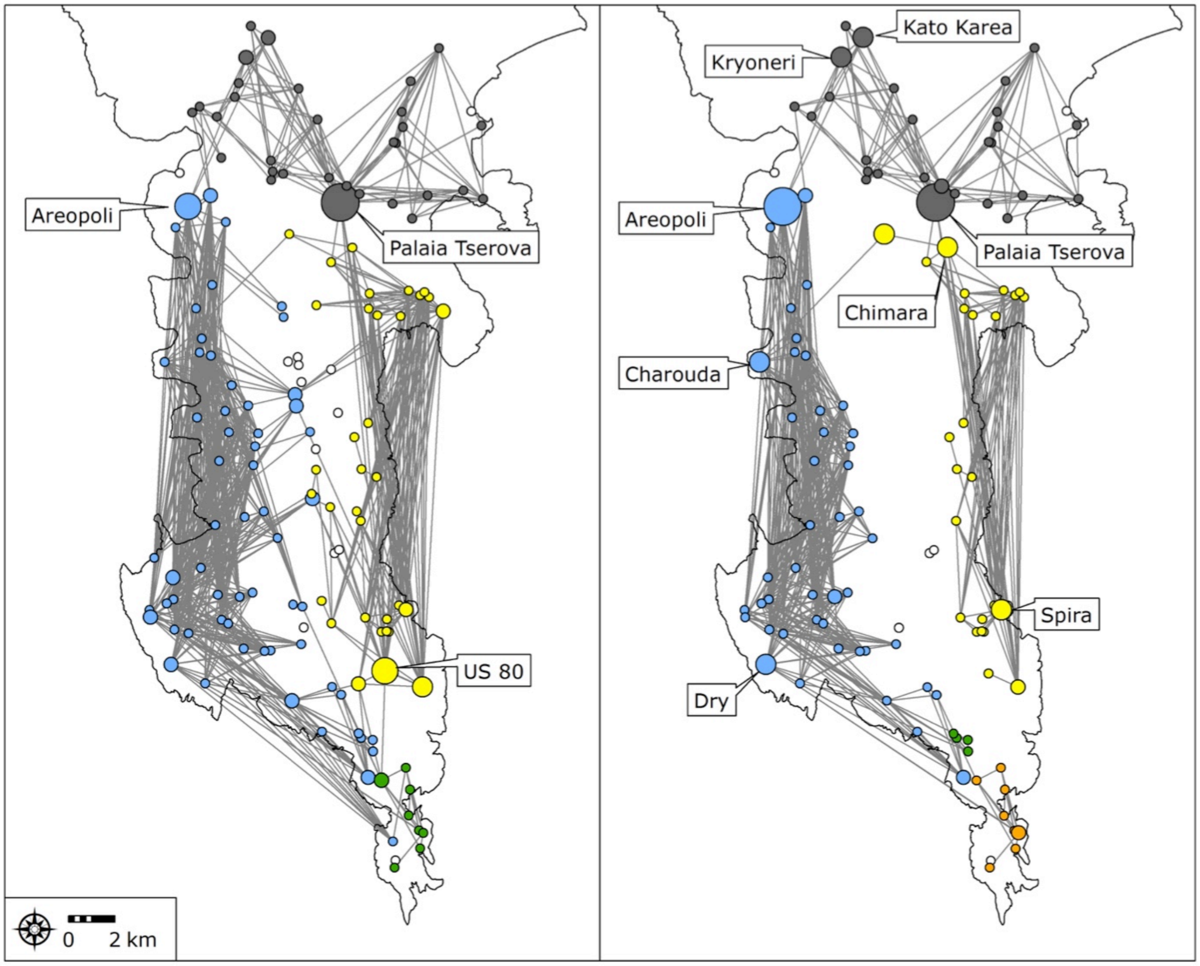


Figure 60. Spatial display of the Girvan-Newman clusters for the Ottoman II-period LOS network: (left) full network (GN=4); (right) permanent villages only (GN=5).

In general, the most "powerful" nodes in the LOS networks in terms of betweenness scores were ones that were located in mountain passes connecting the various sub-regions of the peninsula. Geography seems to have had a large impact in determining the role that each site played in the overall LOS network. Whether or not the settlements were founded (or remained occupied) in specific locations because of their position within these networks is another matter entirely. This interpretation would, of course, suggest causality—not something that SNA is designed to tell us.

As for the four fortresses in the study region, Tigani (T236) received the highest centrality scores. The other three ranked near the middle or even the low end of the scores. Tigani's relative high centrality scores are likely the result of its location in the flat southwestern plain area—all the settlements in this area had a large number of intervisibility connections, so this is no surprise. In short, it seems the fortresses did not play an important role in the regional intervisibility network, nor did they have many intervisibility connections with the settlements around them.

5.2.2 – Cumulative Viewshed Analysis and Visibility of Other Settlements

LOS and cumulative viewshed analyses are both useful for quantifying the visibility of a point on the landscape; however, they accomplish this task in different ways. While LOS analysis identifies which specific settlements are visible *from* a given point within a settlement, cumulative viewsheds can be used to enumerate the relative visibility *of* a settlement to all the others around it. Specifically, a cumulative viewshed analysis determines how many settlements could have "seen" every 5-meter swath of land in the study region (corresponding to a single pixel in the DEM). Thus, any pixel within a settlement could be queried to find out how many other settlements could "see" it at that specific location. Not surprisingly, the figures provided by the cumulative viewshed analysis did not diverge drastically from the LOS analysis, though in some specific cases the values were different (for data, see Tables LXV–LXVIII, Appendix B).

One of the findings of the cumulative viewshed analysis was that there were very few areas of the landscape with only one visible settlement (see Figure 61). There were no totally isolated viewsheds, meaning that all the viewsheds overlapped with at least one other contemporary settlement. There were also very few places on the landscape that were "hidden" from the view of at least a single settlement. These areas were located almost exclusively in river gullies or in the high mountain valleys.

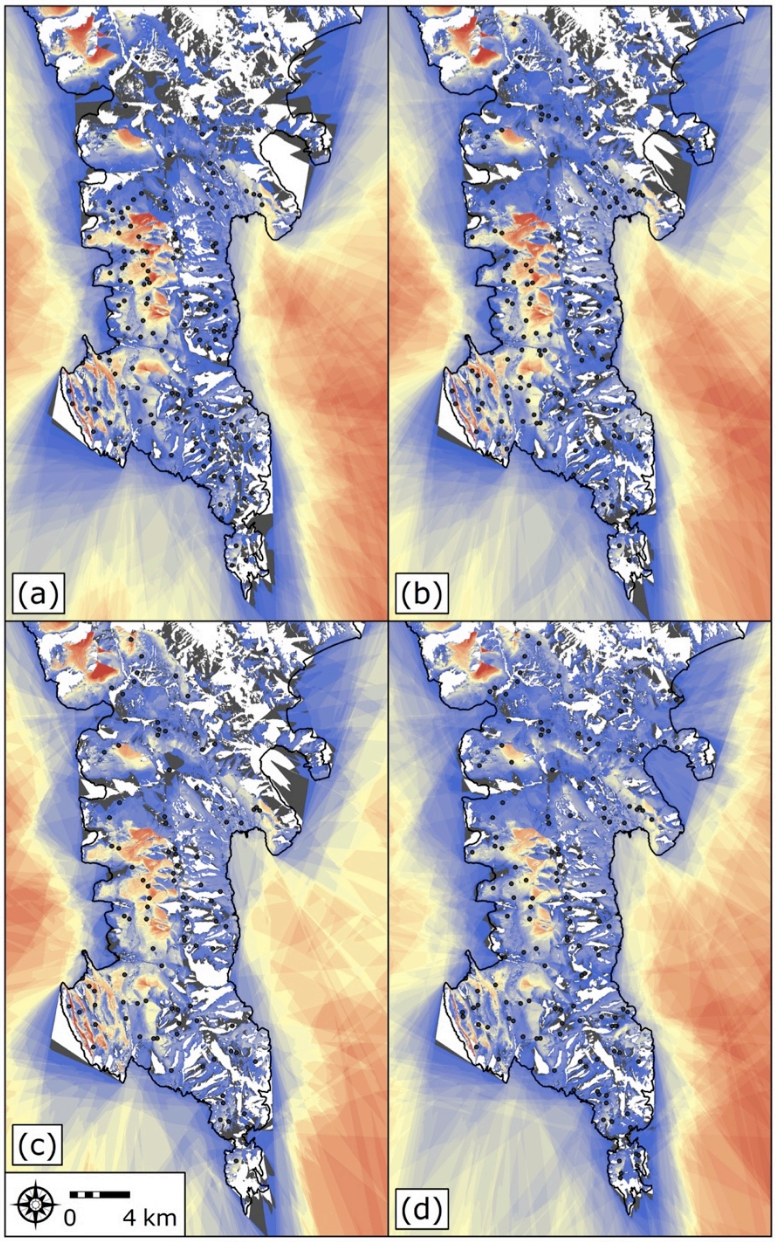


Figure 61. Cumulative viewshed analysis of all settlements: (a) Byzantine, (b) Ottoman I, (c) Venetian, and (d) Ottoman II; white corresponds to areas not visible from any settlement, dark gray to areas visible from only 1 settlement, and increasing visibility is scaled from blue to red.

A Kruskal–Wallis H test was used to determine whether there was a statistically significant difference between the visibility of settlements over time. A test of the raw number of settlements visible to each settlement, derived from each period's cumulative viewshed, showed that there was a statistically significant difference in these values: $\chi^2(2) = 12.778$, $p = 0.005$. A Mann–Whitney U test was used to conduct post hoc analysis and locate the significant differences, based on a Bonferroni correction of $p < 0.008$. There was only one significant relationship: the raw number of visible settlements was higher in the Ottoman I period than in the Venetian period (Table XXIII). There were no significant differences when comparing the normalized values from the cumulative viewshed analysis.

TABLE XXIII. RESULTS OF THE MANN–WHITNEY U TEST COMPARING THE RAW NUMBER OF VISIBLE SETTLEMENTS (VALUES FROM THE CUMULATIVE VIEWSHED) BETWEEN THE OTTOMAN I AND VENETIAN PERIODS

Ranks

	Category	N	Mean Rank	Sum of Ranks
Raw Value	Ottoman I	159	142.86	22714.50
	Venetian	101	111.04	11215.50
	Total	260		

Test Statistics[a]

	Raw Value
Mann-Whitney U	6064.500
Wilcoxon W	11215.500
Z	-3.329
Asymp. Sig. (2-tailed)	.001

[a] Grouping Variable: Category

Likewise, a test of the raw number of visible settlements derived from the LOS analysis showed that there was a statistically significant difference: $\chi^2(2) = 10.958$, $p = 0.012$. The post hoc analysis showed only one significant relationship: again, the number of visible settlements was higher in the Ottoman I period than in the Venetian (Table XXIV). Once again, there were no significant differences when comparing the normalized values from the LOS analysis.

TABLE XXIV. RESULTS OF THE MANN–WHITNEY U TEST COMPARING THE RAW NUMBER OF VISIBLE SETTLEMENTS (VALUES FROM THE LINE-OF-SIGHT ANALYSIS) BETWEEN THE OTTOMAN I AND VENETIAN PERIODS

Ranks

	Category	N	Mean Rank	Sum of Ranks
Raw Count	Ottoman I	159	141.63	22519.50
	Venetian	101	112.98	11410.50
	Total	260		

Test Statistics[a]

	Raw Count
Mann-Whitney U	6259.500
Wilcoxon W	11410.500
Z	-2.999
Asymp. Sig. (2-tailed)	.003

[a] Grouping Variable: Category

What these statistics suggest is that, overall, there was no significant change in the visibility of settlements over time. The decrease in the raw number of visible settlements in the Venetian period (whether assessed by cumulative viewshed or LOS analyses) may be attributed to the overall lower number of inhabited settlements at this time; the normalized values, after all, are not significantly different from the earlier period.

5.2.3 – Visibility of Routes

A total of 8,106 routes segments were recorded—of these, 574 were *kalderimia*, 5,457 were walled paths, and 2,075 were goat paths (Figure 62). This dataset does not include any modern paved segments, nor any segments less than 10 m in length. This arbitrary cut-off value was used in order to eliminate short spurs or connections that are a product of the digitization process.

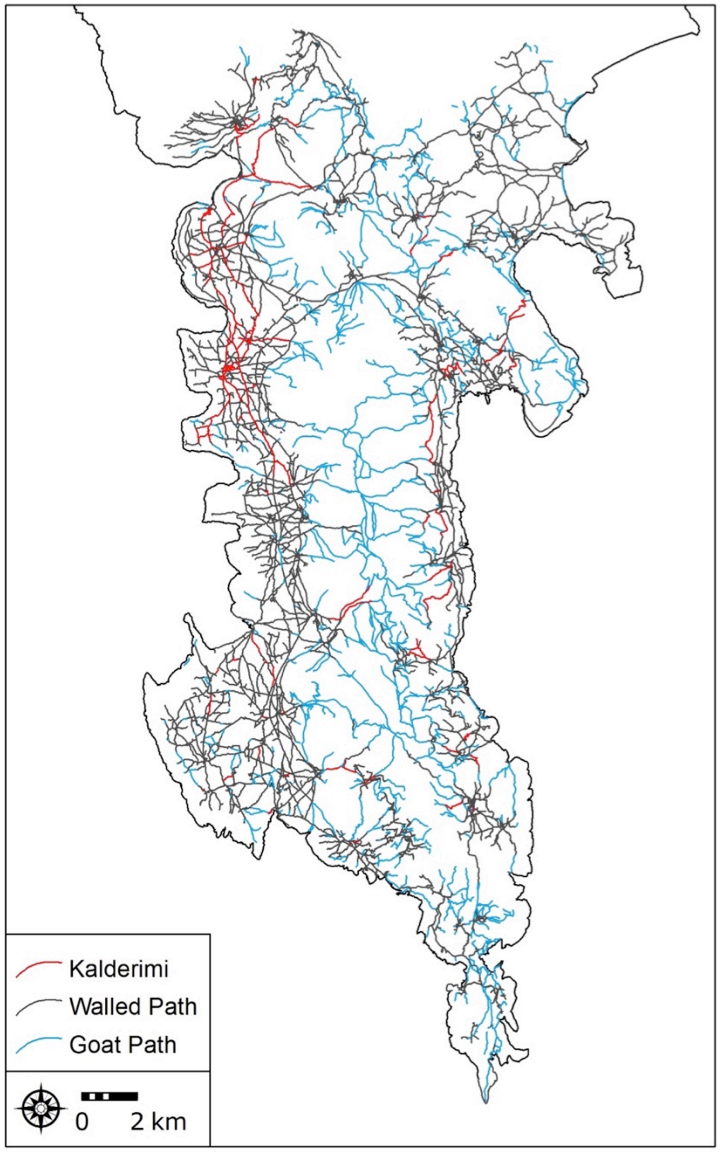


Figure 62. All pre-modern routes in the study region.

To assess the visibility of the routes, a cumulative viewshed analysis was conducted from the settlements in each of the four periods (Byzantine, Ottoman I, Venetian, and Ottoman II), as well as from the randomly generated viewshed. The values returned by the analysis were the maximum number of settlements visible from each route segment. More specifically, the procedure selected the point along each segment with the highest visibility, and returned the value (i.e. the count of visible settlements) from the viewshed raster (the data for each route segment are not reported in table form due to space limitations, but for descriptive statistics of the results, see Tables LXIX–LXXIV, Appendix B). To run the statistical tests, the routes were treated by category (*kalderimia*, walled paths, and goat paths). First, the visibility of each category was compared within each time period, and then each category was assessed diachronically to see how its visibility changed over time.

A Kruskal–Wallis H test, conducted separately for each time period, showed that there was a statistically significant difference in percentage of visible settlements between the route categories: Byzantine, $\chi^2(2) = 218.151$, $p = 0.000$; Ottoman I, $\chi^2(2) = 224.467$, $p = 0.000$; Venetian, $\chi^2(2) = 246.461$, $p = 0.000$; Ottoman II, $\chi^2(2) = 194.888$, $p = 0.000$; and random viewshed, $\chi^2(2) = 377.009$, $p = 0.000$. The results were the same when testing the raw number of settlements that were visible.

A Mann–Whitney U test was used to conduct post hoc analysis and locate the significant differences, based on a Bonferroni correction of $p < 0.017$. For all four periods, goat paths were significantly less visible than both walled paths and kalderimia, and the visibility of paths and *kalderimia* did not differ significantly (Tables XXV–XXXVI).

TABLE XXV. RESULTS OF THE MANN–WHITNEY U TEST COMPARING THE PERCENTAGE OF SETTLEMENTS VISIBLE FROM GOAT PATHS AND WALLED PATHS IN THE BYZANTINE PERIOD

Ranks

	Category	N	Mean Rank	Sum of Ranks
Byz	Goat Paths	2075	3173.53	6585083.50
	Walled Paths	5457	3991.97	21784194.50
	Total	7532		

Test Statistics[a]

	Byz
Mann-Whitney U	4431233.500
Wilcoxon W	6585083.500
Z	-14.647
Asymp. Sig. (2-tailed)	.000

[a] Grouping Variable: Category

TABLE XXVI. RESULTS OF THE MANN–WHITNEY U TEST COMPARING THE PERCENTAGE OF SETTLEMENTS VISIBLE FROM GOAT PATHS AND *KALDERIMIA* IN THE BYZANTINE PERIOD

Ranks

	Category	N	Mean Rank	Sum of Ranks
	Goat Paths	2075	1266.32	2627607.00
Byz	Kalderimia	574	1537.14	882318.00
	Total	2649		

Test Statistics[a]

	Byz
Mann-Whitney U	473757.000
Wilcoxon W	2627607.000
Z	-7.555
Asymp. Sig. (2-tailed)	.000

[a] Grouping Variable: Category

TABLE XXVII. RESULTS OF THE MANN–WHITNEY U TEST COMPARING THE PERCENTAGE OF SETTLEMENTS VISIBLE FROM WALLED PATHS AND *KALDERIMIA* IN THE BYZANTINE PERIOD

Ranks

	Category	N	Mean Rank	Sum of Ranks
	Walled Paths	5457	3020.43	16482501.00
Byz	Kalderimia	574	2973.86	1706995.00
	Total	6031		

Test Statistics[a]

	Byz
Mann-Whitney U	1541970.000
Wilcoxon W	1706995.000
Z	-.611
Asymp. Sig. (2-tailed)	.541

[a] Grouping Variable: Category

TABLE XXVIII. RESULTS OF THE MANN–WHITNEY U TEST COMPARING THE PERCENTAGE OF SETTLEMENTS VISIBLE FROM GOAT PATHS AND WALLED PATHS IN THE OTTOMAN I PERIOD

Ranks

	Category	N	Mean Rank	Sum of Ranks
	Goat Paths	2075	3161.26	6559622.50
Ott 1	Walled Paths	5457	3996.64	21809655.50
	Total	7532		

Test Statistics[a]

	Ott 1
Mann-Whitney U	4405772.500
Wilcoxon W	6559622.500
Z	-14.930
Asymp. Sig. (2-tailed)	.000

[a] Grouping Variable: Category

TABLE XXIX. RESULTS OF THE MANN–WHITNEY U TEST COMPARING THE PERCENTAGE OF SETTLEMENTS VISIBLE FROM GOAT PATHS AND *KALDERIMIA* IN THE OTTOMAN I PERIOD

Ranks

	Category	N	Mean Rank	Sum of Ranks
	Goat Paths	2075	1275.44	2646532.00
Ott 1	Kalderimia	574	1504.17	863393.00
	Total	2649		

Test Statistics[a]

	Ott 1
Mann-Whitney U	492682.000
Wilcoxon W	2646532.000
Z	-6.367
Asymp. Sig. (2-tailed)	.000

[a] Grouping Variable: Category

TABLE XXX. RESULTS OF THE MANN-–WHITNEY U TEST COMPARING THE PERCENTAGE OF SETTLEMENTS VISIBLE FROM WALLED PATHS AND *KALDERIMIA* IN THE OTTOMAN I PERIOD

Ranks

	Category	N	Mean Rank	Sum of Ranks
	Walled Paths	5457	3033.19	16552100.50
Ott 1	Kalderimia	574	2852.61	1637395.50
	Total	6031		

Test Statistics[a]

	Ott 1
Mann-Whitney U	1472370.500
Wilcoxon W	1637395.500
Z	-2.368
Asymp. Sig. (2-tailed)	.018

[a] Grouping Variable: Category

TABLE XXXI. RESULTS OF THE MANN–WHITNEY U TEST COMPARING THE PERCENTAGE OF SETTLEMENTS VISIBLE FROM GOAT PATHS AND WALLED PATHS IN THE VENETIAN PERIOD

Ranks

	Category	N	Mean Rank	Sum of Ranks
	Goat Paths	2075	3135.39	6505937.50
Ven	Walled Paths	5457	4006.48	21863340.50
	Total	7532		

Test Statistics[a]

	Ven
Mann-Whitney U	4352087.500
Wilcoxon W	6505937.500
Z	-15.598
Asymp. Sig. (2-tailed)	.000

[a] Grouping Variable: Category

TABLE XXXII. RESULTS OF THE MANN–WHITNEY U TEST COMPARING THE PERCENTAGE OF SETTLEMENTS VISIBLE FROM GOAT PATHS AND *KALDERIMIA* IN THE VENETIAN PERIOD

Ranks

	Category	N	Mean Rank	Sum of Ranks
Ven	Goat Paths	2075	1265.39	2625681.50
	Kalderimia	574	1540.49	884243.50
	Total	2649		

Test Statistics[a]

	Ven
Mann-Whitney U	471831.500
Wilcoxon W	2625681.500
Z	-7.685
Asymp. Sig. (2-tailed)	.000

[a] Grouping Variable: Category

TABLE XXXIII. RESULTS OF THE MANN–WHITNEY U TEST COMPARING THE PERCENTAGE OF SETTLEMENTS VISIBLE FROM WALLED PATHS AND *KALDERIMIA* IN THE VENETIAN PERIOD

Ranks

	Category	N	Mean Rank	Sum of Ranks
Ven	Walled Paths	5457	3025.42	16509701.00
	Kalderimia	574	2926.47	1679795.00
	Total	6031		

Test Statistics[a]

	Ven
Mann-Whitney U	1514770.000
Wilcoxon W	1679795.000
Z	-1.299
Asymp. Sig. (2-tailed)	.194

[a] Grouping Variable: Category

TABLE XXXIV. RESULTS OF THE MANN–WHITNEY U TEST COMPARING THE PERCENTAGE OF SETTLEMENTS VISIBLE FROM GOAT PATHS AND WALLED PATHS IN THE OTTOMAN II PERIOD

Ranks

	Category	N	Mean Rank	Sum of Ranks
Ott 2	Goat Paths	2075	3212.20	6665315.50
	Walled Paths	5457	3977.27	21703962.50
	Total	7532		

Test Statistics[a]

	Ott 2
Mann-Whitney U	4511465.500
Wilcoxon W	6665315.500
Z	-13.673
Asymp. Sig. (2-tailed)	.000

[a] Grouping Variable: Category

TABLE XXXV. RESULTS OF THE MANN–WHITNEY U TEST COMPARING THE PERCENTAGE OF SETTLEMENTS VISIBLE FROM GOAT PATHS AND *KALDERIMIA* IN THE OTTOMAN II PERIOD

Ranks

	Category	N	Mean Rank	Sum of Ranks
Ott 2	Goat Paths	2075	1262.30	2619269.00
	Kalderimia	574	1551.67	890656.00
	Total	2649		

Test Statistics[a]

	Ott 2
Mann-Whitney U	465419.000
Wilcoxon W	2619269.000
Z	-8.048
Asymp. Sig. (2-tailed)	.000

[a] Grouping Variable: Category

TABLE XXXVI. RESULTS OF THE MANN–WHITNEY U TEST COMPARING THE PERCENTAGE OF SETTLEMENTS VISIBLE FROM WALLED PATHS AND *KALDERIMIA* IN THE OTTOMAN II PERIOD

Ranks

	Category	N	Mean Rank	Sum of Ranks
Ott 2	Walled Paths	5457	3013.80	16446333.50
	Kalderimia	574	3036.87	1743162.50
	Total	6031		

Test Statistics[a]

	Ott 2
Mann-Whitney U	1554180.500
Wilcoxon W	16446333.500
Z	-.302
Asymp. Sig. (2-tailed)	.762

[a] Grouping Variable: Category

When testing the results of the random viewshed, the same pattern was noted for the goat paths (mean rank = 3049.81) versus walled paths (mean rank = 4039.02), U = 4174495.5, p = .000 and for goat paths (mean rank = 1214.09) versus *kalderimia* (mean rank = 1725.93), U = 365390.5, p = .000. However, *kalderimia* (mean rank = 3365.47) were significantly more visible than walled paths (mean rank = 2979.24), U = 1365563.0, p = 0.000. In other words, the tests show that for every time period, the *kalderimia* were less visible than would be expected if the settlement distribution was random; in most cases, their visibility was no different from that of the walled paths, and they were even less visible in the case of the Ottoman I period.

Next, the Friedman test was used to analyze each category of pathway across time. For each of the three route categories, there was a statistically significant difference in the percentage of visible settlements when comparing the five samples (four period viewsheds and one randomly generated viewshed): *kalderimia*, $\chi^2(4) = 143.866$, $p = 0.000$; walled paths, $\chi^2(4) = 2862.836$, $p = 0.000$; and goat paths, $\chi^2(4) = 1069.347$, $p = 0.000$.

A Wilcoxon signed-rank test was used to conduct post hoc analysis and locate the significant differences within each route category, based on a Bonferroni correction of $p < 0.005$. In all four periods and for each of the three categories, the percentage of visible settlements was significantly higher than the values predicted by the random viewshed. The visibility of *kalderimia* (Table XXXVII) initially decreased in the Ottoman I period, but regained a similar degree of visibility in the Venetian period. There was a significant decrease in the percentage of visible settlements in the Ottoman II period, but this value was not significantly different from those of the earlier Byzantine and Ottoman I periods. As for the walled paths (Table XXXVIII), there were no significant differences between the Byzantine and Ottoman periods, but there was a significant increase in visibility in the Venetian period. The visibility of walled paths in the Ottoman II period was significantly lower than in all other time periods. The goat paths (Table XXXIX) were least visible in the Byzantine period, and grew steadily more visible over time. There was a slight decrease in the percentage of visible settlements in the Ottoman II period, but visibility was still higher than in the earlier Byzantine and Ottoman I periods.

TABLE XXXVII. RESULTS OF THE WILCOXON SIGNED-RANKS TEST COMPARING THE PERCENTAGE OF SETTLEMENTS VISIBLE FROM *KALDERIMIA* ACROSS PERIODS

Ranks

		N	Mean Rank	Sum of Ranks
Ott 1–Byz	Negative Ranks	357	275.13	98221.00
	Positive Ranks	189	270.42	51110.00
	Ties	28		
Ven–Byz	Negative Ranks	267	266.37	71121.00
	Positive Ranks	276	277.45	76575.00
	Ties	31		
Ott 2–Byz	Negative Ranks	244	363.52	88698.00
	Positive Ranks	320	220.73	70632.00
	Ties	10		
Random–Byz	Negative Ranks	286	354.11	101275.00
	Positive Ranks	275	204.97	56366.00
	Ties	13		
Ven–Ott 1	Negative Ranks	128	276.04	35333.00
	Positive Ranks	412	268.78	110737.00
	Ties	34		
Ott 2–Ott 1	Negative Ranks	196	362.09	70969.00
	Positive Ranks	366	238.34	87234.00
	Ties	12		
Random–Ott 1	Negative Ranks	272	343.27	93370.00
	Positive Ranks	288	221.22	63710.00
	Ties	14		
Ott 2–Ven	Negative Ranks	300	323.34	97002.00
	Positive Ranks	260	231.07	60078.00
	Ties	14		
Random–Ven	Negative Ranks	329	329.73	108482.00
	Positive Ranks	230	208.86	48038.00
	Ties	15		
Random–Ott 2	Negative Ranks	365	309.08	112813.00
	Positive Ranks	202	238.69	48215.00
	Ties	7		

Test Statistics[a]

	Group A–Group B
Z	-6.388[b]
Asymp. Sig. (2-tailed)	.000
Z	-.746[c]
Asymp. Sig. (2-tailed)	.456
Z	-2.333[b]
Asymp. Sig. (2-tailed)	.020
Z	-5.846[b]
Asymp. Sig. (2-tailed)	.000
Z	-10.398[c]
Asymp. Sig. (2-tailed)	.000
Z	-2.112[c]
Asymp. Sig. (2-tailed)	.035
Z	-3.872[b]
Asymp. Sig. (2-tailed)	.000
Z	-4.821[b]
Asymp. Sig. (2-tailed)	.000
Z	-7.911[b]
Asymp. Sig. (2-tailed)	.000
Z	-8.277[c]
Asymp. Sig. (2-tailed)	.000

[a] Wilcoxon Signed Ranks Test.
[b] Based on negative ranks.
[c] Based on positive ranks.

TABLE XXXVIII. RESULTS OF THE WILCOXON SIGNED-RANKS TEST COMPARING THE PERCENTAGE OF SETTLEMENTS VISIBLE FROM WALLED PATHS ACROSS PERIODS

Ranks

		N	Mean Rank	Sum of Ranks
Ott 1–Byz	Negative Ranks	2825	2334.63	6595316.00
	Positive Ranks	2292	2835.55	6499087.00
	Ties	340		
Ven–Byz	Negative Ranks	2345	2585.55	6063118.00
	Positive Ranks	2685	2454.32	6589847.00
	Ties	427		
Ott 2–Byz	Negative Ranks	2736	3104.49	8493895.00
	Positive Ranks	2489	2072.73	5159030.00
	Ties	232		
Random–Byz	Negative Ranks	3466	3089.58	10708496.00
	Positive Ranks	1762	1679.97	2960110.00
	Ties	229		
Ven–Ott 1	Negative Ranks	2048	2729.38	5589776.00
	Positive Ranks	3032	2412.92	7315964.00
	Ties	377		
Ott 2–Ott 1	Negative Ranks	2988	3150.55	9413834.00
	Positive Ranks	2299	1985.64	4564994.00
	Ties	170		
Random–Ott 1	Negative Ranks	3805	3080.55	11721506.00
	Positive Ranks	1479	1515.53	2241464.00
	Ties	173		
Ott 2–Ven	Negative Ranks	3380	2906.19	9822925.00
	Positive Ranks	1783	1967.44	3507941.00
	Ties	294		
Random–Ven	Negative Ranks	4024	2946.98	11858636.00
	Positive Ranks	1163	1372.69	1596442.00
	Ties	270		
Random–Ott 2	Negative Ranks	4404	2818.81	12414055.00
	Positive Ranks	877	1748.08	1533066.00
	Ties	176		

Test Statistics[a]

	Group A–Group B
Z	-.455[b]
Asymp. Sig. (2-tailed)	.649
Z	-2.557[c]
Asymp. Sig. (2-tailed)	.011
Z	-15.292[b]
Asymp. Sig. (2-tailed)	.000
Z	-35.499[b]
Asymp. Sig. (2-tailed)	.000
Z	-8.257[c]
Asymp. Sig. (2-tailed)	.000
Z	-21.844[b]
Asymp. Sig. (2-tailed)	.000
Z	-42.744[b]
Asymp. Sig. (2-tailed)	.000
Z	-29.481[b]
Asymp. Sig. (2-tailed)	.000
Z	-47.575[b]
Asymp. Sig. (2-tailed)	.000
Z	-49.103[c]
Asymp. Sig. (2-tailed)	.000

[a] Wilcoxon Signed Ranks Test.
[b] Based on negative ranks.
[c] Based on positive ranks.

TABLE XXXIX. RESULTS OF THE WILCOXON SIGNED-RANKS TEST COMPARING THE PERCENTAGE OF SETTLEMENTS VISIBLE FROM GOAT PATHS ACROSS PERIODS

Ranks

		N	Mean Rank	Sum of Ranks
Ott 1–Byz	Negative Ranks	986	764.37	753666.00
	Positive Ranks	848	1095.55	929029.00
	Ties	241		
Ven–Byz	Negative Ranks	741	900.69	667414.00
	Positive Ranks	1035	879.77	910562.00
	Ties	299		
Ott 2–Byz	Negative Ranks	781	1038.27	810885.00
	Positive Ranks	1099	871.02	957255.00
	Ties	195		
Random–Byz	Negative Ranks	1215	1034.33	1256716.00
	Positive Ranks	631	710.09	448065.00
	Ties	229		
Ven–Ott 1	Negative Ranks	762	956.75	729041.00
	Positive Ranks	1028	850.10	873904.00
	Ties	285		
Ott 2–Ott 1	Negative Ranks	886	1122.29	994350.00
	Positive Ranks	1021	807.96	824928.00
	Ties	168		
Random–Ott 1	Negative Ranks	1381	1084.04	1497064.00
	Positive Ranks	510	572.20	291822.00
	Ties	184		
Ott 2–Ven	Negative Ranks	990	947.37	937900.00
	Positive Ranks	827	863.06	713753.00
	Ties	258		
Random–Ven	Negative Ranks	1380	1030.62	1422251.00
	Positive Ranks	447	553.98	247627.00
	Ties	248		
Random–Ott 2	Negative Ranks	1639	1008.83	1653465.00
	Positive Ranks	244	493.12	120321.00
	Ties	192		

Test Statistics[a]

		Group A–Group B
Ott 1–Byz	Z	-3.866[b]
	Asymp. Sig. (2-tailed)	.000
Ven–Byz	Z	-5.626[b]
	Asymp. Sig. (2-tailed)	.000
Ott 2–Byz	Z	-3.109[b]
	Asymp. Sig. (2-tailed)	.002
Random–Byz	Z	-17.654[c]
	Asymp. Sig. (2-tailed)	.000
Ven–Ott 1	Z	-3.313[b]
	Asymp. Sig. (2-tailed)	.001
Ott 2–Ott 1	Z	-3.523[c]
	Asymp. Sig. (2-tailed)	.000
Random–Ott 1	Z	-25.380[c]
	Asymp. Sig. (2-tailed)	.000
Ott 2–Ven	Z	-5.011[c]
	Asymp. Sig. (2-tailed)	.000
Random–Ven	Z	-26.046[b]
	Asymp. Sig. (2-tailed)	.000
Random–Ott 2	Z	-32.489[b]
	Asymp. Sig. (2-tailed)	.000

[a] Wilcoxon Signed Ranks Test.
[b] Based on negative ranks.
[c] Based on positive ranks.

A Friedman test showed that there was also a statistically significant difference in the raw numbers of visible settlements when comparing the five samples: goat paths, $\chi^2(4) = 2107.115$, $p = 0.000$; walled paths, $\chi^2(4) = 5670.137$, $p = 0.000$; and *kalderimia*, $\chi^2(4) = 444.448$, $p = 0.000$.

The post hoc analysis of raw number of visible settlements revealed very similar patterns (Figure 63). The greatest difference between the two analyses (percentages vs. raw numbers) was that the raw number of visible settlements was significantly lower in the Venetian period than in every other period, whereas in terms of percentage it was consistently the highest. Compared to the random viewshed, the *kalderimia* were also significantly less visible in the Venetian period—a relationship not seen in any other test. These patterns are attributable to the fact that the number of total settlements decreased dramatically (from 159 in the Ottoman I period to only 101) before returning to earlier levels in the Ottoman II period (148). For this reason, the most useful measure for assessing visibility in the Venetian period is percentage of visible settlements, not raw numbers.

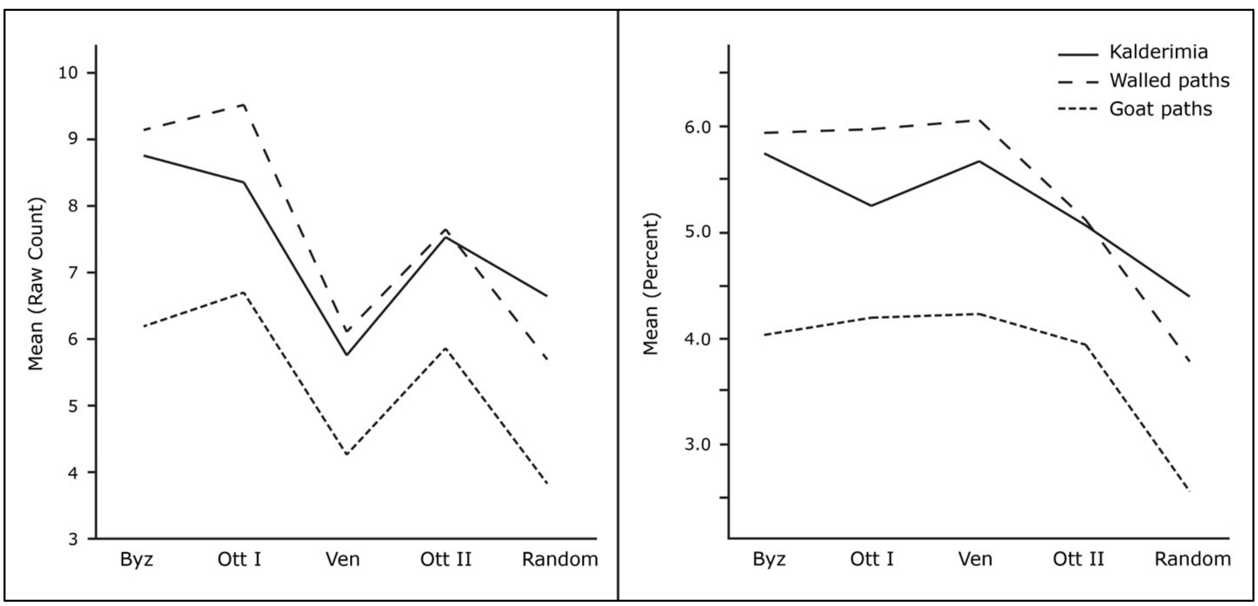


Figure 63. Mean raw counts of visible settlements (left) and mean percentages of visible settlements (right) by pathway category and time period.

Nevertheless, there were interesting patterns for the other time periods (for which sample size is more consistent) in terms of the raw number of visible settlements. The visibility of *kalderimia* (Table XL) in the Ottoman II period was significantly lower than in the Byzantine or Ottoman I periods (neither of which was significantly different in terms of percentage). For the walled paths (Table XLI), there was a significant increase in visibility from the Byzantine to Ottoman I periods (compared to the percentages of visible settlements, which are not significantly different). The visibility of goat paths (Table XLII) increased into the Ottoman I period and declined slightly by the Ottoman II.

TABLE XL. RESULTS OF THE WILCOXON SIGNED-RANKS TEST COMPARING THE RAW NUMBER OF SETTLEMENTS VISIBLE FROM *KALDERIMIA* ACROSS PERIODS

Ranks

		N	Mean Rank	Sum of Ranks
Ott 1–Byz	Negative Ranks	244	231.11	56391.00
	Positive Ranks	189	198.78	37570.00
	Ties	141		
Ven–Byz	Negative Ranks	382	255.98	97785.00
	Positive Ranks	80	114.60	9168.00
	Ties	112		
Ott 2–Byz	Negative Ranks	244	279.06	68091.50
	Positive Ranks	218	178.26	38861.50
	Ties	112		
Random–Byz	Negative Ranks	286	312.28	89312.50
	Positive Ranks	221	178.58	39465.50
	Ties	67		
Ven–Ott 1	Negative Ranks	410	206.32	84593.00
	Positive Ranks	1	73.00	73.00
	Ties	163		
Ott 2–Ott 1	Negative Ranks	208	266.04	55337.00
	Positive Ranks	215	159.72	34339.00
	Ties	151		
Random–Ott 1	Negative Ranks	273	305.49	83399.50
	Positive Ranks	231	189.87	43860.50
	Ties	70		
Ott 2–Ven	Negative Ranks	13	90.96	1182.50
	Positive Ranks	436	229.00	99842.50
	Ties	125		
Random–Ven	Negative Ranks	179	205.57	36796.50
	Positive Ranks	315	271.33	85468.50
	Ties	80		
Random–Ott 2	Negative Ranks	292	281.06	82070.50
	Positive Ranks	202	198.98	40194.50
	Ties	80		

Test Statistics[a]

	Group A–Group B
Z	-3.649[b]
Asymp. Sig. (2-tailed)	.000
Z	-15.492[b]
Asymp. Sig. (2-tailed)	.000
Z	-5.116[b]
Asymp. Sig. (2-tailed)	.000
Z	-7.570[b]
Asymp. Sig. (2-tailed)	.000
Z	-17.652[b]
Asymp. Sig. (2-tailed)	.000
Z	-4.245[b]
Asymp. Sig. (2-tailed)	.000
Z	-6.063[b]
Asymp. Sig. (2-tailed)	.000
Z	-18.156[c]
Asymp. Sig. (2-tailed)	.000
Z	-7.716[b]
Asymp. Sig. (2-tailed)	.000
Z	-6.651[b]
Asymp. Sig. (2-tailed)	.000

[a] Wilcoxon Signed Ranks Test.
[b] Based on negative ranks.
[c] Based on positive ranks.

TABLE XLI. RESULTS OF THE WILCOXON SIGNED-RANKS TEST COMPARING THE RAW NUMBER OF SETTLEMENTS VISIBLE FROM WALLED PATHS ACROSS PERIODS

Ranks

		N	Mean Rank	Sum of Ranks
Ott 1–Byz	Negative Ranks	1737	1942.61	3374316.00
	Positive Ranks	2370	2135.64	5061462.00
	Ties	1350		
Ven–Byz	Negative Ranks	3490	2432.57	8489677.50
	Positive Ranks	941	1412.77	1329418.50
	Ties	1026		
Ott 2–Byz	Negative Ranks	2737	2647.75	7246890.50
	Positive Ranks	1891	1832.16	3464615.50
	Ties	829		
Random–Byz	Negative Ranks	3466	2834.57	9824624.00
	Positive Ranks	1422	1493.74	2124092.00
	Ties	569		
Ven–Ott 1	Negative Ranks	3945	1974.72	7790259.00
	Positive Ranks	2	559.50	1119.00
	Ties	1510		
Ott 2–Ott 1	Negative Ranks	3029	2396.81	7259933.00
	Positive Ranks	1272	1565.66	1991518.00
	Ties	1156		
Random–Ott 1	Negative Ranks	3807	2653.85	10103203.50
	Positive Ranks	973	1360.11	1323386.50
	Ties	677		
Ott 2–Ven	Negative Ranks	461	1157.64	533671.00
	Positive Ranks	3521	2100.68	7396482.00
	Ties	1475		
Random–Ven	Negative Ranks	2647	2265.31	5996283.00
	Positive Ranks	1710	2045.39	3497620.00
	Ties	1100		
Random–Ott 2	Negative Ranks	3758	2506.64	9419939.50
	Positive Ranks	877	1509.68	1323990.50
	Ties	822		

Test Statistics[a]

		Group A–Group B
Ott 1–Byz	Z	-11.218[b]
	Asymp. Sig. (2-tailed)	.000
Ven–Byz	Z	-42.145[c]
	Asymp. Sig. (2-tailed)	.000
Ott 2–Byz	Z	-20.881[c]
	Asymp. Sig. (2-tailed)	.000
Random–Byz	Z	-39.106[c]
	Asymp. Sig. (2-tailed)	.000
Ven–Ott 1	Z	-54.583[c]
	Asymp. Sig. (2-tailed)	.000
Ott 2–Ott 1	Z	-32.566[c]
	Asymp. Sig. (2-tailed)	.000
Random–Ott 1	Z	-46.117[c]
	Asymp. Sig. (2-tailed)	.000
Ott 2–Ven	Z	-47.759[b]
	Asymp. Sig. (2-tailed)	.000
Random–Ven	Z	-15.201[b]
	Asymp. Sig. (2-tailed)	.000
Random–Ott 2	Z	-44.678[c]
	Asymp. Sig. (2-tailed)	.000

[a] Wilcoxon Signed Ranks Test.
[b] Based on negative ranks.
[c] Based on positive ranks.

TABLE XLII. RESULTS OF THE WILCOXON SIGNED-RANKS TEST COMPARING THE RAW NUMBER OF SETTLEMENTS VISIBLE FROM GOAT PATHS ACROSS PERIODS

Ranks

		N	Mean Rank	Sum of Ranks
Ott 1–Byz	Negative Ranks	498	611.21	304383.50
	Positive Ranks	863	721.27	622457.50
	Ties	714		
Ven–Byz	Negative Ranks	1084	751.91	815067.50
	Positive Ranks	322	540.54	174053.50
	Ties	669		
Ott 2–Byz	Negative Ranks	781	827.14	645995.00
	Positive Ranks	803	758.81	609325.00
	Ties	491		
Random–Byz	Negative Ranks	1215	956.79	1162497.00
	Positive Ranks	510	639.56	326178.00
	Ties	350		
Ven–Ott 1	Negative Ranks	1268	636.20	806706.00
	Positive Ranks	2	189.50	379.00
	Ties	805		
Ott 2–Ott 1	Negative Ranks	902	750.89	677298.50
	Positive Ranks	530	657.98	348729.50
	Ties	643		
Random–Ott 1	Negative Ranks	1381	922.96	1274612.50
	Positive Ranks	316	525.76	166140.50
	Ties	378		
Ott 2–Ven	Negative Ranks	82	354.13	29038.50
	Positive Ranks	1338	732.34	979871.50
	Ties	655		
Random–Ven	Negative Ranks	955	766.82	732311.50
	Positive Ranks	546	723.33	394939.50
	Ties	574		
Random–Ott 2	Negative Ranks	1432	903.88	1294352.50
	Positive Ranks	244	454.81	110973.50
	Ties	399		

Test Statistics[a]

	Group A–Group B
Z	-11.139[b]
Asymp. Sig. (2-tailed)	.000
Z	-21.153[c]
Asymp. Sig. (2-tailed)	.000
Z	-1.015[c]
Asymp. Sig. (2-tailed)	.310
Z	-20.293[c]
Asymp. Sig. (2-tailed)	.000
Z	-30.985[c]
Asymp. Sig. (2-tailed)	.000
Z	-10.618[c]
Asymp. Sig. (2-tailed)	.000
Z	-27.585[c]
Asymp. Sig. (2-tailed)	.000
Z	-31.031[b]
Asymp. Sig. (2-tailed)	.000
Z	-10.207[b]
Asymp. Sig. (2-tailed)	.000
Z	-30.037[c]
Asymp. Sig. (2-tailed)	.000

[a] Wilcoxon Signed Ranks Test.
[b] Based on negative ranks.
[c] Based on positive ranks.

In summary, the statistical results show that visibility of different route categories varied over time. Every type of route was more visible than would be expected given a random settlement distribution (with one exception discussed above, due to a comparatively small sample size in the Venetian period). Goat paths were generally less visible, and although there were significant differences between some time periods, the mean visibility did not change dramatically. Walled paths were highly visible compared to the other route categories, but their visibility decreased significantly in the Ottoman II period. Finally, the visibility of *kalderimia* was significantly lower than that of walled paths—surprising, given the fact that *kalderimia* were more visible in the random viewshed. In terms of both percentages and raw numbers, *kalderimia* visibility decreased significantly from the Byzantine to the Ottoman I period, and still more into the Ottoman II. According to percentages, the Venetian period witnessed the highest visibility of all route categories—meaning that the percentage of extant settlements from which a pathway could be seen was higher than in any other period. However, the raw numbers of visible settlements was the lowest, due to the fact that far fewer settlements were dated to this time period.

Regardless of time period, the most visible pathways were those that ascended the hill to Cavo Grosso in the southwestern plain. This fact is not surprising, considering the high visibility of this ridge. Other high-visibility pathways were those ascending the hills along the spine of the peninsula. None of the mountain passes (which would have been strategically important in terms of gaining access to Inner Mani) were highly visible relative to other pathways, likely due to their topographical isolation.

5.2.4 – Visibility of Churches

Churches were an integral part of the landscape; they acted as both public and private spaces for religious worship, sites for social activities that bind communities together, and monuments that displayed the wealth of communities, families, or individuals. Based on the visual prominence of monuments and religious sites in many other parts of the world, the visibility of churches was measured to determine if any statistically significant patterns could be detected.

A total of 383 pre-modern churches were recorded in the study area during the course of fieldwork and imagery analysis. Of these, 203 were identified through field visits or published photographs and descriptions, and as such, could be dated to general time periods. The remaining 180 churches were identified in satellite imagery and road maps, and therefore lack chronological data.

In Mani, the dates for Byzantine churches are much more secure than for churches built in the following Ottoman periods. Published dates are often provided in quarter-century increments, thanks to the development of refined chronologies based on sculpture and iconography. Based on my own field visits and these published data, there are at least 122 churches that were built during the Middle or Late Byzantine periods (Figure 64). Unfortunately, it is not currently possible to refine the chronologies of the remaining churches, either because I did not visit them in person, or because the architectural/iconographic information is not sufficiently defined.

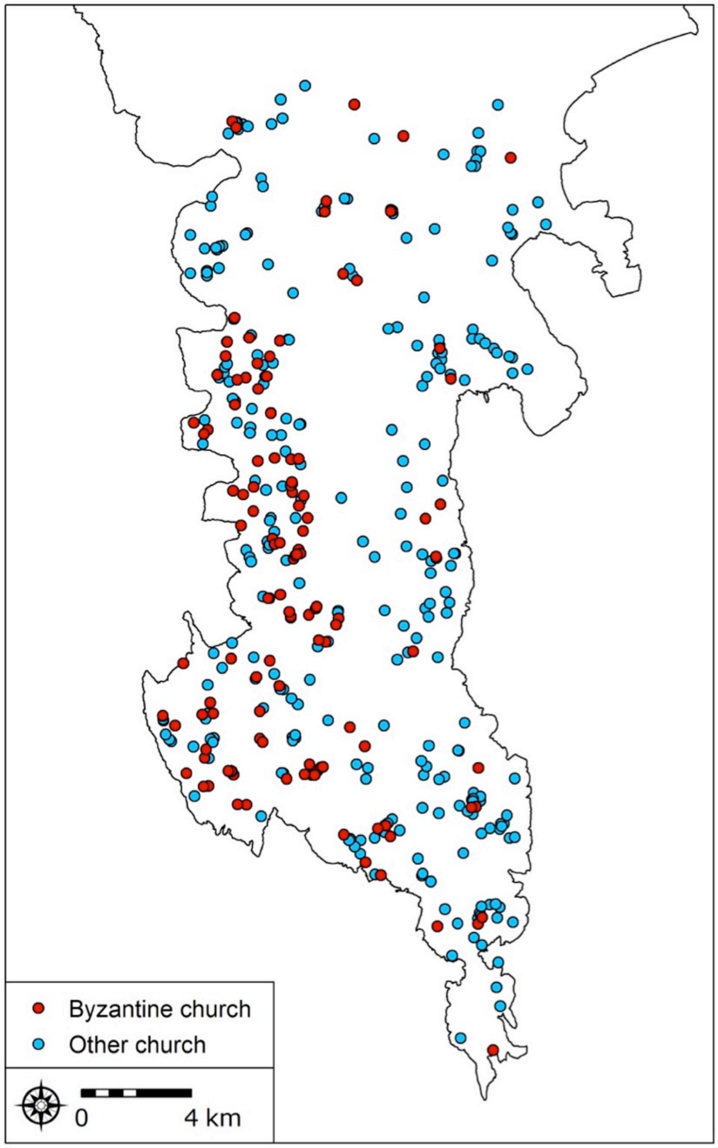


Figure 64. Churches in the study region.

To assess the visibility of the churches, two experiments were conducted: (a) a cumulative viewshed analysis of all 383 churches from the settlements in each of the four periods (Byzantine, Ottoman I, Venetian, and Ottoman II), as well as the randomly generated viewshed, and (b) a cumulative viewshed analysis of only the 122 securely-dated Byzantine churches from the Byzantine-period settlements and the randomly generated viewshed (for results, see Tables LXXV and LXXVI, Appendix B). This second test was meant to act as a more accurate case study by removing any churches that were not yet built at that time.

A Friedman test showed that there was a statistically significant difference in the *raw number* of settlements visible from each church when comparing the five samples (four period viewsheds and one randomly generated viewshed): $\chi^2(4) = 448.937$, $p = 0.000$. A Wilcoxon signed-rank test was used to conduct post hoc analysis and locate the significant differences, with a Bonferroni correction establishing the significance level at $p < 0.005$. In all four periods, the raw number of visible settlements was significantly higher than the values predicted by the random viewshed (Table XLIII). There was no significant difference between the Byzantine and Ottoman I periods, but there was a significant decrease in the number of visible settlements beginning in the Venetian period; in fact, there was not a single church in the Venetian period with a higher number of visible settlements. The number of visible settlements increased from the Venetian to the Ottoman II period, but they remained significantly lower than they had been in the Byzantine and Ottoman I periods.

TABLE XLIII. STATISTICAL RESULTS OF THE WILCOXON SIGNED-RANKS TEST COMPARING THE RAW NUMBERS OF SETTLEMENTS VISIBLE FROM EACH CHURCH

Ranks

		N	Mean Rank	Sum of Ranks
Ott 1–Byz	Negative Ranks	128	143.29	18340.50
	Positive Ranks	159	144.58	22987.50
	Ties	96		
Ven–Byz	Negative Ranks	258	167.10	43111.00
	Positive Ranks	49	85.04	4167.00
	Ties	76		
Ott 2–Byz	Negative Ranks	213	174.00	37062.50
	Positive Ranks	98	116.87	11453.50
	Ties	72		
Random–Byz	Negative Ranks	257	183.47	47153.00
	Positive Ranks	73	102.22	7462.00
	Ties	53		
Ven–Ott 1	Negative Ranks	267	134.00	35778.00
	Positive Ranks	0	.00	.00
	Ties	116		
Ott 2–Ott 1	Negative Ranks	212	150.40	31885.00
	Positive Ranks	61	90.43	5516.00
	Ties	110		
Random–Ott 1	Negative Ranks	270	180.99	48866.50
	Positive Ranks	62	103.41	6411.50
	Ties	51		
Ott 2–Ven	Negative Ranks	30	67.93	2038.00
	Positive Ranks	223	134.95	30093.00
	Ties	130		
Random–Ven	Negative Ranks	199	161.59	32155.50
	Positive Ranks	119	156.01	18565.50
	Ties	65		
Random–Ott 2	Negative Ranks	255	174.10	44396.00
	Positive Ranks	70	122.56	8579.00
	Ties	58		

Test Statistics[a]

	Group A–Group B
Z	-1.676[b]
Asymp. Sig. (2-tailed)	.094
Z	-12.556[c]
Asymp. Sig. (2-tailed)	.000
Z	-8.107[c]
Asymp. Sig. (2-tailed)	.000
Z	-11.468[c]
Asymp. Sig. (2-tailed)	.000
Z	-14.204[c]
Asymp. Sig. (2-tailed)	.000
Z	-10.159[c]
Asymp. Sig. (2-tailed)	.000
Z	-12.161[c]
Asymp. Sig. (2-tailed)	.000
Z	-12.159[b]
Asymp. Sig. (2-tailed)	.000
Z	-4.192[c]
Asymp. Sig. (2-tailed)	.000
Z	-10.616[c]
Asymp. Sig. (2-tailed)	.000

[a] Wilcoxon Signed Ranks Test.
[b] Based on negative ranks.
[c] Based on positive ranks.

A Friedman test showed that there was also a statistically significant difference in the *percentage* of total settlements visible from each church when comparing the five samples: $\chi^2(4) = 234.485$, $p = 0.000$. The post hoc analysis showed, once again, that the percentage of visible settlements was significantly higher than the values predicted by the random viewshed (Table

XLIV). There was no significant difference between the Byzantine, Ottoman I, and Venetian periods. However, in the Ottoman II period, there was a significant decrease in the percentage of total settlements that were visible.

TABLE XLIV. STATISTICAL RESULTS OF THE WILCOXON SIGNED-RANKS TEST COMPARING THE PERCENTAGES OF SETTLEMENTS VISIBLE FROM EACH CHURCH

Ranks

		N	Mean Rank	Sum of Ranks
Ott 1–Byz	Negative Ranks	214	171.12	36619.00
	Positive Ranks	150	198.74	29811.00
	Ties	19		
Ven–Byz	Negative Ranks	171	192.39	32898.00
	Positive Ranks	188	168.73	31722.00
	Ties	24		
Ott 2–Byz	Negative Ranks	213	219.45	46742.00
	Positive Ranks	152	131.93	20053.00
	Ties	18		
Random–Byz	Negative Ranks	257	210.58	54118.00
	Positive Ranks	105	110.33	11585.00
	Ties	21		
Ven–Ott 1	Negative Ranks	143	193.87	27723.00
	Positive Ranks	211	166.41	35112.00
	Ties	29		
Ott 2–Ott 1	Negative Ranks	208	227.35	47288.00
	Positive Ranks	152	116.39	17692.00
	Ties	23		
Random–Ott 1	Negative Ranks	270	209.67	56610.00
	Positive Ranks	96	109.91	10551.00
	Ties	17		
Ott 2–Ven	Negative Ranks	256	192.39	49253.00
	Positive Ranks	94	129.49	12172.00
	Ties	33		
Random–Ven	Negative Ranks	281	203.22	57105.00
	Positive Ranks	76	89.45	6798.00
	Ties	26		
Random–Ott 2	Negative Ranks	292	192.90	56326.00
	Positive Ranks	70	133.96	9377.00
	Ties	21		

Test Statistics[a]

	Group A–Group B
Z	-1.695[b]
Asymp. Sig. (2-tailed)	.090
Z	-.299[b]
Asymp. Sig. (2-tailed)	.765
Z	-6.616[b]
Asymp. Sig. (2-tailed)	.000
Z	-10.675[b]
Asymp. Sig. (2-tailed)	.000
Z	-1.918[c]
Asymp. Sig. (2-tailed)	.055
Z	-7.490[b]
Asymp. Sig. (2-tailed)	.000
Z	-11.371[b]
Asymp. Sig. (2-tailed)	.000
Z	-9.789[b]
Asymp. Sig. (2-tailed)	.000
Z	-12.892[b]
Asymp. Sig. (2-tailed)	.000
Z	-11.783[b]
Asymp. Sig. (2-tailed)	.000

[a] Wilcoxon Signed Ranks Test
[b] Based on negative ranks.
[c] Based on positive ranks.

In summary, the raw numbers of visible settlements decreased significantly in the Venetian period and remained lower in the Ottoman II period than they had been in previous years (Figure 65). The initial decrease is not surprising, because the total number of Venetian-period settlements also decreased dramatically (from 159 in the previous period to only 101). What is interesting is that the number remained low in the Ottoman II period, despite a resurgence in the total number of settlements (returning to 148). The normalized numbers show that the apparent decrease in the Venetian period may, in fact, be misleading, as the percentage of visible settlements did not change. But again, the Ottoman II period is significantly lower in terms of percentage of visible settlements. The statistical analysis highlights that the social and religious landscape had changed dramatically by the Ottoman II period. Churches were significantly less visible to the settlements that people chose to inhabit than they had been in previous centuries.

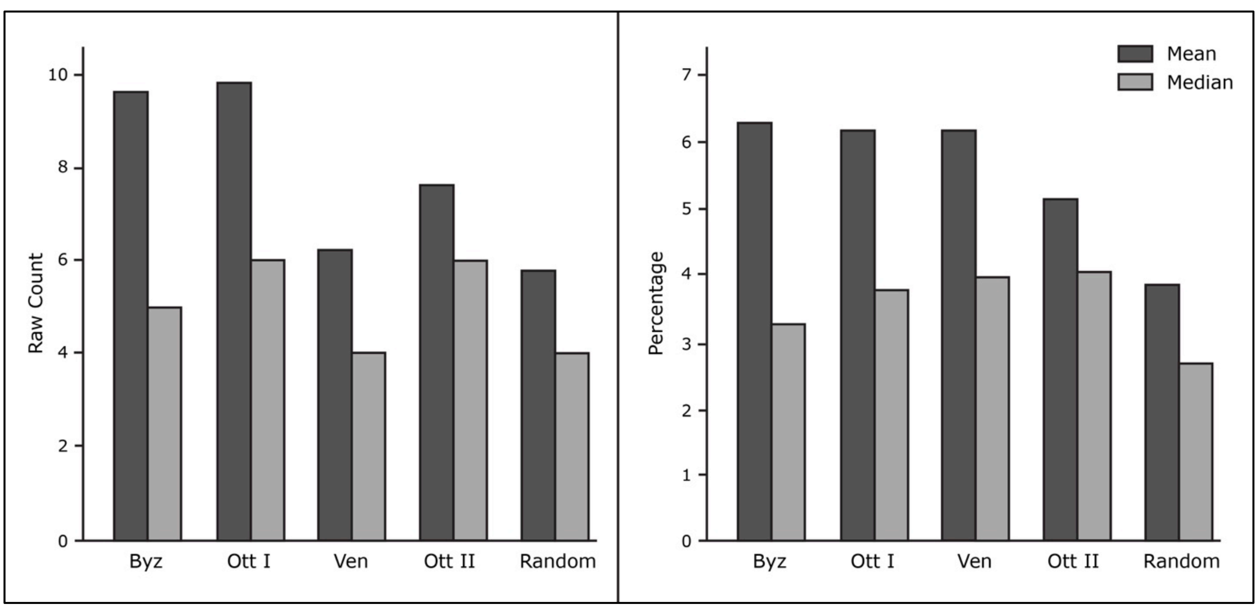


Figure 65. Mean and median numbers of settlements visible from all churches: raw counts (left) and percentages (right).

The second experiment, focusing just on the Byzantine-period churches and settlements, verified the finding that the churches were more visible than would be expected given a random distribution of settlements. A Wilcoxon signed-rank test showed that there was a statistically significant difference in the number of settlements visible from each church, with both a higher raw number ($Z = -7.202$, $p = 0.000$) and a higher percentage of total settlements ($Z = -6.830$, $p = 0.000$) in the Byzantine distribution than in the random distribution (Figure 66).

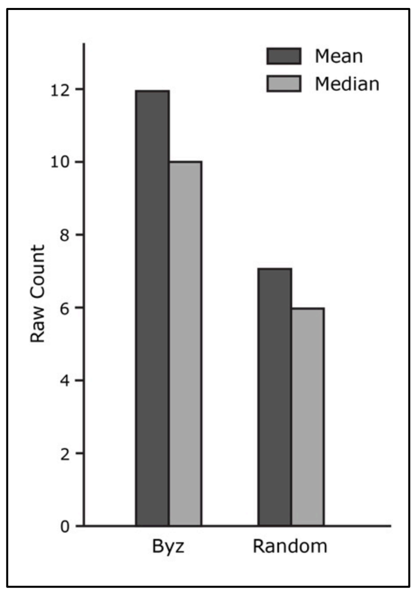


Figure 66. Mean and median raw counts of visible Byzantine-period settlements and randomly distributed settlements from Byzantine-period churches.

5.2.5 – Visibility of Fortresses

There are four fortresses located within the study region: the Byzantine-Ottoman fortress of Passava (T224) in the northeast part of the peninsula; the Middle Byzantine and Frankish fortress of Tigani (T236), which was inhabited until the Venetian period; and the two Ottoman-built fortresses of Achillio (T430) and Kelepha (T343). It is well known that the fortresses were established near key transportation corridors: Passava sits above an overland pass into Mani, while the other three are located above harbors.

A cumulative viewshed analysis was conducted to determine whether the fortresses were also highly visible to the surrounding settlements. Because of the small sample size, statistical analyses were not conducted; however, Figure 67 summarizes the raw counts and percentages of settlements visible from each fortress. Due to the flatness of the terrain in the southwestern part of the peninsula, Tigani had by far the highest visibility. Achillio, nestled in a small bay with rocky ridges all around, had the least.

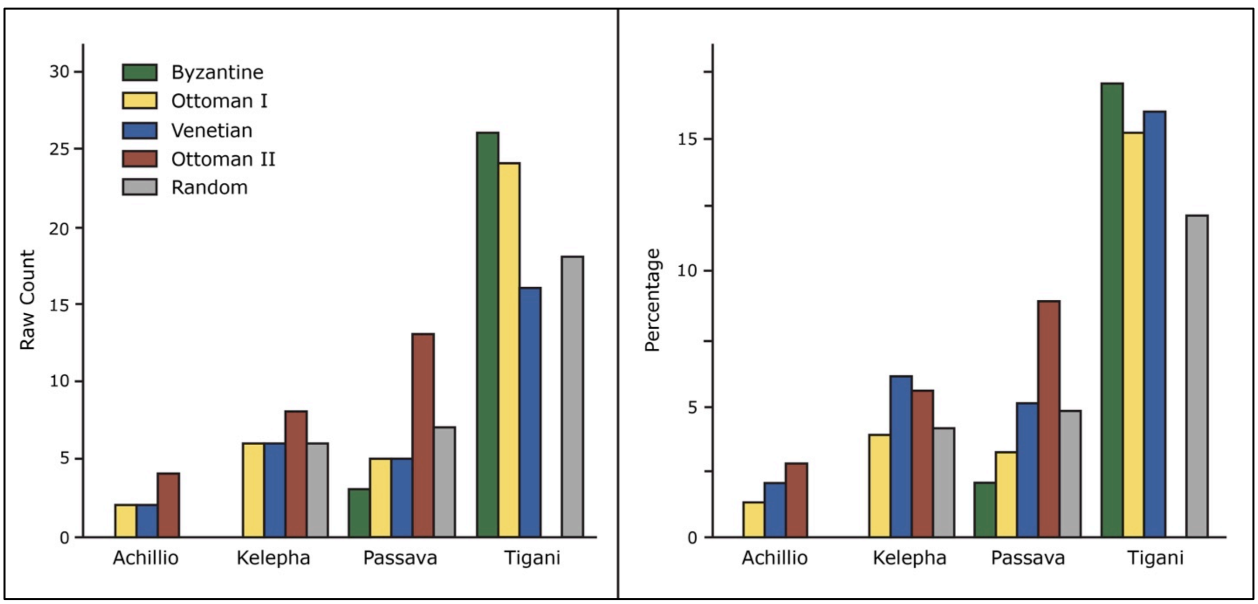


Figure 67 Number of settlements visible from each fortress: raw counts (left) and percentages (right).

What is more interesting is to compare these measured values with values taken from the random viewshed. In many cases, the fortresses had visibility of more settlements than would be expected given a random distribution of settlements. This was not the case, however, for Passava or Kelepha in the periods in which they were built (Byzantine and Ottoman I periods, respectively), suggesting that settlement visibility was not a factor in their original construction. Another interesting pattern is that in the Ottoman II period, the three extant fortresses all had higher visibility than that predicted by the random distribution, indicating that people were occupying more settlements within view of the fortresses than in any other previous period.

5.2.6 – Visibility of Bays

The last features to be subjected to the cumulative viewshed analysis were the 40 bays, including harbors and small ports, in the study region. A viewshed study was conducted to determine whether there was any change over time in the number of settlements visible from each bay (for results, see Table LXXVII, Appendix B).

A Friedman test showed that there was no statistically significant difference in the *percentage* of total settlements visible from each bay when comparing the five samples: $\chi^2(4) = 8.412$, $p = 0.078$. A Friedman test of the *raw numbers* did show a statistically significant difference at the 0.05 level: $\chi^2(4) = 12.982$, $p = 0.011$. A Wilcoxon signed-rank test was used to conduct post hoc analysis and locate the significant differences, with a Bonferroni correction establishing the significance level at $p < 0.005$. Two of the three significant relationships involved the Venetian period (which, as discussed above, should not be considered meaningful due to the disproportion in sample sizes). The third showed that the raw number of visible settlements in the Ottoman II period (mean = 2.41) was higher than the values predicted by the random viewshed (mean = 1.54), Z = -2.910, $p = 0.004$.

5.3 – Distribution of Route Network

A relatively simple method was chosen to analyze the route network: simple presence-absence of connection between each settlement and every other settlement in the network. If a neighbor could be reached directly without passing through another settlement, then this was treated as a connection. SNA was used to assess and interpret the overall route network, as well as interpret the basic distributions of connections throughout the network. A qualitative assessment of the built road network, the significance of which pertains to the overall theoretical model used in this study, will follow in Chapter 7.

5.3.1 – Social Network Analysis of Route Network

As with the LOS networks (section 5.2.1), the route networks were analyzed using SNA software. Analyses were made of eight route network graphs: one from each time period including all routes, and one from each time period omitting goat paths. The latter tests were conducted in order to assess the connectivity of settlements based on the built roads and walled paths, omitting the more informal and low-bulk paths used primarily by shepherds. The connectivity between each node pair was coded in a binary adjacency table and analyzed using UCINET 6 software. Note that because of the size of the matrices, these data are not reported in table form. The goals of the exploratory analysis were to assess the relative ease with which people could have moved between settlements and to locate any particular hubs based on degree, betweenness, and closeness centralities.

The summary table below (Table XLV) reports the overall cohesion measures for each route network. One of the most striking findings was the importance of goat paths in making the networks “small worlds.” Without the goat paths, the networks were less dense, the distance between nodes increased substantially, and the networks became fragmented with many more isolated settlements. In other words, if travel had been limited to only the walled paths and *kalderimia*, it would have taken many more intermediary steps to reach a given settlement, and some may not have been possible to reach at all. In terms of chronological change, the scores indicate that there was a temporary increase in network density during the Venetian period, when there was a smaller average distance between nodes. The values suggest that the network was "closer" at this time—in general, it would have been possible to reach other settlements with fewer intermediary steps.

TABLE XLV. COHESION MEASURES FOR THE ROUTE NETWORKS FROM EACH TIME PERIOD

	Byzantine	Ottoman I	Venetian	Ottoman II
Density	0.051[a] 0.038[b]	0.060 0.048	0.086 0.066	0.067 0.056
Average Degree	7.699 5.830	9.547 7.648	8.554 6.634	9.851 8.243
Average Distance	4.433 7.007	4.387 5.525	3.796 4.354	4.489 5.416
Diameter	11 22	11 13	8 10	12 13
Components	1 24	2 26	2 20	1 19
Fragmentation	0 0.279	0.013 0.291	0.020 0.342	0 0.229

[a] Top values are for the full networks including goat paths

[b] Bottom values are for the primary networks of walled paths and *kalderimia*

Analyzing the individual sites' centrality scores provided additional insight into which nodes were the most "powerful" in each period in terms of degree centrality, closeness centrality, and betweenness centrality. Figures 68–70 show the distribution of these centrality scores for the full route networks (including goat paths) and primary route networks (*kalderimia* and walled paths only; for full results, see Tables LXXVIII–LXXXI, Appendix B).

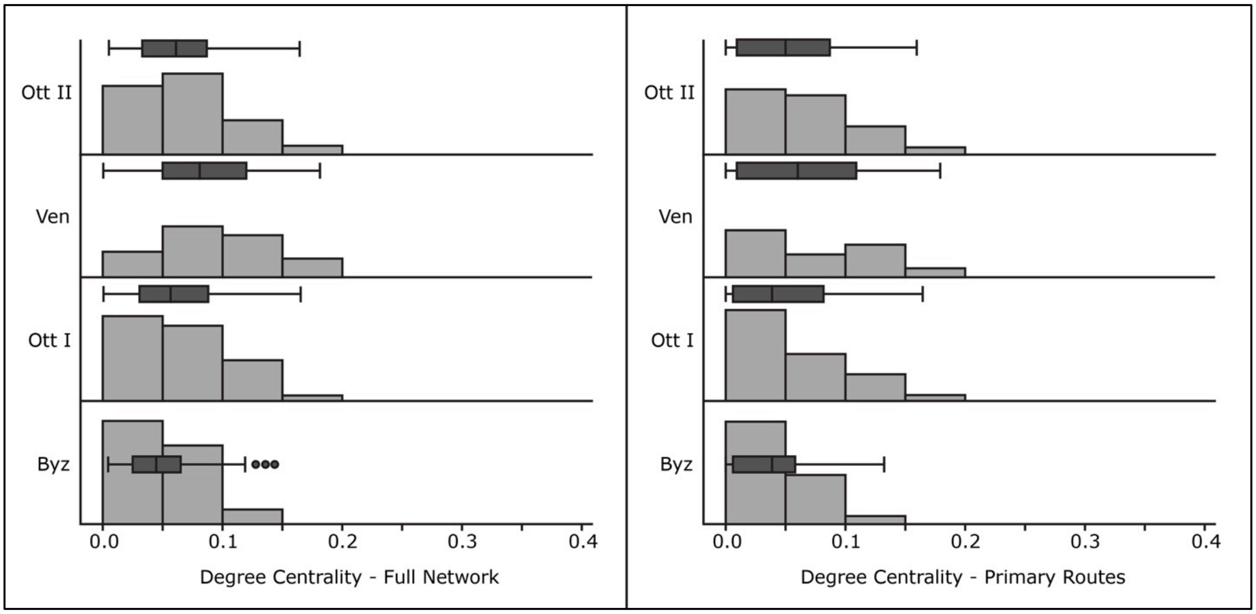


Figure 68. Distribution of degree centrality scores in the route networks: full network (left) and primary routes only (right).

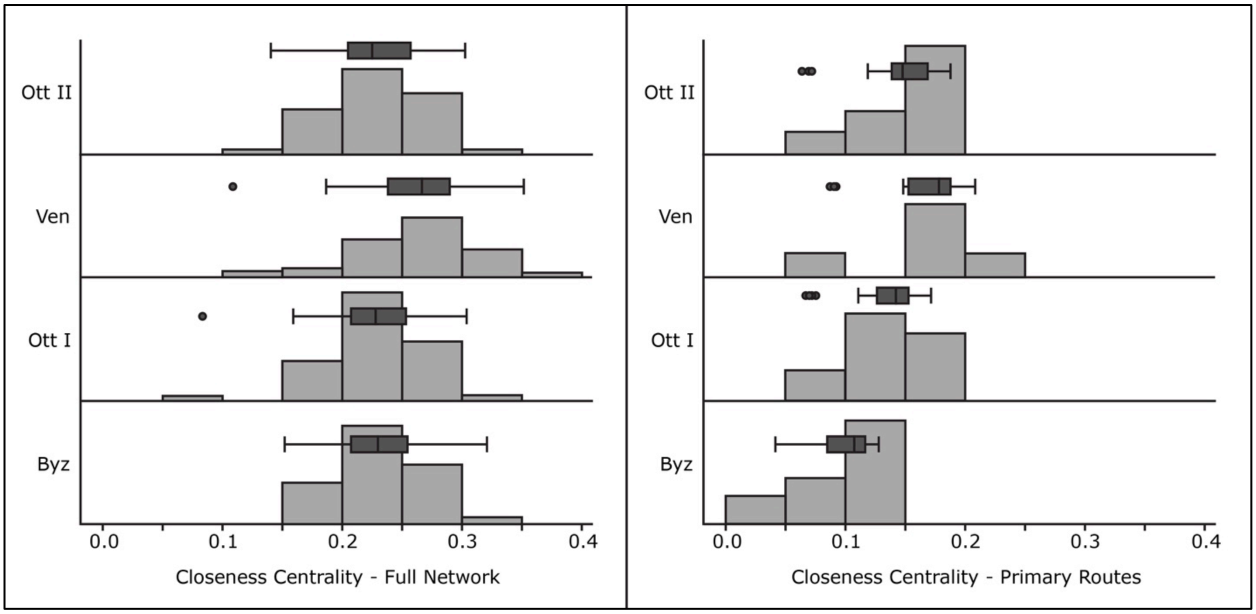


Figure 69. Distribution of closeness centrality scores in the route networks: full network (left) and primary routes only (right).

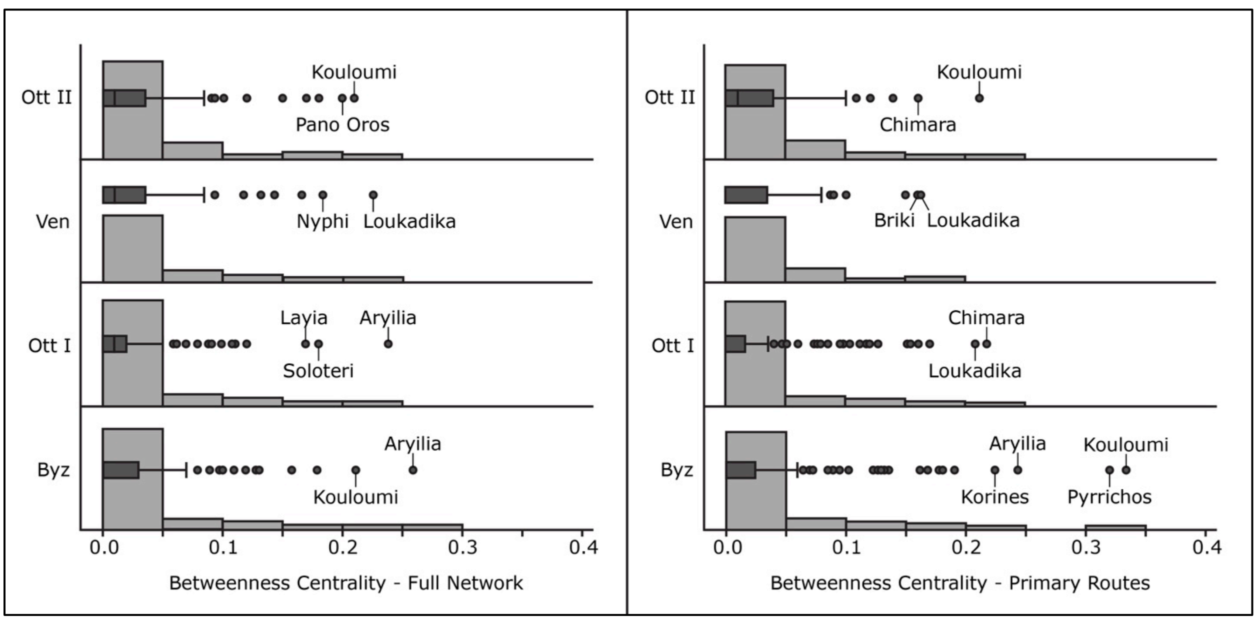


Figure 70. Distribution of betweenness centrality scores in the route networks: full network (left) and primary routes only (right); highest ranking outlier nodes are labeled.

As with the LOS networks, the distribution of degree centrality values reflects the fact that most settlements had only a few connections, while only a few settlements had many connections. However, the distribution also reveals less variation in the average number of connections for each settlement—the gap between the least-connected node and the most-connected node was smaller in the route networks than it was in the LOS networks. Looking at the histograms above, the overall lower degree centrality scores for the Byzantine period reflects the fact that these settlements had fewer average connections (i.e. a lower average degree) than in other periods. Only in the Byzantine period were there statistical outliers, meaning that these settlements were essentially the "hubs" in that they had the most number of connections in their day: Katayiorgis, Kourines, and Aryilia. When analyzing only the primary route network, these outliers disappeared, meaning that when including the goat paths in the analysis, there were no "hubs" with an extraordinarily high degree of connectivity. One last pattern to note is that over time, the locations of the settlements with the highest degree centrality shifted from the west coast (Byzantine and Ottoman I periods) to the east coast and northern valley (Venetian and Ottoman II). This shift likely reflects population movement to these areas and the increase in the number of settlements—and therefore connections—participating in the network in these places.

In terms of closeness centrality scores, the Byzantine-period settlements had lower scores than in later periods, reflecting the lower density of this network and the fewer average connections that each settlement had. The Venetian-period settlements had slightly higher closeness scores, reflecting the smaller size of the network and the fact that fewer intermediaries would have been necessary to reach any given node in the network. Also, when comparing the histograms of the full route network with the primary route network, it is clear that closeness scores were lower in the latter networks. This again emphasizes the overall finding that goat paths were critical in keeping the network densely connected.

Of the three centrality scores, the betweenness scores were the most noticeably different. In every network, there were outliers with significantly higher betweenness scores than most other settlements (Table XLVI). Sites with high betweenness scores tended to be located on the narrow eastern coast or in the valleys that connected the two halves of the peninsula. When comparing the full and primary route networks, the betweenness scores were generally slightly lower in the latter, with the exception of the Byzantine period, when Kouloumi (and Pyrrichos, close behind it) had the highest betweenness scores of any network. Again, their high scores emphasize two important findings: that restricting travel to *kalderimia* and walled paths meant that there were fewer pathways between different parts of the peninsula, and that the lower density and connectivity of the Byzantine-period network meant that these two settlements would have acted as critical “brokers” for overland travel, connecting otherwise isolated areas.

TABLE XLVI. OUTLIER SETTLEMENTS WITH HIGH BETWEENNESS CENTRALITY SCORES (ABOVE 0.150) IN THE ROUTE NETWORKS

Period	Full network			Primary routes only		
	Unit ID	Name	Score	Unit ID	Name	Score
Ottoman II	T075	Kouloumi	0.212	T075	Kouloumi	0.211
	T469	Pano Oros	0.200	T029	Chimara	0.155
	T081	Layia	0.179			
	T104	Mina	0.165			
Venetian	T093	Loukadika	0.225	T093	Loukadika	0.164
	T424	Nyphi, Exo Chora	0.184	T024	Briki	0.161
	T293	Dimaristika	0.166	T075	Kouloumi	0.151
Ottoman I	T021	Aryilia	0.238	T029	Chimara	0.216
	T321	Soloteri	0.181	T093	Loukadika	0.207
	T081	Layia	0.167	T138	Pyrrichos (Kavalos)	0.170
				T021	Aryilia	0.160
				T075	Kouloumi	0.155
				T024	Briki	0.153
Byzantine	T021	Aryilia	0.259	T075	Kouloumi	0.332
	T075	Kouloumi	0.205	T138	Pyrrichos (Kavalos)	0.319
	T278	Korakianika	0.181	T021	Aryilia	0.243
	T014	Alika	0.158	T392	Korines	0.224
				T362	Kouvouklia	0.190
				T051	Kaphiona	0.177
				T029	Chimara	0.177
				T120	Palaiochora	0.169
				T093	Loukadika	0.163

In the graph theoretic diagrams (Figures 71–82), it is easier to visualize the distribution of power throughout each network. Betweenness centrality was chosen as the most useful centrality measure for visualization because it was the most divergent of the three centrality scores and because it shows which settlements would have acted as “brokers” to connect different clusters within the peninsula. A Girvan-Newman algorithm was used to identify and color-code cohesive subgroups—clusters of nodes that are most closely connected to each other in terms of the route network. Unlike the social network analysis of the LOS networks—for which the Girvan-Newman groups often corresponded to the western, northern, and eastern sections—when applied to the route networks, the algorithm suggested that a higher number of groups was more appropriate for the data. In general, these groups included the southwestern plain, the southern tail of the peninsula (Matapan), the southern half of the east coast, the northern half of the east coast (including the settlements in the Kotronas valley), and the northern valley (including the northern half of the west coast).

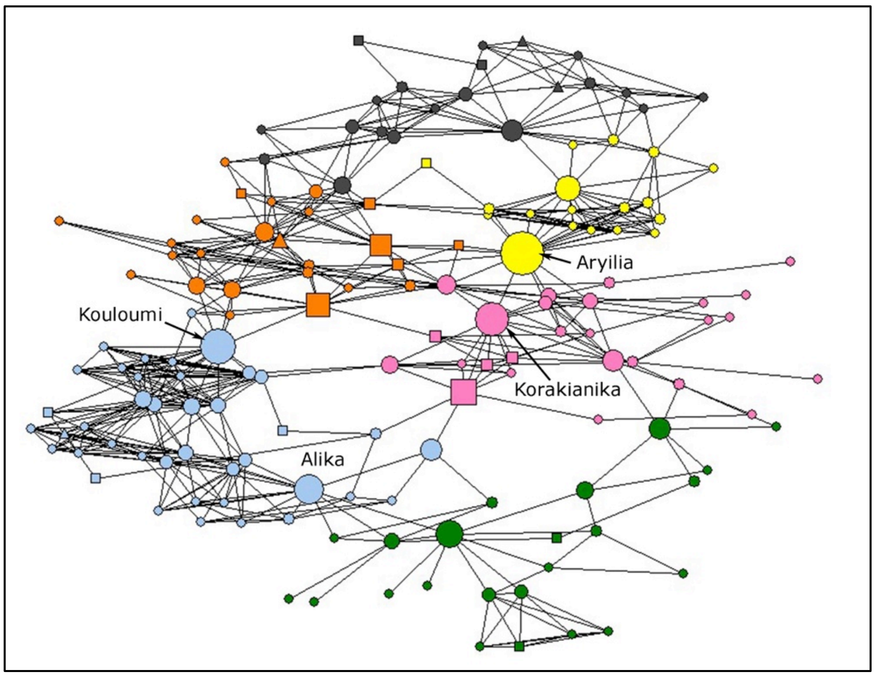


Figure 71. The full Byzantine-period route network, with node size reflecting betweenness centrality. Isolates are in white. Circles represent permanent villages, squares seasonal settlements, and triangles monasteries.

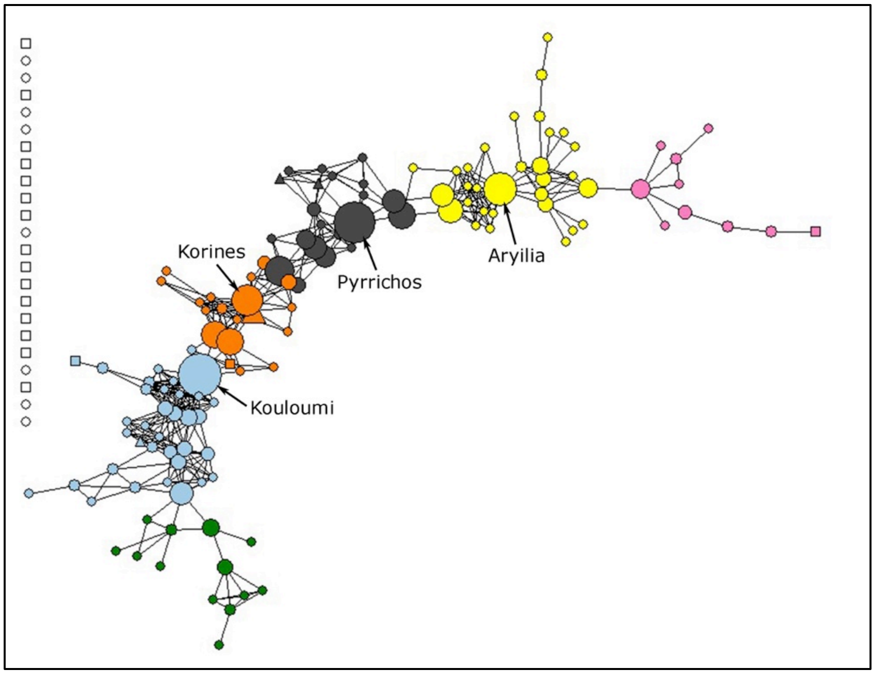


Figure 72. The primary Byzantine-period route network (walled paths and *kalderimia*), with node size reflecting betweenness centrality. Isolates are in white.

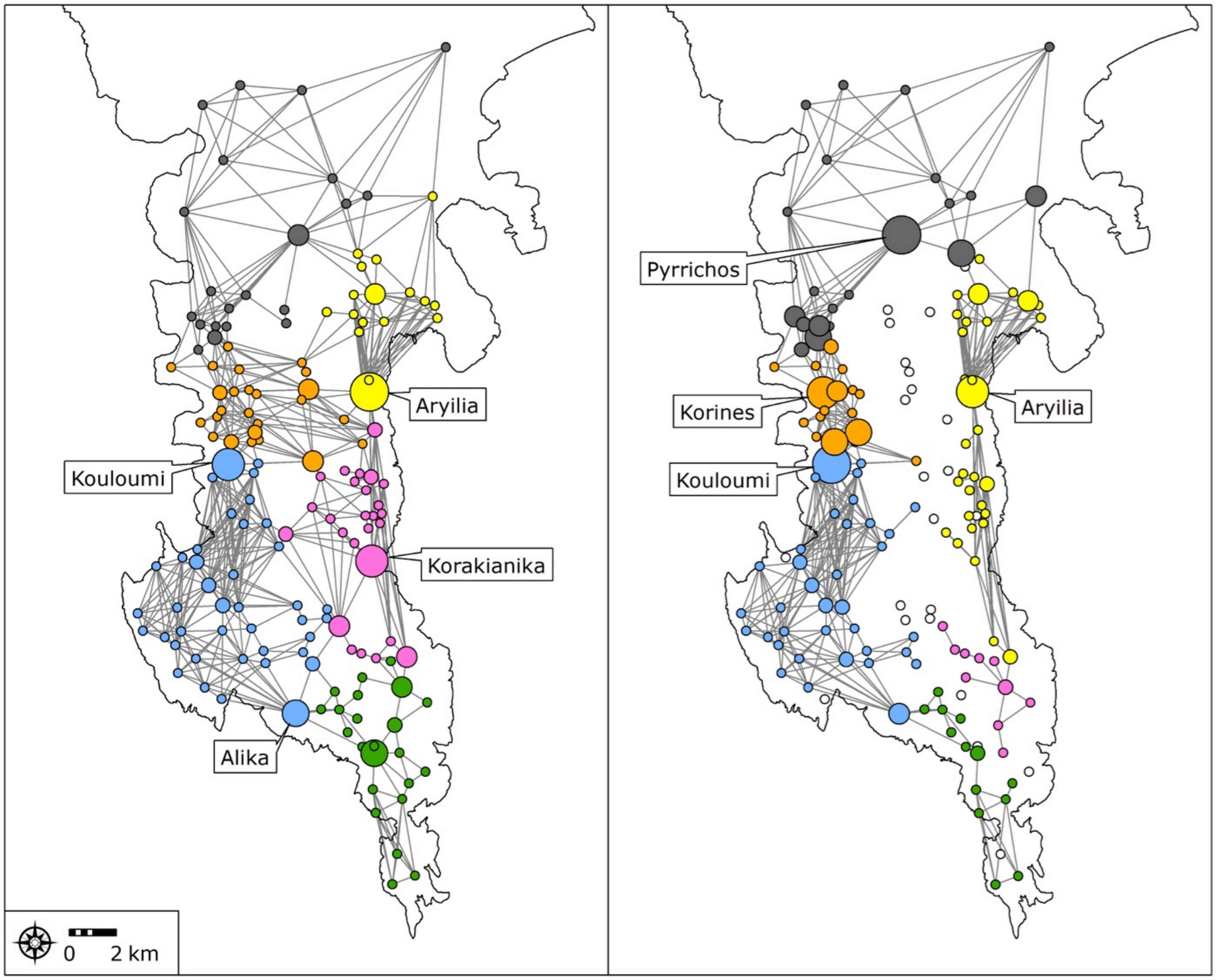


Figure 73. Spatial display of the Girvan-Newman clusters for the Byzantine-period route network: (left) full network (GN=6), (right) primary routes only (GN=6).

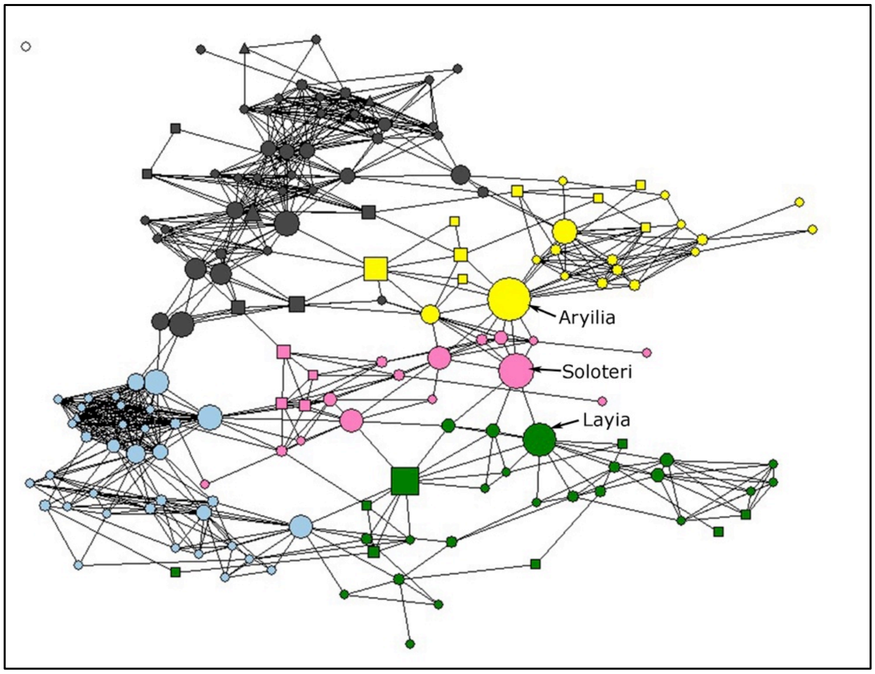


Figure 74. The full Ottoman I-period route network, with node size reflecting betweenness centrality. Isolates are in white. Circles represent permanent villages, squares seasonal settlements, and triangles monasteries.

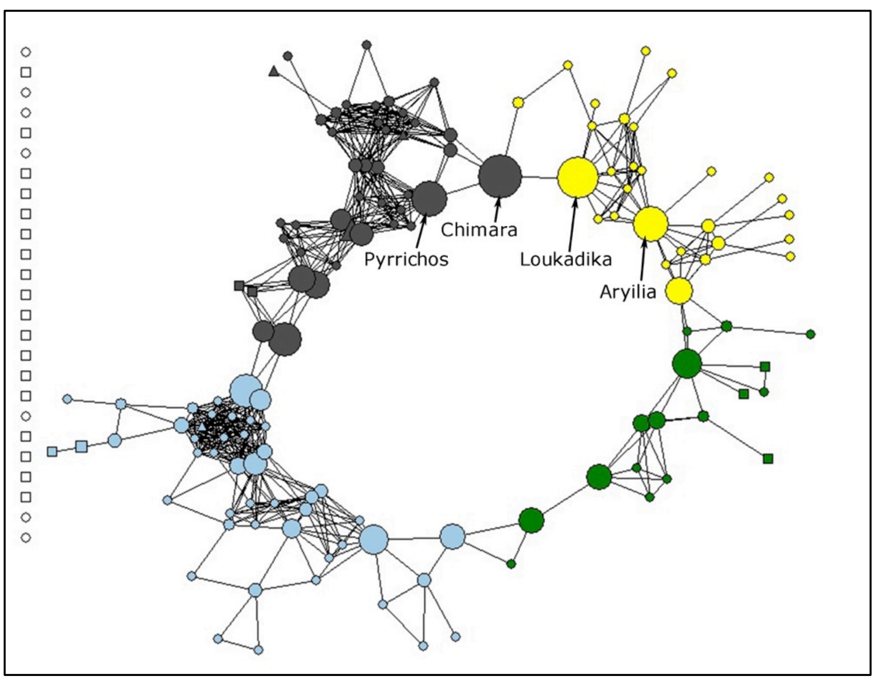


Figure 75. The primary Ottoman I-period route network (walled paths and *kalderimia*), with node size reflecting betweenness centrality. Isolates are in white.

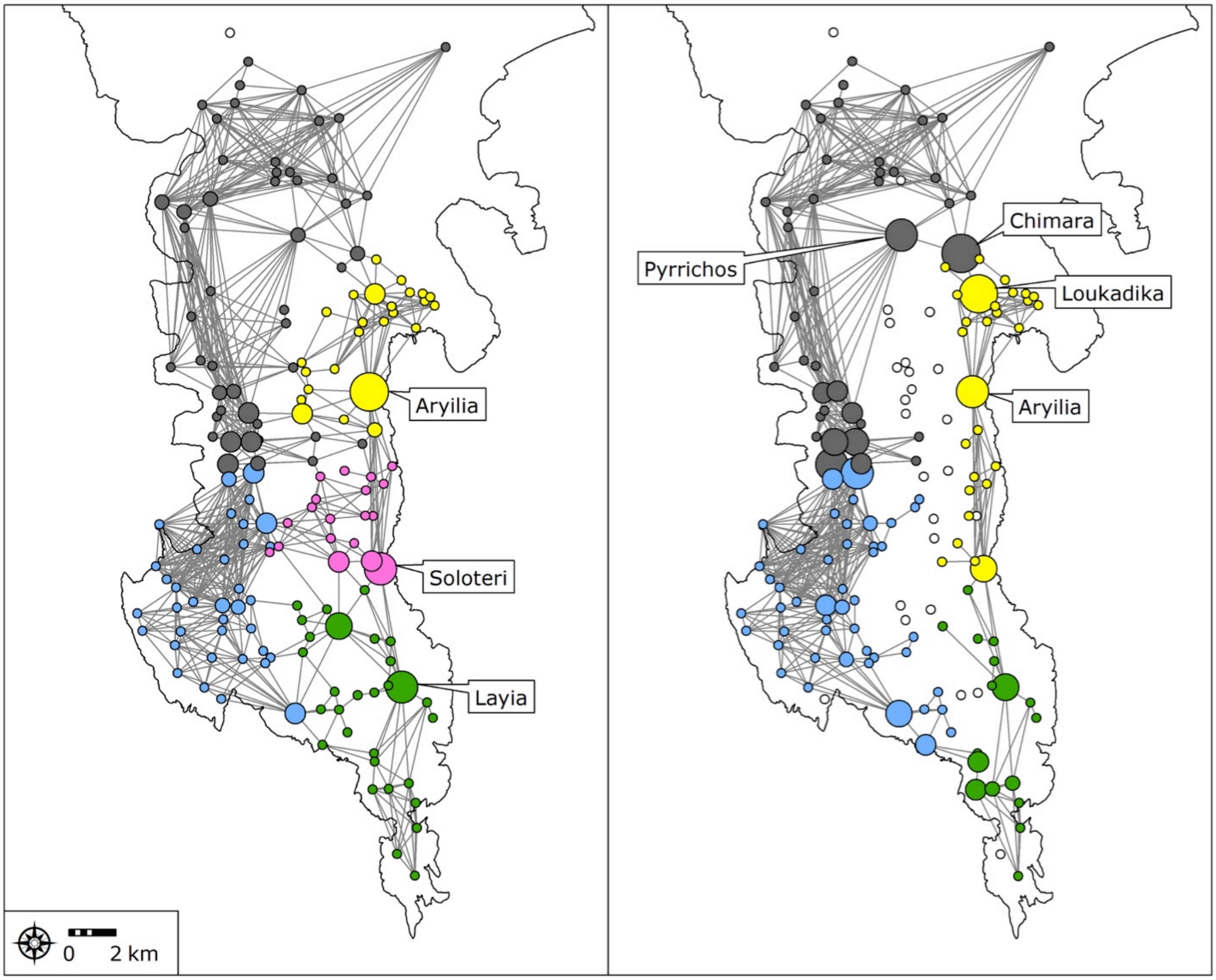


Figure 76. Spatial display of the Girvan-Newman clusters for the Ottoman I-period route network: (left) full network (GN=5), (right) primary routes only (GN=4).

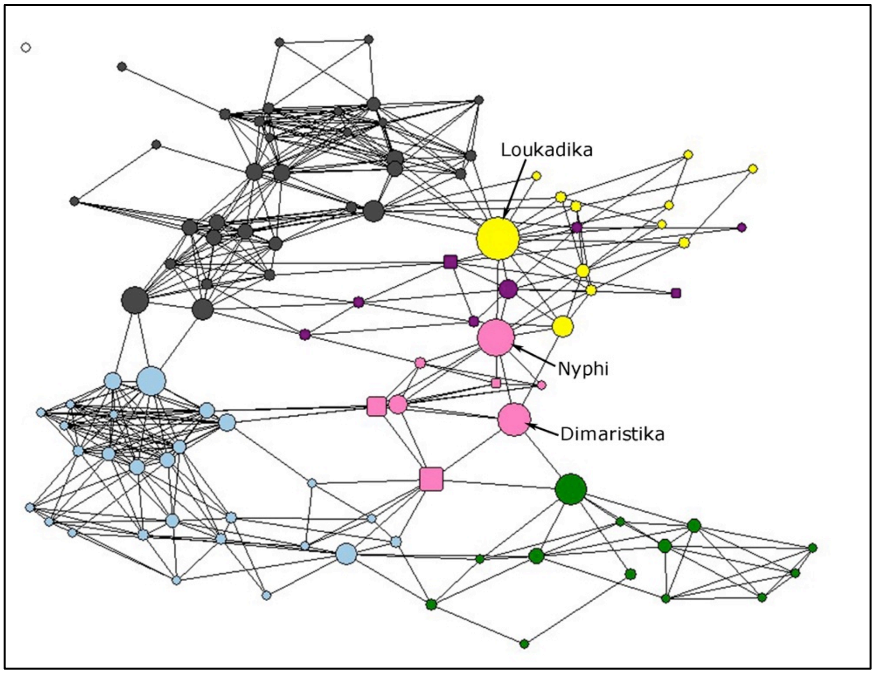


Figure 77. The full Venetian-period route network, with node size reflecting betweenness centrality. Isolates are in white. Circles represent permanent villages, squares seasonal settlements, and triangles monasteries.

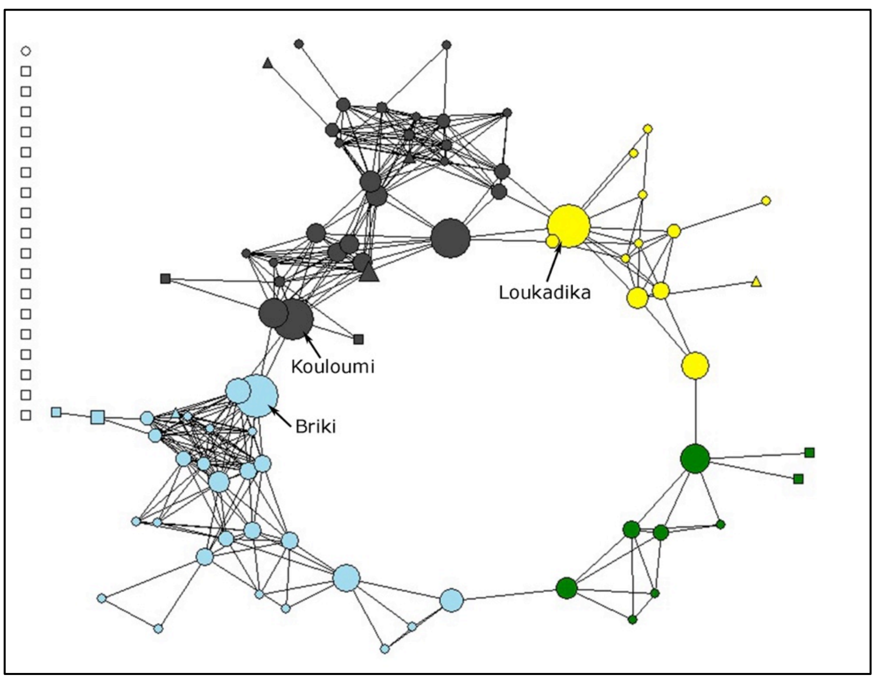


Figure 78. The primary Venetian-period route network (walled paths and *kalderimia*), with node size reflecting betweenness centrality. Isolates are in white.

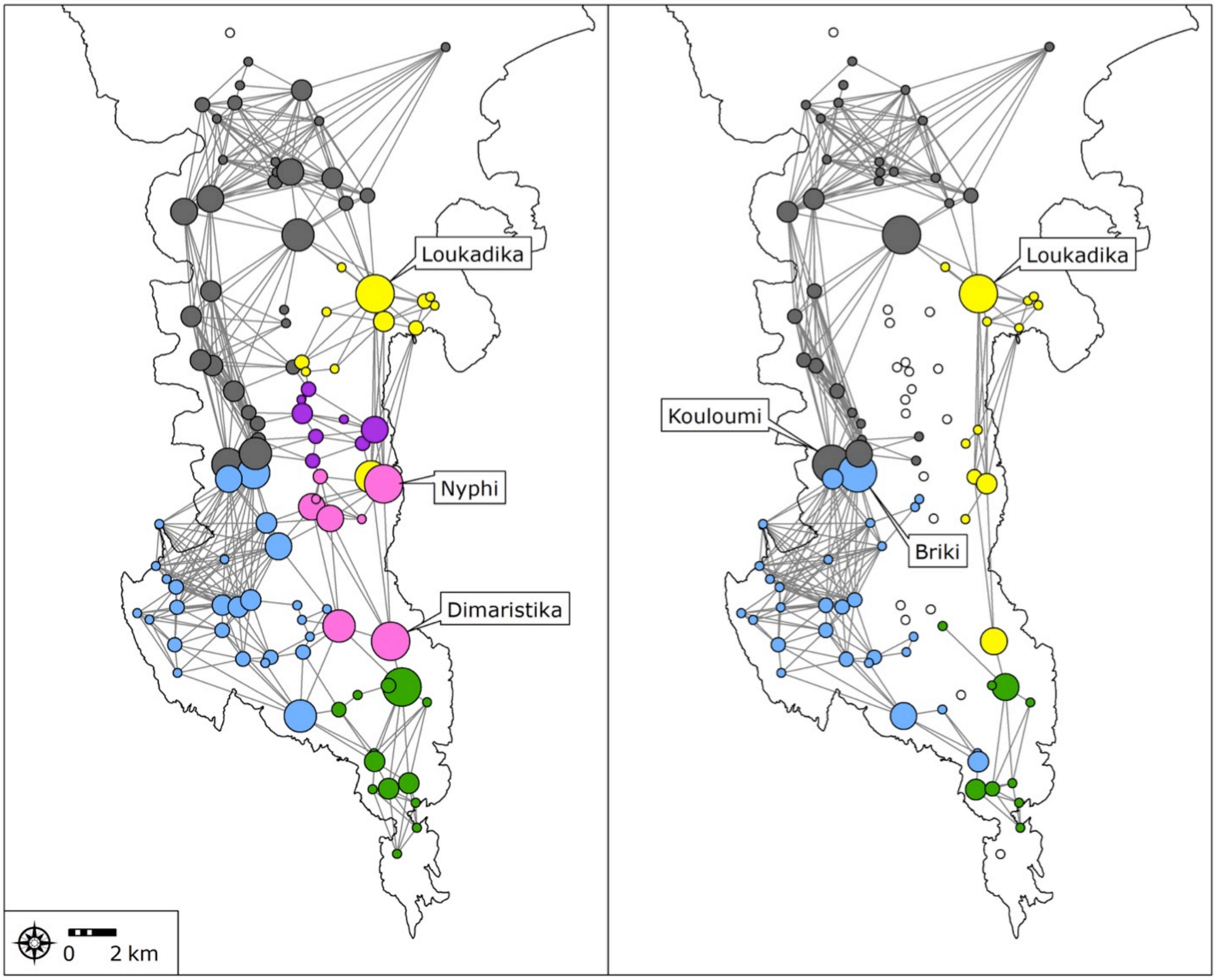


Figure 79. Spatial display of the Girvan-Newman clusters for the Venetian-period route network: (left) full network (GN=6), (right) primary routes only (GN=4).

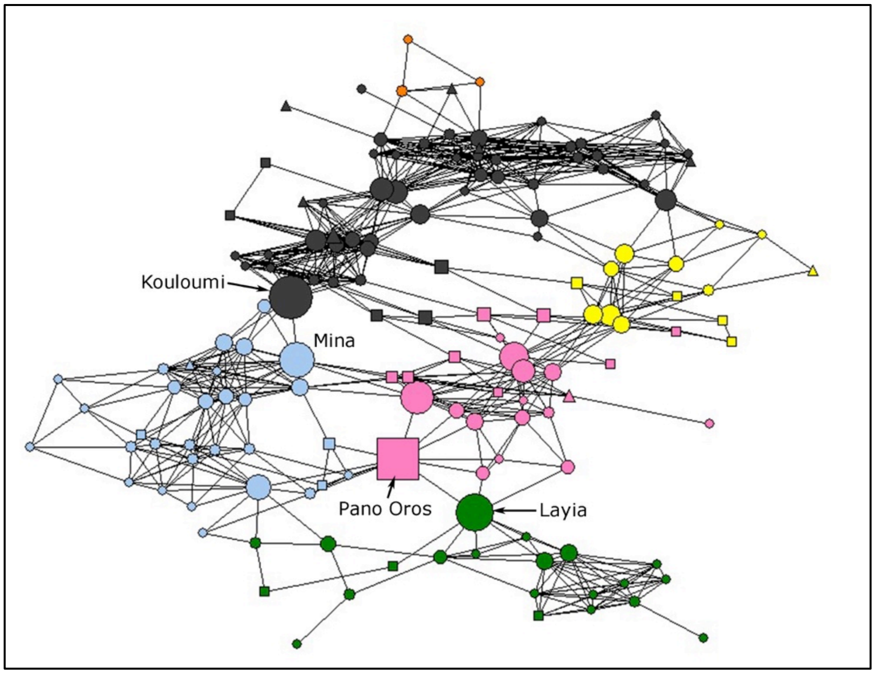


Figure 80. The full Ottoman II-period route network, with node size reflecting betweenness centrality. Isolates are in white. Circles represent permanent villages, squares seasonal settlements, and triangles monasteries.

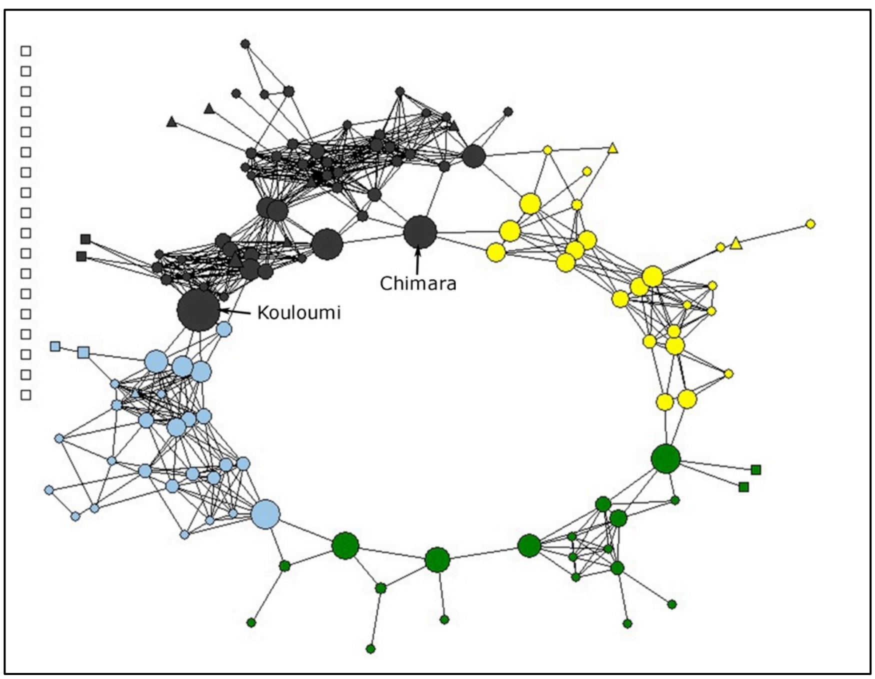


Figure 81. The primary Ottoman II-period route network (walled paths and *kalderimia*), with node size reflecting betweenness centrality. Isolates are in white.

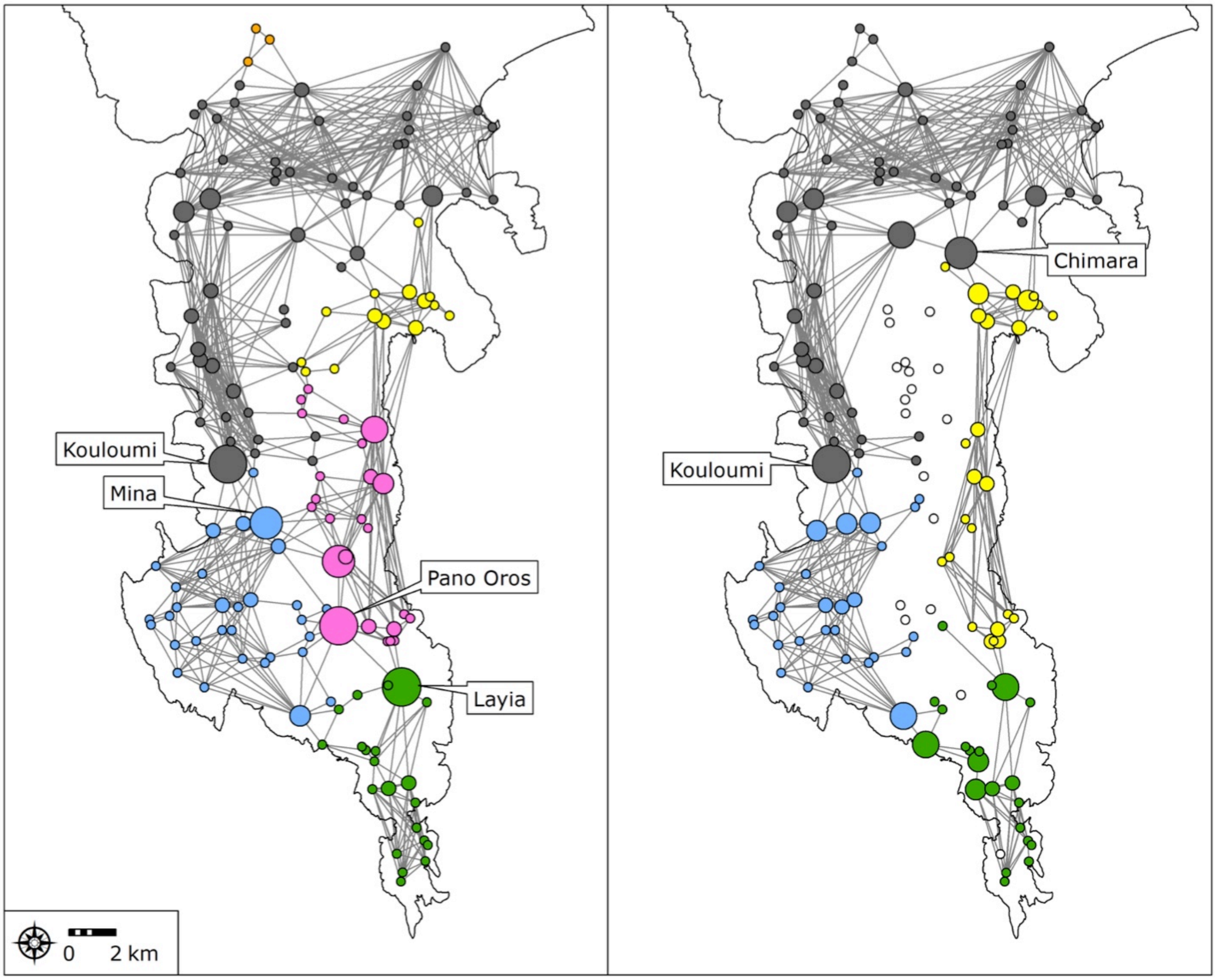


Figure 82. Spatial display of the Girvan-Newman clusters for the Venetian-period route network: (left) full network (GN=6), (right) primary routes only (GN=4).

5.3.2 – Descriptive Statistics of Route Network

The basic distribution of pathway connections sheds additional light on the results of the SNA (for data, see Tables LXXXII–LXXXV, Appendix B). The most important finding was that the primary path network (*kalderimia* and walled paths) was “scale-free.” Scale-free networks are characterized as having a few hubs with many connections, while most nodes have just a few connections. Figure 83 shows how the histogram of the primary path network is similar to an exponential curve—most settlements have only a few connections, while just a few act as hubs. This finding means that the primary transportation network was generally very robust and would have continued to operate even if several of the "less powerful" nodes were removed. However, if one or more of the hubs were removed—say, by being attacked or otherwise closing off access to the roads passing through them—then the entire transportation system would have been affected.

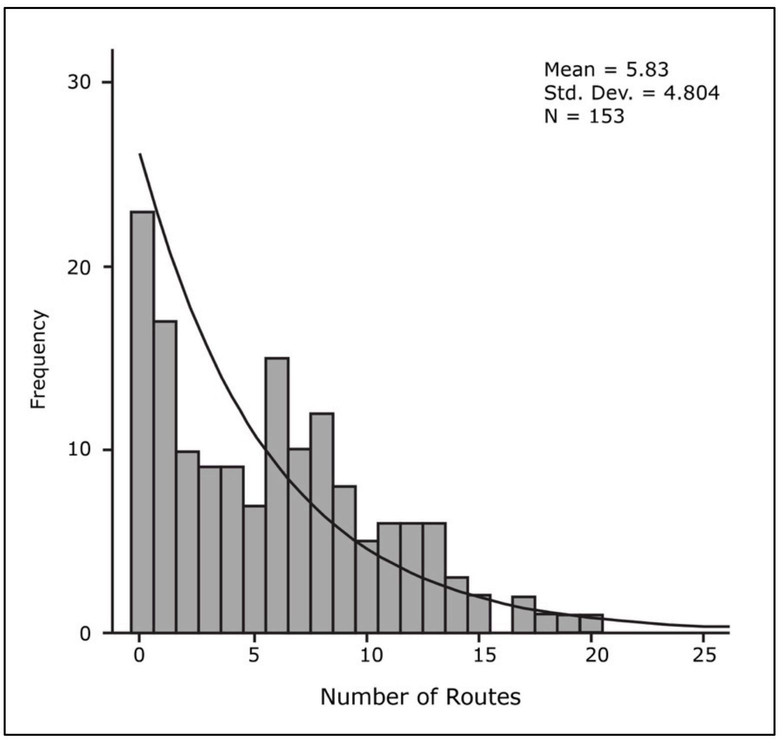


Figure 83. Histogram of the primary pathway network in the Byzantine period, compared to an exponential distribution curve.

However, when considered altogether as part of a single route network (i.e. including goat paths), the networks were *not scale-free*. The histogram of the number of pathways connecting each settlement exhibits a normal distribution (Figure 84). This means that most settlements within the route network had an average number of connections, with just a few nodes on the extreme ends (i.e. with either extremely few or extremely numerous connections). With this type of network, it means that hubs did not play an important role in keeping the network connected and robust. Nonetheless, the route network was still a "small world," meaning that the average distance between any two given nodes was relatively small due to the "weak ties" that connected local clusters of nodes.

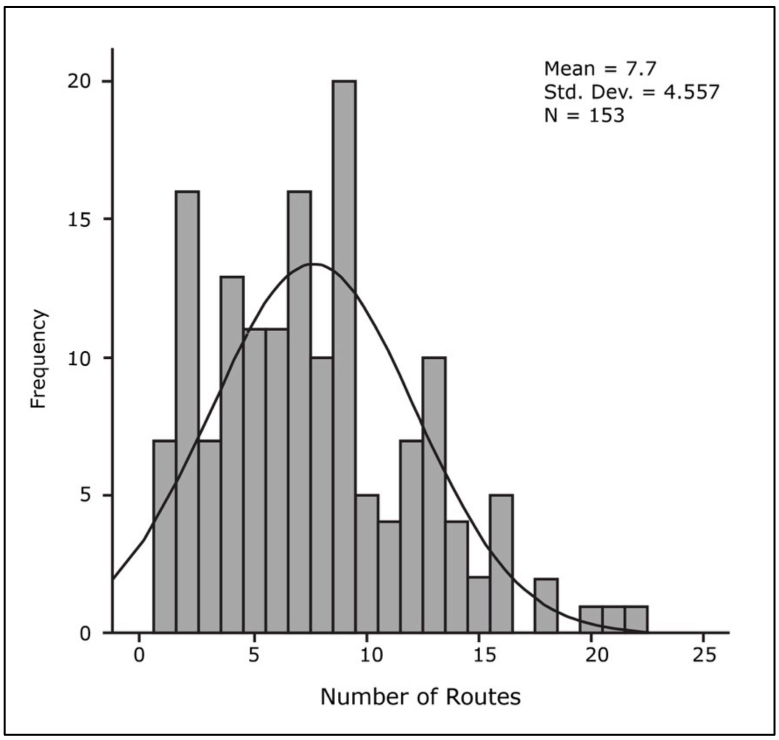


Figure 84. Histogram of the full pathway network in the Byzantine period, compared to a normal distribution curve.

As with the visibility analysis, the four fortresses in the study region were not critical nodes in the route network of Mani (Figure 85). Passava (T224), a Frankish or Late Byzantine fortress, was directly connected to the fewest number of settlements in the Byzantine period and only became more connected (with higher centrality scores) in the Ottoman II, when there was increased settlement in the northeastern section of Mani—though by this point, the fortress was no longer in use by the Ottoman military. Achillio's (T430) low pathway counts and centrality scores were unsurprising given its position on the bay of Porto Kayio: these results emphasize its maritime orientation and perspective and demonstrate that it was relatively disconnected from the overland networks connecting the Maniate settlements. Tigani (T236) was well connected to the road network, but as with the visibility network, this finding reflects the geography of the flat southwestern plain—all the settlements there were well connected to the pathway network. Finally, Kelepha (T343) gave the most surprising results of all four fortresses. Not only was it directly connected to relatively few settlements, but its centrality scores were also lower than most of the settlements in Mani. Specifically, its low closeness score indicates that it would have been relatively difficult and time-consuming for a person to walk from Kelepha to any other given settlement, because it simply was not well connected to the pathway network. This was surprising from a regional perspective, because most of the paths around Kelepha were stone-built *kalderimia*, indicating an investment of labor and funds in developing the road network in this area.

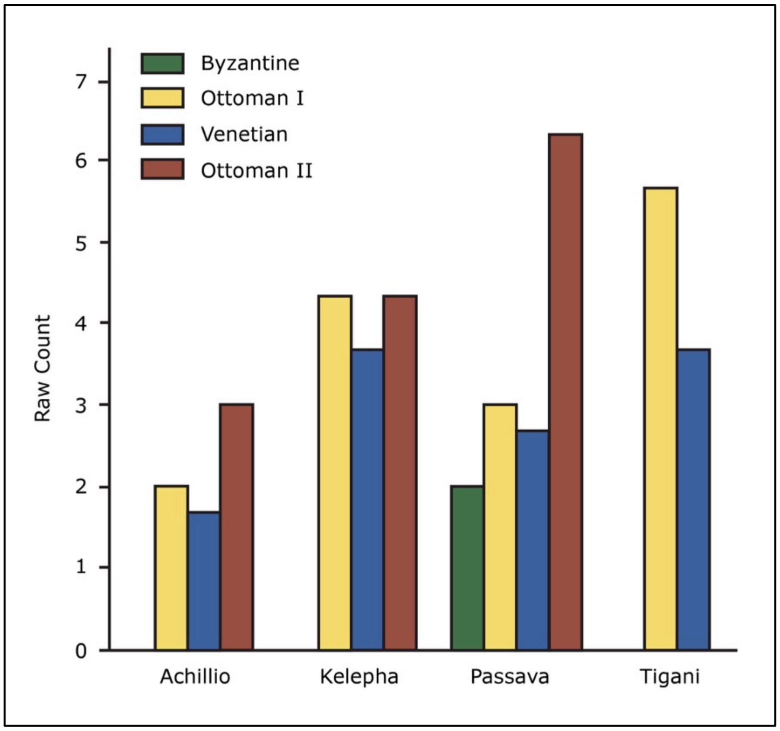


Figure 85. Raw counts of settlements directly connected to each fortress via a route.

5.4 – Chapter Summary

In this chapter, I presented the results of the regional-scale analyses of the settlements in Mani, conducted with a diachronic perspective in mind. Several different methods were used to detect and analyze the spatial patterns, including statistical tests, visibility analyses, cluster analysis (a technique based on the traditional form of point pattern analysis used in the earliest archaeological settlement pattern studies), and social network analysis. Together, these techniques have produced a large amount of data, and while most of the results are rather underwhelming, others provide insight into the patterns of settlement relocation and retention over a span of about 800 years. One of the goals of these analyses was to gain some perspective on why people chose to live where they did on the landscape. Were they close to transportation networks? Which other settlements were they connected to? What could they see? What role did the imperial fortifications play in everyday communication and movement for Maniate villagers? By focusing on three broad variables—settlement location, settlement visibility, and distribution of route networks—these results will provide a starting point for answering these questions.

6 – COMMUNITY-SCALE CASE STUDIES

> Before, life in the Mani had been semi-troglodytic, uncouth in the extreme, but fairly pacific. Now, families began to fortify themselves behind thick walls and under slab-roofs. Quarrels and feuds for the elbow room of families increased with the thickening population, and the chaos lasted from the fourteenth century until late in the nineteenth. (Fermor [1958] 2004:87)

In this chapter, I discuss the changing social organization of the communities in Mani from the Byzantine period through the Ottoman II period using the theoretical concepts outlined in Chapter 3. Eleven case studies are presented to illustrate the diversity in different aspects of community organization, especially in terms of integrative mechanisms and the practice of resource sharing (see sections 3.3.4 and 3.3.5): namely, the distribution of houses and cisterns, the number and location of churches, the presence and location of public spaces, the impact of topography on the spatial layout of settlements, and so on.

In section 3.3.2, my justification is laid out for treating discrete and physical settlements as socially-constructed "communities." This reasoning is based on the spatial boundedness of the Maniate settlements, their toponymic identities, their small populations (typically averaging less than the 150-person "cut-off" for viable social networks), and the lack of clear settlement "clusters" built around dense transportation or visual networks. As Chapter 5 demonstrates, most of the settlements in Mani are relatively well connected—a product of the landscape and the unusually high population density of the region. For all these reasons, and with few exceptions, the physical settlements are considered as socially constituted "imagined communities," upon which people based a shared common identity

The goal of this community-scale analysis is to determine how Maniate communities were organized based on evidence of social practice (see Table II). Taking a closer look at the way people structured their social relationships at the community scale is an essential step in understanding the broader regional context of Maniate life during the transition to Ottoman rule.

One of the challenges that an archaeologist faces is to detect patterns in large datasets—to decide where lines should be drawn and where categories should be formed. When it comes to the settlements of Mani, the subjective analysis of finding settlements "types" within each time period is a difficult task; it is impossible to present a single case study and claim that it represents all the others. Instead, I have opted to present eleven case studies, each of which has its own local flavor and yet illustrates a particular facet of settlement layout and organization. Where possible, the case studies are sites that were recorded thoroughly in person, have a clear distinction between architectural phases, and have definite ties to historical records.

There are two noticeable omissions from the case studies. First, the Venetian period is not represented, as the period lasted only 30 years and is very difficult to detect from an archaeological perspective. Second, the seasonal sites in the mountains are also omitted, partly because they would not have constituted the physical space for permanent "communities" to live and operate according to the theoretical model presented here, and partly because I did not visit them in person.

The chosen case studies can be imagined as representing two spectrums—chronology and geography—with two additional case studies that demonstrate the transition between time periods (Table XLVII, Figure 86). For each case study, a map and occasionally a relevant photograph are included in the text; all additional photographs can be found in Appendix C.

TABLE XLVII. COMMUNITY-SCALE CASE STUDIES AND THEIR RELATIONSHIP TO THE CHRONOLOGY AND GEOGRAPHY OF THE REGION

<table>
<tr><th></th><th>Plains</th><th>Hilltops</th><th colspan="2">Temporal Transition</th></tr>
<tr><td>Ottoman II</td><td>Pyrgos Dirou</td><td>Spira</td><td></td><td rowspan="2">Briki</td></tr>
<tr><td>Ottoman I</td><td>Ippola</td><td>Kaliazi
Skala</td><td rowspan="2">Palaia Tserova</td></tr>
<tr><td>Byzantine</td><td>Kouvouklia
Charouda</td><td>Nyphi
Kotraphi</td><td></td></tr>
</table>

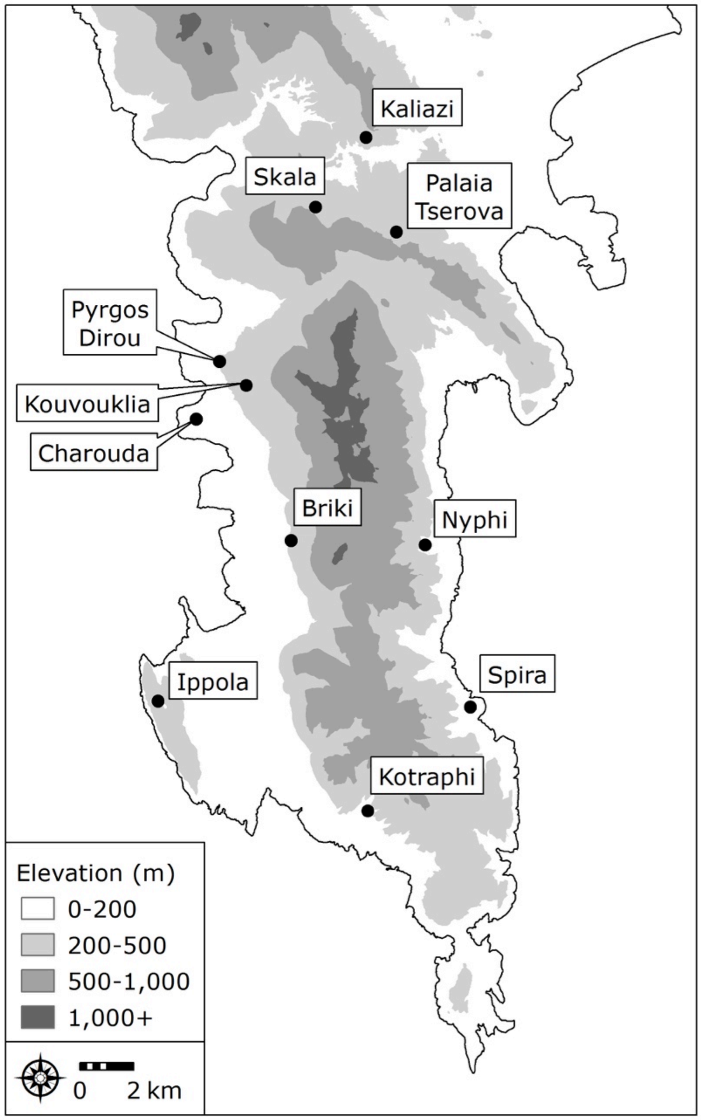


Figure 86. Map showing the location of the selected case studies.

6.1 – Byzantine Plains Settlements: Kouvouklia and Charouda

To illustrate the typical plains settlements of the Byzantine period, two case studies were chosen. Kouvouklia (T362) represents the common pattern of a cluster of houses and cisterns, roughly aligned in the same orientation and evenly dispersed throughout the site. Charouda (T028) represents a more unusual form of spatial layout—also seen in Pyrrichos, Nomia, and the northern neighborhood of Pyrgos Dirou—in which the houses form a ring around a large central area. Charouda also presents a second interesting spatial pattern—also found in Koulouvades, Charia, and Avles—where a cluster of cisterns are found together in one area of the site, rather than being distributed evenly between the houses.

Kouvouklia is a local toponym reported by a man from the nearby town of Pyrgos Dirou. The site includes 46 extant medieval structures, 23 cisterns, and a possible tower. It is an open, undefended site, located on relatively flat terrain between the 220 and 240 m elevation contours (Figure 87). It is located about 180 m southwest of the Middle Byzantine church of the Taxiarchis (Figure 109, Appendix C), which is dated to the second half of the 11th century (Traquair 1908-1909:191-192; Megaw 1932-33:151-152, Pl. 20; Saïtas 2009:375; Drandakis 2002:370-372, Figs. 95-96).

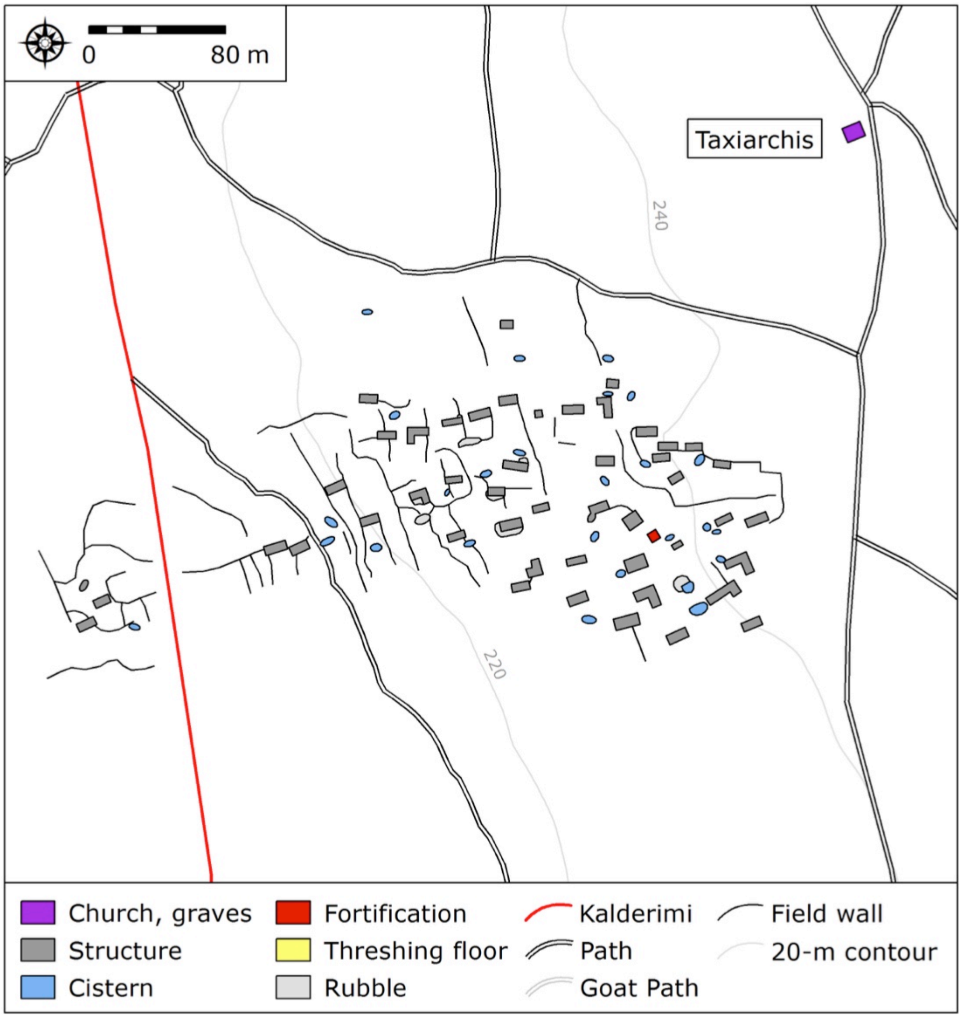


Figure 87. Map of Kouvouklia.

Today, the settlement is overgrown with wild olives, tall field grass, and low brush, making visibility difficult at times but relatively clear compared to other abandoned sites covered with maquis. The eastern part of the site—encompassing the possible tower and several houses—is now used as a grazing area for pigs, and three pigs and three dogs were kept there at the time of survey. There are also a number of modern structures: two dilapidated animal sheds and an abandoned house, as well as a newly built animal shed for the pigs (Figure 110, Appendix C).

Some of the medieval cisterns were reclaimed at some point in the last few decades, having been built up with mortared stones and covered with cement to channel water into the basin.

The vast majority of the medieval residential structures are freestanding “megalithic” buildings; only a few have additions or extensions that were built at a later date (Figure 111, Appendix C). The houses are built in the typical rectangular style, with external lengths ranging from 6.8–12.5 m (average of 10.0 m), external widths of 4.0–6.0 m (average of 5.0 m), and wall widths of 97–140 cm (average of 116 cm). A single low doorway is usually located on the south wall. The structures would have supported a second story, and indeed one house was preserved to such a height that a second doorway could be seen above and to the side of the ground floor entrance. The largest house (with a length of 13.5 m) bears an extremely unusual characteristic: an engraving on the massive lintel above the door with three crosses and two animals, one of which resembles a centaur with a human head (Figure 112, Appendix C). Occasional cross engravings can be seen on door lintels in other settlements, but this was by far the most intricate engraving encountered during the course of fieldwork.

A single, nearly square structure is located at the center of the site, with a length of 7.45 m and a width of 5.54 m (Figure 113, Appendix C). These dimensions, coupled with the extremely thick walls (between 158 and 183 cm in width), suggest it was once taller and possibly served a defensive purpose. The site is otherwise undefended and relatively exposed on the open plain, making this potential tower the only defensive feature identified at the site.

Subterranean cisterns were found interspersed throughout the houses, very often located to the west of a particular house, but in many cases located equidistant from more than one house (Figure 114, Appendix C). The vegetation overgrowth and the reworking of field boundaries and terrace walls may very well have obscured additional cisterns, but based on the field survey it seems that there was approximately 1 cistern for every 2 houses.

The second case study, Charouda, provides an opportunity to discuss two less common (but by no means unique) spatial patterns in the layout of Byzantine-period plains sites: a ring-like layout of houses surrounding a common central area, and a clustering of cisterns in a specific part of the site (Figure 88). Both of these qualities can be found in different plains sites throughout Mani. Charouda is located on the flat peninsula south of Pyrgos Dirou at an elevation of about 160 m. The area around the settlement, particularly to the southeast, is filled with limestone outcrops, which would have provided a ready source of building material (Figure 115, Appendix C). The medieval phase of settlement comprised about 15 “megalithic” houses, 3 Byzantine churches, and at least 11 cisterns. Parts of the site were not surveyed in person, and it is possible that additional cisterns may be found in these areas.

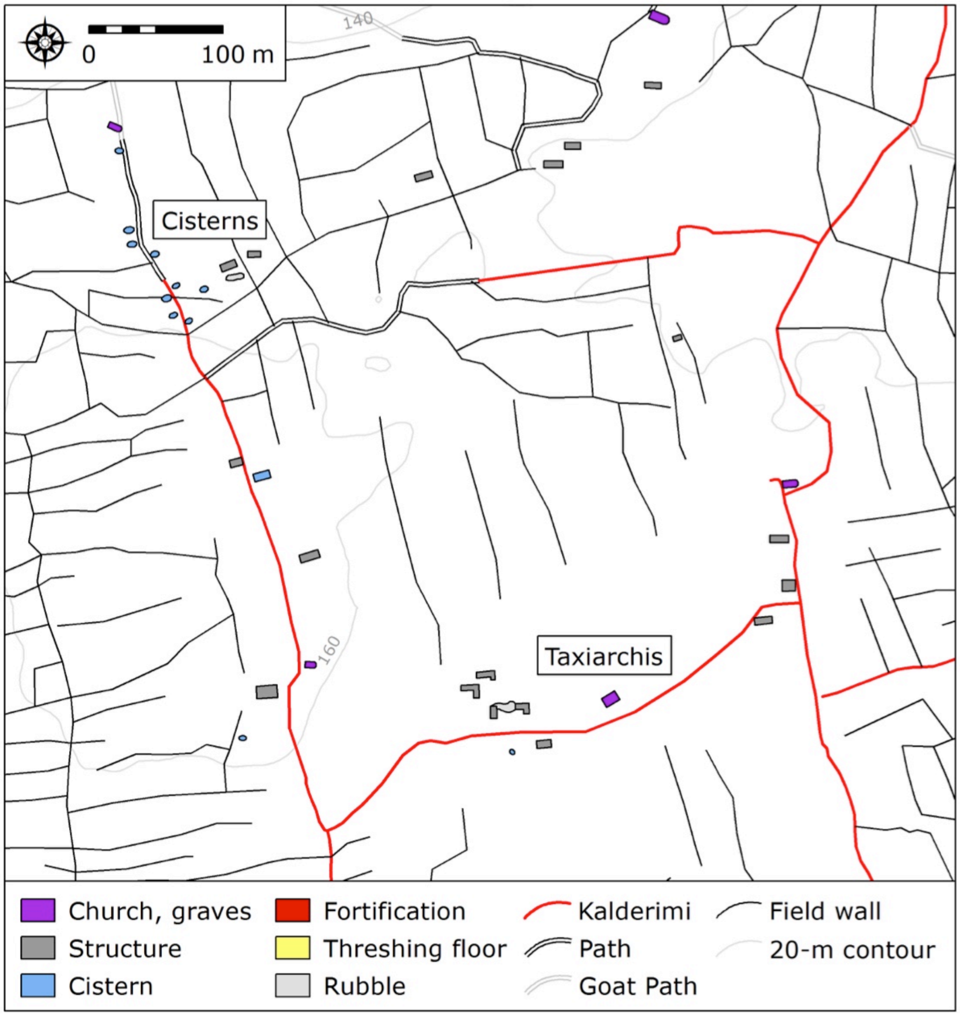


Figure 88. Map of Charouda.

A *kalderimi* (which soon turns into a walled field path) leads north from the site to one of the churches, dateable to the Byzantine period based on its construction with sandstone blocks and marble roof supports (Figure 116, Appendix C). This path is where most of the settlement's cisterns are located, lining both sides of the overgrown pathway (Figure 117, Appendix C). The cisterns themselves are no longer in use, although one still has an intact and well-carved hatch (Figure 118, Appendix C). Another church on the east side of the settlement, Ay. Sotiras, is built in a "megalithic" style and was partially repaired with mortar in the apse and iconostasis (Figure

119, Appendix C). The church of the Taxiarchis, located to the south, has been dated to the last quarter of the 11th century (Drandakis 2002:373; Traquair 1908-1909:189-190, Plates 11-12, Figure 4). The church is a well-preserved example of Middle Byzantine religious architecture in Mani, with preserved iconography (except for one wall in the nave, which has been whitewashed) and marble elements inside the church (Figure 120, Appendix C). The exterior architecture incorporates additional carved pieces, including a Roman-period gravestone, as well as Late Byzantine bowls in the cupola and other parts of the exterior. A modern cemetery, still in use, is located in the churchyard to the east.

Komis (2005:354-355) traced the name “Charouda” to a Slavic root (*koruto*, “drinking channel, boat, bucket, riverbed”). The name first appears in a 1554 map as “Carude,” and it appears again in the 1618 Nevers Catalog as “Charouda Chardiani” with 40 hearths. Komis reports that the dedicatory inscription for the Taxiarchis names the founder as Michail Karidianos (or Kardianos), hinting at this family’s prominence in the Ottoman I period. In 1689, the surname appeared in a letter referring to a Maniate living in Zakynthos, and Komis argues that this migration (first to Zakynthos and later to Italy) led to the disappearance of the family name from the region. I would further add that, based on the absence of architectural remains and historical references after this point, the settlement may even have been abandoned in the late Ottoman I period. It was reoccupied (and prospered) in the Early Modern period (1830–1950), judging from the 72 houses that date to the Early Modern or Modern periods (only 14 of which are now abandoned).

6.2 – Byzantine Hilltop Settlements: The Regions of Nyphi and Kotraphi

Topography plays a major role in determining the layout of a settlement. While the majority of large settlements in the Byzantine period were located on the flat plains, a number of smaller settlements were also located on mountain ridges, especially in the southwest part of the peninsula and along the east coast. The first case study chosen to illustrate this layout is a small, unidentified site referred to here as Unidentified Settlement 5 (T373). US 5 is one of about 10 small clusters of houses, each with its own chapel, scattered along the mountain ridges above Nyphi. This particular settlement is the only one that I recorded in person—discovering it by chance while on a hike to the 17th-century monastery of the Panayias Kournou. In fact, the path between Nyphi and the monastery is a *kalderimi*, built to connect the monastery with the village over 2 km away. After ascending a steep hill south of Nyphi, the *kalderimi* crosses over a ridge and passes just under US 5 before continuing on to the monastery beyond the next ridge.

US 5 is located high above the coast, at about 315 masl, and 875 m south of the "Exo Chora" (Outer Village) neighborhood of Nyphi—itself a major hilltop settlement in the Byzantine period. It is comprised of 9 houses and 4 cisterns, roughly aligned in three rows against the steep hillside (Figure 89). The slope at this elevation is very rocky, with large boulders and little vegetation compared to the gentler slopes. In fact, it is precisely this rocky background that makes it difficult to identify the features in aerial imagery (Figure 121, Appendix C). From a large rock outcrop next to the church, it is possible to see part of the northern coastline, the modern town of Kotronas, and all of the Kolokythia Peninsula, as well as part of the coastline to the south (Figure 90). The highest house—which also happens to be the largest—is located just below the crest of the ridge, making it easy to peer over the ridge to view the Exo Chora neighborhood of Nyphi and all along the coast to Kolokythia Bay.

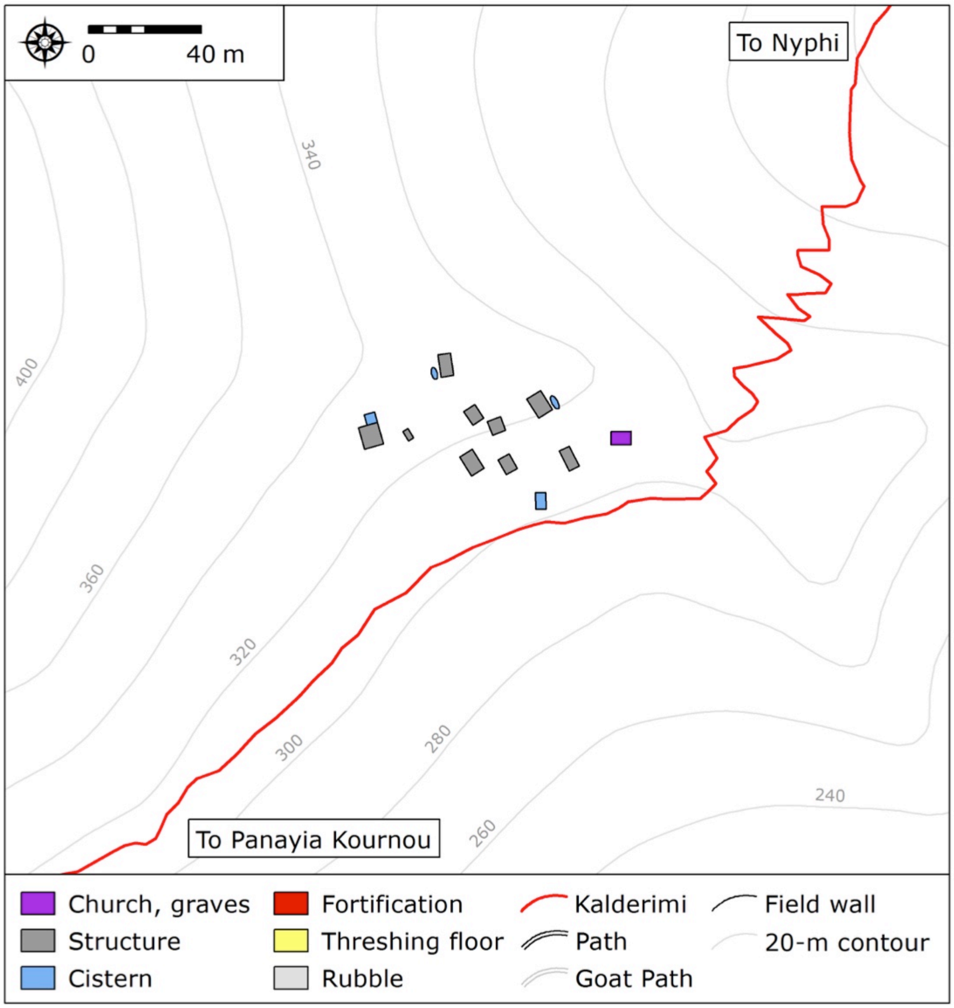


Figure 89. Map of US 5.

Figure 90. Panoramic view from a rock outcrop east of US 5, looking northeast (left) to southeast (right).

The architecture of the houses varies slightly, with the largest being built with rounded boulders, and the others with much more rectangular blocks. The internal dimensions of the houses ranges from 2.3–6.4 m in length (average of 3.9 m) and 1.2–2.9 m in width (average of 2.0 m). The average wall width was roughly 100 cm. The architecture of one house (T373F004) suggests that a narrow stairway or ladder at a downslope corner connected the ground floor to the first floor.

At the eastern edge of the settlement is the small chapel of Ay. Paraskevi (Figure 122, Appendix C). The church has been heavily renovated, with new icons painted in 2002, reapplication of mortar, and whitewashing of the interior. However, the exterior architecture suggests the chapel was built much earlier, and was likely contemporaneous with the settlement.

Another area worth citing as a case study is the region of modern Kotraphi (T170) in the southwest part of Mani, where there are a number of small Byzantine settlement clusters and no less than 13 Byzantine chapels—an extraordinarily high number for such a small area (Figure 91). Saïtas (1982:Figures 11-21, 2009:378) referred to the settlement area as "Katanemistika." It is not clear whether the toponym "Kotraphi" was used in the medieval period to refer to this area, although the name does appear in the historical records and clearly refers to a much smaller settlement: "Kotrafi" is listed in the 1514 *defter* with 28 men and 5 widows, and "Chotrafi" is listed in the 1618 Nevers Catalog with 15 hearths. Soon after this entry, the old settlement was abandoned, and a new one founded above it on the same ridge in the late Ottoman II or Early Modern period.

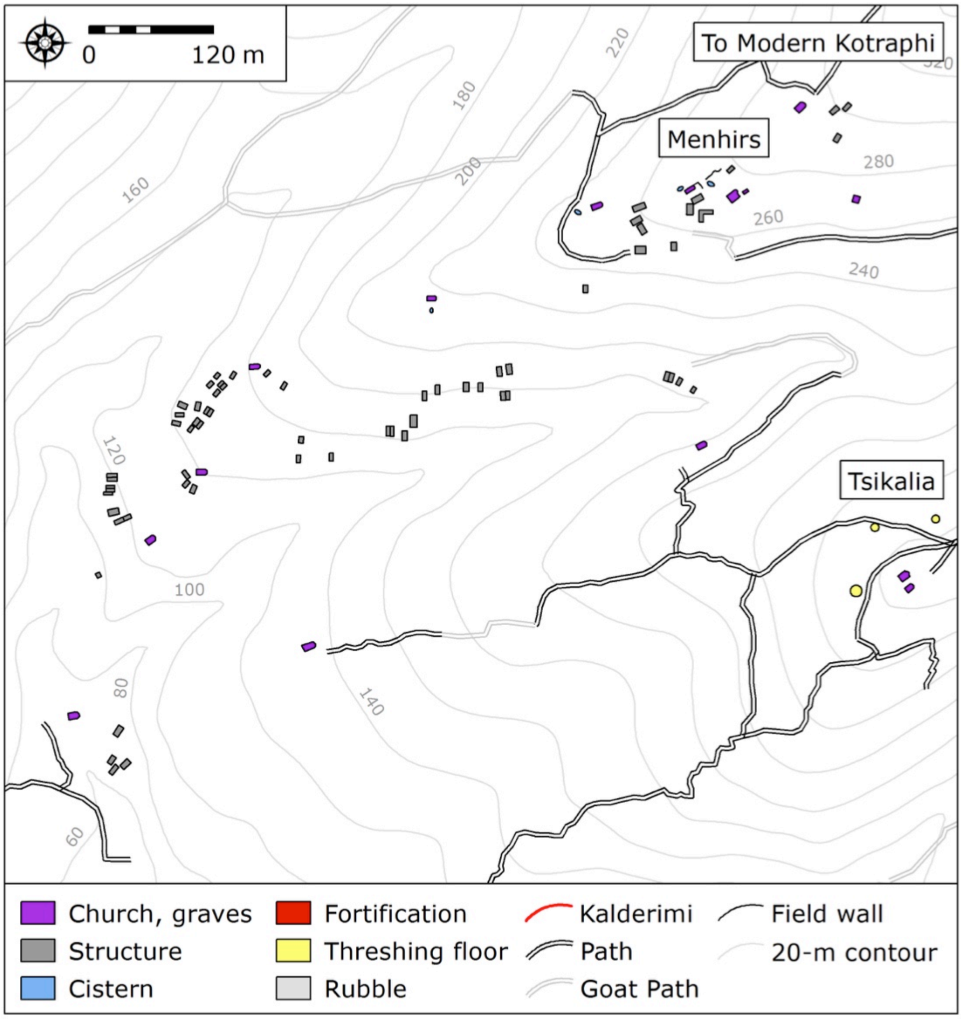


Figure 91. Map of the Kotraphi region.

The ridge along which the medieval buildings are located is a karst and karren topography, with deep channels carved into the limestone bedrock (Figure 123, Appendix C). From this ridge, there is an excellent view of the ridge to the north (where the settlement of Mountanistika extends along the high mountaintop) and Tsikalia to the south, as well as part of the coastline to the west. Most of the hillside along these ridges—wherever rocky protrusions do not interfere—is terraced (Figure 124, Appendix C).

I was able to visit and record several "megalithic" houses built with a mixture of limestone and schist (more common in this part of the peninsula), as well as several Byzantine churches, but most of the structures are located far below the modern road to Tsikalia and so are impossible to reach on foot. A relatively large amount of non-diagnostic ancient and medieval pottery is scattered in the vicinity. In addition to roughly 60 medieval houses which can be seen in the aerial imagery, there are standing stones (menhirs) of early Christian or pre-Christian date near the 13th-century church of Ay. Panteleimon kai Sozon (Figure 125, Appendix C), and more near Ay. Kyriaki (for more information on the menhirs, see Saïtas 1982).

6.3 – Ottoman I Plains Settlement: Ippola

The local architectural tradition after the Byzantine period continued relatively unchanged, with one major difference: the size of the stones used to built house walls decreased over time (see section 2.4). This means that only the most sheltered or well-preserved Ottoman I-period structures still retain their form today. Yet in flat areas, these types of architecture are rarely found; instead, in places where there should be Ottoman I-period settlements, there are inexplicable rubble fields, sometimes piled up into roughly rectangular or oval shapes, and other times spread like a veritable carpet of rubble. At first, these sites seemed to be the result of some kind of anthropogenic activity, such as field clearing, as suggested by Moschos and Moschou (1982:264). It seemed unlikely that they could represent the remains of human settlement, especially after encountering the extremely well-preserved architecture at "megalithic" sites or along the upper mountain ridges, and after failing to identify so much as a single wall within the rubble fields. However, one afternoon while climbing over a particularly overgrown "rubble field" north of Stavri, I saw that a small wall had collapsed, exposing a typical medieval cistern below it (Figure 92).

Figure 92. Exposed cistern below a rubble pile in Stavrikio. The red circle indicates the opening of the cistern, where a thorny branch has been laid to prevent animals from falling in.

After having documented this "rubble field" pattern alongside the typical "megalithic" architecture at diachronic sites, including Omales, Pangia, Dryalos, Kaphiona, Koutrela, Karavas, Kourines, Kouloumi, Gardenitsa, Psio, Soloteri, Avles, Erimos, Kechrianika, and in the vicinity of Vatheia, it seems that the rubble fields are actually the remains of the Ottoman I phases at the sites. The stones used in house construction were no longer large enough to remain intact over several centuries, and the mortar that would have held them together was either not in widespread use or did not preserve well over time. Furthermore, these rubble fields are most often present in flat landscapes—topography that is best suited for animal grazing activities. Over the years, farmers and shepherds would have knocked down the structure walls to prevent harm from befalling their animals, or reused the stones to build small animal pens and field walls. This kind of manipulation of abandoned settlements can seen in the earlier “megalithic” sites, where doorways are blockaded and rocks used to build up the spaces between houses to create pens.

One of the diachronic sites with both “megalithic” architecture and rubble fields is Ippola (T191, also known as Ano Poula), which sits at the north end of the Cavo Grosso plateau above the broad southwestern plain (Figure 93). The modern village of Kipoula is located below the site about 700 m to the southeast, and it can be reached by following a rough *kalderimi* that leads down the escarpment and joins a field path on the plain below (Figure 126, Appendix C). From the cliff edge just a few meters from the site, there is an outstanding view of the entire southwestern plain, north along the coast, and even south toward the end of the peninsula at Matapan. Indeed, the visibility analyses (reported in Chapter 5) verify the extremely high visibility of this cliff edge to the other Maniate settlements.

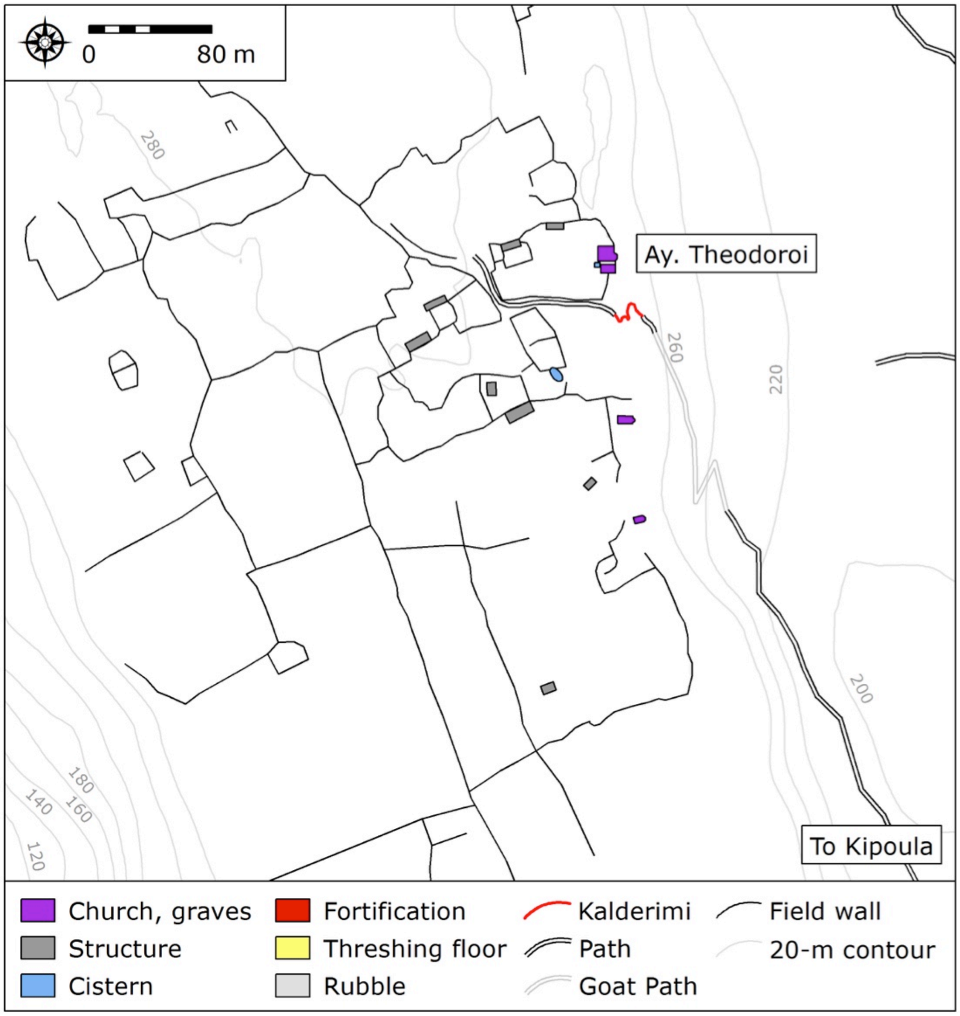


Figure 93. Map of Ippola (Ano Poula).

The toponym "Kipoula" appears in the historical records as early as 1514, in the very first *defter* recorded by the Ottoman Empire (Table XLVIII). However, it is known that the abandoned settlement on Cavo Grosso (i.e. Ippola) was the actual medieval location of the village. Not only is this fact preserved in local oral history, but also the oldest architectural elements in modern Kipoula date to the 18th century, or possibly the 17th century at the very earliest. In other words, the historical references to "Kipoula" up until the early 1700s must have referred to the higher plateau settlement.

TABLE XLVIII. KIPOULA IN THE HISTORICAL RECORDS

Record	Name	Data
1829 Expédition Catalog	Kipoula	20 homes
1813 Roussel Catalog	Micula	100 men and 40 soldiers
1715 *defter*	Kipula	9 married men, 30 *dönüm*[a] of fields, and 200 sheep
1700 Grimani Catalog	Cipulla	22 families, 93 people
1695 Muazzo Catalog	villa Cripula	48 men
1692 Zeno Register	—	—
1618 Nevers Catalog	Chipoulla	30 hearths
1583 *defter*	Kipula	1,025 *akçes*[b] assessed
1514 *defter*	Kipula	25 married men

[a] 1 *dönüm* is the equivalent of 919.30 m^2, so Kipoula held 2.78 ha of fields (İnalcık 1994b:988).

[b] For more on the value of *reales* and Ottoman *akçes* in the 16th–17th centuries, see Barkan and McCarthy (1975:15, Note 12). According to the 1600 exchange rate (which was slightly inflated from 1583), 8 *akçes* could buy an *okka* of lamb (1 *okka* = 1.282945 kg). In other words, 1,025 *akçes* could buy 164 kg of lamb—the equivalent of roughly 3 lambs weighing in at 50 kg each.

Some scholars believed that Ippola is the location of the Classical polis of the same name (Komis 2005:358), although to date there has been no consensus on the ancient site's location. The Laconia Survey recorded Late Bronze Age through medieval pottery on the plateau (Cavanagh et al. 1996:304, site LL188), and Waterhouse and Hope Simpson (1961:123, Note 167) identified a few sherds that are similar to the Early Bronze Age material on the Skopas Peninsula near Kotronas. Indeed, the surface finds around Ippola formed a roughly continuous scatter of non-diagnostic ceramics, mostly of a medium-coarse orange ware. Yet regardless of its ancient history, there is no doubt that Ippola was an important Byzantine site, with 4 churches at the north end alone and many more to the south. One of the churches, the twin church of Ay. Theodoroi (Figure 127, Appendix C), is dated to the 11th century, with iconography from both the 11th and 13th centuries (Drandakis 1986:23-24) and carved marble elements incorporated into the architecture (Drandakis 2002:384). One of the houses to the west of Ay. Theodoroi is an extremely well preserved “megalithic” structure, with very little rubble fill and preserved lower and upper doorways (Figure 128, Appendix C). Several of the 8 intact structures in Ippola open onto thick-walled courtyards—an unusual feature that may reflect the reuse of the houses as animal pens at a later date.

Ippola is one of three discrete areas filled with rubble and dry stone walls along the narrow plateau of Cavo Grosso (Figure 129, Appendix C). This particular rubble field is delineated on its north and south sides by a wide wall, and other double-faced and rubble-filled walls (averaging between 150–230 cm in width) meander throughout the site. Occasionally, foundations can be seen amidst the rubble, and episodes of rebuilding and renovation can be identified in the wall remains. Because of the thick layer of rubble across the site, only two cisterns were recorded, one of which is located between two of the churches where the land is clear of rubble. There are very likely more cisterns that are overgrown or hidden beneath the rubble.

6.4 – Ottoman I Hilltop Settlements: Kaliazi and Skala

The hilltop sites of Kaliazi (T269) and the refuge above Skala (US 6, T378) were first established in the Ottoman I period. Unfortunately, Kaliazi was so overgrown that it was impossible to locate and map the cisterns; however, Google Earth and other aerial imagery did allow for the complete mapping of the large residential structures. Skala was also heavily vegetated, but it was still possible to complete a full recording of the site in person. Interestingly, only one medieval cistern was recorded in the entire site, suggesting that either the cisterns were buried or otherwise invisible to survey, or that they were located further below the hilltop in unsurveyed territory.

Kaliazi was a small village with 27 extant post-medieval residential structures, sitting above the main pass between Areopoli and Gytheio to the northeast (Figure 94 and Figure 130, Appendix C). It has a commanding view of the pass below and is intervisible with several other Ottoman I-period sites nearby, including the hilltop settlements of Skala, Palaia Tserova, and Palaia Karyoupolis, as well as part of Oitylo on the west coast and Skoutari Bay to the east (Figure 95).

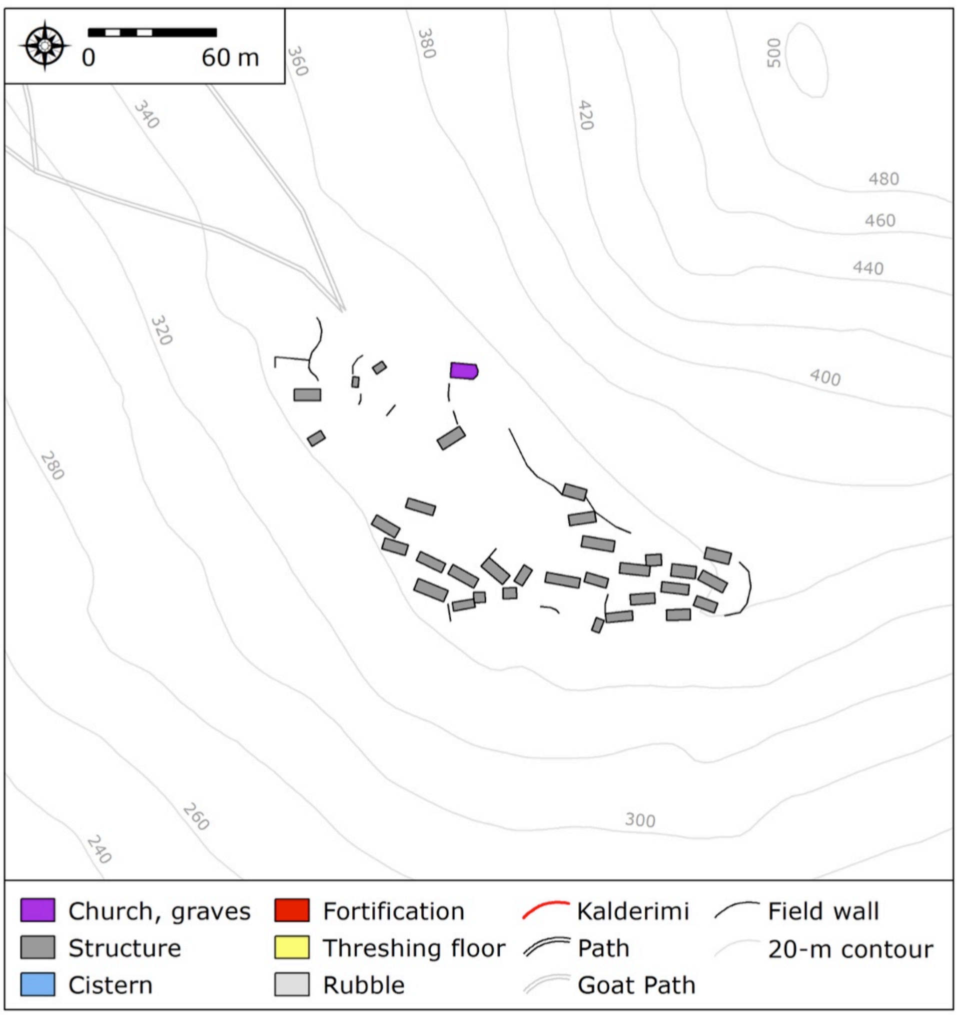


Figure 94. Map of Kaliazi.

Figure 95. Panoramic view from Kaliazi, looking southeast (left) to southwest (right).

Komis (2005:272) traced the toponym “Kaliazi” to an Albanian root (*kallëza*, “corncob”). It first appears as “Cagli” on a map from 1554, and it appears in the historical records between 1583 and 1715 (Table XLIX). The architecture of the ruined buildings stands in stark contrast with that of the Byzantine-period domestic structures, specifically because the walls are narrower (averaging 0.68 m in width) and tile is incorporated into the wall construction (Figure 131, Appendix C). Scattered about the site are reddish-orange medieval tiles with regular grooves on the surface (Figure 132, Appendix C)—another feature absent in the Byzantine-period sites. The buildings also appear to have been mortared, but the mortar is now severely disintegrated to the point that it has the texture of a rough sandy soil.

TABLE XLIX. KALIAZI IN THE HISTORICAL RECORDS

Record	Name	Data
1829 Expédition Catalog	—	—
1813 Roussel Catalog	—	—
1715 *defter*	Kalyazi	38 married men, 22 bachelors, 1 church, and 320 *dönüm*[a] of fields
1700 Grimani Catalog	Calliasi	62 families, 252 people
1695 Muazzo Catalog	villa Caliesi	76 men
1692 Zeno Register	Cagliasi	87 *reales* assessed by the Turks and 83 paid, 87 assessed by the Venetians
1618 Nevers Catalog	Zatena, dove e il passo stretto	10 hearths
1583 *defter*	Kalezi?	10,880 *akçes* assessed

[a] The equivalent of 29.4 ha of fields.

A local man tending the church grounds when I visited told me about the history of the settlement: it had been inhabited in the 16th and 17th centuries, and it was later a monastery. According to oral history, the founder of the Petropoulakis family fled to Kaliazi around the year 1700 after causing trouble with the Venetians and Ottomans, and shortly thereafter, he and his family relocated to more fertile regions to the north around Passava (Komis 2005:272-273). The village was supposedly destroyed by other Maniates because it had become a base of operation for pirates (Komis 2005:Note 48). However, Komis suggests that the attraction of more fertile land was the real cause of its abandonment, and that the abandonment process was complete by the mid-19th century.

Meanwhile, the church of Ay. Sotiras was dedicated in 1725, according to a painted inscription above the door on the interior of the building (Figure 133, Appendix C). The monastery itself was comprised of a few 18th-century buildings, which are located immediately south and west of the church (Figure 134, Appendix C). The monastery was in use until at least the 1830s, when Kaliazi was listed as a monastery by the Expédition Scientifique (Komis

2005:421). Today, the church is still maintained by local residents in a nearby village, but the other buildings are all in ruin.

The village of Skala was first occupied in the Byzantine period, and it is still occupied today; however, the hilltop settlement above the modern town (US 6) was occupied only in the Ottoman I period (Figure 135, Appendix C). Here, through a combination of field recording and aerial imagery analysis, 70 extant post-medieval residential structures were mapped (Figure 96). Skala is located above the same mountain pass as Kaliazi. From the hilltop settlement, it is possible to see Oitylo Bay, the village of Oitylo, part of Kelepha Fortress, Kaliazi, and Vathy Bay to the east (Figure 97). If the vegetation had been cut back, it would have been possible to see Palaia Karyoupolis and Palaia Tserova, as well.

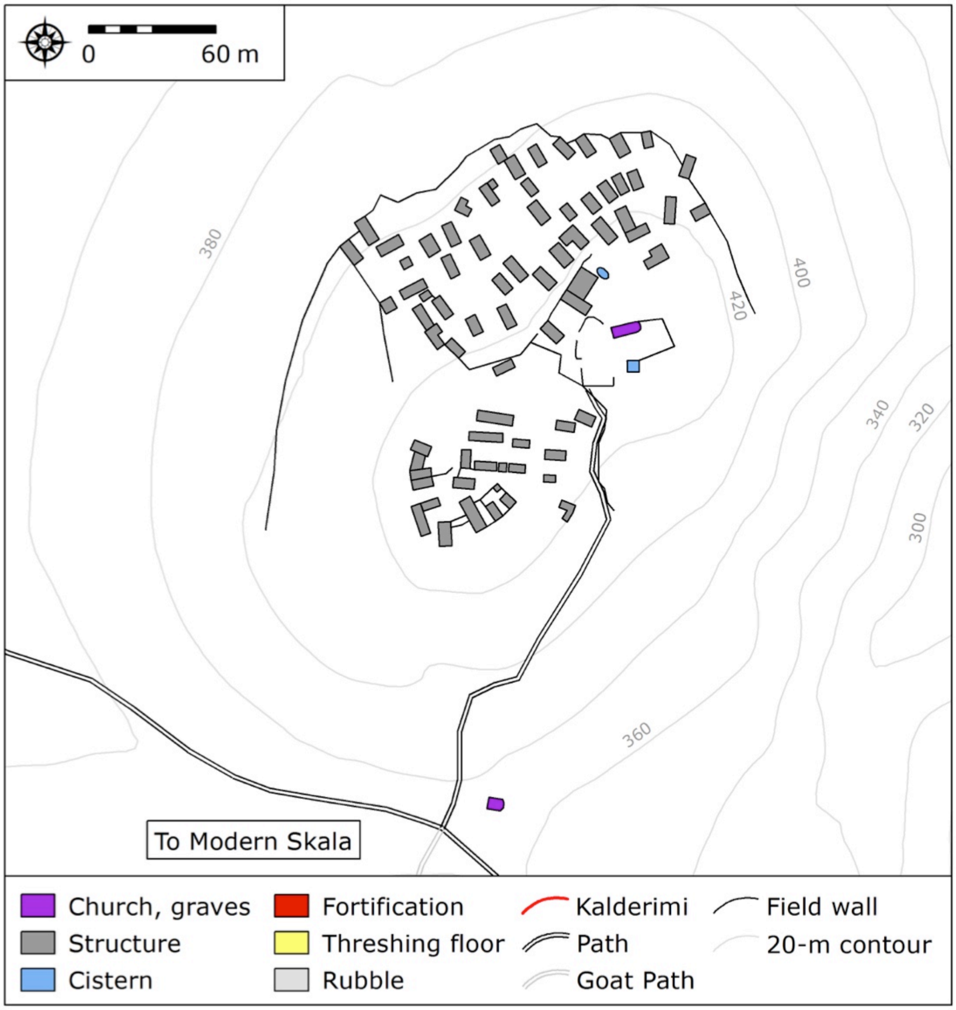


Figure 96. Map of the abandoned hilltop settlement above modern Skala.

Figure 97. Panoramic view from the abandoned hilltop settlement above modern Skala, looking northwest (left) to northeast (right).

Skala (Greek for “staircase, ladder”) appears in the historical records between 1583 and 1715, at times grouped with the nearby settlement of Vachos (Table L). Like Kaliazi, the architecture of the buildings is dramatically different than the “megalithic” structures of the Byzantine settlements. The residential walls are far narrower, averaging 80 cm in width, and there is an abundance of medieval tile (dark red in color and grooved on the face) scattered about the site (Figure 136, Appendix C). The houses are also arranged in a distinctly linear pattern around the crest of the hill and continuing down onto the gentler north face. Aside from these differences, the basic layout of the houses is the same as in the Byzantine-period settlements: the structures have a single ground-floor doorway located on one of the long walls and no preserved windows, and they are oriented perpendicular to the hillside along the contour, such that the upper floor extends onto a partial lower floor. One architectural difference is that some buildings have small crevices along the long sidewalls to hold beams to support the upper floor, either instead of or alongside the traditional ledges that served this purpose (Figure 137, Appendix C).

TABLE L. SKALA IN THE HISTORICAL RECORDS

Record	Name	Data
1829 Expédition Catalog	Skala	17 homes
1813 Roussel Catalog	—	—
1715 *defter*	Vaha, Iskala, and Kerasia	69 married men, 23 bachelors, 3 churches, 409 *dönüm*[a] of fields, and 600 sheep
1700 Grimani Catalog	Scalla	25 families, 107 people
1695 Muazzo Catalog	villa Sulla	51 men
1692 Zeno Register	Vaca, Scala	91 *reales* assessed by the Turks and 91 paid, 91 re-assessed by the Venetians
1618 Nevers Catalog	Scala	30 hearths
1583 *defter*	Vaha ma İskala	11,150 *akçes* assessed

[a] The equivalent of 37.6 ha of fields.

On the east side of the hill, there is a church to the Panayia and a monastery complex from the Ottoman II period (Figure 138, Appendix C). A modern road was built to reach the church, cutting through several abandoned residential structures on the north side of the hill. At some point, the church was extended to the west, and it has been further modified over the years: a south-facing window was built into the wall, cutting through one of the original icons, the icons were repainted, the roof was reinforced with cement, the exterior was heavily renovated, and so on. Still, the church's icons and interior architecture are very similar to those of the Koimisi in modern Skala just below the hill, which is dated by a dedicatory inscription above the door to the year 1640 (Figure 139, Appendix C). Even if the church had been built in an earlier period—a possibility, judging from the style of the iconostasis and the form of the lower icons—it was likely renovated in the Ottoman I period when the hilltop settlement was at its height.

6.5 – Ottoman II Plains Settlement: Pyrgos Dirou

The plains settlements from the Ottoman II period are by and large continuations of earlier settlements; only a few small settlements (such as Spira, see below) were founded at this time. The Ottoman II phase of Pyrgos Dirou, a large diachronic town, is an ideal case study for discussing the typical characteristics of settlements in this period: settlement consolidation and nucleation, the abundance of local stone-built roads, the delineation of public spaces and memorial sites, such as cemeteries, and the replacement of standard rectangular houses with defined house compounds.

Pyrgos Dirou is an undefended agricultural settlement located on a flat plain, about 200 meters above sea level (Figure 98). It is technically comprised of two neighborhoods: the neighborhood north of the modern road that now cuts through the town is known as "Leukias," and the southern neighborhood is "Fourniata"—a name that appears in the 1618 Nevers Catalog as a separate settlement. Indeed, when looking at the distribution of medieval structures, it seems that these two neighborhoods were once separate settlements, although today the two have merged to create a single, large town. From Pyrgos Dirou itself, visibility is limited, though it is possible to gain a view of Areopoli to the north and of the east coast of the Messenian Peninsula from the small bay about 1 km to the north (Figure 140, Appendix C).

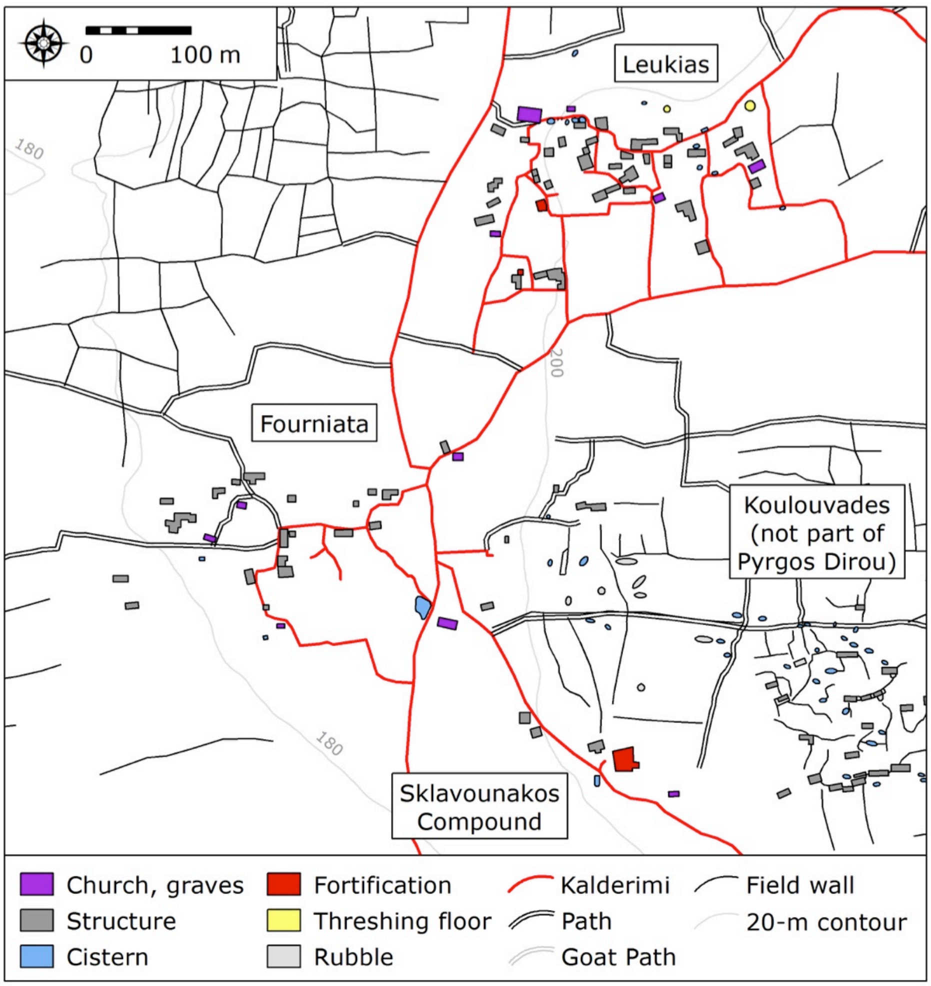


Figure 98. Map of Pyrgos Dirou (main settlement at top right).

In the vicinity of this bay, there is evidence of human activity dating back to the Neolithic period (e.g. Papathanassopoulos 1996; Papathanasiou 2005). A recent survey, the Diros Project, has also recovered evidence of a Classical-Hellenistic period site and a Late Roman site, in addition to the 13th–14th century monastery complex of Ay. Paraskevi and Ay. Theodoroi/Ay. Nikon (see Drandakis 1986:23-24, 2002:390). Locals report another Classical site at modern Charia, about 1 km northeast of Pyrgos Dirou. There are also a number of well-dated Byzantine churches all around the town, and immediately to the southeast is the "megalithic" abandoned settlement of Koulouvades.

The architectural remains in the town testify to the fact that Pyrgos Dirou is itself comprised of at least two separate "megalithic" Byzantine settlements. Ay. Ioannis, in the southern settlement, was built in the first half of the 12th century (Figure 141, Appendix C) (Megaw 1932-33:162; Drandakis 1986:23, 2002:382; Etzeoglou 1977). The square around the church used to be a cemetery, which was in use at least through the 16th century (Saïtas 2009:382-383, Figures 40.24, 40. 26, 40.31). Ay. Sideros, to the north, is dated to 1423 (Figure 142, Appendix C; Drandakis 1986:23). Another nearby church, Ay. Georgios, was built next to a very unusual south-facing megalithic church that has since been abandoned.

The earliest historical accounts of Pyrgos Dirou dates to 1366, when both "Tsimova" and "Iro" (i.e. Areopoli and Diros) were referred to as territories given to the *feudarchis* (ruler or fief-owner), Nikola Acciaiuoli (Longnon and Topping 1969:253-254). The first document to reference the town itself—which by that point was known as "Pyrgos"—is the Ottoman *defter* from 1514, and the town appears continuously in every record thereafter (Table LI).

TABLE LI. PYRGOS IN THE HISTORICAL RECORDS

Record	Name	Data
1829 Expédition Catalog	Pyrgos	200 homes
1813 Roussel Catalog	Pirgi	620 men and 300 soldiers
1715 *defter*	Bırğos	46 married men, 20 bachelors, 1 church, 142.5 *dönüm*[a] of fields, and 600 sheep
1700 Grimani Catalog	Pirgo	87 families, 352 people
1695 Muazzo Catalog	villa Pirgo	125 men
1692 Zeno Register	Pirgo	43 *reales* assessed by the Turks and 25 paid, 53 re-assessed by the Venetians
1618 Nevers Catalog	Pirgos, Fourgniates	90 hearths
1583 *defter*	Bırğos	5,250 *akçes* assessed
1514 *defter*	Pirgos	18 married men, 4 bachelors, 1 widow

[a] The equivalent of 13.1 ha of fields.

Although the records from the turn of the 18th century provide very different population estimates, it is clear that Pyrgos was a village of average size for much of its post-medieval history. The next two records indicate that the town experienced a substantial population boom over the course of the 18th century, and by 1829, Pyrgos Dirou was the third-largest settlement in the study region. As with other Maniate villages, its population began to decline again only in the mid-20th century, when mass migration left many rural areas of Greece under-populated.

In the Ottoman II period, Pyrgos Dirou was still comprised of two distinct neighborhood clusters, one concentrated on a low hill in the north, and the other in the south neighborhood of Fourniata. Each one was organized around a central public square, or *plateia*. A total of six churches were built throughout the town over the course of the post-medieval period (Figure 143, Appendix C). All of them are small (about the same size as their Byzantine predecessors) and could likely only fit between 10–15 people. To accommodate the growing population of the town, additional churches were built over time. Also, whereas several of the smaller Byzantine chapels are relatively isolated, these later churches are surrounded by contemporaneous residential structures, suggesting that people in localized communities or neighborhoods were the primary caretakers and attendees.

As the town coalesced into distinct settlement clusters centered around a *plateia*, house forms also changed dramatically. Some continued to make use of the earlier "megalithic" foundations of medieval houses (Figure 144, Appendix C), while others were built in between, filling the spaces and increasing the density of population within the settlement. The house forms also became more complex, with extensions added onto existing structures and walls erected to delineate compound boundaries and restrict access to cisterns (Figure 145, Appendix C). The most impressive of these semi-fortified complexes is an isolated 18th-century compound built by the Sklavounakos family at the southern edge of Pyrgos Dirou (Figure 146, Appendix C). The walled compound is built on an exposed stretch of pavement karst limestone, with several small sinkholes and one extremely large, open cistern (potentially an ancient quarrying site; Figure 147, Appendix C). A small, family chapel was built just outside the compound wall. The main feature—an imposing tower—was built and dedicated in 1812.

All of the paths within Pyrgos Dirou were once built with rough cobbles, as can be seen in some places where the modern cement pavement has exposed the underlying construction (Figure 148, Appendix C). A local man, born in the 1970s, remembered when the cobbled paths were paved when he was a child. Several *kalderimia* also radiated out from the town in various directions; these long-distance roads were built in a different construction technique, with a relatively even surface and wide paving stones, and at times even passing over bridges (Figures 149 and 150, Appendix C). The *kalderimia* connected Pyrgos Dirou with almost all of the surrounding villages, including Areopoli 5.5 km to the north and the Ottoman fortress of Kelepha another 5 km beyond it. An elderly woman recalled that she and the other schoolchildren walked to Areopoli every day along one of the *kalderimia*, indicating that the long-distance *kalderimia* were used up until the mid-20th century, when most of them were paved over or alternate roads were built.

6.6 – Ottoman II Hilltop Settlement: Spira

As with other hilltop sites, those first founded in the Ottoman II period were also dense, nucleated settlements. Spira (T154) was one of these, comprised of about 6 residential compounds at the time, a church, a windmill, a spring, and a cemetery (Figure 99). Komis (2005:394) reports two possible roots for the toponym: from *louria*, the long fields typical for the area that form a spiral shape, or from *spires*, a dialectal word referring to the furrows created when sowing fields. The settlement appears only once: in the 1829 record with 10 houses.

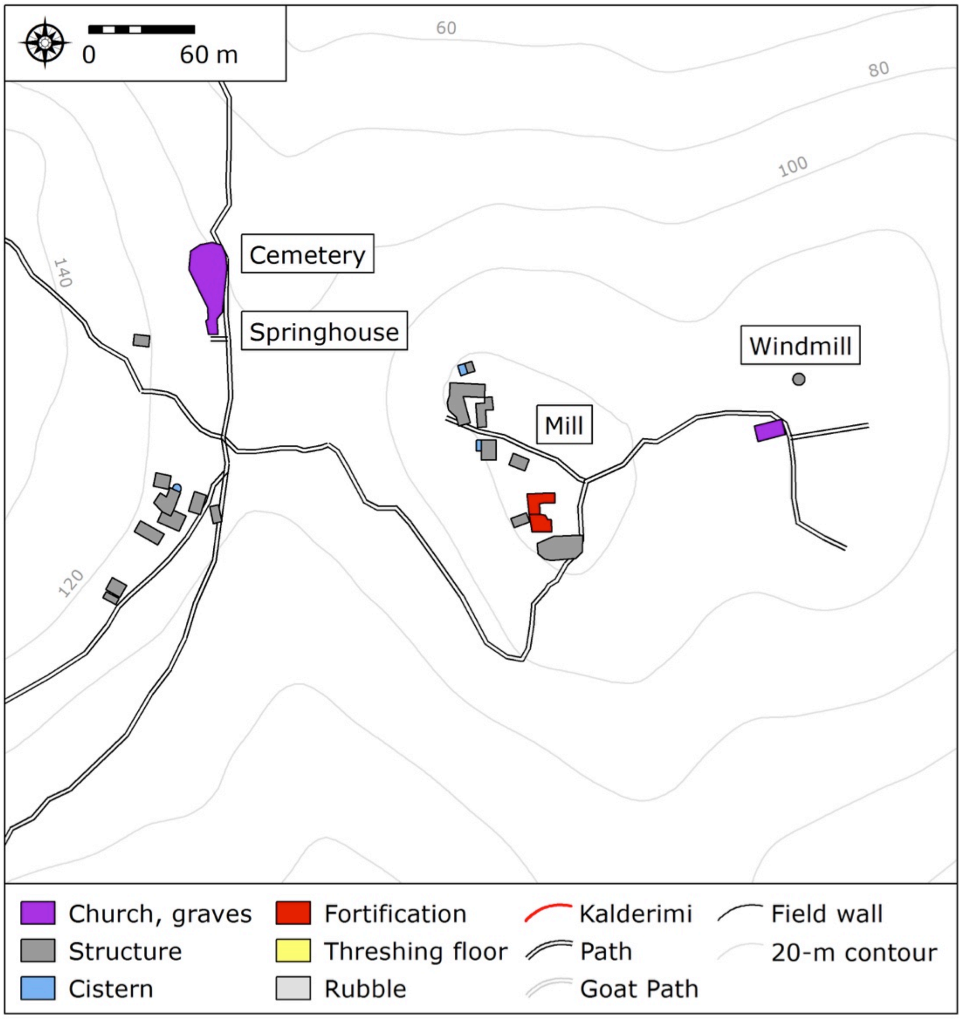


Figure 99. Map of Spira.

The nucleated center of the village is located on top of a hill, with several additional houses in a saddle to the west of the hill (Figure 151, Appendix C). The prominent location made the settlement highly visible, both to other settlements and to the coastline (Figure 152, Appendix C), but it also would have provided a defensive advantage. Three of the Ottoman II-period houses were located on the hilltop; one of these is a tower-house, and another has a modern dedicatory plaque with the date of 1780 and two family names (Figure 153, Appendix C). The building is now abandoned and used for temporary storage. In the Early Modern period, three more houses and a mill were built on top of the hill (the standing millstones and a metal press are now in ruins; Figure 154, Appendix C). A large church was built in the 1800s just east of the hilltop, and an abandoned windmill stands nearby (Figure 155, Appendix C). The lower section of the town also expanded in the Early Modern period. A springhouse and a small cemetery were built just north of this area. Despite the fact that the village is now almost entirely abandoned, dedicatory plaques throughout the village testify to a 20th-century fluorescence and the interest on the part of the village's descendants to maintain and care for the village's memory.

6.7 – Byzantine–Ottoman I Transition: Palaia Tserova

I recorded 103 settlements that were first occupied in the Byzantine period and that continued to be occupied into the Ottoman I period. The case study chosen to illustrate this early settlement continuity is Tserova—a name that now refers to a bustling modern town (officially known as Drosopigi since 1955) that sits below its former location on a hilltop. For clarity's sake, the abandoned site is here referred to as "Palaia Tserova" (T301).

Palaia Tserova is comprised of 48 extant medieval residential structures, a church, and a small cemetery about 100 m north of the church (Figure 100 and Figure 156, Appendix C). The very top of the hill is fortified, with three sides built up with a stone-built wall, and the fourth bounded by the edge of a cliff. A few larger wall foundations can be seen—possibly defining two ruined buildings—and medieval tile is scattered all about the hilltop. The settlement has an excellent view of the valley to the northwest (around the location of Karea), the Skoutari Peninsula to the east, various contemporary settlements (including Karioupoli (Miniakova)), and the hills just above Oitylo Bay (Figure 101). There are at least three watch huts (all possibly of later date): one on top of the fortified hilltop, another on the smaller hill along the ridge, and a third north of the settlement overlooking the modern town. There are long-abandoned, braided terraces on the southern slope of the site, which drops into a steep valley; the other slopes of this valley are only minimally terraced.

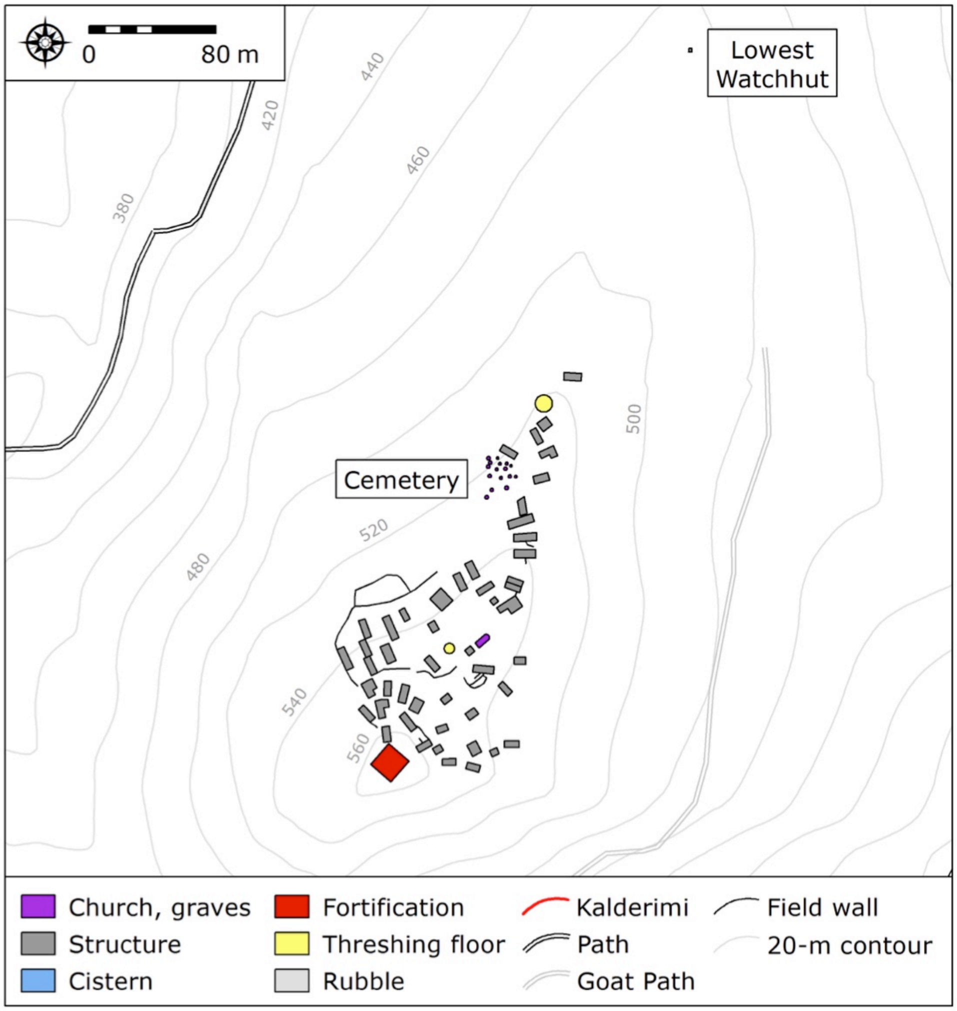


Figure 100. Map of Palaia Tserova.

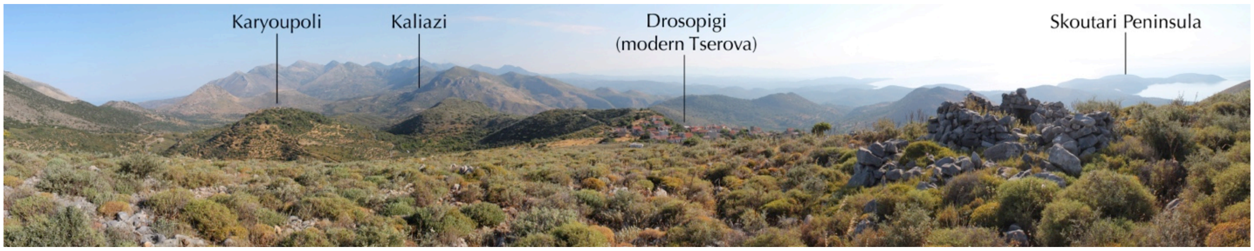


Figure 101. Panoramic view from the lowest watch hut at Palaia Tserova, looking northwest (left) to northeast (right); the watch hut is on the right-hand side in the foreground.

Komis (2005:278) traced the toponym "Tserova" to a Slavic root (from *cer*, Bulgarian for "oak"), and indeed "Cerova" is a settlement name that is found throughout the Balkans today. It is first mentioned as "Carva" on a map from 1554, and it appears in the historical records between 1583 until the present day (Table LII). Komis (2005:278-279) suggested that the settlement was relocated to its present location sometime in the 18th century, soon after the Ottoman Empire regained control of the Peloponnese.

TABLE LII. PALAIA TSEROVA IN THE HISTORICAL RECORDS

Record	Name	Data
1829 Expédition Catalog	Tserova	69 homes
1813 Roussel Catalog	Zerva	100 men and 50 soldiers
1715 *defter*	Çerova	48 married men, 5 widows, 2 bachelors, 1 church, and 210 *dönüm*[a] of fields
1700 Grimani Catalog	Cerova	63 families, 241 people
1695 Muazzo Catalog	villa Cerova	68 men
1692 Zeno Register	Cottrona, e Cerova	70 *reales* assessed by the Turks and 52 paid
1618 Nevers Catalog	—	—
1583 *defter*	Çörova	1,350 *akçes* assessed

[a] The equivalent of 19.3 ha of fields.

The architecture at the site is a mixture of "megalithic" Byzantine-period style architecture and more narrow-walled Ottoman I-period style architecture. The church at the center of the settlement appears to be Byzantine in date based on its architecture and carved elements; however, there is no extant iconography that could be used to precisely date the building (Figure 157, Appendix C). The residential structures can be categorized into two groups. The first is located around the fortified hilltop. Some of these are megalithic, while others use large stones only in the lower courses. Almost all are built into the hillside—some incorporate the bedrock into the back of the building or the walls, while others have been filled with soil and rocks eroding from the hillside. The stones in these particular structures appear "old" and weathered, with white lichen covering them, and the blocks are somewhat rounded (Figure 158, Appendix C).

The second group of structures is located along the ridge running northeast toward the modern town. These buildings are very well built, considering the smaller size of the stones used in their construction. Some of the stones are worked somewhat to achieve a flat surface for laying other stones, thus creating more regular courses (Figure 159, Appendix C). Smaller rocks are used in some of the buildings to fill the crevices in the walls. The stones in these buildings are grey and jagged, with less lichen on their surfaces. These differences in lichen growth and color could possibly be attributed to micro-geographical differences in weather, but it is much more likely that they represent two construction phases, perhaps separated by centuries of time. The layout of the buildings—both those on the hillside and those on the ridge—is remarkably similar, and both groups have average wall widths of between 86 and 89 cm.

The cemetery is located slightly below the settlement on a north-facing slope, and it is comprised of at least 16 stone-built ossuaries. About half of these are fully subterranean pits, while the others protrude slightly above ground. All are built in a dry stone construction, with slab construction supporting a rubble roof (Figure 160, Appendix C). No bones were seen remaining in the ossuaries. There is a single ruined structure next to the cemetery, with an unusually tall doorway. Without excavation, it is impossible to know whether it was built before or after the cemetery itself.

6.8 – Ottoman I–Ottoman II Transition: Briki

Of the 91 settlements that were continuously occupied from the Ottoman I to the Ottoman II period, the settlement of Briki (T024), located on the gentle slopes of the western coast, is an ideal case study for discussing the transition between these periods (Figure 102). Like other diachronic settlements, Briki has a long history that began in the Byzantine period and continued until the present day. The village has five Byzantine churches and about 40 megalithic houses, which are dispersed around and within the town. Over time, as the town coalesced into a nucleated center (and especially when the path through the village was expanded and paved in the 20th century), many of the megalithic structures in the center of Briki were partially destroyed or incorporated into more recent buildings. For example, there is a group of threshing floors south of the modern village, one of which is built directly on top of a filled-in megalithic house. This indicates that the medieval houses were continually reused, destroyed, or altered by later residents, who incorporated them into their own residences, field walls, and terraces.

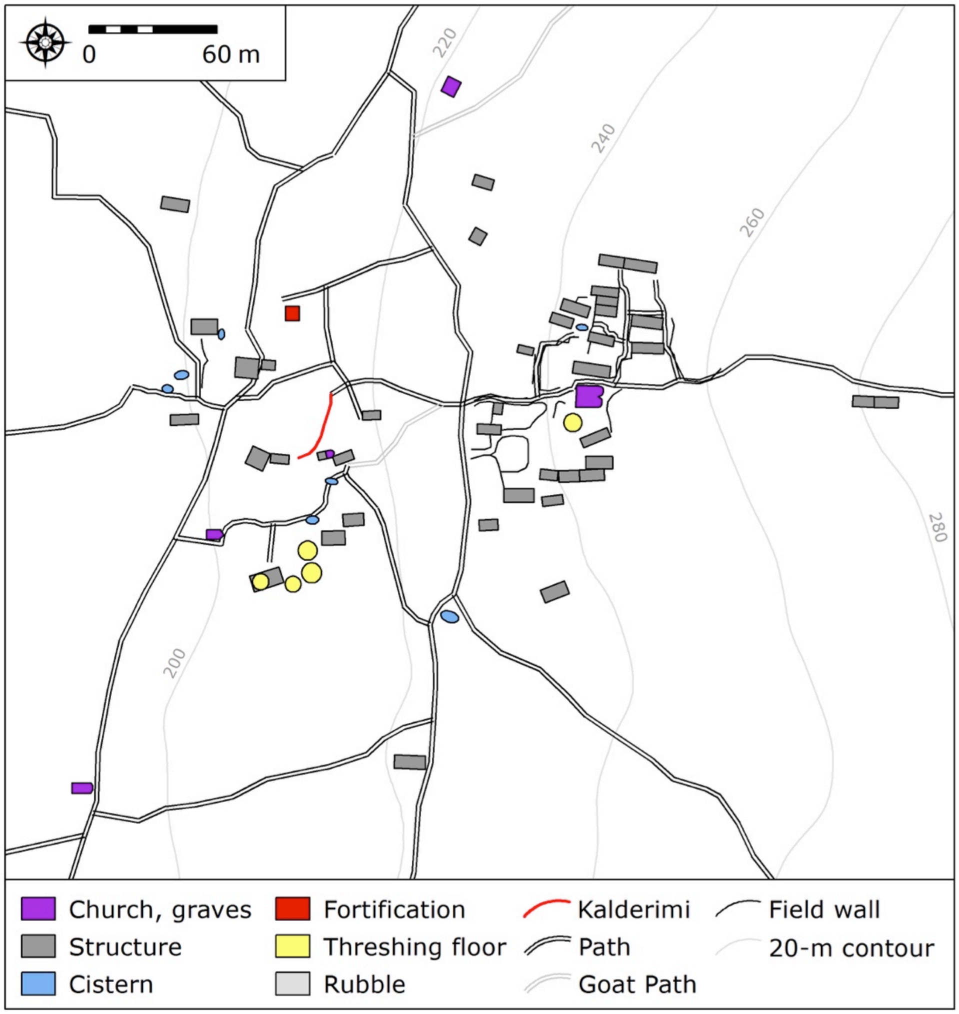


Figure 102. Map of Briki.

The first known reference to the settlement is in the dedication to the church of Archangel Michael in Polemitas, dated to 1278. Drandakis (1982:54) suggested that the toponym "Briki" came from the family name "Patrikios," which is mentioned as a contributing family. It appears in almost every historical record, beginning with the 1514 Ottoman *defter* (Table LIII).

TABLE LIII. BRIKI IN THE HISTORICAL RECORDS

Record	Name	Data
1829 Expédition Catalog	Briki	24 homes
1813 Roussel Catalog	—	—
1715 *defter*	Birgi	12 married men, 2 bachelors, 1 church, 45 *dönüm*[a] of fields, and 200 sheep
1700 Grimani Catalog	Brichi	40 families, 134 people
1695 Muazzo Catalog	villa Brichi	93 men
1692 Zeno Register	Brichi	7 *reales* assessed by the Turks and 7 paid, 7 re-assessed by the Venetians
1618 Nevers Catalog	Brichi	35 hearths
1583 *defter*	Birgi	875 *akçes* assessed
1514 *defter*	Briki	16 married men, 5 bachelors, and 1 widow

[a] The equivalent of 4.14 ha of fields.

Uphill and east of the modern settlement is a cluster of ruined structures that appears to have been occupied through the Ottoman I period (Figure 161, Appendix C). Together, the outer walls of the lowest houses form a daunting megalithic wall that would have been highly defensive, and the refuge has an excellent view of the surrounding settlements (Figure 103). Overall, the structures are built in a smaller dry stone architecture typical of the period (Figure 162, Appendix C). A network of well-defined and thick-walled field paths winds between the upper residences. Downhill from this cluster, the houses are more dispersed, less organized, and less aligned, and megalithic field walls and retaining walls wind their way through the structures. This layout—with a defensive cluster of structures on the upper slopes of a village, with dispersed structures below—is found in the other Ottoman I-period sites located in similar terrain. Lacking a hill that could be fortified, the residents built a defensive refuge out of the very houses within which they lived.

Figure 103. Panoramic view from the Ottoman I-period refuge above Briki, looking southwest (left) to north (right). Note the Lagoudi tower in the foreground, below Koutrela.

In the Ottoman II period, the upper refuge was almost totally abandoned, with the exception of a single house that continued to be maintained into the Early Modern period before it, too, fell to ruin (Figure 163, Appendix C). A single tower was constructed by the Lagoudi family and became the village's main defensive structure—four stories (15.5 m) tall, with projecting *klouvia* and other defensive features (Figure 164, Appendix C). The historical records show that the village's population had peaked in the Ottoman I period and was on the decline by the Ottoman II. Today, Briki is inhabited by nine members of the Lagoudi family, and other relatives return from Athens each year for the summer holiday.

6.9 – Chapter Summary

Eleven case studies were presented in this chapter, illustrating the diversity in how the Maniate communities were organized over time. Nine were selected to represent variation within a single time period and geographical location (hilltop vs. plain), while two more were used to discuss the transition between time periods. While every single settlement in the study region is unique in some way, it is hoped that these case studies give a sense of the general "types" of communities in Mani, how they are structured and laid out, the typical finds that an archaeologist may encounter in the field, and the unique insights provided by combining historical records with aerial mapping and field reconnaissance. The main goal in presenting the case studies is to gain an understanding of how the communities were organized both socially and spatially in the past. In the next chapter, I will describe the evidence for integrative facilities and the practice of resource sharing—the two variables used to interpret whether a settlement was organized so as to promote community cohesion or, on the other hand, to prioritize the nuclear family.

7 – INTERPRETATION AND DISCUSSION

How enjoyable, how very enjoyable and luxurious it is, suddenly to emerge from the stern labyrinth of fact onto these dawn-lit uplands of surmise! (Fermor [1958] 2004:199)

This chapter is divided into two sections. First, I interpret the community-scale and regional-scale patterns presented in the previous two chapters by comparing them to the theoretical models and archaeological signatures developed in Chapter 3. Doing so allows for a "big picture" perspective of the long-term change that took place in the Mani Peninsula from the end of the Byzantine period through the beginning of the Greek Revolution in 1821. In the second section, I discuss the patterns from a macro-scalar perspective. I compare the historical narrative of Mani—including written history, oral history, and the archival records analyzed for this study—to the long-term patterns detected in the regional-scale data. I also interpret the patterns according to two theoretical paradigms: world-systems theory and the interactional approach, which focuses on specific strategies used by imperial and local agents in the complex negotiations that take place when an empire expands into a rural territory. Doing so is an essential step in contextualizing the local- and regional-scale data collected for this study and is a critical component of any multi-scalar archaeological study.

7.1 – Interpretation of Regional-Scale Models: Responses to Imperial Expansion

In Table I, I presented two regional-scale models summarizing the expected archaeological signatures of a region that either is resistant to imperial expansion or is integrated into the empire. As with all theoretical models, no region should be expected to align exactly with either scenario; however, by comparing the real world situation with models like these, it is possible to determine the degree to which the communities either resisted or accepted imperial rule. The models are based on three variables: settlement location, settlement visibility, and route networks.

7.1.1 – Settlement location

Settlement location can provide insight into how communities responded to imperial expansion at the regional scale. As summarized in Table I, resistant communities could be expected to exhibit defensive characteristics in terms of their elevation, access to bays and ports (i.e. transportation routes), and land management strategies. On the other hand, integrated communities would be more "plugged in" to the economic and political networks and would exhibit fewer defensive qualities. In Chapter 5, I presented the results of different spatial analyses that focused on three specific attributes of settlement location: elevation, nearness to ports and bays, and settlement dispersion and clustering.

7.1.1.1 – Elevation

The results from the elevation analysis were surprising, given the fact that other studies from Greece show that medieval settlements tended to be located at higher elevations—a pattern interpreted as a defensive response to Ottoman imperial expansion and increased conflict between Ottoman and European forces. In Mani, this "retreat" was not observed to the same extent as elsewhere in the Peloponnese.

A basic comparison of average settlement elevation across time did not reveal any significant patterns, so it was necessary to take a closer look at the patterns of abandonment and settlement within the specific periods. One of the interesting findings came from a retesting of the "height-zonation hypothesis" first analyzed by Frangakis and Wagstaff (1987). The results from my study show that the only significant pattern was in the Byzantine period, when there were fewer settlements at the lowest elevations (below 100 m) than expected. This pattern is important because it suggests that a smaller percentage of Maniates were living in areas immediately accessible to the coast than in other time periods. Transitioning into the Ottoman I period, when there was a dramatic change in the macro-scalar political context, the settlements that were abandoned were no different in terms of elevation from those that were newly founded. Overall, it seems that elevation was not a factor in determining whether a site was abandoned or relocated—at least not initially.

However, my own experience in the field suggests a more subjective difference between many of the Ottoman I-period sites and those dated to the Byzantine period. Specifically, I encountered several of the Ottoman I-period sites that were extremely overgrown, and therefore more difficult to record. The Ottoman-I settlements seem to have been located in less accessible areas—on low hills or in places backed by a mountain rise—and are comparatively more overgrown today, with thorns and maquis at times completely overrunning the sites. Many of the Byzantine-period sites, on the other hand, are located on the flat plains or on the slowly rising lower hills leading up to the mountains—areas that continue to be used for cultivation or grazing, where wild plants have been kept in check. The statistical tests show that there is no essential difference between the elevation of the Byzantine sites and those of the Ottoman I; however, my subjective experience suggests that there is in fact a difference in settlement location on a more phenomenological plane, which may be difficult to measure quantitatively.

Transitioning into the Venetian period, the statistical tests show that people were abandoning sites that were significantly lower in elevation than those they continued to occupy, indicating that people were, in fact, “retreating” from the lower elevation zones during this period of dramatically increased conflict. Then in the Ottoman II period—the same period when other studies had found a return to low-lying elevations—the newly founded sites were located at lower elevations than those that continued to be occupied; this pattern was previously noted by Frangakis and Wagstaff (1987) using a different statistical test. In other words, as in other parts of Greece, the low-lying areas were reoccupied in Mani beginning in the 18th century.

According to the theoretical models, "defensive" settlement patterns are more likely to reflect a region that is actively avoiding integration into an empire. Elevation is, of course, only one aspect of a settlement pattern, but it is one of the most commonly discussed attributes in Greek contexts. The study of settlement elevation in Mani suggests that some of the coastal Byzantine settlements had a defensive advantage, in that very few of them were located within direct access of the coastline. However this pattern soon disappeared, and the statistics do not support a defensive model when Mani was initially incorporated into the Ottoman Empire. My personal subjective experience, however, suggests that although elevation did not change, people may have selected locations for sites based on other defensive factors, such as protection from a mountain rise on one side. Around the time of the Venetian takeover, the elevation analysis does show a temporary defensive pattern, but this once again dissolved when Ottoman power resumed. In short, the elevation statistics—on their own—suggest that local residents were not actively adopting a defensive position during the majority of Ottoman rule, though other defensive factors may have been in play.

7.1.1.2 – Nearness to Bays

Another aspect of a defensive settlement pattern in a sea-oriented region like Mani is the ease with which residents could access bays and harbors. This is a more difficult variable to interpret, however, because in either case (resistance or integration), access to the sea would have been important for local travel, communication, and even trade. In the case of resistance, residents would be more likely to engage in piracy and corsairing activities. In the case of integration, residents would use the ports and bays to conduct trade, particularly over long distances. Regardless of the model, access to bays and ports would have been important. Thus, the fact that the statistical analysis shows no significant difference in distance to bays over time is not terribly surprising. Instead, what is useful to look at is the average distance that the typical Maniate needed to travel to reach a bay or port—roughly 3 km, or about an hour's walk, depending on the terrain. While this is not a prohibitive distance, it nevertheless indicates that most Maniate settlements were not as "sea-accessible" as one might hypothesize, given the region's isolation from the mainland and its "island-like" character.

When compared to the theoretical models, the settlements' distance from bays and ports suggests that people did not have the kind of immediate access that would be predicted if residents were engaged in frequent sea travel or trade. Instead, only the few settlements on or near the coast would have had the kind of ready access that allowed for regular maritime travel. On the other hand, an hour's walk from the sea does not preclude a reliance on the sea for transport and information—it simply means that inland residents would have been more likely to use the coastal sites as intermediaries.

7.1.1.3 – Clustering and Dispersion

The third attribute of settlement location that was measured was the degree of dispersion and clustering, in terms of both spatial distribution and demography. For the spatial aspect, statistical methods were used to test whether points on a landscape were closer together or farther apart than would be expected given a random distribution. Dispersion is traditionally interpreted as the result of competition and intentional separation between settlements, and it is associated with subsistence-level intensive agriculture, especially when settlements are separated by over 1–2 km. Clustering can suggest cooperation and sharing of agricultural and pastoral land

and, by extension, shared identity. The second aspect is demographic, according to which the term "dispersed" refers to small hamlets with low population densities and the term "nucleated" refers to large villages with high population densities. The two concepts are not mutually exclusive: high-density (nucleated) villages may exhibit a dispersed pattern across the landscape, while low-density (diffused) hamlets may be clustered together. Both approaches, when interpreted together, can provide insight into the factors that encourage people to aggregate—either in terms of living together in a single large village, or living in separate settlements that are situated close together.

In terms of spatial clustering, the only two periods for which there were significant detectable patterns were the Byzantine and Ottoman I periods. In the Byzantine period, the settlement pattern was dispersed at the local-scale (0.2–0.4 km) and clustered at the medium-scale (1.2 km and greater). Meanwhile, clustering was detectable in the Ottoman I settlements only at distances of 3.2 km and greater. The Byzantine-period pattern of dispersion at close distances might reflect a situation in which local community identities were well defined and separate from those of neighboring settlements, while the clustering at larger distances suggests that groups of settlements (about 4–6 in number) cooperated, pooled resources, or perhaps even shared a supra-community identity. In the following period, the pattern of clustering detected at much greater distances would have involved groups of many more settlements—upwards of 25 in some parts of the peninsula. In the later periods, the settlements were essentially distributed randomly across the landscape.

In terms of demographic clustering, there seems to have been an increase in settlement nucleation (i.e. population density) over time. Comparing the spatial layout of settlements from the Byzantine period to the Ottoman II period demonstrates that settlement structure changed from a relatively diffused pattern to a much denser, nucleated pattern (see maps in Chapter 6).

Overall, the patterns of clustering and dispersion detected in the Maniate settlements show that they were predominantly clustered and nucleated. The dispersion noted in the Byzantine settlement pattern is not actually very "dispersed" when compared to other parts of the world, where settlements are separated by several kilometers or are comprised of only one or two homesteads. Framed this way, even the Byzantine settlements of Mani can be considered relatively clustered. There simply was no space between the settlements to allow for all of the residents' fields to be consolidated around the settlement itself (as in Von Thünen's ([1826] 1966) model of agricultural "intensity rings"); instead, landholdings would have been fragmented and scattered. That being said, a perceivable increase in population density and settlement nucleation did take place over time.

A nucleated pattern—which is applicable in all periods in Mani but especially so in the Ottoman II period—is generally associated with a model of integration, and it may result from (1) the practices of extensive, communal agriculture, transhumance, and bare fallowing, (2) the presence of a land-holding elite, or (3) an increased need for agricultural productivity in response to higher taxes. Based on what is known historically about Maniate agricultural practices, factor (1) seems a likely explanation. The spacing of the settlements, as mentioned above, rules out the possibility of intensive agriculture, and it is known that the upper mountain settlements were used seasonally for pastoral activities.

As for factor (2), it has been suggested that a landholding elite existed in Mani during the medieval period, but the direct historical evidence is lacking. At most, there are references to prominent families in some of the largest villages in the region (such as Oitylo and Alika), but this could not explain the overall pattern of nucleation in every small village in Mani. Moreover, the mapping and field recording of medieval settlements did not show a perceivable difference in architecture that would reflect a strongly stratified society (i.e. differences in the size or form of houses). This kind of differentiation really only appears in the Ottoman II period.

Finally, factor (3) was an issue that affected many other parts of Greece under Ottoman rule; however, it would not have been an important consideration if the residents had refused to pay those taxes. In Mani, the *defters* and the 1692 Zeno Register provide some insight into the willingness of Maniates to pay the taxes they were assessed. In 1671, a note recorded on an earlier *defter* (1583) reveals that many of the Maniate settlements were deemed to be "rebellious" and refused to pay their taxes. Then, in 1692, when the Venetian were busy re-assessing taxes on each settlement, they recorded several that had paid less than was owed to the Ottomans, and others that refused outright to pay anything. As Fermor ([1958] 2004:48) recounted, the Maniates were assessed "a nominal yearly tribute. But it was seldom paid. Once, I was told, a farthing was derisively tossed to the Sultan's representative from the tip of a scimitar." Given all these considerations, it seems unlikely that increased taxes would have contributed to settlement nucleation in Mani.

However, nucleation also may be a defensive response to increased conflict, meaning that a model of resistance may still be an appropriate interpretation for the nucleated pattern noted in Mani. Evidence that this model is applicable comes from the defensive installations recorded in many of the Byzantine- and Ottoman I-period sites. In the early periods, settlements tended to have only one defensive structure, such as a tower or a semi-fortified refuge. If defense were truly a concern for the residents, it would be only logical that people would live as close to these communal defensive structures as possible—hence resulting in a nucleated pattern. However, by the Ottoman II period, communal defensive structures were by and large replaced by clan-sponsored towers, which were intended to protect only the members of specific lineages. There were no community-wide defensive measures, such as walls or defensive refuges, in this period. Thus in this case, nucleation is unlikely to reflect the defensive posture of the residents.

In short, I suggest that the settlement nucleation seen in the Maniate settlements is best interpreted as a reflection of agricultural and pastoral activities, paired with the geographical constraints on the population that prevented them from living in sparsely populated settlements spread out from one another. However, on top of that, the nucleation may also reflect other social phenomena. In the Byzantine and Ottoman I periods, the presence of communal defensive structures suggest that nucleation may have also been a response to conflict or, more generally, an increased need to defend communal resources. Later on, and especially by the Ottoman II period, this explanation seems less likely. Instead, the increasing prominence of certain clans and the proliferation of clan-funded towers suggests that communal defense was no longer in practice, and furthermore, that the social hierarchy was diverging. As clans grew in power, they also acquired more lands—and thus, the establishment (or perhaps strengthening) of an elite landholding pattern seems a likely contributor to nucleation in the later periods.

7.1.1.4 – Settlement Location Summary

Overall, the analyses relating to settlement location reveal a complex picture that changed over time. What is most interesting about the results is the *lack* of a dramatic change in the Ottoman I period, when the Ottoman Empire first incorporated the Mani Peninsula into its territory. There are some aspects in each period that could be interpreted as defensive—including the fact that most settlements were at least an hour's walk from bays and ports—but it was not until the Venetian period that a clearly defensive "retreat" from lower elevations was detected in the statistical analysis. Then, remarkably, this pattern was reversed in the Ottoman II period, when people began occupying the low-lying territory along the coastline. At this point, the increase in family-sponsored towers suggests that defense was no longer as much a community concern as a family one, and it also demonstrates that some families had an economic upper hand compared to others. Because of this, the settlement nucleation that persisted into this period may be tied more to landholding patterns than to communal defense. In summary, the regional-scale patterns of settlement location may be described as somewhat "resistant" in the Byzantine and Ottoman I periods, strongly "resistant" in the Venetian period, and "integrated" in the Ottoman II period.

7.1.2 – Settlement Visibility

Visibility—including how visible a settlement is to others, and what can be seen from the vantage of a particular settlement—can provide insight into the defensive and/or cultural significance of settlements and other points on the landscape in the past. Intervisibility is often interpreted as a defensive mechanism, especially when fortified sites like beacons and watchtowers are involved, or when viewsheds incorporate valuable resources and transportation routes. At the same time, high visibility may be linked with culturally significant places, such as monuments and structures that serve as integrative mechanisms for promoting community identity. As summarized in Table I, resistant communities could be expected to be part of intervisibility clusters or networks, with overlapping viewsheds and viewsheds that incorporate local resources, pathways, and places of cultural significance. More integrated communities, on the other hand, would have fewer intervisibility relationships, isolated viewsheds that reflect territoriality and independence from surrounding communities, and viewsheds that include places of imperial importance, such as fortresses.

7.1.2.1 – Social Network Analysis of Line-of-Sight Networks

In Chapter 5, I presented the results of a social network analysis of the intervisibility network, as well as statistical analyses of the visibility of the settlements, pathways, churches, fortresses, and bays to other contemporaneous settlements.Before even beginning the social network analysis, it was clear from the LOS results that there were abundant intervisibility relationships, resulting in a rich LOS network that incorporated most of the settlements in each period. The number of "isolates"— settlements that were not connected to the main visibility network—was small, ranging from 5 to 11 in the network of permanent villages. The permanent village networks were better connected than the networks including the seasonal settlements, meaning that the mountain settlements were generally less well connected to the main network. The average distance in the networks also remained relatively unchanged over time; it would have taken about 3 or 4 intermediaries for a visual message to reach any other node in the system, regardless of period.

Where the characteristics of the networks differed, however, had to do with density and average degree. These differences were most noticeable in the Ottoman II period. Compared to the earlier periods, the Ottoman II-period network had fewer intervisibility connections (i.e. a lower density), and settlements had fewer average connections. While the overall network itself was less dense, there were also fewer isolates, so in this sense it was actually better connected. In other words, the Ottoman II-period network had fewer connections on the whole, but more settlements took part in it.

According to the model presented in Chapter 3, the high connectivity seen in the visual networks of Mani is more characteristic of a "resistant" model, where quick relays of information between a large number of settlements would be beneficial for region-wide cooperation and defense. Participating in such a wide information-sharing network would also be beneficial to communities on the fringes of the network—ones that have only one or two connections and do not act as important or "powerful" players in the system. However, it could be argued that the high connectivity in the visual network is the result of the peninsula's geography, paired with a relatively high population that lived primarily in small, nucleated settlements. The changes seen in the Ottoman II period may also be a result of geography, as several of the settlements in the broad southwestern plain—where visibility is highest—were abandoned. The movement away from high visibility areas like this could have resulted in the pattern seen in the social network analysis, with settlements having fewer average connections despite the fact that there were just as many inhabited settlements as in earlier time periods.

The second aspect of the social network analysis involved analyzing the distribution of "power" among the nodes by comparing their centrality scores. The three measures of centrality—degree, betweenness, and closeness—deal with very different types of "power" that a node might wield in the network. As discussed briefly in chapter 5, the degree and closeness centralities were neither surprising nor particularly insightful. In both cases, the distribution of scores among the settlements reflected underlying geographical patterning and influence on the intervisibility relationships. The distribution of betweenness scores, on the other hand, provided much more insight into the actual functioning of the network. Several settlements appeared as outliers, meaning that they had extremely high betweenness scores and therefore would have been critical brokers if a message were to be passed from one part of the network to another. Among permanent settlements in the Byzantine period, the top three brokers (Pyrrichos, Vlistiko, and Koulouvades) were all located in or near the pass connecting the eastern and western halves of the peninsula. Their role in keeping the network connected is clear in the graph theoretic diagram—if Pyrrichos were to be removed, the whole network would be split into two separate components. While the other two settlements are not as dramatically critical, removing them would have substantially increased the burden on the other nodes around them. In the next two periods, the top brokers are Karea and Palaia Tserova. In the Ottoman I period, these two settlements connected the western and eastern halves through the northern valley. In this case, removing either one (or even both) would not have crippled the network, but it would have had a great impact on the speed with which a message could have passed through the network, forcing other settlements that were less well connected (like Pyrrichos) to pick up the slack. In the Venetian period, when Pyrrichos was likely temporarily abandoned, removing the top brokers would have had a much more substantial impact on the functioning of the network. Finally, in the Ottoman II period, there was a very dramatic change in the appearance of the LOS network. While Palaia Tserova and Karea were still top brokers, the most important node in the system was now Areopoli. Areopoli, at that point in time, had become the cultural and political capital of Inner Mani and the home base of the powerful Mavromichalis clan. While the village was not critical to the functioning of the system as a whole—removing it would simply have shifted brokerage power to other nodes—it was the most important visual link between the settlements in Inner Mani and those in the rest of the peninsula.

The results of the social network analysis demonstrate how important geography was in determining the relationship of the settlements in Mani. In the case of intervisibility and the potential for relaying messages via visual means, those settlements located in mountain passes held a distinct advantage as “brokers” that could relay information from one side of the peninsula to the other. The rise in brokerage power of Areopoli (a plains settlement not located in a mountain pass) in the Ottoman II period is a surprising discovery. The village was inhabited in all four periods, and yet it was only in the Ottoman II period—when it had risen in social and political importance—that it also gained a significant position within the visual network. How can we explain this change? While Areopoli itself did not change in location, the settlements surrounding it did. New settlements, for example, may have been founded nearer to Areopoli as a result of the increasing power of its residents. In turn, this resulted in Areopoli becoming the center of the visual network during the Ottoman II period. Practically speaking, this means that if a person wanted to send a visual message to another location, being in Areopoli would have made it much easier and quicker to send the message successfully.

As with the overall network cohesion values, the centrality measures discussed here indicate that a strong LOS network existed in every period. While in the Byzantine period, a single settlement acted as a hub—meaning that removing it would cripple the whole network—the network in the other periods was more densely interconnected and could have withstood the removal of one or more of the key brokers. Social network analysis in itself cannot tell us whether this robust intervisibility network was an intentional process, or whether people chose site locations because they wanted to communicate with neighboring settlements. Instead, it tells us that there was *potential* for visual communication, and almost every settlement would have had access to this network.

7.1.2.2 – Cumulative Viewshed and Visibility of Settlements

The second tool used to assess settlement visibility was cumulative viewshed analysis. After running the analyses, the initial finding was quite clear: there were very few points on the landscape that could not be seen by at least one settlement, and what is more, there were no totally isolated viewsheds. This high visibility of the landscape translated to a high visibility of the settlements themselves, and there was no real statistical difference in the visibility of settlements over time (when comparing the normalized values). As summarized in the model in Table I, the presence of isolated viewsheds could reflect the establishment of territorial claim over the surrounding land and resources. This is clearly not the case in Mani, where the settlements were too close to each other to allow for territorial claims to be established or enforced through geographical separation. Once again, the viewshed analysis reflects the high density of settlements in the arable parts of the landscape and the lack of separation between them that could have translated to territoriality, resource protection, and community independence that is seen in other parts of Greece at this time. Instead, it is more likely that people living in neighboring settlements had to interact with one another in their daily agricultural and pastoral activities.

7.1.2.3 – Visibility of Routes

Overall, the lower visibility of goat paths compared to both walled paths and *kalderimia* was not surprising, given that goat paths tended to be located in the more remote parts of the peninsula (especially the mountainous interior), where there were fewer settlements. What was interesting was the fact that *kalderimia* were not more visible than walled paths, even though the random viewshed predicted they would be. In fact, in the Ottoman I period, the *kalderimia* were significantly *less visible* than the walled paths. This means that settlements that should have been able to see the *kalderimia* to a higher degree than the walled paths (if they had been positioned randomly on the landscape) actually were not able to do so. However, it should be kept in mind that in every period, the settlements had a higher visibility of all three kinds of paths than was predicted by the random viewshed.

These results show that, overall, the Maniate settlements had a better view of local paths and long-distance *kalderimia* than was predicted by the random viewshed. In part, this could be due to the fact that the paths connect actual settlements—they are purposefully positioned on the landscape and so are more likely to coincide with the viewsheds of actual settlements, rather than random locations on the landscape. However, given the density of settlements in the region and the degree of overlap between viewsheds, it is unlikely that this factor accounts for the entirety of the pattern seen in the statistical analyses.

The analyses also have interesting implications when it comes to the settlements' positioning in relation to the *kalderimia*. The *kalderimia* are concentrated in the northwest part of the study region, near places of great importance to both the Byzantine and Ottoman Empires. One of these places is Oitylo, the administrative capital of Mani throughout the medieval and post-medieval periods. The second is the fortress of Kelepha, a fortification that was built by the Ottomans in 1670. However, some historians have suggested that a Byzantine fortification called the Grand Magne may have been located in this region, either as an earlier phase of Kelepha, or perhaps at Oitylo (Wagstaff, personal communication). The *kalderimia* extend down the west coast to include other major settlements, such as Areopoli and Pyrgos Dirou. There are, of course, other *kalderimia* in Mani, but they seem to be isolated from the main network and were either used for local travel between settlements and fields or to travel further distances to reach remote settlements in the mountains. The bulk of the *kalderimia* are undoubtedly linked with the main imperial centers (both Byzantine and Ottoman) in northwest Mani.

Thus, the results of the viewshed analysis provide strong evidence that the people living in the northwestern part of Mani were intentionally locating their settlements so as to be less visible to people walking along *kalderimia* (or whatever roads or paths predated them). Even if the *kalderimia* themselves were first constructed during the reign of the Ottoman Empire, they were almost certainly built upon preexisting paths or even Byzantine-period roads. It seems that in every period, the residents of Mani were avoiding the paths linked with the strongest centers of imperial presence in the region.

7.1.2.4 – Visibility of Churches

Churches have special social importance in most Christian communities, where they act as integrative mechanisms to promote shared identity within the community or individual lineages. At the regional scale, high visibility of religious monuments like churches would be linked to a resistant model rather than to an integrated one—especially when dealing with a Christian region that is being ruled by a predominantly Muslim empire.

In many other parts of the Ottoman Empire, religious conversion was a common phenomenon, and mosques were often built in the conquered settlements. In Mani, however, there are no standing remains of mosques. The Ottoman records themselves indicate that conversion was extremely limited—the 1715 *defter* refers to only two families that had converted to Islam. It would seem, then, that the Christian faith was an important aspect of Maniate identity.

The results of the viewshed analysis underscore the importance that churches had to the Maniate communities. In every period, churches were more visible to the surrounding settlements than they would have been if the settlements were scattered randomly across the landscape. In other words, the settlements were intentionally situated in places on the landscape with good visibility of churches. This may not be surprising for the Byzantine period—many of the churches are, after all, Byzantine in date, and it follows that settlements would be located in order to have good visibility of the churches in use at that time. However, the pattern continues into the subsequent Ottoman I and Venetian periods. Settlements in these periods still had very high visibility of churches, regardless of when those churches were built. Interestingly, visibility decreased significantly in the Ottoman II period. While the churches were still more visible than predicted by chance, they were significantly less visible than they had been in the previous periods. By this point in time, therefore, the earlier Christian monuments must not have had as great an impact on where people decided to live.

7.1.2.5 – Visibility of Fortresses

The four fortresses in the study region are the best examples of imperial power and investment in the peninsula. Low visibility of the centers of imperial military control—especially when compared to a random distribution of settlements—would suggest that the residents of Mani were actively avoiding the watchful eye of soldiers stationed in the fortresses. A high visibility, on the other hand, would be more indicative of an integrated model, in which the residents either did not care that they could be seen by an imperial garrison or perhaps even chose to live in locations that could be seen.

The results of the cumulative viewshed analysis are surprising. For one, they suggest that when the fortresses were built, the locations were not chosen based on their ability to watch the surrounding settlements. Instead, the builders were probably more concerned with the locations' visibility of transportation corridors, whether by sea or by land. For both Passava and Kelepha, their locations were actually less visible to the settlements around them than was predicted by a random distribution of settlements. Yet over time, visibility of the fortresses increased. Kelepha had a higher visibility than predicted by chance in both the Venetian and Ottoman II periods, and visibility of Passava skyrocketed in the Ottoman II period as people began moving into the northeastern section of the region.

A possible explanation for this pattern is that the fortresses lost their military significance over time. Both Kelepha and Passava had been either refurbished or built by the Ottomans at the end of the Ottoman I period in 1670. They were soon captured by the Venetians in 1685, and Passava was apparently laid waste at this point in time. When the Ottomans conducted their *defter* survey in 1715, Passava was listed as empty and in ruins (*hâli ve harab*). Yet Kelepha continued to be used for more domestic purposes. A letter written in 1691 attests to the fact that public markets (*laiki*) were held within Kelepha fortress every Sunday to sell grains and fruits "for the everyday needs of the residents and especially of the needy from the surrounding settlements" (my translation; Lampros 1877:77). Also, a document in the Nani Archives apparently indicates that two local residents rented shops (*botteghe*) in the castle: one was named Giacomo Costanzo, and the other Carabatto Cufachi Steffanopulo (Komis 2005:281). The *defters* do not provide any insight into what came of Kelepha when the Ottomans retook Mani in 1715; however, the increase in visibility in the later periods may reflect a desire on the part of the local residents to be nearer the *laiki* (in the case of Kelepha) and to capitalize on the rich land around Passava once the Ottoman garrison had been removed.

7.1.2.6 – Visibility of Bays

As with the routes, bays would have been critical nodes in the broader transport and communication network—they are places where ships and small boats embark, bearing trade goods and news, and very often, soldiers and taxation officials. Just as the settlements' access to bays did not change significantly over time (section 7.1.1.2 Nearness to bays), their visibility of bays also did not change to a great extent. The only exception to this was a slight increase in the raw number of visible settlements in the Ottoman II period, which may simply reflect the geographical pattern noted elsewhere—that more people began living in the lower elevations of the peninsula.

7.1.2.7 – Settlement Visibility Summary

As with the analyses of settlement location, the visibility analyses presented a complex picture. On the whole, the Maniate settlements had an extremely high degree of visibility of one another, of the surrounding landscape, of parts of the transportation network (especially walled paths), and of churches, while features most closely associated with imperial power (fortresses and *kalderimia*) were not as visible. All these features point to a model of resistance, where visibility focuses on interconnection between local communities rather than on imperial structures or community independence. Certain aspects hinted at a change in the Ottoman II period: the LOS network became less dense, with fewer average intervisibility connections for each settlement; churches were not quite as visible as they had been in earlier periods; and many more settlements could "see" the fortresses of Kelepha and Passava. This shift can be explained in part by geographical factors, such as the abandonment of some settlements in the flat southwestern plain where visibility is highest, or by the decreased military significance of the fortresses in the Ottoman II period. However, it also suggests that other social factors may have been at play. On the one hand, the decrease in church visibility—paired with the (albeit few) conversions recorded in the 1715 *defter*—hints at a decreasing importance of Christianity as a factor in Maniate identity at the time. On the other hand, the dramatic rise in brokerage power of Areopoli suggests that local politics—and namely, those linked with fomenting revolution—were gaining in importance. After all, Areopoli had become the seat of the Mavromichalis clan, whose members helped lead the unsuccessful Orlov Revolt in 1770. Petros Mavromichalis (also known as Petrobey) became the *bey* of Mani in 1814, and shortly thereafter his clan raised the banner to unite the Maniates in revolution against the Ottoman Empire in 1821. Thus, the increase in Areopoli's brokerage power in the visual network suggests that a model of resistance is equally applicable in the Ottoman II period as in earlier times, at least in terms of the visibility analyses.

7.1.3 – Route Networks

As discussed in Chapter 3, formal built roads are generally associated with imperial investment in a region to serve political/military, economic, or ceremonial functions. Meanwhile, smaller paths are more likely to connect villages and local communities, while goat paths—often nothing more than a rough dirt trail—are used by shepherds to bring their livestock to pasture. In a "resistant" region, built roads would be few in number, and most settlements would be connected via walled paths and goat paths. Moreover, social network analysis of the route network would show that smaller villages wield the most "power" in the system; in other words, they would have high centrality scores and would more frequently act as hubs and brokers connecting other settlements to the network. In an "integrated" region, settlements would be well connected to the built roads, and the most "powerful" nodes would be locations of imperial significance: administrative centers and fortresses. This set-up would allow imperial officials, tax collectors, and soldiers the quickest access to all the other nodes in the system.

As with the LOS networks, before even beginning the social network analysis of the route network, it was clear that the Maniate settlements were connected by a very dense route network that incorporated built roads (*kalderimia*), walled paths, and goat paths. The *kalderimia* were relatively localized (Figure 104), being concentrated in the northwest part of the peninsula, connecting the settlements of Oitylo, Areopoli, and Pyrgos Dirou. Another long stretch of *kalderimia* ran south along the east coast between the settlements in Kolokythia Bay and Nyphi. Isolated *kalderimia* could be found around many other settlements; some of these connected two or more settlements (such as the *kalderimi* that climbed uphill from Diporo to reach Leontakis above it, or the *kalderimi* that connected Mezapos with Gardenitsa), but others appear to have radiated out from a village and disappeared into the surround fields. These latter *kalderimia* must have had local transport functions, giving farmers access to their fields and pasture for their livestock.

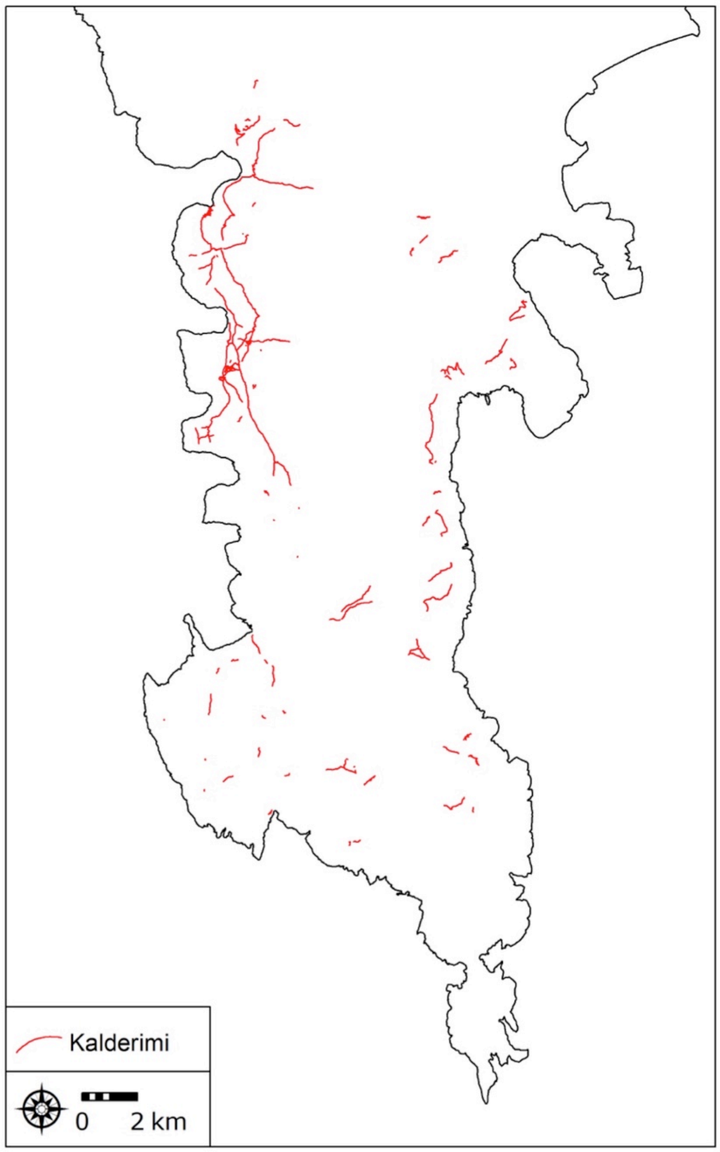


Figure 104. Map of the *kalderimia* in the study region.

The *kalderimia* in Mani—regardless of their primary function—were built in a similar construction style: they were narrow, allowing no more than two people to walk abreast, but also well built, at times requiring a level platform or even a bridge to be built to give the road an even grade. In general, they were built for long-distance travel (or at least to make short-distance travel easier), and they connected many smaller settlements in addition to the major population centers. In the northwest part of the peninsula, the *kalderimia* sub-network connected the Ottoman fortress of Kelepha with settlements about 10 km south of it. Based on all these characteristics, the formal built road system in Mani may be described as "dendritic"—comprised primarily of narrow trade roads that prioritized the overall connectivity of the network.

And yet, despite the abundance of well-built *kalderimia* in some parts of Mani, they connected only a portion of all the settlements in the region. In other areas, the walled paths and goat paths were critical routes that connected settlements to one another. In fact, the overall cohesion scores for the networks show how critical the goat paths would have been in making the network a "small world." With the goat paths included in the analysis, there were almost no isolates at all (with the exception of a single settlement in the Ottoman I and Venetian periods). This makes sense, in that many of the mountainous settlements used for seasonal pasturing practices were only accessible via goat paths. When the goat paths were removed from the analysis, these settlements were unreachable, and movement across the mountain range became impossible—instead, a person wanting to reach the opposite coast would need to travel around the peninsula, crossing through one of the few accessible valleys. In SNA terms, the mountain settlements connected to the network via goat paths were critical links that made it easier for a person to reach any other settlement on the opposite coast more quickly. The distribution of types of route connections presented in Figures 83 and 84 in Chapter 5 further underscores the importance of goat paths in keeping the network connected—without them, the routes display a scale-free pattern, meaning that certain hubs would have wielded more power in the system; with them, the network is not scale-free, meaning that most settlements have an average number of connections, and only a few had either very little or very many connections.

One of the interesting findings of the SNA was that the Byzantine-period route network was less well connected than in the following three periods. It was less dense, and settlements had fewer average connections. When removing the goat paths from the analysis, the average distance skyrocketed to 7 from 4.4, meaning it would have taken on average 7 intermediary steps for a person to reach any other given settlement. The diameter of this network—meaning the maximum distance between two nodes in the network—was 22, compared to the next highest values of 13 for the Ottoman I and Ottoman II periods. These results suggest that while the Byzantine-period settlements were all connected to the route network (there were very few or no isolates, after all), it would not have been as efficient to travel throughout the region as it was in later time periods. In reality, these figures were probably even overestimated to some extent, since the routes used in this analysis were those that were currently visible or detectable on the landscape, some of which may have been constructed *after* the Byzantine period. Thus, it is likely that the actual route network in operation at this point in time would have been even less dense than the analysis suggests.

The Girvan-Newman analysis used to create the graph theoretic diagrams also indicates that the route networks were clustered into highly-connected groups of 20 to 40 settlements, connected to one another through a few critical paths and “broker” settlements. Depending on the period and whether goat paths were included, the analysis indicated that the networks could be divided into 4 to 6 of these tight-knit clusters. These clusters tended to break along geographical lines—those in the southwestern plain tended to form a single cluster, while those around Kolokythia Bay formed another, and so on. As with the LOS analysis, this showed how important geography was in structuring the physical connections between the settlements in Mani.

The analysis of the individual nodes' centrality scores provided more insight into the structure of the route networks over time. As with the LOS networks, the degree and closeness centralities did not provide much insight—both scores illustrated the comparably diffuse network in the Byzantine period and the denser network in the Venetian period. But as with the LOS networks, the betweenness scores highlighted the fact that several settlements—the statistical outliers—would have acted as critical brokers, channeling movement through the network. Interestingly, none of these outliers corresponded to the fortresses or even to the administrative centers of Oitylo or Areopoli. Instead, the brokers tended to be located along narrow parts of the peninsula: the southwest (Alika) and east coasts (Aryilia, Soloteri, Layia, Nyphi, Dimaristika), where movement would have been more restricted with fewer alternatives to passing through a particular broker settlement. Pyrrichos also scored highly in the Byzantine and Ottoman I primary networks—not surprising, given its location in a key mountain pass connecting the east and west halves of the peninsula. Similarly, Loukadika and Chimara scored highly at various points in time precisely because they were located at the head of this valley on its eastern side. One of the surprising findings was the importance of Kouloumi, a settlement located on the broad western coast, midway between the northern and southern parts of Inner Mani. Here, there were few alternatives to traveling from one sub-region into another without passing through

Kouloumi, despite the fact that both north and south of it the route network branched out and expanded.

Overall, the SNA of the pathways in Mani reaffirmed the importance of geography in determining how people interacted with one another. Path networks in flat, open areas tended to be more dense, meaning that all the settlements in these sub-regions were well connected by walled paths and *kalderimia*. Those along narrow coastlines backed by steep mountains were necessarily more constricted, and here the go-between settlements were important "brokers" allowing people to travel further on through the network. The very fact that there were broker-settlements means that people living in those settlements would have had the opportunity to control movement, trade, and possibly communication in that part of the network. However, the more meaningful question to ask is not "Were there brokers?" but rather, "Why did people allow brokers to arise at these points in the network, instead of building pathways that circumvent those settlements?" As with the SNA of the LOS network, this question calls to mind the issue of causality—whether or not people established settlements at the crossroads of a previously built road system, or whether the path network arose because of the layout of the settlements. Unfortunately, this question can only be answered with better chronological control obtained through excavation.

7.1.3.1 – Route Networks Summary

According to the model presented in Chapter 3, this pattern of tight-knit clusters within a relatively dense network is more characteristic of a "resistant" model. In general, the formal built road network did not connect the majority of settlements, and those settlements with the highest centrality scores were small villages. However, in places where the *kalderimia* were most prevalent—the northwestern part of the peninsula around the fortress of Kelepha, for example—

the "integrated" model may be more appropriate. These areas also tended to break into groups in the Girvan-Newman analysis, further emphasizing the high degree of connectivity via the dendritic *kalderimi* network in certain areas. That said, the analysis of Kelepha's centrality scores—and specifically, its lower-than-average closeness centrality score—indicate that it was not well connected to the entire route network. Despite the high investment of labor and resources into the construction of the *kalderimia* in this area, any Ottoman representatives stationed in the fortress would have had efficient access only to those settlements in its immediate vicinity.

Comparing the route networks and the LOS networks may help illustrate the differences in how these networks functioned. In general, the route networks were less dense, and settlements were connected to far more settlements via visual means than physical ones. Another way of understanding the difference between the two types of networks is to look at average distance: a message could have been relayed throughout the visual network more quickly (on average through 2–3 intermediaries compared to 4–5). However, the route networks overall had fewer isolates—some settlements that were completely isolated from others in terms of visibility were connected to the route network by at least a single goat path.

The shapes of the two types of networks were also very different (for example, compare Figures 105 and 106). The Girvan-Newman analysis tended to identify 3 major groups of interconnected settlements in the LOS networks, which corresponded to broad geographical divisions on the landscape. For the route networks, it tended to identify between 4 and 6 tight-knit clusters, within which travel would have been much easier and more efficient. The division of these groups was not necessarily based on landscape: two of them, for example, were connected primarily by *kalderimia*. It may very well be that these parts of the peninsula correspond better to the "integrated" model, whereas the other areas correspond to a "resistant" model.

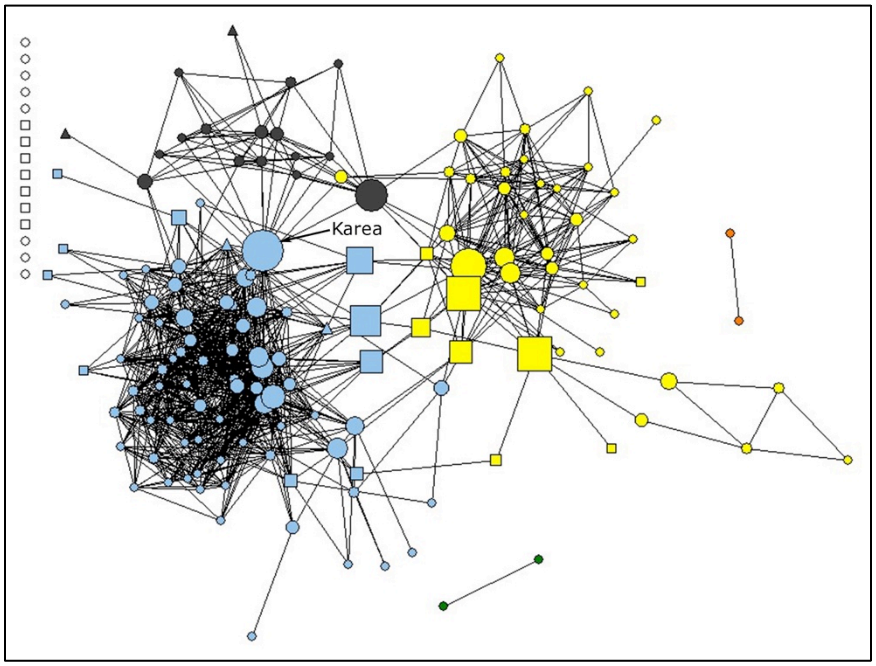


Figure 105. The Ottoman I-period LOS network (from Chapter 5).

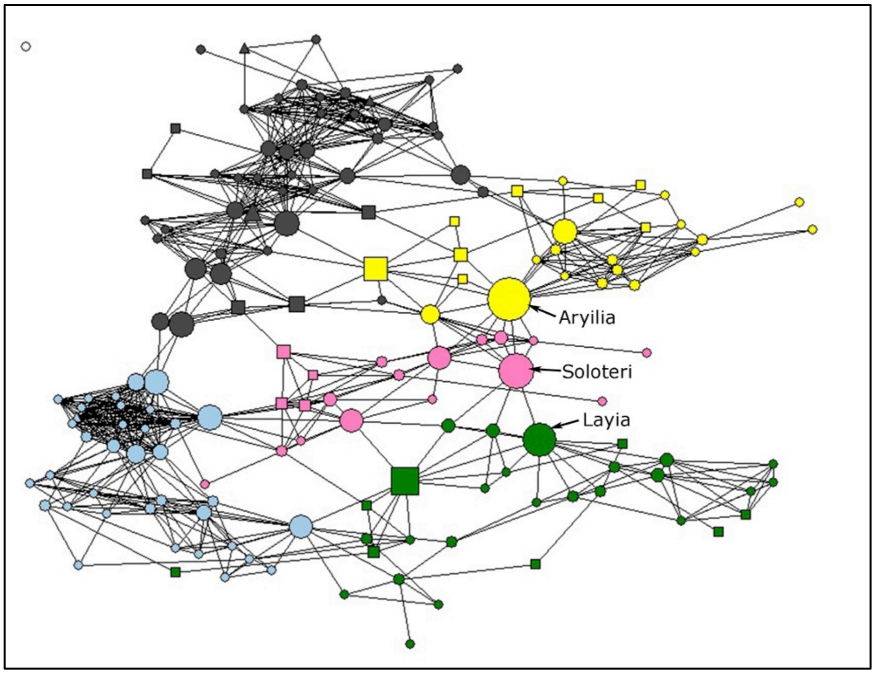


Figure 106. The Ottoman I-period route network (from Chapter 5).

In summary, while the high degree of connectivity in the LOS networks may be a reflection of the topography of the landscape, the connectivity of the route networks cannot necessarily be attributed to geographical factors in every case. A person standing in a particular location does not have much of a choice about which other parts of the landscape can be seen—his or her visibility is completely dependent upon the terrain, and in a densely populated region like Mani, visibility is probably going to be very high no matter where the person is standing. On the other hand, a route network is the product of intentional behavior, either in terms of actual road building or the repeated activity of walking between two points that, over time, results in the creation of a footpath. Certain brokers in the route network, such as Kouloumi, had such high betweenness values precisely because people chose not to build roads or paths that circumvented it, thereby granting its inhabitants much more potential power over local travel, trade, and communication.

7.1.4 – Model Interpretation

The three variables discussed in this section are summarized in Table LIV below and compared to the regional-scale models presented in Chapter 3. In general, the table reflects a shift from a “resistance” model in the Byzantine, Ottoman I, and Venetian periods to the “integration” model in the Ottoman II period; however, the shift is subtle, and some of the material signatures in the Ottoman II period still point to a model of “resistance.” Two of the features—the LOS network in the Ottoman II period, and the distribution of *kalderimia* in all periods—present an even more complicated picture. In these cases, most regions of Mani may be described according to the “resistant” model, while the region around Areopoli and Oiytlo—connected to the Ottoman fortress of Kelepha by a robust and dendritic *kalderimi* network—are a better fit for the “integrated” model.

Without a doubt, the most surprising finding from this analysis is the lack of a clear distinction between the Byzantine and Ottoman I periods, when the Ottoman Empire first established control over Mani. At the beginning of this research, I expected to see a shift toward either stronger resistance or integration at this point in time, with a gradual increase in resistant patterns as the Ottoman period progressed. In fact, it was only in the Venetian period that a very clear response to conflict—the withdrawal of settlements from low-lying areas—took place, and this pattern quickly disappeared once the Ottoman Empire reasserted control. Despite the fact that Mani was the epicenter of rebellion against the Ottomans in 1821, the 100-year period prior to this successful revolution was characterized by more “integrated” patterns than ever before.

TABLE LIV. INTERPRETATION OF THE GATHERED DATA ON SETTLEMENT LOCATION, SETTLEMENT VISIBILITY, AND ROUTE NETWORKS IN TERMS OF THE REGIONAL-SCALE MODELS

Variable	Feature	Byzantine	Ottoman I	Venetian	Ottoman II
Settlement location	Elevation	Fewer sites than expected in lowest elevation zone (below 100 m)[a]	No defensive pattern in terms of elevation, but site location may have other defensive qualities	"Retreat" from lower elevation zones	New settlements founded in lower elevation zones
	Nearness to bays	Average distance of 3 km to nearest bay			
	Clustering and dispersion	Spatial dispersion at 0.2–0.4 km and clustering at 1.2 km and greater; demographic nucleation a possible response to conflict	Spatial clustering at 3.2 km and greater; demographic nucleation a possible response to conflict	Random spatial distribution; demographic nucleation more pronounced	Random spatial distribution; demographic nucleation most pronounced, a possible result of increased social stratification
Settlement visibility	SNA of LOS networks	High connectivity of network possibly due to geography; few isolates (11) and low average distance (3.6 intermediaries); Pyrrichos is a key broker connecting east and west coasts	High connectivity of network possibly due to geography; few isolates (5–11) and lower average distance (~3 intermediaries); key brokers are located in the northern pass connecting the two coasts: Karea and Palaia Tserova		High connectivity but less dense, with fewer average intervisibility connections; Areopoli is a key broker connecting Inner Mani to the rest of the network
	Visibility of settlements	Settlement visibility consistent over time; no isolated viewsheds			
	Visibility of routes	All routes are more visible than expected; *kalderimia* are not more visible than walled paths	*Kalderimia* are significantly less visible than walled paths	All routes are more visible than expected; *kalderimia* are not more visible than walled paths	
	Visibility of churches	High visibility of churches of all periods			Churches are visible to fewer settlements
	Visibility of fortresses	Low visibility of fortresses		Kelepha is visible to more settlements	Kelepha and Passava are visible to more settlements
	Visibility of bays	Visibility of bays consistent over time			
Route network	SNA of route networks	Network is less dense, with fewer average connections (7.7)	Relatively dense network with 4–6 tight-knit clusters and few or no isolates; brokers are villages located in narrow parts of the peninsula or mountain passes, not administrative centers or fortresses		
	Distribution of routes	Robust, scale-free primary route network; *kalderimia* sub-network is dendritic but localized in 2 of the clusters			

[a] Red represents the "resistance" model and blue the "integration" model; purple indicates that both models may be applicable in different parts of the region; and gray is ambiguous.

7.2 – Interpretation of Community-Scale Models: Social Organization

In Table II, I presented two models for inferring whether the social organization of a community promotes cohesion at the community scale or at the scale of the family or clan lineage. The models are based on the notion of "enactments of community," which take place when people gather together in defined spaces, pool their resources to build communal structures, and share their resources with one another. All these types of behavior, in turn, leave behind material signatures that can be used to understand how people organized their communities in the past, specifically in terms of two variables: integrative facilities and resource sharing. In the case studies presented in chapter 6, I reviewed the evidence for these two variables in a range of Maniate communities. In the following section, I will summarize my findings and infer which model is most appropriate for each period in Maniate history.

7.2.1 – Integrative Facilities

The primary integrative facilities in the medieval and post-medieval Maniate communities were churches, cemeteries, and open spaces. The first two would have served as "high-level" integrative mechanisms that provided a space for repeated ritual activities. The third would have served as a "low-level" integrative mechanism that served both secular and ritual purposes and was used by the entire community for everyday activities.

7.2.1.1 – Churches

In each of the case studies in Chapter 6, the settlement had at least one, if not multiple, churches that were in use at the time the settlement was occupied. Many of these churches were built in the Byzantine period, and in some cases they may have been built long before people began living at the site. However, based on episodes of renovation and restoration of the icons, there is no doubt that the churches continued to be used throughout the ensuing centuries.

Furthermore, there are different types of churches, ranging from small chapels built with local limestone to "monumental" churches built with imported materials and tile roofs and decorated with marble sculptures and glazed pottery.

In cases of the small hilltop settlements, whether the Byzantine-period ridge-top clusters above Nyphi or the Ottoman II-period settlement of Spira, each community built or maintained only one (usually small) church. In the plains, the number of churches per settlement was more variable. Some of the *palaiomaniatika*, such as Kouvouklia, tended to have fewer churches; Kouvouklia itself is associated with only a single monumental church, the Taxiarchis, and this is at a distance from the site itself. In this case, the settlement's single church would have served as a gathering place and ritual space for the entire community.

Other Byzantine-period settlements had multiple small chapels, generally built around the edges of the settlement. In Charouda, for example, there were 3 small Byzantine-period churches built at the north, east, and west edges of the settlement, in addition to the single monumental church on the south edge (also named Taxiarchis). Ippola and Pyrgos Dirou, too, had multiple Byzantine-period churches at the edges of the main settlement. The smaller size of these churches would have necessarily restricted the number of people who could enter the building and participate in the rituals. As a result, they likely served only a few households or were used less regularly, such as for funerary purposes or for private prayer. A parallel to this pattern comes from Byzantine Cappadocia, where Kalas (2009:90) suggested that multiple churches around the edges of a settlement served to define the boundaries of the settlement space, and furthermore, "to protect it and provide a sacred barrier between the outside and the inside worlds of the inhabitants." This "sanctified boundary" would be visible to anyone approaching the settlement who encountered a church along the way, and it would also serve to reinforce a sense of shared community identity to anyone from within.

There are also several instances of Byzantine-period isolated churches being built in unoccupied areas between multiple settlements—referred to in Greek as *exoklisia*. This is the case of the monumental churches of Vlacherna and Episkopi, as well as churches that became a part of later settlements: Ay. Theodoroi (in Vamvaka), Ay. Sotira (in Gardentisa), and Ay. Nikolaos (in Yerma). Another published example is a small chapel of Archangel Michael in the village of Polemitas (Drandakis 1982). The dedicatory panel in the church (dated to 1278) names all of its donors and sponsors from the surrounding villages. It is evident that elite families in the wider region pooled their resources to fund the construction and decoration of these isolated churches. Even the larger churches could not have possibly served the entire population of the surrounding villages, but instead they would have acted as inter-community integrative mechanisms—monuments and ritual spaces that bonded together the members of multiple separate communities.

As the Ottoman periods progressed, hilltop settlements—geographically confined and thereby limited in terms of population growth—continued the Byzantine pattern of building or maintaining only a single church. Meanwhile, people who continued to occupy the plains settlements tended to build additional churches to accommodate the growing population.

In Pyrgos Dirou, the spatial distribution and size of the churches reflect an overall pattern of settlement nucleation and the neighborhood-scale focus of the community's social organization. Over the course of the two Ottoman periods, a total of six churches were built. The churches were similar in size to their Byzantine predecessors, meaning that each one could only accommodate a portion of the total population. However, rather than being located on the edges of the settlement, each was surrounded by contemporaneous residential structures. This suggests that the function of the churches was not about establishing a "sanctified boundary" around the entire community, but rather about providing a space for sub-communities or neighborhoods to participate in ritual activities. In Pyrgos Dirou, the latest of these was part of an 18th-century fortified complex built by the Sklavounakos family. The construction of private churches serving a single family became increasingly common in this period. Rather than fund the construction of a church that could be used by the entire community, wealthy individuals in the Ottoman period built churches that were to be used exclusively for their family. One rare exception was the large church in Areopoli, funded by the Mavromichalis family and clearly intended to be used by other members of the community (the family also built several smaller churches in both Areopoli and Limeni). It was not until the Early Modern period following Greece's independence that large churches were again funded by and for the wider community. A total of four of these larger churches were constructed in Pyrgos Dirou in the 19th century, all located on a large *plateia* that could be used for community-wide gatherings, feasts, and parades.

7.2.1.2 – Cemeteries

In each period, one of the social functions of many of the churches was to serve as a place for conducting funereal rituals and laying the dead to rest. Although not every church had a cemetery, cemeteries were rarely founded outside the vicinity of a church. Saïtas (2009:372) published an overview of his recent research on the cemeteries in Mani, which he estimates to number around 400. Cemeteries are most often found in the vicinity of small churches, which are (at least now) associated with specific families or lineages, but others were established near monumental churches or even some *exoklisia* (Saïtas 2009:373-375). Very rarely, important individuals were buried in pseudo-sarcophagi, underground crypts, monastic funerary chapels, or ossuaries within churches (Saïtas 2009:375). Most people, on the other hand, were buried in the cemeteries in shaft graves, built grave structures, and family ossuaries. The association of cemeteries with certain family lineages can be seen in a few cases, such as at the church of Ay. Panteleimon in Ano Boularioi (the Pragiatis, Thomopoulos, and Lykourezos families) and the Koukourianos family in Ay. Georgios in Kato Boularioi (Saïtas 2009:375); however, for the most part the identities of the individuals buried in the medieval cemeteries are unknown. The cemeteries would have functioned as key locations in the social landscape for the "enactment of community." For settlements with only a single church or cemetery, the funereal rituals would have served as a community-scale integrative mechanism, while in settlements large enough to have multiple cemeteries, the funereal rituals would have strengthened the ties of lineage. Many of the medieval and post-medieval cemeteries continue to be used today, a fact that Saïtas (2009:371) traces to the importance of patrilocal lineages, the "regional internecine hostilities, feuds and the culture of revenge [which] prohibited close contact between adversaries, even in the graveyard," and the importance of funerals and other death-related rituals in contemporary social life .

<u>7.2.1.3 – Open Spaces</u>

Open spaces were the primary "low-level" integrative mechanism in many of the larger Maniate communities. In the Byzantine period, as in the case of Charouda, these open spaces occasionally manifested as an uninhabited area at the center of plains settlements, with houses and other features built around the space in a ring or semi-circle. Today, these areas are often overgrown or unused, and without further examination it is impossible to know exactly how they were used in the past—perhaps they were common areas used for gardens, keeping animals, or hosting community gatherings.

In the majority of cases, however, the Byzantine and Ottoman I-period settlements actually lacked well-defined open spaces. In the hilltop settlements, the lack of open or central space can be attributed to topography, though in some cases (such as at Palaia Tserova), a well-defined area around the church remained free of houses even into the Ottoman I period. In the plains settlements that lack an open space, such as Kouvouklia, the houses are instead organized in an "open layout"—they are evenly dispersed and have no dividing compound walls to separate them. Though these settlements lacked a central area where villagers could congregate and "enact community" outside the realm of religious ritual (which took place in the churches), the very layout of the houses would have promoted community cohesion, as in the example from Monte Viudo in northern Peru (Guengerich 2014). The lack of well-defined private spaces further added to the sense that communal space was distributed throughout the settlement, rather than confined to a single area.

A more drastic change took place in the Ottoman II period, when settlements became more consolidated and nucleated and well-defined public spaces became more common. Whereas houses in the earlier phases were dispersed over a broad area, in diachronic settlements the Ottoman II phase tended to be concentrated within a smaller area of the site. This pattern of settlement nucleation coincided with the delineation of pubic squares, called *plateias*. For example, each of the two neighborhoods in Pyrgos Dirou has a main *plateia* at the center of the site, serving as the location for festivals and open markets and as an everyday meeting place. This central area is reminiscent of the open spaces in settlements like Charouda; however, today these spaces are paved and tend to be bordered by large public buildings, like churches—thereby combining the community's low-level and high-level integrative mechanisms into a single space.

7.2.2 – Resource Sharing

The case studies above also provide insight into the practice of community-scale resource sharing and how it changed over time. In general, the sharing of domestic space, storage facilities, and defensive installations reflects a shift from a "community cohesion" model in the Byzantine period toward a "family prioritization" model in the Ottoman II period.

7.2.2.1 – Domestic Space and Storage Facilities

The physical layout of the domestic spaces in the Maniate communities gives some insight into the practice of resource sharing in the past. The "open layout" of the Byzantine and Ottoman I-period settlements—along with the relative uniformity in house structure, high visibility of doorways, and lack of property or compound walls defining house complexes—suggest that community-scale sharing was a regular practice among the villagers in these settlements. In addition, the typical villager had access to only limited private storage space: namely, the ground floor of the house. Water storage facilities (i.e. cisterns) were common, but generally unprotected. They also tended to be dispersed among the houses, or in some cases, built within a single area of a settlement. Cisterns were also often built next to Byzantine-period churches, and just as the church was used by multiple members of the community, it is reasonable to assume that the water in those particular cisterns also was used by more than one family. These aspects of the cisterns' location hint at the possibility of water sharing or multi-household ownership of cisterns. As discussed in section 3.3.5, this type of settlement layout, paired with the limited amount of private storage facilities, hinders people from hiding or protecting their resources. People can actually see their neighbors' resources and are more likely to make requests if they are in need.

By the Ottoman II period, the rise in the number of walled family compounds dramatically increased the amount of private storage space available to each villager: houses became larger, roofed storage areas and animal pens were built, and walls were constructed to enclose cisterns within the family compound and, in some cases, restrict neighbors' visibility of the interior courtyard. The importance of water in the arid climate of Mani is underscored by two stories from the late 18th century:

> When a Kakovoulian marries, the most important task is to probe the tank, the main part of the dowry given to his wife. The more water consumed at the wedding banquet, the richer a person is considered to be. This extravagance makes a lot of noise, and it does not fail to instruct the entire township about how much water was drunk …
>
> One of these mountaineers confessed to a priest, with tears in his eyes, that he'd had the misfortune, after giving a drink to a beast of burden, to throw away the little water that remained. The priest thought the sin enormous, and granted absolution only with the payment of sixteen measures of oil. (My translation, Grasset de Saint-Sauveur 1800:369-370)

There is no doubt that water was an extremely valuable resource throughout all of Mani's history. However, the above case studies suggest that by the Ottoman II period, access to water was increasingly controlled by individual nuclear families. The overall trend toward increased private domestic space and resource protection suggests a decline in resource sharing as a social practice in the Ottoman II-period communities.

7.2.2.2 – Defensive Installations

Like the other material elements, the communities' defensive installations hint at an increasingly family-centered approach to defense in the Ottoman II period. Earlier Byzantine-period towers existed, but a village never had more than one, which was sufficient for guarding and defending a group of families. The most impressive example of an early defensive installation is the 15th-century tower in Palaia Karyoupolis (Figure 107), the seat of the bishopric and headquarters of a military commander at the time (Kalamara and Roumeliotis 2004:45,

Figure 16; Saïtas 2001:20-21; Etzeoglou 1982). A few other sites, including Palaia Tserova and Loukadika, have semi-fortified areas at the top of a hill that are reminiscent of the typical *kastro* found at medieval settlements elsewhere in Greece. Villagers in the Ottoman I-period settlements, like Briki, Karynia, and other sites along the base of the mountain, constructed communal refuge areas on the site's upper slopes (Figure 108).

Figure 107. 15th-century tower at Palaia Karyoupolis, from the northwest (T271F002).

Figure 108. Upper refuge area in Karynia, showing the outlines of two connected houses built on top of protruding bedrock.

Later, however, "war towers" were constructed and enclosed within private compounds to defend a single family, rather than the community as a whole. By the Ottoman II period, the infamous "tower towns" of Mani had appeared, places like Vatheia and Layia, where up to 12 independent towers had been erected—not to fight off outsiders, but to fight against the other families within the same town. With the introduction of mortar in the Early Modern period, these towers were renovated and made even taller. There are three such towers in Pyrgos Dirou, all associated with a particular family clan, including the impressive Sklavounakos tower and family complex (first founded in the Ottoman II period but expanded built up in the following centuries). It is telling that the Sklavounakos family compound is located on the edge of Diros, far from all the other hundreds of people living there, as this indicates that the tower was in no way built for the benefit of others in the community.

7.2.3 – Model Interpretation

In general, the case studies discussed above point to a gradual shift from a model of "community cohesion" to one of "family prioritization." Because of the resolution of the archaeological data, it is not possible to identify precisely when this change took place, but it seems to have taken hold by the Ottoman II period at the latest. In the Byzantine and Ottoman I periods, settlements either had a common public space at the center of the site or an "open layout" with evenly distributed (or equally accessible) water storage facilities, little private space, shared defensive facilities, and religious spaces that were either communal, inter-community, or located on the settlement periphery so as to promote a sense of community identity and perhaps even bestow a sacred protection over the community. By the Ottoman II period, houses became private refuges for a single nuclear family, easily defended in times of duress thanks to their increased private space, protected cisterns, and compound walls. Churches and *plateias*, likewise, served small local neighborhoods rather than the whole community, and towers multiplied as inter-family conflict increased. This evidence, summarized in Table LV below, is compared to the models presented in Chapter 3.

TABLE LV. INTERPRETATION OF THE GATHERED DATA ON INTEGRATIVE FACILITIES AND RESOURCE SHARING PRACTICES IN TERMS OF THE COMMUNITY-SCALE MODELS

Variable	Feature	Byzantine	Ottoman I	Ottoman II
Integrative facilities	Churches	Usually 1 church or more around the edges of settlements; *exoklisi* used by multiple communities[a]	1 or more churches	1 or more churches; in larger villages churches serve specific neighborhoods or family lineages
	Cemeteries	Communal cemeteries in small villages; individual family cemeteries in larger villages		
	Open spaces	Open layout or open space at village center		Settlement nucleation, with *plateia* at village or neighborhood centers
Resource sharing	Domestic space and storage facilities	Open layout, uniform house structure, highly visible doors and no walls; small storage areas within houses; unprotected cisterns		More complex house forms, walled compounds; expanded and protected storage areas; cisterns sometimes located within house compounds
	Defensive installations	Single communal defensive tower or fortified refuge		Several clan-funded war towers within each settlement

[a] Red represents the "community cohesion" model and blue the "family prioritization" model, while gray is ambiguous.

7.3 – Discussion

The data about the medieval and post-medieval settlements in Mani reveal two remarkable patterns. On the one hand, at the regional scale, the settlements appear to have physical, measurable qualities that are consistent with a "resistant" model throughout much of this history, without any meaningful change between the Byzantine and Ottoman I periods. This pattern lasts until the Ottoman II period, when the settlements conform to a more "integrated" pattern, at least in some parts of the region. On the other hand, at the community scale, the layout of the settlements and various other pieces of evidence are consistent with a model of "community cohesion." Again, this lasts until the Ottoman II period, when social hierarchy seems to become more pronounced and individual clans and families are prioritized over the identity of the community as a whole.

In this section, I will contextualize these patterns from a macro-scalar perspective. First, I will discuss the specific history of Mani during the Byzantine to Ottoman II periods to compare what is known about the region's actual attempts at resistance with the patterns detected here. Next, I will apply two macro-scalar lenses—the core-periphery approach and the interactional approach—to tease out the nuances in the relationship between Maniates and the various imperial authorities that ruled over them.

7.3.1 – Historical Evidence of Resistance/Integration and Community Organization

Modern tradition testifies to the Maniates' culture of resistance, especially in the Ottoman II period leading up to the Greek Revolution, and local ethnic pride is founded upon a supposed history of rebellion that stretches back to Mani's earliest days. While it was not the intent of this research to either verify or disprove those claims, the results lend some support to these attitudes. According to the patterns detected in the archaeological data, the Maniates seem to have resisted imperial control throughout most of the medieval and post-medieval periods—at least up until the re-establishment of Ottoman rule in 1715.

As reviewed in Chapter 2, there are a few important historical accounts that attest to Mani's history of resistance. The earliest of these are rather sketchy and unreliable. In the 10th century, the Byzantine emperor Constantine Porphyrogennetos claimed that Mani had been converted to Christianity only under the reign of his grandfather, Basil I, in the 9th century AD, long after the rest of Greece had become a part of the Christian realm. Several hundred years later, an account about the 13th-century Frankish prince Guillaume II Villehardouin (*The Chronicle of the Morea*; Villehardouin 2008) suggests that he built fortresses in Mani to control the Melingoi, a Slavic tribe living in the Taygetos Mountains (Wagstaff 1991:141-142). Incidentally, Drandakis (1965:218) suggested that this was the actual group—not the Maniates themselves—that Porphyrogennetos was referring to in his account of his grandfather's accomplishments.

Accounts of actual rebellion and resistance became more numerous as history progressed. In 1415, Manuel II Palaiologos embarked on a program to rehabilitate the Hexamilion Wall at the Isthmus of Corinth and protect the Byzantine citizens of the Morea from increasing numbers of Turkish raids and attacks. Yet in a letter written to monks in Thessaloniki, Manuel II described the open hostility he faced from landowners in the Morea, and he alluded to the revolts he had to put down that summer (Barker 1969:316-317). It was during this campaign that Manuel II issued a command to have the fortifications in Mani dismantled, as testified in a eulogy by a contemporary panegyrist, Dimitrios Chrysoloras (1926). This command likely referred to the Frankish castles of Beaufort, Passava, and Grand Magne (Wagstaff 1991:147). This account suggests that the fortresses in Mani were no longer assets to the Byzantine Empire, and perhaps were even contributing to local resistance to Byzantine control in Mani.

Another interesting aspect from this campaign was that Manuel II brought an end to a local Maniate practice of *machalismos*—the "cutting off [of] their enemies' fingers or toes, and dipping these ghastly trophies in the festive bumper, with which they drank to the health of their friends" (Miller 1908:384). This was one of many supposed customs that lent support to modern interpretations of the medieval Maniates as being "lawless and savage" (see also Barker 1969:Note 32). The account also demonstrates that the Maniates had unique cultural rituals that set them apart from other Greeks—or, even if the practice was exaggerated or fabricated, that outsiders at least perceived them as being culturally different.

These few accounts from the Byzantine period correspond well with the regional-scale archaeological patterns detected in this study. Mani may have been an official part of the Byzantine Empire even until the end, but it was not fully integrated with the empire, either politically or culturally, to the same extent as were other parts of Greece.

At the community scale, on the other hand, there is evidence of some integration with the empire. Specifically, many churches were built in Mani during the Byzantine period, including some with high-quality iconographic paintings. While many of these paintings reflect local traditions, others were done in an imperial style (Kalopissi-Verti 1999). A microanalytical analysis of the pigment composition from selected Byzantine churches lent further support to this assessment. Specifically, "The identified pigments indicated a typical Byzantine palette … At least to some extent, precious pigments were used similarly to the metropolitan monuments," with local techniques used mostly in the preparatory layers and pigment binders (Hein et al. 2009:2070). The commissioning of imperial-style icons would have involved hiring experienced iconographers and paying for expensive pigments. In other words, it would have required financing from either a very wealthy individual, or the pooling of resources from a community. As one of the few churches in Mani with a written dedication, the church of the Archangel Michael in Polemitas provides evidence of at least one *exoklisi* (a church outside the boundaries of a settlement) that was funded by multiple individuals from the surrounding villages (Drandakis 1982). The high quality of the religious paintings in some of the Maniate churches supports the interpretation of village-scale social organization as promoting community cohesion, as communities would have needed to cooperate in order to fund these magnificent works of art.

The one potential disagreement between the archaeological patterns and the historical narrative of the Byzantine period is the absence of a clear material signature of social hierarchy in terms of house forms and the spatial layout of communities. Unlike later periods, when wealthy families built impressive houses and towers to distinguish themselves from their fellow villagers, this type of discrepancy is not evident in the earlier villages. It is possible, of course, that with excavation, material differences could be identified, but at present they are lacking. This is important because local historians such as Kyriakos Kassis (1979:23-26) claim there was a stratified social hierarchy in Mani at the end of the Byzantine period, comprised of three levels: (1) the *megalogenites* (those of noble birth)—mercenaries and lords, including the famous Nikliani, who sought asylum in Mani in the 15th century; (2) the *achamnomeri*—a kind of middle class with a status similar to emancipated servants, who had rights to some common property and could own fields but were not allowed to build towers; and (3) the *fameyi*—essentially slaves, and notably few in number. Kassis (1979:26) claims that the modern economic mode of production and treatment of property and resource rights was essentially unchanged from this medieval setup; however, he also suggests that the material differences between the groups were not great, and that members of all three were relatively impoverished and engaged in piracy as a means of supplementing their meager livelihoods. If the historical narrative is factual, then the patterns detected in this study underscore the relative material equality of these groups at the end of the Byzantine period.

The macro-scalar history of the transition to Ottoman rule in Greece, as discussed in more detail in Chapter 2, highlights the great amount of political instability, armed conflict, and revolts that took place around AD 1460, as well as the quick return to the linguistic, religious, and cultural status quo once Ottoman rule was put in place. Before analyzing the data from Mani, therefore, it was hypothesized that the data would reflect either a pattern of increased resistance (as suggested by the historical narrative and folk memory), or increased integration (as experienced in other parts of Greece). Instead, the patterns suggest that there was very little change during the transition from Byzantine to Ottoman rule, at least in terms of the regional-scale settlement patterns.

This lack of a dramatic change in the Ottoman I period is surprising when compared to the number of historical accounts of revolts and rebellions that took place during this period. The first rebellion took place from 1463 to 1479, when a Greek lord named Kokodilos Kladas joined with Venice and led attacks on Ottoman forces until the two powers made peace. After that, Kladas continued his revolutionary efforts from Mani for several years before the revolt was eventually put down (Greenhalgh and Eliopoulos 1985:24-25). After 90 years of relative peace, the Ottomans began building the fortress of Achillio in Porto Kayio in 1570, but the Maniates requested assistance from the Venetians, and together they attacked and destroyed the fortress (Coronelli 1687:104; Greenhalgh and Eliopoulos 1985:25). Soon after, another failed revolution under the leadership of the Bishop of Monemvasia ended in 1573 following a brief holdout in Mani (Greenhalgh and Eliopoulos 1985:25-26). From this point until the beginning of the Ottoman-Venetian War of 1645, there were no actual armed revolts in Mani, though this was not for lack of trying. The Maniates corresponded with various European powers looking for assistance in armed rebellion: Pope Gregory XIII in 1582, Pope Clement VIII in 1603, King Philip III of Spain in 1605, and Charles Duke of Nevers in 1618 (see the discussion of the Nevers Catalog in section 4.1.2; Greenhalgh and Eliopoulos 1985:26). During the Ottoman-

Venetian war that began in 1645, Maniates attacked Turkish ships at increasing rates and assisted the Venetians in military endeavors (Greenhalgh and Eliopoulos 1985:26-27), and in 1667 they even staged a failed rebellion with the assistance of the Venetians (Randolph 1689:9). When the Ottomans prevailed over Venice in 1669, there was a brief period of substantially increased conflict within Mani itself. The Ottomans launched a military campaign to put down the revolts in Mani (Institute for Neohellenic Research 1993:28), built or refurbished the fortresses in the region, stationed a galley in the bay of Porto Kayio, and subdued prominent families by taking some of their relatives hostage (Finlay 1866:136-137, 211-212). The Ottomans also freed Liberakis Yerakaris, a pirate from Oitylo who had been imprisoned for illegal piratical activities, and sent him to Mani with the expectation that he would help subdue it. It is generally agreed that this was a failed bureaucratic move on the Ottomans' part, as the man quickly began to abuse his power and resources to persecute his rivals in Mani—thereby contributing to a mass emigration of Stephanopouloi and Iatranoi (or Medici) to Italy (Greenhalgh and Eliopoulos 1985:27; Fermor [1958] 2004:99-108). Yerakaris soon returned to piracy and was imprisoned once again by the Ottomans in 1682.

In addition to these accounts of actual (or attempted) armed resistance, the Ottoman imperial tax records—the *defters*—add new insight into the degree to which Mani resisted or accepted incorporation in the Ottoman I period. There are 3 available *defters* that are relevant for this period: TT80, a *mufassal defter* from AD 1514, TT603, a *mufassal defter* from AD 1583, and TT677, an *icmal defter* also from AD 1583. Put very generally, *mufassal defters* describe how tax is to be collected from the villages within a district, while *icmal defters* focus on how those revenues are to be distributed among *timar* holders and guards.

The 1514 *defter*, which covers the entire Peloponnese, records only 38 settlements in the southwestern part of Mani (see Figure 24). It was not until the 1583 *defters*—13 years after the Ottomans' partially failed attempt to build a fortress at Porto Kayio—that the rest of Mani was recorded. While not definitive evidence, it is tempting to interpret the narrow coverage of the 1514 *defter* as a reflection of the Ottomans' lack of control of the peninsula. After all, if the Ottomans did not enumerate the villages in the rest of Mani, it suggests they were not imposing a tax on the Maniates, either.

By the time the 1583 *defters* were compiled, the Ottomans had established definitive control over the entire peninsula (see Figure 25). The *defters* show that *timars* (military fiefs) had been established in the region, and that guards were actively stationed in the "fortress of İmanya"— referring to Passava. TT603 names 12 villages and 5 *mezraas* (abandoned villages now used as cultivated land) that were considered part of the "estate of the men of the fortress of İmanya." Almost all of these areas, with the exception of Karea, are north of the bounds of the study region. TT677 lists a total of 54 villages, most of which are in the study region, along with how the revenues from those villages should be distributed to the 60 guards and 1 cavalier stationed in the fortress. While the majority of the guards are Turkish, four of them are Christians: Thanasis son of Sinandinos and Manol and Nikola from the same family, as well as a fourth with a different family name. Elsewhere in the empire, it was not unusual for Christians to be employed in the Ottomans' military ranks. Another interesting point from this *defter* is that two settlements—Zarnata and Ano Doli—were obliged to pay the *maktu* (the annual flat tax), rather than a tax based on expected agricultural production—the norm in the early part of the Ottoman reign. By the time the Venetians conquered the Peloponnese and began assessing their own taxes, the *maktu* had been put in place throughout much of Mani (see description of the 1692 Zeno Register in section 4.1.2).

As the brief historical sketch above mentioned, over the course of the next 80 years the Maniates tried to rally support from various Western powers to stage a rebellion against the Ottomans. According to Bernard Randolph (1689), they managed to do so in 1667. However, the rebellion—as so often happened—failed. This period of resistance is actually referenced in two marginal notes added to TT677 by the vizier Abdürrahman el-tevfiki on 17–26 August 1671. In the first note, the scribe wrote:

> In the past, the guards of the now rebuilt fortress of Manya were granted *timars* within the borders of Mani. However, since Mani was rebellious, nobody was left in the fortress. The revenues … from the village of Palaiokastro and its dependencies, according to the old survey, should now be granted as *timars* … to the Warden of the recently rebuilt fortress, Abdülkadir, and to the Head of the *Azeb*s, Hasan. (TT677, p. 95)

In other words, this note indicates that between 1583 and 1671, the Maniates had rebelled and the fortress of Passava had been abandoned. However, as is known from other sources, the Ottomans rebuilt Passava and either refurbished or constructed Kelepha in 1670, following their victory over Venice in their contest for Crete. This note indicates that they also installed Turkish leaders in the region. The second note lists several villages that were not rebellious and would continue to be part of the military estates of the guards—Tratsa, Anoya, Tseria, and Anavryti—all of which are located outside the borders of Mani, closer to Mystras (TT677, p. 101).

In summary, while the archaeological data from the Ottoman I period suggest that the Maniates continued to adopt a model of "mild resistance" and that no drastic changes took place after the transition to Ottoman rule, the historical data paint a slightly different picture. It seems that there was actually more armed resistance (and attempted resistance) in this period than is reflected in the settlement pattern analysis—enough that retribution was required on the part of the Ottomans, first in 1570 with the construction of Porto Kayio, and again in 1670 with the refurbishment of the northern fortresses.

Turning to the Venetian period, the archaeological pattern of heightened resistance and an overall more defensive settlement pattern are consistent with the historical narrative. In 1684, the Venetians launched a successful campaign to conquer the Peloponnese, and in Mani, the residents were eager to assist and helped destroy the Turkish garrisons stationed in the fortresses (Greenhalgh and Eliopoulos 1985:28). Over the course of the next 30 years, day-to-day life in the Peloponnese did not change drastically. As Greenhalgh and Eliopoulos (1985:29) wrote, the Peloponnesians "found Venetian imperialism no less ruthless and much more efficient than that of the Turks." The Venetians quickly commissioned censuses and cadastral surveys to evaluate the state of the territory, determine how much tax each village had paid under the Ottomans, and assess their own taxes based on these amounts. In Mani, the Venetians rewarded the residents' military assistance by reducing the amount of the *maktu* each village was expected to pay (Komis 2005:44-46). They also seemed generally less interested in the peninsula from a bureaucratic standpoint, judging from the lack of cadastral surveys undertaken there.

In terms of the historical settlement lists, there are three relevant Venetian sources: the 1692 Zeno Register, the 1695 Muazzo Catalog, and the 1700 Grimani Catalog. The first is a tax register that lists 69 settlements in Mani and the amount of tax that each village paid under the Ottomans, along with the amount reassessed by the Venetians. Overall, the total combined tax of the Maniate settlements was reduced from 5,551 *piastres* (the Venetian estimate of the Ottoman *maktu*) to 3,171.50 *piastres* per year (Komis 2005:44-45, Note 32). The Muazzo Catalog was compiled to assess the military strength of Mani and count how many potential combatants were available to call upon in case the Venetians had need of them. Lastly, the Grimani Catalog was a full census of the Peloponnese, recording the demographic breakdown of 93 settlements in the peninsula (53 of which are within the bounds of the study region). These three documents reflect the bureaucratic strength of the Republic of Venice and their great interest in establishing order quickly and efficiently. Yet despite the seeming accuracy and detail of the records—and especially of the Grimani Catalog—scholars have doubted its figures, suggesting that the total population estimate for the Peloponnese of 176,844 people was far too low (Topping 1976-1978:123-124). In Mani, for example, several major settlements were omitted, showing that the Venetian census-takers lacked local knowledge of the regional topography and culture. The low estimate may also reflect the fact that local villagers generally tried to evade taxation by "abandoning" villages before census-takers arrived, underreporting their populations, and so on. By the time the Ottoman Empire launched its campaign to retake the Peloponnese in 1715, few Peloponnesians put up a fight, and the Ottomans were soon victorious.

The final period considered in this study, the Ottoman II period, is surprising because of the divergence between the archaeological signatures discussed here and the historical events that took place. Specifically, the regional-scale data reflects a more integrated model, with the adoption of non-defensive settlement locations, a decreased density in the visual network, and the decreased visibility of religious monuments, to name just a few points.

In terms of the historical narrative, on the other hand, the Ottoman II period was supposedly the point in the Maniates' most fervent resistance leading up to the Greek Revolution (see, for example, Kassis 1979:33-38). Maniate pirates thrived during the 18th century as trade between the Ottoman Empire and Western Europe boomed (Harlaftis and Laiou 2008:Note 28). In 1770, Mani was at the center of the failed Orlov Revolt, in which Russian military aid was promised in exchange for the Maniates' cooperation in a revolt to make the Peloponnese a

Russian protectorate (Kostantaras 2013:635). However, the aid never arrived in full, and the rebellion was soon put down. This revolt was a factor in the Ottomans appointing a *bey* to rule over the region, first from Outer Mani and then from the Grigorakis clan in Oitylo. However, the *beys* did not remain loyal to the empire. In the final few decades before the Revolution erupted, the Maniates continued their secret negotiations with European powers, and especially the French, who were looking to occupy the Peloponnese. *Bey* Zanetos Grigorakis (or Zanetbey) even sought an alliance with Napoleon to gain weapons (Wagstaff 1996:279), and a secret envoy was sent to Mani in 1797–1798 to collect information for the French general. In response, the Ottomans attacked Gytheio in 1803 and 1807 (Greenhalgh and Eliopoulos 1985:31). In 1815, Petros Mavromichalis (or Petrobey) was appointed *bey* of Mani, but he, too, conspired with the French to gain weapons, funding, and freedom from Ottoman rule (Kostantaras 2013:643-644). By 1818, the secret organization called the *Filiki Etairia* (Society of Friends) had gained momentum and was plotting a revolution to overthrow Ottoman rule once and for all. Petrobey and the other leaders of Mani set aside their local conflicts and joined the *Filiki Etairia* in this year (see Kostantaras 2013:644). Then on March 17, 1821, a band of armed Maniates—led by Petrobey and in league with the Greek general, Theodoros Kolokotronis—attacked the city of Kalamata and liberated it from Ottoman troops (Kapetanakis 2011:509-511). The Greek Revolution continued until 1829, when the First Hellenic Republic was formed.

There are three settlement lists that are relevant to this time period: TT878, a *mufassal defter* from AD 1715 (the year the Ottomans reconquered the Peloponnese), the 1813 Roussel Catalog, and the 1829 Expédition Catalog. TT878 records a total of 79 settlements within the peninsula, as well as several *çiftliks* (hereditary, private estates) and two *mezraas* outside the ruined fortress of Passava. For each parcel of property, the *defter* states to whom the land formerly belonged (all of which are Turkish names), and to whom the land belonged in 1715 (often Greek names). The transferal of property was a common phenomenon under the brief Venetian rule, and this particular *defter* shows that it also took place in Mani. For the *çiftliks* that included nearby villages, the names of the Greek sharecroppers who worked the land are also listed alongside those of the owners—the descriptions of the other *çiftliks* state only the number of sharecroppers' houses. The *defter* enumerates a number of resources associated with each estate or village: the area of agricultural fields and vineyards and the number of sheep, watermills (both those used all year round, and those used only 6 months out of the year), flourmills, silk mills, winepresses, oil presses, fig trees, mulberry trees, and olive trees. Finally, one of the most curious pieces of information in this *defter* is the recording of two individuals who are described as "new Muslims" or converts—partial owners of an estate known as "Cucuri" (currently unidentified, but likely in the northeast part of the peninsula).

The 1813 Roussel Catalog, like the Muazzo Catalog from over a century earlier, was compiled to assess the number of military recruits in the Maniate villages who would assist the French in the event of an attack on the Peloponnese. The final list, the 1829 Expédition Catalog, was a census conducted by a French military and scientific mission (the Expédition Scientifique de Morée) to assess the state of the Peloponnese following the Revolution. In fact, the collection of data from Mani was delayed until 1834 by local rebellions taking place *after* the Revolution had concluded. Maniates were not happy about being subjected to yet another power—this time that of their fellow Greeks.

While the latter two lists reflect the Maniates' resistance, the Ottoman *defter* from 1715 provides a very different perspective of the situation. Not only had the Ottomans managed to conduct a full survey of the peninsula, but the *defter* also reveals that the very common practice of estate management had, in fact, penetrated into Mani's borders—even if only in the fertile northeast part of the region. The lists of produce from these estates include wheat, barley, rye, millet, corn, beans, sesame and lentils, linen and cotton, beehives, sheep, and pigs—all of which could be exported to other parts of the Ottoman Empire and beyond, to the rich markets in Western Europe and elsewhere in the Ottoman world-empire. The two accounts of conversion, however scanty, suggest that Mani was not totally cut off from cultural and religious exchange, as the oral legends might suggest.

In short, the 1715 *defter* lends weight to the archaeological pattern detected in this study—that in the Ottoman II period, Maniates were less resistant to Ottoman authority and were engaging in large-scale networks of trade and cultural exchange to a greater extent. There is no doubt that the Maniates continued to seek ways to overthrow Ottoman rule, and in fact they participated in an infamous but failed revolt in 1770. However, the data suggests that overall the region may have reaped some profit from being a part of the empire at this time.

7.3.2 – Interpretation According to the World-Systems Approach

According to Wallerstein's original world systems model, the rise of capitalism in the 16th century transformed Europe into a "world economy." Unlike earlier "world empires," the world economy lacked a unifying political entity. Instead, it was divided into core states, semi-peripheral areas, and peripheral areas (Wallerstein 1974:348-350). This model was designed to explain the relationship between different geographical areas within the modern capitalist context—specifically the channeling of resources from peripheral areas to core states and the redistribution of those goods around the system.

In later adaptations to the model, people living in the periphery of a world-economy were thought to have the ability (or agency) to determine the extent to which they engaged with the core—this process often has been referred to as “negotiated peripherality” (Kardulias 2007:55; see also Chase-Dunn and Hall 1997; Stein 1999; Kardulias 1999:xviii; Hall 1999:10; Kardulias and Yerkes 2004; Parkinson and Galaty 2009; Hall et al. 2011:257). Other cases have shown that a process of mutual influencing or “hybridization” may occur in peripheral regions (van Dommelen 1997). However, there are certainly case studies, such as that of Mani, that do not fit neatly within a periphery categorization. Instead, terms like “marginal” and “frontier” have been offered to describe areas that are relatively disengaged from the world economy on the one hand, or as boundaries or borders on the other (Sherratt 1993:43; Lightfoot and Martinez 1995; Schneider 1997:21; Barfield 2001; Schon and Galaty 2006).

The historical narrative of Mani reviewed above points to the fact that Mani was on the “edge” of the Byzantine and Ottoman Empires in many ways. Culturally, the residents retained unique practices (some of which were outlawed by imperial authorities), such as a unique dialect. Politically, few administrators were ever successfully appointed by imperial authorities prior to the 18th century, and even then the Ottoman-appointed *beys* sought ways to undermine the empire’s hold on the region. Economically, Maniates were always poor relative to the rest of the Peloponnese, and they relied on piracy and the slave trade as key sources of income throughout much of their history. Again, it was not until the 18th century that *çiftliks*—estates that produced goods for long-distance trade—seem to have been established in the northeast sector of the peninsula.

And yet, there are other pieces of evidence that point to Mani’s integration (or at least engagement) with the various empires. In the Byzantine period, this came in the form of religious devotion and the pooling of resources to build elaborate churches and commission stunning iconography. In the Ottoman I period, the Maniates extended their political reach to various nations and states in Europe, capitalizing on the complicated and interwoven desires of these various nations—all of which were core states, or were at least vying to become core states, in the capitalist world economy. In the Venetian period, Mani was assessed and taxed just as it had been under the Ottoman before, and just as it would be under the Ottomans once again in 1715. Finally, with the reestablishment of Ottoman rule in the 18th century, Maniates again were involved in various international plots to overthrow Ottoman rule in the Peloponnese, while some Maniates simultaneously derived economic benefit from Ottoman rule—some in the form of reduced taxation because they had converted to Islam, and others because they leased or owned *çiftliks* with scores of sharecroppers in their employ.

It is neither possible nor helpful to frame Mani as a "periphery" within the Byzantine world empire or the capitalist world economy. Instead, I suggest that Mani should be seen as a region that constantly changed its stance within these world systems, oscillating over time from a "margin" of little interest to the macro-regional powers to a "frontier" where the intersection of multiple national actors resulted in fomenting resistance and cross-cultural exchange—often unwilling, as in slavery and piracy, but also in the form of political envoys and secret data-collecting missions. Mani's geography and "island-like" nature played a substantial role in the region's relationship to the world systems in which it was located. Being physically separated from the mainland by the Taygetos Mountains allowed the region some amount of protection from overland attacks. Any troops moving into the region could have passed through only one main route—the valley leading southwest from Gytheio toward Areopoli. Otherwise, attacks had to be made by sea, as was the case multiple times in Mani's history. Even then, however, most settlements were located at a distance of about 3 km from any accessible bays, and the visual and route networks were so dense that villagers could be mobilized very quickly in the event of an actual seaborne attack. In fact, just such an event is known to have happened in 1826, when the Ottoman navy attacked the town of Pyrgos Dirou while all the men were away fighting in the revolution. Famously armed only with stones and sickles, the fierce Maniate women were miraculously victorious against their better-armed, well-trained foes (Greenhalgh and Eliopoulos 1985:62-63). It was precisely the topography of the region that allowed Mani to remain not a periphery, but rather as an oscillating margin/frontier throughout the medieval and post-medieval periods.

7.3.3 – Interpretation According to the Interactional Approach

Compared to the world-systems approach, interactional models place more emphasis on the particular strategies used by expanding empires and states to incorporate new territories, as well as the strategies used by local individuals in response to those efforts of incorporation. These strategies may shift over time. One way to categorize imperial strategies, according to Hassig (1985) and Hastorf and D'Altroy (2001) is in terms of territorial (high-control, high-investment) and hegemonic (low-control, low-investment) types.

All three major powers that dominated Mani—the Byzantine Empire, the Ottoman Empire, and the Republic of Venice—used territorial strategies to do so, which typically involved maintaining a military or political presence in the region. Both the Byzantines and the Ottomans built and/or rehabilitated fortresses and maintained garrisons in Mani—a tactic that requires a very high amount of investment in terms of money, resources, labor, and time. The elaborate *kalderimi* network was very likely a product of the Ottoman Empire's territorial tactics, and its connection with the fortress of Kelepha highlights its desire to dominate the region militarily, at least at certain points in time. The Ottomans and the Venetians also used a high-investment practice of detailed recording of bureaucratic registers to enumerate, tax, and subjugate the population. The spread of new land management practices (including *pronoias* in the Byzantine period, and *timars* and *çiftliks* in the Ottoman period), as well as the reassignment of property under the Venetians, also qualify as part of a territorial strategy. Interestingly, territorial strategies are typically used when empires deem a region to be profitable or important in some way. Typically, this involves a high productive or extractive value; however, Mani's aridity and lack of natural resources precludes this as an explanation. Instead, it may have been considered important because of its strategic location on the main trade route from the Western Mediterranean, or because of its potential to destabilize the wider region through political intrigue and armed resistance. In any case, the use of these territorial tactics underscores the importance that Mani held to all three world powers, despite its geographical seclusion and low potential for profit.

Hegemonic strategies appear to have been used to a great extent only in the Ottoman II period. These strategies rely more on coercion and indirect diplomacy to achieve dominance over a region. The Ottomans frequently used hegemonic tactics throughout the empire—most notoriously in the "recruitment" of Christian boys to join the elite Janissary corps. Up until the dramatic fiscal and political reformation at the end of the 17th century, they also used "scheduling" to rotate official political, judicial, and military positions and thereby prevent particular individuals from accruing too much power in a particular region. As Barkey (1996:479) pointed out, "Such instability vitiated any possible local alliances;" it decreased the ability of local residents to form alliances with mid-level employees of the state and thereby contest the power of Ottoman authority (see also Barkey 1991). Another hegemonic strategy had to do with religion. The Ottomans never forced people within their territory to convert to Islam; however, they provided financial incentive to do so by levying a *cizye* (poll tax) on non-Muslim households. Those who converted no longer needed to pay this extra tax. In Mani, there is little evidence for effective hegemonic tactics being employed prior to the 18th century. The only Ottoman-appointed *bey,* Liberakis Yerakaris, was a bureaucratic failure, and there is no evidence of religious conversion. By the 18th century, however, *beys* thought to be friendly to the empire were installed, and the *bey*-ship was transferred whenever the Ottomans saw fit. There is also a local legend, recounted to me by a member of the Mavromichalis family, that claims Petrobey Mavromichalis' son was taken by the Ottomans as a hostage and reared as a Muslim in Istanbul. Upon the boy's return—as a decorated military officer who wanted to help fight for Mani's freedom—Petrobey and his wife were appalled by his religion and culture and ultimately disowned him. Finally, there is also the evidence from the 1715 *defter* that at least some families in Mani (albeit, in the northeastern part of the peninsula) had willingly converted to Islam.

The flip side of the imperial strategies to integrate dominated territories is the local-scale response, which may include resistance, "avoidance protest," and ethnic differentiation. The instances of Maniate armed resistance have been discussed in detail already. It is also important to point out that non-confrontational avoidance protest was another strategy that Maniates used to resist imperial rule. The Maniates were infamous pirates and slave-traders, at times luring unsuspecting sailors into the bays along the coast and then holding them for ransom, as in the 17th-century account by Bernard Randolph (1689:9):

> If any Ship come [sic] to Anchor on their Coast, many arm themselves and go to the place, over against where the Ship doth ride; some of them will be in Priests' Habits, walking by the Sea side, with their Wallets, in which they will have some Wine and Bread. Their Companions lye hid behind the Bushes at some convenient Post. When any strangers come ashore, who do not understand their Language, the feigned Priests make signs to them, shewing them their Bread and Wine, which they offer to them for money, by which the strangers being enticed from the Sea side (and it may be to sit down and take their Wine) the hidden Maniotts come and make their Prey. The Priests will seem to be sorry, and endeavour to make the strangers believe they were altogether ignorant of any such design. So a white flag is put out, and a Treaty held with the Ship for their

> Ransome. The Priests endeavor to moderate the Price, shewing a great deal of respect to their Companions, who are clothed in Turkish habits. Many Ships have been thus served.

There are seemingly endless accounts of this nature. Villagers also may have deliberately avoided enumeration by census officials, either by underreporting the population or by temporarily abandoning settlements so that they appeared unpopulated. Such activity was recorded in other Greek regions, and is very likely to have been the case in Mani, as well. As for ethnic differentiation, the Maniates have a strong regional and ethnic pride that manifests today in annual cultural celebrations (such as the March 17 parade in honor of the first battle of the Greek Revolution), statues commemorating local heroes, and unique regional practices like the singing of *mirologia* (funeral dirges). How far back in time these practices stretch is, unfortunately, a matter of mere speculation, but it seems that they have been in existence since at least Ottoman II times.

I would also suggest that one of the Ottomans' territorial tactics—the construction or funding of the *kalderimi* network—may have helped contribute to the local-scale pattern discussed above: namely, the adoption of a more family-centered model of social organization over a community-cohesion model. The construction of a road network that linked the villages almost directly with Ottoman garrisons would have altered the very social fabric of the communities by exposing them to quicker and more forceful response from the Ottoman authority in the event of disobedience. Villagers may have responded to this encroachment of the state and the compromising of community-scale defenses by reinforcing the security of their own homesteads, in a way turning inwards toward the family and away from the community.

7.4 – Chapter Summary

In this chapter, I reviewed the community-scale and regional-scale patterns from the medieval and post-medieval settlements in Mani, as presented in Chapters 5 and 6. The archaeological and historical data I collected show that Maniate settlement patterns were consistent with a "resistant" model for much of the region's history and lacked any substantial change during the tumultuous Byzantine-Ottoman transition circa AD 1460. The most surprising finding from the regional-scale analysis was a shift toward an "integration" model in the Ottoman II period. In terms of the community-scale patterns, the organization of Maniate communities seems to have shifted over time from a "community cohesion" model to a "family prioritization" model, with the most noticeable change once again in the Ottoman II period. Comparing the specific archaeological signatures with the theoretical models I developed made it possible to discuss these patterns from a long-term perspective.

In the second section, I contextualized these patterns within a macro-scalar framework, first by comparing them to the historical narrative of the region and its interaction with the Byzantine Empire, the Ottoman Empire, and the Republic of Venice (among other international powers), and then by interpreting these patterns according to two macro-scalar theoretical paradigms: the core-periphery approach and the interactional approach. The goal of this multi-scalar analysis was to understand how the lives of Maniates were interwoven with processes and events taking place in different parts of the world.

8 – CONCLUSION

"When God had finished making the world, he had a sack of stones left over and he emptied it here …" (interview with a Maniate man, Fermor [1958] 2004:112)

In many ways, the Mani Peninsula is a region unlike any other, with its own vernacular architectural tradition, a clan-based social structure that at times promoted disunity and competition, and a "memory of resistance" to imperial rule that stretches back to the earliest days of Ottoman control. Its island-like nature and rocky topography oriented its residents away from the Greek mainland and towards the sea, where they could make a scanty living from the trade in salt and quails, piracy, and privateering. Yet in other ways, Mani's status as a rural landscape, one that often featured within the designs of international powers vying for control over the Eastern Mediterranean, means that it is a relevant comparative study for many other parts of the world. Like other remote landscapes, Mani resists categorization according to traditional core-periphery models. Still, archaeological studies of such regions are crucial for understanding how the lower classes, the rural peasants, and the silenced majority whose voices so rarely make it into the historical narrative experience the complicated process of imperial expansion.

The quote I chose to head this concluding chapter reflects a simple fact: even rural peasants who rarely venture far from their home village are aware of how their community relates to the larger processes and events over which they have no control. This man was aware that Mani is a desolate land, not only to the eye of a foreign power, but also to the people who were born and raised there. Interspersed among all the historical narratives pieced together in this study are countless tales lamenting the lack of fresh water, the periodic hunger, and the other challenges faced by living in a place like Mani. Maniates have always been aware of how their homeland compared to the fertile plains elsewhere in the Mediterranean, just as they were aware of the rich cargo of the sailing vessels that passed them by, bound for the Aegean Sea. Thus, as an archaeologist and a historian, studying the medieval and post-medieval history of this region meant framing my data within the broader, macro-scalar perspective, as well as focusing in on the smallest possible scale of analysis: the individual community.

For this study, I developed an innovative interdisciplinary approach that combined archival research, archaeological fieldwork, remote-sensing applications, spatial analysis within a GIS environment, and social network analysis. Any one of these approaches could have formed the core of a dissertation study, and as a result, there are many potential areas that were explored only briefly and that could produce fruitful results if more attention is given to them. However, combining these approaches provided insights into the Maniate communities, spanning the period AD 1000–1821, that could never have come from a traditional settlement pattern study on its own—or a historical study, for that matter.

At the same time, this methodology is a promising contribution to cross-cultural research on marginal and frontier regions on the edges of expanding states. Already there is a rich body of research on these kinds of areas, spanning all periods and places in the world. However, the methods I developed and implemented have the potential to provide new insights into the experience of living in these areas, in terms of both the residents' desire to cooperate with or resist state authority and the effects that such confrontation may have at the community scale. Implementing this approach in other parts of the world will require a commitment to an interdisciplinary methodology, combining local-scale archaeological datasets, settlement pattern analysis, GIS and spatial technologies, and historical records (where available).

It is important to point out the limitations of this study—or, framed in another way, the areas for future research to improve upon the work done here. Probably the area in greatest need of further attention is the lack of a refined chronology for Byzantine and Ottoman I architecture and ceramics. The division developed for this study was hazy at best, and reliant upon a rough distinction between "megalithic" and "not-quite-megalithic" architecture with a wall width of 1 m as the dividing line. When possible, this categorization was corroborated by historical records, but there were many settlements that were totally absent from the historical lists, and in these cases chronology was assigned solely based on the architecture preserved at the site. The only way to obtain tighter chronological control over these periods from an archaeological perspective is to conduct test excavations of *palaiomaniatika* and Ottoman I-period sites. Doing so would not only allow us to date these sites more precisely, but would also yield rich datasets for these understudied periods that could be used to understand social stratification, short- and long-distance trade networks, religious devotion, and production and consumption practices, among many other topics. Further research on the settlements may help us understand whether communities were organized differently in relation to variables that are currently unexplored: access to specific resources, location on the landscape, distance to monumental churches, and so on.

The route network was another archaeological dataset that lacked chronological control. Although it is sometimes possible to establish relative chronologies for certain route segments based on their association with dateable features or settlements, this was not possible for many of the route segments I recorded. The strongest evidence that the *kalderimi* network was built in the Ottoman I period was the fact that a particularly long and well-built *kalderimi* connected the settlement of Areopoli with the fortress of Kelepha, purportedly built in 1670 by the Ottoman Empire. However, it is known that formal built roads existed in the Byzantine period, too, and it is likely that some of the Ottoman roads in Mani overlay earlier Byzantine-period roads. As for the walled field paths and goat paths, it is much more difficult to know exactly when those paths were established and, moreover, when they were used or when they fell into disuse. Another related issue is that many of the *kalderimia* have likely been destroyed or covered by modern roads, thereby affecting the way I coded the route network and processed the data.

Another limitation of this study was that the chosen spatial analyses are but a few of the potential tools available to researchers today—there are many other analyses that could have been conducted, as well as different choices that could have been made about how to run them. In Chapter 4, I provided a detailed description of the specific methodology used for each analysis, but changing these parameters even slightly (such as increasing the observer height in a line-of-sight analysis) could produce entirely different results. The same is true for SNA, which provides the most subjective results of any of the tools used here; in this case, the interpretation of the SNA results rests solely on the researcher's shoulders. The choice of which variables to include in the analysis is also a subjective process, and there are potentially fruitful avenues that could be explored in future analyses, such as considering the role of water transport and bay access when analyzing the route network.

Beyond these minor methodological details, future research might focus on aspects that I overlooked in this study: the relationship between settlement location and fresh water sources, like springs; the archaeological evidence for multi-settlement communities, and whether the material groupings (based on shared pottery or minor architectural details) correspond to the groups identified in the social network analysis of the LOS and route networks; a more complex analysis of the route network, taking into consideration not simply a direct connection, but also the distance and the amount of time and energy required to travel between two points; and any number of further analyses to tease apart the sub-regions within Mani itself. One dataset in particular, the monasteries, was highlighted in the analyses, and an understanding of the relationship between the monasteries and the settlements would benefit from more detailed study.

Overall, of course, this study was only the first step toward understanding the spatial relationship between communities in medieval and post-medieval Mani. As most of the analyses presented here were exploratory in nature, future work would benefit from a more hypothesis-driven approach to the spatial analyses. Specific questions could be posed and tested to explore the relationship between coastal travel and overland travel via *kalderimia* and walled paths; the interaction between settlement patterns, route networks, and imperial access points (such as bays); the role of monasteries in mitigating between locals and administrative representatives; the different functions of *kalderimia* in the landscape (especially comparing those connecting settlements over long distances with those connecting only to fields); and the relationship between settlements at the ends of *kalderimia* (i.e. the extent of imperial reach) with other places in the region.

Despite these (and other) limitations, the models developed in Chapter 3 provide an initial on-the-ground framework for discussing the process of imperial expansion and the material correlates that archaeologists and historians can detect and study. Perhaps the most important finding was that Mani was most affected not by the initial process of imperial conquest, but rather by financial and administrative changes that took place in the Ottoman Empire in the late 17th century: the privatization of landholdings, decentralization, and the rise of the capitalist world economy. The patterns detected in my analyses corroborate the perspective first observed by historians that the status quo was often preserved when the Ottoman Empire took control of a new region. A review of the historical narrative further underscores the fact that a resistant region will continue to resist authority regardless of the strategies used by an empire to incorporate it; however, certain strategies may add fuel to the proverbial fire, as in the appointment of local Maniates as *beys*, which inadvertently imbued them with additional power to conduct secret negotiations and help bring about the Greek Revolution. Furthermore, the findings have important implications for understanding the "memories of resistance" present in many parts of the former Ottoman Empire. In Mani, that "memory" extends back in time to the very first Ottoman period, and it becomes even more visceral when dealing with the more immediate past (especially from the 18th century on). This study underscores the divide between the concept of "resistance" as a component of cultural identity and the aspects of resistance that are embedded in the material record. In Mani, these two concepts do not necessarily align. In fact, elements of both resistance and integration appear to have coexisted during the period of most fervent "resistance," as recalled in stories and memories.

The next step is to test these models in other parts of the world that may be called the frontiers, margins, or borderlands of expanding states, and particularly to see whether these other regions experience a similar maintenance of the status quo when they are brought into a new empire. Using the methods developed here, the models may be applied to regions that have already been published, such as the rich datasets from elsewhere in the Peloponnese (Messenia, Laconia) and the Balkans (Albania). They may also be applied to areas far beyond the Ottoman frontiers, from the Assyrian and Roman Empires, to those of the Incas, the Spanish, or the Han Dynasty in China. Testing these models with additional case studies will help identify any weaknesses or criteria that may be unique to certain regions, thereby allowing the models to be refined and strengthened for comparative study.

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APPENDICES

APPENDIX A

SETTLEMENT CATALOG

This catalog is a listing of all the settlements in the study region dated to the Byzantine through Ottoman II periods:

T001 Ayeranos
T005 Ayia Varvara
T006 Ayia Varvara (Phtio)
T008 Ayios Yeoryios
T012 Akia
T013 Piontes
T014 Alika
T018 Archia
T020 Areopoli (Tsimova)
T021 Aryilia
T024 Briki
T027 Charia
T028 Charouda
T029 Chimara
T030 Chosiari
T031 Kalyvia
T033 Pera Dimaristika
T034 Diporo
T035 Dry
T036 Dryalos
T038 Erimos
T041 Phlomochori
T042 Gardenitsa
T044 Gonea
T046 Kauki
T047 Kainouryia Chora
T049 Kalonioi
T051 Kaphiona
T054 Karea
T055 Karynia
T056 Karioupoli (Miniakova)
T063 Kechrianika
T064 Kelepha
T066 Keria
T067 Kipoula
T068 Kita
T072 Korogonianika
T073 Kotronas
T075 Kouloumi
T076 Kounos
T077 Koutrela
T079 Kryoneri
T080 Kyparissos
T081 Layia
T089 Leontakis
T091 Limeni
T093 Loukadika
T100 Nyphi, Mesa Chora
T101 Mezapos
T104 Mina
T106 Mountanistika
T107 Neochori
T109 Nikandreio
T111 Nomia
T113 Ochia
T114 Oitylo
T115 Omales (Krelianika)
T117 Pachianika
T118 Pangia
T120 Palaiochora
T122 Parasyros
T130 Polemitas
T132 Porachia
T133 Porto Kayio
T137 Pyrgos Dirou (Pyrgos)
T138 Pyrrichos (Kavalos)
T139 Riganochora
T145 Skala
T146 Skaltsotianika
T149 Skoutari
T152 Sotiras (Kouskouni)
T154 Spira
T155 Stavri
T161 Tsikalia
T162 Tsopakas
T163 Vachos
T164 Vamvaka
T167 Vatheia

APPENDIX A (continued)

T169	Ano Boularioi
T170	Kotraphi
T171	Kato Boularioi
T172	Kato Meri
T176	Ayioryis
T179	Agriokampi
T181	Chalopyrgos
T184	Elaia
T186	Gatis
T189	Glezou
T190	Goulas
T191	Ippola
T197	Kourines
T199	Karavas
T200	Kastri
T201	Katayioryis
T207	Koureloi
T212	Mantophoros
T215	Marmatsouka
T218	Mianes
T219	Neasa
T222	Paliros
T224	Passava Fortress
T225	Pepo
T226	Petomoniastika
T227	Pyrgaki
T231	Psio
T233	Skaphidianika
T236	Tigani
T237	Trochalakas
T238	Tserasia
T255	Makrynaros
T261	Drymos (Driali)
T262	Drosopigi (Tserova)
T269	Kaliazi
T271	Palaia Karyoupolis
T278	Korakianika
T279	Kozia
T280	Kato Pachianika
T284	Kozounas
T290	Menenianika
T293	Dimaristika
T299	Olympies
T301	Palaia Tserova
T302	Paliochori
T307	US 10
T308	Pirgaros (Kato Dimaristika)
T313	Ayia Lia
T321	Soloteri
T327	Vata
T328	Vathy
T341	Yerma
T342	Kato Karea (Konakia)
T343	Kelepha Fortress
T352	Kondili
T356	Yeroyiannoukou Kalyvia
T359	Moni Spiliotissas
T360	Proskephalia
T362	Kouvouklia
T363	Koulouvades
T364	Males
T365	Skyphianika
T366	US 3
T372	US 4
T373	US 5
T374	Avles
T375	Lakkos
T377	Ano Dimaristika
T378	US 6
T379	Moni Sotira
T381	Moni Ay. Dimitriou
T382	Soulia
T383	US 8
T385	Moni Panayias Tsipiotissas
T386	Moni Panayias Phaneromenis
T387	Moni Panayias Kotroniotissas
T388	Moni Dekoulou
T389	US 67
T390	US 9
T391	US 12
T392	Korines
T396	US 13
T397	Pachia
T398	US 15
T399	US 16
T400	Marassi
T401	US 18
T402	US 19
T403	US 20
T404	US 21

APPENDIX A (continued)

T405	US 22
T406	US 23
T407	Palaia Kokkinoyia
T409	US 25
T410	Sela
T411	US 27
T412	US 28
T413	US 29
T414	Vlistiko
T416	Parapodas
T417	Divola
T418	Phlitsos
T420	Moni Panayias Ayitrias
T421	US 33
T422	Katsipos
T423	US 35
T424	Nyphi, Exo Chora
T425	Nyphi, Chalikia
T427	Stavrikio
T429	Vlacherna
T430	Achillio Fortress
T431	Moni Panayias Kournou
T432	US 36
T433	Liostypha
T434	Skourka
T435	US 39
T436	US 41
T437	US 42
T438	US 43
T439	US 44
T440	US 45
T441	US 46
T442	US 47
T443	US 48
T444	US 49
T445	US 50
T446	US 51
T447	Vikolias
T448	US 52
T449	US 72
T450	Lakka Kalantrea
T451	Lakka Sangia
T452	Lakka Armaka
T453	Lakka Achrada
T454	US 73
T455	US 53
T456	US 54
T457	Throkalou
T458	US 55
T459	US 56
T460	Bastounes
T461	Stou Gorgona
T462	US 74
T463	Lakoi
T464	Trilangado
T465	Stou Laou
T466	Sarantaria
T467	Kako Vouni
T468	Nikolakkos
T469	Pano Oros
T470	US 57
T471	US 58
T472	US 59
T473	Phranezi
T474	US 61
T475	US 62
T476	US 63
T477	US 64
T478	Mesopangi
T479	US 66
T480	US 68
T481	US 69
T482	US 70
T483	US 71
T484	US 75
T485	US 76
T486	US 77
T487	US 78
T488	US 79
T489	Rizakia
T490	US 80
T491	US 81
T492	US 82
T493	US 83

APPENDIX A (continued)

Catalog entries are formatted as follows:

Unit ID **Site Name (Former Name)** Coordinates, Elevation
Periods represented
Site type / Occupation status / Recording type / Average wall width of houses
Date(s) recorded

Lists Summary of data from historical settlement lists

Med Medieval house count

Bib Bibliographic references and brief summary

Desc Site description

Unit ID – Unit IDs were assigned during the course of the research period, so they do not necessarily reflect a particular order. Those assigned to settlements outside the chronological scope of this study are omitted entirely.

Site name – Site names are given in both English transliteration and original Greek form (as they appear on the Anavasi atlas and/or local road signs). Transliteration guidelines were adapted from the journal *Hesperia*. Former names, if any, are taken from Pikoulas (2001) and follow in parentheses after the settlement name.

Coordinates, Elevation – Coordinates and elevation are provided for the center of each settlement. Values are taken from the GIS database and determined through a combination of site visits and aerial imagery inspection. Coordinates are in the WGS84 UTM Zone 34N projection.

Periods represented – The following abbreviations are used to reference chronological categories: Byz (Byzantine), Ott I (Ottoman I), Ven (Venetian), Ott II (Ottoman II).

Site type – Sites are classified into four functional categories: permanent, seasonal (restricted to sites in the mountains that were used for pastoralist activity), monasteries, and fortresses.

Occupation status – Sites are classified into two occupation categories: occupied and abandoned.

Recording type – Sites are classified into four categories based on how intensively the site was recorded: full mapping (all features were recorded in person), partial mapping (some features were recorded in person), field visit (I visited the site but no features were recorded), and remote ID (I identified the site in the imagery and did not visit in person).

Average wall width of houses – This field is used to indicate three categories of sites: “Wall widths > 1 m,” “Wall widths variable,” and “Wall widths < 1 m.” As discussed in the main text, I argue that average house wall width is a potential chronological indicator, with walls greater than 1 m being indicative of Byz period construction.

Date(s) recorded – The date or dates the sites were visited in person, if applicable.

Lists (Summary of data from historical settlement lists) – Every settlement list in which the settlement appears, including its historical toponym and a brief summary of demographic data. An asterisk before a year indicates a tentative correlation with the modern settlement (*1618). A question mark following a historical toponym indicates a tentative reading of the name (Karinya (?)).

Med (Medieval house count) – The total number of medieval houses I counted in the field and in remotely sensed imagery. This field is only applicable to settlements with Byz and/or Ott I phases.

Bib (Bibliographic references and brief summary) – Information about the settlements that I gathered during the course of research. These entries are in no way exhaustive, focusing instead on the chronologically relevant data and information about toponym identification. Much of the information is cited from Kostas Komis' 2005 publication, *Πληθυσμός και Οικισμοί της Μάνης: 15ος-19ος αιώνας (Population and Settlements of the Mani: 15th-19th Centuries)*.

Desc (Site description) – Summaries based on my fieldwork and remote-sensing investigation of the settlements. While I also collected data about the Early Modern (EM) and Modern (Mod) phases of the settlements, this information has been omitted because it is not directly relevant to the present study.

T001 **Ayeranos – Αγερανός** N 4062282, E 636414, 55 m
Ott II
Permanent / Occupied / Partial Mapping / Wall widths < 1 m
August 2013

Lists 1829 – Ageranos, 50 households

Bib Possibly the site of ancient Arainos. The modern town was likely founded in the early 18th century by the Koutsogligorakides family, and it was mentioned in a 1798 poem by Nikitas Niphakis (Komis 2005:265).

Desc Situated on a small promontory north of Skoutari Bay on the east coast. I recorded only those homes in the immediate vicinity of the village. There are several abandoned houses in the settlement, interspersed with those that are still occupied and well maintained. The four towers belonged to the Grigorakis family, the easternmost being attributed to Antonbey. Uphill to the west, there are several abandoned and ruined structures, as well as the uppermost tower itself. This is an excellent example of a highly defensible towerhouse, with a vaulted cistern with a plaster-lined, flat roof. Aside from tile fragments, very little ceramic material is present. Along the main road below the towers, there is a large EM church of the Taxiarchon Ageranou adjacent to Antonbey's tower, with a grave of a member of the family dated to 1922. The field walls in the area, especially just north of the church, appear very old, but the actual buildings do not predate the Ott II period. Both of the large tower complexes exhibit Ott II construction but were likely renovated sometime in the EM period.

T005 **Ayia Varvara – Αγία Βαρβάρα** N 4049952, E 624666, 162 m
Byz, Ott I
Permanent / Occupied / Partial Mapping / Wall widths > 1 m
4 August 2014

Lists 1829 – Hagia-Varvara, 7 households

Med 0

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). See also Komis 2005:370.

Desc A very small community on the flat plain about 250 m west of Tsopakas and 650 m east of the ruined settlement of Lakkos. There is a single tower along the modern road with a megalithic foundation and EM upper phase, perhaps an outpost from the ruined settlement. Aside from this, the standing residential architecture is all EM or Mod. The church at the northwest corner of the village is probably Byz or Ott I, but it has been re-mortared and renovated. There are several modern dedicatory panels around and inside the church, with a small modern cemetery to the east. There are at least three isolated ruined structures to the east and southeast that can be seen in the imagery, and one of these may be a second church.

T006 **Ayia Varvara (Phtio) – Αγία Βαρβάρα (Φτείο)** N 4050213, E 624832, 165 m
Byz, Ott I
Permanent / Occupied / Partial Mapping / Wall widths > 1 m
6 August 2014

Lists 1829 – Phtio, 6 households
1618 – Ftio Sabatiani, 20 hearths

Med 1

Bib Today Phtio is considered a part of the larger settlement of Ayia Varvara. The Sabatianoi family likely founded the settlement. The family name was found throughout Inner Mani in the 17th century and spread to the north in the 18th century, although the name is still found in Vachos today (Komis 2005:366-367).

Desc A road sign points to the modern village, which has predominantly EM and Mod architecture and a single megalithic structure that was reused in the EM period. There is a fragmentary section of a *kalderimi* along the north side of a building dated to 1859. The area around the village is deflated, with much exposed bedrock. The bay is visible just beyond the settlement to the west, and a path leads downhill in that direction before curving south toward the ruined settlement of Lakkos. In the imagery, a small barrel-vaulted chapel is visible just west of the town along the road.

T008 **Ayios Yeoryios – Άγιος Γεώργιος** N 4045375, E 625797, 116 m
Byz, Ott I, Ott II
Permanent / Occupied / Partial Mapping / Wall widths > 1 m
5 August 2014

Lists 1829 – Hagios-Yeoryios, 12 households

Med 13

Bib See Komis 2005:370.

Desc Situated on a gentle slope above a gully leading down to Mezapos, which is about 1.2 km to the west. The landscape all around the village is full of slightly wild olives, with some scattered cypresses. It is ideally situated to see the entire plain to the southwest, including the Tigani Peninsula. A scatter of at least 13 ruined structures can be seen in the imagery west of the village. The megalithic church of Ay. Yeoryios is at the modern village’s southern boundary. There are two more churches: Ay. Dimitrios to the north, built in a large-stone construction and dating approximately to the 10th century (based on local information[1]), and Ay. Nikolaos, which is Byz in date. Some of the buildings are built in Ott II-style construction. The large EM tower/mill complex at the center of the village has Ott II elements. The EM period is best represented in the extant architecture.

T012 **Akia – Άκια** N 4048953, E 626432, 278 m
Byz, Ott I, Ven, Ott II
Permanent / Occupied / Full Mapping / Wall widths variable
3–4 August 2014

Lists 1829 – Akia, 19 households
1618 – Hachia, 40 hearths
1514 – Akya, 41 *hâne*, 1 bachelor

Med 41

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). Akia was absent from the lists between 1618 and 1805 (Komis 2005:369). Komis linked the area around the 11th-century church of Ay. Ilias with the toponym "Kremos," which appeared only in a 1798 poem by Nikitas Niphakis, grouped together with Paliochora and Vamvaka (Komis 2005:374). The cornice in the church is attributed to Nikitas, and the lintel over the sanctuary door was carved in his style (Drandakis 2002:366-367). Leake (1830:285) referred to the settlement as "Atja."

Desc The modern village and an associated group of medieval ruined structures stretch up a steep, north-facing hill, about 400 m north of Vamvaka. A ruined tower can be seen on an isolated spur of rock just west of the village. On the cliff above it is the ruined megalithic church of Ay. Ilias. The occupied part of the village is located along the modern paved road leading north to Vamvaka, and today it has an operational hotel. The abandoned part of the settlement is located on the steep hill above it, now overgrown with dense vegetation. Erosion has filled in most of the structures such that the ground floors are almost entirely obscured. We documented more than a dozen ruined medieval structures, built perpendicular to the hillside. Those along the same elevation contour share a common downhill wall that could have been defensive in function. Just above these ruined structures at the highest contour of the site are two deserted EM structures. We also recorded several slab-lined cisterns throughout the site, though it is likely that there are more that have been obscured by erosion and vegetation growth. Overall, there was very little ceramic material, although some slate (from roof fall) was found by the tower structure uphill. Many more medieval house structures can be seen in the imagery, including some that form the foundation for currently occupied buildings but that

[1] While in the field, I occasionally met local villagers who were curious about my research. Any information that I was given about the history of the village or local toponyms has been noted, with all traces of the villagers' identity omitted to protect their privacy and confidentiality.

correspond in size and are in line with the ruined structures, bringing the total number of recorded medieval houses to at least 41. Locals indicate that the toponym "Gremos" refers to the general area around Akia.

T013 **Piontes – Πιόντες** N 4037769, E 633619, 289 m

Byz, Ott I, Ven, Ott II
Permanent / Occupied / Partial Mapping / Wall widths > 1 m
6 August 2014

Lists 1829 – Piondes, 40 households
1813 – Miconides, 100 men, 40 soldiers
1700 – Biondes, 29 families, 123 people
1695 – villa Piondos, 56 combatants
1692 – Lagia, e Piondes (see T081)
1618 – Piondes, 50 hearths
1583 – Laya, with Pyondes (see T081)

Med 15

Bib Several churches from the 10th, 13th, and 16th centuries are located around the settlement: Ay. Yeoryios, Theotokos Megalocharis, and the monastery of Sotira, respectively (Drandakis 1986:21; Drandakis et al. 1980b:138-140). In 1928, the name changed from Piontes to Akroyiali (Komis 2005:388-389).

Desc The settlement is situated on a low hill about 1 km east of Layia. Immediately west of the town is a wide, flat plain that is filled with rubble walls. Although the Anavasi atlas lists the settlement as "Akroyiali," locals and road signs refer to it as "Piontes." Like Korogonianika to the south, it seems to be surrounded by several small Byz chapels—six are labeled on the Anavasi atlas. Two of these are in the town itself. There are also two EM churches, one built in the cemetery to the northeast, and one in the central *plateia*. In total, I counted 9 total churches associated with the settlement. The upper neighborhood on a small hill is signed as "Tsikdianika." On the very top of this hill there are at least 10 medieval structures that I did not investigate in person, but I could clearly see the walls from the cemetery to the north. In other words, there is an upper village—perhaps a refuge—that probably dates to the Ott I period or earlier and fell out of use thereafter. There is a square-shaped structure lower on the western hillside, possibly a tower foundation. There are some medieval remains in the town, a megalithic wall in the southwest corner of the village just east of the church of Sotira, and another to its immediate southwest. The tower complex in the center of town is impressive in size and defensive qualities, and it likely dates to the 18th or very early 19th century. In the imagery, it is clear that there is a very disbursed settlement pattern around the nucleated hilltop settlement in the medieval period, specifically to the south and southwest, in the valley (see T449). In all, I counted at least 27 more structures disbursed around the main settlement. The walls of all these structures generally average about 1 m in width, suggesting fluorescence in the early Ott I period.

T014 **Alika – Άλικα** N 4037192, E 628213, 116 m
Byz, Ott I, Ven, Ott II
Permanent / Occupied / Partial Mapping / Wall widths > 1 m
2 July 2014, 6 August 2014

Lists 1829 – Alika, 80 households
1813 – Glica, 190 men, 80 soldiers
1715 – Alika, 16 *hâne*, 4 bachelors
1700 – Allica, 60 families, 234 people
1695 – villa Alica, 117 combatants
1692 – Alica, e Zucaglia (tax)
1618 – Alica, 80 hearths
1583 – Alika (tax)
1514 – [illegible], 47 *hâne*, 5 bachelors

Med 33

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). There are several Byz churches in and around the settlement, including the 5th- or 6th-century church of Ay. Andreas (Saïtas 1982:Figure 11), an undated church of Ay. Elias with a crypt under the narthex floor (Saïtas 2009:375), and a 10th-century church of Ay. Stratigos (Drandakis 1986:22, 24), with a cemetery around it made of graves and above-ground ossuaries (for a plan map of the tombs, see Saïtas 2009:381, Figures 40.19-22). The area around Ay. Stratigos is known locally as "Skentrines" and is located in the ruined older settlement (see also Saïtas 2009). The newer settlement was first mentioned in a Venetian source from 1571 as "casale Alica." Alika was the home of the Mavromichalis and Grigorakis clans prior to their migration north (Komis 2005:341-342). For a brief account from the early 19th century, see Leake 1830:287.

Desc Located on the southwestern coast between Yerolimenas and Vatheia. There is a limited ancient presence in the town, mostly in terms of columns and inscriptions that have been gathered into a small *plateia* below the town along the main road. One of the columns is made of granite. The inscriptions are likely associated with the ancient settlement of Kainipolis just southeast of Alika (see Kyparissos, T080). The ruined medieval settlement sits above the modern town on a ridge, overlooking the southwestern peninsula and the coast to the southeast. The ruined church of Ay. Stratigos is situated in the upper contours of the site, occupying the largest of the buildings. The terrain is steep and I could not record the others individually, but additional residential structures are visible in the imagery. The structures on the northwest side of the settlement wrap around the mountain and cross the gully, all with average wall widths above 1 m. In addition, two rectangular structures can be seen on top of the mountain. These could be lookouts, oriented so as to view south to the bay below Alika. There is an unidentified entry in the 1514 record, which I tentatively associated with Alika because of its large size and location relative to other settlements in the *defter*. If the attribution is correct, there were likely many more medieval structures at the time, some of which were certainly incorporated into the Ottoman-period town, but others that may be in the vicinity of the modern town where the landscape is more overgrown. The area around the cluster of structures is filled with rubble, rock fall, and wall fall, but there are also a large number of medieval sherds scattered about the site of coarse ware, amphorae, glazed ware (green, yellow, and brown), some fine ware, and so on. The Byz presence extends from this section down toward Kyparissos below. There are at least two small Byz chapels in the modern town, and another EM church that was built on what appears to have been a much larger Byz church (Ay. Andreas). The paving stones of this larger, earlier church can be seen extending beyond the apse of the more recent church. There are several pieces of ancient marble spolia in the church and the surrounding EM residences, very likely from the ancient settlement of Kainipolis to the south. The settlement's nearness to Kyparissos cannot be understated, particularly since there is a 6th century basilica of Ay. Petros there. The modern settlement is located at the base of a mountain, just above and out of sight from most of the southwestern peninsula. In the upper reaches of the modern town are the older Ott I and II buildings and towers. Many of these have megalithic foundations, and the paths between them are cobbled. Several of the buildings also incorporate sandstone blocks, quarried from the rock wall in the upper *plateia*. This is not a common stone in the region, and it may be one of the main sources of sandstone used in the nearby Middle Byz churches. Several large, EM buildings were built above this man-made cliff, and there is a potentially Ott II (but likely EM) church in the *plateia* that was formed by the quarrying. There are several *kalderimia* preserved within the town, but the paths radiating out (especially toward the agricultural fields below) are walled field paths.

T018 **Archia – Αρχιά** N 4040839, E 625298, 99 m
Ott II
Permanent / Occupied / Partial Mapping / Wall widths < 1 m
6 May 2014

Lists 1829 – Arkhia, 5 households

Bib The settlement was first mentioned in 1655, but disappeared from the sources until 1829. It did not appear in modern sources after 1940 (Komis 2005:342).

Desc A small hamlet with three residential complexes, all with EM architecture, about 780 m south of Kita. The northernmost building is a tower complex and may be Ott II based on a lack of mortar in its lower courses. There is also a ruined building with double-coursed rubble-filled walls, held together in the lowest courses with plaster. This may be one of the earliest structures in the settlement, but certainly it is no earlier than Ott II. The 1655 reference to "Archia" that Komis notes is curious—I wonder if the name is a corruption of "Bragia di Nicliani," which I have tentatively assigned to Kourines (T197) immediately north, therefore associating it with a settlement with Ott I architecture. Unfortunately, I do not have access to the 1655 list and so cannot see the order in which settlements were recorded. As for the present village, it may have begun as a single homestead in the late 18th century and expanded over time.

T020 **Areopoli (Tsimova) – Αρεόπολη (Τσίμοβα)** N 4058679, E 623258, 260 m
Byz, Ott I, Ven, Ott II
Permanent / Occupied / Partial Mapping / Wall widths > 1 m
N/A

Lists 1829 – Tsimova, 290 households
1813 – Zimova, 600 men, 300 soldiers
1715 – Çimova, with the *mahalle* of Kuskuni, 82 *hâne*, 16 bachelors
1700 – Cimova bassa, 98 families, 417 people
1695 – villa Cimova, 236 combatants
1618 – Zimova, 30 hearths
1583 – Çimova, with Kuskuni (tax)

Med N/A

Bib The older toponym is Slavic, derived from either the personal name Čimo or the word *zima* (winter). The first historical appearance was a 1336 reference to "Shimova" (see Longnon and Topping 1969:28). The Mavromichalis clan was established in the settlement by the end of the 17th century, and they controlled the export trade out of Limeni to the north. In the Ott II period, the town was renamed "Areopoli" in honor of the family, and power shifted here from Oitylo. At the end of the 19th century, it was named the administrative seat of the region (Komis 2005:398). The church of the Taxiarchis in the old *plateia* was built in 1798 by the Mavromichalis family (Traquair 1908/09:204-206, Plate 15, Figures 3, 7, 8). For a brief account from the early 19th century, see Leake 1830:282-283.

Desc Located in the middle of a coastal plateau in the northwest part of the study region. I did not record the town in detail because of its representation in the records and its sizeable modern population. The modern town was built directly on the medieval site, judging by the presence of megalithic foundations throughout the town, and it now extends beyond the earlier boundaries especially to the north, east, and south. Although it began as a relatively small village, after the 17th century it quickly grew to one of the largest settlements in the region. There are at least 6 churches in the town, several of which were funded by the Mavromichalis family. Several *kalderimia* lead to the town—some from Limeni and Kelepha to the north, some from Charia and Pyrgos Dirou to the south, and at least one from Sotiras (Kouskouni) to the east.

T021 Aryilia – Αργιλιά N 4051011, E 631148, 220 m
Byz, Ott I
Permanent / Occupied / Field Visit / Wall widths variable
12 August 2014

Lists 1829 – 55 households

Med 15

Bib The toponym comes from the Greek word for *Olea oleaster*, the wild olive (Komis 2005:342-343).

Desc The settlement is located halfway up a mountainside on the east coast of the peninsula, about 1.5 km north of Drymos (Driali). Aryilia is one of a chain of megalithic settlements extending south along the eastern coast, with Drymos (Driali) and Nyphi further south. Parallel to these three settlements and at a higher elevation, there are several smaller megalithic settlements, each of which is connected to a lower settlement via a *kalderimi*: Makrynaros, Paliochori, and US 5 (north to south). I recorded several medieval structures in person: two ruined structures on the slopes above the town to the west, and another that is incorporated into a ruined EM house. The church is EM–Mod in date, but there are several pieces of marble sculpture incorporated into the construction, as well as several Byz marble columns standing in the courtyard. In the imagery, several more medieval structures can be seen above the modern settlement on the hillside. There is also a *kalderimi* extending from the northernmost part of the village toward the modern road below, and passing directly below the ruined settlement. At some point, the *kalderimi* turns into a walled field path. Based on its toponym and the preserved architecture, I believe the site was abandoned for a period of time, then reinhabited in the very late Ott II or early EM period.

T024 Briki – Μπρίκι N 4047550, E 626228, 225 m
Byz, Ott I, Ven, Ott II
Permanent / Occupied / Full Mapping / Wall widths > 1 m
6 July 2014

Lists 1829 – Briki, 24 households
1715 – Birgi, 12 *hâne*, 2 bachelors
1700 – Brichi, 40 families, 134 people
1695 – villa Brichi, 93 combatants
1692 – Brichi (tax)
1618 – Brichi, 35 hearths
1583 – Birgi (tax)
1514 – Briki, 16 *hâne*, 5 bachelors, 1 widow

Med 41

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). The first reference to the settlement seems to be the dedication of the church of Archangel Michael in Polemitas, dated to 1278. The phrases “πλυσι(ον) του π(ατ)ρικη” and “ειστα μπ(ατ)ρικιου” may refer to the surname “Patrikios” (Drandakis 1982:54; see also Komis 2005:347-348). There are several Byz churches in the settlement: the 11th-century (?) church of Ay. Yeoryios with 13th-century iconography and a marble sculpture with the inscription, “Nikitas marble-carver servant of Christ” (Drandakis 1986:23-24; 2002:365); the 12th-century monastery of Ay. Triada with one sculpture inscribed with the name of Nikitas and another dating to 1122 (Drandakis 1986:25; 2002:365, 276); the 14th-century church of Ay. Nikolaos (Drandakis 1986:22), and another Middle Byz church of Ay. Leo with iconography dating to circa 1400 (Drandakis 1972; 1986:22, 24).

Desc See case study in Chapter 6. The medieval town is spread along the hillside east, west, and south of the modern town. There is good reason to believe that additional structures would have existed where the town is now, but most of them were either destroyed or incorporated into the modern ground level. Of these structures, a few are made with particularly large stones, with very impressive and well-preserved downhill faces. One group of them in the eastern cluster form a daunting megalithic wall that would have been highly defensive. A single structure in this upper section was used into the Ott II and possibly EM periods, but it is now overgrown and ruined. In the downhill cluster, the structures seem to be less organized and aligned, however we were not able to record the southwestern-most section of the town (where additional megalithic walls can be seen). Dispersed throughout these structures are megalithic field walls and retaining walls. In the middle cluster south of the modern town, there are a number of threshing floors, one of which is built directly on top of a medieval house. It seems that these structures were continually reused, destroyed, or altered by later residents, who incorporated them into their own residences, field walls, and terraces. In many cases, the terraces do seem to be later than the structures. We found very few cisterns associated with the houses. Only one was located in the uppermost section: a cistern that was created out of a natural gully or small cave in the ground. In the lower clusters, we recorded four slab-topped cisterns. I suspect that either the cisterns are too overgrown to see, or perhaps that the settlement was spring-fed. There are five churches, which are located in the middle and higher contours. Three have megalithic foundations (Ay. Leo to the north, Ay. Dimitrios high up to the east, and an unidentified church in the modern town with only an apse remaining). Another is Middle Byz with a later cupola added on (Ay. Nikolaos), and another south of town that is also Middle Byz (Ay. Yeoryios). There is a network of well-defined field paths leading between the upper residences. One path, leading uphill from the church of Ay. Nikolaos, is cobbled just as it reaches the town—this is the only *kalderimi* I recorded.

T027 Charia – Χαρία N 4055297, E 624405, 201 m
Byz, Ott I, Ven, Ott II
Permanent / Occupied / Partial Mapping / Wall widths > 1 m
16 March 2014, 13 August 2014

Lists 1829 – Karya, 35 households
1813 – Caria, 100 men, 40 soldiers
1715 – Harya, 20 *hâne*, 6 bachelors
1700 – Caries, 47 families, 178 people
1695 – villa Cariestena, 86 combatants
1692 – Caries (tax)
1618 – Charia, 80 hearths
1583 – Haryez (tax)

Med 1

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). The settlement first appeared in the 1447 travelogue by Cyriac of Ancona as "villa Καίρια" (Ancona 2003:313; see also Komis 2005:353). The church of Ay. Nikolaos is dated to the 11th century, with 11th and 12th century sculptures in the porch and templon screen, respectively (Drandakis 1986:22; 2002:274, 382). The modern churches of the Koimisis and Ay. Yeoryios may contain carved marble elements dating to the 12th century (Drandakis 2002:381-382).

Desc Located on the flat plain above Diros Bay about 870 m northeast of Pyrgos Dirou. It is separated from Pyrgos Dirou to the west by a slight dip in the topography, and to the north the land drops down to a gully. It is not fortified, but it would have had a good view of the coast and of anyone approaching up the *kalderimi* from across the gully. Overall, the settlement has a long history of occupation, stretching as far back as ancient times, and ancient pottery has been found in the vicinity of the village (see Pullen et al., in press). Just north of the modern village is an open field with at least 16 medieval cisterns, roughly oriented northwest–southeast. I recorded several preserved *kalderimia* and paths around the village, as well as some Ott II towers and tower-houses.

T028 Charouda – Χαρούδα N 4052068, E 622696, 159 m
Byz, Ott I, Ott II
Permanent / Occupied / Partial Mapping / Wall widths > 1 m
22 July 2014

Lists 1829 – Karouda, 25 households
1618 – Charouda Chardiani, 40 hearths

Med 15

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). The toponym comes from the Slavic *koruto* (drinking channel, boat, bucket, riverbed). It first appeared on a 1554 map as "Carude" (Komis 2005:354-355). The church of the Taxiarchis dates to the second half of the 11th century (Drandakis 1986:22; 2002:373; Saïtas 2009:375), and the threshold is built with an upside-down 12th-century templon screen (Drandakis 2002:383; see also Traquair 1908/09:189-190, Plates 11, 12, Figure 4). The dedicatory inscription in the church names the founder as Michael Karidianos or Kardianos, as is reflected in the toponym in the 1618 Nevers Catalog. The Kardianoi family likely had a lot of power in the region. The surname appeared in a letter from 1689 in reference to a man living in Zakynthos, possibly reflecting the broader migration of Maniates in the later 17th century, first to Zakynthos and then to Italy (Komis 2005:354-355).

Desc See case study in Chapter 6. The settlement is located on the flat peninsula south of Pyrgos Dirou. The area around the settlement, particularly to the southeast, is full of bedrock outcrops, and *kalderimia* radiate out from the village in all directions. I recorded several medieval structures, including the megalithic church of Ay. Sotiras, and there are additional medieval structures that I missed around the vicinity of the modern town that can be seen in the aerial imagery. Interestingly, I found only a few slab-topped cisterns in the main part of the settlement, and only one that is definitely associated with medieval structures. However, the *kalderimi* leading north to a ruined Byz church is lined on either side by at least 10 slab-topped cisterns. The Middle Byz church of Ay. Taxiarchis is located in the southwest part of town. My impression was that the iconography (redone at some point in the church's history) was very well preserved, with only one wall in the nave being whitewashed. The carved marble pieces supporting the dome are all intact and are likely original, as is the templon screen. The exterior of the church has a single ancient gravestone. There are also well-preserved Late Byz bowls in the cupola and other parts of the exterior. An EM–Mod cemetery is now in the churchyard to the east. Based on the more recent architecture, I suspect that the town was abandoned sometime in the 17th century, then reoccupied in the late 18th or early 19th century.

T029 Chimara – Χιμάρα N 4056904, E 630663, 376 m
Byz, Ott I, Ott II
Permanent / Occupied / Partial Mapping / Wall widths > 1 m
27 March 2014

Lists 1829 – Khimarha, 42 households
1813 – Chimera, 100 men, 40 soldiers
*1618 – Chorio-Chorogona, 30 hearths

Med 3

Bib There is evidence of megalithic architecture in the village (Saïtas 2001:Note 42). The toponym "Chimara" first appeared in the early 18th century, then again in the 1798 poem by Nikitas Niphakis (Komis 2005:372). Note that Komis linked the toponym "Chorio-Chorogona" from the 1618 Nevers Catalog with a different settlement, Korogonianika (T072).

Desc Located between Pyrrichos (Kavalos) and Loukadika in a valley connecting the two coasts. Although the modern toponym does not appear in earlier records, there are remains of at least three structures with megalithic foundations. All three are abandoned and located in what is now the center of town on either side the main road, which used to be a *kalderimi*. The large church in the center of the village was dedicated in 1899. Smaller chapels are located on the outskirts, which I did not investigate in person. As for the entry of "Chorio-Chorogona" in the 1618 Nevers Catalog, I suggest that the order of the list (Cavallo nel Purcho, Chorio-Chorogona, Viglistico) points to a location somewhere between Pyrrichos (Kavalos) and Vlistiko. Korogonianika (T072) is located at the southernmost end of the peninsula, and it does not make sense according to the geographical trajectory of the list for the authors to have referenced its present location at this point in the catalog. If my association is correct, the Korogonas clan associated with the 17th-century toponym may have been established here, then relocated to found the settlement of Korogonianika in the Matapan Peninsula sometime in the 17th century.

T030 Chosiari – Χωσιάρι N 4064083, E 633213, 53 m
Ott II
Permanent / Occupied / Field Visit / Wall widths < 1 m
11 August 2014

Lists 1813 – Cossiri, 30 men, 15 soldiers

Bib The toponym comes from the Byzantine term *chosiarios* (a soldier who organized ambushes), which in turn is derived from *chosia* (ambush) (Komis 2005:282-283, Note 109).

Desc A dispersed EM–Mod settlement spread along the modern road between Gytheio and Areopoli (Tsimova) in the northeast part of the study region. There are a few isolated, ruined EM homesteads on top of the hills in the surrounding area. Southeast of the modern town is a church of the Koimisis, potentially Ott I or even Late Byz in date. The exterior is whitewashed and locked, making it difficult to date. There are several ruined Ott II–EM buildings in the vicinity, two of which have been renovated and are now occupied. Komis correlated this town with a 1618 record for "Chosea," but there is no architectural evidence for an early settlement here, and a better candidate for this toponym is Kozia (T279). It is worth noting that the agricultural plains in the northeast part of Mani have very little medieval domestic architecture, regardless of whether or not there was a known earlier presence.

T031 Kalyvia – Καλύβια N 4059188, E 636461, 126 m
Ott II
Permanent / Occupied / Partial Mapping / Wall widths < 1 m
21 April 2014

Lists 1829 – Kalyvia, 23 households
1813 – Placocagliva, 40 men, 20 soldiers

Bib The toponym *kalyvia* was common in Byz-period Greece, referring to temporary dwellings used by pastoralists or other itinerant groups. The toponym was also a synonym of *proasteia* (suburbs) (Komis 2005:317; for more on the etymology of the toponym, see 293 and Note 170).

Desc Located above Skoutari Bay about 2.5 km east of Skoutari. The village is relatively large for the area and mostly comprised of EM and Mod houses. The oldest buildings are EM in date, with the exception of a single ruined structure with a large-stone foundation, possibly from the Ott II period. Only a single corner of the tall, mortared tower is still standing. Note that the settlement is listed erroneously on the Anavasi atlas as "Diasela."

T033 **Pera Dimaristika – Πέρα Διμαρίστικα** N 4040889, E 632224, 247 m
Ott II
Permanent / Occupied / Partial Mapping / Wall widths < 1 m
25 April 2014

Lists 1829 – Pera Dimaristika, 31 households
1813 – Dimaristica (see T293)
*1715 – Sela (see T293)
*1695 – villa Sela (see T293)
*1692 – Sela (see T293)
*1618 – Sella (see T293)
*1583 – Sela (see T293)

Bib For bibliographic references, see T293 (Dimaristika).

Desc See also Kato Dimaristika (T308) and Ano Dimaristika (T377). The settlement is located on the top of a hill on the east coast of the peninsula, just north of the main settlement of Dimaristika. A steep ravine separates the two hills. The majority of buildings are EM in date. There are a few buildings with typical Ott II construction and large foundations and some smaller single-story structures that may also be Ott II. A cluster of these houses is located on the southeast side of the village, but I did not investigate closely because they are now overgrown. On the east end of the village there is a large residential complex, the earliest phase of which looks to be Ott II, with EM and Mod components. On the north side of the village there are two very ruined structures, the easternmost of which may be Ott I or II, and the other later. One or two additional rectangular structures are visible in the imagery downhill to the east, but I was unable to investigate them in person. There are two EM towers in the village, the tallest of which is in the center of town, and the main church is also EM in date.

T034 Diporo – Δίπορο N 4039691, E 626954, 202 m
Ott I, Ven, Ott II
Permanent / Occupied / Partial Mapping / Wall widths < 1 m
11 May 2014

Lists 1829 – Viporo, 25 housholds
1715 – Bulari, with the *mahalle* of Demüri, a village listed in the old register (see T171)
1700 – Diporro, 8 families, 37 people
1695 – diporo Catopulari, 41 combatants
1692 – Bolarus, e Dipori (see T171)
1583 – Dipori (tax)

Med 14

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). The toponym is geographical, meaning "crossing, passing." It first appeared in a 1655 record as "Ferra Porto" (Komis 2005:365). The church of Ay. Stratigos is dated to the early 11th century, with 12th-century iconography (Drandakis 1986:22, 24) and a 12th-century porch (Megaw 1932-33:162; see Traquair 1908/09:177-180, Plates 11-12, 16). The marble sculptures are "precursory" to those by Nikitas and probably date to the first half of the 11th century (Drandakis 2002:371, Figures 121-125, 127, 129-131). Inside the church are marble pseudo-sarcophagi and a subterranean crypt below the narthex floor (Saïtas 2009:375, Figures 40.7, 40.8). Apparently some of the original slate tiles from the roof were reused in the cemetery adjacent to the church (Dean 2006:113). For a list and of the icons and a plan map of Ay. Stratigos, see Greenhalgh and Eliopoulos 1985:114-115.

Desc A village uphill from Kato and Ano Boularioi, nestled at the base of a mountain pass leading to the settlements of Pepo, Leontakis, and Mountanistika. There are several Byz churches and Ott I–Mod residential structures within the village. North of this is anther cluster of structures associated with a Byz church of Ay. Panteleimon (see Katsipos, T422). In the north part of the village is a cluster of Ott II and EM houses, all facing downhill to the west. Within the village are several more Ott I, Ott II, and EM houses, only two or three of which were built in the EM period. Most of the structures in the village are built on large dry stone foundations. Across the gully south of the village and spread out on a mountain slope, many large walls and at least one (if not more) discernible structures can be seen in the imagery. None of these have walls wider than 1 m, suggesting that the settlement itself did not coalesce until the Ott I period. There is a megalithic church of Ay. Spyridon (?) at the southwest corner of the village and another unidentified Byz church in the center of the village. Above the town to the east is the Byz church of Ay. Stratigos, one of the churches that have been renovated recently by the local archaeological authority.

T035 Dry – Δρύ N 4039025, E 622994, 195 m
Byz, Ott I, Ven, Ott II
Permanent / Occupied / Partial Mapping / Wall widths > 1 m
9 May 2014

Lists 1829 – Apano et Kato Dry, 30 households
1700 – Dri, 29 families, 116 people
1695 – villa Dri, 51 combatants
1692 – Counos, Diri e Chipula (see T076)
1618 – Dri de Condestauli, 85 hearths
1583 – Dri (tax)
1514 – Dri (?), 19 *hâne*, 5 bachelors

Med 2

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). The toponym comes from the Greek word for *Quercus macrolepis* (or *Quercus aegilops*), the Valonia oak. The toponym first appeared in the 1447 travelogue by Cyriac of Ancona as "villa Dryea," and it appeared again in a 1571 Venetian record as "casale chiamato Dri" (Ancona 2003:311-313; Komis 2005:363).

Desc Located in the broad southwestern plain. Most of the residences in the village have been renovated, but it is clear that the village had an early history, with some megalithic and large dry stone structures especially on the north side of town. There is a definite Ott I structure in the same area, perhaps even built on a megalithic foundation. However, I certainly did not see a large amount of architectural evidence from the Ott I settlement that would correspond to the entries from that period. From above the village, about 8 EM towers are visible. The EM structures continue to the east along the modern road, stopping at the ridge just west of Keria. It is possible that the earlier structures from the Byz and Ott I periods (as attested to in the historical records) have been dismantled or rebuilt over time, but the historical records clearly show that the settlement was occupied continuously from at least the end of the Byz period onward.

T036 Dryalos – Δρύαλος N 4050111, E 626017, 278 m
Byz, Ott I, Ven, Ott II
Permanent / Occupied / Partial Mapping / Wall widths < 1 m
4 August 2014

Lists 1829 – Dryalos, 40 households
1813 – Docagli, 100 men, 50 soldiers
1715 – Dryaloz, 26 *hâne*, 4 bachelors
1700 – Driallo, 49 families, 201 people
1695 – villa Drialo, 81 combatants
1692 – Drialos (tax)

1618 – Drialo, 15 hearths
1583 – Dryaloz (tax)
1514 – Dryalos, 13 *hâne*, 3 bachelors, 1 widow

Med 0

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). The toponym comes from the Greek word for *Quercus macrolepis* (or *Quercus aegilops*), the Valonia oak (Komis 2005:364). The church of Ay. Yeoryios dates to the second half of the 13th century (Drandakis 1986:23) or the late 14th or 15th century (Traquair 1908/09:181, Plates 11-12), with a later lateral narthex and graffiti dating to 1397/98 at the earliest (Drandakis 2002:391). The belfry dates to the second half of the 13th century (Megaw 1932-33:162). The church of the Taxiarchis dates to the Ottoman period, with a possible 14th-century cornice used as a bench inside the sanctuary and a cornice placed as the base of the lowest tier of the belfry with an inscription dated to 1102/1103 (Drandakis 1986:25, 2002:375).

Desc Located on the gentle slopes of the foothills on the west coast. It has an upper and lower spatial layout, much like Mina, Vamvaka, Kita, and the rest of the large towns located at about the same elevation. I did not see any overtly medieval architecture, but the fields around the town are full of rubble walls, and there are several Byz churches in the town. In all, I recorded five churches: one Byz church (Ay. Yeoryios), three Ott churches (Ay. Theodoros, Taxiarchis, and Ay. Andreas), and another Mod church (Ay. Kyriaki). There are many definite cases of Ott II architecture, along with EM and Mod structures. The number of churches and representation in the records suggests continual occupation from at least the late Byz period onward.

T038 Erimos – Έρημος N 4045822, E 625276, 116 m
Byz, Ott I
Permanent / Occupied / Full Mapping / Wall widths > 1 m
3 August 2013, 7 June 2014

Lists 1829 – Erimo, 6 households
1618 – Erimo, 15 hearths
1514 – Erimo, 20 *hâne*, 4 bachelors, 2 widows

Med 14

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). The first reference to the settlement was in the dedication of the church of Archangel Michael in Polemitas, dated to 1278, specifically in the phrase "ειστην ερεμοντυ" (Drandakis 1982:55; see also Komis 2005:364-365). The church of Ay. Varvara dates to the second half of the 12th century (Megaw 1932-33:145-149, 162, Plate 17; Drandakis 1986:22, 2002:380; Charalambous 2009), and there are standing grave structures in the cemetery

(Saïtas 2009:381, Figures 40.23, 40.30). The glazed bowls in the exterior look to be late 12th century (Guy Sanders, personal communication). The ruined church of Soulani dates to the 14th century (Drandakis 1986:23).

Desc The EM–Mod town is situated on a flat plain about 850 m northeast of Mezapos, with cleared olive fields around it. There is no architectural evidence of occupation during the Ven and Ott II periods. There are also no *kalderimia* extending from the village, although a dirt path was recently bulldozed to Lakos, one of the modern towns that has developed along the main road. There is a cluster of ruined residential structures and cisterns southeast of the modern town. I recorded only a few discrete megalithic or large-stone structures (including several slab-topped cisterns), but additional structures seem to have once existed where there are now newer field walls. The wide wall foundations can be seen in places, particularly closer to the modern town. There is an old, wide field path that leads through this section of the village, but it seems to be later than the structures (for example, it crosses directly over a medieval cistern). However, there is still no architectural evidence of the 16th-century households in the immediate vicinity of the modern village. In the aerial imagery, there appears to be another small settlement cluster about 200 m southeast of modern Erimos. This is mostly comprised of rubble, with a few structures distinguishable among the massive field walls and trees. This cluster may be the location of the Ott I settlement, though its distance suggests it could have been a separate, earlier settlement. If so, it would be unusual that a large Middle Byz church was built to the northwest of the main residential settlement, rather than to the east. At present, I would associate the cluster with the earlier phases of Erimos, but the chronological assignment is tentative without checking the architecture in the field.

T041 Phlomochori – Φλομοχώρι N 4054234, E 631402, 153 m
Ott II
Permanent / Occupied / Partial Mapping / Wall widths < 1 m
12 August 2014

Lists 1829 – Phlomokhori, 37 households
1813 – Flomochori, 100 men, 40 soldiers

Bib The toponym appeared for the first time in the 1798 poem by Nikitas Niphakis. In the 19th century it became the seat of the Deme of Kolokythia (Komis 2005:387-388).

Desc A large settlement situated on a hill above Kolokythia Bay and the town of Kotronas. Like Nyphi and Kokkala, Phlomochori is comprised of a few smaller neighborhoods: Kauki, Vata, and Chalikia Vata. These are labeled on the Anavasi atlas, and a resident verified that they are considered a part of the wider town of Phlomochori. The neighborhoods of Kauki and Chalikia Vata do not appear in the records. Vata, however, is in every record beginning with 1583. Vata is separated from modern Phlomochori by a small river gorge. These were clearly two separate settlements until very recently, when their boundaries blended together. Within Phlomochori itself, I did not see any traces of medieval architecture. Altogether there are at least 9 churches associated with the wider town of Phlomochori. Within the upper part of town, there are two EM–Mod churches, and two more have been built to the east along the road down to Vata. Above the town are three more churches, one of which (just below the megalithic church in Loukadika) may have had an earlier history. There are also a number of towers and other residential structures in the main town, all of which are EM in date. Given the size of the modern settlement and the evidence of extensive population in the area in the medieval period, there may have been a smaller settlement located on this hill that has been built over and/or destroyed.

T042 **Gardenitsa – Γαρδενίτσα** N 4043853, E 624994, 112 m
Ott I, Ven
Permanent / Occupied / Partial Mapping / Wall widths < 1 m
9 May 2014, 5 August 2014

Lists 1829 – Vardanitsa, 22 households
1618 – Gardinichia, 20 hearths

Med 1

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). The toponym may be Slavic (from “Gordnica”), or it may be a derivation of the Greek surname Kardianos, which is mentioned in the dedicatory inscription of the Taxiarchis in Charouda (Komis 2005:367-368). The church of the Sotira dates to the first half of the 11th century, with iconography from the 14th–15th centuries (Drandakis 1986:22, 24, 2002:371-372; see also Traquair 1908/09:180-181, Plates 11-12; Megaw 1932-33:162; Kalamara and Roumeliotis 2004:Figure 11). Dr. Guy Sanders (personal communication) reported that the bowls in the facade are imported Islamic polychrome whiteware and may date to the 12th century. Ay. Petros dates to the 12th century, with iconography from the early 13th century (Drandakis 1986:23-24) and marble sculptures dated to the 12th century (Drandakis 2002:378-379). The church was previously dedicated to Ay. Paraskevi and the Archangel Michael (Saïtas 2009:375). Ay. Ioannis the Theologian is dated possibly to the 11th century, with 12th century iconography (Drandakis 1986:23-34) and carved marble elements possibly attributed to Nikitas (Drandakis 2002:367).

Desc Today the settlement is divided into an Ano (Upper) and Kato (Lower) village, located at the northeasternmost part of the flat plain in the southwest part of the peninsula. A section of overgrown *kalderimi* connects the two parts of the village. While EM and Mod material is plentiful within the village, I did not record any evidence of medieval residential architecture, despite the settlement’s association with several Byz churches. Only one of these (Sotiras) is actually located in the present day settlement. Ay. Ioannis (which I did not visit in person) is 350 m to the west, and Ay. Petros is over 700 meters south. Interestingly, just south of Ay. Petros is an isolated medieval structure that appears to have been reworked into a church, and perhaps was a precursor to the church itself. As for the residential history, I suspect the rubble piles that are on the fringes of the settlement may be the remains of the Ott I-period settlement, and at least one structure is visible in the early 1990s imagery north of Kato Gardenitsa. It seems possible to me that during the Byz period, Sotira was one of the isolated Byz churches (*exoklisia*), where an Ott I settlement arose later. Based on the lack of architectural remains and absence from the historical records, the village appears to have been abandoned sometime after the 17th century until it flourished once again in the 19th century.

T044 **Gonea – Γονέα** N 4054693, E 633950, 259 m
Byz, Ott I, Ven, Ott II
Permanent / Occupied / Partial Mapping / Wall widths > 1 m
17 June 2014

Lists 1829 – Gonea, 29 households
1813 – Gonea, 40 men, 25 soldiers
1715 – Afunga, with the *mahalle* of Gonya and Riğanihori (see T073)
1695 – villa Gonea, 83 combatants
1692 – Affungia, e Gogna (see T073)
1618 – Gognia di Cholochitia, 12 hearths
1583 – Afungâ, with Gonya (see T073)

Med 13

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). The settlement did not appear in modern sources after 1928 (Komis 2005:369).

Desc Located high on a descending ridge above Kotronas. Like nearby Riganochora, the town seems to have been continually occupied since Byz times, and at least one medieval structure was later reused as the foundation for an EM building. In the aerial imagery, several rectangular ruined structures can be seen radiating out around the settlement at the lowest elevation contour—this suggests that the whole village was once a medieval settlement, but that the upper structures were destroyed over the centuries as newer houses and structures were built. There are two churches in town: a small likely Ottoman-period chapel, and a larger EM church with an inscription of 1927. Several of the structures have been renovated in recent years. Leading downhill from the settlement is a clearly visible *kalderimi*. The *kalderimi* is no longer visible at a fork where it meets a dirt road coming up from below. It is unclear whether the path continued on toward Kotronas as a footpath, or whether this part of the *kalderimi* has since been destroyed.

T046 **Kauki – Καυκί** N 4062159, E 632860, 111 m
Ott II
Permanent / Occupied / Field Visit / Wall widths < 1 m
11 August 2014

Lists 1829 – Kafkio, 11 households
1813 – Cafki, 15 men, 20 soldiers

Bib The toponym comes from the Greek term for a vessel or container. It was first mentioned in the 1798 poem by Nikitas Niphakis, and it did not appear in modern sources after 1928 (Komis 2005:297).

Desc A small village with Ott II and EM architecture, and only a few EM–Mod residential complexes. It is perched on a hill with an excellent view of Neochori to the south, Karioupoli (Miniakova) to the north, and Vathy Bay to the east. There are two churches in the village. The one at the very western edge is a potentially Byz barrel-vaulted chapel dedicated to St. John the Theologian. I could see no signs of a settlement associated with the chapel, meaning that actual settlement was probably not founded until the later Ott II period at the earliest. The second church in the center of town, Ay. Spyridon, likely dates to the late 1800s.

T047 Kainouryia Chora – Καινούργια Χώρα N 4034088, E 631986, 420 m
Ott I, Ven, Ott II
Permanent / Occupied / Field Visit / Wall widths < 1 m
18 July 2014

Lists 1829 – Kaenouria-Khora, 22 households
1813 – Kienourio Chora, 20 men, 20 soldiers
1700 – Chiernuiacora, 12 families, 53 people
1695 – Chienuria Cora, 19 combatants
1618 – Gnio-Chorio di Chosma, 50 hearths
1583 – Vatya, with [illegible] and Kenurya Hora (see T167)

Med 2

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). Descendants of the Kosmadoi family, associated with the 1618 toponym, now live in the region of Vatheia (Komis 2005:170).

Desc Located on the crest of a hill overlooking Achillio and Porto Kayio, ideally situated to have two windmills on the hilltops northeast and southwest of the village. The church in the central *plateia* has a dedicatory plaque on the western wall with the date of 1865. The fields around the settlement are filled with old, collapsing field walls, but I saw no traces of ruined structures. Locals told me that the village is about 250 years old, and the architectural remains generally reflect this, with predominantly EM and Mod architecture and only a few Ott II structures. However, in scholarly publications this is listed as the site of a *palaiomaniatiko* settlement, and in the imagery at least two possible Ott I structures can be seen at the northern edge of the settlement. It is possible that other buildings in the village have earlier foundations, but it is unlikely that there are many such buildings.

T049 **Kalonioi – Καλονιοί** N 4042130, E 626115, 232 m
Ott I, Ven, Ott II
Permanent / Occupied / Partial Mapping / Wall widths < 1 m
5 August 2014

Lists 1829 – Kaloni, 10 households
1813 – Caloji, 100 men, 40 soldiers
1700 – Calgni, 30 families, 104 people
1695 – villa Caloni, 48 combatants
1692 – Chita, Coloni, e Nomia (see T068)
1618 – Chalionna de Nicliani, 15 hearths

Med N/A

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). The toponym may have come from the surname Calona, which appeared in Venetian sources from the 17th century. It first appeared in a 1554 map as "Cagnonus" (Komis 2005:352).

Desc Situated on a mountainside above Kita, dominating the main pass into the mountains. The main village is aligned along two roads leading uphill. There are a few abandoned EM houses high up along one road, as well as large-stone Ott I structures that are in various stages of collapse. I did not conduct a full count of the number of medieval houses. Although the records do not list the town in 1715, there is definitely an Ott II presence, including the church of Ay. Nikolaos with an inscription date of 1765. The architectural evidence suggests the town was actually founded in the Ott I period. The church of Ay. Phaneromeni is located north of the town. It has some megalithic blocks in the foundation and other large-stone structures (possibly Ott I in date) around it, along with a ruined barrel-vaulted cistern that is likely associated with the EM residential cluster southwest of the church.

T051 **Kaphiona – Καφιόνα** N 4048879, E 625258, 150 m
Byz, Ott I, Ott II
Permanent / Occupied / Field Visit / Wall widths < 1 m
4 August 2014

Lists 1829 – Kaphiona, 10 households
1514 – Kafyoni, 20 *hâne*, 3 bachelors, 1 widow

Med 10

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). The toponym appeared in the 1798 poem by Nikitas Niphakis (Komis 2005:371). The church of Ay. Ioannis dates to circa 1300, with iconography from the same period (Drandakis 1986:22, 24). Another Byz church of Ay. Theodoroi is now demolished, but had large funerary sarcophagi beneath the foundations (Saïtas 2009:375). Ay. Vasilios (likely modern) has 12th-century marble sculptures incorporated into the structure (Drandakis 2002:376-377).

Desc Situated on a slight hill near the main road south of Tsopakas, overlooking a bay below. The ruined medieval village of Kato Meri is located along a gentle slope to the west. There appeared to be some ruins and rubble piles around the settlement that could correspond to an Ott I phase. In the imagery, I could detect at least 10 rectangular structures in the southwestern and western sides of the settlement, all oriented roughly southwest–northeast. A small group of EM houses in the center of the village may very well overlay several more. These structures, along with the Byz churches in the area (and the fact that the site is listed as a *palaiomaniatiko* settlement in the scholarly literature) suggest that it had a Byz occupation phase as well. However, the gap in the historical records and my own investigation suggest the settlement was temporarily abandoned after the very early Ott I period and reinhabited only in the late 18th or early 19th century. The church in the center of the village is double-apsed, with a whitewashed interior, a few small carved marble pieces in the exterior, and an inscription dated to 1832. Another potentially EM church of Ay. Dimitrios is located within the modern cemetery south of the town. Far below the settlement to the west is a large-stone church of Ay. Nikolaos. It is in a state of near ruin, with no traces of walls remaining. The area between the village and this *exoklisi* church is occupied only by two small farms. There is also a large, unfinished resort on the hillside between Kato Meri and Kaphiona.

T054 Karea – Καρέα N 4066492, E 626348, 548 m
Ott I, Ven, Ott II
Permanent / Occupied / Partial Mapping / Wall widths < 1 m
1 May 2014

Lists 1829 – Apano et Kato-Keria, 10 households
1813 – Carea, 30 men, 20 soldiers
1715 – Kato Kari, Goratos and Zunyanes (see T342)
1700 – Carea, 59 families, 280 people
1695 – villa Carea, 135 combatants
1692 – Carea (tax)
1618 – Charea, 18 hearths
1583 – Karya (tax)

Med 0

Bib See Komis 2005:279.

Desc See Kato Karea (Konakia) (T342). A large settlement high in the mountains in the valley beyond Oitylo. There are springs all around the town. From here, it is possible to see the western part of Limeni, Kelepha, and all the settlements in between. Like Kryoneri, most of the buildings here appear to date to the EM or Mod periods, consistent with the 1813 and 1829 records. I also saw two dated inscriptions from the 1800s. Although it is recorded as having a very large population around the year 1700, I did not see any architecture that could be assigned to this date. A resident told me that the Byz settlement of Karea was located high on a hill to the west, and that it was later relocated to its present location. Apparently there is a ruined tower and multiple house foundations, along with remnants of "Cyclopean" walls in this area (see http://www.mani.org.gr/horia/doitilou/karea/karea.htm). Supposedly this old village was occupied through the Venetian census in 1700 before the village was relocated to its present location. In the imagery, the area is so overgrown with scrub that no foundations can be seen. The villager also told me that Karea was a *proastio* (suburb) of Oitylo during the Ottoman period. A refuge from this period was located high on a ridge to the east of the village. Further along this ridge to the south is the Ottoman-period church of Ay. Varvara. A very rough dirt road leads up to it. Local tradition also holds that about 200 people fled to Karea to escape the Ottomans when they controlled the pass from Gytheio to Oitylo, including the fortress of Kelepha. This population movement may help explain the seemingly temporary population explosion around 1700. Interestingly, the map from the Expédition Scientifique seems to have misidentified Kato and Ano Karea: Kato Karea (Konakia) is placed where Kryoneri is today; Kryoneri is placed at Moni Spiliotissas (a monastery), and Ano Karea is placed at Panagakou, a very small cluster with two large, ruined EM residential complexes. Generally, the Expédition map is considered a reliable source of settlement location, so these errors are surprising.

T055 Karynia – Καρύνια N 4044414, E 627287, 224 m
Byz, Ott I, Ven, Ott II
Permanent / Occupied / Full Mapping / Wall widths > 1 m
30 April 2014

Lists 1829 – Karinia, 15 households
1715 – Karinya, 8 *hâne*
1700 – Carigna, 12 families, 48 people
1695 – villa Cangria, 25 combatants
1692 – Mina, Carini (see T104)
1618 – Charignia, 30 hearths
1583 – Karinya (tax)
1514 – Karinya (?), 20 *hâne*, 4 bachelors, 1 widow

Med 9

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). The church of Ay. Yeoryios dates to 1281 (Drandakis 1986:23-24; see also Komis 2005:353-354).

There are standing grave structures in the cemetery associated with this church (Saïtas 2009: 381, Figures 40.14, 40.15), as well as with the church of Ay. Solomoni (Saïtas 2009:381, Figures 40.25, 40.28). The Panagitsa is a cave church with a separate section serving as a collective charnel house (Saïtas 2009:284, Figure 40.35).

Desc Located in the foothills of the mountains on the west side of the peninsula. Most of the architecture appears to be EM in date, some with Mod additions, and a couple with possible Ott II foundations. There is also megalithic architecture scattered about, including in the Byz church of Ay. Yeoryios. An EM–Mod church above the village is built upon a megalithic foundation, as well. Above the village there is a compound of several dry stone structures, likely Ott I in date. The refuge is well situated above a short cliff for defense, with very tall walls and only a few small windows facing out. Another wall along the path uphill would have allowed the occupants to defend the path.

T056 Karioupoli (Miniakova) – Καριούπολη (Μινιάκοβα) N 4062760, E 632783, 199 m
Ott II
Permanent / Occupied / Partial Mapping / Wall widths < 1 m
21 April 2014

Lists 1829 – Karioupolis
1813 – Magnacova
1715 – Karyupoli (see T271)
1700 – Cariopoli (see T271)
1695 – Criopoli (see T271)
1692 – Cariopoli (see T271)
1618 – Chariopoli, Vescovato (see T271)
1583 – Karyupoli (see T271)

Bib The toponym originally referred to an older settlement southwest of this village (see Palaia Karyoupolis, T271). The new village was first recorded as “Maniakova New Karyopoli” in 1763. Later it was referred to as “Karyoupolis the Miniakova,” “New Karyoupolis,” or “Karyoupolis.” Its founding seems to have contributed to the decline of the old settlement, which was finally deserted sometime between 1879 and 1896 (Komis 2005:279-280). The older name, Miniakova, was referenced in a letter written in 1763 by Papadakis, and it appeared again in the 1798 poem by Nikitas Niphakis (Saïtas 2001:34, Note 155; for a plan of the older section of town, see Saïtas 2001:Figure 42).

Desc Located on a round hill in the northeast part of the study region, northeast of Neochori. According to a resident, the oldest buildings in the settlement date to about 1820 or 1830. These include the church (with only a few original icons on the iconostasis—the rest have been repainted or are in the process of renovation), the “palace” or tower just south of it, and a house on the *plateia*, which was the home of the bishop before he moved to Gytheio. The town was once the seat of the Orthodox Church in the region, which was also the role of Palaia Karyoupolis before it. There are a few more 19th-century buildings here, one of which has Byz spolia above the door. The architecture reflects the town's relocation here in the mid 1700s. A resident claimed there were two reasons for its relocation in this particular spot: (1) the geography of the hill was ideal for defending the pass below it, and (2) there was a spring or stream at the base of the hill to supply fresh water.

T063 **Kechrianika – Κεχριάνικα** N 4040840, E 624890, 108 m
Byz, Ott I, Ven, Ott II
Permanent / Occupied / Partial Mapping / Wall widths > 1 m
6 May 2014

Lists 1829 – Kekhrianika, 30 households
1813 – Kicerica, 90 men, 40 soldiers
1700 – Cecrianica, 11 families, 52 people
1692 – Chechrianica (tax)

Med 9

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). The toponym came from the surname Kechris, which was found in Maniate settlements in Tuscany in the second half of the 17th century. It first appeared in 1680 as "χωρίο Κεχρένικα" (Komis 2005:355-356). The megalithic church of Ay. Kyprianos was ruined at the time of Megaw's work (se Megaw 1932-33:138), and it may now be Ay. Charalampos, a church with recent renovations. Ay. Andreas dates to the 13th century (Drandakis 1985, 1986:23). For more on the megalithic structures in the village, see Saïtas 2001:Note 42, Figures 51 and 56.

Desc Located on the flat southwestern plain. Aside from a Byz church in the center of town, I did not see any abandoned structures from a Byz settlement. However, it is possible that the earlier settlement has been incorporated into the later Ott I buildings. Many of the more recent houses have older foundations, one of which is a tower dated to the Ott I period and renovated in the EM period. There are several field paths leading from the town, but no *kalderimia*. About 500 m north of the village is an area with huge rubble piles, which may be the remains of a short-lived 16th or 17th century settlement (see Mesopangi, T478).

T064 **Kelepha – Κελεφά** N 4063330, E 625428, 245 m
Ott I, Ven, Ott II
Permanent / Occupied / Partial Mapping / Wall widths < 1 m
6 July 2014

Lists 1829 – Kelepha, 20 households
1715 – Nefs-i varoş-ı Kelefa, 62 *hâne*, 18 bachelors

1700 – Borga di Chieffalà, 108 families, 467 people
1695 – Borgo di Chielefa, 173 combatants
1692 – Chelefa (tax)
1618 – Chelefa, 300 hearths
1583 – Kelefa (tax)

Med 0

Bib The toponym was first mentioned in 1495. The settlement continued to thrive even after the fortress nearby lots its military significance (Komis 2005:280-281). Evliya Çelebi reported that Kelepha had 100 houses and 300 demolished houses (see Wagstaff 2009:127). For the nearby fortress of the same name, see T343.

Desc Located about 630 m northeast of Kelepha fortress. Like Oitylo across the gorge, the stone here is a conglomerate rather than limestone, and the rocks used to build the field walls are highly eroded and, as a result, appear older than they probably are. The town is still well occupied, and there are tended olive groves around it (and especially to the north). However, there is a notable absence of pre-EM architecture in the buildings. The only exceptions are two larger churches, which could possibly date to the late 1700s, and another very odd arched/domed structure that could have been an Ottoman construction. The building has a non-rectilinear shape with thick red tile incorporated into the wall, and the ruined walls are thicker at the top as if to form an arch or dome. The building is located on the main path leaving the town to the north, making it one of the nearest structures to a spring below the town, while also having a possible view of the fortress to the west. Reconciling the settlement lists with this particular settlement is challenging due to the lack of older architecture or rubble piles in the immediate vicinity. However, given the village's representation in the records and the history of this micro-region (periodic destructions, most importantly), it is safe to assume the historical narrative of its occupation is correct despite the lack of archaeological remains.

T066 Keria – Κέρια N 4039631, E 623751, 174 m
Byz
Permanent / Occupied / Full Mapping / Wall widths > 1 m
6 May 2014, 1 August 2014

Lists 1829 – Keria, 12 households

Med 12

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). The toponym first appeared in 1829, although it is an older settlement with Byz churches (Komis 2005:372). The church of Ay. Ioannis dates to the first half of the 13th century (Traquair 1908/09:190, Plate 11; Megaw 1932-33:162; Drandakis 1986:22; Saïtas 2009:375). The cornices above the templon are in secondary use from other churches, and one of them has an inscription that is reminiscent of Nikitas in type and position (see Drandakis 2002:368-369, 374). Guy Sanders (personal communication) suggested the bowls in the exterior façade date to the late 13th or early 14th century, and some of them may be Italian imports. Ay. Yeoryios dates to the 10th century, with 10th and 13th century iconography (Drandakis 1986:22-24). The Asomatos dates to possibly the middle 12th century, with mid-13th century iconography (Drandakis 1986:23, 24). Ay. Dimitrios dates to circa 1300 (Drandakis 1986:23, 24).

Desc Aligned north–south along a low ridge that looks west over a shallow valley in the southwestern plain. A short walk to the eastern edge of the ridge provides an excellent view of the plain to the east. Just below the modern village to the west, there is a cluster of ruined medieval structures and associated cisterns. Altogether, we recorded 12 houses and 4 slab-topped cisterns, in addition to a scattering of EM structures and cisterns throughout the area. We recorded a ruined Byz church in the northwest part of this cluster (possibly Asomatos), with several well-carved marble sculptures. In addition to the structures, there are a number of thick, double-coursed, rubble-filled walls in the overgrown area west of the town, one of which measures over 2.5 m wide. There is another large-stone structure in the middle of the modern village, oriented east–west. Next to this structure are two dry stone barrel-vaulted Byz churches. The most impressive church is Ay. Ioannis, with an unusual number of marble carvings and spolia incorporated into the exterior. A *kalderimi* leads west from the town (roughly where the two small churches are) toward the east side of Dry and through the cluster of medieval structures. After the Byz phase, there is a single Ott I structure associated with Ay. Ioannis that may have served as a monastery. If this was truly the only Ott I structure, the settlement would not necessarily have prompted recording by an Ottoman official—hence explaining the lack of historical references. The settlement appears to have been otherwise unoccupied until the EM period, when it flourished.

T067 Kipoula – Κηπούλα N 4041292, E 621793, 209 m
Ven, Ott II
Permanent / Occupied / Partial Mapping / Wall widths < 1 m
8 May 2014

Lists 1829 – Kipoula, 20 households
1813 – Micula, 100 men, 40 soldiers
1715 – Kipula, 9 *hâne*
1700 – Cipulla (see T191)
1695 – villa Cripula (see T191)
1692 – Counos, Diri e Chipula (see T076)
1618 – Chipoulla (see T191)
1583 – Kipula (see T191)
1514 – Kipula (see T191)

Bib The toponym originally referred to an older settlement on the plateau above and west of this village (see Ippola, T191). In the EM period, pirates from the village of Kipoula were active in the region (Komis 2005:358). Ay. Dimitrios at the center of the village (recently enclosed within a larger half-finished building) has 12th-century marble sculptures in secondary reuse (Drandakis 2002:384). Two additional Byz churches are nearby: Ay. Anargyroi dates to 1265 (Drandakis 1986:23-24), and Ay. Nikitas dates to the 10th century, with iconography dated to the 10th century and the third quarter of the 12th century (Drandakis 1986:22-23).

Desc Located on the broad southwestern plain, immediately below the imposing plateau of Cavo Grosso. The earliest architectural phase dates to the Ven or Ott II period. The large population from earlier records was very likely located atop the ridge to the west, in what is now known as “Ano Kipoula,” “Ano Poula,” or “Ancient Ippola.” The population records from the Ven period refer to a very large population relative to the standing remains in the village, suggesting that this may have been a period of overlap when the population was gradually shifting from the plateau settlement to the one below. The small, barrel-vaulted church in the center of town, Ay. Dimitrios, appears to be Byz or Ott I in date, but the interior has been completely whitewashed and renovated. As Drandakis noted, there are many Byz spolia incorporated into the exterior of the structure. The entire building has been enclosed within a larger half-finished structure dating to the 1930s. There are many EM, EM–Mod, and Mod complexes in the village, corresponding to the increase in population here in the early 19th century.

T068 Kita – Κοίτα N 4041828, E 625582, 149 m
Byz, Ott I, Ven, Ott II
Permanent / Occupied / Field Visit / Wall widths > 1 m
5 August 2014

Lists 1829 – Kita (with Hagii-Sophi), 68 households
1813 – Pita, 700 men, 300 soldiers
1715 – Kita, 127 *hâne*, 21 bachelors
1700 – Giatta, 111 families, 478 people
1695 – villa Chita, 170 combatants
1692 – Chita, Coloni, e Nomia (tax)
1618 – Chita de Nicliani, 80 hearths
1583 – Kita (tax)
1514 – Kalokita, 81 *hâne*, 15 bachelors, 5 widows

Med N/A

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). The toponym first appeared in a Venetian list from 1571 as “Chita casale.” Today the town is made up of several clan-based neighborhoods, and it is divided into a Pano (Upper) and Kato (Lower) village. The toponym “Hagii-Sophi” (or Ayios Iosiph), which appeared for the first and only time in the 1829 list, was a nearby settlement (Komis 2005:358-359). There are several 13th-century Byz churches in the settlement, including Ay. Yeoryios (Drandakis 1986:23-24), Ay. Nikolaos (Drandakis 1986:24), and Ay. Therapontos (Drandakis 1986:23). The church of the Asomatos, near a spring, is made entirely of local schist except for a marble iconostasis (Traquair 1908/09:185-186, Plates 11, 13, 16). For a brief account from the early 19th century, see Leake 1830:287. For plan maps showing the evolution of the layout of the town, see Saïtas 2001:Figure 55.

Desc Located on the modern road on the lower slopes adjacent to the southwestern plain. I did not record individual features within the settlement because it is well represented in the records and has already received substantial academic attention. Walking around the town, there are abundant ruined Ott I, Ott II, and EM structures. Many of the streets between these structures are still cobbled.

T072 Korogonianika – Κορογονιάνικα N 4034328, E 632843, 350 m
Byz, Ott I, Ven, Ott II
Permanent / Occupied / Partial Mapping / Wall widths > 1 m
18 July 2014

Lists 1829 – Korogonianika, 15 households
1813 – Carogognianica, 50 men, 30 soldiers
1695 – Conogognani, 11 combatants

Med 16

Bib The toponym came from the surname “Korogonas.” In addition to the *palaiomaniatiko* settlement and churches, there are also menhirs (standing stones) in the settlement (Komis 2005:359-360). The megalithic church of Ay. Philippos dates to the 10th century (Drandakis 1986:21; for a plan of the cemetery, see Saïtas 2009:375, Figure 40.5; Saïtas 1982:Figure 23). Additional Byz churches in the vicinity include Ay. Charalampos, Ypapanti, and Ay. Triada (Saïtas 1982:23).

Desc Located on a hill just north of Porto Kayio. A long valley west of the settlement is terraced on the south slope and would have been ideal for grain agriculture. On the northwest corner of this valley is another cluster of megalithic structures (US 67, T389). There is more terracing on the eastern slopes west of the town. A villager said that there are 11 churches around and within the settlement, including some that are Byz in date: Ay. Philippos, Ay. Triada (southwest), Ay. Charalambos (south), Ay. Maximus (a new church in the west), Ay. Papadi (built within the last year or so), Ay. Dimitrios (east), Ay. Nikolaos (further east), Panayia (northeast), and three more that I could not locate (Ay. Miri, Ay. Giorgis, and Ay. Therapon). The history of this area began with megalithic structures in the southwest part of town around Ay. Philippos and continued fairly continuously until today. The modern name, as suggested by Komis, seems to have derived from the family name “Korogonas,” which appeared in the 1618 Nevers Catalog as "Chorio-Chorogona." However, when mapping this list it seemed that the 1618 settlement must have been located somewhere near Kotronas—every other entry in the list follows a geographical pattern (i.e. reflecting a physical journey through Mani), and it would have been extremely unlikely that the authors inserted a toponym from southern Mani while traveling around the northern section before they had even ventured so far south. There is no doubt that the history of this settlement reaches back to Byz times, but I believe its name was carried south sometime in the late 17th century from an earlier, more northern settlement. Since then, the Korogonas family line ended or moved away, replaced by residents with different family names.

T073 **Kotronas – Κότρωνας** N 4053722, E 633141, 21 m
Ott I, Ven, Ott II
Permanent / Occupied / Field Visit / Wall widths < 1 m
12 August 2014

Lists 1829 – Kotronaes, 44 households
1813 – Cotronis, 150 men, 60 soldiers
*1715 – Afunga, with the *mahalle* of Gonya and Riğanihori, 92 *hâne*
*1700 – Affungia, 136 families, 560 people
*1695 – villa Alfongia, 135 combatants
*1692 – Affungia, e Gogna (tax)
*1618 – Afungia di Cholochitia, 50 hearths
*1583 – Afungâ, with Gonya (tax)

Med N/A

Bib Komis suggested that the toponym "Affunga" referred to an abandoned settlement near Skaltsotianika. It appeared for the last time in the Papadakis notebook with the date of 1723 (Komis 2005:341). In regards to modern Kotronas, remains of a *palaiomaniatiko* settlement were preserved within the town until recently, and the church of the Zoodochos Pigi was built on the site of an older Late Roman or Paleochristian church (Komis 2005:Note 494). The broader area was referred to as "Cholochitia" throughout most of the post-medieval period, with the first reference to Kotronas appearing in the 1798 poem by Nikitas Niphakis (see Komis 2005:349-352). Leake (1830:272) associated the Skopas Peninsula with ancient Teuthrone.

Desc I did not record individual features because of the town's size and representation in the records. The large modern town is located at the mouth of Kolokythia Bay, and it probably has been continually occupied since ancient times. It is associated with the ancient site of Teuthrone, and there is supposedly a Spartan fortification on the large hill immediately east of the settlement. It is ringed by medieval and post-medieval settlements along the slopes of the hills around it. At its center, the small Skopas Peninsula juts out into the bay. The peninsula is the site of a ruined medieval fortification, and it is now actively farmed. There is a very high density of obsidian and sherds from all periods at the site. As for the main town's representation in the records, I suggest that the toponym "Affunga" referred to the location of modern Kotronas. Komis assigned "Affunga" to a small abandoned site north of the modern town, and in fact there is a church in Skaltsotianika (T146) that is locally known as Panayia of Afungias. However, I believe that the large size of "Affunga" and its impressive representation in the historical lists points to a more important settlement, one that was associated in the records with the settlements of Gonea and Riganochora, as well as the monastery of Sotira uphill and east of Kotronas. As for the modern name, the toponym "Kotrona" or "Kastrona" appeared in the 1583 *defter* and again in the 1715 *defter*; however, in the latter it is explicitly noted that the settlement's name had changed from "Kotrona" to "Divala" by this point in time. This note suggests that the modern toponym of "Kotronas" was brought to the town sometime in the early 18th century, which coincides with the disappearance of "Affunga" from the records.

T075 **Kouloumi – Κουλούμι** N 4047921, E 625137, 145 m
Byz, Ott I, Ven, Ott II
Permanent / Occupied / Partial Mapping / Wall widths > 1 m
19 July 2014

Lists 1829 – Apano et Kato Kouloumi, 30 households
1813 – Culumi, 120 men, 60 soldiers
1715 – Kulumi, 7 *hâne*, 1 bachelor
1700 – Calumia, 24 families, 86 people
1695 – villa Calamaj, 33 combatants
1692 – Culcomia (tax)
1618 – Chouloumia, 60 hearths
1583 – Kulumya (?) (tax)
1514 – Kulumya, 20 *hâne*, 6 bachelors, 5 widows

Med 12

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). The toponym comes from the Latin *cumulus* (heap, hill) (Komis 2005:360-361). It first appeared in the 1278 dedication of the church of Archangel Michael in Polemitas in the form "ευστράτιος ο κουλουμιάτης," referring to a resident of the village (Drandakis 1982:50). The church of the Taxiarchis dates to the 12th century (Saïtas 2009:375; see also Traquair 1908/09:182, Figure 2). The templon screen was built in 1888, but there are earlier sculptures present as well (Drandakis 2002:388). The church of the Asomatos dates to the 13th century (Drandakis 1986:22, 24).

Desc The village is located on a flat plain just south of Kaphiona. Within the village itself, little early architecture can be seen aside from a single megalithic structure and additional ruined structures along and below the eastern ridge. The area immediately east is extremely overgrown, but crumbling field walls can be seen throughout this part of the site. The site apparently extends to the west, where we found additional ruined structures and a surprisingly dense scatter of ceramics and lithics. The land here is relatively flat, with well-defined terraces. It also seems that the land has not been deflated the way it has around other parts of the west coast: there are no places where bedrock is sticking up above ground surface. The artifact scatter dissipates around 150 m west of the settlement, but it continues all the way to the dirt road that cuts through and heads west toward an isolated megalithic double-apsed church. This church has an impressive view of the Tigani Peninsula to the southwest and the bay immediately to its north. The land around the church is divided into orderly, low-walled plots, and there is a possible well in a basin just next to it. Southwest of Kouloumi there is also a massive wall of dry stone rocks, now very overgrown and difficult to see. In the imagery, it clearly extends for at least 250 m north–south, and it appears to be comprised of a pair of parallel walls. All around the modern village, ruins and rubble piles can be seen in the imagery—many of these are likely residential structures. I saw no Ott I or Ott II architecture in town, though there is an abundance of EM and Mod structures. There is a small church on the east side of the village, possibly Asomatos. The large Byz church of Ay. Taxiarches (also known as Michalis) is located southeast of the village. Despite the poor preservation of early buildings, the evidence suggests that Kouloumi did have a settlement phase in the Byz and Ott I periods. Destruction and reuse are most likely responsible for the absence of more houses from these periods.

T076 Kounos – Κούνος N 4040217, E 622870, 178 m

Byz, Ott I, Ven, Ott II
Permanent / Occupied / Partial Mapping / Wall widths > 1 m
8 May 2014

Lists 1829 – Kouno, 25 households
1813 – Cunus, 35 men, 35 soldiers
1700 – Cuno, 46 families, 180 people
1695 – villa Cuno, 100 combatants
1692 – Counos, Diri e Chipula (tax)
1618 – Chounos de Condestauli, 60 hearths
1583 – Kulos (?) (tax)
1514 – Kuno, 38 *hâne*, 4 bachelors

Med 4

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). The toponym may come from the Slavic term *kuna* (weasel, ferret, badger) or from the Greek term *konos* (cone), and it is related to the surname Condestauli, which was prominent in the region until the migration of the 16th and 17th centuries. It first appeared in a 1571 Venetian document as “casale detteo CUNO” (Komis 2005:361-362). The church of Ay. Kyriaki (?) dates to the 11th century (Drandakis 1986:22, 24), and the Koimisi has iconography from the 16th–17th centuries and marble sculptures from the 12th–13th centuries incorporated into the exterior (Drandakis 1986:23). The EM church of Ay. Ioannis also has Byz spolia in the exterior walls, including various sculptures attributed to the workshop of Nikitas and others that may have come from the ruined basilica at Tigani (Drandakis 2002:369, Figure 81, 383-384).

Desc A large village with over 10 EM towers in the broad southwestern plain. The town appears to have been founded in the Byz period and was occupied continuously until today. There are at least four Byz churches here: the Koimisi in the east, a ruined church in the center, and two locked churches in the cemetery to the north. A road sign pointing toward the Byz churches and cemetery refers to it as "Κοιμητηριο Πεντακιων," indicating that there were actually five churches here at one point, and the ruins in the cemetery seem to corroborate this. The megalithic structures that I recorded were incorporated into later walls near these churches. I also recorded a handful of Ott I houses, though it is likely that the rest were incorporated into later structures. No other ruins can be seen in the imagery around the town. There are a number of Ott II structures, one of which has an inscribed date of 1727 on a lintel. Others have been incorporated into EM buildings, including towers. The EM period is best represented today. During my visit, a villager gave me a tour of a recently renovated towerhouse from this period. The *kamara* in the ground floor is almost two stories in height, and in the past, the residents would have climbed up the narrow stairs with their hands and feet to access the tower. Next to it is one of the Byz churches, with an inscribed date of 1803 (reflecting a renovation episode) and the family's name on the bell tower. Another villager said that Kounos was the main administrative center in the area at its height in the EM period.

T077 Koutrela – Κουτρέλα N 4047288, E 625175, 140 m

Ott I, Ven
Permanent / Occupied / Partial Mapping / Wall widths < 1 m
3 August 2014, 5 August 2014

Lists 1829 – Koutrela, 9 households
*1715 – Gospondini, with the *mahalle* of Banbaka, 23 *hâne*
*1700 – Chaspotinus, 25 families, 94 people
*1695 – villa Gospodini, 60 combatants
*1692 – Cospodini (tax)
*1618 – Chaspotigni, 40 hearths
*1583 – Gospondini (tax)

Med 19

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). The toponym "Kaspotini" was associated with the surname Kaspotinos, and Komis suggested the settlement was located somewhere between Briki and Erimos (possibly at modern Lakos) based on the order of the 1618 Nevers Catalog (Komis 2005:355). The toponym "Koutrela" first appeared in 1829 (Komis 2005:373-374).

Desc Situated slightly south of Kouloumi along a small east-facing ridge. Given the similarity of the landscape and geography as other medieval settlements, I was initially surprised to find very little medieval architecture in the settlement. In the imagery, however, substantial ruins are visible in and around the settlement. These include definite rectangular structures (large-stone and rubble-filled), as well as rubble piles and thick, winding walls. I argue that Koutrela is the most likely location for the missing settlement of "Kaspotini," for three reasons. (1) The 1715 *defter* clearly links Kaspotini with Vamvaka. According to the other usages of the term *mahalle* in the 1715 *defter*, Vamvaka could have been located between 1 and 2 km away from Kaspotini, and Koutrela is within this threshold at about 1.5 km away. (2) The ruins at Koutrela suggest continual occupation from the Byz through Ven periods, though there was an absence of Ott II architecture at the site. Kaspotini appeared in records from 1583 through 1715, and Koutrela did not appear until 1829. Thus the remains are consistent with a settlement that experienced a temporary abandonment in the 18th century. (3) Koutrela is the only viable settlement within the proper distance and with substantial ruins, the others being accounted for: Kouloumi, Kaphiona, Akia, Briki, and a small abandoned settlement south of Vamvaka that does not have enough ruins to correspond to Kaspotini. The only potential issue with this correlation is the change of toponyms, of which there are only a few other examples in Mani.

T079 Kryoneri – Κρυονέρι N 4065082, E 626007, 342 m
Ott I, Ven, Ott II
Permanent / Occupied / Partial Mapping / Wall widths < 1 m
1 May 2014

Lists 1829 – Kryo-Nero, 6 households
1813 – Krionero, 35 men, 20 soldiers
1715 – Kıryonero, 41 *hâne*, 14 bachelors
1700 – Crio Nero, 54 families, 240 people
1695 – villa Crionero, 100 combatants
1692 – Crionere (tax)
1618 – Chrio-Nero, 45 hearths
1583 – Kıryonero (tax)

Med 0

Bib See Komis 2005:282.

Desc Located on a narrow projecting ridge in the large valley east of Oitylo. The town has a view of Palavista, the monastery of Spiliotissas, the abandoned settlement of Petroulianika (Astriva), Klainianika, and more settlements to the southwest. This is an impressive vantage point and highly defensible due to its location on the ridge, although it is also highly visible. There is a substantial amount of EM and Mod architecture here, with very little that predates these periods. The only exception is the church, which may be on the site of an earlier structure (the lower courses of the north wall appear to protrude slightly and are darker in color). The absence of architecture from circa 1700 is very similar to the situation in Karea, which is also recorded as having a high population at this time. Perhaps the absence of architecture is due to a micro-regional variation in architectural style that did not preserve well or was readily incorporated into later houses.

T080 **Kyparissos – Κυπάρισσος** N 4035967, E 629161, 8 m
Ott I, Ott II
Permanent / Occupied / Partial Mapping / Wall widths < 1 m
2 July 2014

Lists 1829 – Kyparissi, Monastère (no data)
1813 – Kiparissi, 50 men, 20 soldiers
1618 – Chiparizzo, 10 hearths

Med 0

Bib The village is associated with the Roman-period city of Kainipolis, and there are three Paleochristian basilicas in the area. The toponym first appeared in the 1447 travelogue by Cyriac of Ancona as "Cyparisseae" (Ancona 2003:312-319). The toponym again appeared in a Venetian account from 1571 in the phrase "antiquissima citta chiamata da loro Chieparisso." Another account from 1644 detailed the failed attempt of 40 local residents to migrate from the village by sea (Komis 2005:356-358). Leake (1830:290) described it as "once a considerable village, but now reduced to one pyrgo, a chapel, and a house for the priest." For full discussion of his 19th-century visit, see Leake 1830:290-294. The Paleochristian basilica of Ay. Petros was excavated in the 1960s (see Drandakis 1965a, 1966b).

Desc The Roman town of Kyparissos is located around a small harbor near the southern end of the peninsula. There is an Ott II-period monastery here (Koimisis tis Theotokou) that probably dates to about 1700–1750 AD, and the church and surrounding plaza and walls have a unusually high number of ancient spolia and columns. There is another smaller chapel across the harbor to the south that also incorporates ancient spolia, including a possible Roman sarcophagus lid (which may have come from a possible sarcophagus that is now sitting atop an isolated stand of rock in the harbor, and which a local man told us is a *gourna*, or a pecked stone basin used to water animals), a column capital and a Latin inscription above the door, and a Roman inscription referencing the polis of Tainaron (now used as the altar table). It is possible that the ancient spolia came from a Roman-period temple here at Kyparissos, or from the settlement of Kainipolis a bit higher up on the promontory above Kyparissos to the north. The buildings now standing in Kyparissos are EM or Mod. There are a few situated around the harbor (which is still in active use), and many more situated along the main paved road. These along the modern road must have appeared more recently, but there may be earlier (pre-EM) phases under the structures around the harbor. Based on the records, the remains, and Komis' suggestion, it seems there was likely a break in settlement at the very end of the Ott I period until later in the Ott II period.

T081 **Layia – Λάγια** N 4038426, E 632548, 386 m
Byz, Ott I, Ven, Ott II
Permanent / Occupied / Partial Mapping / Wall widths > 1 m
6 August 2014

Lists 1829 – Lagia, 90 households
1813 – Laca, 380 men, 200 soldiers
1700 – Laia, 92 families, 360 people
1695 – villa Lagia, 168 combatants
1692 – Lagia, e Piondes (tax)
1618 – Laia di Chourchougliani, 100 hearths
1583 – Laya, with Pyondes (tax)

Med N/A

Bib The toponym may either come from the Greek word *laas* (stone) or the family name Lagios. There are *palaiomaniatika* settlements in the vicinity, and several Byz churches within the village itself (Komis 2005:374-375). The church of Ay. Zacharias dates to the last quarter of the 13th century (Drandakis 1986: 21; Saïtas 2009:375) and Ay. Stratigos to the mid-14th century (Drandakis 1986:21). For the church of Ay. Nikolaos, see US 25 (T409). The modern toponym appeared for the first time in a 1571 Venetian document as "casale detto Lagia" (Komis 2005:375).

Desc Situated in the southeastern part of the peninsula midway up the mountain slope. Above the town to the northwest is a cluster of at least 13 threshing floors. Several goat paths and footpaths head uphill from the town toward the pastures along the mountain spine. There is megalithic architecture in the town, and it seems to have been continuously occupied at least since Byz times. Because of its size and the amount of rebuilding in later periods, I did not record the whole town. I walked through only the southeastern-most section of the village, and I easily identified at least 4 megalithic structures, along with many Ott I/II, EM, and Mod structures. One of these is an Ott II war tower, which was partially rebuilt in the EM period, and there are many more towers in the village. At least 4 more ruined megalithic structures can be seen in the imagery. In the main cemetery on the south end of the town, there is a church that appeared to be Ott II in date.

T089 **Leontakis – Λεοντάκης** N 4039907, E 628332, 503 m
Byz, Ott I, Ven, Ott II
Permanent / Occupied / Partial Mapping / Wall widths > 1 m
11 July 2014

Lists 1813 – Liondachi, 30 men, 20 soldiers
1700 – Lindachi, 13 families, 40 people
1695 – villa Liondachi, 25 combatants
1692 – Sela, e Liondachi (see T293)

Med 9

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). The village also appeared in the 1798 poem by Nikitas Niphakis (Komis 2005:377).

Desc Located high on a ridge above Diporo and Ano Boularioi, accessed by a well-preserved *kalderimi* leading up the gorge from these lower settlements, or from footpaths from another ridge-top settlement of Mountanistika immediately south. I walked only the beginning of this *kalderimi*, but it is highly visible in the imagery and clearly paved most of the way up. Several buildings have megalithic foundations and Ott I architecture. The structures in the settlement use local marble in their construction. On the southwest side and on the slope below the modern buildings, additional older walls and some megalithic houses can be seen. The church appears to be EM in date, and the only inscribed date we recorded on the houses was 1844. There is a potentially Ott I or Ott II ruined tower on the north side of the village, with an EM tower immediately to its west. The two structures that can be seen from the villages below are not actually towers, but rather tall rectangular residential structures.

T091 Limeni – Λιμένι N 4060331, E 623104, 0 m
Ott II
Permanent / Occupied / Partial Mapping / Wall widths < 1 m
1 April 2014

Lists 1829 – Limeni, 12 households

Bib The village was originally the port of Areopoli and was also known as "Porto Zimova." Both were home to the Mavromichalis clan who migrated north from Alika during the Venetian period (Komis 2005:376-377). Permanent residences were established in the Ott II period, as corroborated by Leake's (1830:312) account that the town consisted of "five or six magazines and two pyrghi." The monastery of the Panayia "Evretia" has a 12th century marble sculpture incorporated into the belfry (Drandakis 2002:383).

Desc Located on the south side of Oitylo Bay, tucked into a small bay and out of sight from Kelepha Fortress. The oldest structure in the village is the ruined women's monastery of the Panayia "Evretia," which is located north of the main village. The residential structures associated with the Mavromichalis family date to the 18th century.

T093 Loukadika – Λουκάδικα N 4055179, E 631403, 314 m
Byz, Ott I, Ven, Ott II
Permanent / Occupied / Partial Mapping / Wall widths > 1 m
12 August 2014

Lists 1829 – Loukadika, 27 households
1813 – Ducadica, 70 men, 30 soldiers
1715 – Lukadika and Kısani, 25 *hâne*, 5 bachelors
1700 – Lucadica, 44 families, 171 people
1695 – villa Lucada, 89 combatants
1692 – Candili, e Lucadia (tax)
1618 – Castro di Cholochitia, 80 hearths
1583 – Lukadika ma Kısani (tax)

Med 24

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981); see also Saïtas 2001:42. The toponym may be a corrupted form of "Gouladika" (see notes at Goulas, T190). The village is on the site of the acropolis of ancient Teuthrone, located in the vicinity of modern Kotronas on Kolokythia Bay (Komis 2005:349). There is disagreement in the scholarly sources about this location being a medieval *kastro* (fortified refuge) (see Wagstaff 1977:207; Komis 2005:349). Komis distinguished Loukadika from the 1618 entry for "Castro di Cholochitia," though I argue the two are one and the same. References to the *kastro* first appeared in 1463 as "Cosshochia sive Colochita" and again in 1467 as "Cochichia over Colichitia" (see Komis 2005:349-352). In 1447, Cyriac of Ancona (2003:324-325) wrote in reference to this site, "on the acropolis of the same city, which they call Colochitea, I climbed the citadel built by later generations on a steep and rocky hill." The church of Ay. Asomati dates to the end of the 13th century (Drandakis 1986:21).

Desc Perched on top of a ridge that overlooks Kolokythia Bay. It is an excellent vantage point for viewing the valley below it, as well as the entire length of the eastern coast of the peninsula stretching to the south. Two settlements appear with it in the settlement lists: Kisani and Kondili (for the latter, see T352). There is some evidence of megalithic structures within the modern town. At least 24 additional ruined houses can be seen in the imagery along the eastern slope of the ridge. At the top of the hill is a ruined barrel vaulted chapel (Ay. Asomati), situated within a fortification wall. There is also a large cistern within the wall—an indication that this was probably a fortified refuge or *kastro*. In regards to Komis' association of the "Castro" of Kolokythia with modern Kotronas, it seems much more likely that it refers to this fortified area in Loukadika.

T100 **Nyphi, Mesa Chora – Νύφι, Μέσα Χώρα** N 4047383, E 631226, 139 m
Byz, Ott I, Ven, Ott II
Permanent / Occupied / Field Visit / Wall widths > 1 m
12 August 2014

Lists 1829 – Nymphi et Driali, 65 households
1813 – Niri, 150 men, 60 soldiers
1715 – Nifi, with the *mahalle* of Dryal, 34 *hâne*
1700 – Niffi, 14 families, 138 people
1692 – Driceli, Gnifi (tax)
1618 – Gnifi, 20 hearths
1583 – Nifi (tax)

Med 13

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). See also Komis 2005:368.

Desc The name "Nyphi" encompasses four smaller neighborhoods near a small river valley on the east coast of the peninsula. Mesa Chora (meaning "Inner Village") is one of the older clusters, and it is located in the valley at the foot of the mountain. Exo Chora (T424) is positioned along a high mountain ridge immediately south. Two additional EM–Mod clusters developed later, one along the river delta and beach (Chalikia, T425) and the other in the next valley to the south (Vigla). Mesa Chora is mostly Ott II-Mod, but there is at least one structure with a megalithic foundation and EM renovation. There is also a ruined Byz church on the north side of the cemetery, with an EM church built to the south of the cemetery. Nyphi is one of a chain of megalithic settlements extending south along the eastern coast, with Drymos (Driali) and Aryilia further north. Parallel to these three settlements and at a higher elevation, there are several smaller megalithic settlements, each of which is connected to a lower settlement via a *kalderimi*: Makrynaros, Paliochori, and US 5 (north to south).

T101 **Mezapos – Μέζαπος** N 4045086, E 624514, 27 m
Ott II
Permanent / Occupied / Field Visit / Wall widths < 1 m
7 April 2014

Lists 1829 – Mezapo, 3 households

Bib The toponym comes from *messos* (middle) and *apa* (water), meaning a place found between two rivers. It may be associated with the cities of Messi and Messa, mentioned by Homer and Pausanias, respectively (see also Leake 1830:286). In the post-medieval period, the toponym first appeared in a 1594 reference as "Mesapo," with no population information and only a description of the broader area producing acorns. It is likely the port was used in the 18th century by pirates. In the 19th century, it was associated with famous pirates including Theodorakis Katzos and the Sassarianoi. The settlement itself was founded by the early 19th century (Komis 2005:380-382).

Desc Located on a harbor in the southwestern part of the peninsula, partially shielded from the sea by the Tigani Peninsula. I did not see any foundations or other buildings that dated to earlier than the 19th century. The "ancient cemetery" built into the caves south of the town are rock-cut platforms within a cave, which could possibly date from ancient times or the early Christian period.

T104 Mina – Μίνα N 4045408, E 626774, 192 m
Byz, Ott I, Ven, Ott II
Permanent / Occupied / Partial Mapping / Wall widths > 1 m
5 August 2014

Lists 1829 – Mina, 80 households
1813 – Mina, 50 men, 40 soldiers
1715 – Mina (?), 15 *hâne*
1700 – Mina, 38 families, 123 people
1695 – villa Lamina, 53 combatants
1692 – Mina, Carini (tax)
1618 – Mina, 40 hearths
1583 – Mina (tax)
1514 – Mina, 22 *hâne*, 6 bachelors, 1 widow

Med 7

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981); see also Saïtas (2001:Note 42) and Komis (2005:382). Ay. Anargyroi dates to the second half of the 13th century (Drandakis 1986:22, 24). Another unidentified megalithic chapel dates to the 13th century (Drandakis 1986:22, 24). Ay. Ioannis is a ruined single-aisle church with marble sculptures dating to the 12th century (Drandakis 1986:23, 24; 2002:379)

Desc Located on the lower slopes of the western mountains, east of Mezapos. Megalithic architecture is interspersed throughout the town, and there are two megalithic churches on a hill above the village (likely Ay. Ioannis and the unnamed chapel referenced by Drandakis). Ay. Anargyroi is still in use today. The church at center of the village is a much larger EM construction.

T106 Mountanistika – Μουντανίστικα N 4039417, E 628741, 577 m
Byz
Permanent / Occupied / Field Visit / Wall widths < 1 m
11 July 2014

Lists 1829 – Mondanistika, 12 households

Med 0

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). The toponym is related to the surname Mundanos, which appeared in Maniate communities in Corsica in the second half of the 17th century. The surname "Mountaneas" was also found in the region around Zarnata (in the northern part of the peninsula) in the early 19th century (Komis 2005:383). The ruined church of Ay. Kyriaki was later used as a communal ossuary (Saïtas 2009:384).

Desc Located on the crest of a steep hill that is covered with unusually tall and narrow terraces. On the north side is a valley leading down to Ano and Kato Boularioi, and on the south side is a valley separating the village from Kotraphi. The town is comprised of EM and Mod structures (including a mill), and several paths can be seen in the imagery extending into the fields on all sides. A local resident said that the terraces around the villages were used in the early 20th century to grow mainly wheat and vegetables. There are a number of threshing floors north of the village along the ridge. In the imagery, an old path can be seen leading north from the town to Leontakis, but it is now heavily overgrown (a paved road now provides faster access). In the past, this would have been the only access route between the settlements. The lack of typical megalithic architecture is probably due to the surrounding geology, which is primarily schist. Because of the date of nearby Leontakis and the scholarly accounts, I will include the settlement in the Byz period.

T107 Neochori – Νεοχώρι N 4061580, E 632647, 134 m
Ott II
Permanent / Occupied / Field Visit / Wall widths < 1 m
11 August 2014

Lists 1829 – Neokhori, 50 households
1813 – Gochori, 60 men, 30 soldiers

Bib The toponym appeared in the 1798 poem by Nikitas Niphakis (Komis 2005:290).

Desc A primarily EM–Mod village in the fertile northeast part of the peninsula. There are three churches in the settlement, one of which is brand new (north of the town and associated with the cemetery), and two others that may be Ott II in date. The church in the center of the town has a Byz carved marble column on its west side. Komis associated this village with an entry in the 1618 Nevers Catalog for "Gnio-Chori." However, based on the order of the list, I think a more likely candidate for that settlement is Tserasia (see T238). I could find no evidence of an Ott I phase of settlement in this village.

T109 Nikandreio – Νικάνδρειο N 4052347, E 623960, 190 m
Ott I, Ven, Ott II
Permanent / Occupied / Partial Mapping / Wall widths > 1 m
7 July 2014

Lists 1829 – Nikandro, 4 households
1618 – Nichandria, 15 hearths

Med 1

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981); see also Komis 2005:384.

Desc Located on a small peninsula south of Pyrgos Dirou. At least four structures were built in the Ott II period, but the majority of the structures date to the EM period. A single church sits at the southeast corner of the village, and it has a megalithic foundation that is most evident on the western wall. Though locked, it is possible to see the iconography on the north wall and arched ceiling, all of which appears to be Ott II in date. Thus, the church may have been built in the Byz period, rebuilt later on (likely in the Ott II period), then renovated in the EM and Mod periods. A church of Ay. Yeoryios is marked on the Anavasi atlas just south of the town, but I did not visit and it is not visible in the imagery (it may be ruined and/or covered by trees). Komis' reference to a *palaiomaniatiko* settlement may refer to the one about 200 m north (Mantophoros, T212) or another east of it (Marmatsouka, T215) or it could simply refer to small bit of megalithic wall in the church, and a single megalithic structure to the east of the settlement. There is no other evidence of a settlement here from the Byz period, however its presence in the 1618 Nevers Catalog suggests a population had been established here by the Ott I period.

T111 Nomia – Νόμια N 4041910, E 624893, 117 m
Byz, Ott I, Ven, Ott II
Permanent / Occupied / Full Mapping / Wall widths > 1 m
9 May 2014

Lists 1829 – Nomia, 30 households
1813 – Nomica, 230 men, 150 soldiers
1715 – Nomi (?), 12 *hâne*, 5 bachelors
1700 – Nomia, 40 families, 163 people
1695 – vila Nomia, 59 combatants
1692 – Chita, Coloni, e Nomia (see T068)
1618 – Nomia di Nicliani, 30 hearths
1583 – Nomya (tax)

Med 15

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). The toponym first appeared in a 1571 Venetian record as "Casale detto Nomia" (Komis 2005:385). A Byz church of Panayia or Panayitsa contains both 12th and 13th century marble sculptures (Drandakis 2002:383), and it used to have two side cells which were torn down and around 1900 to make room for a larger outer church to be built around it, which itself was later torn down (Traquair 1908/09:193, Plate 11). The modern church of the Panayia has a 12th century templon screen architrave in the west door lintel (Drandakis 2002:383). The Trisagia has standing grave structures in the cemetery (Saïtas 2009:381).

Desc Located about 420 m west of Kita. There are a few megalithic structures in the settlement, along with several foundations of potentially Ott I structures. Overall, most of these older walls have been destroyed, seemingly to build newer ones or to construct two lime kilns in the area. The megalithic and ruined structures are primarily located in the area furthest west, while even more ruins and field walls are present in the center of town, though they are currently very overgrown. This layout is very similar to other settlements, where the central area is more open and may have been used for keeping animal or for gardens. There were also several ruined aviaries here. In terms of churches, there is an Ott II church on the west side of town, an EM church, and a larger half-completed church of the Panayia, with Byz spolia incorporated into the exterior, including one with an inscription. I did not locate the older Panayia or Panayitsa. I recorded two walled field paths leading out of the town: one to the north toward Gardenitsa, and another to the south (between the megalithic structures) toward Kechrianika.

T113 **Ochia – Οχιά** N 4038409, E 624138, 87 m
Byz, Ott I, Ott II
Permanent / Occupied / Partial Mapping / Wall widths > 1 m
6 May 2014

Lists 1829 – Okhia, 12 households
1813 – Ochia, 20 men, 12 soldiers
1618 – Ozia di Chorogon, 20 hearths
1514 – Osya (?), 14 *hâne*, 2 bachelors

Med 2

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). The church of the Panayia dates to circa the 10th century (Komis 2005:385; Megaw 1932-33:138). Ay. Nikolaos dates to the mid-12th century, and its corner tower was erected in 1861 (Traquair 1908/09:181, Plates 12, 13, 16; see also Megaw 1932-33:162; Saïtas 2009:375). It has carved marble elements (Drandakis 1986:22; 2002:379-380) and an 18th century monastery.

Desc Located in the southeastern plain. It extends along a north–south line, and the residences are relatively dispersed. The architecture seems to be predominantly EM and Mod in date, with the exception of a single megalithic structure at the southeast corner of the town. There is also a potentially Byz or Ott I double-apsed church. Aside from these remains, there are no other signs of a Byz settlement within the town, suggesting that they have been destroyed or incorporated within the later village. There are two abandoned EM towers, and most of the EM complexes are between 3 and 4 stories in height. East of the town is the 12th-century church of Ay. Nikolaos. Based on its absence from the Venetian-period records and the lack of architecture predating the EM period, I suspect the village was abandoned and re-occupied following the construction of the monastery, much like Keria to the north.

T114 **Oitylo – Οίτυλο** N 4063244, E 624041, 229 m
Byz, Ott I, Ven, Ott II
Permanent / Occupied / Partial Mapping / Wall widths > 1 m
29 April 2014

Lists 1829 – Vytilo, 120 households
1813 – Vitulo, 700 men, 300 soldiers
1715 – Vitiloz, 56 *hâne*, 29 bachelors
1700 – Vitullo, 129 families, 516 people
1695 – villa Vitulo, 224 combatants
1692 – Vittulo, Pogliana (tax)
1618 – Vitolo, 400 hearths
1583 – Vitiloz (tax)

Med N/A

Bib The town is associated with the ancient city of Oiytlon. For a brief account from 1447, see Cyriac of Ancona (2003:310-311). It seems that pirate activity began taking place in the 13th century, using the port below (modern Karavostasi) as the base of operations. In the 17th century, the powerful Stephanopouloi family controlled the export of acorns to Italy, and their rivals the Iatrianoi-Medikoi (or Medici) also lived in the village. The rivalry resulted in the immigration of the families to Corsica and Tuscany, respectively (Komis 2005:338-339). Venetian-period sources report that the city was walled and that a Turkish garrison was stationed there (Randolph 1689:10). The cross-in-dome church of the Sotiras, located below Oitylo and spanning an old *kalderimi*, dates to the 13th century (Drandakis 1986:22; 1995; Traquair 1908/09:202). Ay. Yeoryios dates to the first half of the 14th century, with an inscription of 1331/32 on a relieving arch above the south door, and an inscription of 1334/35 on a lintel in the templon screen (Drandakis 1986:23, 2002:391).

Desc The large town sits on a high plateau overlooking Oitylo Bay. It is a predominantly EM–Mod residential community. Many of the buildings, including two basilica-type churches in the southwest neighborhood, have almost megalithic rectangular sandstone blocks in the lower courses, but otherwise appear to be EM structures. There are very old field walls throughout the outskirts of the town, which may be associated with the ancient settlement here. They are built of a material that is very worn, lending them a sense of being ancient, though the wear could be attributed to a different stone material than is available elsewhere in southern Mani. The "palace"—what appears to be a large Ott II–EM residential complex—has three ancient marble sculptures in it walls, one of which is a huge column capital in an exterior corner of the complex. There are also several *kalderimia* leading out of the town, all of which take advantage of the bedrock and have rough cobbles elsewhere, with edge paving stones, steps, and Z-curves. Some sections pass through very densely vegetated areas (the entire ecosystem below the town is more densely vegetated than elsewhere in Mani). They also pass by several springs and streambeds. The *kalderimia* are bordered by very ancient-looking, low, dry stone walls, some of which have large or even megalithic lower courses. I am inclined to date the retaining walls (which support some of the curves in the *kalderimia*) to an ancient period of the town's history. Although Drandakis notes Byz spolia in Ay. Yeoryios and dates it to the 14th century (and another church of Sotiras to the 13th century), there are no associated domestic structures still standing that can be dated to this period. However, there is no doubt that the town was occupied continuously from that point in time.

T115 **Omales (Krelianika) – Ομαλές (Κρελιάνικα)** N 4057692, E 622839, 176 m
Ott II
Permanent / Occupied / Partial Mapping / Wall widths < 1 m
1 July 2016

Lists 1829 – Krilianika, 20 households
1813 – Acarcoglica, 40 men, 20 soldiers

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). The toponym comes from the family name Krialis. The settlement was mentioned without an associated date in the Papadakis notebook, as well as in the 1798 poem by Nikitas Niphakis. The name was changed to Omales in 1955 (Komis 2005:374). The church of Ay. Polykarpos is Paleochristian and is likely associated with a *palaiomaniatiko* settlement, possibly that referred to as "Palerimos." The associated cemetery was excavated and published (Drandakis et al. 1981:221-222; Saïtas 2009 379-380).

Desc Located on the slope north of Diros Bay, on one of the major *kalderimia* between Areopoli and Pyrgos Dirou. In the imagery, a small cluster of ruined buildings (with some modern structures) is visible immediately northeast of the modern village—a possible candidate for the 17th century village of "Mavroiagni" (see US 59, T472). There are also massive rubble piles west of the modern town. Otherwise, there is as yet little evidence that the *palaiomaniatiko* settlement associated with Ay. Polykarpos was located within the village itself. Ay. Polykarpos itself is vandalized and in a ruined state, with a collapsed roof and names scratched into the interior and exterior plaster.

T117 **Pachianika – Παχιάνικα** N 4043764, E 629853, 349 m
Ott I, Ott II
Permanent / Occupied / Field Visit / Wall widths > 1 m
31 July 2014

Lists 1829 – Pakhianika, 36 households
1813 – Palmichira, 50 men, 30 soldiers

Med 2

Bib A *palaiomaniatiko* settlement is located east of the village. The toponym first appeared without an associated date in the Papadakis notebook (Komis 2005:386).

Desc Located high up on the eastern slope of a mountain overlooking Kokkala. There is evidence of at least two large-stone structures (Ott I in date) and two potentially Ott II structures. A ruined church is located nearby in Kato Pachianika (T280) and may be associated with the early structures. We also noted two slab-topped cisterns along the modern road. There are several threshing floors downhill from the town below the road, and the slopes around the village are all terraced. A cemetery is located south of the village at about the same elevation, and there are two EM churches from the mid-1800s. The settlement further north and above Pachianika (US 3, T283), likely the one referenced by Komis, appears to have older architecture than here (i.e. from the Byz period). Overall, based on the standing architecture, Pachianika seems to have had a small Ott I occupation, but blossomed only in the 1800s. It is worth noting that I recorded significantly fewer EM houses in the town than are represented in the records (only about 4 houses, compared to the 36 households attested to in the Expédition Catalog).

T118 **Pangia – Πάγκια** N 4041817, E 622965, 180 m
Byz, Ott I, Ven, Ott II
Permanent / Occupied / Full Mapping / Wall widths > 1 m
8 May 2014, 5 June 2014

Lists 1829 – Pangia, 17 households
1695 – villa Jamichi, 46 combatants
1692 – Stavri, Stavrichie, e Pangie (see T155)
1618 – Pangia, 25 hearths
1583 – İstavriko, with Pangyez and İstavri (see T427)
1514 – Pangia (?), 13 *hâne*

Med 12

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). The toponym comes from the Greek *apanemos* (leeward, sheltered). The first reference to the settlement was an indirect phrase in the dedication of the church of Archangel Michael in Polemitas, dated to 1278: "πατζάτη" (Komis 2005:387; Drandakis 1982:51). The toponym also appeared in a 1554 map by Agnese as "Pegia." There are two *palaiomaniatika* settlements: one to the east, and another to the south (Komis 2005:387).

Desc Located in the broad southwestern plain. There seems to have been a fairly continuous occupation from the medieval to Mod periods. The modern village itself is made up of two main clusters of tall EM towers and towerhouses. Near the center is a Byz church of Asomatos, with white marble blocks built into the construction and one with a potentially ancient inscription. The main church in town appears to date to the 19th century, except for the north wall, which looks very much like a Byz church, with its rectangular semi-coursed large stones. Around the town to the southeast and north are megalithic ruins. In the southeastern section we recorded 10 residential structures and two Byz churches, along with 20 cisterns (the majority of which were slab-topped). As with some of the other medieval abandoned settlements, the two churches were on the eastern end of the residential cluster. Much of the area was heavily forested with prickly trees, while other fields were clear of vegetation or had olives sparsely planted in them. In addition to several typical megalithic structures, there were also some massive rubble piles. The cisterns here generally seemed to be semi-subterranean, at times built up to about 1 meter above the ground. North of the modern town, there were only two megalithic structures. In this area, there were also massive rubble piles, most of which were built up as very thick walls. Within these walls were about four or five large circular areas, intentionally built as if to act as an enclosure of some kind. The walls possibly could have served basic defensive purposes, though their irregularity and lack of tower construction suggests that they were erected quickly. The circular areas, which now seem to be ideal growing locations for trees, may have once served as places to hide and pop up to shoot attackers. Meanwhile, animals could be kept behind the walls, which seem to form a type of U-shaped enclosure (if not a full enclosure). In this area there is also a fragment of a *kalderimi*, which is now covered on either end by the modern road. North of this section, we found another small cluster of activity, including several slab-topped cisterns in the same field, several more confusing rubble piles, a possible building foundation, and a very large ruined church that was expanded to the west at some point in time. In addition to the Byz structures, I also recorded Ott I and Ott II structures, the earlier of which were all in ruins or even partially demolished. The EM period is best represented among the standing architecture. The dates noted on the towers include 1848, 1880, and 1878. The town's absence from the later 17th and 18th century records may be explained by the poor coverage of the later lists—it is evident that the village was continuously occupied throughout this period. Note that the 1695 reference to "Jamichi" is my own correlation. Pangia was the only settlement that was not otherwise referenced in this list, although it appeared in the 1583 *defter*, the 1618 list, and the 1692 list. Komis, on the other hand, associated this entry with Gardenitsa, which appeared only in the 1618 list as "Gardinichia" (and with only 20 hearths) and did not appear again until the EM period.

T120 Palaiochora – Παλαιόχορα N 4049277, E 626284, 228 m
Byz
Permanent / Occupied / Partial Mapping / Wall widths > 1 m
4 August 2014

Lists 1829 – Palaeo-Khora, 12 households

Med 15

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). Komis associated this settlement with an entry for "Fichouriani" in the 1618 Nevers Catalog, suggesting that the settlement's name was later changed to Palaiochora (2005:365-386). The modern toponym first appeared in the 1798 poem by Nikitas Niphakis (Komis 2005:386-387). The church of Ay. Petros dates to the later 10th century, with iconography dated to the 10th century, the later 10th century, and the 13th century (Drandakis 1986:22-23). The church was built on a Late Christian building, possibly a basilica, (Drandakis 1975), and has standing grave structures in the cemetery (Saïtas 2009:381).

Desc Located on a gentle slope below Skyphianika. Several of the megalithic structures from that cluster seem to stretch down a slight ridge toward Palaiochora. It is predominantly an EM–Mod village, but with Byz churches and megalithic residential structures. I recorded three in person: one structure is associated with Ay. Petros and the cemetery southwest of town, another is mostly dismantled and associated with an EM tower complex, and a third is the foundation for an EM–Mod residence. Remnants of a *kalderimi* lead up from below the cemetery toward the village. The cemetery itself is very interesting, as the Byz church is attached to a megalithic structure and there are a number of older ossuaries interspersed with more modern ones. Based on the order of the 1618 Nevers Catalog, Komis suggested that "Fichouriani" referred to this location. However, there are many more abandoned and megalithic structures above modern Palaiochora in Skyphianika. This, along with the road pattern extending out from the higher settlement, suggests that the latter was the actual location of the 17th century settlement. That said, the remains at modern Palaiochora should not be discounted—it was clearly the location of a small Byz settlement. In the imagery, at least 15 rectangular structures can be seen extending along the contour south toward Akia. The structures are particularly overgrown and difficult to measure, but I recorded at least one wall over 1 m in width, consistent with typical Byz architecture. This and the spacing (and the lack of mention in Ott I sources) suggests it was abandoned after the Byz period and reinhabited only in the early 1800s.

T122 Parasyros – Παρασυρός N 4058950, E 632465, 163 m
Ott II
Permanent / Occupied / Field Visit / Wall widths < 1 m
21 April 2014

Lists 1829 – Parasyros, 20 households
1813 – Parassiros, 50 men, 30 soldiers

Bib The toponym appeared in in the Papadakis notebook with a date of 1760 and again in the 1798 poem by Nikitas Niphakis (Komis 2005:318-319).

Desc Situated in the fertile northeast part of the peninsula. There is a large *plateia* at the center of the village with a huge plane tree. All the buildings appears to be EM or Mod in date.

T130 Polemitas – Πολεμίτας N 4044950, E 627592, 284 m
Byz
Permanent / Occupied / Partial Mapping / Wall widths < 1 m
30 April 2014

Lists 1829 – Polemita, 6 households

Med 2

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). The toponym comes from the Doric dialect (Komis 2005:390). The name first appeared in the dedication of the church of the Archangel Michael (within this very settlement): "χω(ρίου) του Πολεμίτα" (Drandakis 1982:50). The dedication in this church references several nearby settlements and states that several inhabitants of the village contributed to its construction in the year 1278. Three of the donors are labeled "Kouloumiatis" (as in, from Kouloumi; see Drandakis 1982, 1986:23-24; Kalopissi-Verti 1992:71-72; Kalamara and Roumeliotis 2004:38). The neighboring church of Ay. Nikolaos dates to the 14th century, with iconography dated to the second half of the 14th century (Drandakis 1986:22, 24).

Desc Located in the foothills on the western side of the peninsula, with entirely EM–Mod residential architecture. The two Byz churches are located on the north side of the village; both are very small and in poor condition. Ay. Nikolaos is a megalithic structure, but the church of the Archangel Michael was built with smaller stones. It is possible that these were isolated churches (*exoklisia*) that later developed into a settlement. Above the village to the east, on the north side of the gully, there is a ruined large-stone structure. Although it is now treated as a "church" (i.e. people have recently left religious paraphernalia in the structure), it appears to have been repurposed rather than originally intended as a church. In particular, the apse appears to be an addition. On the south side of the gully is an EM animal complex and above it a *kalderimi* that leads uphill. This *kalderimi* seems to come from Mina and continue up to a valley high in the mountains, possibly to a seasonal settlement there. I would also venture to guess that a path continued south from this point to the settlement of Karynia (there are Ott II structures there, but also a few megalithic structures), but I could find no evidence of such a path.

Overall, the modern settlement as we know it appears to have been re-founded in the EM period. The village was likely abandoned after the Byz period.

T132 Porachia – Πoράχια N 4034065, E 631294, 276 m
Byz, Ott I, Ven, Ott II
Permanent / Abandoned / Full Mapping / Wall widths < 1 m
5 August 2013

Lists 1695 – Poralia, 8 combatants
1618 – Porascia di Ragusei, 25 hearths
1514 – Porahya, 21 *hâne*

Med 3

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). The toponym is geographical; it may come from *oporikia* (related to fruit trees), or from *aporrachia* (from the ridge). It first appeared in the 1447 travelogue by Cyriac of Ancona as "Porasia villa" (Ancona 2003:321; see also Komis 2005:390-391). The reference in the 1618 Nevers Catalog to "Ragusei" is associated with the powerful Aravouzaion family that was based in Vatheia. This name may reflect the family's origins either as immigrants from Ragusa or as Arab pirates. Komis suggests the former is more plausible, based on the trade relations between Ragusa and the Peloponnese in the 14th–15th centuries. The family name disappeared in the early 19th century (Komis 2005:390-391).

Desc Very isolated from any nearby villages, the settlement is located high on a mountainside in the south of the peninsula amidst very steep and rocky terrain. The toponym is marked as an abandoned village on the Anavasi atlas. Despite a lack of preserved medieval domestic architecture, there can be no doubt that the medieval village was located here. The local stone is schist, not limestone, and so the buildings would have been very different than further north in the plains of Inner Mani. It is likely that the later residents re-used the stone to build their houses. There is a small church here may date to the Byz period. There does not appear to be a preserved path from the access road leading uphill, although people have visited in the last few years to tend to the church. In addition to several residences with Ott II phases, there were additional ruined EM structures. We recorded three threshing floors, but no cisterns. There were some olive trees between the two abandoned houses to the north, but almost none on the stepped terraces below, suggesting that this was likely a subsistence-based community.

T133 Porto Kayio – Πόρτο Κάγιο N 4032431, E 633182, 4 m
Ott I, Ven, Ott II
Permanent / Occupied / Field Visit / Wall widths < 1 m
6 August 2014

Lists 1829 – Porto-Quaglio, 16 households
1813 – Bertucana, 20 men, 12 soldiers

Med 0

Bib Komis linked the 1813 reference to Bertucana to this settlement based on a lack of reasonable alternatives in the vicinity, suggesting it is a corruption of the Greek pronunciation. The toponym derives from the Italian for "Port of Quails," referring to the migration of quails to this part of Mani every autumn (see Ancona 2003:318-321). The toponym first appeared in a Latin source from 1278 ("in Portu Qualiarum"), which refers to the area being used as a refuge for pirates. It appeared in later maps in similar forms. By the 16th century, the area was associated with piracy, quail hunting, and trade with passing sailors. The pirate Lambros Katsonis was associated with the port in the late 18th century. The permanent settlement was not established until the early 19th century. Prior to this point, people likely lived in temporary structures and caves—the latter attested to in several accounts from the 16th through 18th centuries (Komis 2005:343-345).

Desc An EM–Mod harbor village nestled at the base of a gully. It is sheltered on the south and west by hills, and sits directly across from the fortress/settlement of Achillio. Along the path from the church of Ay. Triada to a cemetery above the village, I saw several pieces of ancient tile. This is not surprising, considering the association of this bay with the ancient site of Psamathous (as labeled on the Anavasi atlas). From above the modern village, it does not appear to have any ruined structures. A local told me that it now has a several tavernas that serve visitors arriving by sailboat, and today it is clearly a bustling little summer village. The Grigorakis family tower is located above the village and commands an exceptional view of the entire Tainaron peninsula and the western coastline of Mani to the north, along with some of the southeastern villages (Achillio, Kainouryia Chora, and Korogonianika). I did not visit the settlement itself since it is well represented in the later records. Based on the extensive written sources referenced by Komis, I included this in the analyses for the Ott I and Ven periods, despite the lack of architectural remains and its exclusion from the official lists. It was clearly an important center of pirate activity from the 16th century on.

T137 **Pyrgos Dirou (Pyrgos) – Πύργος Διρού (Πύργος)** N 4054217, E 623570, 195 m
Byz, Ott I, Ven, Ott II
Permanent / Occupied / Full Mapping / Wall widths > 1 m
31 March 2014, 1 April 2014

Lists 1829 – Pyrgos, 200 households
1813 – Pirgi, 620 men, 300 soldiers
1715 – Bırğos, 46 *hâne*, 20 bachelors
1700 – Pirgo, 87 families, 352 people
1695 – villa Pirgo, 125 combatants
1692 – Pirgo (tax)

1618 – Pirgos (and Fourgniates), 90 hearths (combined total)
1583 – Bırğos (tax)
1514 – Pirgos, 18 *hâne*, 4 bachelors, 1 widow

Med 18

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). The toponym comes from the Slavic *vir* (puddle, swamp, or backwater). The earliest historical reference to the name was "Iro," recorded in a 1366 settlement list (see Longnon and Topping 1969:253-254). A 1594 document described the region as acorn-producing (Komis 2005:389). The southern neighborhood is known as Fourniata (see Komis 2005:366). Ay. Ioannis was built in the first half of the 12th century (Megaw 1932-33:162; Drandakis 1986:23, 2002:382; Etzeoglou 1977; see Figure 141, Appendix C). The square around the church used to be a cemetery, which was in use at least through the 16th century (Saïtas 2009:382-383, Figures 40.24, 40. 26, 40.31). Ay. Sideros is dated to 1423 (Drandakis 1986:23; see Figure 142, Appendix C). Ay. Paraskevi near the Diros Caves has marble carvings dating to the first half of the 13th century (Drandakis 2002:390).

Desc See case study in Chapter 6. The local name for the northern neighborhood is Leukias, while its southern neighborhood is Fourniata. The name "Pyrgos Dirou" is used by locals to refer to the broader area around the core settlement, including the nearby settlements of Charia, Kalou, Glezou, Triantaphyllia, and so on. The town has evidence of continual occupation from the Byz period through modern times. The northern neighborhood, situated on a slight hill, contains a number of megalithic buildings and old field walls that now border the village. Altogether I recorded eight churches, three Byz and the rest Ott II or EM in date. A resident told me that most of the roads in town used to be *kalderimia*. Those that have not been paved have smaller cobbles and cruder construction than those that lead out of the town to connect to other settlements.

T138 Pyrrichos (Kavalos) – Πύρριχος (Κάβαλος) N 40576912, E 628123, 424 m
Byz, Ott I, Ven, Ott II
Permanent / Occupied / Full Mapping / Wall widths > 1 m
2 August 2013, 3 April 2014

Lists 1829 – Kavalos, 50 households
1813 – Cavalo, 130 men, 100 soldiers
1715 – Kavaloz, with the *mahalle* of Anemohori, 33 *hâne*, 12 bachelors
1700 – Cavallo, 54 families, 246 people
1695 – villa Cavalo, 124 combatants
1692 – Cavalo (tax)
1618 – Cavallo nel Purcho, 10 hearths
1583 – Kavaloz, with Anemohori (tax)

Med 68

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). The name of the village was changed in 1929 (see Komis 2005:352). For a brief account from the early 19th century, see Leake 1830:275.

Desc Located in the mountain pass that connects Areopoli on the west coast with Kotronas on the east. There is a single very small area of hillside terracing northeast of the village. At the center of the village, there is a small open area that is flat, well-watered, and broadly terraced. At present, these fields are badly overgrown and the olives do not appear to have been tended in a very long time. The medieval structures are concentrated on a small hill southeast of the modern village, extending east along the contour of a south-facing mountain, and additional structures are found within the modern village. For those perched on the ridge overlooking the pass, the excellent view would have provided some defensive advantage. There is also a megalithic foundation on the highest point of the hill, and it has been remodeled recently: a narrow field wall of smaller rocks has been built within the foundation limits, creating a kind of wind shelter or hiding point for peering down at the paths below. Most of the ceramic material at the site is medieval tile, with some EM glazed ware. There are four medieval churches in the village. One is above the settlement to the north, at about the same elevation as the possible watch hut. There are about 15–20 ossuaries around the church. The chapels of Ay. Yeoryios and another unidentified one to its southeast also appear to be Byz in form, with iconography possible from the Ott I or Ott II period. The megalithic foundation of a fourth church is located just south of the modern road across from the main village. A number of Ott II structures, many of which are built on megalithic foundations, are located in the modern town below. Today the town is mostly comprised of EM or Mod structures, and there are two churches dating to the early 20th century.

T139 **Riganochora – Ριγανόχορα** N 4054878, E 633516, 222 m
Byz, Ott I, Ven, Ott II
Permanent / Occupied / Partial Mapping / Wall widths > 1 m
17 June 2014

Lists 1829 – Rhigano-Khora, 20 households
1813 – Riganochoro, 40 men, 20 soldiers
1715 – Afunga, with the *mahalle* of Gonya and Riğanihori (see T073)
*1618 – Haitofoglia di Cholochitia (see T412)

Med 12

Bib The Grigorakis family lived here for a time after moving from Alika to Passava (Komis 2005:392).

Desc Located along a ridge above Kotronas and Kolokythia Bay. Within the town there is a cluster of ruined houses (some with megalithic foundations) and slab-topped cisterns. There are at least two separate walled and cobbled pathways running through the village. One seems to lead to the EM church of Ay. Dimitrios on the west side of the village. Another well-built *kalderimi* leads north and uphill from the town toward the mountains, passing by an isolated EM farmstead situated far above the town. This *kalderimi* passes by two ruined settlements (US 28, T412 and US 29, T413) but does not lead directly to either one. Just west of the village along the modern road there is another possibly Ottoman-period church of Ay. Kyriaki. Based on the local toponym of "Aetopholia" in this area, and the presence of Ott I remains here and in the two ruined settlements immediately above it, I suggest that the entry in the 1618 Nevers Catalog may refer to this general area.

T145 Skala – Σκάλα N 4059966, E 627147, 398 m
Ott I, Ven, Ott II
Permanent / Occupied / Field Visit / Wall widths < 1 m
11 August 2014

Lists 1829 – Skala, 17 households
1715 – Vaha, Iskala, and Kerasia (see T163)
1700 – Scalla, 25 families, 107 people
1695 – villa Sulla, 51 combatants
1692 – Vaca, Scala (see T163)
1618 – Scala, 30 hearths
1583 – Vaha ma İskala (see T163)

Med 6

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981); see also Komis 2005:328.

Desc Situated in the pass between Gytheio and Areopoli, immediately west of the larger town of Vachos. Some large-stoned ruined structures can be seen in the village, as well as two older churches. The church of the Koimisi is located next to the cemetery and contains a dedicatory panel dated to 1640. The interior of another smaller church of Ay. Yeoryios is entirely white-washed. Immediately above the village on a hill is US 6 (T378). Based on the pathways and the grade of the hill surrounding it, this settlement was probably only accessed through Skala and therefore may have served as a refuge for the village.

T146 Skaltsotianika – Σκαλτσοτιάνικα N 4055246, E 632881, 132 m
Byz, Ott I, Ott II
Permanent / Occupied / Field Visit / Wall widths < 1 m
16 June 2014

Lists 1829 – Skaltsonianika, 15 households
1813 – Scalgudianica, 30 men, 20 soldiers
1618 – Scalciotiagni, 30 hearths

Med 9

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). The toponym may come from the family name Skalkos, which was associated with a Maniate colony in Zakynthos in the 17th century as well as with Kita and Pyrrichos (Kavalos) in records from the year 1831 (Komis 2005:392-393). The church of Ay. Nikolaos, located nearby in a region called Kakomachi, dates to the end of the 13th century (Drandakis 1986:21).

Desc Situated on a hill west of Riganochora overlooking Kolokythia Bay. The architecture is mostly EM–Mod in date, although I did record Ott II architecture during my brief field visit. In the imagery, a cluster of ruined structures can be seen at the southeastern part of the town—the area is now heavily vegetated and I did not investigate in person. This architecture, plus the presence of the Byz church in the vicinity, suggests that there was a Byz village here. The absence of the village from Venetian records and the 1715 defter suggests the village was temporarily abandoned at this time, perhaps at the same time that the two settlements above Riganochora (US28, T412 and US29, T413) were abandoned. The large EM church at the eastern edge of the village is known locally as Panayia tis Aphoungias (Παναγία της Αφούγκιας), a clear reference to the older toponym "Affunga" (see discussion at Kotronas, T073).

T149 Skoutari – Σκουτάρι N 4059340, E 633852, 70 m
Byz, Ott II
Permanent / Occupied / Partial Mapping / Wall widths < 1 m
21 April 2014

Lists 1829 – Skoutari, 125 households
1813 – Scutari, 600 men, 300 soldiers

Med 0

Bib The church of Ay. Varvara dates to the 12th century (Drandakis 1986:20), suggesting that there was a Byz settlement in the vicinity. The modern village was founded in the 18th century, likely in connection with the occupation of the area by the Grigorakis family. Already by 1740 it was mentioned by an Italian traveler as an important harbor and refuge for corsairs. Skoutari Bay below the village continued to be used as a pirate refuge into the early 19th century, until the pirate ships were burned by the English fleet in 1832 (Komis 2005:331-332). For a brief account from the early 19th century, see Leake 1830:268-272.

Desc Located along a ridge above Skoutari Bay. The geology here is primarily schist, which may explain the lack of preserved domestic architecture for the Byz phase. However, the lack of any Ott I churches, structures, or historical accounts suggests that the area was abandoned during this time, as suggested by Komis. Most of the architecture is EM or Mod. Two towers remain standing on top of the hill, one of which borders one side of the village *plateia* and is dated to 1770—it seems that many more towers were once present, based on Leake's account from the early 1800s. There are two churches on top of the hill with 18th-century icons (similar in style to those of Moni Dekoulou, T388), as well as a 19th-century church.

T152 **Sotiras (Kouskouni) – Σωτήρας (Κουσκούνι)** N 4059223, E 624380, 379 m
Ott I, Ven, Ott II
Permanent / Occupied / Full Mapping / Wall widths < 1 m
6 August 2013, 19 April 2014

Lists 1829 – Kouskouni, 40 households
1813 – Cuscoji, 60 men, 30 soldiers
1715 – Çimova, with the *mahalle* of Kuskuni (see T020)
1700 – Cimova alta, 48 families, 172 people
1618 – Chouschougni, 40 hearths
1583 – Çimova, with Kuskuni (see T020)

Med 11

Bib See Komis 2005:362. The church of the Metamorphosis tou Sotira was built in 1717 (see Traquair 1908/09:206-207, Figure 9; Saïtas 2009:Figure 40.1).

Desc Located above Areopoli on a slope to the east. At least one *kalderimi* ran between the two villages, and another one may have led north to the monastery of Panayias Tsipiotissas. There are several large-stone Ott I structures on the west side of the village, which the main *kalderimi* circumvents. Several additional structures, including towers, are built upon much older and larger foundations. Otherwise, there are many newer structures dating to the Ott II and EM periods. There are three churches altogether: two older, dilapidated churches, and the church of the Metamorphosis tou Sotiras located in the center of the village in the main *plateia*.

T154 **Spira – Σπίρα** N 4041351, E 632911, 126 m
Ott II
Permanent / Occupied / Full Mapping / Wall widths < 1 m
25 April 2014

Lists 1829 – Spira, 10 households

Bib The toponym may derive from the Greek word *louria*, which refers to the spiral shape of the fields in this region, or from *spires*, which is a local term for the furrows dug during the planting season (Komis 2005:394).

Desc See case study in Chapter 6. Located on a small hill below Dimaristika on the east coast, with additional buildings in a saddle west of the hill. The settlement has been inhabited continuously since at least the Ott II period, although the church was not built until the 19th century. Its location makes it highly visible to people traveling along the coast, but it also provides some defensive advantage. The hilltop neighborhood is comprised of about six residential complexes, three of which—including a tower—have Ott II components. There is also a ruined EM mill. East of the town is the large EM church and a ruined windmill. The lower section of town has at least three Ott II structures.

T155 Stavri – Σταυρί N 4042673, E 622919, 190 m
Ott I, Ven, Ott II
Permanent / Occupied / Partial Mapping / Wall widths < 1 m
9 May 2014

Lists 1829 – Stavri, 8 households
1813 – Stavri, 50 men, 30 soldiers
1700 – Stabri, 14 families, 66 people
1695 – villa Stavri, 22 combatants
1692 – Stavri, Stavrichie, e Pangie (tax)
1583 – İstavriko, with Pangyez and İstavri (see T427)

Med 0

Bib Komis suggested that the two toponyms “Stavrikios” and “Stavri” referred to different sections of a single settlement, with the latter referring to a newer section (see Komis 2005:394-395). The church of Ay. Vasilios contains a cornice that may have been carved by Nikitas (Drandakis 2002:367).

Desc A village with several large EM towers and towerhouse complexes located on the flat southwestern plain. The small neighborhood of Charampos is located just north of Stavri. Within the main village, only a few buildings can be dated to the Ott II period, including a tower and an abandoned building in the main *plateia*, as well as a church. Overall, it was difficult to correlate the surviving architectural record with the historical records, especially the very high figure from 1813. The lack of Ott II material might suggest that the 1813 list is an overestimate, though many of the large EM complexes probably incorporate earlier buildings. There are two EM churches, both with Byz spolia in the exteriors (one of which is likely Ay. Vasilios). I found no traces of the earlier Ott I phase, despite the settlement’s representation in the early records. As for the Ott I village of Stavrikio (T427), the co-appearance of both names in the records suggests they were contemporaneous and separate settlements, contrary to Komis’ suggestion. However, it is evident that Stavri survived to the present day, whereas the other settlement was likely abandoned after the Ven period.

T161 **Tsikalia – Τσικαλιά** N 4037466, E 629865, 321 m
Byz, Ott I, Ven, Ott II
Permanent / Occupied / Partial Mapping / Wall widths > 1 m
6 August 2014

Lists 1829 – Tsikalia, 30 households
1813 – Zucaglia, 108 men, 50 soldiers
1715 – Çukalâ, 12 *hâne*
1700 – Zucaglia, 30 families, 112 people
1695 – villa Lucalia, 95 combatants
1692 – Alica, e Zucaglia (see T014)
1618 – Zuchaglia, 30 hearths
1583 – Çukalâ (tax)
1514 – Tsukalya, 19 *hâne*

Med 1

Bib The settlement is located in an area with a long human presence, as indicated by standing stones, Paleochristian churches, and *palaiomaniatika* settlements (Komis 2005:399). The double-apsed church of Ay. Konstantinos is dated to the 11th century and is now used as a communal ossuary (Drandakis 1986:23-24; Saïtas 2009: 375, 384, Figure 40.6). Another church of Ay. Asomatos is dated to the Byz period (Drandakis 1986:23; Saïtas 2005:Note 787).

Desc Aligned along the spine of a ridge high above Kyparissos, the town has a view of Kainouryia Chora and part of the Tainaron peninsula to the south, Kotraphi and the whole ridge to the north (including Mountanistika beyond it), and Alika below it to the west. The now-abandoned medieval part of Alika is obscured by a mountain. There is a slate stairway on the south side of town that leads up to the center of the village, but it has been redone and traces of an earlier stair are obscured. Overall, this would have been an extremely defensible location, with excellent views of the surrounding landscape. There is good evidence of an ancient presence nearby in the form of spolia. Many of the EM–Mod buildings have ancient marble pieces, including the church at the center of the village along the main road. These pieces were probably brought up from ancient Kainipolis below. Although Tsikalia is represented in all the records, I found only one potential medieval building, perhaps because most of the structures are built with slate and schist. There is some megalithic architecture in Kotraphi nearby, and there is a limestone quarry just to the south of Tsikalia, but perhaps for some reason the Byz and Ott I buildings here were not built with limestone. The ruined church of Ay. Konstantinos, also built with slate, is located in the cemetery on the lowest part of the ridge. The preservation of the icons is very poor, with only a fragment of a figure remaining in the apse. There is another potential Byz church above in the middle of the town that has been completely whitewashed and renovated. The settlement appears to have been occupied continuously since the Byz period, although the traces of its earlier phases are limited.

T162 Tsopakas – Τσόπακας N 4049914, E 625053, 170 m
Ott II
Permanent / Occupied / Partial Mapping / Wall widths < 1 m
4 August 2014

Lists 1829 – Tsopaka, 8 households

Bib The toponym comes from the surname Tsopeis, a family that originated in Kita. Near the village is a 14th-century church of the Trisagia (Komis 2005:395-396).

Desc The EM–Mod village is located next to a large natural chasm with a built structure inside. I recorded one late Ott II tower dated to 1804. Another EM–Mod structure has an associated large-stone structure, but much of it is ruined and/or incorporated into the newer complex. The church on the main *plateia* has been recently remodeled, with a dedication on the bell tower of 1965. However, the thickness of the walls suggests it may have an earlier phase. I also recorded two sections of *kalderimia*, one of which predates an EM structure built on top of it, and another that curves around an Ott II tower.

T163 Vachos – Βαχός N 4060376, E 627790, 293 m
Ott I, Ven, Ott II
Permanent / Occupied / Partial Mapping / Wall widths < 1 m
11 August 2014

Lists 1829 – Vakho, 100 households
1813 – Vacho, 250 men, 130 soldiers
1715 – Vaha, Iskala, and Kerasia, 69 *hâne*, 23 bachelors
1695 – villa Vacha, 28 combatants
1692 – Vaca, Scala (tax)
1618 – Vacha, 35 hearths
1583 – Vaha ma İskala (tax)

Med N/A

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). Leake (1830:281) described the village as consisting of “about thirty miserable huts.” See also Komis 2005:334-335.

Desc Located on the southern side of a wide mountain pass connecting Areopoli and Gytheio. I did not record the town in detail because of its representation in the records and because of its extensive modern occupation. I did not see much that appeared to predate the Ott II period, suggesting that the earlier settlement has been obscured by later building phases or by the dense vegetation surrounding the settlement. Near the settlement to the southwest is the village of Skala (T145), another settlement that appears to have been founded in the Ott I period. Several other villages in the vicinity were occupied at this time, including a "Panagia di Vacha" (T448), the refuge above Skala (T378), and Tserasia (T238).

T164 Vamvaka – Βάμβακα N 4048370, E 626308, 239 m
Ven, Ott II
Permanent / Occupied / Partial Mapping / Wall widths < 1 m
4 August 2014

Lists 1829 – Vambaka, 20 households
1813 – Bambaca, 130 men, 60 soldiers
1715 – Gospondini, with the *mahalle* of Banbaka (see T077)
1700 – Pabaca, 10 families, 42 people

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). A *palaiomaniatiko* settlement nearby is referred to as Kotronaki (Komis 2005:385). The church of Ay. Theodoroi is dated to the 11th century (Megaw 1932-33:139-145, 162, Plates 18-19, Figures 1-2). The church has a marble sculpture with a date of 1075 and the signature of Nikitas (Drandakis 1986:22, 25; 2002:364; Traquair 1908/09:182-185, Plate 16). The inscription says that "whilst Leo dedicated the entablatures inside the church, the monastery as a whole was founded by this Theodore in honour of his patron saint" (Traquair 1908/09:184).

Desc Located on the lower slopes of the mountains on the west coast. Because of the extent of EM–Mod occupation, I investigated only briefly. Within the village itself, I did not see much evidence of early architecture, and only a few Ott II buildings are still standing. It is likely that many of these were rebuilt in the EM period. There are at least two EM towers, one of which is dated to 1819. The Byz church of Ay. Theodoros is located in the upper part of the village. Another EM church is located in the village center. Despite the fact that this settlement has a Byz monumental church, the lack of megalithic architecture suggests there was no associated settlement in that period. The records likewise suggest it was first occupied in the Ven period and that occupation has continued until today.

T167 Vatheia – Βάθεια N 4035245, E 631389, 193 m
Ott I, Ven, Ott II
Permanent / Occupied / Partial Mapping / Wall widths < 1 m
6 August 2014

Lists 1829 – Vathia, 50 households
1813 – Ravana, 50 men, 30 soldiers
1715 – Vatya (?), 31 *hâne*, 4 bachelors
1700 – Vatia, 54 families, 212 people
1695 – villa Vatia, 61 combatants
1692 – Vathia (tax)
1618 – Vatia, 20 hearths
1583 – Vatya, with [illegible] and Kenurya Hora (tax)
1514 – Vatya, 27 *hâne*, 11 bachelors, 3 widows

Med 0

Bib The double-apsed church of Ioannis Prodromos dates to the 14th or 15th century (Drandakis 1986:22). Today the village is made up of four neighborhoods, each of which is associated with a particular clan (Komis 2005:396-397). For the layout of the town, see Saïtas 2001:Figure 243. For a brief account from the early 19th century, see Leake 1830:294.

Desc The tower town is located on top of a tall and very defensible hill on the west coast. While the majority of the town is abandoned today, a few of the houses have been renovated recently. Because of the extensive research that has been done on the more recent phases of occupation in the town, I did not record individual structures. There are two *xemonia* (small settlements built on the outskirts of a village) to the north, Goulas and Petomoniastika (see T190 and T226). Saïtas described these as having megalithic architecture, as well as Byz churches and a row of standing stones. Several additional clusters of ruined structures, walls, and walled field paths are located north of Vatheia in a small valley. Vatheia itself is comprised mainly of towers dating to the late Ott II and EM period, with few traces of an earlier settlement. I suspect that the medieval settlement was dispersed throughout the lower valley in small clusters. The area has several gullies running down to the bay below (where modern Kapoi is situated). The location would have had some limited defensive properties, being situated on the hillside, and it would have granted access to both seasonal stream water and the bay below. The entire landscape around it is terraced, indicating intensive agricultural use. It was not until the Ottoman period (by the 16th century at least) that the population here nucleated on the highest hilltop, where Vatheia is now located. By the Ott II period, settlement on the hill expanded, and the smaller clusters around Vatheia were either continuously inhabited from the medieval period or reinhabited at this time. The intensive fortification and tower building in Vatheia in the later Ott II period was likely the result of a high population density within the town, particularly since there were several families living here.

T169 Ano Boularioi – Άνω Μπουλαριοί N 4039452, E 626725, 169 m
Byz, Ott I, Ven, Ott II
Permanent / Occupied / Partial Mapping / Wall widths > 1 m
11 May 2014

Lists 1829 – Apano-Boularious, 20 households
1813 – Bucari (see T171)
1715 – Bulari, with the *mahalle* of Demüri, listed as village in the old register (see T171)
1700 – Bulariù alta, 26 families, 96 people
1695 – villa Pulariapano, 54 combatants
1692 – Bolarus, e Dipori (see T171)
1618 – Apano-Mulareos Nicliani, 40 hearths
1583 – Bulari (see T171)
1514 – Apano Mulari, 31 *hâne*

Med 0

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). The toponym may derive from the Slavic root *boljare* (aristocrat, noble, eminent), or more likely from the Greek *emvolarios* (beggar) (Komis 2005:383-384). The ruined church of Ay. Nikolaos or Ay. Yeoryios may date to the 13th century (Drandakis 1986:23; Saïtas 2009:375). For the Anemodouras and Mantouvalos family war towers, see Dean 2006:112.

Desc Located midway up the slopes on the west coast. The settlement is connected with the lower village of Kato Boularioi by a number of old paths and a modern road (which may overlay a footpath). The village of Diporo is above it. One of the footpaths leading uphill from the south is bordered by old field walls with very large or even megalithic lower courses and small rubble fill. Evidently, this was the primary route into town in the early 19th century, judging by the inscriptions on the late Ott II or EM buildings, which all face the path. Within the town there is architectural evidence from the Ott I period on. The oldest buildings are located in the northern, uphill part of the town, including an Ott I war tower (of the Anemodouras family) and Ott I and Ott II houses. There is also a small locked chapel that could date to the Byz period. Near this is the late Ott II tower of the Mantouvalos clan. The buildings west and downhill along the main road date to the late 19th century or Mod period. The modern church at the top of the village (the Koimisi) is located next to a ruined Byz church with only a double apse remaining.

T170 Kotraphi – Κοτράφι N 4037477, E 629097, 174 m
Byz, Ott I, Ott II
Permanent / Occupied / Full Mapping / Wall widths > 1 m
5 August 2013, 7 June 2014

Lists 1618 – Chotrafi, 15 hearths

1514 – Kotrafi, 28 *hâne*, 5 widows

Med 60

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). The settlement has a medieval phase, but after 1618 it did not appear in the settlement lists until 1879 (Komis 2005:360). There are numerous Byz churches associated with this location, which Saïtas (1983:Figures 11-21; 2009:378) referred to as "Katanemistika." The church of the Sotiras dates to the 15th century (Drandakis 1986:22; Saïtas 2009:375). The double-apsed church of Ay. Panteleimon and Sozon dates to the last quarter of the 13th century, with iconography dated to circa 1300 (Drandakis 1986:23-24; Saïtas 1982, 2009:378). Ay. Kyriaki dates to the period 1262–1300 (Saïtas 1982:Figures 11, 17, 2009:378). Ay. Giannis (?), in Lagiatiko, has 13th-century iconography and standing grave structures (Drandakis 1986:23; Saïtas 1982:Figure 11, 2009:381). Several other Byz churches have been identified in the region, including Ay. Philippos, Ay. Nikolaos, Ay. Dimitris (?), Elousa (?), and Ay. Giannis (Saïtas 1982:Figure 11). For more on the standing stones in and around the medieval settlement, see Saïtas 1982.

Desc See case study in Chapter 6. Located high on a narrow ridge in the southwest part of the peninsula. The modern village is comprised mostly of EM and Mod structures, with only a few potential Ott II structural elements. A wide, dirt road is cut into the mountains between the village and Tsikalia to the south. This road does not appear to be used by cars, although animals do walk it. With the exception of a single ruined, dry stone structure above the town, all of the buildings are mortared. The fields on either side of the ridge are terraced, and there are ruined walls (perhaps animal pens) below the modern road cut. The medieval settlement is located slightly lower on the same ridge (to the west) and is comprised of several small clusters of ruined houses and several churches. Despite the fact that most of the structures in this area are built with a mixture of schist and limestone, at least one of the medieval houses is made entirely of megalithic limestone boulders. Further along this ridge and below it on either side are several more clusters of structures, none of which are accessible, but they are visible both in the aerial imagery and from the modern road to the north across the gully. Between the medieval settlement and these various clusters there is a large area of limestone outcrops. There is also a surprisingly high concentration of ancient and medieval pottery. We found one massive limestone block that seemed to have been cut into a rectangular shape (perhaps for an ancient temple) but no other structures from the ancient period. Several field walls had been erected and may be associated with the abandoned medieval structures down the slope to the south and west. Using the maps drawn by Saïtas (1982) and the aerial imagery, I was able to identify dozens of additional structures that were inaccessible to us in the field. Altogether, there are 13 churches distributed along the ridge. I identified five residential structures in the field (one of which is distinctly megalithic) and another 55 potentially megalithic, ruined structures that I could not visit. One of these, visible from the road to the north, appears to be a square-shaped tower. This area was clearly an important center of settlement in the Byz and Ott I periods, tapering off by the mid-17th century. Unlike the neighboring village of Tsikalia, this settlement did not appear in the

Ven or Ott II records, suggesting it was temporarily abandoned. When it was reoccupied in the Ott II period, it was located higher uphill away from the earlier ruins.

T171 Kato Boularioi – Κάτω Μπουλαριοί N 4039615, E 625767, 95 m
Byz, Ott I, Ven, Ott II
Permanent / Occupied / Partial Mapping / Wall widths > 1 m
11 May 2014

Lists 1829 – Kato-Boularious, 30 households
1813 – Bucari, 130 men, 60 soldiers
1715 – Bulari, with the *mahalle* of Demüri, listed as a village in the old register, 34 *hâne*, 1 bachelor
1700 – Bullariù bassa, 23 families, 109 people
1695 – villa Catopulari, 19 combatants
1692 – Bolarus, e Dipori (tax)
1618 – Chato-Mulareos Nicliani, 30 hearths
1583 – Bulari (tax)
1514 – Kato Mulari, 7 *hâne*

Med 7

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). The toponym may derive from the Slavic root *boljare* (aristocrat, noble, eminent), or more likely from the Greek *emvolarios* (beggar) (Komis 2005:383-384). The double-apsed church of Ay. Yeoryios dates to the 13th century (Drandakis 1986:23), and it is associated with a cemetery that belongs to the Koukouriani lineage (Saïtas 2009:375).

Desc Located below and west of Ano Boularioi. In addition to the Byz church, there are several megalithic structures in the southeast part of the village, some of which are ruined, overgrown, or partially demolished, while others have been incorporated into large Ott II and EM complexes. There is also an Ott II tower. Along a dirt path heading south is the Byz church of Ay. Yeoryios. There are two more churches, one of which is Ott II in date with fragments of original icons.

T172 Kato Meri – Κάτω Μέρη N 4049101, E 624488, 134 m
Byz, Ott I
Permanent / Abandoned / Full Mapping / Wall widths > 1 m
17 April 2014

Lists 1514 – Kato Meri, 4 *hâne*, 1 widow

Med 13

Bib The church of Ay. Theodoroi contains a marble templon screen carved prior to the founding of the church, with an inscription of "Nikitas" and the date of 1144–1145 (Drandakis 1986:23, 2002:365-6). It has iconography dated to 1263–1270 (Drandakis 1986:24; see also Kalamara and Roumeliotis 2004:Figure 5).

Desc Located on a gentle slope southwest of Dryalos. The megalithic structures are typical: oriented with the long side perpendicular to the hillside, with a south-facing door topped with a huge lintel stone. The structures are completely filled with rubble. There is one larger complex, which seems to have been expanded by adding structures to an earlier house. The ceramic material around the site was limited to medieval courseware, with a substantial amount of medieval tile only in one of the structures. The area around the settlement is now overgrown with macquis, limiting our recording to only eight houses and six cisterns, two of which were topped with rubble and bounded by a single course of rocks, though still slab-topped in design. An additional five houses can be seen in the imagery. Above this settlement to the north, a Mod residential complex has been constructed. The church of Ay. Theodoroi is located just southeast and uphill from the village, but judging by the exterior it seems to have been renovated recently.

T176 **Ayioryis – Αγιώργης** N 4043241, E 624045, 136 m
Ott II
Permanent / Occupied / Partial Mapping / Wall widths < 1 m
9 May 2014

Lists 1829 – Hagios-Yeoryios, 9 households

Bib See Komis 2005:370-371.

Desc The predominantly EM village is located on the flat southwestern plain, just south of the Byz monumental church of Episkopi. There is a single Ott II tower, in addition to many EM structures, some of which are in ruins while others have been renovated. Just north of the tower is a small church, locked and unidentified, with a potential inscribed marble spolia above one of the south windows. Altogether, at its height, the town would have had about 13 EM structures. Komis' reference to a palaiomaniatiko settlement in the vicinity may refer to Kourines (T197) to the southeast.

T179 **Agriokampi – Αγριοκάμπι** N 4030132, E 632521, 217 m
Ott II
Permanent / Abandoned / Partial Mapping / Wall widths < 1 m
8 April 2014

Desc An unsheltered village located on a high ridge on the Matapan Peninsula. There are a total of about eight Ott II and EM houses in a very dispersed pattern. The fields to the north of the village are wide, flat terraces without olives. The houses are built in typical

Ott II construction, with a barrel-vaulted ground floor and a first floor topped with slate and plaster. The older houses are small, square, dry stone structures, with slightly sloping walls and only very small windows. Interestingly, windows are not present on the north walls, and the entrances are mostly on the south wall (possibly related to wind direction). There is a field path that runs north from the village to connect with the village of Mianes. East of this is a water trough, which looks as though it is still used to water animals. An enclosed area next to this has a large amount of foliage and may possibly be a spring. In the imagery, the western slope below the ridge appears terraced, and there are several ruins around a small church (see US 68, T480).

T181 Chalopyrgos – Χαλόπυργος N 4045421, E 627678, 405 m
Ott I
Permanent / Abandoned / Partial Mapping / Wall widths < 1 m
30 April 2014

Med 8

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981).

Desc Located high on a hilltop above Polemitas. There is a single EM residential complex that appears to have been recently abandoned and an old church with megalithic foundations just west of the EM complex. Beyond the complex, the area is inaccessible heavily vegetated, but I could see another possible church with a cement roof and another potential megalithic structure. In the imagery, at least eight medieval structures can be seen clearly, with walls averaging less than 1 m in width.

T184 Elaia – Ελαία N 4040380, E 623782, 166 m
Ott II
Permanent / Occupied / Partial Mapping / Wall widths < 1 m
8 May 2014

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981).

Desc Located east of Kounos in the broad southwestern plain. There is at least one Ott II building on the east side of the town, in addition to about a dozen EM residential complexes and several Mod houses. The church of Ay. Polykarpou was built in 1963. The village appears to have been founded in the Ott II period, and it expanded in the EM and Mod periods.

T186 Gatis – Γάτης N 4041076, E 621851, 212 m
Ott II
Permanent / Occupied / Field Visit / Wall widths < 1 m
8 May 2014

Desc A small EM–Mod hamlet on the broad southwestern plain, just south of modern Kipoula. There is at least one structure that appears to have a phase dating to the late 1700s.

T189 Glezou – Γλέζου N 4053810, E 624605, 236 m
Byz
Permanent / Occupied / Partial Mapping / Wall widths > 1 m
23 April 2014

Med 6

Bib The church of the Taxiarchis dates to the 11th century (Megaw 1932-33:139, 151-152, Plates 20; Saïtas 1986:22, 2009:375), and ruins of Ay. Marina are in the cemetery associated with it (Saïtas 2009:375). The church contains several marble carvings that can be linked with the art of Nikitas and that are dated to the second half of the 11th century (Drandakis 2002:370, 372, Figures 95-96). Traquair (1908/09:191-192) referred to the church as “Ay. Marina” and described the inscriptions on the marble beams below the dome. Guy Sanders (personal communication) suggested that some of the glazed bowls in the church’s exterior are imported Islamic polychrome white ware with designs reflecting Spanish influence, possibly from the 12th century.

Desc The village is a collection of about 15 residential complexes southeast of Pyrgos Dirou on the flat plain and lowest contours of the foothills to the east. Two of the abandoned complexes have megalithic foundations, while the rest are EM–Mod or Mod in date. There are no remains from the Ott I or Ott II periods. There is a ruined fragment of a *kalderimi* running north–south beside an EM property and partially covered by a wall associated with the complex. The area around the houses is very overgrown, with cactus especially in the interior of the town. In the imagery, several more abandoned megalithic structures can be seen west of the two with megalithic foundations, bringing the total count of medieval houses to at least six. There are several churches in the vicinity of the settlement. On the outskirts to the west, the modern church of Ay. Therapon was built on the site of an earlier ruined one, and Byz marble sculptures around the modern church and in its walls suggests that the older church was Byz in date. Uphill to the east of the settlement are four more Byz churches and several scattered megalithic structures, particularly to the east, southeast, and south. One of these is Ay. Taxiarchis. The other two are associated with separate settlements: Ay. Varvara and Ay. Nikolaos (in Parapodas, T416) and Ay. Petros (in Soulia, T382).

T190 Goulas – Γουλάς N 4035874, E 630858, 135 m
Byz, Ott II
Permanent / Abandoned / Remote ID / Wall widths > 1 m
6 August 2014

Lists 1829 – Koula, 12 households

Med 14

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). The toponym comes from the Arabic *kule* (tower). In the Byz period, various forms of the word were widespread in Greece and the Balkans. However, the toponym is also related to the family name Goulakos or Goulakis. In the surrounding area there are standing stones (menhirs), Paleochristian churches, and remains of a *palaiomaniatiko* settlement. The settlement did not appear in modern census records after 1896 (Komis 2005:373). The settlement was founded as a *xemoni* of the neighboring village of Vatheia, probably in the 19th century, and it has a war tower dating to before 1821 (Kalamara and Roumeliotis 2004:56). Ay. Paraskevi is a small single-room rubble church with possible megalithic architecture and ancient spolia in the altar. Ay. Giannis is a cross-shaped church with megalithic elements and an associated cemetery (Saïtas 1982:Figure 22; see Drandakis 1979:210).

Desc The ruined settlement is located just northwest of Vatheia, on a lower slope across a gully. Today it is inaccessible, and the crumbling towers make it unsafe to explore on foot. In the imagery, the walls of the oldest structures on the edges of the settlement average more than 1 m in width (consistent with a Byz date), and the Byz churches in the settlement are also described as having possible megalithic architecture. Without visiting the site in person, I could not check for evidence of occupation in the Ott I and Ven periods. However, it seems likely that it was abandoned after the Byz period and reoccupied in the Ott II period as a *xemoni* of Vatheia.

T191 Ippola – Ιππόλα N 4041571, E 621276, 278 m
Byz, Ott I, Ven
Permanent / Abandoned / Full Mapping / Wall widths > 1 m
10 June 2014

Lists 1829 – Kipoula (see T067)
1813 – Micula (see T067)
1715 – Kipula (see T067)
1700 – Cipulla, 22 families, 93 people
1695 – villa Cripula, 48 combatants
1618 – Chipoulla, 30 hearths
1583 – Kipula (tax)
1514 – Kipula, 25 *hâne*

Med 8

Bib Some believe that the medieval village is located on the ancient *polis* of the same name (e.g. Leake 1830:287; see Komis 2005:358). The toponym was later transferred to a village below it on the flat plain (see Kipoula, T067). The church of Ay. Theodoroi and Ay. Philippos both date to the 11th century, with iconography dating to the 11th and 13th centuries (Drandakis 1986:23-24). The former has marble sculptures dating to the 12th century that are used as various architectural elements (Drandakis 2002:383), and the latter has a marble piece inscribed with a date of 1073/4 (Drandakis 1986:23-25). For additional churches of the Panayia and Sotiras, see Drandakis 1986:23. At least two English publications discuss the pottery at the site: Waterhouse and Hope-Simpson (1961:123, Note 167) found a few sherds similar to the Early Bronze Age material on Skopas, the small peninsula at Kotronas on the east coast of Mani, and the Laconia Survey recorded Late Bronze Age through Medieval pottery (Cavanagh et al. 1996:304, site LL188).

Desc See case study in Chapter 6. Located at the north end of a narrow plateau called Cavo Grosso bordering the west side of the flat southwestern plain. The visible remains of the site are comprised of five Byz churches, numerous walls, and a few large-stone or megalithic residential structures spread along the eastern side of the ridge. There are also two or three discrete areas filled with rubble and dry stone walls. The largest, just west of the double Byz churches (Ay. Theodoroi), is delineated at least on the north and south sides by a wide wall, with many other walls meandering throughout the area. These walls, built with double facing and filled with rubble, average between 150 and 230 cm in width. West of the double churches there is a well-preserved megalithic structure and a large-stone structure built in typical medieval style, both oriented east-to-west, and each with its own walled courtyard. Further southwest is another foundation for a structure, but a smaller stone structure now sits on its west end and the original walls are missing. South of the main cluster and just west of another church are a number of stone foundations surrounded by rubble, suggestive of a structure once held together with mud or daub that has since collapsed. I recorded only two cisterns (one of which is between the two churches), but undoubtedly there are more that are overgrown or hidden beneath wall fall. It is difficult to estimate the total number of structures here due to the extent of collapse of the non-megalithic walls. I counted at least eight medieval structures, but there were undoubtedly more at its height. If the rubble piles date to the Ott I period, these may account for the high number of houses recorded for Kipoula at this time. Today Ippola is approached by a modern hiking path that ascends Cavo Grosso south of the site. All across the plateau from the hiking path to the northernmost part of the site is a roughly continuous scatter of non-diagnostic ceramics. Leading past the double churches and down the mountainside toward Kipoula is a section of a *kalderimi*, which likely would have been the main access route until it became heavily overgrown on the plain below. It is not constructed as regularly as the *kalderimia* elsewhere in the peninsula (which are possibly Ottoman in date), and it may be contemporaneous with the Byz-period churches at the site. As for the population of "Kipoula" recorded in the settlement lists, the architectural remains suggest that there was a shift of population from the plateau site (Ippola) to the plains site (Kipoula) during the Ven period.

T197 Kourines – Κουρίνες N 4042772, E 624301, 138 m
Byz
Permanent / Abandoned / Full Mapping / Wall widths > 1 m
9 May 2014, 5 June 2014

Lists *1618 – Bragia di Nicliani, 10 hearths

Med 15

Desc A large cluster of ruined structures on the southwestern plain, just north of Nomia. The name for this abandoned settlement is a local toponym reported by a resident of Kita, who believed that it came from an older family name. It is comprised of about 15 residential structures (some of which were recorded in the field, and some identified in the imagery) and at least seven cisterns. Several of the houses were massive complexes, with potential internal divisions that we could not distinguish because of the amount of rubble within them. The settlement appears to be exceptionally defensive, in terms of the extremely thick structure walls (130–150 cm in width); field walls extending from the corners of buildings to create an outer wall or walled courtyard; doorways facing into the center of the village; and cisterns incorporated either within the residential complexes or immediately outside the complex walls. Like Pangia nearby, the area around the village is entirely flat, so the settlement would have been exposed on all sides. At the very northeast of the settlement, there is a single megalithic structure that is exceptional in several regards: it has extremely thick walls, which extend far to the south to create a very thick-walled courtyard, and it is not filled with any rubble at all, unlike most of the other megalithic structures we recorded.

T199 Karavas – Καραβάς N 4040803, E 623119, 167 m
Byz, Ott I
Permanent / Occupied / Partial Mapping / Wall widths variable
8 May 2014

Med 13

Bib The church of Ay. Nikitas near Karavas dates to the 13th century, with iconography dated to 1270–1280 and the first quarter of the 13th century (Drandakis 1986:23-24). Ay. Yeoryios contains 13th-century iconography (Drandakis 1986:23-24). For Ay. Mamas, see Drandakis 1986:23-24.

Desc An EM–Mod village located north of Kounos on the broad southwestern plain, with several homesteads and an EM tower. North of the main village there is an overgrown area with potentially four ruined Byz churches, two of which I recorded in person, and two of which I tentatively identified in the imagery. There are also at least 13 domestic structures and rubble piles visible in the imagery.

T200 **Kastri – Καστρί** N 4033065, E 631420, 73 m
Byz
Permanent / Occupied / Partial Mapping / Wall widths > 1 m
8 April 2014

Med 6

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981).

Desc A small EM settlement with a single church, situated downhill from the modern road that runs along the southwest coast toward the Matapan Peninsula. Two isolated residences (one of which has a tower) are located on the rugged slopes above the town. The tower has been re-plastered, and potentially even raised in height since it was built. This particular feature can be seen from almost all of the northern part of the Matapan Peninsula. Another ruined EM residence is located on a spur of rock between the village and the sea, on the spur's north face (facing the village). At the top of this spur is a rectangular structure that is plastered on all the interior faces, almost like an above-ground cistern that could have been used to collect rainwater to irrigate the fields below. In the imagery, at least six ruined rectangular structures can be seen on the opposite side of the spur, facing the sea to the south. Several rubble piles can be seen in this area that may correspond to additional structures. About 350 m to the east, a very ruined Byz church is visible in the imagery, now the location of a modern cemetery.

T201 **Katayioryis – Καταγιώργης** N 4043750, E 623784, 93 m
Byz
Permanent / Occupied / Partial Mapping / Wall widths > 1 m
9 May 2014

Med 8

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). Episkopi dates to the late 12th century or circa 1200 (Megaw 1932-33:150, 152; Drandakis 1986:22, 24; Saïtas 2009:375). It contains many marble sculpted elements, including one that is reminiscent of a piece found on Tigani (Drandakis 2002:384-5). Guy Sanders (personal communication) reported that at least one green-and-brown painted bowl in the facade of the church could date to the third quarter of the 12th century. For a list of the icons and a plan map of Episkopi, see Greenhalgh and Eliopoulos 1985:98-99.

Desc Today Katayioryis is an EM–Mod settlement with two towers complexes, one of which is dated to 1862. The village is not actually much lower than Ayioryis in terms of elevation, but it is on the way "down" to the Byz churches of Episkopi and Vlacherna (T429) toward the coast further north. The earliest phase of occupation is represented by at least eight megalithic structures that can be seen in the imagery around Episkopi, all of which have average wall widths greater than 1 m. The church is at the center of these structures. Episkopi is one of the churches that has been renovated by the local archaeological authority, and although I was granted access to it, I did not venture into the overgrowth around the church to record the buildings in person. At least one megalithic structure was visible from the church through the vegetation. A *kalderimi* leads past the church and continues downhill to the west to the modern road. This same path continues east from the modern town. Along the eastern section of the path, parts of the field wall have been removed to allow access to two threshing floors, which are likely associated with the EM houses.

T207 **Koureloi – Κουρελοί** N 4030999, E 633555, 66 m
Ott II
Permanent / Occupied / Partial Mapping / Wall widths < 1 m
8 April 2014

Desc Located south of Paliros on the Matapan Peninsula. A very small settlement of about four relatively recent residential complexes and a church of Archangel Michael with iconography dated to 1997. There is an abandoned residential complex to the south of the site that appears to be Ott II in date. The settlement is intervisible with the ruined structures of Pyrgaki to the north, as well as Mianes and Agriokampi to the southwest, and there is a footpath leading downhill to a beach below.

T212 **Mantophoros – Μαντοφόρος** N 4052803, E 623857, 193 m
Byz, Ott II
Permanent / Abandoned / Full Mapping / Wall widths > 1 m
3 August 2013

Med 32

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). The ruined church of Ay. Vasileios dates to the 12th century (Mexia 2008/9:128-137). Ay. Panteleimon is a ruined megalithic church dated to the first half of the 13th century (Mexia 2008/9:140-142). Another church of the Panayia dates to about 1400 (Mexia 2008/9:137-140).

Desc Located just west of the road from Pyrgos Dirou south to Nikandreio. It is comprised of several multi-story EM houses and an EM tower in the northeast part of the settlement, a number of slab-lined cisterns, at least 32 megalithic residences, and several Byz churches. The distribution of the ruined medieval structures suggests that this was a single large settlement stretching north–south from Mantophoros down to Nikandreio. There is evidence of late Ott II or early EM architecture, but nothing definitively Ott I, as all the house walls average more than 1 m in width. In other words, the village appears to have been inhabited in the Byz period but abandoned for a time before being reoccupied.

T215 **Marmatsouka – Μαρματσούκα** N 4052117, E 624468, 193 m
Byz, Ott I, Ven, Ott II
Permanent / Occupied / Partial Mapping / Wall widths > 1 m
7 July 2014

Med 9

Desc Located east of Charouda along the road heading south from Pyrgos Dirou. At least three of the occupied residential complexes have megalithic foundations. One family invited me to look at the interior of the megalithic ground floor of their house, which they use as a low-roofed storage area. Unlike other houses that are built directly on top of the walls, this particular house had simply incorporated the north wall of the structure, cut off part of the south wall, then expanded south to create a much larger floor plan. The southern wall of the megalithic structure can be seen by passing through an EM *kamara*, and the door is still intact. The village church (Metamorphos Sotiras) also seems to have a megalithic foundation, but only a single course is preserved on the eastern end of the building. North of the modern village there is a small cluster of about five megalithic structures, four of which have been incorporated into a small modern agricultural area and are now used as animal pens. One of these structures was rebuilt into a small EM residential complex, now ruined. There is a slab-lined cistern just south of the cluster on the path to Marmatsouka. South of the village, a ruined structure can be seen in the aerial imagery that appears apsidal, as if it is a church. One of the residents told me that there is a megalithic cistern (*kolosterna*) nearby that measures 11 m long and 2.4 m wide, and that is topped by nine massive limestone slabs. Although I did not see the cistern in person, there is a rubble pile visible in the imagery south of the village that may be the location of this cistern. Within the village, I also recorded two structures with Ott I and II architectural elements, in addition to several EM houses and a tower. There is good evidence to suggest the town was inhabited continually since the Byz period, but that it became nucleated in its present location only in the Ott I period.

T218 **Mianes – Μιανές** N 4030515, E 632587, 232 m
Ott II
Permanent / Occupied / Partial Mapping / Wall widths < 1 m
8 April 2014

Desc Located on the Matapan Peninsula north of Minaes, sheltered on the north side by a slight ridge. The village is comprised of several abandoned EM houses and one Ott II house that was recently renovated and is still occupied. The residents told me that the village had been fully occupied in the mid-20th century, but that the younger generation had left Mani to find work elsewhere in Greece. There is a spring near the village that supplies drinking water.

T219 **Neasa – Νέασα** N 4039680, E 624439, 109 m
Ott I
Permanent / Occupied / Full Mapping / Wall widths < 1 m
15 April 2014

Med 17

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981).

Desc A primarily EM–Mod village on the southwestern plain occupied by a single family lineage. I recorded several Ott I buildings just west of the modern town area. The rectangular buildings have large-stone foundations with walls generally less than 1 m wide. They are arranged in a north–south line, and there are a number of cisterns just east of the houses along a well-used field path. Because of the heavy vegetation, we did not record the additional ruined structures north of the village. Altogether at least 17 medieval houses can be seen. The town appears to have been abandoned after the Ott I period and reoccupied in the early 1800s. The EM phase is comprised of several houses and a tower, some with inscriptions dating to the early 1800s. The church on the western edge of town (Sotiras) also appears to be EM in date.

T222 **Paliros – Πάλιρος** N 4031884, E 633513, 149 m
Ott II
Permanent / Occupied / Partial Mapping / Wall widths < 1 m
8 April 2014

Desc Located on a small ridge on the Matapan Peninsula, just south of (and above) Porto Kayio. The earliest inscribed date that could be found in this village is on the church: 1741. However, walking around the village, it is clear that the residents have a propensity for inscribing their initials, various dates, and even elaborate pictures into the blocks of the various buildings in town. Almost all are graced with three initials ending in K, if not the entire last name of "Kassis," the main family that occupied the town. There are numerous depictions of a lyre-playing mermaid (or a woman sitting on a dolphin), and another of a boy playing a lyre for a dog. Other than the church and another building (recently re-plastered) with an inscription of "1760," most of the other inscriptions and almost all of the architecture is EM in date. The village was likely founded in the Ott II period but expanded and prospered in the EM period.

T224 **Passava Fortress – Πασσαβάς** N 4065701, E 634421, 151 m
Byz, Ott I, Ven, Ott II
Fortress, Abandoned, Field Visit, Wall widths < 1 m
9 July 2013

Lists 1715 – Nefs-i Pasava (no settlement data)

Med N/A

Bib See the settlement of Passava (T305). The fortress was built in 1254, allegedly on the site of the Homeric city of Las. The toponym is thought to derive from the French *passe-avant*, dealing with the movement of trade goods. Control of the fortress shifted hands over the following centuries, first to the Byzantines in 1262, then to the Ottomans in 1481. The first documented reference to the name was in 1670, when Evliya Çelebi referred to it as "Pasova-i Hakaniye kalesi." In 1685 it was captured and destroyed by the Venetians (see Coronelli 1687:92-93), and when the Ottoman reconquered the Peloponnese, they repaired the fortress and established a Turkish village nearby called Tourkovrisi, with about 700–800 families. The Maniates staged a revolt in 1780, seizing the castle and killing the people in Tourkovrisi (Komis 2005:319-32). Visiting in the 1830s, Leake reported remains of buildings and gardens within the fortress and a "piece of Hellenic wall" in the southeastern wall of the fortress. He concluded that the fortress was on the site of ancient Las (Leake 1830:256-259).

Desc The fortress is situated on top of a hill overlooking the main pass between Gytheio and Oitylo. It can be reached via an unmarked hiking path up the southwestern and southern slopes of the hill. Today it is extremely overgrown and difficult to explore except by walking along the ramparts, though there are ruined buildings still standing at the center of the fortress. The northern wall abuts the edge of a very tall cliff. A gate is still well preserved on the eastern wall, where there are also some traces of earlier architecture in the lowest courses. The southern wall is partially collapsed.

T225 **Pepo – Πέπο** N 4040573, E 628637, 416 m
Byz, Ott I, Ven, Ott II
Permanent / Abandoned / Field Visit / Wall widths < 1 m
11 July 2014

Med 3

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). The church of the Koimisi dates to the 13th century and has iconography from the same century (Drandakis 1986:23-24).

Desc Located deep in a narrow valley on the lower south-facing slope of a steep mountain. Diporo and Ano and Kato Boularioi are situated at the base of the valley to the west. Its placement is such that it cannot be seen from any of the towns below—only Leontakis is intervisible with it. A field path extends from the western part of the village downhill toward Diporo, eventually connecting up with a section of *kalderimi*. The initial part of this path immediately outside the village is not paved. In the imagery, the *kalderimi* does not seem to appear until after the path crosses the remma, about 750 m west of the village. As the path leaves the village, a tall wall borders the southern edge of the settlement, possibly to protect it from anyone walking up the path. Also notable about the settlement's location is a (now dry) streambed running below it toward the plain below. Steps lead down to the streambed and up the other side. Around the settlement, especially on the western and southern slopes of the valley, there are many crumbling field walls and even some potentially megalithic or large-stone structures. Overall, this would have been an ideal location for a well-defended settlement: it is well watered, protected from view, and has some defensive architecture. Like nearby Mountanistika, Pepo does not appear in any of the census records. The standing architecture largely dates to the late EM period, but there is some evidence of earlier habitation as well. Specifically, there are at least three visible ruined structures built with large dry stone architecture in the Ott I style. They are not "megalithic," although there is megalithic architecture in the nearby hamlet of Leontakis. I suspect Pepo was first occupied in the Byz period but that it did not expand until the Ott II and EM periods. The last evidence of activity in the village is a renovated house on the western side of the village with an inscription of 1996.

T226 **Petomoniastika – Πετομονιάστικα** N 4035728, E 631023, 92 m
Ott II
Permanent / Abandoned / Remote ID / Wall widths < 1 m
N/A

Lists 1829 – Petrovouni, 2 households

Bib This is a *xemoni* of Vatheia (Komis 2005:387). Komis associated Petomoniastika with the village of "Petrovouni," listed in the 1829 Expédition Catalog. For a plan of the village, see Saïtas 1982:Figure 22.

Desc Located north of Vatheia, immediately adjacent to Goulas, another *xemoni*. Today it is inaccessible, and the crumbling towers make it unsafe to explore on foot. Aside from a Byz church at the southern edge of the settlement, the only other structures visible in the imagery belong to an Ott II complex.

T227 **Pyrgaki – Πυργάκι** N 4031690, E 633667,
Ott II
Permanent / Abandoned / Remote ID / Wall widths < 1 m
N/A

Desc An overgrown and inaccessible settlement on the Matapan Peninsula just south of Paliros on a south-facing hill. In the imagery, it appears to be comprised of about four abandoned residential complexes and associated field walls and animal pens. Based on its association with Paliros, I will tentatively date the settlement to the Ott II period (when Paliros was at its height).

T231 **Psio – Ψίο** N 4042071, E 623648, 166 m
Ott I
Permanent / Occupied / Field Visit / Wall widths < 1 m
9 May 2014

Lists 1829 – Spio, 5 households

Med 2

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). The toponym comes from the Greek *psios* (pure, unmixed). A *palaiomaniatiko* settlement is located west of the modern settlement (Komis 2005:394).

Desc An EM–Mod village extending along a narrow plateau in the middle of the southwestern plain. Below the settlement to the west, at the base of the plateau, an extensive rubble area with at least two rectangular structures can be seen in the imagery. This pattern of a broad rubble area with a few visible structure walls is generally consistent with an Ott I date, and together with Komis' reference to a palaiomaniatiko village in the vicinity, I will associate this area with an Ott I phase of settlement.

T233 **Skaphidianika – Σκαφιδιάνικα** N 4040562, E 622423, 182 m
Byz
Permanent / Occupied / Partial Mapping / Wall widths > 1 m
8 May 2014

Med 6

Desc An EM–Mod village north of Kounos on the southwestern plain. South of the village, the modern road cuts through a small *palaiomaniatiko* settlement. Above the road there is a barrel-vaulted single-aisle church without preserved iconography, likely Byz in date. Downhill from the church to the east, I recorded a single megalithic house in person, and at least five additional ruined houses can be seen in the imagery.

T236 Tigani – Τηγάνι N 4045369, E 622212, 44 m
Ott I, Ven
Permanent / Abandoned / Partial Mapping / Wall widths < 1 m
7 April 2014

Lists 1700 – Maina Alta, 49 families, 190 people

Med 26

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). For a discussion of the settlement "Maina Alta" in the Grimani census, see Komis 2005:377-379. Komis believed that this name must be referring to one of three places associated with the toponym "Maina": the Byz and Frankish fortified site on the Tigani Peninsula, the Frankish castle called the "Grand Magne," the location of which is still unknown (see further discussion at Kelepha Fortress, T343), or the Ottoman fortress in Porto Kayio, also known as Achillio (see T174). However, archaeologists have identified a *palaiomaniatiko* settlement on Tigani, and based on this fact as well as the presence of a number of saltpans on the peninsula, Komis linked "Maina alta" with the first location, Tigani. Excavations were conducted in the 5th or 6th century basilica on Tigani between the 1960s and 1980s (Drandakis 1965b, 1966a; Drandakis and Gkioles 1982, 1986, 1988; Drandakis et al. 1980a, 1983; Gkioles 2008/2009). A total of 36 marble carved elements were recovered from the excavations (Drandakis 2002:387-388). For an overview of the site, see Saïtas 2009:375-376, Figure 40.9. For a brief account of Fermor meeting two local women collecting salt on Tigani, see Fermor 2004:78-79.

Desc The narrow Tigani Peninsula extends about 1.5 km north from the southwestern plain, providing shelter to Mezapos Bay. Most of the peninsula is low and rocky, and there are over 100 individual saltpans and two small dry stone huts built to shelter salt collectors while they wait for the water to evaporate. At the very north end of the peninsula is a raised plateau, accessed by a crude staircase carved into the rock on the southeast corner, with remains of fortifications, an excavated Paleochristian basilica, and several other ruined buildings. The entire area is now very overgrown, so I did not explore the majority of the plateau aside from the basilica (at the southeast corner). In the imagery, at least 26 structures can be identified in the area, and given the heavy vegetation here, it is likely there are many more. There is a single structure at the edge of the plateau at the northwest corner, possibly intended to watch for ships approaching from around Cavo Grosso. The structures all have walls much narrower than 1 m, suggesting the settlement was founded in the Ott I period at the earliest. While there may have been a population here in the Early Byz period (i.e. associated with the basilica), I did not see evidence of a later Byz "megalithic" settlement.

T237 **Trochalakas – Τροχάλακας** N 4041441, E 622655, 175 m
Ott II
Permanent / Occupied / Field Visit / Wall widths < 1 m
8 May 2014

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981).

Desc A small Ott II–EM village with four residential complexes southwest of Pangia. One has a tower that appears to date to the late 1700s. Additional modern residences have been built to the north of this earlier cluster of houses.

T238 **Tserasia – Τσερασιά** N 4060800, E 627166, 297 m
Ott I, Ven, Ott II
Permanent / Occupied / Field Visit / Wall widths < 1 m
11 August 2014

Lists 1829 – Keratsa, 12 households
1813 – Kiesera, 360 men, 150 soldiers
1715 – Vaha, Iskala, and Kerasia (see T163)
1700 – Chierasia, 19 families, 75 people
*1618 – Gnio-Chori, 16 hearths

Med 6

Bib Komis (2005:282) suggested that the toponym comes from the Greek *kerakia* (carob tree). He also connects the 1813 settlement "Kiesera" with entries for Keratsa or Kerasia, although it is clear, compared to the other records, that the population estimate is far too large for this village alone. It is possible that the values include the neighboring village of Skala, which is missing from the records (for comparison, nearby Vachos is listed as having 250 men and 130 soldiers).

Desc Located just north of Skala on a small flat area on the north-facing side of a hill. The abandoned settlement of US 6 (T378) is located on top of this same hill. In the imagery, at least 6 rectangular structures can be seen with walls less than 1 m in width, suggesting the settlement was founded in the Ott I period. Komis did not link the 1618 Nevers Catalog entry for "Gnio-Chori" with this settlement, instead connecting it with Neochori. However, based on the order of the catalog entries (Vacha, Gnio-Chori, Panagia di Vacha, Scala), Gnio-Chori must be in the vicinity of Vachos and Skala. I believe that Gnio-Chori refers to a settlement newly founded in the late Ott I period in the immediate vicinity of these two settlements. Tserasia is the ideal candidate, as it does not appear in the other Ott I records, but it does continue to be occupied throughout the Ven and Ott II periods.

T255 **Makrynaros – Μακρύναρος** N 4051539, E 630827, 407 m
Byz
Permanent / Abandoned / Remote ID / Wall widths > 1 m
N/A

Med 19

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). Kaloyirou (2005) referred to this settlement as "Makrinaros" and included a photograph of Byz megalithic structures around the monastery. There is a *kalderimi* that leads up to the settlement from Zouda to the northeast.

Desc A megalithic settlement with church of Ay. Yeoryios Makrynaros, nestled at the top of a ridge above Aryilia. In the imagery, at least 19 ruined structures can be seen in the highest part of the village, with another cluster of houses arranged along the hillside to the east (US 47, T442). Residents of Phlomochori described the location of the church and showed me a picture that someone had taken of the church—whitewashed on the exterior, but with clear megalithic foundations. Based on the photographs in Kaloyirou (2005), the houses appear to have been abandoned by the Ott I period. While the church was maintained, the settlement was not occupied after the Byz period.

T261 **Drymos (Driali) – Δρυμός (Δριαλί)** N 4049385, E 631383, 257 m
Byz, Ott I, Ven, Ott II
Permanent / Occupied / Partial Mapping / Wall widths > 1 m
12 August 2014

Lists 1829 – Nymphi et Driali (see T100)
1813 – Driachi, 100 men, 50 soldiers
1715 – Nifi, with the *mahalle* of Dryal (see T100)
1700 – Drialli, 38 families, 147 people
1695 – villa Driali, 93 combatants
1692 – Driceli, Gnifi (tax)
1618 – Driali di Cholochitia, 25 hearths

Med 7

Bib The toponym comes from the Greek *dry* (Valonia oak). The settlement of Paliochori (T302), southwest of Drymos, is considered the older location of the village according to oral tradition. The name was changed in 1957 to its current form (Komis 2005:363). The church of the Koimisi dates to the 13th century, with iconography from the end of the same century (Drandakis 1986:21).

Desc Located along the same elevation as Aryilia and is now connected to it by a modern road. In the imagery, it appears to have been connected with Nyphi to the south by way of a slowly descending field path. It is unlikely that there were settlements below it (i.e. nearer to the coast) prior to the EM period. There is definitely a Byz presence here, as attested by the Byz church of the Koimisi at the center of town, with a megalithic foundation. There are likely additional megalithic buildings around it, but most of the town is comprised of EM–Mod houses. Drymos is one of a chain of megalithic settlements extending south along the eastern coast, with Aryilia to the north and Nyphi further south. Parallel to these three settlements and at a higher elevation, there are several smaller megalithic settlements, each of which is connected to a lower settlement via a *kalderimi*: Makrynaros, Paliochori, and US 5 (north to south). In the case of Drymos and Paliochori, both have 13th-century churches and megalithic houses, despite the fact that oral tradition suggests the latter is older in date. It may be that Drymos was only a very small settlement in the Byz period, or even just a church along the path to Paliochori. Also, there are many more megalithic structures in Paliochori than in Drymos. That said, the presence of the definite megalithic architecture and a Byz church means that Drymos had a Byz phase as well.

T262 **Drosopigi (Tserova) – Δροσοπηγή (Τσεροβά)** N 4059753, E 630472, 411 m
Ott II
Permanent / Occupied / Field Visit / Wall widths < 1 m
11 August 2014

Lists 1829 – Tserova, 69 households
1813 – Zerva, 100 men, 50 soldiers
1715 – Çerova (see T301)
1700 – Cerova (see T301)
1695 – villa Cerova (see T301)
1692 – Cottrona, e Cerova (see T301)
1583 – Çörova (see T301)

Bib See Palaia Tserova (T301). The toponym comes from the Slavic *cerova* (oak). It was first documented in 1554 as "Carva." The settlement relocated from a higher location to the south, likely in the 18th century. The older settlement is not mentioned in any sources from the 19th or 20th centuries, suggesting that the population movement was immediate. The name was changed to Drosopigi in 1955 (Komis 2005:278-279).

Desc Although the older name of the town is listed as "Basi" in Pikoulas' lexicon, locals confirmed that it is actually "Tserova." I did not record the town in detail, as it is known that the medieval settlement was located above the town in Palaia Tserova. Overall, the structures appear to be mostly EM–Mod in date, with some Ott II architecture. Based on my own observations, I would agree with Komis about the date of the population movement. The settlement lists up until 1715 refer to the now-abandoned location.

T269 Kaliazi – Κάλιαζη N 4062557, E 629021, 347 m
Ott I, Ven, Ott II
Permanent / Abandoned / Partial Mapping / Wall widths < 1 m
1 August 2014

Lists 1715 – Kalyazi, 38 *hâne*, 22 bachelors
1700 – Calliasi, 62 families, 252 people
1695 – villa Caliesi, 76 combatants
1692 – Cagliasi (tax)
*1618 – Zatena, dove e il passo stretto, 10 hearths
1583 – Kalezi (?) (tax)

Med 27

Bib The toponym likely comes from the Albanian *kalëz* (corncob). It was first documented in a 1554 map as "Cagli." Allegedly, this was the settlement to which Michalis Bozis-Petropoulakis fled around the year 1700 after coming into conflict with the Venetians and Ottomans. In the early 18th century, members of the Petropoulakis family spread to more fertile areas around Passava to the north. Komis suggested that this population movement led to Kaliazi's abandonment, contrary to the oral legend that it was destroyed by other Maniates because it had become a base for pirates. Its abandonment was not immediate—the population began dwindling at the beginning of the 18th century, and was complete by the second half of the 19th century. The church of the Sotiras was founded in 1725 (Komis 2005:272-273). As for the 1618 Nevers Catalog reference to "Zatena," Komis linked it with the toponym "Sterna," which also appeared in the 1554 map. He argued that Zatena is a corrupted form of "Stena" or "Steni" (narrow pass), a toponym associated with Pyrrichos (Kavalos).

Desc See case study in Chapter 6. Kaliazi is located on a flat section of a south-facing hill overlooking the pass between Areopoli and Gytheio. The location affords an excellent view of the valley below, and the settlement is intervisible with many of the other settlements in the valley, including US 6, Palaia Karyoupolis, Palaia Tserova, and the bay to the east of the peninsula. Part of Oitylo can also be seen. Today only the church, which was built in 1725, is maintained. South of the church is a ruined Ott I settlement with at least 27 houses visible in the imagery, now so overgrown that it most of it was impossible to access. The house architecture incorporates tile in the construction, and there is reddish orange grooved tile (similar to that found at nearby US 6, T378) scattered about the site. When the church was built in 1725, a monastery was also founded at the site, and several ruined monastery buildings are still standing in the vicinity of the church. In regards to the 1618 Nevers Catalog entry for "Zatena, dove e il passo stretto" (Zatena, where the pass is narrow), I believe there are three main reasons why it should be connected with this settlement: (1) The order of the Nevers Catalog (Charea, Chosea, Zatena dove e il passo stretto, Vacha) indicates that Zatena should be located somewhere between Karea and Vachos. Yet the catalog is conspicuously missing a direct reference to Kaliazi, a settlement that appears in other documents from the Ott I and Ven periods and would have been on the route that the authors took between Karea and Vachos. Pyrrichos (Kavalos) is much further south, and the authors would not have encountered it at this point in their journey. (2) Pyrrichos (Kavalos) appears later in the list, in the appropriate position relative to its geography, as "Cavallo nel Purcho." (3) The reference to a "narrow pass" could be a reference to the pass between Areopoli and Gytheio, rather than the pass between Areopoli and Kotronas (in which Pyrrichos is located).

T271 **Palaia Karyoupolis – Παλαιά Καρυούπολις** N 4060115, E 629576, 414 m
Byz, Ott I, Ven, Ott II
Permanent / Abandoned / Partial Mapping / Wall widths < 1 m
18 April 2014

Lists 1829 – Karioupolis (see T056)
1813 – Magnacova (see T056)
1715 – Karyupoli, 20 *hâne*, 2 bachelors, 3 widows
1700 – Cariopoli, 36 families, 165 people
1695 – Criopoli, 63 combatants
1692 – Cariopoli (tax)
1618 – Chariopoli, Vescovato, 20 hearths
1583 – Karyupoli (tax)

Med 29

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). During the Late Byz period, Karyoupolis was the seat of the bishopric and the headquarters of a military commander, and its tower dates to the 15th century (Kalamara and Roumeliotis 2004:45, Figure 16; see Figure 107 in this text). Ay. Nikolaos dates to the end of the 13th century (Drandakis 1986:20) and Ay. Yeoryios to the early 15th century (Drandakis 1986:20; Saïtas 2001:20-21). The settlement first appeared in historical sources in the early 9th century and was inhabited continuously until its desertion in the 19th century (Komis 2005:279-280). In 1447, Cyriac of Ancona (2003:324-327) referred to the site as "Caropolim." For the ancient graves and ossuaries at the site, see Saïtas 2009:376. For more on the history of the site, see Etzeoglou 1982.

Desc See the modern village of Karioupoli (T056). The settlement is indicated by a hiking sign for Karyoupolis and the Monastery of Ayios Yeoryios, between the towns of Vachos and Drosopigi. The rocky hiking path to the site is overgrown, and the village itself is also heavily vegetated. The area around the two churches and the tower is accessible, but we were able to reach only one of the ruined domestic structures. This structure was made of mortared, uncoursed limestone blocks with medieval tile interspersed throughout, and it likely dates to the Ott I period. No entrances or lintels could be seen. We also found three joining sherds of Byz green-glaze pottery. Aside from this, there was a large amount of medieval tile in the entire vicinity of the site. In the imagery, additional rectangular structures can be seen on the north side of the hill below the churches, for a total count of at least 29 houses. It is very likely that there are more structures hidden beneath the vegetation.

T278 **Korakianika – Κορακιάνικα** N 40437956, E 631252, 78 m
Byz, Ott I
Permanent / Occupied / Field Visit / Wall widths > 1 m
31 July 2014

Med 6

Desc Located above Kokkala. The architecture in the village is predominantly EM in date. I recorded a single megalithic structure that is visible above the modern paved road. In the imagery, at least five more of these ruined houses can be seen, with varying wall widths. A megalithic wall forms the western edge of the small cemetery, and above this there is a ruined structure with a barrel-vaulted *kamara*, possibly EM in date.

T289 **Kozia – Κόζια** N 4062679, E 629865, 354 m
Ott I
Permanent / Abandoned / Partial Mapping / Wall widths < 1 m
1 August 2014

Lists 1618 – Chosea, 12 hearths

Med 14

Bib The toponym comes from the Byzantine term *chosiarios* (a soldier who organized ambushes), which in turn is derived from *chosia* (ambush). As for the 1618 Nevers Catalog reference to "Chosea," Komis links it with the modern village of Chosiari, located in the arable land in the northeast part of Mani (Komis 2005:282-283, Note 109).

Desc The settlement is located high above the pass from Areopoli to Gytheio on the side of a mountain, and it has an excellent view of the valley below. It consists of a single EM tower complex and the church of Ay. Yeoryios, which has a painted dedication above the door dated to the 1860s (likely a renovation date, as the church architecture itself appears much older). A spring is located just behind the church, and the water is currently channeled via a cement trough and rubber piping to irrigate the fields. The settlement is labeled as "Kouaki" on the Anavasi atlas, although a hand-painted sign next to the church says "Kozia" with a date of 2011. In the imagery, at least 14 rectangular domestic structures with walls less than 1 m thick can be seen aligned on a flat area above the EM tower complex. This area is not visible from the dirt road below. Based on the modern toponym, I believe this abandoned village—not Chosiari, as Komis suggested—is the "Chosea" referenced in the 1618 Nevers Catalog. Not only is it a stronger case based on its geographical location near the villages named alongside it in the Nevers Catalog (including Vachos and Skala), Chosiari has no standing architecture from the Ott I period. Based on the architecture, it seems the settlement was abandoned sometime in the 1700s and then reoccupied in the 1800s.

T280 **Kato Pachianika – Κάτω Παχιάνικα** N 4043959, E 630168, 226 m
Ott II
Permanent / Occupied / Partial Mapping / Wall widths < 1 m
31 July 2014

Desc High above Kokkala in a small valley, labeled on the Anavasi atlas as “Koulizianika.” The village is also known as “Ayios Nikolaos” (see http://www.mani.org.gr/horia/danmanis/kokkala/kokkala.htm). This alternative name likely derives from the name of the EM church in the main *plateia*. The town is dominated by EM architecture, but there is a late Ott II tower (dated to 1805) overlooking the path from below. A *kalderimi* leads downhill to agricultural fields below the village, and a number of cisterns are grouped along the upper part of the path. A branch of this path may continue east to an isolated and ruined triple-apsed church, where the modern road picks it up and paves over it. The gully north of the village has naturally eroded caverns that are now used as animal pens. The town seems to have a defensive layout, with a tower, grouped cisterns, and a house in the upper part of the town with its own cistern located inside the house. The town is not in the records, but it might have been first occupied when Pachianika was reinhabited in the late Ott II.

T284 **Kozounas – Κόζουνας** N 4041521, E 632655, 154 m
Ott II
Permanent / Abandoned / Partial Mapping / Wall widths < 1 m
25 April 2014

Desc Comprised of a single, Ott II–EM structure on the hill overlooking Spira.

T290 **Menenianika – Μενενιάνικα** N 4058233, E 633260, 121 m
Ott II
Permanent / Occupied / Partial Mapping / Wall widths < 1 m
21 April 2014

Desc Simultaneously a large residential complex, a monastery, and a village with its own name, located on the side of a mountain overlooking Skoutari Bay. A functioning springhouse is built into the hill below the structures. As the name indicates, it is the settlement of the Menenakos family, and it is still in use. The buildings have been recently renovated, and there are dedicatory plaques from the 21st century commemorating the installation of benches and new cobbling within the monastery’s courtyard, as well as the installation of electric wiring. Another plaque lists the public works funded by the family in the area around Skoutari: paving the road from Parasyros and the road to the beach, supplying water from the spring, and paving the road from the center of Kotronas to the monastery.

T293 **Dimaristika – Διμαρίστικα** N 4040376, E 632058, 240 m
Byz, Ott I, Ven, Ott II
Permanent / Occupied / Full Mapping / Wall widths > 1 m
26 April 2014

Lists 1829 – Mesa Dimaristika, 26 households
1813 – Dimaristica, 140 men, 60 soldiers
*1715 – Sela, 18 *hâne*, 2 bachelors
*1695 – villa Sela, 90 combatants
*1692 – Sela, e Liondachi (tax)
*1618 – Sella, 60 hearths
*1583 – Sela (tax)

Med 31

Bib The settlement has evidence of megalithic architecture (Saïtas 2001:Note 42). The double-apsed church of Ay. Paraskevi, located in the cemetery at Rizopyrgos, dates to the 12th or 13th century (Drandakis 1986:21; Saïtas 2009:375). The older toponym "Sella" is a geographical indicator and is used frequently to refer to hilly areas. In Mani, the toponym appears also near Mavriano and Phlomochori. Komis (2005:393) suggested that the village referenced in the historical settlement lists was located in the latter area of Mani. The modern toponym "Dimaristika" comes from the Greek *damari* (quarry), and several ancient marble quarries are located in the vicinity of the village (Warren 2012:Note 6). The first reference to the modern name was in the 1798 poem by Nikitas Niphakis. After 1940, the five discrete clusters or neighborhoods were listed together under the single modern name (Komis 2005:362).

Desc See Pera Dimaristika (T033), Kato Dimaristika (T308), and Ano Dimaristika (T377). Dimaristika refers generally to 5 discrete villages located in the hills on the east coast between Kokkala and Layia (the fifth being an EM settlement of Mesa Dimaristika). The core area, where this particular village is located, has evidence of medieval occupation, while the other villages appear to have been founded in the Ott II or EM periods. These newer villages are located on all sides of Dimaristika, and their prefixes are directional prepositions (Pera – "through," Kato – "below," Mesa – "inner," and Ano – "above"). Of these, only Mesa Dimaristika appears to have been founded in the EM period, despite the fact that the name appears in the 1829 Expédition Catalog with 26 households. It seems likely that this entry actually refers to the main settlement of Dimaristika, rather than the small hamlet with only a few houses that is now known by that name. Dimaristika itself is located on a hill overlooking a small bay below, and a slight dip or saddle separates it from Ano Dimaristika immediately west. The area today is extremely overgrown, and I could access only a few of the megalithic structures, several of which were reused in the Ott II and EM periods. From the main road that now curves around the hill, several more structures can be seen, and in the imagery, at least 31 are visible in total. I recorded one lintel-topped cistern and several more with later phases, and it is likely there are many more. A local resident told me there is no spring in the vicinity of the settlement, hence why so many cisterns were built. There are also two ruined churches, Ay. Paraskevi and Ay. Kyriaki, at the center of the settlement, sheltered from the hill to the east. Both are dry stone constructions with large-stone foundations, now ruined. A very rough *kalderimi* runs north from Dimaristika toward Pera Dimaristika. The settlement and its peripheral neighborhoods appear to have experienced a fluorescence in the Ott II period, and the central hill became the location of several Ott II houses with an impressive towerhouse at its apex. Today this central building is abandoned and entirely overgrown. Later, an EM church was built between Ano Dimaristika and Dimaristika, along with many more EM houses. As for the correlation of Dimaristika and "Sella" (meaning "saddle" or "slope"), which appears in several of the historical settlement lists, this is my own suggestion based on the order of the 1583 defter (Layia and Piontes, Sela, Nyphi). This order and the population attributed to it over time suggests that Sella was a major village located somewhere on the southern stretch of the east coast. Furthermore, the defter lists Sella in the district of "İç Manya," which is applied only to settlements in Inner Mani and the southernmost part of the east coast (i.e. Laya and Nyphi). Komis, on the other hand, suggested that the settlement was linked to an area known as Sella near Phlomochori further north, but the defter groups all the settlements in that region together in the district of "Manya." Another clue as to its location comes from the 1692 Zeno Register, which groups Sella with Leondakis, a medieval village high in the mountains directly west of Dimaristika and connected to it by a series of goat paths.

T299 **Olympies – Ολυμπιές** N 4042557, E 630955, 183 m
Ott I
Permanent / Occupied / Partial Mapping / Wall widths < 1 m
26 April 2014

Desc Set deep into a narrow mountain valley above Kokkala on the east coast. The architecture is primarily EM in date, including several very tall towerhouses (4–5 stories in height), but I recorded two Ott I structures on the north side of a small gully leading west uphill out of the village. Both have a typical small south-facing window, and each is connected to its own small natural cave that would have been used to keep animals. The church is EM in date.

T301 **Palaia Tserova – Παλαιά Τσεροβά** N 4059035, E 630163, 544 m
Byz, Ott I, Ven, Ott II
Permanent / Abandoned / Full Mapping / Wall widths > 1 m
13 June 2014

Lists 1829 – Tserova (see T262)
1813 – Zerva (see T262)
1715 – Çerova, 48 *hâne*, 2 bachelors, 5 widows
1700 – Cerova, 63 families, 241 people
1695 – villa Cerova, 68 combatants
1692 – Cottrona, e Cerova (tax)
1583 – Çörova (tax)

Med 48

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). See Drosopigi (Tserova) (T262). The toponym comes from the Slavic *cerova* (oak). It was first documented in 1554 as "Carva." The settlement relocated from a higher point south of its present location in the 18th century. The older settlement was not mentioned in any sources from the 19th or 20th centuries, suggesting that the population movement was immediate. The name was changed to Drosopigi in 1955 (Komis 2005:278-279).

Desc See case study in Chapter 6. An abandoned settlement above modern Drosopigi on the apex of a hill. The location provides an excellent view of the wide valley to the north, the Skoutari Peninsula to the east, various settlements (including Palaia Karyoupolis), and the hills just above Oitylo Bay. I recorded three watch huts: one on top of the fortified hilltop, another on the smaller hill along the ridge, and a third further north of the settlement, overlooking Drosopigi. This last watch hut has a view of Oitylo Bay, thus making it possible to have relayed messages back about any ships going in or out there. The valley to the south is terraced on the northern slope, but the southern slope (along the north face of the next mountain) is only minimally terraced. These appear to be long-abandoned, braided terraces. The ruined church at the center of the settlement seems to have been rebuilt in the EM period, but the large blocks in its lower courses—along with a few rectangular blocks of sandstone used in the arches—suggest that it may once have been a Byz chapel. There is also a fortified hilltop, with three sides built up with a stone-built wall, and the fourth dropping off at a cliff to its south. We could identify only a rough watch hut amidst a few larger wall foundations, and there was medieval tile scattered about. Though the "fortification" wouldn't have provided much defense, it is one of the few examples of a medieval *kastro* that can be found in Mani. The residential structures can be divided into two types. The first group is located around the higher hill. Some of these are megalithic, while others use large stones in the lower courses. Almost all are built into the hillside, either fully incorporating bedrock into the back or side walls, or disappearing into them as if they were filled with erosion from the hillside. The stones in these particular structures seem quite old and weathered, with white lichen covering them, and the blocks are somewhat rounded. The second group is located along the ridge running northeast and then north toward Drosopigi. These are very well built, considering that they are dry stone with large- or standard-sized stones. The stones may be worked somewhat to achieve a flat surface, on which other blocks are stacked. Smaller stones are used in some of the buildings to fill the crevices. The stones in these buildings are grey and jagged, with no lichen on any of their surfaces. The layout of both types of buildings is remarkably similar. It may be possible to attribute the noted differences to micro-geographical differences in weather, but I think it is much more likely that they reflect two construction phases, perhaps separated by centuries of time. Along with the residential structures and church, we recorded about 16 stone-built ossuaries concentrated below the settlement to the northeast, on a north-facing slope. About half of these are fully subterranean pits, while others are built up above ground. All are dry stone construction, with slab construction supporting a rubble roof. Next to the ossuaries there is a single rectangular structure, the dating and purpose of which is unclear.

T302 **Paliochori – Παλιοχώρι** N 4048804, E 630861, 451 m
Byz, Ott I, Ven, Ott II
Permanent / Abandoned / Full Mapping / Wall widths > 1 m
8 June 2014

Med 50

Bib See Drymos (Driali) (T261). Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). This settlement, located southwest of Drymos, is considered the older location of Drymos (Driali) according to oral tradition (Komis 2005:363). Ay. Yeoryios dates to the end of the 13th century (Drandakis 1986:21).

Desc A large megalithic settlement with very limited Ott II and EM phases, located on a ridge south of Drymos. The megalithic structures are concentrated on the south slope of the ridge, such that only one or two of them can be seen from Drymos or the bay to the north. A path (at times a proper *kalderimi*) connects Drymos to Paliochori, and continues further south to Nyphi, Mesa Chora. Thus, although the settlement would have been obscured from the sight of a person approaching from the north, it would have been visible from the south. As with other megalithic settlements, the structures are of typical design and tend to be aligned along the contours of the hill. Only a few structures (on the ridge) have field walls connecting their downhill faces, which could have served a defensive function. There are also many cisterns distributed throughout the settlement, but they seem to be associated with individual residences—at times even attached to a long side of a house. I was unable to record all the megalithic structures due to inclement weather, and I recorded only nine cisterns (only those along the central elevation contour up until the church)—there are likely many more preserved in the settlement. The height of the settlement's occupation was the medieval period, and a total of at least 50 medieval houses were recorded through a combination of field recording and imagery inspection. There is at least one structure above the main cluster on the hill that could be dated to the Ott I period. The church appears to be attached to a Byz–Ott I building, and the icons inside appear Ott II in date. The church and another structure have 20th-century phases, and there are also three features that date to the 20th century: a tower complex and two unfinished towers. In the Ott II and EM periods, it is likely that only one or two families lived here, and it may very well have been abandoned for a short time between these periods.

T307 **US 10** N 4043222, E 625359, 108 m
Byz
Permanent / Abandoned / Remote ID / Wall widths > 1 m
N/A

Med 5

Bib For a plan of the settlement and photographs of two rectangular shaft graves to the west and north, see Saïtas 2009:Figure 40.11.

Desc A small cluster of at least five ruined megalithic structures and a ruined church of Ay. Marina, south of Gardenitsa. The only exposed wall that can be seen in the imagery is about 1.15 m in width, suggesting a Byz date.

T308 **Pirgaros (Kato Dimaristika) – Πύργαρος (Κάτω Διμαρίστικα)** N 4040388, E 632250, 186 m
Ott II
Permanent / Occupied / Partial Mapping / Wall widths < 1 m
26 April 2014

Lists 1829 – Pera and Mesa Dimaristika (see T033 and T293)
1813 – Dimaristica (see T293)
*1715 – Sela (see T293)
*1695 – villa Sela (see T293)
*1692 – Sela (see T293)
*1618 – Sella (see T293)
*1583 – Sela (see T293)

Bib For bibliographic references, see T293 (Dimaristika).

Desc See also Pera Dimaristika (T033) and Ano Dimaristika (T377). The settlement is located just east of Dimaristika, below the modern road. Due to the presence of a herd of cows, I did not investigate the north side of the village or the two potential *kalderimia* that can be seen in the imagery. Based on what I could access, the village is comprised of at least one Ott II building and several EM buildings, one of which has been renovated. A bedrock path leads downhill to the east to an abandoned EM structure, and a very rough *kalderimi* ascends the hill south of this—now used as a cow path.

T313 Ayia Lia – Αϊ Λία N 4040993, E 631141, 521 m
Ott II
Permanent / Occupied / Partial Mapping / Wall widths < 1 m
6 August 2014

Desc A small settlement located high above Dimaristika adjacent to a number of ancient quarries of limestone and rosso antico (a local red marble that was widely traded in ancient times). Its location provides it clear defensive advantage. The settlement is labeled "Prophitis Ilias" on the Anavasi atlas, but a road sign displays the name Ayia Lia. There are signs posted along the road warning visitors not to take anything from the ancient quarry. The town's architecture dates to the Ott II at the earliest, with the tower complex on top of the hill appearing to be the earliest structure. From the vantage point of the tower, it is possible to see the two towers in Dimaristika and Ano Dimaristika, as well as the eastern edge of Spira below them. All of Pera Dimaristika is obstructed from view. Otherwise, the view is mainly restricted to the ravine to the south, which is full of loose rosso antico fragments. The village expanded slightly in the EM period, and today only one of the buildings has been renovated to create a large tower complex. All the buildings incorporate the rosso antico as if it is ordinary limestone, especially to accentuate corners and doorways.

T321 Soloteri – Σολοτέρι N 4043472, E 631630, 14 m
Ott I
Permanent / Occupied / Field Visit / Wall widths < 1 m
31 July 2014

Lists 1618 – Zoloteria, 46 hearths

Med 1

Bib The toponym comes from the Latin *solitarium* (solitary, alone) (Komis 2005:399).

Desc Located at the mouth of a ravine above Kokkala. It is comprised mostly of modern structures along the modern road running north–south along the coast. The gully running alongside its southern border is filled with river-rolled rocks, which have been used in dry stone walls around the area. The area stretching between the modern settlement and the coast has lots of rock rubble and very ruined walls that can be seen from the road, and there is at least one definite older structure east of the modern road by the coast. These walls and the structure are likely part of the 17th-century settlement, long-abandoned and very ruined. The area was likely unoccupied between the mid-17th and late 18th centuries, until the area expanded in the EM period.

T327 Vata – Βάτα N 4053995, E 631776, 107 m
Byz, Ott I, Ven, Ott II
Permanent / Occupied / Partial Mapping / Wall widths > 1 m
12 August 2014

Lists 1829 – Vata, 44 households
1813 – Battas, 70 men, 30 soldiers
1715 – Vata, 44 *hâne*, 16 bachelors
1700 – Vata, 66 families, 283 people
1695 – villa Vatta, 156 combatants
1692 – Vatta (tax)
1618 – Vatas di Cholochitia, 30 hearths
1583 – Vata (tax)

Med 14

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). The *palaiomaniatiko* settlement is located on the southeastern side of the modern settlement (Komis 2005:396).

Desc Today Vata is considered a neighborhood within the wider town of Phlomochori, though the two were clearly separate settlements until very recently, when their boundaries blended together. It is separated from modern Phlomochori by a small river gorge and was once connected to the former by at least two *kalderimia*. Vata appears to have been continuously occupied from at least the Byz period. I recorded several megalithic houses in person, some of them forming the foundations of later houses. At least 14 can be seen altogether in the field and in the imagery. The village has three churches: the Byz church of Ay. Varvara, a potentially Ott II church of Ay. Kyriaki, and an EM–Mod church of Ioannis Prodromos.

T328 Vathy – Βαθύ N 4062993, E 635813, 2 m
Ott II
Permanent / Occupied / Field Visit / Wall widths < 1 m
11 August 2014

Lists 1813 – Vathi, 60 men, 50 soldiers

Bib The toponym, referring to the port at Vathy Bay, appeared in sources from the 14th and 15th centuries. Based on the establishment of the Grigorakis clan in the area around Ayeranos and the foundation of Skoutari, specifically, the settlement was likely founded after the Ottomans reconquered the Peloponnese in 1715. The settlement appeared on a map from 1720, but the population was probably very small at this point and the area's primary importance was still the port, which was used for exports in the early 18th century. The population estimate from 1813 likely included the population of nearby

Ayeranos, which was omitted from the list (Komis 2005:336-337). For a brief account from the early 19th century, see Leake 1830:266-267.

Desc Located in a flat plain fed by the Tourkovrisi stream, just north of the small peninsula on which Ayeranos is located. The architecture in the village is primarily EM and Mod, and it is now a beach and hotel destination.

T341 Yerma – Γέρμα N 4063869, E 628280, 315 m
Byz, Ott I, Ven, Ott II
Permanent / Occupied / Partial Mapping / Wall widths < 1 m
18 March 2014

Lists 1715 – Ayo Nikola Yerma, monastery with 1 monk

Bib Ay. Nikolaos dates to the 11th century, with iconography possibly from the same century (Drandakis 1986:20-21, 2002:375).

Desc A local resident gave me a tour of the church, which is normally kept locked, and told me about the history of the town. Yerma began as a Byzantine monastery, which (based on the *defter* from 1715) was still in use during the 18th century. During this entire period, there does not appear to have been a permanent settlement associated with the church. The monastery was expanded into a settlement in the early 1800s, after a decree from the new minister of religion closed all the monasteries in the region. The monastery complex was expanded and rebuilt to become the central building in town and subdivided into several houses, and the Tsotakou family built a tower on the northwest side of town. Between 1900 and 1925, most of the younger generation left Mani, and today it is only seasonally occupied.

T342 Kato Karea (Konakia) – Κάτω Καρέα (Κονάκια) N 4066028, E 626922, 389 m
Ott II
Permanent / Occupied / Partial Mapping / Wall widths < 1 m
1 May 2014

Lists 1829 – Apano et Kato-Keria (see T054)
1813 – Carea (see T054)
1715 – Kato Kari, Goratos and Zunyanes 120 *hâne*, 44 bachelors
1700 – Carea (see T054)
1695 – villa Carea (see T054)
1692 – Carea (see T054)
1618 – Charea (see T054)
1583 – Karya (see T054)

Desc See Karea (T054). A primarily EM–Mod village in the large valley east of Oitylo. The main church dates to 1958. There are some buildings that may date to the late 1700s, but they are not built in the typical Ott II construction style found in Inner Mani. There are no towers in either Karea or Kato Karea (Konakia). The view from here includes Boutselianika, Kryoneri, and other EM villages in the valley. Interestingly, the map from the Expédition Scientifique seems to have misidentified Kato and Ano Karea: Kato Karea (Konakia) is placed where Kryoneri is today; Kryoneri is placed at Moni Spiliotissas (a monastery), and Ano Karea is placed at Panagakou, a very small cluster with two large, ruined EM residential complexes. Generally, the Expédition map is a reliable source of settlement location, so these errors are very surprising.

T343 Kelepha Fortress – Κελεφά N 4062646, E 624670, 240 m
Ott I, Ven, Ott II
Fortress / Abandoned / Field Visit / Wall widths < 1 m
1 August 2013

Med N/A

Bib Kelepha is one of the debated locations of the Frankish fortress of Grand Magne (Kriesis 1963; Wagstaff 1991, 2009; Komis 2005:Note 665). This association is partly based on an excerpt from the Chronicle of the Morea, which recounts the establishment of the fortress by Guillaume de Villehardouin: "Thereupon, the prince himself made a tour on horseback, following the directions of the people of the land, and he passed Passava and journeyed to Máïni, and there he found an awesome crag on a promontory. Because he found it pleasing, he built there a castle and named it Máïni, as it is still called" (Lurier 1964:159). The association is also based on the fortresses' strategic location overlooking Oitylo Bay and at the western end of the pass between Oitylo and Gytheio. Cyriac of Ancona (2003:310-311), travelling past the nearby settlement of Oitylo in 1447, reported that "no more than five stadia from the shore we saw a citadel built by later inhabitants out of [materials taken from] ancient buildings," but it is unclear whether he was referring to the promontory of Oitylo itself or to Kelepha opposite. The traditional argument, however, is that Kelepha was first constructed in 1670 by the Ottomans. Prior to this, the toponym, which appears in the historical records as early as 1495, was associated with the nearby settlement of the same name (T064) (Komis 2005:280-281). The Venetians conquered the area in 1685, and the Ottomans attempted to recapture it in the spring of 1686, to no avail (Coronelli 1687:88-91). During the Venetian period, there were two *botteghe* (shops) in the castle, one rented by Giacomo Costanzo and the other by Carabatto Cufachi Steffanopulo (Komis 2005:281). Every Sunday a *laiki* (public market) was held within the fortress (Lampros 1877:77). After the Ottoman reconquest, Kelepha lost its military importance and declined, while the nearby settlement continued to thrive.

Desc See also Tigani (T236) and Achillio (T430). I visited the fortress several times but did not record it in detail, as it is well published and did not support a permanent population within its walls. Most of the walls and bastions are still standing, aside from the southeastern bastion and part of the western wall. From the fortress, there is an excellent view of Oitylo across the gorge and many of the settlements around Oitylo Bay and extending into the valley to the northeast. A well-built *kalderimi* runs from the fortress downhill to the southwest, continuing all the way to Areopoli. Most of this *kalderimi* is still intact, and immediately below the fortress on the steep slope, several Z-curves can still be seen (see Figure 34 in main text).

T352 **Kondili – N/A** N 4056320, E 629983, 474 m
Ott I, Ven, Ott II
Permanent / Abandoned / Full Mapping / Wall widths < 1 m
19 April 2014, 1 July 2014

Lists 1715 – Kondili, 40 *hâne*, 19 bachelors
1700 – Candilli, 79 families, 345 people
1695 – villa Condili, 142 combatants
1692 – Candili, e Lucadia (tax)
1583 – Kondili (tax)

Med 63

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). Komis traced the toponym to a family surname that was mentioned in a list of seafarers from 1563. He proposed that it might be associated with modern Loukadika based on the order of the settlement lists (Komis 2005:348).

Desc The settlement is labeled as “Kastraki” on the Anavasi atlas, and a villager in Phlomochori confirmed that it is now known by this toponym. It is located on two small conical hills in the valley between Pyrrichos and Loukadika. A hiking path begins southwest of the highest (western) hill and is marked by a sign for “Ancient Pyrrichos.” It circles to the southern slope, but ends abruptly at an impassable section of overgrown macquis. Today this hill is better reached from the northeast, where it is possible to follow cow paths all the way up the hill’s eastern face. Atop the highest hill, there are two rectangular structures and some pottery that appear to be ancient, possibly associated with the acropolis of ancient Pyrrichos. These are constructed with standard-sized, semi-worked blocks made of grey marble and limestone. One has a preserved entryway on the short, eastern end, though no lintel stone remains. On the northern and southern ends of the hilltop, there are loose, circular structures that appear to be windbreaks or lookouts. The northern side also has a large built wall that extends in a straight line, ending on either side at the naturally defensible hillside. There is also a narrow cave southwest of the largest rectangular structure. At one point, the entrance had been built up with limestone cut blocks, and wall fall now obscures the cave floor. The cave may have been a source of fresh water. The medieval structures are located atop the next hill (to the east) and along the eastern faces of both hills. They do not have megalithic or large-stone foundations, and the average wall width is 90 cm, suggesting they were not built until the Ott I period at the earliest. Otherwise they are very similar to the other abandoned medieval structures in the region. At the top of the eastern hill, several attached houses form a complex, while the rest of the houses are more dispersed and aligned along the contours of the hillsides. We recorded only the structures on the top of the eastern hill, including one very large cistern built with bedrock. In the imagery, a total of at least 63 structures can be seen. Based on the size of this settlement (in terms of the architectural remains) and its order in the 1583 defter (Kavaloz, Kondili, Lukadika), I believe this is a good candidate for the now-forgotten toponym of Kondili. Kondili is also one of the few large settlements missing from the 1618 Nevers Catalog, which also follows a geographical route past this area (the order is as follows: Cavallo nel Purcho, Chorio-Chorogona, Viglistico, Scalciotiagni). I suspect that the authors missed the settlement as they travelled from Cavalos to Vlistikos, arching around modern Chimara (which I have tentatively linked with Chorio-Chorogona) on the other side of the gully. This was also the only list that recorded Vlistikos, suggesting that the other lists traced a path through Kondili south toward Loukadika.

T356 **Yeroyiannoukou Kalyvia – Γερογιαννούκου Καλύβια** N 4031305, E 632335, 179 m
Byz, Ott I, Ven, Ott II
Seasonal / Abandoned / Remote ID / Wall widths > 1 m
N/A

Med 5

Desc A seasonal installation with a total of about 13 rectangular structures (five of which could be residential structures) and associated walls, above Marmari to the south. The toponym is taken from the Anavasi atlas. Unlike permanent settlements, the structures pare not organized in a regular pattern. The site is currently inaccessible, except by hiking up through vegetation and following animal paths. Given the rise in Marmari's popularity as a beach destination in recent years, I doubt that the area is still in use. A well-built path leads around the mountain from the north and seems still to be used by animals—I suspect this is connected with the kalyvia at the top of the hill. The rectangular structures may be temporary residences (as indicated by the name) or even animal pens. In the imagery, several of the walls are clearly megalithic and well over 1 m in width, while others are more narrow, meaning it may have been used as a seasonal installation in all periods.

T359 **Moni Spiliotissas – Μονή Σπηλιώτισσας** N 4064080, E 625637, 210 m
Byz, Ott I, Ven, Ott II
Monastery / Occupied / Partial Mapping / Wall widths < 1 m
18 March 2014

Lists 1715 – Panaya İspilyotisa, in the borders of Kelefa, monastery with 3 monks

Med N/A

Bib For a brief account from the early 19th century, see Leake 1830:281.

Desc A monastery north of the village of Kelepha, bordered on the north and south by gullies that lead west to Oitylo. There is a cave chapel below the monastery along cliff of the northern gully. Today the monastery is well kept and maintained for visitors.

T360 **Proskephalia – Προσκεφάλια** N 4034822, E 633552, 309 m
Byz
Permanent / Abandoned / Remote ID / Wall widths > 1 m
N/A

Med 33

Desc A small abandoned village northeast of Korogonianika in the southeast part of the peninsula. I did not visit the site alone because of its distance from the nearby village. In the imagery, at least 33 ruined structures can be seen, many of which are linked by field walls to create animal pens or compounds. At least two ruined churches can also be seen. Most of the walls average more than 1 m in width, suggesting a foundation and primary occupation date in the Byz period.

T362 **Kouvouklia – Κουβούκλια** N 4053326, E 624565, 227 m
Byz
Permanent / Abandoned / Full Mapping, Wall widths > 1 m
16 June 2014

Med 46

Bib See Glezou (T189) for sources on Ay. Taxiarchis.

Desc See case study in Chapter 6. The local toponym was reported by residents of nearby Pyrgos Dirou and confirmed by residents of the surrounding villages. Kouvouklia is a large megalithic settlement south of Glezou on the nearly flat plain below the lower slopes of a mountain. The settlement is located southwest of the Middle Byz church of Ay. Taxiarchis. Although the settlement is generally undefended, there is one structure in the eastern part of the site that seemed to have been a tower. The structure's walls are unusually thick (about 150–180 cm), and it is more or less square in dimensions (7.5 x 5.5 m). We recorded 46 medieval houses, most of which are independent structures, but some of which form attached complexes. We also recorded 22 medieval cisterns, many of which are located immediately southwest of houses. We did not find cisterns associated with all of the structures, but the overgrowth and reworking of field boundaries and terrace walls may very well have obscured many of these features. Today the settlement is overgrown with wild olives, tall field grass, and some low brush. The very eastern part is now used as a farmstead, and there are a number of modern structures here, as well as some medieval structures that have been adapted for farming purposes. Field paths pass by the settlement on the northern and eastern borders, and another passes through the western portion of the settlement to connect to the modern paved road, which runs north–south through the very western edge of the settlement. This road was likely once a *kalderimi*.

T363 **Koulouvades – Κουλουβάδες** N 4053885, E 623939, 212 m
Byz
Permanent / Abandoned / Full Mapping / Wall widths > 1 m
4 June 2014

Med 28

Desc A settlement similar in layout and architecture to Kouvouklia (T362), located southeast of Pyrgos Dirou. The local toponym was reported by residents of nearby Pyrgos Dirou, who also reported a second toponym for the area: Pano Chorio (Πάνω Χωρίο). A ruined Byz church of Ay. Vlasis or Ay. Vlasides is situated within the village at its northeastern edge. The settlement forms a kind of triangle shape, with the longest end pointing to the east. The area is now subdivided into olive groves that are fairly overgrown, and the walls of the buildings have been incorporated into field walls either to delineate fields or to serve as animal pens. We recorded a total of 28 individual houses, some of which are connected into multi-house complexes. Most of the buildings are filled with rubble, and the walls have been reduced to only the lowest course(s). The one exception to this is one of the largest houses I recorded in Mani (see Figure 8 in the main text). We also recorded 32 cisterns, only one of which was a later barrel-vaulted construction. The ratio is nearly one cistern per house—extremely high compared to other villages we recorded in detail, particularly considering that the cisterns are likely to be underrepresented in the final counts. A cluster of cisterns is located in the northwest part of the settlement, with several sharing a single field, while others seem to be distributed at random in between the structures. A walled field path runs along the north edge of the site but comes to an end at the middle of the site—no field paths connected the structures or lead to the church.

T364 **Males – Μάλες** N 4055135, E 625887, 295 m
Byz
Permanent / Abandoned / Full Mapping / Wall widths > 1 m
9 June 2014

Med 47

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). Ay. Vasileios, near the settlement of Males, has 12th century marble sculptures (Drandakis 2002:383). The settlement appears in the Nani archives as "villa Emialo" (Komis 2005:364).

Desc A primarily megalithic settlement along the lower slope of the mountains above the modern village of Paliopyrgos, northeast of Pyrgos Dirou. There are two small EM complexes high on the hill above the ruins. The local toponym was provided by villagers in Pyrgos Dirou, and there is a division between the upper (Pano) and lower (Kato) parts of the old settlement. Like Koulouvades and Kouvouklia to the southwest, most of the structures are isolated houses or at most two to three attached houses, but here there are also two complexes with up to five connected houses. We recorded only five cisterns altogether, but it is likely that we missed others because of vegetation or later wall construction. A *kalderimi* leads uphill toward the settlement from Charia, passing an isolated ruined Byz church (possibly the Ay. Vasileios referenced by Drandakis) and ending at two more small ruined Byz churches (together referred to by locals as Ay. Vasilides) on the north side of the settlement. The lower part of this *kalderimi* is now paved, but the upper part is preserved. Another walled field path, now paved, branched off from this *kalderimi* and headed directly for the center of the settlement. Within the settlement itself there are no walled field paths that would have connected the structures. Overall it lacks the defensive quality of later settlements on these lower slopes (such as a large wall connecting the faces of several structures). Its location on the gentle hillside provides a good view of the flat plains below. The area around the structures is now terraced—at times it seems that the terraces were built around the structures, while in the case of at least one house, it seems that the terraces were already there when the house was built. A modern road now cuts through the middle of the settlement along the contour of the hill, heading north to an isolated EM farmstead. In the aerial photography from 1967, this road was still a field path, and it appears that the construction of the road did not destroy any pre-existing structures.

T365 **Skyphianika – Σκυφιάνικα** N 4049647, E 626394, 309 m
Byz, Ott I, Ven
Permanent / Occupied / Partial Mapping / Wall widths > 1 m
15 June 2014

Lists 1829 – Skyphianika, 9 households
1715 – İşkifyanika, empty of peasants (*hâli ane'l-reaya*)
1700 – Schiffanica, 22 families, 86 people
1695 – villa Schiafianina, 36 combatants
1692 – Soffianica (tax)
*1618 – Fichouriani, 30 hearths
1583 – İskifyanika (tax)
*1514 – Fihuryani (?), 42 *hâne*, 5 bachelors, 1 widow

Med 27

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). There is another settlement called Skyphianika in the northern part of the peninsula. The toponym comes from the family name Schipho or Schiphos, which appeared in a letter written by residents of Outer Mani in 1585. The family name Skyphakos is still present in Mani today (Komis 2005:332-333). Komis (2005:393-394) attributed the existence of two settlements with the same name to population movement from the north to the south. Meanwhile, he traced the toponym "Fichouriani" (from the 1618 Nevers Catalog) to a different family name, Phikouras, which appeared in historical documents from Outer Mani in the 18th century and also in references to Maniates who emigrated to Corsica in the later 17th century (Komis 2005:365-386). Komis suggested that the settlement of Fichouriani was located in Palaiochora (T120), below Skyphianika.

Desc Located on the upper slopes south of Dryalos, with architecture ranging from megalithic Byz houses through Ott I phases. The settlement was reported as abandoned when the Ottoman reconquered the Peloponnese in 1715, but it was reoccupied in the EM period. There is a small church of Prophitis Ilias built on a megalithic foundation in the east (uphill) part of the site. The megalithic structures that were not used later are in a particularly bad state of ruin: two of them seem to have been incorporated into terrace walls, turning them into two-sided platforms. Additional structures can be seen in the aerial imagery extending downhill in an area that is now overgrown. It should be noted that contrary to Komis' argument about population movement, the toponym "Skyphianika" was already present in this area at the time of the 1583 *defter*. Although Komis suggested that "Fichouriani" referred to Palaiochora below this village, I suggest that Skyphianika was a more likely candidate. There are more abandoned structures here that would have corresponded with the Ott I population estimates, while Palaiochora lacks Ott I period architecture.

T366 **US 3** N 4044773, E 629516, 501 m
Ott I
Permanent / Abandoned / Partial Mapping / Wall widths < 1 m
31 July 2014

Med 4

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981).

Desc A small settlement on a narrow ridge high above Kokkala, accessed by a field path (now a dirt road) leading uphill from Pachianika or by a goat path from Kato Pachianika. The settlement is comprised of at least 4 residential structures, with construction typical of medieval ruined houses (though with smaller stones). It is located on a hill, protected on the north and west by larger mountains, and it has a clear view of the valley down to Kokkala to the east. There is a modern dome-shaped monument to a local author (Ioannis Barbayiannis) between the site and the modern road. The entire complex is paved with rocks to create a flat surface, and there are many walls and small animal shelters around—today the area appears to be used only for animals. Only one feature still has a barrel-vaulted roof, supported by the ledges along the inside walls of the building, and topped with a slanted slate roof above it. We did not record any cisterns, though there was one building with a non-plastered, stone-lined pit in one end and another pit outside a structure with a small *gourna* next to it.

T372 **US 4** N 4036808, E 632234, 322 m
Byz
Permanent / Abandoned / Field Visit / Wall widths > 1 m
18 July 2014

Med 19

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981).

Desc An unusually dispersed settlement of at least 19 ruined structures and a ruined church, located in a protected valley below the modern road from Kotraphi to Layia. I did not explore the settlement alone, but identified features from the road above and in the imagery.

T373 **US 5** N 4046167, E 631538, 318 m
Byz
Permanent / Abandoned / Full Mapping / Wall widths > 1 m
9 April 2014

Med 9

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981).

Desc See case study in Chapter 6. A small abandoned settlement high on a south-facing slope on the *kalderimi* between Nyphi and the monastery of Panayias Kournou. It is comprised of 9 ruined houses, a Byzantine church at the eastern edge of the settlement (Ay. Paraskevi), and at least four cisterns topped with small limestone slabs. The houses vary slightly, with the largest and highest one formed of large rounded boulders, and some with much more rectangular blocks. The architecture of one of the ruined houses suggests that there was a stairway leading from the ground floor to the first floor. The church of Ay. Paraskevi was recently re-mortared and whitewashed inside.

T374 Avles – Αυλές N 4037910, E 624842, 114 m
Byz, Ott I
Permanent / Abandoned / Full Mapping / Wall widths variable
15 April 2014

Med 10

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981).

Desc An abandoned complex of structures located on the plateau west of and above Yerolimenas and southeast of Ochia. The name is a local toponym reported by a resident of Ochia. The settlement is comprised of several ruined medieval structures and large rubble complexes, similar to those recorded in the vicinity of Diros Bay. The interiors are completely filled with rubble. The houses are arranged in small complexes, with a south-facing door that opens into a walled area, sometimes with a small door that can be used to access the complex from outside the walls. Some of these complexes are isolated, while others are connected by field walls. There are a few cisterns associated with individual complexes, as well as a cluster of six cisterns that range from completely subterranean and slab-covered to semi-subterranean with partial barrel-vaults. Altogether, we recorded 11 cisterns in the settlement, although there are likely more. The area now is almost entirely abandoned, used today only for grazing. The center of the settlement is thick with untamed olives, while grass and low macquis covers the area around this patch.

T375 Lakkos – Λάκκος N 4049693, E 623949, 134 m
Byz, Ott I[2], Ott II
Permanent / Abandoned / Full Mapping / Wall widths > 1 m
16 April 2014, 17 April 2014

Lists *1618 – Mos Sabatiani, 30 hearths

Med 48

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). The toponym mentioned in the 1618 Nevers Catalog, "Mos," cannot be translated. Based on the order of the list (Ftio Sabatiani, Mos Sabatiani, Nichandria), Komis (2005:383) suggested that it is referring to T375 (Lakkos), which is west of Ftio.

Desc A large primarily megalithic abandoned settlement on the plateau west of Tsopakas. The name is a local toponym reported by a resident of Tsopakas, and it is a geographical term that means "pit" or "depression." The fields around the settlement are flat and relatively

[2] I originally classified this settlement as Byz and Ott II only, and excluded it from the Ott I period when conducting the spatial analyses. Upon reassessment of the settlement lists, however, it seems likely that this site is linked with the 1618 Nevers Catalog entry for "Mos Sabatiani," and therefore would have been occupied in the Ott I period, too.

clear of loose rocks, though bedrock can be seen dotting the landscape. The fields are still used for grazing cows, and the olives are not currently overgrown or wild. There is a single ruined church of Ay. Sotiras north of the settlement, and the church of the Trisagia is about 250 m to the east. The settlement itself is comprised of 48 houses, some of which are connected together to form small complexes. There are about 30 of these distinct "structure areas," including some isolated houses and some connected compounds. The typical residential structures are like those seen elsewhere: a rectangular, megalithic structure oriented east–west, preserved to the roof of the ground floor, with a south-facing doorway topped with a huge lintel stone, and filled with wall fall or smaller rubble. In addition, most of the structures have a walled area south of the main structure that could have been used to contain animals. Very limited ceramic material was identified, mostly medieval courseware (many of which were handles), and no tile. A single Late Byz green-and-brown glazed fineware body fragment was found in the material on top of a plastered roof, which belonged to a structure added to the north side of a megalithic structure—the sherd may be archaic imitation Italian painted sgraffito from the 14th century at the earliest (Guy Sanders, personal communication). We also documented 12 cisterns, most of which are of the subterranean, slab-topped type. Almost all of the cisterns that we noted are completely filled with earth, and a few have even been deliberately covered with rubble (though the *gournes* that remain indicate their presence). The fact that the cisterns here are completely filled in (in contrast with those of similar design elsewhere that are only partially filled with rubble) suggests a longer period of disuse. To the south of almost all of the houses, rubble walls have been built up to block the entrance. A number of field walls or large, rectilinear rubble piles have also been erected to connect the structures, perhaps to make use of the megalithic walls in creating enclosures for animals. The vegetation within the settlement is now forested with a mixture of olives, figs, and acorn-producing trees—perhaps more verdant than the surrounding landscape because animals have been kept here, and thereby provided a natural source of manure. North of the main settlement area is a small cluster of megalithic structures. In the middle of this smaller cluster, one of the structures continued to be used in the Ott II and EM periods, with a subterranean cistern just west of the complex. Upon reassessment of the 1618 Nevers Catalog, I believe Komis' suggestion that this was "Mos Sabatiani" is sound, in part because of the geographical progression that would have taken the recorders south from Korines (T392) and Ftio (T006) before heading north again to Nikandreio (T109), and also because of the similarity of household estimates between the catalog and the archaeological remains.

T377 **Ano Dimaristika – Άνω Διμαρίστικα** N 4040360, E 631953, 276 m
Ott II
Permanent / Occupied / Full Mapping / Wall widths < 1 m
26 April 2014

Lists 1829 – Pera and Mesa Dimaristika (see T033 and T293)
1813 – Dimaristica (see T293)
*1715 – Sela (see T293)

*1695 – villa Sela (see T293)
*1692 – Sela (see T293)
*1618 – Sella (see T293)
*1583 – Sela (see T293)

Bib For bibliographic references, see T293 (Dimaristika).

Desc See also Pera Dimaristika (T033) and Kato Dimaristika (T308). Several Ott II and EM structures clustered on the hillside above Dimaristika to the west, with an Ott II–EM tower above them on the hill.

T378 US 6 (Skala) N 4060367, E 627209, 419 m
Ott I, Ven, Ott II
Permanent / Abandoned / Full Mapping / Wall widths < 1 m
12 June 2014

Lists 1715 – Vaha, Iskala, and Kerasia (see T163)
1700 – Scalla (see T145)
1695 – villa Sulla (see T145)
1692 – Vaca, Scala (see T163)
1618 – Scala (see T145)
1583 – Vaha ma İskala (see T163)

Med 70

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981).

Desc See case study in Chapter 6. For the modern settlement, see Skala (T145). A ruined settlement on the apex of a hill above modern Skala, with a large abandoned Ott II–EM monastery next to a church of the Koimisi, possibly Byz in date. In the medieval period, the settlement was comprised of at least 70 individual residential structures. The houses are typical of an Ott I settlement, with walls averaging 70–90 cm in width and made of standard- or large-stone construction. The basic layout of the houses is the same as their earlier counterparts, though some have preserved compartments in the side walls to support beams for the first floor. Other features are similar: a single ground-floor door is located on one of the long walls, the houses are oriented perpendicular to the hillside along the contours of the hill, and they have a higher floor level near the hill. Unlike many other abandoned sites in the region, there was a large amount of dark red grooved tile scattered across the site. Only a few sherds of fineware with yellow-green glaze were seen. The church has preserved icons underneath more recent ones, the latter of which may date to the 17th century based on their similarity to those in a church in modern Skala. The building was expanded to the west sometime after its construction, and it has been modified and renovated over the years (e.g. a south-facing window was built into the wall, cutting through one of the original icons). Aside from the cistern associated with the church, we were unable to locate any others—I suspect that any cisterns may have been located below the houses, lower down on the hillside.

T379 **Moni Sotira – Μονή Σωτήρα** N 4054247, E 634582, 387 m
Ott II
Monastery / Abandoned / Field Visit / Wall widths < 1 m
17 June 2014

Lists 1715 – Sotira, in the borders of the village of Afunga, monastery with 3 monks

Desc A monastery high above Kotronas on the crest of a hill overlooking the bay. It is a walled complex with very tall, exceptionally defensible walls. It has excellent view of the whole valley to the east and of Kolokythia Bay. The surrounding land is covered with very old, tall olives, but the hillside above the monastery to the north and east is now a mixture of olives and a prickly holly-like plant, making it totally impassable. Goats were grazing in the fields below when we visited. A local resident told me that the monastery was founded in the 1700s by the Kaleryis family after migrating from Gonea, Crete. The church has iconography that is very similar to that of Moni Dekoulou in Oitylo, which dates to 1765. The back wall of the church has the same depiction of Christ, with a beast and Satan below him, and various saints and other creatures all around; the circular icon above has the Pantokrator surrounded by the 12 horoscope signs. It is also clear in many places that the icons have been redone, particularly on the iconostasis and inside the apse.

T381 **Moni Ay. Dimitriou – Μονή Αγ. Δημητρίου** N 4058072, E 625141, 350 m
Ott II
Monastery / Abandoned / Partial Mapping / Wall widths < 1 m
6 August 2013

Desc A monastery southeast of Areopoli (Tsimova) on the lower contours of a mountain. There are multiple construction phases dating to the Ott II–Mod periods. The main building has a ground floor with two vaulted storage rooms or pens. Above it is a vaulted room and an open walled courtyard. A second story was added on later. The easternmost section is another arched room, open at both the north and south ends—this has a few inscriptions of graffiti (with additional inscriptions and dates elsewhere on the property). There is some EM tile inside, but the roof is now made of slate with tile above it. There is lots of modern tile scattered about the second floor, where the floor is cement-lined. The church associated with the monastery is still maintained. There is at least one subterranean cistern here that may have dated to the original construction of the building, whereas the second, above-ground cistern may be more recent.

T382 Soulia – Σουλιά N 4052936, E 625115, 288 m
Byz
Permanent / Abandoned / Full Mapping / Wall widths > 1 m
15 June 2014

Med 42

Bib The church of Ay. Petros, a free-standing cross with dome structure, dates to 1025 (Drandakis 1986:22; Saïtas 2009:375), with iconography dating to the second half of the 13th century (Drandakis 1986:24). It contains closure slabs similar in decoration to others by Nikitas (Drandakis 2002:371). See also Traquair 1908/09:192-193, Plates 11, 14.

Desc A primarily megalithic settlement situated on a wide-terraced and relatively clear landscape in the lower contours of a hill southeast of Kouvouklia. The name is a local toponym reported by a resident of Triantaphyllia. The Byz church of Ay. Petros is located at the southernmost edge of the settlement. I recorded several megalithic houses immediately north of the church, but in the imagery a total of at least 42 are visible extending further north. The majority of these structures have walls over 1 m in width. The settlement stretches for about 650 m along this contour. Of the medieval houses, at least two have EM phases, with mortared superstructures built directly on top of the megalithic foundations. Mostly the structures are discrete and independent, with at most a small courtyard or field walls extending from the corners. However, one of the EM complexes was also an earlier complex, with three attached megalithic structures and an associated cistern. Several of the medieval houses contained a distinct compartment in the west end with remnants of plaster and no doors, suggesting it was once used to hold liquid (i.e., an internal cistern). The only other cisterns we noted in the settlement include one associated with the megalithic–EM complex, and two more associated with the church of Ay. Petros. Thus, I think it is reasonable to explain these compartments as the primary method of storing water for the residents of this settlement.

T383 US 8 N 4051965, E 625603, 300 m
Byz
Permanent / Abandoned / Full Mapping / Wall widths > 1 m
15 June 2014

Med 35

Desc A cluster of megalithic structures and an EM complex and nearby farmstead, located south of Soulia in an overgrown area. Only a small section of US 8 is now accessible via a dirt road. Although animals were clearly kept here in the recent past, the area is now only used for bees. All three EM buildings are built on top of earlier megalithic structures—one is a residential building, along with an associated barrel-vaulted structure, and further away is a larger animal barn. We recorded two additional ruined megalithic structures, but it was clear that the walls had been modified heavily since being abandoned. Altogether, we recorded five megalithic structures and a single walled field path running between them. A total of at least 35 structures were recorded in the field and in the imagery, dispersed across the gentle hillside on either side of the gully. Although they are all inaccessible due to heavy vegetation growth, I expect they are part of the same building tradition, as they are generally aligned the same way (against the hillside) and have walls that average over 1 m in width. In the Anavasi atlas, a church of Ay. Petros is labeled in the middle of this cluster, and local residents in Triantaphyllia verified its presence.

T385 **Moni Panayias Tsipiotissas –** N 4060896, E 624927, 160 m
Μονή Παναγίας Τσιπιώτισσας
Byz, Ott I, Ven, Ott II
Monastery / Abandoned / Partial Mapping / Wall widths < 1 m
19 May 2014

Med N/A

Desc A monastery located next to a number of natural limestone caves, on the south slope of the valley between Kelepha Fortress and Areopoli. The church appears very similar to the Byz church of Ay. Nikolaos in Yerma. Both have two multi-faceted columns within the church, along with a rosso antico (local red marble) slab in the doorframe that appears to have been cut to make a larger entry (though the arch above it seems original). The church is made of very large rectangular yellow sandstone blocks, with smaller ones interspersed throughout the construction. The exterior of the walls are still covered with plaster. The monastery buildings appear to be more recent, and they have been recently re-mortared and retiled (likely in 1997, the year of the monastery's dedication), though the tiling is already in disrepair. The stair leading up to the newer monastery is made of large unworked limestone blocks, unmortared, and an inscription in cement on the stair reads, "16-01-61." The blocks on the stair are eroded from water. The southernmost building (presumably another residence) has been rebuilt in parts with new limestone above the original sandstone.

T386 **Moni Panayias Phaneromenis –** N 4051028, E 625380, 193 m
Μονή Παναγίας Φανερωμένης
Byz, Ott I, Ven, Ott II
Monastery / Occupied / Partial Mapping / Wall widths < 1 m
N/A

Med N/A

Bib Ay. Petrakis contains iconography dated to 1323, as well as a marble sculpture dated to 1079 with an inscription by Nikitas (Drandakis 1986:23-25).

Desc An active monastery located just off the modern road heading south from Areopoli. Below the road there is a sort of modern amphitheater or paved seating area. The monastery building itself appears to date to the 18th century.

T387 **Moni Panayias Kotroniotissas – Μονή Παναγίας Κοτρωνιώτισσας** N 4059482, E 635310, E 65 m
Ott II
Monastery / Abandoned / Partial Mapping / Wall widths < 1 m
1 August 2013, 21 April 2014

Desc During the initial visit, we mistakenly recorded an isolated EM farmstead 170 m southeast of the actual monastery complex, thinking that it was the main monastery. The main house at this site was built on a large-stone foundation, with several ruined structures nearby that could have been animal pens, as well as a barrel-vaulted cistern that had been renovated with a cement roof in the EM period. The church at the monastery is probably Ott II in date, made of limestone with some sandstone arches and a roof that was tiled in the EM period. The bell tower has a Byz carved marble column incorporated into it. The monastery building immediately south of the church is ruined, but it is still standing to the original three stories, with gun slits on the first and second floors. The building is made with sandstone archways; otherwise it is a mixture of mortared red slate and limestone, with a slate roof. There were cement mixers on property when I visited, suggesting it is currently undergoing repair.

T388 **Moni Dekoulou – Μονή Δεκούλου** N 4062823, E 623707, 124 m
Ott II
Monastery / Occupied / Partial Mapping / Wall widths < 1 m
29 April 2014

Bib See Traquair 1908/09:198-202, Plates 14, 15, 18.

Desc The monastery is located below a series of natural limestone caves southwest of (and below) Oitylo. The iconography inside the main church (the Zoodosos Pigi) is dated to 1765, and there are parallels with Moni Sotira on the opposite side of the peninsula (see T379). All of the wall paintings have been preserved, though on the west wall a painting of what looks like a very large red devil appears to be an addition. The bell tower on the southeast corner is a more recent addition and has a marble column incorporated within it. The monastery is kept locked, but the occupants currently living in the western side of the building have a key. Below the cave system just west of the monastery, there is a water channel that was dry at the time of my visit. This would have been a well-watered place, though certainly not sheltered from the surrounding settlements and fortress of Kelepha. The website of the monastery (http://www.monidekoulou.gr) traces its foundation back to a Daniel and Nikiphoros Dekoulou, who founded the monastery after migrating to Mani from Constantinople.

T389 **US 67** N 4035633, E 632444, 351 m
Byz
Permanent / Abandoned / Field Visit / Wall widths > 1 m
18 July 2014

Med 40

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981).

Desc Driving north from Kainouryia Chora toward Layia, the road passes through a cluster of ruined megalithic structures. The cluster is located on a slope just above a small, flat, arable valley. At least 40 residential structures can be seen in the imagery, all with walls averaging over 1 m in width. It is likely that the construction of the road destroyed several more, especially as megalithic boulders can be seen below the road. The structures are relatively dispersed, though generally aligned along the contours of the hillside.

T390 **US 9** N 4037086, E 630638, 344 m
Byz
Permanent / Abandoned / Field Visit / Wall widths > 1 m
18 July 2014

Med 10

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981).

Desc A cluster of at least 10 ruined structures situated on a steep hillside southeast of Tsikalia, sheltered by the southern slope and tucked into a small valley. Two field paths run along the contours to connect the settlement with Tsikalia. The area is now slightly overgrown, but the cluster can be seen when driving up from the south on the modern road. There are lots of field walls around and connecting the structures. The walls of the structures average more than 1 m in width, suggesting a Byz date. There does not appear to be a church associated with the settlement, but a ruined isolated church is located about 550 m south of the settlement across a small ravine.

T391 **US 12** N 4038223, E 629682, 341 m
Byz, Ott I
Permanent / Abandoned / Remote ID / Wall widths variable
N/A

Med 3

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981); see also Saïtas 1982:Figure 11.

Desc A megalithic settlement 200 m north of modern Kotraphi, on a field path connecting Kotraphi with Mountanistika on the high ridge further north. Three structures are visible in the imagery, one of which may be a church. One of the structures has walls greater than 1 m in width, while the others are narrower.

T392 Korines – Κορίνες N 4050967, E 624784, 119 m
Byz, Ott I
Permanent / Abandoned / Full Mapping / Wall widths variable
1 August 2014

Lists *1618 – Zigarismeni, 20 hearths

Med 20

Bib The toponym "Zigarismeni" is located somewhere near the settlements of "Drialo" and "Ftio," based on the order of the 1618 Nevers Catalog (Komis 2005:398). Komis linked it with the area around modern Poliana, along the modern road immediately west of Dryalos (Komis 2005:370).

Desc A dispersed settlement of ruined large-stone structures and slab-topped cisterns, on the gentle slope downhill from Moni Panayias Phaneromenis. The name is a local toponym reported by a resident living in the area. The resident also said that the area north of this settlement is known as Xigianiko (Ξιγκιάνικο), which could possibly be linked with the toponym of "Zigarismeni" in the 1618 Nevers Catalog. Altogether we recorded 18 discrete large-stone houses and 13 slab-topped cisterns, and 2 additional structures can be seen in the imagery. The settlement spans two gullies, both of which are now dry (and one is now crossed by a modern dirt road). A modern church of Ay. Anna has been built at the center of the settlement, but a ruined structure can be seen in the 1967 imagery and it is likely that the original church dates to the same period as the structures around it. The landscape here is gently sloping and terraced down to the bay below, and it was burned recently at the time of our visit. Even still, the amount of vegetation that had grown here since the burning was remarkably low. The ground is full of small river-rolled pebbles, and the cuts that can be seen in the gully reveal fill that is mostly all rocks and very little soil. We found few ceramics in the vicinity, though I did see at least two pieces of ancient ceramics (one probably Roman) and one large handle that may be Roman or Byz. The structures are nearly impossible to see in the aerial imagery, possibly due to the sparse vegetation and rocky background. Although Komis did not explicitly link the reference to "Zigarismeni" with this abandoned settlement, I think it is the best candidate. Based on the order of the list (Drialo, Zigarismeni, Ftio Sabatiani, Mos Sabatiani, Nichandria), the geographical progression would have taken the recorders north from Dryalos to this settlement, then south to record Ayia Varvara (Phtio) (T006) and Lakkos (T375), before heading north again to Nikandreio (T109). The similarity of household estimates between the catalog and the architectural remains provides additional support for this connection.

T396 **US 13** N 4038084, E 630662, 513 m
Byz, Ott I, Ven, Ott II
Seasonal / Abandoned / Remote ID / Wall widths variable
N/A

Med 9

Bib See Saïtas 1982:Figure 11.

Desc A very dispersed megalithic settlement in the mountains above Kotraphi. There are clearly discernible structures on two hills, separated by about 450 m, and the Anavasi atlas indicates an abandoned church on a third hill. Unusually, the church can be seen in the imagery oriented nearly north–south. In all, I can identify only nine potential residential structures amidst field walls.

T397 **Pachia** N 4035907, E 631358, 183 m
Byz
Permanent / Abandoned / Remote ID / Wall widths > 1 m
N/A

Med 7

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981); see also Saïtas 1982:Figure 11, 2001:Figure 15.

Desc The settlement consists of at least seven houses arranged in a line along a single contour, on a slope above and northeast of Goulas, near Vatheia. The toponym comes from Saïtas' publication. The wall width suggests it was occupied only during the Byz period.

T398 **US 15** N 4035602, E 631364, 124 m
Byz, Ott I, Ven
Permanent / Abandoned / Remote ID / Wall widths > 1 m
N/A

Med 20

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981); see also Saïtas 1982:Figure 11.

Desc A scattered settlement east of Goulas, near Vatheia. In the imagery, the ruins appear to be very complex with many walls connecting the structures, suggesting it was once a small, nucleated settlement. The walls of the oldest structures average more than 1 m in width, consistent with a Byz date. Unlike Goulas, there appears to be a great deal of rubble in the nucleated area at the southwest point of the settlement cluster, and I suspect this is part of a continued settlement through Venetian times. In the Ott II period, it seems that settlement shifted uphill to US 16 (T399).

T399 **US 16** N 4035690, E 631442, 159
Ott II
Permanent / Abandoned / Remote ID / Wall widths < 1 m
N/A

Med 20

Bib See Saïtas 1982:Figure 11.

Desc A small settlement below and north of Vatheia, just uphill from US 15 (T398). The settlement it is now abandoned and can be easily seen from Vatheia, and based on the wall width and more elaborate compounds that can be seen, it appears to date to the Ott II and EM periods. Saïtas does not indicate that it has megalithic architecture, suggesting it either predates or is contemporaneous with the early phases of Vatheia on the hill above.

T400 **Marassi – Μαράσσι** N 4042617, E 625603, 139 m
Ott I
Permanent / Abandoned / Partial Mapping / Wall widths < 1 m
16 April 2014

Med 16

Bib The monumental cross-in-dome church of Ay. Seryios and Vachos dates to the first quarter of the 12th century (Drandakis 2002:377) or perhaps the second half of the 12th century (Megaw 1932-33:162). Its iconography dates to 1262–1275 (Drandakis 1986:22, 24). The church is also known as "Tourloti" (Komis 2005:258-259). It used to have a beveled cornice associated with the workshop of Nikitas, but Drandakis could not relocate it later (Drandakis 2002:369). See also Traquair 1908/09:186-189, Plates 11, 12, 13, 16, Figure 3.

Desc An abandoned settlement north of Kita, just south of the Byz church of Ay. Seryios and Vachos. The name is a local toponym reported by a resident of Kita. At the center of this settlement is a smaller church of Ay. Yeoryios, and uphill from the settlement is another small ruined church. The walls of the surrounding buildings are very difficult to measure because the structures are full of rubble, but I can find no walls greater than 1 m in width. This suggests a slightly later settlement, perhaps one that was founded after Ay. Sergios and Vachos was completed. The small chapel on the hill does have walls over 1 m in width, and may also be Byz in date.

T401 **US 18** N 4044418, E 626937, 198 m
Ott I
Permanent / Abandoned / Partial Mapping / Wall widths < 1 m
30 April 2014

Med 10

Desc A small settlement about 220 m west of Karynia, with structures aligned roughly along the contour of a gentle slope. I recorded the small church of Ay. Charampos, which has no preserved icons, along with one ruined megalithic structure. Additional structures are visible in the imagery.

T402 **US 19** N 4044172, E 626920, 212 m
Ott I
Permanent / Abandoned / Field Visit / Wall widths < 1 m
5 August 2014

Med 11

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981).

Desc A small settlement about 280 m southwest of Karynia, with three clusters of structures stretching up a slope. An old church is located immediately next to two ruined EM residential complexes. In the imagery, at least three square structures can be seen in the uphill part of the settlement, which appear to be tower foundations. The largest of these is massive, with walls nearly 2 m in width. The rest of the walls, however, are much narrower. Without a field visit, there is no way to know when the church dates to.

T403 **US 20** N 4046426, E 626063, 148 m
Byz, Ott I
Permanent / Abandoned / Remote ID / Wall widths variable
N/A

Med 10

Desc A cluster of at least 10 houses in the overgrown area east of modern Lakos, along the modern road stretching down the west coast. About 150 m east of the structures is a ruined church.

T404 **US 21** N 4051088, E 626035, 294 m
Byz
Permanent / Abandoned / Partial Mapping / Wall widths > 1 m
15 June 2014

Med 6

Bib For the ruined church of Ay. Solomonis, see Drandakis 1986:23. The church has since been rebuilt.

Desc A dispersed settlement with megalithic architecture about 200 m north of modern Phrangoulias. The church associated with this settlement has a megalithic foundation but has been renovated recently, and it is now incorporated within an EM–Mod cemetery. All the houses are freestanding without associated walls, courtyards, or cisterns that we could locate. The landscape in this area is quite unusual. The olive fields immediately north of the road have been tended very recently and are unusually clear. The terraces uphill from these are overgrown, but a fire seems to have swept through this part fairly recently—in the aerial imagery from 2011, all of these fields appear to be overgrown with macquis, but now the macquis in the untended fields is limited to patchy, new growth. Regardless, the clear patches here give a sense of how visible the walls, buildings, and other features on the landscape might have been when the area was being actively cultivated.

T405 **US 22** N 4050923, E 626342, 346 m
Byz
Permanent / Abandoned / Partial Mapping / Wall widths > 1 m
5 July 2014

Med 24

Desc A dispersed settlement of megalithic structures on the slopes about 350 uphill (and west) from Phrangoulias. The church at the northwest corner of the settlement, Ay. Ioannis Prodromos, has a megalithic foundation and was rebuilt or renovated in 1998. Another church is located at the south edge of the settlement, but we did not have time to visit it, and most of the structures are inaccessible now. Most of the houses are isolated, but several are attached to form small complexes. All are aligned along the contours stretching up the gentle hillside.

APPENDIX A (continued)

T406 **US 23** N 4047354, E 624454, 141 m
Byz
Permanent / Abandoned / Remote ID / Wall widths > 1 m
N/A

Med 35

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). For a plan map of the site, see Saïtas 2001:Figure 16.

Desc A dispersed megalithic settlement on the flat plain about 600 m west of modern Koutrela. There are two churches, one on the north edge of the site, and the other at the southeast. In the imagery, the walls average well over 1 m in width, suggesting the structures were all built in the Byz period. Saïtas mapped six cisterns distributed throughout the site, along with an additional six in a group at the southeastern edge of the settlement, north of the church.

T407 **Palaia Kokkinoyia** N 4030382, E 633099, 98 m
Byz, Ott I
Permanent / Abandoned / Remote ID / Wall widths variable
N/A

Lists *1514 – Kokinogya, 15 *hâne*, 3 bachelors

Med 26

Bib For an early 19th century account of a visit to Tainaron, see Leake 1830:297-304.

Desc A ruined settlement about 750 m north of the modern coastal village of Kokkinoyia on the Matapan Peninsula. I observed the settlement from above it on a modern road and identified at least 26 houses in the imagery. The settlement is sheltered on three sides by hills, and open only on the north. The houses are organized along the contours of a slight slope and are grouped into two main clusters. All are connected with large walls to create animal pens. Four structures are built perpendicular to the majority, possibly to create small individual complexes. I suspect this is the 16th century settlement of "Kokinogya" based on its location near modern Kokkinoyia and the lack of Byz architecture anywhere else on the Matapan Peninsula. It should be noted that the Byz church of Asomatos, built on top of a Classical temple, is 750 m south near the modern village.

T409 **US 25** N 4039713, E 632757, 310 m
Byz
Permanent / Abandoned / Partial Mapping / Wall widths > 1 m
6 August 2014

Med 14

Bib Ay. Nikolaos dates to 1121 based on an inscription, and it has spolia in the templon (Drandakis 1986:21, 2002:376) and crypts under the narthex floor (Saïtas 2009:375).

Desc A small megalithic settlement about 1 km north of Layia. At the northeast edge of the settlement (downhill) is the Byz church of Ay. Nikolaos. In the imagery at least 14 houses can be seen aligned along the contours above the church, as well as two round structures (possible towers), one of which sits on a large rectangular platform or structure.

T410 **Sela – Σέλα** N 4053558, E 630713, 305 m
Byz, Ott I
Permanent / Abandoned / Remote ID / Wall widths variable
N/A

Med 37

Bib Listed as a *palaiomaniatiko* settlement in Moschos and Moschou (1981).

Desc See Vikolias (T447) and US 51 (T446). The southernmost of three megalithic settlements on the lower slopes of a hill west of Phlomochori. The name is a local toponym reported by a resident of Phlomochori, and it is a geographical description meaning "saddle" or "slope." A walled field path leads from Phlomochori up to Vikolias (T447) northeast of Sela, then a goat path continues on to Sela from there. In the imagery, at least 37 houses can be seen aligned along the contours on either side of the saddle. A church, the Panayia tis Selas, is located at the northern edge of the settlement on the path from Vikolias. Goat paths continue from Sela up into the hills. The majority of the buildings average more than 1 m in width, but a few have narrower walls, suggesting continued occupation in the Ott I period.

T411 **US 27** N 4054162, E 634059, 104 m
Byz
Permanent / Abandoned / Remote ID / Wall widths > 1 m
N/A

Med 19

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981).

Desc A megalithic settlement located on the slopes northeast of modern Kotronas, below Moni Sotira. In the imagery, at least 19 houses and a renovated church can be seen.

T412 **US 28** N 4055193, E 633423, 330 m
Ott I
Permanent / Abandoned / Remote ID / Wall widths < 1 m
N/A

Lists 1618 – Haitofoglia di Cholochitia, 40 hearths

Med 15

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). The toponym Aetopholia (Αετοφωλιά) is located in the region of Skaltsotianika (Komis 2005:371).

Desc See US 29 (T412). A small cluster of structures about 220 m above Riganochora to the northeast. In the imagery, at least 15 houses can be seen on this ridge. The houses are dispersed and not aligned along the contours, but all are oriented with the short ends pointing downhill. The area is overgrown with macquis and therefore inaccessible, and no paths lead to the site. The Byz or Ott I church of Ay. Kyriaki is located about 170 m below the settlement to the south. Residents in the region of Phlomochori refer to the hill directly behind this settlement (about 700 m to the north) as "Aetopholia" (eagle's nest). It seems likely that the name, which appears in the 1618 Nevers Catalog, once referred to this settlement and possibly included another Ott I settlement about 250 m to the southeast, US 29 (T413). This location would also make sense considering the geographical progression of this list (Scalciotiagni, Haitofoglia di Cholochitia, Afungia di Cholochitia), which would have meant traveling along the same ridge as Skaltsotianika before dropping down into the valley below.

T413 **US 29** N 4055059, E 633758, 298 m
Ott I, Ven, Ott II
Permanent / Abandoned / Full Mapping / Wall widths < 1 m
17 June 2014

Lists 1618 – Haitofoglia di Cholochitia (see T412)

Med 7

Bib See T412 for references. Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981).

Desc A small settlement about 190 m above Riganochora to the northeast, comprised of seven rectangular structures, a hut, a cistern, and another hut or possible ruined church. The construction is dry stone, and appears to be Ott I through Ott II in date. A well-built and particularly long Ott I feature at the top of the site is oriented east–west rather than north–

south like the others. The site has excellent views of Gonea and Moni Sotira to the west, along with Kolokythia Bay below. A second cluster of ruins, US 28 (T412) is located on a hill about 250 m northwest of this one. The toponym "Aetopholia," which appears in the 1618 Nevers Catalog, may have referred to both this settlement and US 28.

T414 **Vlistiko – Βλίστικο** N 4056656, E 631450, 332 m
Byz, Ott I
Permanent / Abandoned / Remote ID / Wall widths > 1 m
N/A

Lists 1618 – Viglistico, 25 hearths

Med 22

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). Komis linked the name in the 1618 Nevers Catalog with a toponym near Chimara, where there are remains of a *palaiomaniatiko* settlement and a ruined chapel (Komis 2005:397).

Desc Located on the slopes about 670 m east of Chimara. The toponym is taken from Komis' description of the location of this site. The houses are roughly aligned along the contours of the slope, and a building with a preserved roof—possibly a church—is in the middle of the settlement. Based on the wall width and the reference in the settlement list, it seems likely the site was occupied in the Byz and Ott I periods.

T416 **Parapodas – Παράποδας** N 4053798, E 625052, 293 m
Byz
Permanent / Abandoned / Partial Mapping / Wall widths > 1 m
23 April 2014

Med 29

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). The ruined church of Ay. Varvara dates to the second half of the 12th century, with iconography from the same century (Drandakis 1986:23-24, 2002:384). Ay. Nikolaos is a single-aisle church with fragments of wall paintings dating to the 13th century and marble carvings dating to the 12th century (Drandakis 2002:390).

Desc A dispersed settlement located east and uphill from Glezou, extending north–south for about 440 m. The settlement is located along the same contour as Males, Phranezi, Soulia, US 8, and other Byz settlements further south. Two ruined churches are located at the north edge of the settlement: Ay. Nikolaos is in a very ruinous state, and the upper (easternmost) church is Ay. Varvara. A third church is located further south on the western edge of the settlement. The area is accessed by a field path heading uphill from

Glezou, which then curves to the south to continue through Soulia. I recorded only a few megalithic structures in the north part of the settlement due to inclement weather, and these had walls well over 1 m in width. A modern road now cuts through the settlement and must have destroyed at least a few medieval houses. A total of at least 29 structures can be seen in the imagery (including the historical photographs that predate the road).

T417 **Divola – Δήβολα** N 4059367, E 631080, 249 m
Byz, Ott I, Ven, Ott II
Permanent / Abandoned / Remote ID / Wall widths > 1 m
N/A

Lists 1715 – Divala, (formerly known as) Kotrona, 19 *hâne*, 4 bachelors, 2 widows
1700 – Dittolla, 24 families, 105 people
1695 – villa Divola, 42 combatants
1692 – Drivola (tax)
1583 – Kotrona or Kastrona (?) (tax)

Med 30

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). Divola is an abandoned settlement near Tserova. Komis (2005:287) linked the toponym with the Divolianoi family of Polemitas, suggesting that the settlement was founded as a result of population movement out of Bassa Maina. It was abandoned sometime in the 18th century.

Desc A ruined and overgrown settlement visible in the imagery about 750 m northeast of Palaia Tserova, sheltered on the west and south by two steep hills. Between these hills, a section of a *kalderimi* heads southwest through a narrow pass toward the valley connecting Pyrrichos and Kotronas. The houses are dispersed along the lower slopes of these hills, and a church is located at the eastern edge of the settlement. One interesting finding is that the 1715 defter explicitly mentions an earlier name for this settlement, Kotrona or Kastrona, which is how the settlement is identified in the 1583 defter. It seems the name was changed by 1692 to the form Divola; however, in the 1692 Zeno Register another settlement of Cottrona is listed along with Cerova. I am not certain which settlement this Cottrona is referring to in 1692.

T418 **Phlitsos – Φλίτσος** N 4061530, E 632393, 182 m
Ott II
Permanent / Occupied / Remote ID / Wall widths < 1 m
N/A

Lists 1829 – Phlitsos, 8 households
1813 – Livaskli, 15 men, 12 soldiers

Bib Komis (2005:302-303) argued that the name "Livaskli," which only appeared in the 1813 Roussel Catalog, is a corruption of Phlitsos. The settlement was located in the district of Neochori but no longer appeared in sources after 1920.

Desc Based on Komis' assessment and the 1829 Expédition Scientifique map, which places Phlitsos immediately southwest of Neochori, I suggest that this toponym should be identified with a small cluster of buildings slightly above and outside modern Neochori. The cluster can be seen in the imagery, but I drove past it on my way to the center of Neochori. It is comprised of about two large EM–Mod homesteads, but additional ruins can be seen to its southwest, now overgrown. These are likely all late Ott II or EM as well, corresponding with the two entries for this settlement from 1813 and 1829.

T420 **Moni Panayias Ayitrias – Μονή Παναγίας Αγήτριας** N 4043577, E 622059, 78 m
Byz, Ott I, Ven, Ott II
Monastery / Abandoned / Partial Mapping / Wall widths > 1 m
7 April 2014

Med 1

Bib The cruciform church is dated the 13th century, and its full name is Panayia Odigitria ("Our Lady who shows the way"). The dome dates to about 1200 with an added narthex possibly dated to the 13th century or earlier. There are frescoes from the 13th century overlaid by those from the 18th century (Dean 2006:129-130). For further description, including the 13th-century depiction of the Archangel Michael, see Greenhalgh and Eliopoulos 1985:93, Plate 26.

Desc A Byz church and monastery located at the foot of a north-facing cliff just west of the Tigani Peninsula. There is a large amount of marble material and iconography inside, including carved marble doorframes and inscribed marble floor pieces alternating or bordered with rosso antico (local red marble) floor pieces. One of the columns looks very similar to the one standing next to the Tigani basilica. Behind the church itself are a number of caves, one of which seems to have been built so as to house a crypt (or possible storage area)—the entrance is halfway back into the cave, though parts of the roofing have collapsed into the chamber below. The caves have niches carved into the walls. On the same contour as the church, before the path ascends back up toward the main road, there is a single megalithic structure with a preserved lintel over the door. It is aligned lengthwise along the contour, rather than against it, and there are a number of built-up walls below it.

T421 **US 33** N 4048882, E 626140, 216 m
Byz, Ott I
Permanent / Abandoned / Remote ID / Wall widths variable
N/A

Med 10

Desc Located about 100 m west of Akia on a gentle slope. At least 10 houses can be seen in the imagery, along with a single church.

T422 **Katsipos – Κατσιπός** N 4039972, E 626636, 169 m
Byz, Ott I
Permanent / Abandoned / Remote ID / Wall widths variable
N/A

Med 27

Bib The megalithic double-apsed church of Ay. Panteleimon is dated to 991/992 based on iconography (Drandakis 1986:22-23), and its cemetery was used by the Pragiatis, Thomopoulos, and Lykourezos families from Diporo up until the 1970s (Saïtas 2009:375).

Desc A dispersed settlement immediately northwest of Diporo along the same contour of a mountain. The name is a local toponym reported by a resident of Kita. In the imagery, at least 27 houses can be seen around the Byz church of Ay. Panteleimon. It can be accessed by a field path from Diporo that continues to the northwest toward Kita. I suspect this community predated the one in Diporo (based on the dating of the churches, respectively), and that it expanded to found new churches and houses in Diporo later in the Byz period.

T423 **US 35** N 4033650, E 632563, 253 m
Byz
Permanent / Abandoned / Remote ID / Wall widths > 1 m
N/A

Med 5

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981).

Desc Located about 500 m northwest of the fortress of Achillio on a narrow flat area midway up the mountainside. In the aerial imagery, at least five structures can be seen west of and uphill from a maintained church, off the road leading up the mountain from Achillio. The area is very overgrown.

T424 **Nyphi, Exo Chora – Νύφι, Έχω Χώρα** N 4047088, E 631758, 173 m
Byz, Ott I, Ven, Ott II
Permanent / Occupied / Field Visit / Wall widths > 1 m
12 August 2014

Lists 1829 – Nymphi et Driali (see T100)
1813 – Niri (see T100)
1715 – Nifi, with the *mahalle* of Dryal (see T100)
1700 – Niffi (see T100)
1692 – Driceli, Gnifi (see T100)
1618 – Gnifi (see T100)
1583 – Nifi (see T100)

Med 4

Bib For bibliographic references, see T100 (Nyphi, Mesa Chora).

Desc One of the four smaller neighborhoods that comprises Nyphi, near a small river valley on the east coast of the peninsula. Exo Chora ("Outer Village") is one of the older clusters, and it is positioned along the eastern edge of a high mountain ridge southeast of Mesa Chora. The domestic architecture in the settlement ranges from Byz through Mod, but the only church I recorded dates to the EM–Mod period. A small cluster of four abandoned houses is located further up on the ridge about 220 m to the southwest.

T425 **Nyphi, Chalikia – Νύφι, Χαλίκια** N 4047833, E 632130, 6 m
Ott I
Permanent / Occupied / Field Visit / Wall widths < 1 m
12 August 2014

Lists 1829 – Nymphi et Driali (see T100)
1813 – Niri (see T100)
*1618 – Amigdalia, 15 hearths

Med N/A

Bib See T100 (Nyphi, Mesa Chora). The toponym Amigdalia is found in the region of Nyphi (Komis 2005:342).

Desc There is only a single narrow road down to the beach, and the area is now a tourist destination. There are two modern churches and a basketball court above the town to the south. The walls along the road down to the beach, however, appear to be very old and could date to the Ottoman period. Locals in the area confirmed that this area is known as

"Amygdali," a toponym that appears in the 1618 Nevers Catalog between the settlements of Nyphi and Sela (Gnifi, Amigdalia, Sella). If the association is correct, this would be a very rare example of a coastal Ott I site.

T427 Stavrikio – Σταυρίκιο N 4043013, E 622522, 200 m
Ott I, Ven
Permanent / Abandoned / Field Visit / Wall widths < 1 m
10 June 2014

Lists 1692 – Stavri, Stavrichie, e Pangie (see T155)
1618 – Stavrichious, 40 hearths
1583 – İstavriko, with Pangyez and İstavri (tax)

Med 0

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). Komis (2005:394-395) suggested that the two toponyms "Stavrikios" and "Stavri" referred to different sections of a single settlement, with the latter referring to a newer section.

Desc See Stavri (T155). An overgrown area filled with rubble and walls, about 500 m northwest of Stavri on the southwestern plain. The rubble area does not appear to have standing architecture aside from the field walls, but during my visit to the site, I found a slab-topped cistern buried under a very thick rubble wall. The cistern was exposed only because one of its slabs had collapsed and the rubble had fallen into it (see Figure 92 in the main text). After recording several of these enigmatic "rubble fields" elsewhere in Mani, I believe they are the remains of Ott I settlements, and that the house foundations are now covered by rubble that collapsed from the houses' superstructures. The co-appearance of both "Stavri" and "Stavrikio" in the records suggests they were contemporaneous and separate settlements, contrary to Komis' suggestion. However, it is evident that Stavri survived to the present day, whereas Stavrikio settlement was likely abandoned after the Ven period.

T429 Vlacherna – Βλαχέρνα N 4044303, E 623822, 38 m
Byz, Ott I
Permanent / Occupied / Partial Mapping / Wall widths > 1 m
7 April 2014

Med 2

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). Vlacherna is a cross-in-dome church dated to the second half of the 12th century (Megaw 1932-33:149-150, 162, Figures 5-6; Drandakis 1986:22), with 13th century iconography (Drandakis 1986:24; Saïtas 2009:375).

Desc Just southwest of the Byz church of Vlacherna is a small residential complex with an EM tower, animal pen, and residential structure. The tower was built on an earlier megalithic foundation. The other two structures were added onto the north and south ends (respectively) of a rectangular, megalithic, barrel-vaulted structure.

T430 **Achillio Fortress – Αχίλλειο** N 4033496, E 633129, 74 m
Ott I, Ven, Ott II
Fortress / Abandoned / Field Visit / Wall widths < 1 m
6 August 2014

Med N/A

Bib Early on, some scholars identified this as location of the Frankish fortress of Grand Magne (Traquair 1905-1906:275). At the time of Traquair's visit, the fortress consisted of "...a few crumbling walls, the remains of the fortress of Maina, called in the Chronicle, 'La Grande Maigne,'" and he found no traces of the Frankish castle. Vincenzo Coronelli, writing in 1687, referred to the fortress as "Maina." According to him, this is where "the Ottomans built a Fortress which they named Turcotogli Olimienas, which the Greeks interpret Castro di Maini, and the Turks Monige. Their design in this was thereby to bridle the Inhabitants of Tzaconia" (Coronelli 1687:103). After its construction, local Maniates sent a plea of help to the Venetians, and the Venetian Captain Quirini brought a fleet the following year and destroyed the fortress. Maps of the fortress were drawn by Giovanni Francesco Camocio (1575) and Coronelli (1687). For a discussion of the settlement of "Maina alta," recorded in the 1618 Nevers Catalog, see Kelepha Fortress (T343).

Desc See also Tigani (T236) and Kelepha Fortress (T343). The fortress is situated on the north side of the bay of Porto Kayio and it has excellent views of the entire bay. Today, only the outer walls of the fortress are preserved, and there are two EM–Mod houses that have been built on top of the ruins within these walls. Additional EM–Mod complexes are situated along the upper wall above the fortress. A path leads east and downhill from the fortress to a natural spring and a small bay further on.

T431 **Moni Panayias Kournou – Μονή Παναγίας Κουρνού** N 4045578, E 630846, 473 m
Ven, Ott II
Monastery / Abandoned / Partial Mapping / Wall widths < 1 m
9 April 2014

Desc The 17th-century monastery is located high on a mountainside on the eastern side of the peninsula, about 1.8 km south of Nyphi. It is accessed by a roughly cobbled *kalderimi*, now used as a hiking trail. The monastery complex is comprised of a multi-roomed structure serving as the dormitory, another structure connecting to the inner courtyard, the church, and an elaborate and very large system of storage rooms on the ground floor. A spring is located just south of the monastery and now provides fresh drinking water to Nyphi below, via a very long series of hoses and pipes that follow along the hiking trail. The icons in the church are similar to those in the church in Paliros (dated to 1741).

T432 **US 36** N 4045186, E 631120, 495 m
Byz, Ott II
Permanent / Abandoned / Partial Mapping / Wall widths > 1 m
9 April 2014

Med 9

Desc Located above Moni Panayias Kournou, about 400 m southeast along a dirt and bedrock hiking path from the monastery. The path continues to the southwest to the ruined Hellenistic–Roman site of Aigila, known locally as Kionia. At least nine ruined megalithic structures can be seen in the imagery in a cluster on a prominent ridge overlooking the length of the eastern coast of the peninsula. A small ruined chapel (likely Byz in date) is located northwest of the settlement along the path, and a ruined isolated Ott II household is immediately west, also along the path. It is likely there are more ruined houses in the vicinity that I could not see because of the amount of bedrock in the area.

T433 **Liostypha – Λιόστυφα** N 4044521, E 625807, 112 m
Ott I
Permanent / Abandoned / Remote ID / Wall widths < 1 m
N/A

Med 24

Desc A tight cluster of structures and connecting field walls about 1 km east of Mezapos, just south of a gully on a gentle slope. The name is a local toponym reported by a resident of Kita. In the imagery, at least 24 houses can be identified, but no church is clearly visible. The area is now enclosed by a field wall, suggesting it was modified to be used as an series of animal pens.

T434 **Skourka – Σκούρκα** N 4054372, E 632182, 136 m
Ott I
Permanent / Abandoned / Remote ID / Wall widths < 1 m
N/A

Lists 1618 – Scurca di Cholochitia, 25 hearths

Med 36

Bib The toponym comes from the Albanian *skerke* (steep, rocky place). The toponym is found in the areas around Kotronas, Phlomochori, and Tainaron, and Komis (2005:393) linked the 1618 reference to the one in Phlomochori.

Desc Located about 500 m northeast of Vata on a low hill above Kolokythia Bay. A resident of Phlomochori verified the location of this toponym as a low hill northeast of Vata, where there is an overgrown area with a large number of ruined houses. The resident also said that the toponym is associated with a church of Ay. Nikonas, built on the site of an older church of the same name. One of the structures I identified may be a church, but there is another modern church about 250 m south of the site, too—either one may be Ay. Nikonas. The settlement is most clearly visible in an aerial photograph from 1963, before the vegetation took over the site; however, it is impossible to estimate an average wall thickness in Google Earth today. The settlement may very well have a Byz phase.

T435 **US 39** N 4054653, E 632102, 110 m
Ott I
Permanent / Abandoned / Remote ID / Wall widths < 1 m
N/A

Lists *1618 – Giorgicio-Poulo di Cholochitia, 15 hearths

Med 8

Bib Based on the order of the 1618 Nevers Catalog, Komis (2005:368) suggested the settlement was located somewhere near Vata and Kotronas.

Desc A small cluster of houses located about 180 m north of Skourka (T434). Based on the order of the 1618 Nevers Catalog (Vatas di Cholochitia, Scurca di Cholochitia, Giorgicio-Poulo di Cholochitia, Castro di Cholochitia), it seems the recorders were traveling up from Skourka toward Loukadika above the valley on a prominent hill (also referred to elsewhere as the “Kastro” or fortification of Kolokythia Bay). In the imagery, at least eight structures can be seen aligned in two rows along the contours of a hill. Unfortunately, because of the heavy vegetation in this area, it is impossible to get a clear estimate of the average thickness of the house walls. The settlement may very well have a Byz phase.

T436 **US 41** N 4040026, E 630393, 569 m
Byz
Permanent / Abandoned / Remote ID / Wall widths > 1 m
N/A

Med 32

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981).

Desc The westernmost of three settlements in a mountain valley above Layia and Dimaristika. The houses are dispersed and aligned along the contours of a gentle hill. They are likely Byz in date, based on their scattered layout and the amount of rubble around them. The area is now accessed by a dirt road heading uphill from Layia to the south. In the past it was accessed by a series of goat paths from Layia and Dimaristika, which continued on into the mountains.

T437 **US 42** N 4039858, E 630820, 539 m
Byz
Permanent / Abandoned / Remote ID / Wall widths > 1 m
N/A

Med 34

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981).

Desc See US 41 (T436) for similar description. The middle of three settlements in a mountain valley above Layia and Dimaristika. A church of the Taxiarchis is located in the eastern part of the settlement. Another ruined double-apsed church can be seen 250 m to the south.

T438 **US 43** N 4039664, E 631438, 521 m
Byz
Permanent / Abandoned / Remote ID / Wall widths > 1 m
N/A

Med 56

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981).

Desc See US 41 (T436) for similar description. The easternmost of three settlements in a mountain valley above Layia and Dimaristika. The Anavasi atlas labels three ruined churches on the southern edge of the settlement, but I could identify only two in the imagery.

T439 **US 44** N 4059096, E 622321, 217 m
Ott I
Permanent / Abandoned / Remote ID / Wall widths < 1 m
N/A

Med 7

Desc Located about 650 m northwest of Areopoli, accessed by a dirt road that was once a field path. In the imagery at least seven structures can be seen aligned along a gentle hill facing the western coast. A church north of the houses is labeled in the Anavasi atlas as the Panayitsa.

T440 **US 45** N 4040495, E 631382, 431 m
Ott I
Permanent / Abandoned / Remote ID / Wall widths < 1 m
N/A

Med 10

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981).

Desc Located on the hillside above Dimaristika about 700 m to the west, just below the rosso antico quarries. Average wall thickness is less than 1 m. The area appears inaccessible today.

T441 **US 46** N 4036504, E 630231, 133 m
Byz, Ott I
Permanent / Abandoned / Remote ID / Wall widths variable
N/A

Med 12

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981).

Desc Three small clusters of houses on a steep hillside about 700 m south of Tsikalia. The clusters are each 150 m apart and separated by a gully. There is a small chapel uphill about 350 m to the east. There appear to be some preserved roofs. The area appears inaccessible today.

T442 **US 47** N 4051520, E 631134, 244 m
Byz
Permanent / Abandoned / Remote ID / Wall widths > 1 m
N/A

Med 16

Desc A very dispersed settlement of megalithic structures on the eastern side of a hill below Makrynaros (T255). At the center is a cluster of connected structures.

T443 **US 48** N 4055774, E 632538, 231 m
Ott I
Permanent / Abandoned / Remote ID / Wall widths < 1 m
N/A

Med 14

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981).

Desc A slightly dispersed settlement on the hillside about 450 m northwest of Skaltsotianika, with at least 15 structures and one possible church visible in the imagery.

T444 **US 49** N 4056349, E 630834, 356 m
Byz
Permanent / Abandoned / Remote ID / Wall widths > 1 m
N/A

Med 7

Desc A cluster of structures about 450 m south of Chimara, perched at the edge of a ridge overlooking a steep gully. At least seven structures are visible in the imagery. A resident of Phlomochori referred to this area as Mavrianos (Μάβριανος).

T445 **US 50** N 4055141, E 630490, 275 m
Byz, Ott I
Permanent / Abandoned / Remote ID / Wall widths variable
N/A

Med 9

Desc A dispersed settlement about 750 m west of Loukadika, with at least nine structures and one church. The church is visible in an aerial photograph from 1967, but is now covered by a large tree. The structures are very ruined and covered with vegetation, making it extremely difficult to see more than a few exposed walls clearly enough for measurements.

T446 **US 51** N 4054312, E 630488, 344 m
Byz
Permanent / Abandoned / Remote ID / Wall widths > 1 m
N/A

Med 14

Desc See Sela (T410) and Vikolias (T447). The northernmost of three megalithic settlements on the lower slopes of a hill west of Phlomochori. The settlement is separated from Vikolias by a gully. At least 14 structures can be seen in the imagery, but no church is visible. The structure walls are all massive and average well over 1 m in width, suggesting occupation was limited to the Byz period. The site can be accessed by a field path that follows the gully up from Phlomochori, and continues on as a hiking path into the mountains.

T447 **Vikolias – Βικόλιας** N 4053978, E 630880, 255 m
Byz, Ott I
Permanent / Abandoned / Remote ID / Wall widths > 1 m
N/A

Lists 1618 – Voucholia de Cholochitia, 40 hearths

Med 38

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). Based on the order of the 1618 Nevers Catalog, Komis (2005:397) linked the settlement with a toponym found in the region of Phlomochori.

Desc See Sela (T410) and US 51 (T446). The middle of three megalithic settlements on the lower slopes of a hill west of Phlomochori. The toponym was verified by a resident of Phlomochori, who said it is also known as Kolossospita (Κολοσσόσπιτα). The resident said that the church of Ay. Ioannis is located here and was maintained until very recently. The settlement is separated from US 51 by a gully to the north, and Sela is about 250 m further uphill to the southwest, accessed by a goat path. In the imagery, at least 38 houses and one church can be seen. Almost all of the houses have walls well over 1 m in width, and only one or two of the highest structures had walls about 1 m in width.

T448 **US 52** N 4060014, E 628089, 400 m
Ott I
Permanent / Abandoned / Remote ID / Wall widths < 1 m
N/A

Lists *1618 – Panagia di Vacha, 20 hearths

Med 11

Bib Komis (2005:318) linked the 1618 reference to “Panagia di Vacha” to an area known as Panayitsa, east of Vachos.

Desc I visited the small EM–Mod settlement of Panayitsa, but could not identify any architecture that might be linked to an Ott I settlement. Instead, I suggest the toponym may refer to a small abandoned settlement above Vachos about 290 m to the southeast. At least 11 structures are visible in the imagery.

T449 **US 72** N 4037114, E 633866, 251 m
Ott I
Seasonal / Abandoned / Remote ID / Wall widths < 1 m
N/A

Lists *1618 – Chanbos alle Vigne, 20 hearths

Med 15

Bib Komis (2005:353) linked the entry in the 1618 Nevers Catalog with an area near Dimaristika, where there is a toponym of Ampelos (Ἀμπελος), which means “vineyard.” The area was referred to as having vineyards in a report from the year 1571.

Desc See Piontes (T013). The modern area known as Ampelos has no architecture or even rubble piles that would indicate the presence of an Ott I period settlement. Instead, I suggest that the settlement referenced in the 1618 Nevers Catalog was further south, about 1 km southeast of Layia in the broad and flat plain around Piontes. In the imagery, a very dispersed settlement pattern can be seen around the nucleated hilltop of Piontes, specifically to the south and southwest. At least 15 isolated structures and several churches are scattered about this area.

T450 **Lakka Kalantrea – Λάκκα Καλαντρέα** N 4052053, E 627919, 981 m
Ott I, Ven, Ott II
Seasonal / Abandoned / Remote ID / Wall widths < 1 m
N/A

Med 6

Desc One of the seasonal, dispersed settlement areas in the central mountains, connected by goat path to the east and west sides of the peninsula. The toponym is taken from the Anavasi atlas and was not verified with any residents of Mani. I did not visit any of these settlements in person, but images and brief descriptions from hikers in the area can be found online (http://www.mani.org.gr/taigetos/diadromes/sagias/sag.htm). Located above Soulia (T382) and US 8 (T383).

T451 **Lakka Sangia – Λάκκα Σαγγιά** N 4052254, E 628285, 976 m
Byz, Ott I, Ven, Ott II
Seasonal / Abandoned / Remote ID / Wall widths variable
N/A

Med 11

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981).

Desc See Lakka Kalantrea (T450) for similar description. Above Phlomochori. There are two structures in the center of the cluster that are square in shape and could be possible towers.

T452 **Lakka Armaka – Λάκκα Άρμακα** N 4051859, E 628449, 1002 m
Byz, Ott I, Ven, Ott II
Seasonal / Abandoned / Remote ID / Wall widths variable
N/A

Med 8

Desc See Lakka Kalantrea (T450) for similar description. Above Phlomochori.

T453 **Lakka Achrada – Λάκκα Αχράδα** N 4051980, E 629684, 698 m
Ott I, Ven, Ott II
Seasonal / Abandoned / Remote ID / Wall widths < 1 m
N/A

Med 10

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981).

Desc See Lakka Kalantrea (T450) for similar description. Above Phlomochori.

T454 **US 73** N 4044564, E 630515, 242 m
Byz, Ott I
Permanent / Abandoned / Remote ID / Wall widths variable
N/A

Med 19

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). Ay. Ioannis Potamatis has marble architectural members dating to the 12th century (Drandakis 2002:390).

Desc Located on a steep hillside about 550 m north of Kato Pachianika. A *kalderimia* leads downhill from the site just above a gully, then branches off to connect to Kato Pachianika to the southwest and Korakianika to the southeast. The ruined church of Ay. Ioannis Potamatis can be seen at the southern edge of the settlement.

T455 **US 53** N 4051109, E 628564, 997 m
Byz, Ott I, Ven, Ott II
Seasonal / Abandoned / Remote ID / Wall widths variable
N/A

Med 12

Desc See Lakka Kalantrea (T450) for similar description. Above Aryilia.

T456 **US 54** N 4050673, E 628271, 1116 m
Byz, Ott I, Ven, Ott II
Seasonal / Abandoned / Remote ID / Wall widths variable
N/A

Med 8

Desc See Lakka Kalantrea (T450) for similar description. Above Aryilia.

T457 **Throkalou – Θροκάλου** N 4050068, E 628299, 1027 m
Ott I, Ven, Ott II
Seasonal / Abandoned / Remote ID / Wall widths < 1 m
N/A

Med 8

Desc See Lakka Kalantrea (T450) for similar description. Above Drymos (Driali) and Aryilia.

T458 **US 55** N 4049828, E 630070, 832 m
Byz, Ott I, Ven, Ott II
Seasonal / Abandoned / Remote ID / Wall widths variable
N/A

Med 4

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981).

Desc See Lakka Kalantrea (T450) for similar description. Above Drymos (Driali). There is a small church about 200 m northeast of the settlement on top of a hill.

T459 **US 56** N 4043947, E 623184, 32 m
Byz
Permanent / Abandoned / Remote ID / Wall widths > 1 m
N/A

Med 2

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981).

Desc Two megalithic structures about 250 m northwest of modern Phokaloto, with a small chapel with an intact roof next to them.

T460 **Bastounes – Μπαστούνες** N 4049101, E 628874, 880 m
Ott I, Ven, Ott II
Seasonal / Abandoned / Remote ID / Wall widths < 1 m
N/A

Med 4

Desc See Lakka Kalantrea (T450) for similar description. Above Drymos (Driali).

T461 **Stou Gorgona – Στου Γοργόνα** N 4048064, E 628746, 771 m
Byz, Ott I, Ven, Ott II
Seasonal / Abandoned / Remote ID / Wall widths variable
N/A

Med 22

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981).

Desc See Lakka Kalantrea (T450) for similar description. Above Akia and Paliochori. Based on the Anavasi atlas, I had originally separated this from the toponym "Korigones," but the features themselves stretch in a broader area that encompasses both toponyms. There is also a structure that appears to be a church on the western edge of the settlement area, though it could very well be an apsidal cistern.

T462 **US 74** N 4045011, E 630018, 513 m
Byz
Permanent / Abandoned / Remote ID / Wall widths > 1 m
N/A

Med 7

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981).

Desc Located along a steep descending ridge about 1 km north of Kato Pachianika, connected to that settlement and Pachianika by goat paths. The structures, as well as a megalithic church, are barely visible in the imagery because of the rocky background. None of the houses are on the same contour. The only wall width I could measure is of the church, and it is well over 1 m.

T463 **Lakoi – Λάκοι** N 4047401, E 629071, 737 m
Byz, Ott I, Ven, Ott II
Seasonal / Abandoned / Remote ID / Wall widths variable
N/A

Med 20

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981).

Desc See Lakka Kalantrea (T450) for similar description. Above Nyphi, Mesa Chora. A structure that appears to be a chapel with an intact barrel-vaulted roof is at the center of the settlement area.

T464 **Trilangado – Τριλάγκαδο** N 4046091, E 628707, 585 m
Byz, Ott I, Ven, Ott II
Seasonal / Abandoned / Remote ID / Wall widths variable
N/A

Med 8

Desc See Lakka Kalantrea (T450) for similar description. Above Mina. Accessed by a *kalderimi* leading uphill along the north side of a gully and continuing on to Stou Laou.

T465 **Stou Laou – Στου Λαού** N 4046438, E 628887, 596 m
Ott I, Ven, Ott II
Seasonal / Abandoned / Remote ID / Wall widths < 1 m
N/A

Med 3

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981).

Desc See Lakka Kalantrea (T450) for similar description. Above Mina, just east of Trilangado. Accessed by a *kalderimi* leading uphill along the north side of a gully and passing through Trilangado.

T466 **Sarantaria – Σαρανταριά** N 4045598, E 629489, 691 m
Byz, Ott I, Ven, Ott II
Seasonal / Abandoned / Remote ID / Wall widths variable
N/A

Med 5

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981).

Desc See Lakka Kalantrea (T450) for similar description. Above Polemitas. Accessed by a *kalderimi* leading uphill along the south side of a gully.

T467 **Kako Vouni – Κακό Βουνί** N 4041911, E 628080, 584 m
Byz, Ott I, Ven, Ott II
Seasonal / Abandoned / Remote ID / Wall widths variable
N/A

Med 37

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981).

Desc See Lakka Kalantrea (T450) for similar description. Above Kita and Kalonioi. Accessed by a goat path leading uphill from Kalonioi, part of which is now a dirt road.

T468 **Nikolakkos – Νικόλακκος** N 4041733, E 629362, 771 m
Byz, Ott I, Ven, Ott II
Seasonal / Abandoned / Remote ID / Wall widths variable
N/A

Med 6

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981).

Desc See Lakka Kalantrea (T450) for similar description. Above Karynia.

T469 **Pano Oros – Πάνω Όρος** N 4041020, E 629866, 700 m
Byz, Ott I, Ven, Ott II
Seasonal / Abandoned / Remote ID / Wall widths variable
N/A

Med 16

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981).

Desc See Lakka Kalantrea (T450) for similar description. Above Ayia Lia and the three mountain settlements above Layia (see T436, T437, T438).

T470 **US 57** N 4038844, E 630856, 468 m
Byz
Permanent / Abandoned / Remote ID / Wall widths > 1 m
N/A

Med 32

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981).

Desc See the unidentified settlements T436, T437, T438, and T471. Another dispersed megalithic settlement above Layia, about 850 m south of the three others. Accessed by a *kalderimi* heading uphill from Layia and passing through US 80 (T490) to the northeast. The houses are aligned along the contours of a hill.

T471 **US 58** N 4038186, E 631379, 423 m
Ott I
Permanent / Abandoned / Remote ID / Wall widths < 1 m
N/A

Med 9

Desc See the unidentified settlements T436, T437, T438, and T470. Another dispersed megalithic settlement above Layia, about 550 m southeast of US 58 (T470). Accessed by a goat path directly from Layia. In the imagery, at least nine houses and one church are visible, but the rubble around the structures suggests more houses were once present. The walls are noticeably smaller than in US 58 to the north.

T472 **US 59** N 4058009, E 623288, 250 m
Ott I
Permanent / Occupied / Field Visit / Wall widths < 1 m
1 July 2014

Lists *1618 – Mavroiagni, 10 hearths

Med 7

Bib The name referenced in the 1618 Nevers Catalog is derived from a family name, possibly Mavriano, which appeared in 17th century records and possibly also in a 14th century register from Langkada. Based on the order of the list (Zimova, Mavroiagni, Chouchougni), Komis (2005:379-380) suggested that it is associated with the toponym of "Mavriano" near Chimara (see US 49, T444). According to oral legend, the abandonment of that settlement (US 49) was due to a pirate attack during which the residents were enslaved and taken to Algeria (Komis 2005:379-380).

Desc A ruined settlement with EM architecture south of Areopoli. The settlement is known locally as a *xemoni* of Areopoli. In the imagery, at least seven structures can be seen. There are two churches in the settlement, both renovated recently. Ay. Dimitrios appears to be post-Byz in construction, and it contains preserved icons (some with their eyes scratched out). The area between the houses is filled with dry stone walls. I think this is a better candidate for the settlement listed in the 1618 Nevers Catalog because it is near both Areopoli (Tsimova) and Sotiras (Kouskouni). The settlement that Komis suggests is located in a part of Mani through which the recorders of the list had already passed.

T473 **Phranezi – Φρανέζη** N 4054559, E 625178, 292 m
Byz
Permanent / Abandoned / Remote ID / Wall widths variable
N/A

Med 24

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). Ay. Theodoroi dates to the 12th century (Drandakis 1986:23, 2002:382-383).

Desc Located on the lower slopes between Males and US 32, above Velousi. The name is a local toponym reported by a resident of Pyrgos Dirou. The area is extremely overgrown, and as a result it is barely visible in the imagery. The structures are spread to the south and southeast of the 12th century church of Ay. Theodoroi, and two more ruined churches are visible at the west and southeast borders of the site.

T474 **US 61** N 4040919, E 626119, 138 m
Byz, Ott I
Permanent / Abandoned / Remote ID / Wall widths variable
N/A

Med 6

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981).

Desc Located south of Kita along the mountainside, with at least four chapels visible in the imagery, all about 120 m apart from one another. The Anavasi atlas notes two Byz chapels, one of which is called Ay. Nikolaos. Moschos and Moschou (1981) note two *palaiomaniatika* settlements on either side of this one. Wall width is variable, but most of the structures are too ruined to measure.

T475 **US 62** N 4054418, E 629332, 647 m
Byz, Ott I, Ven, Ott II
Seasonal / Abandoned / Remote ID / Wall widths variable
N/A

Med 3

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981).

Desc See Lakka Kalantrea (T450) for similar description. Above Phlomochori. Has evidence of EM use.

T476 **US 63** N 4053942, E 627608, 803 m
Byz, Ott I, Ven, Ott II
Seasonal / Abandoned / Remote ID / Wall widths variable
N/A

Med 3

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981).

Desc See Lakka Kalantrea (T450) for similar description. Above Males. Has evidence of EM use.

T477 **US 64** N 4054509, E 627527, 840 m
Byz, Ott I, Ven, Ott II
Seasonal / Abandoned / Remote ID / Wall widths variable
N/A

Med 2

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981).

Desc See Lakka Kalantrea (T450) for similar description. Above Males. Has evidence of EM use.

T478 **Mesopangi – Μεσοπάγκι** N 4041307, E 624932, 110 m
Ott I
Permanent / Abandoned / Field Visit / Wall widths < 1
6 May 2014

Lists *1618 – Mizopangi, 30 hearths

Med 0

Bib The toponym Mizopangi is geographical, from *apangeios* (leeward, sheltered). Komis (2005:382-383) linked the name with the area around Pangia, where the toponym "Misopangi" is still present.

Desc An area about 350 m north of Kechrianika with large rubble piles. The name for this general area is a local toponym reported by a resident of Kita. I could not identify any foundation walls or corners at the site, despite the fact that it looks like a ruined settlement in the imagery. The rubble is irregular and unworked, and I saw only a few pieces of ceramic, including a coarseware fragment and a medium coarse fragment with orange paint or burnish. However, based on the rubble piles and the association with the toponym, I think this is the best candidate for the 17th century settlement of "Mizopangi." The large amount of rubble could be explained as collapsed walls once held together with mud or a poor-quality plaster. The area now appears to be used by hunters, with little circular areas formed out of rubble and small "windows" or gun slits built up with the rubble along the ridges of the piles.

T479 **US 66** N 4040831, E 621488, 265 m
Byz, Ott I
Permanent / Abandoned / Partial Mapping / Wall widths variable
10 June 2014

Med 5

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981).

Desc Located about 380 m south of Ippola (T191) on the plateau of Cavo Grosso, extending down along the hillside to the plain below. It seems that there are at least five distinct structures in association with three Byz churches in this area, and additional rubble (possibly from an Ott I settlement) is present on the plateau above. One of the structures is an agglomeration of at least four distinct rectangular rooms.

T480 **US68** N 4030023, E 632124, 198 m
Byz
Permanent / Abandoned / Remote ID / Wall widths > 1 m
N/A

Med 4

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981).

Desc Located about 300 m west of Agriokampi on the Matapan Peninsula. In the imagery, at least four houses and a church are visible.

T481 **US 69** N 4047952, E 626405, 230 m
Byz, Ott I
Permanent / Abandoned / Remote ID / Wall widths variable
N/A

Med 14

Desc Located about 270 m south of Vamvaka. At least 14 houses are visible in the imagery, but there appears to be no church.

T482 **US 70** N 4041358, E 629331, 768 m
Byz
Seasonal / Abandoned / Remote ID / Wall widths > 1 m
N/A

Med 10

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981).

Desc See Lakka Kalantrea (T450) for similar description. Above Pepo. A cluster of houses centered around the church of Ay. Ioannis.

T483 **US 71** N 4041282, E 628288, 734 m
Byz, Ott I, Ven, Ott II
Seasonal / Abandoned / Remote ID / Wall widths variable
N/A

Med 15

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981). Ay. Asomatoi dates to the 10th–11th centers (Drandakis 1986:22).

Desc A slightly dispersed cluster stretching along a ridge high above Pepo (to the north), with the church of Ay. Asomatoi at its northwest corner.

T484 **US 75** N 4045822, E 631689, 149 m
Byz
Permanent / Abandoned / Remote ID / Wall widths > 1 m
N/A

Med 8

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981).

Desc Located about 1 km south of Nyphi, Exo Chora, at about the same elevation. Accessible via a field path running south along the contour from the latter settlement. Relatively dispersed.

T485 **US 76** N 4045721, E 631317, 275 m
Byz, Ott I
Permanent / Abandoned / Remote ID / Wall widths variable
N/A

Med 11

Desc Located on a ridge above US 75 (T484) and directly below Moni Panayias Kournou. The Anavasi atlas marks a church here, but I was unable to identify it in the imagery. The structures are very difficult to see in the imagery because of the contrast of the rocks behind them.

T486 **US 77** N 4045725, E 630989, 391 m
Byz, Ott I
Permanent / Abandoned / Remote ID / Wall widths variable
N/A

Med 11

Desc Located about 130 m northeast of Moni Panayias Kournou, beginning at a slightly lower elevation and descending the hill just above US 76 (T485). One church can be seen in the imagery. As with the other settlements in this area, the structures are very difficult to see because of the contrast of the rocks behind them.

T487 **US 78** N 4046814, E 631011, 358 m
Byz, Ott I
Permanent / Abandoned / Remote ID / Wall widths variable
N/A

Med 18

Desc Located on a mountain ridge about 750 m above Nyphi, Exo Chora, along a *kalderimi*. In the imagery, one church is visible along the ridge, and the Anavasi atlas labels it Ay. Aikaterini. The structures are very difficult to see because of the contrast of the rocks behind them.

T488 **US 79** N 4045400, E 631606, 240 m
Byz
Permanent / Abandoned / Remote ID / Wall widths > 1 m
N/A

Med 4

Desc Located about 350 m south of US 75 (T484). In the imagery it does not appear to be accessible via any extant paths. One megalithic church is visible below the site to the east. The structures are very difficult to see because of the contrast of the rocks behind them.

T489 **Rizakia – Ριζάκια** N 4039532, E 632067, 446 m
Byz, Ott I
Permanent / Abandoned / Remote ID / Wall widths < 1 m
N/A

Med 27

Bib Listed as a *palaiomaniatiko* settlement by Moschos and Moschou (1981).

Desc Located on the northwest side of a peak above Dimaristika. The toponym is taken from the Anavasi atlas. The structures are almost completely ruined, appearing now as roughly rectangular rubble piles aligned in two contours along the steep mountainside. The 1967 imagery is not much clearer, but it is possible to see several walls and corners that suggest this really is a group of structures. At least 27 structures are visible, but it is possible there are more. There is also an apsidal structure (a possible cistern) that is still standing, oriented to the west. I am tentatively including it in the Byz and Ott I categories based on perceived settlement layout.

T490 **US 80** N 4038489, E 631978, 497 m
Ott I, Ven, Ott II
Seasonal / Abandoned / Remote ID / Wall widths < 1 m
N/A

Med 14

Desc Located uphill from Layia about 320 m to the west, and accessed by a *kalderimi* that continues on to US 57 (T470). The structures are in a state of ruin and are mostly rectangular rubble piles, partially discernible through a combination of imagery types. A small roofless chapel is clearly visible and intact, with walls less than 1 m in width. This fact, plus the state of ruin of the structures, suggests the settlement is Ott I at the earliest.

T491 **US 81** N 4047183, E 630528, 308 m
Byz
Permanent / Abandoned / Remote ID / Wall widths > 1 m
N/A

Med 7

Desc A small cluster of structures above Nyphi, Mesa Chora, about 380 m to the west. The area is heavily vegetated and difficult to identify structures, but at least seven houses are visible in the imagery. It is likely there are more.

T492 **US 82** N 4047529, E 630746, 394 m
Byz
Permanent / Abandoned / Remote ID / Wall widths > 1 m
N/A

Med 12

Desc Located along a prominent slope above Nyphi, Mesa Chora, about 220 m to the west. There is a small chapel that is barely visible against the rocky background, with walls more than 1 m wide. The structures I identified around it are extremely difficult to see in the imagery.

T493 **US 83** N 4047646, E 630105, 633 m
Byz, Ott I
Permanent / Abandoned / Remote ID / Wall widths variable
N/A

Med 24

Desc Located along a ridge far above Nyphi, Mesa Chora, about 900 m to the west. There is a small east–west oriented structure visible against the rocky background on the crest of the ridge. In some imagery it appears rectangular, but in others it appears apsidal (i.e. as if it were a church). The structures I identified around it are extremely difficult to see in the imagery. A general pattern can be seen of spaced out buildings stretched along the contour and continuing onto the next southern ridge.

APPENDIX B

DATA TABLES

Tables LVI–LXXXV contain all the additional statistical data from the regional-scale analyses discussed in Chapter 6.

APPENDIX B (continued)

TABLE LVI. LEAST-COST PATH DISTANCES TO NEAREST BAY

Unit ID	Name	Distance (m)	Bay ID
T001	Ayeranos	742.60	2
T005	Ayia Varvara	1873.66	E
T006	Ayia Varvara (Phtio)	1452.19	D
T008	Ayios Yeoryios	1489.24	F
T012	Akia	2623.66	E
T013	Piontes	1463.31	Q
T014	Alika (new)	1263.22	H
T014	Alika (old)	1501.12	H
T018	Archia	3069.61	G
T020	Areopoli (Tsimova)	2559.77	B
T021	Aryilia	1072.50	W
T024	Briki	3025.45	E
T027	Charia	2115.88	C
T028	Charouda	4913.79	C
T029	Chimara	4858.07	X
T030	Chosiari	3541.86	2
T031	Kalyvia	1288.46	1
T033	Pera Dimaristika	1394.77	S
T034	Diporo	2146.06	G
T035	Dry	3244.55	G
T036	Dryalos	7179.49	C
T038	Erimos	1247.64	F
T041	Phlomochori	1361.88	X
T042	Gardenitsa	1260.81	F
T044	Gonea	1421.30	Y
T046	Kauki - A	3524.40	1
T047	Kainouryia Chora	1623.64	M
T049	Kalonioi	3773.07	F
T051	Kaphiona	1329.35	E
T054	Karea (new)	6723.68	A
T054	Karea (old)	5648.01	A
T055	Karynia	3134.46	F
T056	Karioupoli (Miniakova)	4003.05	1
T063	Kechrianika	3339.84	G
T064	Kelepha	3389.39	A
T066	Keria	2879.44	G
T067	Kipoula	5433.38	F
T068	Kita	3768.91	F
T072	Korogonianika	1011.60	N
T073	Kotronas	495.84	Y
T075	Kouloumi	1486.95	E
T076	Kounos	4432.89	G
T077	Koutrela	2395.34	E
T079	Kryoneri	5553.81	A
T080	Kyparissos	188.49	I
T081	Layia	2525.08	R
T089	Leontakis	3952.92	G
T091	Limeni	0.00	B
T093	Loukadika	2598.06	X
T100	Nyphi, Mesa Chora	1143.23	V
T101	Mezapos	0.00	F

APPENDIX B (continued)

TABLE LVI. LEAST-COST PATH DISTANCES TO NEAREST BAY (continued)

Unit ID	Name	Distance (m)	Bay ID
T104	Mina	2467.99	F
T106	Mountanistika	4434.67	G
T107	Neochori	3621.39	1
T109	Nikandreio	1581.73	D
T111	Nomia	3579.71	F
T113	Ochia	1398.68	G
T114	Oitylo	1829.47	A
T115	Omales (Krelianika)	1595.46	C
T117	Pachianika	2370.12	T
T118	Pangia	3851.52	F
T120	Palaiochora	2475.65	E
T122	Parasyros	2553.96	Z
T130	Polemitas	3892.35	F
T132	Porachia	2142.28	J
T133	Porto Kayio	63.58	M
T137	Pyrgos Dirou	2058.17	C
T138	Pyrrichos (Kavalos)	6930.17	C
T139	Riganochora	1822.36	Y
T145	Skala	4114.09	A
T146	Skaltsotianika	2000.99	Y
T149	Skoutari	879.42	Z
T152	Sotiras (Kouskouni)	4010.90	B
T154	Spira	538.07	S
T155	Stavri	2925.60	F
T161	Tsikalia	2078.61	H
T162	Tsopakas	1909.06	D
T163	Vachos	4305.57	A
T164	Vamvaka	2683.13	E
T167	Vatheia	1473.68	J
T169	Ano Boularioi	1797.05	G
T170	Kotraphi (new)	2259.00	H
T170	Kotraphi (old)	1678.57	H
T171	Kato Boularioi	1563.41	G
T172	Kato Meri	698.30	E
T176	Ayioryis	5797.41	G
T179	Agriokampi	1278.89	L
T181	Chalopyrgos	3743.18	F
T184	Elaia	3716.45	G
T186	Gatis	5813.13	G
T189	Glezou	3023.82	C
T190	Goulas	897.17	J
T191	Ippola	5244.92	F
T197	Kourines	3829.25	F
T199	Karavas	4695.43	G
T200	Kastri	1492.38	M
T201	Katayioryis	1612.01	F
T207	Koureloi	341.19	L
T212	Mantophoros	4595.89	C
T215	Marmatsouka	4698.49	C
T218	Mianes	977.67	L
T219	Neasa	2089.09	G

APPENDIX B (continued)

TABLE LVI. LEAST-COST PATH DISTANCES TO NEAREST BAY (continued)

Unit ID	Name	Distance (m)	Bay ID
T222	Paliros	696.27	M
T224	Passava Fortress	2969.86	2
T225	Pepo	4366.41	G
T226	Petomoniastika	1030.31	J
T227	Pyrgaki	975.33	M
T231	Psio	5454.87	G
T233	Skaphidianika	4976.75	G
T236	Tigani	4778.85	F
T237	Trochalakas	5826.25	G
T238	Tserasia	3479.48	A
T255	Makrynaros	1902.29	W
T261	Drymos (Driali)	1092.57	W
T262	Drosopigi (Tserova)	4948.80	Z
T269	Kaliazi	6354.84	A
T271	Palaia Karyoupolis	6437.86	A
T278	Korakianika	844.44	T
T279	Kozia	7293.93	A
T280	Kato Pachianika	1952.93	T
T284	Kozounas	1218.45	S
T290	Menenianika	774.74	Z
T293	Dimaristika	1447.69	S
T299	Olympies	1482.88	T
T301	Palaia Tserova	5039.24	Z
T302	Paliochori	2089.77	W
T307	US 10	2152.88	F
T308	Pirgaros (Kato Dimaristika)	1228.35	S
T313	Ayia Lia	2726.74	S
T321	Soloteri	187.51	T
T327	Vata	942.72	X
T328	Vathy	90.46	2
T341	Yerma	6668.98	A
T342	Kato Karea (Konakia)	6754.79	A
T343	Kelepha Fortress	2381.52	A
T352	Kondili	4624.10	X
T356	Yeroyiannoukou Kalyvia	741.08	K
T359	Moni Spiliotissas	4207.75	A
T360	Proskephalia	676.86	O
T362	Kouvouklia	3341.13	C
T363	Koulouvades	2854.54	C
T364	Males	3841.01	C
T365	Skyphianika	2823.50	E
T366	US 3	3066.89	T
T372	US 4	2139.03	P
T373	US 5	1034.00	U
T374	Avles	735.12	G
T375	Lakkos	1214.96	E
T377	Ano Dimaristika	1552.85	S
T378	US 6	3639.09	A
T379	Moni Sotira	990.12	Y
T381	Moni Ay. Dimitriou	4954.88	B
T382	Soulia	4112.29	C

APPENDIX B (continued)

TABLE LVI. LEAST-COST PATH DISTANCES TO NEAREST BAY (continued)

Unit ID	Name	Distance (m)	Bay ID
T383	US 8	6105.25	C
T385	Moni Panayias Tsipiotissas	1282.93	A
T386	Moni Panayias Phaneromenis	5831.41	C
T387	Moni Panayias Kotroniotissas	1019.98	Z
T388	Moni Dekoulou	739.00	A
T389	US 67	1559.90	P
T390	US 9	2015.05	I
T391	US 12	2766.39	H
T392	Korines	1116.63	D
T396	US 13	3130.40	H
T397	Pachia	1433.24	J
T398	US 15	1374.92	J
T399	US 16	1773.36	J
T400	Marassi	3008.66	F
T401	US 18	2756.41	F
T402	US 19	2960.69	F
T403	US 20	2684.13	F
T404	US 21	7126.47	C
T405	US 22	7260.55	C
T406	US 23	1331.17	E
T407	Palaia Kokkinoyia	565.96	L
T409	US 25	1952.10	S
T410	Sela	1761.82	X
T411	US 27	578.58	Y
T412	US 28	2268.77	Y
T413	US 29	2191.51	Y
T414	Vlistiko	3947.93	Y
T416	Parapodas	3627.31	C
T417	Divola	3844.60	Z
T418	Phlitsos	3849.67	1
T420	Moni Panayias Ayitrias	3593.47	F
T421	US 33	2262.22	E
T422	Katsipos	2462.95	G
T423	US 35	708.87	M
T424	Nyphi, Exo Chora	1075.04	V
T425	Nyphi, Chalikia	54.12	V
T427	Stavrikio	3018.57	F
T429	Vlacherna	1106.72	F
T430	Achillio Fortress	494.81	N
T431	Moni Panayias Kournou	2388.30	U
T432	US 36	1451.05	U
T433	Liostypha	1879.06	F
T434	Skourka	1391.00	X
T435	US 39	1711.60	X
T436	US 41	3545.64	S
T437	US 42	2890.76	S
T438	US 43	2327.44	S
T439	US 44	2093.98	B
T440	US 45	2338.77	S

APPENDIX B (continued)

TABLE LVI. LEAST-COST PATH DISTANCES TO NEAREST BAY (continued)

Unit ID	Name	Distance (m)	Bay ID
T441	US 46	1119.86	I
T442	US 47	1663.44	W
T443	US 48	2618.53	Y
T444	US 49	4127.65	X
T445	US 50	3082.24	X
T446	US 51	2497.67	X
T447	Vikolias	2281.52	X
T448	US 52	4905.10	A
T449	US 72	1309.52	P
T450	Lakka Kalantrea	7758.96	C
T451	Lakka Sangia	8227.43	C
T452	Lakka Armaka	4480.94	X
T453	Lakka Achrada	3096.21	X
T454	US 73	2031.77	T
T455	US 53	4026.35	W
T456	US 54	9715.49	C
T457	Throkalou	9724.03	C
T458	US 55	2064.76	W
T459	US 56	6946.56	G
T460	Bastounes	3871.74	W
T461	Stou Gorgona	5554.18	E
T462	US 74	2777.00	T
T463	Lakoi	3539.90	V
T464	Trilangado	5049.33	F
T465	Stou Laou	5453.90	F
T466	Sarantaria	3584.62	T
T467	Kako Vouni	6074.70	F
T468	Nikolakkos	3430.02	T
T469	Pano Oros	4076.64	S
T470	US 57	5255.89	S
T471	US 58	4710.85	S
T472	US 59	3602.07	B
T473	Phranezi	3856.56	C
T474	US 61	3096.55	G
T475	US 62	3954.85	X
T476	US 63	6017.24	C
T477	US 64	5646.88	C
T478	Mesopangi	3794.95	G
T479	US 66	6109.54	G
T480	US 68	1738.35	L
T481	US 69	2999.95	E
T482	US 70	3705.58	T
T483	US 71	4807.70	G
T484	US 75	682.57	U
T485	US 76	1071.29	U
T486	US 77	1406.82	U
T487	US 78	1873.57	V
T488	US 79	941.62	U
T489	Rizakia	2017.96	S
T490	US 80	3924.34	S
T491	US 81	1970.47	V

APPENDIX B (continued)

TABLE LVI. LEAST-COST PATH DISTANCES TO NEAREST BAY (continued)

Unit ID	Name	Distance (m)	Bay ID
T492	US 82	1672.11	V
T493	US 83	2490.05	V

APPENDIX B (continued)

TABLE LVII. RIPLEY'S K RESULTS FOR THE BYZANTINE PERIOD

Expected K	Observed K	Difference K	Lower Confidence Envelope	Upper Confidence Envelope
200	99.17	-100.83	121.46	371.07
400	350.63	-49.37	377.64	590.90
600	654.10	54.10	578.28	847.34
800	976.75	176.75	755.29	1037.78
1000	1218.67	218.67	946.06	1220.69
1200	1470.99	270.99	1206.50	1425.14
1400	1744.73	344.73	1386.66	1678.65
1600	1959.78	359.78	1599.13	1871.21
1800	2224.24	424.24	1798.85	2110.80
2000	2468.42	468.42	2033.67	2316.30
2200	2717.80	517.80	2234.17	2533.31
2400	2962.80	562.80	2438.35	2739.43
2600	3200.57	600.57	2673.10	2951.99
2800	3463.29	663.29	2876.90	3147.89
3000	3706.77	706.77	3087.96	3371.19
3200	3973.77	773.77	3293.71	3584.70
3400	4190.61	790.61	3490.16	3793.32
3600	4408.50	808.50	3667.43	4017.46
3800	4658.54	858.54	3858.24	4218.10
4000	4885.26	885.26	4056.44	4434.08
4200	5110.11	910.11	4251.20	4632.07
4400	5345.74	945.74	4445.16	4844.32
4600	5562.15	962.15	4643.73	5058.84
4800	5755.51	955.51	4834.67	5241.23
5000	5973.53	973.53	5032.53	5465.83
5200	6167.95	967.95	5220.07	5678.52
5400	6378.05	978.05	5388.81	5888.54
5600	6588.91	988.91	5555.51	6084.87
5800	6800.47	1000.47	5734.54	6286.02
6000	7036.81	1036.81	5913.55	6476.37

APPENDIX B (continued)

TABLE LVIII. RIPLEY'S K RESULTS FOR THE OTTOMAN I PERIOD

Expected K	Observed K	Difference K	Lower Confidence Envelope	Upper Confidence Envelope
200	178.51	-21.49	95.42	387.60
400	393.43	-6.57	323.58	572.52
600	625.71	25.71	599.70	829.11
800	869.31	69.31	775.19	1036.52
1000	1090.04	90.04	989.33	1256.86
1200	1352.81	152.81	1221.97	1487.45
1400	1606.63	206.63	1426.52	1693.53
1600	1846.56	246.56	1609.46	1940.33
1800	2073.05	273.05	1842.86	2161.21
2000	2303.95	303.95	2034.25	2398.81
2200	2538.95	338.95	2225.55	2607.07
2400	2763.06	363.06	2410.17	2795.00
2600	3006.86	406.86	2634.00	3041.48
2800	3232.32	432.32	2852.23	3249.18
3000	3456.25	456.25	3017.44	3465.46
3200	3730.53	530.53	3194.78	3691.27
3400	3957.90	557.90	3396.46	3938.30
3600	4165.81	565.81	3548.54	4149.93
3800	4404.32	604.32	3741.50	4363.30
4000	4634.49	634.49	3946.39	4554.73
4200	4855.63	655.63	4171.82	4774.32
4400	5080.59	680.59	4357.56	4976.02
4600	5315.31	715.31	4550.23	5172.50
4800	5529.40	729.40	4737.95	5373.24
5000	5754.53	754.53	4931.92	5576.54
5200	5962.39	762.39	5091.34	5774.67
5400	6168.42	768.42	5270.16	5953.99
5600	6386.35	786.35	5459.39	6135.86
5800	6565.96	765.96	5630.17	6317.91
6000	6781.85	781.85	5799.45	6487.14

APPENDIX B (continued)

TABLE LIX. RIPLEY'S K RESULTS FOR THE VENETIAN PERIOD

Expected K	Observed K	Difference K	Lower Confidence Envelope	Upper Confidence Envelope
200	184.31	-15.69	150.49	451.47
400	383.67	-16.33	300.98	681.37
600	721.72	121.72	592.48	890.30
800	963.60	163.60	774.69	1236.39
1000	1121.12	121.12	969.46	1462.92
1200	1337.57	137.57	1170.53	1624.30
1400	1589.07	189.07	1366.88	1824.58
1600	1777.43	177.43	1516.13	2057.90
1800	1976.51	176.51	1735.52	2252.31
2000	2219.39	219.39	1956.36	2461.31
2200	2421.89	221.89	2244.76	2645.35
2400	2651.77	251.77	2400.76	2886.88
2600	2916.15	316.15	2610.88	3084.10
2800	3136.89	336.89	2807.33	3300.48
3000	3356.61	356.61	3015.42	3509.97
3200	3599.17	399.17	3192.35	3719.85
3400	3811.56	411.56	3411.82	3954.45
3600	3994.34	394.34	3597.60	4130.91
3800	4193.49	393.49	3814.53	4348.58
4000	4440.06	440.06	3981.56	4543.42
4200	4665.16	465.16	4159.60	4766.01
4400	4879.88	479.88	4364.18	4995.69
4600	5101.11	501.11	4565.79	5221.77
4800	5311.00	511.00	4715.85	5424.91
5000	5504.69	504.69	4891.47	5612.65
5200	5701.72	501.72	5085.54	5846.84
5400	5899.86	499.86	5281.07	6051.45
5600	6096.19	496.19	5460.28	6211.20
5800	6272.88	472.88	5613.66	6373.16
6000	6485.01	485.01	5803.10	6552.75

APPENDIX B (continued)

TABLE LX. RIPLEY'S K RESULTS FOR THE OTTOMAN II PERIOD

Expected K	Observed K	Difference K	Lower Confidence Envelope	Upper Confidence Envelope
200	219.00	19.00	163.23	364.99
400	425.65	25.65	357.62	583.99
600	684.79	84.79	574.79	809.59
800	899.99	99.99	744.44	1060.37
1000	1080.28	80.28	920.48	1283.20
1200	1287.35	87.35	1128.53	1497.81
1400	1553.69	153.69	1404.16	1693.19
1600	1735.16	135.16	1619.19	1921.68
1800	1927.22	127.22	1817.65	2127.01
2000	2150.68	150.68	2047.87	2329.10
2200	2324.52	124.52	2227.36	2573.66
2400	2522.42	122.42	2422.19	2765.29
2600	2763.36	163.36	2635.04	2984.03
2800	2949.91	149.91	2846.01	3219.40
3000	3165.99	165.99	3061.60	3471.85
3200	3391.10	191.10	3264.60	3699.24
3400	3601.43	201.43	3449.53	3900.48
3600	3800.84	200.84	3635.31	4071.60
3800	4012.27	212.27	3857.21	4285.84
4000	4222.58	222.58	4054.55	4485.11
4200	4429.52	229.52	4269.02	4695.24
4400	4621.46	221.46	4470.24	4888.19
4600	4818.47	218.47	4652.49	5098.42
4800	5024.20	224.20	4853.73	5282.20
5000	5215.70	215.70	5034.26	5476.36
5200	5394.01	194.01	5204.45	5702.31
5400	5579.03	179.03	5403.38	5910.19
5600	5765.97	165.97	5589.53	6110.13
5800	5947.49	147.49	5765.97	6298.65
6000	6141.01	141.01	5938.97	6482.10

APPENDIX B (continued)

TABLE LXI. CENTRALITY MEASURES FOR EACH NODE IN THE BYZANTINE-PERIOD LOS NETWORK

Unit ID	Name	Type	All sites			Permanent villages		
			Degree	Betweenness	Closeness	Degree	Betweenness	Closeness
T005	Ayia Varvara	Permanent	0.204	0.013	0.308	0.215	0.002	0.267
T006	Ayia Varvara (Phtio)	Permanent	0.178	0.011	0.306	0.185	0.001	0.265
T008	Ayios Yeoryios	Permanent	0.125	0.002	0.273	0.146	0.002	0.240
T012	Akia	Permanent	0.105	0.001	0.261	0.123	0.001	0.251
T013	Piontes	Permanent	0.171	0.185	0.299	0.177	0.157	0.240
T014	Alika	Permanent	0.105	0.044	0.317	0.108	0.009	0.239
T020	Areopoli (Tsimova)	Permanent	0.171	0.027	0.281	0.177	0.024	0.265
T021	Aryilia	Permanent	0.007	0.000	0.235	0.008	0.000	0.198
T024	Briki	Permanent	0.211	0.005	0.283	0.246	0.009	0.270
T027	Charia	Permanent	0.026	0.000	0.228	0.031	0.000	0.219
T028	Charouda	Permanent	0.217	0.032	0.313	0.231	0.162	0.296
T029	Chimara	Permanent	0.066	0.010	0.282	0.077	0.148	0.263
T035	Dry	Permanent	0.171	0.009	0.295	0.185	0.005	0.246
T036	Dryalos	Permanent	0.237	0.005	0.285	0.269	0.010	0.272
T038	Erimos	Permanent	0.145	0.001	0.277	0.169	0.003	0.264
T044	Gonea	Permanent	0.132	0.108	0.312	0.123	0.007	0.206
T051	Kaphiona	Permanent	0.164	0.001	0.264	0.192	0.002	0.243
T055	Karynia	Permanent	0.086	0.001	0.269	0.100	0.002	0.256
T063	Kechrianika	Permanent	0.151	0.005	0.291	0.169	0.007	0.264
T066	Keria	Permanent	0.263	0.026	0.308	0.292	0.045	0.279
T068	Kita	Permanent	0.171	0.002	0.281	0.200	0.006	0.267
T072	Korogonianika	Permanent	0.007	0.000	0.224	0.000	0.000	0.091
T075	Kouloumi	Permanent	0.237	0.003	0.285	0.277	0.006	0.272
T076	Kounos	Permanent	0.250	0.023	0.307	0.277	0.028	0.278
T081	Layia	Permanent	0.013	0.000	0.236	0.015	0.000	0.198
T089	Leontakis	Permanent	0.053	0.000	0.253	0.062	0.000	0.232
T093	Loukadika	Permanent	0.112	0.010	0.263	0.131	0.013	0.233
T100	Nyphi, Mesa Chora	Permanent	0.007	0.000	0.211	0.008	0.000	0.191
T104	Mina	Permanent	0.099	0.001	0.258	0.115	0.001	0.237
T106	Mountanistika	Permanent	0.086	0.039	0.315	0.085	0.020	0.238
T111	Nomia	Permanent	0.211	0.007	0.296	0.246	0.011	0.270
T113	Ochia	Permanent	0.099	0.001	0.279	0.115	0.001	0.236
T114	Oitylo	Permanent	0.013	0.012	0.169	0.008	0.000	0.149
T118	Pangia	Permanent	0.237	0.019	0.306	0.254	0.009	0.250
T120	Palaiochora	Permanent	0.164	0.002	0.277	0.185	0.003	0.264
T130	Polemitas	Permanent	0.059	0.000	0.254	0.069	0.000	0.233
T132	Porachia	Permanent	0.105	0.066	0.313	0.115	0.052	0.239
T137	Pyrgos Dirou	Permanent	0.118	0.023	0.300	0.123	0.010	0.261
T138	Pyrrichos (Kavalos)	Permanent	0.026	0.029	0.294	0.031	0.383	0.286
T139	Riganochora	Permanent	0.118	0.031	0.279	0.115	0.006	0.206
T146	Skaltsotianika	Permanent	0.099	0.004	0.257	0.115	0.020	0.233
T149	Skoutari	Permanent	0.007	0.000	0.198	0.008	0.000	0.171
T161	Tsikalia	Permanent	0.039	0.001	0.271	0.046	0.002	0.230
T169	Ano Boularioi	Permanent	0.099	0.001	0.257	0.115	0.001	0.236
T170	Kotraphi	Permanent	0.020	0.000	0.248	0.023	0.000	0.198
T171	Kato Boularioi	Permanent	0.079	0.001	0.280	0.092	0.001	0.236
T172	Kato Meri	Permanent	0.151	0.001	0.265	0.169	0.001	0.242

APPENDIX B (continued)

TABLE LXI. CENTRALITY MEASURES FOR EACH NODE IN THE BYZANTINE-PERIOD LOS NETWORK (continued)

Unit ID	Name	Type	All sites			Permanent villages		
			Degree	Betweenness	Closeness	Degree	Betweenness	Closeness
T189	Glezou	Permanent	0.158	0.003	0.280	0.169	0.003	0.265
T190	Goulas	Permanent	0.013	0.006	0.245	0.015	0.007	0.197
T191	Ippola	Permanent	0.224	0.023	0.305	0.238	0.012	0.250
T197	Kourines	Permanent	0.237	0.016	0.302	0.269	0.018	0.272
T199	Karavas	Permanent	0.204	0.015	0.303	0.223	0.022	0.274
T200	Kastri	Permanent	0.013	0.000	0.249	0.008	0.000	0.198
T201	Katayioryis	Permanent	0.184	0.007	0.283	0.208	0.006	0.258
T212	Mantophoros	Permanent	0.171	0.013	0.306	0.177	0.001	0.265
T215	Marmatsouka	Permanent	0.250	0.026	0.316	0.269	0.005	0.273
T224	Passava Fortress	Permanent	0.013	0.000	0.198	0.015	0.000	0.171
T225	Pepo	Permanent	0.000	0.000	0.100	0.000	0.000	0.091
T233	Skaphidianika	Permanent	0.230	0.023	0.310	0.246	0.024	0.275
T255	Makrynaros	Permanent	0.053	0.000	0.250	0.062	0.003	0.222
T261	Drymos (Driali)	Permanent	0.039	0.000	0.249	0.046	0.001	0.221
T271	Palaia Karyoupolis	Permanent	0.020	0.000	0.199	0.023	0.000	0.171
T278	Korakianika	Permanent	0.000	0.000	0.100	0.000	0.000	0.091
T293	Dimaristika	Permanent	0.000	0.000	0.100	0.000	0.000	0.091
T301	Palaia Tserova	Permanent	0.039	0.081	0.241	0.046	0.067	0.201
T302	Paliochori	Permanent	0.007	0.000	0.235	0.008	0.000	0.198
T307	US 10	Permanent	0.138	0.001	0.277	0.162	0.002	0.264
T327	Vata	Permanent	0.059	0.000	0.259	0.069	0.002	0.229
T341	Yerma	Permanent	0.026	0.036	0.200	0.023	0.014	0.171
T356	Yeroyiannoukou Kalyvia	Seasonal	0.092	0.027	0.280			
T359	Moni Spiliotissas	Monastery	0.007	0.000	0.169			
T360	Proskephalia	Permanent	0.013	0.000	0.255	0.015	0.000	0.200
T362	Kouvouklia	Permanent	0.145	0.002	0.279	0.154	0.003	0.264
T363	Koulouvades	Permanent	0.217	0.036	0.315	0.231	0.224	0.297
T364	Males	Permanent	0.026	0.000	0.244	0.031	0.000	0.218
T365	Skyphianika	Permanent	0.237	0.008	0.285	0.269	0.013	0.272
T372	US 4	Permanent	0.007	0.000	0.235	0.008	0.000	0.198
T373	US 5	Permanent	0.053	0.037	0.240	0.062	0.046	0.201
T374	Avles	Permanent	0.197	0.009	0.296	0.231	0.017	0.270
T375	Lakkos	Permanent	0.191	0.015	0.307	0.200	0.004	0.266
T382	Soulia	Permanent	0.230	0.008	0.286	0.254	0.010	0.271
T383	US 8	Permanent	0.191	0.003	0.279	0.215	0.006	0.267
T385	Moni Panayias Tsipiotissas	Monastery	0.007	0.000	0.147			
T386	Moni Panayias Phaneromenis	Monastery	0.118	0.006	0.299			
T389	US 67	Permanent	0.007	0.000	0.235	0.008	0.000	0.198
T390	US 9	Permanent	0.013	0.000	0.250	0.015	0.000	0.200
T391	US 12	Permanent	0.007	0.000	0.245	0.008	0.000	0.196
T392	Korines	Permanent	0.053	0.002	0.278	0.046	0.000	0.226
T396	US 13	Seasonal	0.066	0.182	0.313			
T397	Pachia	Permanent	0.013	0.006	0.245	0.015	0.007	0.197
T398	US 15	Permanent	0.013	0.000	0.201	0.015	0.000	0.168

APPENDIX B (continued)

TABLE LXI. CENTRALITY MEASURES FOR EACH NODE IN THE BYZANTINE-PERIOD LOS NETWORK (continued)

Unit ID	Name	Type	All sites			Permanent villages		
			Degree	Betweenness	Closeness	Degree	Betweenness	Closeness
T403	US 20	Permanent	0.125	0.001	0.273	0.146	0.002	0.261
T404	US 21	Permanent	0.164	0.002	0.278	0.177	0.004	0.264
T405	US 22	Permanent	0.204	0.006	0.281	0.223	0.008	0.267
T406	US 23	Permanent	0.257	0.004	0.288	0.285	0.007	0.274
T407	Palaia Kokkinoyia	Permanent	0.000	0.000	0.100	0.000	0.000	0.091
T409	US 25	Permanent	0.000	0.000	0.100	0.000	0.000	0.091
T410	Sela	Permanent	0.026	0.000	0.247	0.031	0.000	0.196
T411	US 27	Permanent	0.132	0.082	0.300	0.131	0.017	0.234
T414	Vlistiko	Permanent	0.092	0.015	0.284	0.108	0.226	0.267
T416	Parapodas	Permanent	0.197	0.009	0.283	0.223	0.012	0.269
T417	Divola	Permanent	0.000	0.000	0.100	0.000	0.000	0.091
T420	Moni Panayias Ayitrias	Monastery	0.145	0.001	0.264			
T421	US 33	Permanent	0.092	0.000	0.271	0.100	0.001	0.258
T422	Katsipos	Permanent	0.092	0.000	0.257	0.108	0.001	0.236
T423	US 35	Permanent	0.007	0.000	0.224	0.000	0.000	0.091
T424	Nyphi, Exo Chora	Permanent	0.066	0.028	0.261	0.077	0.042	0.231
T429	Vlacherna	Permanent	0.039	0.000	0.235	0.046	0.000	0.226
T432	US 36	Permanent	0.059	0.014	0.261	0.062	0.009	0.203
T436	US 41	Permanent	0.013	0.000	0.244	0.008	0.000	0.092
T437	US 42	Permanent	0.020	0.000	0.245	0.015	0.000	0.092
T438	US 43	Permanent	0.112	0.014	0.273	0.115	0.024	0.233
T441	US 46	Permanent	0.013	0.000	0.250	0.015	0.000	0.200
T442	US 47	Permanent	0.039	0.000	0.256	0.046	0.000	0.201
T444	US 49	Permanent	0.059	0.000	0.259	0.069	0.000	0.229
T445	US 50	Permanent	0.013	0.000	0.213	0.015	0.000	0.193
T446	US 51	Permanent	0.053	0.000	0.250	0.062	0.003	0.222
T447	Vikolias	Permanent	0.053	0.004	0.250	0.062	0.008	0.222
T451	Lakka Sangia	Seasonal	0.000	0.000	0.100			
T452	Lakka Armaka	Seasonal	0.000	0.000	0.100			
T454	US 73	Permanent	0.007	0.000	0.215	0.000	0.000	0.091
T455	US 53	Seasonal	0.000	0.000	0.100			
T456	US 54	Seasonal	0.079	0.154	0.313			
T458	US 55	Seasonal	0.000	0.000	0.100			
T459	US 56	Permanent	0.099	0.002	0.272	0.108	0.000	0.230
T461	Stou Gorgona	Seasonal	0.000	0.000	0.100			
T462	US 74	Permanent	0.020	0.000	0.237	0.015	0.000	0.198
T463	Lakoi	Seasonal	0.007	0.000	0.215			
T464	Trilangado	Seasonal	0.053	0.039	0.297			
T466	Sarantaria	Seasonal	0.033	0.037	0.283			
T467	Kako Vouni	Seasonal	0.007	0.000	0.220			
T468	Nikolakkos	Seasonal	0.007	0.000	0.215			
T469	Pano Oros	Seasonal	0.072	0.038	0.268			
T470	US 57	Permanent	0.013	0.000	0.244	0.008	0.000	0.092
T473	Phranezi	Permanent	0.026	0.000	0.244	0.031	0.000	0.218
T474	US 61	Permanent	0.099	0.001	0.257	0.115	0.001	0.236
T475	US 62	Seasonal	0.020	0.000	0.246			

APPENDIX B (continued)

TABLE LXI. CENTRALITY MEASURES FOR EACH NODE IN THE BYZANTINE-PERIOD LOS NETWORK (continued)

Unit ID	Name	Type	All sites			Permanent villages		
			Degree	Betweenness	Closeness	Degree	Betweenness	Closeness
T476	US 63	Seasonal	0.000	0.000	0.100			
T477	US 64	Seasonal	0.007	0.000	0.224			
T479	US 66	Permanent	0.276	0.031	0.312	0.300	0.031	0.278
T480	US 68	Permanent	0.132	0.067	0.318	0.138	0.033	0.240
T481	US 69	Permanent	0.118	0.001	0.275	0.138	0.003	0.262
T482	US 70	Permanent	0.000	0.000	0.100	0.000	0.000	0.091
T483	US 71	Seasonal	0.066	0.013	0.275			
T484	US 75	Permanent	0.026	0.000	0.198	0.031	0.000	0.171
T485	US 76	Permanent	0.020	0.000	0.197	0.023	0.000	0.171
T486	US 77	Permanent	0.020	0.001	0.212	0.023	0.000	0.173
T487	US 78	Permanent	0.033	0.008	0.249	0.038	0.002	0.197
T488	US 79	Permanent	0.020	0.000	0.197	0.023	0.000	0.171
T489	Rizakia	Permanent	0.099	0.031	0.272	0.108	0.064	0.233
T491	US 81	Permanent	0.007	0.000	0.178	0.008	0.000	0.164
T492	US 82	Permanent	0.020	0.012	0.212	0.023	0.014	0.193
T493	US 83	Permanent	0.046	0.000	0.258	0.054	0.000	0.202

APPENDIX B (continued)

TABLE LXII. CENTRALITY MEASURES FOR EACH NODE IN THE OTTOMAN I-PERIOD LOS NETWORK

Unit ID	Name	Type	All sites			Permanent villages		
			Degree	Betweenness	Closeness	Degree	Betweenness	Closeness
T005	Ayia Varvara	Permanent	0.184	0.007	0.312	0.202	0.002	0.280
T006	Ayia Varvara (Phtio)	Permanent	0.146	0.004	0.305	0.155	0.002	0.274
T008	Ayios Yeoryios	Permanent	0.158	0.002	0.295	0.194	0.003	0.268
T012	Akia	Permanent	0.089	0.001	0.283	0.109	0.001	0.263
T013	Piontes	Permanent	0.158	0.076	0.310	0.147	0.104	0.253
T014	Alika	Permanent	0.101	0.033	0.306	0.109	0.027	0.262
T020	Areopoli (Tsimova)	Permanent	0.139	0.019	0.304	0.147	0.023	0.293
T021	Aryilia	Permanent	0.006	0.000	0.244	0.008	0.000	0.208
T024	Briki	Permanent	0.203	0.005	0.305	0.248	0.007	0.284
T027	Charia	Permanent	0.019	0.000	0.251	0.023	0.000	0.242
T028	Charouda	Permanent	0.184	0.027	0.319	0.202	0.089	0.301
T029	Chimara	Permanent	0.070	0.003	0.268	0.070	0.019	0.243
T034	Diporo	Permanent	0.114	0.001	0.280	0.140	0.001	0.263
T035	Dry	Permanent	0.158	0.006	0.294	0.178	0.007	0.270
T036	Dryalos	Permanent	0.228	0.008	0.303	0.271	0.013	0.284
T038	Erimos	Permanent	0.139	0.001	0.292	0.171	0.001	0.270
T042	Gardenitsa	Permanent	0.177	0.005	0.311	0.209	0.004	0.280
T044	Gonea	Permanent	0.114	0.033	0.290	0.101	0.004	0.215
T047	Kainouryia Chora	Permanent	0.032	0.014	0.280	0.016	0.013	0.195
T049	Kalonioi	Permanent	0.120	0.002	0.286	0.147	0.002	0.265
T051	Kaphiona	Permanent	0.158	0.002	0.290	0.194	0.003	0.269
T054	Karea	Permanent	0.177	0.094	0.328	0.209	0.253	0.316
T055	Karynia	Permanent	0.114	0.001	0.289	0.140	0.001	0.270
T063	Kechrianika	Permanent	0.146	0.003	0.285	0.171	0.002	0.268
T064	Kelepha	Permanent	0.038	0.003	0.255	0.047	0.003	0.245
T068	Kita	Permanent	0.171	0.004	0.298	0.209	0.007	0.281
T072	Korogonianika	Permanent	0.013	0.000	0.254	0.008	0.000	0.167
T073	Kotronas	Permanent	0.076	0.001	0.261	0.085	0.001	0.214
T075	Kouloumi	Permanent	0.222	0.012	0.317	0.256	0.005	0.285
T076	Kounos	Permanent	0.228	0.015	0.314	0.264	0.025	0.303
T077	Koutrela	Permanent	0.184	0.003	0.295	0.217	0.003	0.279
T079	Kryoneri	Permanent	0.044	0.005	0.280	0.054	0.010	0.270
T080	Kyparissos	Permanent	0.019	0.000	0.246	0.016	0.000	0.217
T081	Layia	Permanent	0.019	0.000	0.250	0.008	0.000	0.208
T089	Leontakis	Permanent	0.044	0.000	0.271	0.054	0.000	0.252
T093	Loukadika	Permanent	0.133	0.012	0.266	0.147	0.010	0.225
T100	Nyphi, Mesa Chora	Permanent	0.006	0.000	0.210	0.008	0.000	0.187
T104	Mina	Permanent	0.120	0.001	0.285	0.147	0.001	0.263
T109	Nikandreio	Permanent	0.209	0.017	0.322	0.225	0.014	0.298
T111	Nomia	Permanent	0.190	0.004	0.296	0.233	0.005	0.274
T113	Ochia	Permanent	0.076	0.001	0.281	0.093	0.001	0.262
T114	Oitylo	Permanent	0.044	0.018	0.270	0.047	0.009	0.263
T117	Pachianika	Permanent	0.025	0.007	0.187	0.031	0.000	0.103
T118	Pangia	Permanent	0.203	0.012	0.323	0.225	0.019	0.299
T132	Porachia	Permanent	0.095	0.026	0.306	0.109	0.031	0.264
T133	Porto Kayio	Permanent	0.006	0.000	0.112	0.008	0.000	0.101
T137	Pyrgos Dirou	Permanent	0.108	0.007	0.310	0.116	0.003	0.284

APPENDIX B (continued)

TABLE LXII. CENTRALITY MEASURES FOR EACH NODE IN THE OTTOMAN I-PERIOD LOS NETWORK (continued)

Unit ID	Name	Type	All sites			Permanent villages		
			Degree	Betweenness	Closeness	Degree	Betweenness	Closeness
T138	Pyrrichos (Kavalos)	Permanent	0.019	0.008	0.276	0.023	0.073	0.267
T139	Riganochora	Permanent	0.108	0.010	0.269	0.101	0.004	0.215
T145	Skala	Permanent	0.051	0.003	0.261	0.062	0.004	0.254
T146	Skaltsotianika	Permanent	0.082	0.003	0.258	0.093	0.009	0.222
T152	Sotiras (Kouskouni)	Permanent	0.203	0.028	0.315	0.240	0.037	0.302
T155	Stavri	Permanent	0.297	0.037	0.341	0.326	0.026	0.308
T161	Tsikalia	Permanent	0.032	0.003	0.276	0.039	0.028	0.233
T163	Vachos	Permanent	0.038	0.002	0.260	0.047	0.002	0.253
T167	Vatheia	Permanent	0.032	0.011	0.272	0.039	0.013	0.250
T169	Ano Boularioi	Permanent	0.114	0.001	0.280	0.140	0.001	0.263
T170	Kotraphi	Permanent	0.013	0.000	0.243	0.016	0.000	0.215
T171	Kato Boularioi	Permanent	0.070	0.000	0.274	0.085	0.000	0.257
T172	Kato Meri	Permanent	0.133	0.001	0.287	0.155	0.001	0.265
T181	Chalopyrgos	Permanent	0.127	0.002	0.298	0.147	0.001	0.263
T191	Ippola	Permanent	0.209	0.035	0.330	0.209	0.032	0.298
T199	Karavas	Permanent	0.171	0.009	0.308	0.194	0.017	0.297
T215	Marmatsouka	Permanent	0.228	0.018	0.320	0.256	0.005	0.285
T219	Neasa	Permanent	0.133	0.004	0.290	0.163	0.005	0.271
T224	Passava Fortress	Permanent	0.025	0.001	0.276	0.031	0.001	0.267
T225	Pepo	Permanent	0.000	0.000	0.111	0.000	0.000	0.100
T231	Psio	Permanent	0.228	0.016	0.327	0.256	0.023	0.304
T236	Tigani	Permanent	0.152	0.034	0.313	0.155	0.010	0.280
T238	Tserasia	Permanent	0.038	0.001	0.278	0.047	0.001	0.268
T261	Drymos (Driali)	Permanent	0.070	0.001	0.239	0.085	0.002	0.209
T269	Kaliazi	Permanent	0.063	0.008	0.280	0.070	0.004	0.270
T271	Palaia Karyoupolis	Permanent	0.057	0.002	0.280	0.070	0.003	0.270
T278	Korakianika	Permanent	0.013	0.000	0.161	0.016	0.000	0.103
T279	Kozia	Permanent	0.025	0.001	0.243	0.031	0.001	0.233
T293	Dimaristika	Permanent	0.006	0.000	0.112	0.008	0.000	0.101
T299	Olympies	Permanent	0.000	0.000	0.111	0.000	0.000	0.100
T301	Palaia Tserova	Permanent	0.095	0.069	0.305	0.101	0.213	0.287
T302	Paliochori	Permanent	0.013	0.000	0.245	0.016	0.000	0.209
T321	Soloteri	Permanent	0.019	0.004	0.187	0.023	0.000	0.103
T327	Vata	Permanent	0.082	0.004	0.262	0.093	0.005	0.222
T341	Yerma	Permanent	0.063	0.010	0.281	0.070	0.004	0.270
T343	Kelepha Fortress	Permanent	0.032	0.000	0.237	0.039	0.000	0.232
T352	Kondili	Permanent	0.076	0.011	0.266	0.093	0.043	0.247
T356	Yeroyiannoukou Kalyvia	Seasonal	0.089	0.011	0.285			
T359	Moni Spiliotissas	Monastery	0.013	0.000	0.227			
T365	Skyphianika	Permanent	0.228	0.010	0.307	0.271	0.016	0.285
T366	US 3	Permanent	0.019	0.024	0.223	0.016	0.000	0.103
T374	Avles	Permanent	0.177	0.010	0.298	0.217	0.028	0.276
T378	US 6	Permanent	0.070	0.007	0.281	0.085	0.007	0.271
T385	Moni Panayias Tsipiotissas	Monastery	0.006	0.000	0.219			
T386	Moni Panayias	Monastery	0.101	0.004	0.299			

APPENDIX B (continued)

TABLE LXII. CENTRALITY MEASURES FOR EACH NODE IN THE OTTOMAN I-PERIOD LOS NETWORK (continued)

Unit ID	Name	Type	All sites			Permanent villages		
			Degree	Betweenness	Closeness	Degree	Betweenness	Closeness
T391	Phaneromenis US 12	Permanent	0.000	0.000	0.111	0.000	0.000	0.100
T392	Korines	Permanent	0.025	0.000	0.267	0.016	0.000	0.231
T396	US 13	Seasonal	0.063	0.038	0.294			
T398	US 15	Permanent	0.006	0.000	0.220	0.008	0.000	0.206
T400	Marassi	Permanent	0.089	0.000	0.278	0.109	0.001	0.262
T401	US 18	Permanent	0.133	0.001	0.293	0.163	0.002	0.272
T402	US 19	Permanent	0.146	0.001	0.294	0.178	0.002	0.273
T403	US 20	Permanent	0.133	0.001	0.287	0.163	0.003	0.272
T407	Palaia Kokkinoyia	Permanent	0.000	0.000	0.111	0.000	0.000	0.100
T410	Sela	Permanent	0.051	0.001	0.237	0.062	0.000	0.191
T412	US 28	Permanent	0.120	0.011	0.274	0.116	0.004	0.216
T413	US 29	Permanent	0.108	0.031	0.289	0.093	0.003	0.215
T414	Vlistiko	Permanent	0.089	0.005	0.270	0.093	0.043	0.245
T417	Divola	Permanent	0.000	0.000	0.111	0.000	0.000	0.100
T420	Moni Panayias Ayitrias	Monastery	0.114	0.008	0.305			
T421	US 33	Permanent	0.089	0.001	0.290	0.101	0.001	0.269
T422	Katsipos	Permanent	0.114	0.001	0.280	0.140	0.001	0.263
T424	Nyphi, Exo Chora	Permanent	0.089	0.012	0.258	0.109	0.015	0.223
T425	Nyphi, Chalikia	Permanent	0.044	0.001	0.252	0.047	0.002	0.210
T427	Stavrikio	Permanent	0.285	0.030	0.338	0.318	0.029	0.309
T429	Vlacherna	Permanent	0.051	0.001	0.280	0.062	0.002	0.273
T430	Achillio Fortress	Permanent	0.006	0.000	0.112	0.008	0.000	0.101
T433	Liostypha	Permanent	0.133	0.002	0.302	0.155	0.001	0.265
T434	Skourka	Permanent	0.070	0.001	0.256	0.078	0.003	0.221
T435	US 39	Permanent	0.032	0.000	0.217	0.039	0.000	0.190
T439	US 44	Permanent	0.108	0.016	0.301	0.101	0.008	0.288
T440	US 45	Permanent	0.006	0.000	0.112	0.008	0.000	0.101
T441	US 46	Permanent	0.006	0.000	0.241	0.008	0.000	0.215
T443	US 48	Permanent	0.070	0.002	0.256	0.078	0.002	0.214
T445	US 50	Permanent	0.019	0.000	0.225	0.023	0.000	0.209
T447	Vikolias	Permanent	0.082	0.003	0.247	0.101	0.005	0.221
T448	US 52	Permanent	0.032	0.000	0.259	0.039	0.000	0.253
T449	US 72	Seasonal	0.063	0.009	0.294			
T450	Lakka Kalantrea	Seasonal	0.000	0.000	0.111			
T451	Lakka Sangia	Seasonal	0.000	0.000	0.111			
T452	Lakka Armaka	Seasonal	0.000	0.000	0.111			
T453	Lakka Achrada	Seasonal	0.000	0.000	0.111			
T454	US 73	Permanent	0.013	0.009	0.222	0.008	0.000	0.103
T455	US 53	Seasonal	0.000	0.000	0.111			
T456	US 54	Seasonal	0.063	0.050	0.300			
T457	Throkalou	Seasonal	0.063	0.061	0.318			
T458	US 55	Seasonal	0.000	0.000	0.111			
T460	Bastounes	Seasonal	0.032	0.000	0.275			
T461	Stou Gorgona	Seasonal	0.000	0.000	0.111			
T463	Lakoi	Seasonal	0.013	0.004	0.256			

APPENDIX B (continued)

TABLE LXII. CENTRALITY MEASURES FOR EACH NODE IN THE OTTOMAN I-PERIOD LOS NETWORK (continued)

Unit ID	Name	Type	All sites			Permanent villages		
			Degree	Betweenness	Closeness	Degree	Betweenness	Closeness
T464	Trilangado	Seasonal	0.070	0.037	0.314			
T465	Stou Laou	Seasonal	0.025	0.009	0.280			
T466	Sarantaria	Seasonal	0.038	0.027	0.298			
T467	Kako Vouni	Seasonal	0.006	0.000	0.228			
T468	Nikolakkos	Seasonal	0.006	0.000	0.221			
T469	Pano Oros	Seasonal	0.070	0.070	0.273			
T471	US 58	Permanent	0.000	0.000	0.111	0.000	0.000	0.100
T472	US 59	Permanent	0.152	0.016	0.304	0.155	0.009	0.292
T474	US 61	Permanent	0.108	0.001	0.279	0.132	0.001	0.263
T475	US 62	Seasonal	0.025	0.000	0.233			
T476	US 63	Seasonal	0.013	0.000	0.243			
T477	US 64	Seasonal	0.019	0.000	0.244			
T478	Mesopangi	Permanent	0.171	0.004	0.294	0.202	0.003	0.272
T479	US 66	Permanent	0.272	0.044	0.337	0.295	0.046	0.306
T481	US 69	Permanent	0.108	0.001	0.292	0.132	0.001	0.271
T483	US 71	Seasonal	0.051	0.015	0.284			
T485	US 76	Permanent	0.000	0.000	0.111	0.000	0.000	0.100
T486	US 77	Permanent	0.000	0.000	0.111	0.000	0.000	0.100
T487	US 78	Permanent	0.038	0.000	0.236	0.047	0.000	0.190
T489	Rizakia	Permanent	0.114	0.025	0.297	0.116	0.053	0.250
T490	US 80	Seasonal	0.152	0.071	0.313			
T493	US 83	Permanent	0.063	0.001	0.259	0.062	0.000	0.213

APPENDIX B (continued)

TABLE LXIII. CENTRALITY MEASURES FOR EACH NODE IN THE VENETIAN-PERIOD LOS NETWORK

Unit ID	Name	Type	All sites			Permanent villages		
			Degree	Betweenness	Closeness	Degree	Betweenness	Closeness
T012	Akia	Permanent	0.070	0.000	0.293	0.099	0.000	0.277
T013	Piontes	Permanent	0.150	0.081	0.324	0.141	0.193	0.274
T014	Alika	Permanent	0.100	0.024	0.322	0.113	0.034	0.292
T020	Areopoli (Tsimova)	Permanent	0.170	0.047	0.334	0.197	0.049	0.336
T024	Briki	Permanent	0.170	0.003	0.315	0.239	0.005	0.301
T027	Charia	Permanent	0.020	0.000	0.270	0.028	0.000	0.267
T034	Diporo	Permanent	0.110	0.002	0.298	0.155	0.004	0.292
T035	Dry	Permanent	0.170	0.012	0.303	0.211	0.019	0.277
T036	Dryalos	Permanent	0.190	0.005	0.318	0.254	0.007	0.303
T042	Gardenitsa	Permanent	0.160	0.006	0.325	0.211	0.005	0.301
T044	Gonea	Permanent	0.120	0.028	0.297	0.099	0.007	0.226
T047	Kainouryia Chora	Permanent	0.050	0.017	0.287	0.028	0.026	0.197
T049	Kalonioi	Permanent	0.110	0.002	0.302	0.155	0.004	0.293
T054	Karea	Permanent	0.210	0.117	0.356	0.282	0.354	0.372
T055	Karynia	Permanent	0.090	0.001	0.299	0.127	0.001	0.290
T063	Kechrianika	Permanent	0.150	0.006	0.307	0.197	0.006	0.295
T064	Kelepha	Permanent	0.060	0.004	0.273	0.085	0.005	0.271
T067	Kipoula	Permanent	0.100	0.013	0.330	0.113	0.023	0.324
T068	Kita	Permanent	0.140	0.004	0.317	0.197	0.007	0.305
T072	Korogonianika	Permanent	0.020	0.001	0.265	0.014	0.000	0.167
T073	Kotronas	Permanent	0.080	0.002	0.272	0.099	0.003	0.226
T075	Kouloumi	Permanent	0.210	0.012	0.334	0.268	0.008	0.310
T076	Kounos	Permanent	0.250	0.027	0.346	0.324	0.058	0.357
T077	Koutrela	Permanent	0.160	0.003	0.313	0.211	0.003	0.300
T079	Kryoneri	Permanent	0.070	0.011	0.303	0.099	0.022	0.307
T081	Layia	Permanent	0.020	0.000	0.260	0.014	0.000	0.220
T089	Leontakis	Permanent	0.050	0.001	0.292	0.070	0.001	0.284
T093	Loukadika	Permanent	0.100	0.003	0.273	0.127	0.007	0.228
T100	Nyphi, Mesa Chora	Permanent	0.010	0.000	0.217	0.014	0.000	0.188
T104	Mina	Permanent	0.100	0.001	0.301	0.141	0.003	0.292
T109	Nikandreio	Permanent	0.210	0.030	0.347	0.239	0.024	0.336
T111	Nomia	Permanent	0.170	0.006	0.311	0.239	0.009	0.300
T114	Oitylo	Permanent	0.060	0.024	0.289	0.070	0.013	0.296
T118	Pangia	Permanent	0.210	0.019	0.348	0.254	0.039	0.346
T132	Porachia	Permanent	0.100	0.018	0.319	0.127	0.046	0.293
T133	Porto Kayio	Permanent	0.010	0.000	0.144	0.014	0.000	0.101
T137	Pyrgos Dirou	Permanent	0.120	0.015	0.337	0.141	0.009	0.326
T138	Pyrrichos (Kavalos)	Permanent	0.000	0.000	0.143	0.000	0.000	0.100
T139	Riganochora	Permanent	0.110	0.012	0.278	0.099	0.007	0.226
T145	Skala	Permanent	0.060	0.003	0.282	0.085	0.004	0.289
T152	Sotiras (Kouskouni)	Permanent	0.200	0.044	0.342	0.268	0.057	0.348
T155	Stavri	Permanent	0.280	0.046	0.364	0.324	0.044	0.353
T161	Tsikalia	Permanent	0.030	0.001	0.267	0.042	0.051	0.237
T163	Vachos	Permanent	0.050	0.000	0.282	0.070	0.000	0.287
T164	Vamvaka	Permanent	0.150	0.003	0.313	0.197	0.004	0.297
T167	Vatheia	Permanent	0.040	0.017	0.291	0.056	0.026	0.278
T169	Ano Boularioi	Permanent	0.100	0.001	0.297	0.141	0.003	0.291
T171	Kato Boularioi	Permanent	0.070	0.001	0.293	0.099	0.002	0.286

APPENDIX B (continued)

TABLE LXIII. CENTRALITY MEASURES FOR EACH NODE IN THE VENETIAN-PERIOD LOS NETWORK (continued)

Unit ID	Name	Type	All sites			Permanent villages		
			Degree	Betweenness	Closeness	Degree	Betweenness	Closeness
T191	Ippola	Permanent	0.250	0.073	0.361	0.268	0.096	0.350
T215	Marmatsouka	Permanent	0.220	0.028	0.342	0.268	0.007	0.311
T224	Passava Fortress	Permanent	0.040	0.001	0.294	0.056	0.002	0.301
T225	Pepo	Permanent	0.000	0.000	0.143	0.000	0.000	0.100
T236	Tigani	Permanent	0.150	0.028	0.331	0.155	0.018	0.314
T238	Tserasia	Permanent	0.050	0.000	0.297	0.070	0.000	0.302
T261	Drymos (Driali)	Permanent	0.050	0.000	0.241	0.070	0.000	0.191
T269	Kaliazi	Permanent	0.090	0.012	0.301	0.113	0.007	0.307
T271	Palaia Karyoupolis	Permanent	0.080	0.001	0.300	0.113	0.002	0.307
T293	Dimaristika	Permanent	0.000	0.000	0.143	0.000	0.000	0.100
T301	Palaia Tserova	Permanent	0.120	0.071	0.326	0.155	0.277	0.327
T302	Paliochori	Permanent	0.010	0.000	0.254	0.014	0.000	0.220
T327	Vata	Permanent	0.070	0.001	0.270	0.085	0.001	0.225
T341	Yerma	Permanent	0.100	0.015	0.303	0.127	0.009	0.309
T343	Kelepha Fortress	Permanent	0.050	0.001	0.254	0.070	0.001	0.256
T352	Kondili	Permanent	0.050	0.006	0.275	0.070	0.051	0.266
T356	Yeroyiannoukou Kalyvia	Seasonal	0.090	0.013	0.305			
T359	Moni Spiliotissas	Monastery	0.020	0.000	0.243			
T365	Skyphianika	Permanent	0.190	0.006	0.318	0.254	0.010	0.303
T378	US 6	Permanent	0.100	0.010	0.303	0.141	0.013	0.310
T385	Moni Panayias Tsipiotissas	Monastery	0.010	0.000	0.233			
T386	Moni Panayias Phaneromenis	Monastery	0.090	0.005	0.316			
T396	US 13	Seasonal	0.080	0.029	0.305			
T398	US 15	Permanent	0.010	0.000	0.234	0.014	0.000	0.223
T413	US 29	Permanent	0.110	0.024	0.296	0.085	0.003	0.225
T417	Divola	Permanent	0.000	0.000	0.143	0.000	0.000	0.100
T420	Moni Panayias Ayitrias	Monastery	0.120	0.008	0.325			
T424	Nyphi, Exo Chora	Permanent	0.070	0.017	0.265	0.099	0.026	0.226
T427	Stavrikio	Permanent	0.260	0.030	0.360	0.310	0.039	0.351
T430	Achillio Fortress	Permanent	0.010	0.000	0.144	0.014	0.000	0.101
T431	Moni Panayias Kournou	Monastery	0.000	0.000	0.143			
T450	Lakka Kalantrea	Seasonal	0.000	0.000	0.143			
T451	Lakka Sangia	Seasonal	0.000	0.000	0.143			
T452	Lakka Armaka	Seasonal	0.000	0.000	0.143			
T453	Lakka Achrada	Seasonal	0.000	0.000	0.143			
T455	US 53	Seasonal	0.000	0.000	0.143			
T456	US 54	Seasonal	0.060	0.038	0.312			
T457	Throkalou	Seasonal	0.080	0.039	0.332			
T458	US 55	Seasonal	0.000	0.000	0.143			
T460	Bastounes	Seasonal	0.050	0.000	0.295			
T461	Stou Gorgona	Seasonal	0.000	0.000	0.143			
T463	Lakoi	Seasonal	0.020	0.003	0.264			

APPENDIX B (continued)

TABLE LXIII. CENTRALITY MEASURES FOR EACH NODE IN THE VENETIAN-PERIOD LOS NETWORK (continued)

Unit ID	Name	Type	All sites			Permanent villages		
			Degree	Betweenness	Closeness	Degree	Betweenness	Closeness
T464	Trilangado	Seasonal	0.080	0.028	0.326			
T465	Stou Laou	Seasonal	0.030	0.011	0.296			
T466	Sarantaria	Seasonal	0.050	0.016	0.311			
T467	Kako Vouni	Seasonal	0.010	0.000	0.242			
T468	Nikolakkos	Seasonal	0.010	0.000	0.229			
T469	Pano Oros	Seasonal	0.080	0.026	0.283			
T475	US 62	Seasonal	0.030	0.000	0.240			
T476	US 63	Seasonal	0.000	0.000	0.143			
T477	US 64	Seasonal	0.010	0.000	0.261			
T483	US 71	Seasonal	0.060	0.024	0.303			
T490	US 80	Seasonal	0.140	0.060	0.325			

APPENDIX B (continued)

TABLE LXIV. CENTRALITY MEASURES FOR EACH NODE IN THE OTTOMAN II-PERIOD LOS NETWORK

Unit ID	Name	Type	All sites			Permanent villages		
			Degree	Betweenness	Closeness	Degree	Betweenness	Closeness
T001	Ayeranos	Permanent	0.020	0.000	0.250	0.026	0.000	0.237
T008	Ayios Yeoryios	Permanent	0.088	0.005	0.284	0.114	0.006	0.257
T012	Akia	Permanent	0.068	0.000	0.267	0.088	0.001	0.256
T013	Piontes	Permanent	0.136	0.078	0.335	0.123	0.086	0.257
T014	Alika	Permanent	0.109	0.038	0.309	0.123	0.040	0.255
T018	Archia	Permanent	0.082	0.003	0.287	0.105	0.006	0.275
T020	Areopoli (Tsimova)	Permanent	0.143	0.118	0.330	0.149	0.296	0.326
T024	Briki	Permanent	0.156	0.005	0.293	0.202	0.015	0.280
T027	Charia	Permanent	0.027	0.000	0.261	0.026	0.000	0.256
T028	Charouda	Permanent	0.143	0.024	0.314	0.149	0.118	0.301
T029	Chimara	Permanent	0.061	0.004	0.289	0.061	0.103	0.260
T030	Chosiari	Permanent	0.041	0.002	0.250	0.053	0.003	0.237
T031	Kalyvia	Permanent	0.082	0.009	0.254	0.096	0.014	0.241
T033	Pera Dimaristika	Permanent	0.007	0.000	0.232	0.009	0.000	0.208
T034	Diporo	Permanent	0.102	0.004	0.278	0.132	0.005	0.258
T035	Dry	Permanent	0.136	0.041	0.292	0.158	0.124	0.268
T036	Dryalos	Permanent	0.163	0.006	0.292	0.202	0.016	0.280
T041	Phlomochori	Permanent	0.061	0.001	0.279	0.061	0.000	0.214
T044	Gonea	Permanent	0.122	0.026	0.312	0.105	0.003	0.217
T046	Kauki - A	Permanent	0.054	0.003	0.252	0.070	0.004	0.239
T047	Kainouryia Chora	Permanent	0.054	0.058	0.307	0.044	0.003	0.189
T049	Kalonioi	Permanent	0.088	0.002	0.277	0.114	0.003	0.257
T051	Kaphiona	Permanent	0.088	0.001	0.279	0.114	0.002	0.257
T054	Karea	Permanent	0.048	0.003	0.276	0.061	0.004	0.271
T055	Karynia	Permanent	0.075	0.005	0.278	0.096	0.011	0.265
T056	Karioupoli (Miniakova)	Permanent	0.048	0.000	0.210	0.061	0.000	0.200
T063	Kechrianika	Permanent	0.122	0.008	0.293	0.149	0.010	0.279
T064	Kelepha	Permanent	0.048	0.006	0.281	0.061	0.008	0.275
T067	Kipoula	Permanent	0.068	0.009	0.311	0.061	0.018	0.280
T068	Kita	Permanent	0.150	0.013	0.311	0.193	0.061	0.299
T072	Korogonianika	Permanent	0.027	0.001	0.266	0.026	0.000	0.184
T073	Kotronas	Permanent	0.088	0.002	0.282	0.096	0.002	0.216
T075	Kouloumi	Permanent	0.150	0.017	0.315	0.175	0.015	0.285
T076	Kounos	Permanent	0.190	0.023	0.317	0.219	0.042	0.298
T079	Kryoneri	Permanent	0.061	0.049	0.313	0.079	0.143	0.316
T080	Kyparissos	Permanent	0.020	0.000	0.247	0.018	0.000	0.207
T081	Layia	Permanent	0.014	0.000	0.265	0.009	0.000	0.207
T089	Leontakis	Permanent	0.048	0.001	0.271	0.061	0.002	0.249
T091	Limeni	Permanent	0.000	0.000	0.125	0.000	0.000	0.091
T093	Loukadika	Permanent	0.109	0.002	0.284	0.123	0.014	0.234
T100	Nyphi, Mesa Chora	Permanent	0.007	0.000	0.218	0.009	0.000	0.178
T101	Mezapos	Permanent	0.020	0.000	0.230	0.026	0.000	0.221
T104	Mina	Permanent	0.075	0.005	0.276	0.096	0.006	0.255
T107	Neochori	Permanent	0.061	0.002	0.253	0.079	0.003	0.239
T109	Nikandreio	Permanent	0.163	0.016	0.311	0.167	0.003	0.278
T111	Nomia	Permanent	0.143	0.009	0.296	0.184	0.016	0.283
T113	Ochia	Permanent	0.068	0.002	0.281	0.079	0.002	0.257

APPENDIX B (continued)

TABLE LXIV. CENTRALITY MEASURES FOR EACH NODE IN THE OTTOMAN II-PERIOD LOS NETWORK (continued)

Unit ID	Name	Type	All sites			Permanent villages		
			Degree	Betweenness	Closeness	Degree	Betweenness	Closeness
T114	Oitylo	Permanent	0.048	0.030	0.286	0.044	0.041	0.289
T115	Omales (Krelianika)	Permanent	0.122	0.021	0.295	0.114	0.004	0.274
T117	Pachianika	Permanent	0.000	0.000	0.125	0.000	0.000	0.091
T118	Pangia	Permanent	0.156	0.015	0.320	0.167	0.009	0.267
T122	Parasyros	Permanent	0.034	0.000	0.228	0.035	0.000	0.224
T132	Porachia	Permanent	0.102	0.042	0.309	0.123	0.056	0.255
T133	Porto Kayio	Permanent	0.007	0.000	0.185	0.009	0.000	0.156
T137	Pyrgos Dirou	Permanent	0.088	0.009	0.316	0.088	0.003	0.280
T138	Pyrrichos (Kavalos)	Permanent	0.020	0.006	0.287	0.018	0.105	0.268
T139	Riganochora	Permanent	0.109	0.010	0.293	0.096	0.003	0.216
T145	Skala	Permanent	0.041	0.002	0.234	0.053	0.002	0.230
T146	Skaltsotianika	Permanent	0.075	0.002	0.276	0.088	0.012	0.232
T149	Skoutari	Permanent	0.041	0.004	0.251	0.053	0.006	0.237
T152	Sotiras (Kouskouni)	Permanent	0.170	0.051	0.315	0.202	0.060	0.300
T154	Spira	Permanent	0.122	0.044	0.294	0.149	0.106	0.259
T155	Stavri	Permanent	0.211	0.049	0.335	0.219	0.030	0.296
T161	Tsikalia	Permanent	0.027	0.002	0.268	0.035	0.010	0.212
T162	Tsopakas	Permanent	0.122	0.002	0.288	0.149	0.009	0.275
T163	Vachos	Permanent	0.027	0.000	0.229	0.035	0.000	0.225
T164	Vamvaka	Permanent	0.129	0.003	0.289	0.158	0.011	0.276
T167	Vatheia	Permanent	0.041	0.004	0.273	0.053	0.009	0.247
T169	Ano Boularioi	Permanent	0.095	0.003	0.278	0.123	0.004	0.257
T170	Kotraphi	Permanent	0.020	0.000	0.246	0.026	0.000	0.209
T171	Kato Boularioi	Permanent	0.048	0.000	0.252	0.061	0.001	0.243
T176	Ayioryis	Permanent	0.156	0.018	0.312	0.184	0.019	0.286
T179	Agriokampi	Permanent	0.007	0.000	0.221	0.009	0.000	0.182
T184	Elaia	Permanent	0.136	0.012	0.310	0.167	0.032	0.293
T186	Gatis	Permanent	0.143	0.032	0.325	0.149	0.044	0.292
T190	Goulas	Permanent	0.020	0.000	0.243	0.026	0.000	0.207
T207	Koureloi	Permanent	0.014	0.000	0.250	0.018	0.000	0.183
T212	Mantophoros	Permanent	0.116	0.010	0.306	0.114	0.002	0.273
T215	Marmatsouka	Permanent	0.150	0.015	0.324	0.167	0.009	0.291
T218	Mianes	Permanent	0.000	0.000	0.125	0.000	0.000	0.091
T222	Paliros	Permanent	0.034	0.013	0.275	0.044	0.027	0.219
T224	Passava Fortress	Permanent	0.082	0.010	0.255	0.105	0.015	0.242
T225	Pepo	Permanent	0.000	0.000	0.125	0.000	0.000	0.091
T226	Petomoniastika	Permanent	0.020	0.000	0.243	0.026	0.000	0.207
T227	Pyrgaki	Permanent	0.048	0.029	0.276	0.061	0.059	0.220
T237	Trochalakas	Permanent	0.122	0.012	0.309	0.132	0.004	0.259
T238	Tserasia	Permanent	0.034	0.000	0.254	0.044	0.000	0.241
T261	Drymos (Driali)	Permanent	0.048	0.000	0.248	0.053	0.000	0.194
T262	Drosopigi (Tserova)	Permanent	0.095	0.030	0.259	0.114	0.053	0.261
T269	Kaliazi	Permanent	0.061	0.006	0.257	0.070	0.004	0.244
T271	Palaia Karyoupolis	Permanent	0.075	0.008	0.279	0.096	0.016	0.275
T280	Kato Pachianika	Permanent	0.000	0.000	0.125	0.000	0.000	0.091
T284	Kozounas	Permanent	0.088	0.010	0.283	0.105	0.032	0.256
T290	Menenianika	Permanent	0.041	0.000	0.210	0.044	0.000	0.200

APPENDIX B (continued)

TABLE LXIV. CENTRALITY MEASURES FOR EACH NODE IN THE OTTOMAN II-PERIOD LOS NETWORK (continued)

Unit ID	Name	Type	All sites			Permanent villages		
			Degree	Betweenness	Closeness	Degree	Betweenness	Closeness
T293	Dimaristika	Permanent	0.027	0.000	0.268	0.026	0.000	0.209
T301	Palaia Tserova	Permanent	0.156	0.181	0.317	0.184	0.277	0.298
T302	Paliochori	Permanent	0.007	0.000	0.257	0.009	0.000	0.207
T308	Pirgaros (Kato Dimaristika)	Permanent	0.007	0.000	0.232	0.009	0.000	0.208
T313	Ayia Lia	Permanent	0.088	0.021	0.300	0.079	0.002	0.214
T327	Vata	Permanent	0.068	0.001	0.280	0.070	0.000	0.215
T328	Vathy	Permanent	0.000	0.000	0.125	0.000	0.000	0.091
T341	Yerma	Permanent	0.061	0.012	0.282	0.070	0.014	0.276
T342	Kato Karea (Konakia)	Permanent	0.061	0.055	0.312	0.070	0.141	0.314
T343	Kelepha Fortress	Permanent	0.048	0.006	0.255	0.053	0.005	0.255
T352	Kondili	Permanent	0.061	0.006	0.279	0.070	0.019	0.252
T356	Yeroyiannoukou Kalyvia	Seasonal	0.068	0.009	0.282			
T359	Moni Spiliotissas	Monastery	0.020	0.000	0.248			
T375	Lakkos	Permanent	0.116	0.006	0.303	0.114	0.001	0.274
T377	Ano Dimaristika	Permanent	0.020	0.000	0.252	0.026	0.000	0.209
T378	US 6	Permanent	0.075	0.016	0.284	0.096	0.021	0.279
T379	Moni Sotira	Monastery	0.156	0.041	0.315			
T381	Moni Ay. Dimitriou	Monastery	0.116	0.005	0.298			
T385	Moni Panayias Tsipiotissas	Monastery	0.014	0.000	0.228			
T386	Moni Panayias Phaneromenis	Monastery	0.061	0.003	0.293			
T387	Moni Panayias Kotroniotissas	Monastery	0.041	0.006	0.251			
T388	Moni Dekoulou	Monastery	0.027	0.006	0.263			
T396	US 13	Seasonal	0.061	0.051	0.316			
T399	US 16	Permanent	0.027	0.000	0.244	0.035	0.000	0.208
T413	US 29	Permanent	0.116	0.023	0.311	0.096	0.003	0.216
T417	Divola	Permanent	0.020	0.000	0.227	0.018	0.000	0.222
T418	Phlitsos	Permanent	0.061	0.002	0.253	0.079	0.003	0.239
T420	Moni Panayias Ayitrias	Monastery	0.102	0.010	0.299			
T424	Nyphi, Exo Chora	Permanent	0.061	0.013	0.271	0.070	0.017	0.213
T430	Achillio Fortress	Permanent	0.020	0.012	0.222	0.026	0.017	0.183
T431	Moni Panayias Kournou	Monastery	0.007	0.000	0.225			
T432	US 36	Permanent	0.075	0.013	0.283	0.061	0.000	0.214
T450	Lakka Kalantrea	Seasonal	0.000	0.000	0.125			
T451	Lakka Sangia	Seasonal	0.000	0.000	0.125			
T452	Lakka Armaka	Seasonal	0.000	0.000	0.125			
T453	Lakka Achrada	Seasonal	0.000	0.000	0.125			
T455	US 53	Seasonal	0.000	0.000	0.125			
T456	US 54	Seasonal	0.068	0.055	0.303			
T457	Throkalou	Seasonal	0.048	0.031	0.324			

APPENDIX B (continued)

TABLE LXIV. CENTRALITY MEASURES FOR EACH NODE IN THE OTTOMAN II-PERIOD LOS NETWORK (continued)

Unit ID	Name	Type	All sites			Permanent villages		
			Degree	Betweenness	Closeness	Degree	Betweenness	Closeness
T458	US 55	Seasonal	0.000	0.000	0.125			
T460	Bastounes	Seasonal	0.014	0.000	0.253			
T461	Stou Gorgona	Seasonal	0.000	0.000	0.125			
T463	Lakoi	Seasonal	0.014	0.003	0.254			
T464	Trilangado	Seasonal	0.061	0.049	0.326			
T465	Stou Laou	Seasonal	0.014	0.006	0.264			
T466	Sarantaria	Seasonal	0.034	0.002	0.293			
T467	Kako Vouni	Seasonal	0.007	0.000	0.234			
T468	Nikolakkos	Seasonal	0.007	0.000	0.224			
T469	Pano Oros	Seasonal	0.068	0.022	0.281			
T475	US 62	Seasonal	0.027	0.000	0.247			
T476	US 63	Seasonal	0.007	0.000	0.233			
T477	US 64	Seasonal	0.014	0.000	0.256			
T483	US 71	Seasonal	0.054	0.021	0.296			
T490	US 80	Seasonal	0.136	0.102	0.340			

APPENDIX B (continued)

TABLE LXV. RAW COUNTS AND PERCENTAGES OF VISIBLE SETTLEMENTS FOR THE BYZANTINE PERIOD

			Number of visible settlements			
Unit ID	Name	Type	Viewshed: Raw	Viewshed: Normalized	LOS: Raw	LOS: Normalized
T005	Ayia Varvara	Permanent	21	0.1382	34	0.2237
T006	Ayia Varvara (Phtio)	Permanent	19	0.1250	30	0.1974
T008	Ayios Yeoryios	Permanent	20	0.1316	19	0.1250
T012	Akia	Permanent	18	0.1184	16	0.1053
T013	Piontes	Permanent	23	0.1513	26	0.1711
T014	Alika	Permanent	9	0.0592	16	0.1053
T020	Areopoli (Tsimova)	Permanent	25	0.1645	26	0.1711
T021	Aryilia	Permanent	5	0.0329	1	0.0066
T024	Briki	Permanent	31	0.2039	32	0.2105
T027	Charia	Permanent	6	0.0395	4	0.0263
T028	Charouda	Permanent	35	0.2303	33	0.2171
T029	Chimara	Permanent	10	0.0658	10	0.0658
T035	Dry	Permanent	39	0.2566	26	0.1711
T036	Dryalos	Permanent	34	0.2237	39	0.2566
T038	Erimos	Permanent	18	0.1184	23	0.1513
T044	Gonea	Permanent	22	0.1447	20	0.1316
T051	Kaphiona	Permanent	25	0.1645	26	0.1711
T055	Karynia	Permanent	13	0.0855	14	0.0921
T063	Kechrianika	Permanent	14	0.0921	23	0.1513
T066	Keria	Permanent	27	0.1776	40	0.2632
T068	Kita	Permanent	25	0.1645	26	0.1711
T072	Korogonianika	Permanent	4	0.0263	1	0.0066
T075	Kouloumi	Permanent	32	0.2105	40	0.2632
T076	Kounos	Permanent	36	0.2368	38	0.2500
T081	Layia	Permanent	1	0.0066	2	0.0132
T089	Leontakis	Permanent	8	0.0526	8	0.0526
T093	Loukadika	Permanent	16	0.1053	17	0.1118
T100	Nyphi, Mesa Chora	Permanent	5	0.0329	1	0.0066
T104	Mina	Permanent	17	0.1118	15	0.0987
T106	Mountanistika	Permanent	12	0.0789	13	0.0855
T111	Nomia	Permanent	28	0.1842	35	0.2303
T113	Ochia	Permanent	14	0.0921	15	0.0987
T114	Oitylo	Permanent	4	0.0263	2	0.0132
T118	Pangia	Permanent	38	0.2500	36	0.2368
T120	Palaiochora	Permanent	27	0.1776	27	0.1776
T130	Polemitas	Permanent	10	0.0658	9	0.0592
T132	Porachia	Permanent	15	0.0987	16	0.1053
T137	Pyrgos Dirou	Permanent	19	0.1250	19	0.1250
T138	Pyrrichos (Kavalos)	Permanent	4	0.0263	4	0.0263
T139	Riganochora	Permanent	21	0.1382	18	0.1184
T146	Skaltsotianika	Permanent	16	0.1053	15	0.0987
T149	Skoutari	Permanent	2	0.0132	1	0.0066
T161	Tsikalia	Permanent	6	0.0395	6	0.0395
T169	Ano Boularioi	Permanent	16	0.1053	15	0.0987
T170	Kotraphi	Permanent	5	0.0329	3	0.0197
T171	Kato Boularioi	Permanent	10	0.0658	13	0.0855
T172	Kato Meri	Permanent	18	0.1184	24	0.1579
T189	Glezou	Permanent	23	0.1513	25	0.1645

APPENDIX B (continued)

TABLE LXV. RAW COUNTS AND PERCENTAGES OF VISIBLE SETTLEMENTS FOR THE BYZANTINE PERIOD (continued)

Unit ID	Name	Type	Number of visible settlements			
			Viewshed: Raw	Viewshed: Normalized	LOS: Raw	LOS: Normalized
T190	Goulas	Permanent	2	0.0132	3	0.0197
T191	Ippola	Permanent	51	0.3355	34	0.2237
T197	Kourines	Permanent	35	0.2303	37	0.2434
T199	Karavas	Permanent	23	0.1513	32	0.2105
T200	Kastri	Permanent	3	0.0197	2	0.0132
T201	Katayioryis	Permanent	23	0.1513	31	0.2039
T212	Mantophoros	Permanent	27	0.1776	27	0.1776
T215	Marmatsouka	Permanent	33	0.2171	39	0.2566
T224	Passava Fortress	Permanent	2	0.0132	2	0.0132
T225	Pepo	Permanent	1	0.0066	0	0.0000
T233	Skaphidianika	Permanent	31	0.2039	35	0.2303
T255	Makrynaros	Permanent	7	0.0461	8	0.0526
T261	Drymos (Driali)	Permanent	12	0.0789	7	0.0461
T271	Palaia Karyoupolis	Permanent	3	0.0197	3	0.0197
T278	Korakianika	Permanent	0	0.0000	1	0.0066
T293	Dimaristika	Permanent	1	0.0066	0	0.0000
T301	Palaia Tserova	Permanent	5	0.0329	6	0.0395
T302	Paliochori	Permanent	6	0.0395	1	0.0066
T307	US 10	Permanent	17	0.1118	21	0.1382
T327	Vata	Permanent	11	0.0724	9	0.0592
T341	Yerma	Permanent	3	0.0197	4	0.0263
T356	Yeroyiannoukou Kalyvia	Seasonal	13	0.0855	14	0.0921
T359	Moni Spiliotissas	Monastery	1	0.0066	1	0.0066
T360	Proskephalia	Permanent	1	0.0066	2	0.0132
T362	Kouvouklia	Permanent	25	0.1645	23	0.1513
T363	Koulouvades	Permanent	29	0.1908	34	0.2237
T364	Males	Permanent	5	0.0329	4	0.0263
T365	Skyphianika	Permanent	36	0.2368	36	0.2368
T372	US 4	Permanent	1	0.0066	1	0.0066
T373	US 5	Permanent	11	0.0724	8	0.0526
T374	Avles	Permanent	25	0.1645	30	0.1974
T375	Lakkos	Permanent	27	0.1776	29	0.1908
T382	Soulia	Permanent	35	0.2303	35	0.2303
T383	US 8	Permanent	38	0.2500	29	0.1908
T385	Moni Panayias Tsipiotissas	Monastery	1	0.0066	1	0.0066
T386	Moni Panayias Phaneromenis	Monastery	17	0.1118	19	0.1250
T389	US 67	Permanent	2	0.0132	1	0.0066
T390	US 9	Permanent	2	0.0132	2	0.0132
T391	US 12	Permanent	0	0.0000	1	0.0066
T392	Korines	Permanent	7	0.0461	10	0.0658
T396	US 13	Seasonal	6	0.0395	10	0.0658
T397	Pachia	Permanent	2	0.0132	2	0.0132
T398	US 15	Permanent	2	0.0132	2	0.0132
T403	US 20	Permanent	18	0.1184	20	0.1316
T404	US 21	Permanent	25	0.1645	25	0.1645
T405	US 22	Permanent	33	0.2171	31	0.2039

APPENDIX B (continued)

TABLE LXV. RAW COUNTS AND PERCENTAGES OF VISIBLE SETTLEMENTS FOR THE BYZANTINE PERIOD (continued)

			Number of visible settlements			
Unit ID	Name	Type	Viewshed: Raw	Viewshed: Normalized	LOS: Raw	LOS: Normalized
T406	US 23	Permanent	31	0.2039	40	0.2632
T407	Palaia Kokkinoyia	Permanent	1	0.0066	0	0.0000
T409	US 25	Permanent	12	0.0789	0	0.0000
T410	Sela	Permanent	9	0.0592	4	0.0263
T411	US 27	Permanent	21	0.1382	20	0.1316
T414	Vlistiko	Permanent	14	0.0921	14	0.0921
T416	Parapodas	Permanent	28	0.1842	30	0.1974
T417	Divola	Permanent	2	0.0132	0	0.0000
T420	Moni Panayias Ayitrias	Monastery	19	0.1250	22	0.1447
T421	US 33	Permanent	17	0.1118	16	0.1053
T422	Katsipos	Permanent	14	0.0921	15	0.0987
T423	US 35	Permanent	1	0.0066	1	0.0066
T424	Nyphi, Exo Chora	Permanent	12	0.0789	10	0.0658
T429	Vlacherna	Permanent	6	0.0395	7	0.0461
T432	US 36	Permanent	10	0.0658	9	0.0592
T436	US 41	Permanent	2	0.0132	2	0.0132
T437	US 42	Permanent	3	0.0197	3	0.0197
T438	US 43	Permanent	12	0.0789	17	0.1118
T441	US 46	Permanent	2	0.0132	2	0.0132
T442	US 47	Permanent	7	0.0461	6	0.0395
T444	US 49	Permanent	8	0.0526	9	0.0592
T445	US 50	Permanent	2	0.0132	2	0.0132
T446	US 51	Permanent	9	0.0592	8	0.0526
T447	Vikolias	Permanent	8	0.0526	8	0.0526
T451	Lakka Sangia	Seasonal	1	0.0066	0	0.0000
T452	Lakka Armaka	Seasonal	1	0.0066	0	0.0000
T454	US 73	Permanent	1	0.0066	2	0.0132
T455	US 53	Seasonal	0	0.0000	0	0.0000
T456	US 54	Seasonal	10	0.0658	12	0.0789
T458	US 55	Seasonal	0	0.0000	0	0.0000
T459	US 56	Permanent	0	0.0000	16	0.1053
T461	Stou Gorgona	Seasonal	2	0.0132	0	0.0000
T462	US 74	Permanent	3	0.0197	3	0.0197
T463	Lakoi	Seasonal	2	0.0132	1	0.0066
T464	Trilangado	Seasonal	8	0.0526	8	0.0526
T466	Sarantaria	Seasonal	5	0.0329	5	0.0329
T467	Kako Vouni	Seasonal	1	0.0066	1	0.0066
T468	Nikolakkos	Seasonal	5	0.0329	1	0.0066
T469	Pano Oros	Seasonal	13	0.0855	11	0.0724
T470	US 57	Permanent	1	0.0066	2	0.0132
T473	Phranezi	Permanent	7	0.0461	4	0.0263
T474	US 61	Permanent	13	0.0855	15	0.0987
T475	US 62	Seasonal	3	0.0197	3	0.0197
T476	US 63	Seasonal	1	0.0066	0	0.0000
T477	US 64	Seasonal	3	0.0197	1	0.0066
T479	US 66	Permanent	50	0.3289	42	0.2763
T480	US 68	Permanent	19	0.1250	20	0.1316

APPENDIX B (continued)

TABLE LXV. RAW COUNTS AND PERCENTAGES OF VISIBLE SETTLEMENTS FOR THE BYZANTINE PERIOD (continued)

Unit ID	Name	Type	Number of visible settlements: Viewshed: Raw	Viewshed: Normalized	LOS: Raw	LOS: Normalized
T481	US 69	Permanent	15	0.0987	20	0.1316
T482	US 70	Permanent	3	0.0197	0	0.0000
T483	US 71	Seasonal	9	0.0592	10	0.0658
T484	US 75	Permanent	5	0.0329	4	0.0263
T485	US 76	Permanent	3	0.0197	3	0.0197
T486	US 77	Permanent	3	0.0197	3	0.0197
T487	US 78	Permanent	7	0.0461	5	0.0329
T488	US 79	Permanent	3	0.0197	4	0.0263
T489	Rizakia	Permanent	16	0.1053	15	0.0987
T491	US 81	Permanent	1	0.0066	1	0.0066
T492	US 82	Permanent	2	0.0132	3	0.0197
T493	US 83	Permanent	6	0.0395	7	0.0461

APPENDIX B (continued)

TABLE LXVI. RAW COUNTS AND PERCENTAGES OF VISIBLE SETTLEMENTS FOR THE OTTOMAN I PERIOD

Unit ID	Name	Type	Number of visible settlements: Viewshed: Raw	Viewshed: Normalized	LOS: Raw	LOS: Normalized
T005	Ayia Varvara	Permanent	22	0.1392	32	0.2025
T006	Ayia Varvara (Phtio)	Permanent	18	0.1139	23	0.1456
T008	Ayios Yeoryios	Permanent	26	0.1646	26	0.1646
T012	Akia	Permanent	18	0.1139	15	0.0949
T013	Piontes	Permanent	20	0.1266	25	0.1582
T014	Alika	Permanent	11	0.0696	16	0.1013
T020	Areopoli (Tsimova)	Permanent	20	0.1266	22	0.1392
T021	Aryilia	Permanent	9	0.0570	1	0.0063
T024	Briki	Permanent	30	0.1899	34	0.2152
T027	Charia	Permanent	4	0.0253	5	0.0316
T028	Charouda	Permanent	27	0.1709	29	0.1835
T029	Chimara	Permanent	11	0.0696	11	0.0696
T034	Diporo	Permanent	18	0.1139	18	0.1139
T035	Dry	Permanent	36	0.2278	25	0.1582
T036	Dryalos	Permanent	35	0.2215	36	0.2278
T038	Erimos	Permanent	19	0.1203	24	0.1519
T042	Gardenitsa	Permanent	25	0.1582	29	0.1835
T044	Gonea	Permanent	21	0.1329	18	0.1139
T047	Kainouryia Chora	Permanent	12	0.0759	5	0.0316
T049	Kalonioi	Permanent	20	0.1266	19	0.1203
T051	Kaphiona	Permanent	25	0.1582	27	0.1709
T054	Karea	Permanent	29	0.1835	28	0.1772
T055	Karynia	Permanent	18	0.1139	19	0.1203
T063	Kechrianika	Permanent	15	0.0949	24	0.1519
T064	Kelepha	Permanent	6	0.0380	6	0.0380
T068	Kita	Permanent	26	0.1646	27	0.1709
T072	Korogonianika	Permanent	4	0.0253	2	0.0127
T073	Kotronas	Permanent	18	0.1139	12	0.0759
T075	Kouloumi	Permanent	24	0.1519	36	0.2278
T076	Kounos	Permanent	33	0.2089	37	0.2342
T077	Koutrela	Permanent	24	0.1519	32	0.2025
T079	Kryoneri	Permanent	7	0.0443	8	0.0506
T080	Kyparissos	Permanent	4	0.0253	3	0.0190
T081	Layia	Permanent	4	0.0253	3	0.0190
T089	Leontakis	Permanent	7	0.0443	7	0.0443
T093	Loukadika	Permanent	20	0.1266	21	0.1329
T100	Nyphi, Mesa Chora	Permanent	5	0.0316	1	0.0063
T104	Mina	Permanent	21	0.1329	20	0.1266
T109	Nikandreio	Permanent	27	0.1709	35	0.2215
T111	Nomia	Permanent	27	0.1709	35	0.2215
T113	Ochia	Permanent	12	0.0759	12	0.0759
T114	Oitylo	Permanent	10	0.0633	7	0.0443
T117	Pachianika	Permanent	4	0.0253	4	0.0253
T118	Pangia	Permanent	34	0.2152	34	0.2152
T132	Porachia	Permanent	13	0.0823	15	0.0949
T133	Porto Kayio	Permanent	1	0.0063	1	0.0063
T137	Pyrgos Dirou	Permanent	22	0.1392	19	0.1203
T138	Pyrrichos (Kavalos)	Permanent	6	0.0380	3	0.0190

APPENDIX B (continued)

TABLE LXVI. RAW COUNTS AND PERCENTAGES OF VISIBLE SETTLEMENTS FOR THE OTTOMAN I PERIOD (continued)

			Number of visible settlements			
Unit ID	Name	Type	Viewshed: Raw	Viewshed: Normalized	LOS: Raw	LOS: Normalized
T139	Riganochora	Permanent	19	0.1203	18	0.1139
T145	Skala	Permanent	7	0.0443	8	0.0506
T146	Skaltsotianika	Permanent	14	0.0886	13	0.0823
T152	Sotiras (Kouskouni)	Permanent	34	0.2152	32	0.2025
T155	Stavri	Permanent	42	0.2658	48	0.3038
T161	Tsikalia	Permanent	5	0.0316	5	0.0316
T163	Vachos	Permanent	7	0.0443	6	0.0380
T167	Vatheia	Permanent	7	0.0443	5	0.0316
T169	Ano Boularioi	Permanent	19	0.1203	19	0.1203
T170	Kotraphi	Permanent	4	0.0253	2	0.0127
T171	Kato Boularioi	Permanent	10	0.0633	12	0.0759
T172	Kato Meri	Permanent	18	0.1139	23	0.1456
T181	Chalopyrgos	Permanent	19	0.1203	20	0.1266
T191	Ippola	Permanent	54	0.3418	33	0.2089
T199	Karavas	Permanent	19	0.1203	27	0.1709
T215	Marmatsouka	Permanent	29	0.1835	36	0.2278
T219	Neasa	Permanent	18	0.1139	22	0.1392
T224	Passava Fortress	Permanent	4	0.0253	4	0.0253
T225	Pepo	Permanent	1	0.0063	0	0.0000
T231	Psio	Permanent	26	0.1646	38	0.2405
T236	Tigani	Permanent	23	0.1456	25	0.1582
T238	Tserasia	Permanent	5	0.0316	6	0.0380
T261	Drymos (Driali)	Permanent	15	0.0949	11	0.0696
T269	Kaliazi	Permanent	10	0.0633	10	0.0633
T271	Palaia Karyoupolis	Permanent	10	0.0633	9	0.0570
T278	Korakianika	Permanent	2	0.0127	2	0.0127
T279	Kozia	Permanent	4	0.0253	4	0.0253
T293	Dimaristika	Permanent	1	0.0063	3	0.0190
T299	Olympies	Permanent	0	0.0000	0	0.0000
T301	Palaia Tserova	Permanent	14	0.0886	15	0.0949
T302	Paliochori	Permanent	8	0.0506	2	0.0127
T321	Soloteri	Permanent	3	0.0190	4	0.0253
T327	Vata	Permanent	14	0.0886	13	0.0823
T341	Yerma	Permanent	8	0.0506	10	0.0633
T343	Kelepha Fortress	Permanent	5	0.0316	7	0.0443
T352	Kondili	Permanent	10	0.0633	12	0.0759
T356	Yeroyiannoukou Kalyvia	Seasonal	12	0.0759	14	0.0886
T359	Moni Spiliotissas	Monastery	2	0.0127	3	0.0190
T365	Skyphianika	Permanent	35	0.2215	36	0.2278
T366	US 3	Permanent	3	0.0190	3	0.0190
T374	Avles	Permanent	24	0.1519	28	0.1772
T378	US 6	Permanent	8	0.0506	11	0.0696
T385	Moni Panayias Tsipiotissas	Monastery	1	0.0063	3	0.0190
T386	Moni Panayias Phaneromenis	Monastery	14	0.0886	16	0.1013
T391	US 12	Permanent	0	0.0000	0	0.0000
T392	Korines	Permanent	3	0.0190	5	0.0316

APPENDIX B (continued)

TABLE LXVI. RAW COUNTS AND PERCENTAGES OF VISIBLE SETTLEMENTS FOR THE OTTOMAN I PERIOD (continued)

			Number of visible settlements			
Unit ID	Name	Type	Viewshed: Raw	Viewshed: Normalized	LOS: Raw	LOS: Normalized
T396	US 13	Seasonal	6	0.0380	10	0.0633
T398	US 15	Permanent	1	0.0063	2	0.0127
T400	Marassi	Permanent	21	0.1329	14	0.0886
T401	US 18	Permanent	24	0.1519	21	0.1329
T402	US 19	Permanent	22	0.1392	23	0.1456
T403	US 20	Permanent	20	0.1266	23	0.1456
T407	Palaia Kokkinoyia	Permanent	1	0.0063	0	0.0000
T410	Sela	Permanent	13	0.0823	8	0.0506
T412	US 28	Permanent	20	0.1266	19	0.1203
T413	US 29	Permanent	17	0.1076	17	0.1076
T414	Vlistiko	Permanent	14	0.0886	14	0.0886
T417	Divola	Permanent	1	0.0063	0	0.0000
T420	Moni Panayias Ayitrias	Monastery	15	0.0949	18	0.1139
T421	US 33	Permanent	16	0.1013	14	0.0886
T422	Katsipos	Permanent	18	0.1139	18	0.1139
T424	Nyphi, Exo Chora	Permanent	15	0.0949	14	0.0886
T425	Nyphi, Chalikia	Permanent	16	0.1013	7	0.0443
T427	Stavrikio	Permanent	32	0.2025	46	0.2911
T429	Vlacherna	Permanent	8	0.0506	11	0.0696
T430	Achillio Fortress	Permanent	1	0.0063	1	0.0063
T433	Liostypha	Permanent	20	0.1266	21	0.1329
T434	Skourka	Permanent	18	0.1139	12	0.0759
T435	US 39	Permanent	6	0.0380	7	0.0443
T439	US 44	Permanent	11	0.0696	17	0.1076
T440	US 45	Permanent	1	0.0063	1	0.0063
T441	US 46	Permanent	1	0.0063	1	0.0063
T443	US 48	Permanent	13	0.0823	11	0.0696
T445	US 50	Permanent	1	0.0063	3	0.0190
T447	Vikolias	Permanent	13	0.0823	13	0.0823
T448	US 52	Permanent	6	0.0380	5	0.0316
T449	US 72	Seasonal	8	0.0506	10	0.0633
T450	Lakka Kalantrea	Seasonal	1	0.0063	0	0.0000
T451	Lakka Sangia	Seasonal	1	0.0063	0	0.0000
T452	Lakka Armaka	Seasonal	1	0.0063	0	0.0000
T453	Lakka Achrada	Seasonal	0	0.0000	0	0.0000
T454	US 73	Permanent	2	0.0127	2	0.0127
T455	US 53	Seasonal	0	0.0000	0	0.0000
T456	US 54	Seasonal	13	0.0823	10	0.0633
T457	Throkalou	Seasonal	17	0.1076	10	0.0633
T458	US 55	Seasonal	0	0.0000	0	0.0000
T460	Bastounes	Seasonal	6	0.0380	5	0.0316
T461	Stou Gorgona	Seasonal	2	0.0127	0	0.0000
T463	Lakoi	Seasonal	3	0.0190	2	0.0127
T464	Trilangado	Seasonal	12	0.0759	11	0.0696
T465	Stou Laou	Seasonal	6	0.0380	4	0.0253
T466	Sarantaria	Seasonal	6	0.0380	6	0.0380
T467	Kako Vouni	Seasonal	2	0.0127	1	0.0063

APPENDIX B (continued)

TABLE LXVI. RAW COUNTS AND PERCENTAGES OF VISIBLE SETTLEMENTS FOR THE OTTOMAN I PERIOD (continued)

			Number of visible settlements			
Unit ID	Name	Type	Viewshed: Raw	Viewshed: Normalized	LOS: Raw	LOS: Normalized
T468	Nikolakkos	Seasonal	4	0.0253	1	0.0063
T469	Pano Oros	Seasonal	12	0.0759	11	0.0696
T471	US 58	Permanent	0	0.0000	0	0.0000
T472	US 59	Permanent	16	0.1013	24	0.1519
T474	US 61	Permanent	15	0.0949	17	0.1076
T475	US 62	Seasonal	4	0.0253	4	0.0253
T476	US 63	Seasonal	3	0.0190	2	0.0127
T477	US 64	Seasonal	5	0.0316	3	0.0190
T478	Mesopangi	Permanent	20	0.1266	31	0.1962
T479	US 66	Permanent	51	0.3228	43	0.2722
T481	US 69	Permanent	16	0.1013	18	0.1139
T483	US 71	Seasonal	6	0.0380	8	0.0506
T485	US 76	Permanent	1	0.0063	0	0.0000
T486	US 77	Permanent	0	0.0000	0	0.0000
T487	US 78	Permanent	8	0.0506	6	0.0380
T489	Rizakia	Permanent	18	0.1139	20	0.1266
T490	US 80	Seasonal	19	0.1203	24	0.1519
T493	US 83	Permanent	9	0.0570	10	0.0633

APPENDIX B (continued)

TABLE LXVII. RAW COUNTS AND PERCENTAGES OF VISIBLE SETTLEMENTS FOR THE VENETIAN PERIOD

Unit ID	Name	Type	Number of visible settlements: Viewshed: Raw	Viewshed: Normalized	LOS: Raw	LOS: Normalized
T012	Akia	Permanent	11	0.11	8	0.08
T013	Piontes	Permanent	3	0.03	15	0.15
T014	Alika	Permanent	4	0.04	10	0.10
T020	Areopoli (Tsimova)	Permanent	13	0.13	17	0.17
T024	Briki	Permanent	18	0.18	19	0.19
T027	Charia	Permanent	3	0.03	3	0.03
T034	Diporo	Permanent	10	0.10	11	0.11
T035	Dry	Permanent	25	0.25	17	0.17
T036	Dryalos	Permanent	18	0.18	19	0.19
T042	Gardenitsa	Permanent	16	0.16	17	0.17
T044	Gonea	Permanent	14	0.14	12	0.12
T047	Kainouryia Chora	Permanent	9	0.09	5	0.05
T049	Kalonioi	Permanent	12	0.12	11	0.11
T054	Karea	Permanent	22	0.22	21	0.21
T055	Karynia	Permanent	9	0.09	10	0.10
T063	Kechrianika	Permanent	11	0.11	16	0.16
T064	Kelepha	Permanent	6	0.06	6	0.06
T067	Kipoula	Permanent	7	0.07	10	0.10
T068	Kita	Permanent	14	0.14	14	0.14
T072	Korogonianika	Permanent	3	0.03	2	0.02
T073	Kotronas	Permanent	10	0.10	8	0.08
T075	Kouloumi	Permanent	15	0.15	21	0.21
T076	Kounos	Permanent	24	0.24	25	0.25
T077	Koutrela	Permanent	15	0.15	16	0.16
T079	Kryoneri	Permanent	7	0.07	8	0.08
T081	Layia	Permanent	3	0.03	2	0.02
T089	Leontakis	Permanent	5	0.05	5	0.05
T093	Loukadika	Permanent	10	0.10	10	0.10
T100	Nyphi, Mesa Chora	Permanent	3	0.03	1	0.01
T104	Mina	Permanent	10	0.10	11	0.11
T109	Nikandreio	Permanent	17	0.17	23	0.23
T111	Nomia	Permanent	17	0.17	18	0.18
T114	Oitylo	Permanent	8	0.08	6	0.06
T118	Pangia	Permanent	19	0.19	22	0.22
T132	Porachia	Permanent	9	0.09	10	0.10
T133	Porto Kayio	Permanent	1	0.01	1	0.01
T137	Pyrgos Dirou	Permanent	16	0.16	14	0.14
T138	Pyrrichos (Kavalos)	Permanent	1	0.01	0	0.00
T139	Riganochora	Permanent	11	0.11	12	0.12
T145	Skala	Permanent	6	0.06	6	0.06
T152	Sotiras (Kouskouni)	Permanent	23	0.23	20	0.20
T155	Stavri	Permanent	25	0.25	30	0.30
T161	Tsikalia	Permanent	3	0.03	3	0.03
T163	Vachos	Permanent	6	0.06	5	0.05
T164	Vamvaka	Permanent	17	0.17	15	0.15
T167	Vatheia	Permanent	5	0.05	4	0.04
T169	Ano Boularioi	Permanent	11	0.11	11	0.11
T171	Kato Boularioi	Permanent	7	0.07	8	0.08

APPENDIX B (continued)

TABLE LXVII. RAW COUNTS AND PERCENTAGES OF VISIBLE SETTLEMENTS FOR THE VENETIAN PERIOD (continued)

Unit ID	Name	Type	Number of visible settlements			
			Viewshed: Raw	Viewshed: Normalized	LOS: Raw	LOS: Normalized
T191	Ippola	Permanent	34	0.34	25	0.25
T215	Marmatsouka	Permanent	16	0.16	22	0.22
T224	Passava Fortress	Permanent	4	0.04	4	0.04
T225	Pepo	Permanent	0	0.00	0	0.00
T236	Tigani	Permanent	15	0.15	15	0.15
T238	Tserasia	Permanent	4	0.04	5	0.05
T261	Drymos (Driali)	Permanent	7	0.07	5	0.05
T269	Kaliazi	Permanent	10	0.10	9	0.09
T271	Palaia Karyoupolis	Permanent	9	0.09	8	0.08
T293	Dimaristika	Permanent	0	0.00	0	0.00
T301	Palaia Tserova	Permanent	11	0.11	12	0.12
T302	Paliochori	Permanent	6	0.06	1	0.01
T327	Vata	Permanent	8	0.08	7	0.07
T341	Yerma	Permanent	8	0.08	10	0.10
T343	Kelepha Fortress	Permanent	5	0.05	6	0.06
T352	Kondili	Permanent	4	0.04	5	0.05
T356	Yeroyiannoukou Kalyvia	Seasonal	9	0.09	9	0.09
T359	Moni Spiliotissas	Monastery	2	0.02	3	0.03
T365	Skyphianika	Permanent	19	0.19	19	0.19
T378	US 6	Permanent	8	0.08	10	0.10
T385	Moni Panayias Tsipiotissas	Monastery	1	0.01	1	0.01
T386	Moni Panayias Phaneromenis	Monastery	8	0.08	9	0.09
T396	US 13	Seasonal	4	0.04	8	0.08
T398	US 15	Permanent	1	0.01	2	0.02
T413	US 29	Permanent	11	0.11	11	0.11
T417	Divola	Permanent	1	0.01	0	0.00
T420	Moni Panayias Ayitrias	Monastery	10	0.10	13	0.13
T424	Nyphi, Exo Chora	Permanent	7	0.07	7	0.07
T427	Stavrikio	Permanent	22	0.22	26	0.26
T430	Achillio Fortress	Permanent	1	0.01	1	0.01
T431	Moni Panayias Kournou	Monastery	0	0.00	0	0.00
T450	Lakka Kalantrea	Seasonal	1	0.01	0	0.00
T451	Lakka Sangia	Seasonal	1	0.01	0	0.00
T452	Lakka Armaka	Seasonal	1	0.01	0	0.00
T453	Lakka Achrada	Seasonal	0	0.00	0	0.00
T455	US 53	Seasonal	0	0.00	0	0.00
T456	US 54	Seasonal	10	0.10	6	0.06
T457	Throkalou	Seasonal	10	0.10	8	0.08
T458	US 55	Seasonal	0	0.00	0	0.00
T460	Bastounes	Seasonal	7	0.07	5	0.05
T461	Stou Gorgona	Seasonal	2	0.02	0	0.00
T463	Lakoi	Seasonal	3	0.03	2	0.02
T464	Trilangado	Seasonal	8	0.08	8	0.08
T465	Stou Laou	Seasonal	5	0.05	3	0.03
T466	Sarantaria	Seasonal	5	0.05	5	0.05
T467	Kako Vouni	Seasonal	2	0.02	1	0.01

APPENDIX B (continued)

TABLE LXVII. RAW COUNTS AND PERCENTAGES OF VISIBLE SETTLEMENTS FOR THE VENETIAN PERIOD (continued)

			Number of visible settlements			
Unit ID	Name	Type	Viewshed: Raw	Viewshed: Normalized	LOS: Raw	LOS: Normalized
T468	Nikolakkos	Seasonal	3	0.03	1	0.01
T469	Pano Oros	Seasonal	9	0.09	8	0.08
T475	US 62	Seasonal	3	0.03	3	0.03
T476	US 63	Seasonal	1	0.01	0	0.00
T477	US 64	Seasonal	3	0.03	1	0.01
T483	US 71	Seasonal	4	0.04	6	0.06
T490	US 80	Seasonal	10	0.10	14	0.14

APPENDIX B (continued)

TABLE LXVIII. RAW COUNTS AND PERCENTAGES OF VISIBLE SETTLEMENTS FOR THE OTTOMAN II PERIOD

Unit ID	Name	Type	Number of visible settlements			
			Viewshed: Raw	Viewshed: Normalized	LOS: Raw	LOS: Normalized
T001	Ayeranos	Permanent	3	0.0204	3	0.0204
T008	Ayios Yeoryios	Permanent	13	0.0884	13	0.0884
T012	Akia	Permanent	13	0.0884	11	0.0748
T013	Piontes	Permanent	3	0.0204	20	0.1361
T014	Alika	Permanent	6	0.0408	16	0.1088
T018	Archia	Permanent	10	0.0680	12	0.0816
T020	Areopoli (Tsimova)	Permanent	19	0.1293	21	0.1429
T024	Briki	Permanent	22	0.1497	25	0.1701
T027	Charia	Permanent	5	0.0340	5	0.0340
T028	Charouda	Permanent	21	0.1429	21	0.1429
T029	Chimara	Permanent	9	0.0612	9	0.0612
T030	Chosiari	Permanent	6	0.0408	6	0.0408
T031	Kalyvia	Permanent	12	0.0816	12	0.0816
T033	Pera Dimaristika	Permanent	8	0.0544	1	0.0068
T034	Diporo	Permanent	14	0.0952	15	0.1020
T035	Dry	Permanent	32	0.2177	20	0.1361
T036	Dryalos	Permanent	23	0.1565	25	0.1701
T041	Phlomochori	Permanent	10	0.0680	9	0.0612
T044	Gonea	Permanent	21	0.1429	18	0.1224
T046	Kauki - A	Permanent	7	0.0476	8	0.0544
T047	Kainouryia Chora	Permanent	13	0.0884	8	0.0544
T049	Kalonioi	Permanent	14	0.0952	13	0.0884
T051	Kaphiona	Permanent	12	0.0816	14	0.0952
T054	Karea	Permanent	7	0.0476	7	0.0476
T055	Karynia	Permanent	11	0.0748	12	0.0816
T056	Karioupoli (Miniakova)	Permanent	7	0.0476	8	0.0544
T063	Kechrianika	Permanent	11	0.0748	20	0.1361
T064	Kelepha	Permanent	7	0.0476	7	0.0476
T067	Kipoula	Permanent	7	0.0476	10	0.0680
T068	Kita	Permanent	19	0.1293	22	0.1497
T072	Korogonianika	Permanent	5	0.0340	4	0.0272
T073	Kotronas	Permanent	15	0.1020	13	0.0884
T075	Kouloumi	Permanent	18	0.1224	23	0.1565
T076	Kounos	Permanent	27	0.1837	28	0.1905
T079	Kryoneri	Permanent	9	0.0612	9	0.0612
T080	Kyparissos	Permanent	3	0.0204	3	0.0204
T081	Layia	Permanent	17	0.1156	2	0.0136
T089	Leontakis	Permanent	7	0.0476	7	0.0476
T091	Limeni	Permanent	2	0.0136	0	0.0000
T093	Loukadika	Permanent	15	0.1020	16	0.1088
T100	Nyphi, Mesa Chora	Permanent	1	0.0068	1	0.0068
T101	Mezapos	Permanent	3	0.0204	4	0.0272
T104	Mina	Permanent	13	0.0884	12	0.0816
T107	Neochori	Permanent	9	0.0612	9	0.0612
T109	Nikandreio	Permanent	21	0.1429	26	0.1769
T111	Nomia	Permanent	20	0.1361	21	0.1429
T113	Ochia	Permanent	9	0.0612	10	0.0680
T114	Oitylo	Permanent	8	0.0544	7	0.0476

APPENDIX B (continued)

TABLE LXVIII. RAW COUNTS AND PERCENTAGES OF VISIBLE SETTLEMENTS FOR THE OTTOMAN II PERIOD (continued)

			Number of visible settlements			
Unit ID	Name	Type	Viewshed: Raw	Viewshed: Normalized	LOS: Raw	LOS: Normalized
T115	Omales (Krelianika)	Permanent	17	0.1156	18	0.1224
T117	Pachianika	Permanent	1	0.0068	0	0.0000
T118	Pangia	Permanent	19	0.1293	25	0.1701
T122	Parasyros	Permanent	5	0.0340	5	0.0340
T132	Porachia	Permanent	14	0.0952	15	0.1020
T133	Porto Kayio	Permanent	1	0.0068	1	0.0068
T137	Pyrgos Dirou	Permanent	25	0.1701	14	0.0952
T138	Pyrrichos (Kavalos)	Permanent	2	0.0136	3	0.0204
T139	Riganochora	Permanent	17	0.1156	17	0.1156
T145	Skala	Permanent	8	0.0544	6	0.0408
T146	Skaltsotianika	Permanent	12	0.0816	11	0.0748
T149	Skoutari	Permanent	10	0.0680	6	0.0408
T152	Sotiras (Kouskouni)	Permanent	30	0.2041	25	0.1701
T154	Spira	Permanent	17	0.1156	18	0.1224
T155	Stavri	Permanent	30	0.2041	32	0.2177
T161	Tsikalia	Permanent	4	0.0272	4	0.0272
T162	Tsopakas	Permanent	17	0.1156	20	0.1361
T163	Vachos	Permanent	8	0.0544	4	0.0272
T164	Vamvaka	Permanent	20	0.1361	19	0.1293
T167	Vatheia	Permanent	7	0.0476	6	0.0408
T169	Ano Boularioi	Permanent	14	0.0952	15	0.1020
T170	Kotraphi	Permanent	3	0.0204	3	0.0204
T171	Kato Boularioi	Permanent	8	0.0544	8	0.0544
T176	Ayioryis	Permanent	23	0.1565	23	0.1565
T179	Agriokampi	Permanent	3	0.0204	1	0.0068
T184	Elaia	Permanent	19	0.1293	20	0.1361
T186	Gatis	Permanent	12	0.0816	21	0.1429
T190	Goulas	Permanent	4	0.0272	3	0.0204
T207	Koureloi	Permanent	1	0.0068	2	0.0136
T212	Mantophoros	Permanent	17	0.1156	18	0.1224
T215	Marmatsouka	Permanent	16	0.1088	22	0.1497
T218	Mianes	Permanent	2	0.0136	0	0.0000
T222	Paliros	Permanent	5	0.0340	5	0.0340
T224	Passava Fortress	Permanent	12	0.0816	12	0.0816
T225	Pepo	Permanent	1	0.0068	0	0.0000
T226	Petomoniastika	Permanent	3	0.0204	4	0.0272
T227	Pyrgaki	Permanent	6	0.0408	7	0.0476
T237	Trochalakas	Permanent	17	0.1156	18	0.1224
T238	Tserasia	Permanent	5	0.0340	6	0.0408
T261	Drymos (Driali)	Permanent	11	0.0748	7	0.0476
T262	Drosopigi (Tserova)	Permanent	11	0.0748	14	0.0952
T269	Kaliazi	Permanent	12	0.0816	9	0.0612
T271	Palaia Karyoupolis	Permanent	10	0.0680	12	0.0816
T280	Kato Pachianika	Permanent	1	0.0068	0	0.0000
T284	Kozounas	Permanent	12	0.0816	13	0.0884
T290	Menenianika	Permanent	6	0.0408	6	0.0408
T293	Dimaristika	Permanent	3	0.0204	4	0.0272

APPENDIX B (continued)

TABLE LXVIII. RAW COUNTS AND PERCENTAGES OF VISIBLE SETTLEMENTS FOR THE OTTOMAN II PERIOD (continued)

			Number of visible settlements			
Unit ID	Name	Type	Viewshed: Raw	Viewshed: Normalized	LOS: Raw	LOS: Normalized
T301	Palaia Tserova	Permanent	19	0.1293	23	0.1565
T302	Paliochori	Permanent	10	0.0680	1	0.0068
T308	Pirgaros (Kato Dimaristika)	Permanent	2	0.0136	2	0.0136
T313	Ayia Lia	Permanent	12	0.0816	13	0.0884
T327	Vata	Permanent	12	0.0816	10	0.0680
T328	Vathy	Permanent	0	0.0000	0	0.0000
T341	Yerma	Permanent	9	0.0612	9	0.0612
T342	Kato Karea (Konakia)	Permanent	9	0.0612	9	0.0612
T343	Kelepha Fortress	Permanent	7	0.0476	7	0.0476
T352	Kondili	Permanent	7	0.0476	9	0.0612
T356	Yeroyiannoukou Kalyvia	Seasonal	9	0.0612	10	0.0680
T359	Moni Spiliotissas	Monastery	3	0.0204	5	0.0340
T375	Lakkos	Permanent	15	0.1020	18	0.1224
T377	Ano Dimaristika	Permanent	2	0.0136	4	0.0272
T378	US 6	Permanent	9	0.0612	11	0.0748
T379	Moni Sotira	Monastery	23	0.1565	23	0.1565
T381	Moni Ay. Dimitriou	Monastery	17	0.1156	17	0.1156
T385	Moni Panayias Tsipiotissas	Monastery	2	0.0136	2	0.0136
T386	Moni Panayias Phaneromenis	Monastery	9	0.0612	9	0.0612
T387	Moni Panayias Kotroniotissas	Monastery	6	0.0408	6	0.0408
T388	Moni Dekoulou	Monastery	4	0.0272	4	0.0272
T396	US 13	Seasonal	5	0.0340	9	0.0612
T399	US 16	Permanent	4	0.0272	4	0.0272
T413	US 29	Permanent	16	0.1088	17	0.1156
T417	Divola	Permanent	4	0.0272	3	0.0204
T418	Phlitsos	Permanent	9	0.0612	9	0.0612
T420	Moni Panayias Ayitrias	Monastery	12	0.0816	17	0.1156
T424	Nyphi, Exo Chora	Permanent	10	0.0680	10	0.0680
T430	Achillio Fortress	Permanent	3	0.0204	3	0.0204
T431	Moni Panayias Kournou	Monastery	1	0.0068	1	0.0068
T432	US 36	Permanent	10	0.0680	11	0.0748
T450	Lakka Kalantrea	Seasonal	1	0.0068	0	0.0000
T451	Lakka Sangia	Seasonal	1	0.0068	0	0.0000
T452	Lakka Armaka	Seasonal	1	0.0068	0	0.0000
T453	Lakka Achrada	Seasonal	0	0.0000	0	0.0000
T455	US 53	Seasonal	0	0.0000	0	0.0000
T456	US 54	Seasonal	12	0.0816	10	0.0680
T457	Throkalou	Seasonal	12	0.0816	7	0.0476
T458	US 55	Seasonal	0	0.0000	0	0.0000
T460	Bastounes	Seasonal	4	0.0272	2	0.0136
T461	Stou Gorgona	Seasonal	2	0.0136	0	0.0000
T463	Lakoi	Seasonal	3	0.0204	2	0.0136
T464	Trilangado	Seasonal	9	0.0612	9	0.0612
T465	Stou Laou	Seasonal	5	0.0340	2	0.0136
T466	Sarantaria	Seasonal	5	0.0340	5	0.0340

APPENDIX B (continued)

TABLE LXVIII. RAW COUNTS AND PERCENTAGES OF VISIBLE SETTLEMENTS FOR THE OTTOMAN II PERIOD (continued)

			Number of visible settlements			
Unit ID	Name	Type	Viewshed: Raw	Viewshed: Normalized	LOS: Raw	LOS: Normalized
T467	Kako Vouni	Seasonal	1	0.0068	1	0.0068
T468	Nikolakkos	Seasonal	5	0.0340	1	0.0068
T469	Pano Oros	Seasonal	11	0.0748	10	0.0680
T475	US 62	Seasonal	4	0.0272	4	0.0272
T476	US 63	Seasonal	2	0.0136	1	0.0068
T477	US 64	Seasonal	4	0.0272	2	0.0136
T483	US 71	Seasonal	6	0.0408	8	0.0544
T490	US 80	Seasonal	16	0.1088	20	0.1361

APPENDIX B (continued)

TABLE LXIX. DESCRIPTIVE STATISTICS OF THE RAW NUMBERS OF VISIBLE SETTLEMENTS FROM *KALDERIMIA*

	N	Mean	Std. Deviation	Minimum	Maximum	Percentiles 25th	50th (Median)	75th
Byzantine	574	8.77	9.216	0	50	2.00	5.00	14.00
Ottoman I	574	8.34	8.134	0	54	2.00	5.00	13.00
Venetian	574	5.74	5.319	0	34	2.00	4.00	9.00
Ottoman II	574	7.53	5.814	0	39	3.00	5.00	11.00
Random	574	6.60	4.935	0	31	3.00	6.00	10.00

TABLE LXX. DESCRIPTIVE STATISTICS OF THE PERCENTAGES OF VISIBLE SETTLEMENTS FROM *KALDERIMIA*

	N	Mean	Std. Deviation	Minimum	Maximum	Percentiles 25th	50th (Median)	75th
Byzantine	574	.057309098	.0602381283	.0000000	.3267970	.013071900	.032679700	.091503300
Ottoman I	574	.052462027	.0511601326	.0000000	.3396230	.012578600	.031446500	.081761000
Venetian	574	.056784112	.0526675854	.0000000	.3366340	.019802000	.039604000	.089108900
Ottoman II	574	.050899332	.0392837574	.0000000	.2635140	.020270300	.033783800	.074324300
Random	574	.044030204	.0329003111	.0000000	.2066670	.020000000	.040000000	.066666700

TABLE LXXI. DESCRIPTIVE STATISTICS OF THE RAW NUMBERS OF VISIBLE SETTLEMENTS FROM WALLED PATHS

	N	Mean	Std. Deviation	Minimum	Maximum	Percentiles 25th	50th (Median)	75th
Byzantine	5457	9.11	9.528	0	50	2.00	5.00	14.00
Ottoman I	5457	9.49	9.063	0	53	2.00	6.00	15.00
Venetian	5457	6.12	5.616	0	33	2.00	4.00	9.00
Ottoman II	5457	7.61	6.190	0	39	3.00	6.00	11.00
Random	5457	5.63	4.776	0	30	2.00	4.00	9.00

APPENDIX B (continued)

TABLE LXXII. DESCRIPTIVE STATISTICS OF THE PERCENTAGES OF VISIBLE SETTLEMENTS FROM WALLED PATHS

	N	Mean	Std. Deviation	Minimum	Maximum	Percentiles 25th	50th (Median)	75th
Byzantine	5457	.059548156	.0622755815	.0000000	.3267970	.013071900	.032679700	.091503300
Ottoman I	5457	.059693673	.0569993055	.0000000	.3333330	.012578600	.037735800	.094339600
Venetian	5457	.060574431	.0556067128	.0000000	.3267330	.019802000	.039604000	.089108900
Ottoman II	5457	.051393199	.0418267197	.0000000	.2635140	.020270300	.040540500	.074324300
Random	5457	.037533446	.0318371448	.0000000	.2000000	.013333300	.026666700	.060000000

TABLE LXXIII. DESCRIPTIVE STATISTICS OF THE RAW NUMBERS OF VISIBLE SETTLEMENTS FROM GOAT PATHS

	N	Mean	Std. Deviation	Minimum	Maximum	Percentiles 25th	50th (Median)	75th
Byzantine	2075	6.17	8.430	0	49	1.00	3.00	8.00
Ottoman I	2075	6.67	8.167	0	53	1.00	4.00	9.00
Venetian	2075	4.25	5.077	0	33	1.00	2.00	6.00
Ottoman II	2075	5.85	6.044	0	40	2.00	4.00	8.00
Random	2075	3.82	4.425	0	30	1.00	2.00	5.00

TABLE LXXIV. DESCRIPTIVE STATISTICS OF THE PERCENTAGES OF VISIBLE SETTLEMENTS FROM GOAT PATHS

	N	Mean	Std. Deviation	Minimum	Maximum	Percentiles 25th	50th (Median)	75th
Byzantine	2075	.040296089	.0550964796	.0000000	.3202610	.006536000	.019607800	.052287600
Ottoman I	2075	.041936796	.0513637934	.0000000	.3333330	.006289300	.025157200	.056603800
Venetian	2075	.042109058	.0502677864	.0000000	.3267330	.009901000	.019802000	.059405900
Ottoman II	2075	.039550634	.0408373882	.0000000	.2702700	.013513500	.027027000	.054054100
Random	2075	.025461852	.0295003723	.0000000	.2000000	.006666700	.013333300	.033333300

APPENDIX B (continued)

TABLE LXXV. RAW COUNTS AND PERCENTAGES OF VISIBLE SETTLEMENTS FOR EACH CHURCH IN THE BYZANTINE, OTTOMAN I, VENETIAN, AND OTTOMAN II PERIODS, AS WELL AS THE RANDOMLY GENERATED VIEWSHED

ID	Byz: Raw	Ott1: Raw	Ven: Raw	Ott2: Raw	Rand: Raw	Byz: Norm	Ott1: Norm	Ven: Norm	Ott2: Norm	Rand: Norm
None	28	21	15	16	13	0.1830	0.1321	0.1485	0.1081	0.0867
None	19	15	9	12	9	0.1242	0.0943	0.0891	0.0811	0.0600
None	33	34	18	21	15	0.2157	0.2138	0.1782	0.1419	0.1000
None	21	19	12	16	8	0.1373	0.1195	0.1188	0.1081	0.0533
None	20	18	13	14	12	0.1307	0.1132	0.1287	0.0946	0.0800
None	14	10	7	10	8	0.0915	0.0629	0.0693	0.0676	0.0533
None	22	18	11	12	12	0.1438	0.1132	0.1089	0.0811	0.0800
None	11	10	6	7	8	0.0719	0.0629	0.0594	0.0473	0.0533
None	23	22	17	17	15	0.1503	0.1384	0.1683	0.1149	0.1000
None	25	24	15	15	13	0.1634	0.1509	0.1485	0.1014	0.0867
None	18	22	10	14	9	0.1176	0.1384	0.0990	0.0946	0.0600
None	16	15	11	11	8	0.1046	0.0943	0.1089	0.0743	0.0533
None	1	2	2	2	6	0.0065	0.0126	0.0198	0.0135	0.0400
None	9	12	7	7	5	0.0588	0.0755	0.0693	0.0473	0.0333
None	7	10	5	6	5	0.0458	0.0629	0.0495	0.0405	0.0333
None	18	17	11	13	10	0.1176	0.1069	0.1089	0.0878	0.0667
None	2	2	2	2	1	0.0131	0.0126	0.0198	0.0135	0.0067
None	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
None	1	1	1	4	0	0.0065	0.0063	0.0099	0.0270	0.0000
None	2	3	3	3	0	0.0131	0.0189	0.0297	0.0203	0.0000
None	1	1	1	1	0	0.0065	0.0063	0.0099	0.0068	0.0000
None	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
None	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
None	1	0	0	0	0	0.0065	0.0000	0.0000	0.0000	0.0000
None	0	1	0	1	0	0.0000	0.0063	0.0000	0.0068	0.0000
None	1	0	0	1	1	0.0065	0.0000	0.0000	0.0068	0.0067
None	4	3	1	2	1	0.0261	0.0189	0.0099	0.0135	0.0067
None	2	1	0	0	2	0.0131	0.0063	0.0000	0.0000	0.0133
None	3	4	1	2	2	0.0196	0.0252	0.0099	0.0135	0.0133
None	19	16	10	15	9	0.1242	0.1006	0.0990	0.1014	0.0600
None	13	12	9	14	7	0.0850	0.0755	0.0891	0.0946	0.0467
None	11	11	7	8	5	0.0719	0.0692	0.0693	0.0541	0.0333
None	14	12	8	12	8	0.0915	0.0755	0.0792	0.0811	0.0533
None	1	1	1	1	1	0.0065	0.0063	0.0099	0.0068	0.0067
None	14	13	6	7	5	0.0915	0.0818	0.0594	0.0473	0.0333
None	3	3	2	2	1	0.0196	0.0189	0.0198	0.0135	0.0067
None	3	3	2	2	1	0.0196	0.0189	0.0198	0.0135	0.0067
None	20	15	10	15	15	0.1307	0.0943	0.0990	0.1014	0.1000
None	8	2	2	3	6	0.0523	0.0126	0.0198	0.0203	0.0400
None	2	3	3	4	4	0.0131	0.0189	0.0297	0.0270	0.0267
None	4	3	3	3	8	0.0261	0.0189	0.0297	0.0203	0.0533
None	5	4	2	3	3	0.0327	0.0252	0.0198	0.0203	0.0200
None	14	18	10	13	5	0.0915	0.1132	0.0990	0.0878	0.0333
None	2	1	1	3	0	0.0131	0.0063	0.0099	0.0203	0.0000
None	0	1	1	3	0	0.0000	0.0063	0.0099	0.0203	0.0000
None	2	4	3	3	0	0.0131	0.0252	0.0297	0.0203	0.0000
None	1	3	2	2	1	0.0065	0.0189	0.0198	0.0135	0.0067

APPENDIX B (continued)

TABLE LXXV. RAW COUNTS AND PERCENTAGES OF VISIBLE SETTLEMENTS FOR EACH CHURCH IN THE BYZANTINE, OTTOMAN I, VENETIAN, AND OTTOMAN II PERIODS, AS WELL AS THE RANDOMLY GENERATED VIEWSHED (continued)

ID	Byz: Raw	Ott1: Raw	Ven: Raw	Ott2: Raw	Rand: Raw	Byz: Norm	Ott1: Norm	Ven: Norm	Ott2: Norm	Rand: Norm
None	1	2	1	1	1	0.0065	0.0126	0.0099	0.0068	0.0067
None	1	2	1	1	1	0.0065	0.0126	0.0099	0.0068	0.0067
None	2	2	2	2	0	0.0131	0.0126	0.0198	0.0135	0.0000
None	5	7	4	7	3	0.0327	0.0440	0.0396	0.0473	0.0200
None	19	14	10	14	11	0.1242	0.0881	0.0990	0.0946	0.0733
None	11	7	6	7	10	0.0719	0.0440	0.0594	0.0473	0.0667
None	11	7	6	8	11	0.0719	0.0440	0.0594	0.0541	0.0733
None	22	20	12	18	10	0.1438	0.1258	0.1188	0.1216	0.0667
None	2	1	1	1	1	0.0131	0.0063	0.0099	0.0068	0.0067
None	12	11	8	11	13	0.0784	0.0692	0.0792	0.0743	0.0867
None	15	14	8	12	8	0.0980	0.0881	0.0792	0.0811	0.0533
None	3	2	0	0	0	0.0196	0.0126	0.0000	0.0000	0.0000
None	5	9	4	7	2	0.0327	0.0566	0.0396	0.0473	0.0133
None	0	1	1	1	0	0.0000	0.0063	0.0099	0.0068	0.0000
None	1	1	1	1	0	0.0065	0.0063	0.0099	0.0068	0.0000
None	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
None	4	4	3	4	2	0.0261	0.0252	0.0297	0.0270	0.0133
None	0	1	0	0	0	0.0000	0.0063	0.0000	0.0000	0.0000
None	18	19	12	10	9	0.1176	0.1195	0.1188	0.0676	0.0600
None	10	11	6	4	6	0.0654	0.0692	0.0594	0.0270	0.0400
None	2	2	2	3	0	0.0131	0.0126	0.0198	0.0203	0.0000
None	2	7	6	8	4	0.0131	0.0440	0.0594	0.0541	0.0267
None	1	5	5	6	2	0.0065	0.0314	0.0495	0.0405	0.0133
None	8	4	4	4	6	0.0523	0.0252	0.0396	0.0270	0.0400
None	1	2	0	1	1	0.0065	0.0126	0.0000	0.0068	0.0067
None	8	10	6	10	3	0.0523	0.0629	0.0594	0.0676	0.0200
None	22	21	12	16	8	0.1438	0.1321	0.1188	0.1081	0.0533
None	1	1	1	5	1	0.0065	0.0063	0.0099	0.0338	0.0067
None	1	1	1	4	3	0.0065	0.0063	0.0099	0.0270	0.0200
None	1	1	1	5	2	0.0065	0.0063	0.0099	0.0338	0.0133
None	2	2	2	7	4	0.0131	0.0126	0.0198	0.0473	0.0267
None	1	1	1	3	0	0.0065	0.0063	0.0099	0.0203	0.0000
None	4	3	3	3	1	0.0261	0.0189	0.0297	0.0203	0.0067
None	11	8	7	6	8	0.0719	0.0503	0.0693	0.0405	0.0533
None	1	0	0	0	0	0.0065	0.0000	0.0000	0.0000	0.0000
None	10	11	5	8	4	0.0654	0.0692	0.0495	0.0541	0.0267
None	9	10	5	6	3	0.0588	0.0629	0.0495	0.0405	0.0200
None	9	10	5	6	3	0.0588	0.0629	0.0495	0.0405	0.0200
None	10	11	5	8	3	0.0654	0.0692	0.0495	0.0541	0.0200
None	22	16	12	16	17	0.1438	0.1006	0.1188	0.1081	0.1133
None	1	0	0	0	0	0.0065	0.0000	0.0000	0.0000	0.0000
None	7	8	5	8	7	0.0458	0.0503	0.0495	0.0541	0.0467
None	6	7	5	7	7	0.0392	0.0440	0.0495	0.0473	0.0467
None	1	3	0	2	1	0.0065	0.0189	0.0000	0.0135	0.0067
None	4	4	3	3	1	0.0261	0.0252	0.0297	0.0203	0.0067
None	5	5	4	4	2	0.0327	0.0314	0.0396	0.0270	0.0133
None	0	1	0	1	0	0.0000	0.0063	0.0000	0.0068	0.0000

APPENDIX B (continued)

TABLE LXXV. RAW COUNTS AND PERCENTAGES OF VISIBLE SETTLEMENTS FOR EACH CHURCH IN THE BYZANTINE, OTTOMAN I, VENETIAN, AND OTTOMAN II PERIODS, AS WELL AS THE RANDOMLY GENERATED VIEWSHED (continued)

ID	Byz: Raw	Ott1: Raw	Ven: Raw	Ott2: Raw	Rand: Raw	Byz: Norm	Ott1: Norm	Ven: Norm	Ott2: Norm	Rand: Norm
None	3	6	3	7	3	0.0196	0.0377	0.0297	0.0473	0.0200
None	5	2	2	2	1	0.0327	0.0126	0.0198	0.0135	0.0067
None	2	1	0	0	0	0.0131	0.0063	0.0000	0.0000	0.0000
None	8	9	4	6	3	0.0523	0.0566	0.0396	0.0405	0.0200
None	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
None	2	3	2	2	1	0.0131	0.0189	0.0198	0.0135	0.0067
None	3	3	3	3	1	0.0196	0.0189	0.0297	0.0203	0.0067
None	1	2	0	0	0	0.0065	0.0126	0.0000	0.0000	0.0000
None	1	1	1	1	1	0.0065	0.0063	0.0099	0.0068	0.0067
None	3	4	4	11	6	0.0196	0.0252	0.0396	0.0743	0.0400
None	2	2	2	2	0	0.0131	0.0126	0.0198	0.0135	0.0000
None	4	2	1	1	0	0.0261	0.0126	0.0099	0.0068	0.0000
None	2	4	3	5	1	0.0131	0.0252	0.0297	0.0338	0.0067
None	4	3	3	3	0	0.0261	0.0189	0.0297	0.0203	0.0000
None	4	2	2	2	2	0.0261	0.0126	0.0198	0.0135	0.0133
None	2	6	4	5	6	0.0131	0.0377	0.0396	0.0338	0.0400
None	22	26	13	13	10	0.1438	0.1635	0.1287	0.0878	0.0667
None	25	25	14	15	10	0.1634	0.1572	0.1386	0.1014	0.0667
None	1	0	0	0	0	0.0065	0.0000	0.0000	0.0000	0.0000
None	1	1	0	0	1	0.0065	0.0063	0.0000	0.0000	0.0067
None	2	2	2	2	0	0.0131	0.0126	0.0198	0.0135	0.0000
None	0	1	1	1	0	0.0000	0.0063	0.0099	0.0068	0.0000
None	0	3	2	2	1	0.0000	0.0189	0.0198	0.0135	0.0067
None	0	0	0	3	0	0.0000	0.0000	0.0000	0.0203	0.0000
None	1	5	4	9	5	0.0065	0.0314	0.0396	0.0608	0.0333
None	2	2	1	1	0	0.0131	0.0126	0.0099	0.0068	0.0000
None	8	8	5	7	2	0.0523	0.0503	0.0495	0.0473	0.0133
None	7	7	5	6	2	0.0458	0.0440	0.0495	0.0405	0.0133
None	7	11	5	7	2	0.0458	0.0692	0.0495	0.0473	0.0133
None	13	13	9	13	6	0.0850	0.0818	0.0891	0.0878	0.0400
None	7	8	4	8	4	0.0458	0.0503	0.0396	0.0541	0.0267
None	5	6	4	5	2	0.0327	0.0377	0.0396	0.0338	0.0133
None	4	3	2	4	6	0.0261	0.0189	0.0198	0.0270	0.0400
None	5	6	5	5	7	0.0327	0.0377	0.0495	0.0338	0.0467
None	37	38	21	27	18	0.2418	0.2390	0.2079	0.1824	0.1200
None	21	19	12	16	9	0.1373	0.1195	0.1188	0.1081	0.0600
None	32	33	17	23	15	0.2092	0.2075	0.1683	0.1554	0.1000
None	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
None	1	2	1	4	2	0.0065	0.0126	0.0099	0.0270	0.0133
None	9	6	4	5	6	0.0588	0.0377	0.0396	0.0338	0.0400
None	7	10	6	5	6	0.0458	0.0629	0.0594	0.0338	0.0400
None	5	8	6	6	7	0.0327	0.0503	0.0594	0.0405	0.0467
None	15	16	11	12	9	0.0980	0.1006	0.1089	0.0811	0.0600
None	1	2	2	2	1	0.0065	0.0126	0.0198	0.0135	0.0067
None	7	5	4	3	5	0.0458	0.0314	0.0396	0.0203	0.0333
None	2	1	0	0	0	0.0131	0.0063	0.0000	0.0000	0.0000
None	3	1	1	1	0	0.0196	0.0063	0.0099	0.0068	0.0000

APPENDIX B (continued)

TABLE LXXV. RAW COUNTS AND PERCENTAGES OF VISIBLE SETTLEMENTS FOR EACH CHURCH IN THE BYZANTINE, OTTOMAN I, VENETIAN, AND OTTOMAN II PERIODS, AS WELL AS THE RANDOMLY GENERATED VIEWSHED (continued)

ID	Byz: Raw	Ott1: Raw	Ven: Raw	Ott2: Raw	Rand: Raw	Byz: Norm	Ott1: Norm	Ven: Norm	Ott2: Norm	Rand: Norm
None	9	10	3	6	3	0.0588	0.0629	0.0297	0.0405	0.0200
None	1	1	1	1	0	0.0065	0.0063	0.0099	0.0068	0.0000
None	3	1	1	1	1	0.0196	0.0063	0.0099	0.0068	0.0067
None	4	7	4	6	3	0.0261	0.0440	0.0396	0.0405	0.0200
None	0	0	0	1	0	0.0000	0.0000	0.0000	0.0068	0.0000
None	11	13	7	11	6	0.0719	0.0818	0.0693	0.0743	0.0400
None	3	1	1	2	1	0.0196	0.0063	0.0099	0.0135	0.0067
None	1	0	0	1	0	0.0065	0.0000	0.0000	0.0068	0.0000
None	38	37	21	22	15	0.2484	0.2327	0.2079	0.1486	0.1000
None	3	3	3	3	2	0.0196	0.0189	0.0297	0.0203	0.0133
None	8	9	6	8	5	0.0523	0.0566	0.0594	0.0541	0.0333
None	1	3	2	2	0	0.0065	0.0189	0.0198	0.0135	0.0000
None	3	3	3	3	1	0.0196	0.0189	0.0297	0.0203	0.0067
None	26	19	12	13	12	0.1699	0.1195	0.1188	0.0878	0.0800
None	22	20	12	11	13	0.1438	0.1258	0.1188	0.0743	0.0867
None	3	3	3	3	1	0.0196	0.0189	0.0297	0.0203	0.0067
None	1	2	1	1	0	0.0065	0.0126	0.0099	0.0068	0.0000
None	5	6	4	7	2	0.0327	0.0377	0.0396	0.0473	0.0133
None	15	13	7	11	9	0.0980	0.0818	0.0693	0.0743	0.0600
None	6	6	5	7	6	0.0392	0.0377	0.0495	0.0473	0.0400
None	5	9	7	7	7	0.0327	0.0566	0.0693	0.0473	0.0467
None	3	1	1	2	0	0.0196	0.0063	0.0099	0.0135	0.0000
None	2	3	2	3	1	0.0131	0.0189	0.0198	0.0203	0.0067
None	15	17	8	16	9	0.0980	0.1069	0.0792	0.1081	0.0600
None	11	12	6	12	6	0.0719	0.0755	0.0594	0.0811	0.0400
None	11	14	10	12	9	0.0719	0.0881	0.0990	0.0811	0.0600
None	15	17	11	15	13	0.0980	0.1069	0.1089	0.1014	0.0867
None	2	3	2	3	1	0.0131	0.0189	0.0198	0.0203	0.0067
None	8	12	6	9	3	0.0523	0.0755	0.0594	0.0608	0.0200
None	4	3	2	2	6	0.0261	0.0189	0.0198	0.0135	0.0400
None	33	33	19	20	14	0.2157	0.2075	0.1881	0.1351	0.0933
None	26	24	15	15	11	0.1699	0.1509	0.1485	0.1014	0.0733
None	8	7	5	7	4	0.0523	0.0440	0.0495	0.0473	0.0267
None	13	12	7	11	7	0.0850	0.0755	0.0693	0.0743	0.0467
None	0	1	1	3	0	0.0000	0.0063	0.0099	0.0203	0.0000
None	1	2	2	2	0	0.0065	0.0126	0.0198	0.0135	0.0000
None	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
None	41	37	19	28	22	0.2680	0.2327	0.1881	0.1892	0.1467
None	2	2	1	1	3	0.0131	0.0126	0.0099	0.0068	0.0200
T007F001	19	15	10	9	10	0.1242	0.0943	0.0990	0.0608	0.0667
T008F002	9	16	7	7	6	0.0588	0.1006	0.0693	0.0473	0.0400
T012F001	31	32	16	22	16	0.2026	0.2013	0.1584	0.1486	0.1067
T013F001	1	1	0	0	1	0.0065	0.0063	0.0000	0.0000	0.0067
T013F003	1	3	2	2	1	0.0065	0.0189	0.0198	0.0135	0.0067
T014F001	2	1	1	1	0	0.0131	0.0063	0.0099	0.0068	0.0000
T014F002	10	8	6	6	5	0.0654	0.0503	0.0594	0.0405	0.0333
T014F004	6	5	4	5	3	0.0392	0.0314	0.0396	0.0338	0.0200

APPENDIX B (continued)

TABLE LXXV. RAW COUNTS AND PERCENTAGES OF VISIBLE SETTLEMENTS FOR EACH CHURCH IN THE BYZANTINE, OTTOMAN I, VENETIAN, AND OTTOMAN II PERIODS, AS WELL AS THE RANDOMLY GENERATED VIEWSHED (continued)

ID	Byz: Raw	Ott1: Raw	Ven: Raw	Ott2: Raw	Rand: Raw	Byz: Norm	Ott1: Norm	Ven: Norm	Ott2: Norm	Rand: Norm
T014F101	3	3	3	3	1	0.0196	0.0189	0.0297	0.0203	0.0067
T014F102	3	2	2	2	2	0.0196	0.0126	0.0198	0.0135	0.0133
T014F103	9	11	8	7	4	0.0588	0.0692	0.0792	0.0473	0.0267
T024F001	30	28	16	19	13	0.1961	0.1761	0.1584	0.1284	0.0867
T024F017	31	30	17	22	15	0.2026	0.1887	0.1683	0.1486	0.1000
T024F035	23	21	13	16	10	0.1503	0.1321	0.1287	0.1081	0.0667
T024F043	23	25	14	15	11	0.1503	0.1572	0.1386	0.1014	0.0733
T027F021	4	3	2	4	5	0.0261	0.0189	0.0198	0.0270	0.0333
T028F001	30	25	17	19	18	0.1961	0.1572	0.1683	0.1284	0.1200
T028F005	33	26	18	20	19	0.2157	0.1635	0.1782	0.1351	0.1267
T028F018	7	7	5	6	9	0.0458	0.0440	0.0495	0.0405	0.0600
T034F001	14	17	9	13	5	0.0915	0.1069	0.0891	0.0878	0.0333
T034F011	6	6	4	5	3	0.0392	0.0377	0.0396	0.0338	0.0200
T034F019	1	2	2	2	0	0.0065	0.0126	0.0198	0.0135	0.0000
T035F008	2	3	3	2	7	0.0131	0.0189	0.0297	0.0135	0.0467
T036F001	31	32	16	19	14	0.2026	0.2013	0.1584	0.1284	0.0933
T036F003	29	32	17	21	15	0.1895	0.2013	0.1683	0.1419	0.1000
T036F004	34	35	19	24	15	0.2222	0.2201	0.1881	0.1622	0.1000
T036F005	34	35	19	24	15	0.2222	0.2201	0.1881	0.1622	0.1000
T038F002	10	10	5	5	7	0.0654	0.0629	0.0495	0.0338	0.0467
T038F005	19	20	12	12	12	0.1242	0.1258	0.1188	0.0811	0.0800
T038F114	15	17	9	9	10	0.0980	0.1069	0.0891	0.0608	0.0667
T041F003	6	6	4	7	5	0.0392	0.0377	0.0396	0.0473	0.0333
T042F001	13	14	9	8	8	0.0850	0.0881	0.0891	0.0541	0.0533
T042F002	29	26	16	20	15	0.1895	0.1635	0.1584	0.1351	0.1000
T042F003	5	5	3	2	5	0.0327	0.0314	0.0297	0.0135	0.0333
T049F001	14	18	11	14	7	0.0915	0.1132	0.1089	0.0946	0.0467
T049F002	9	12	7	9	4	0.0588	0.0755	0.0693	0.0608	0.0267
T055F005	11	16	8	7	6	0.0719	0.1006	0.0792	0.0473	0.0400
T055F021	13	18	9	11	7	0.0850	0.1132	0.0891	0.0743	0.0467
T056F002	1	1	1	7	4	0.0065	0.0063	0.0099	0.0473	0.0267
T063F019	4	3	2	1	5	0.0261	0.0189	0.0198	0.0068	0.0333
T063F024	10	12	8	7	6	0.0654	0.0755	0.0792	0.0473	0.0400
T064F001	0	1	1	1	2	0.0000	0.0063	0.0099	0.0068	0.0133
T064F004	1	5	5	6	4	0.0065	0.0314	0.0495	0.0405	0.0267
T066F001	19	17	15	14	12	0.1242	0.1069	0.1485	0.0946	0.0800
T066F003	7	8	6	5	6	0.0458	0.0503	0.0594	0.0338	0.0400
T066F004	6	6	5	5	6	0.0392	0.0377	0.0495	0.0338	0.0400
T066F115	2	1	1	1	4	0.0131	0.0063	0.0099	0.0068	0.0267
T067F001	36	35	25	29	22	0.2353	0.2201	0.2475	0.1959	0.1467
T067F002	45	45	29	34	27	0.2941	0.2830	0.2871	0.2297	0.1800
T067F007	6	6	6	7	10	0.0392	0.0377	0.0594	0.0473	0.0667
T072F002	3	3	3	3	1	0.0196	0.0189	0.0297	0.0203	0.0067
T072F004	2	2	2	2	0	0.0131	0.0126	0.0198	0.0135	0.0000
T072F005	1	2	2	4	0	0.0065	0.0126	0.0198	0.0270	0.0000
T075F002	10	9	5	6	8	0.0654	0.0566	0.0495	0.0405	0.0533
T075F006	17	12	8	12	13	0.1111	0.0755	0.0792	0.0811	0.0867

APPENDIX B (continued)

TABLE LXXV. RAW COUNTS AND PERCENTAGES OF VISIBLE SETTLEMENTS FOR EACH CHURCH IN THE BYZANTINE, OTTOMAN I, VENETIAN, AND OTTOMAN II PERIODS, AS WELL AS THE RANDOMLY GENERATED VIEWSHED (continued)

ID	Byz: Raw	Ott1: Raw	Ven: Raw	Ott2: Raw	Rand: Raw	Byz: Norm	Ott1: Norm	Ven: Norm	Ott2: Norm	Rand: Norm
T075F008	8	6	5	4	6	0.0523	0.0377	0.0495	0.0270	0.0400
T076F001	4	2	2	2	4	0.0261	0.0126	0.0198	0.0135	0.0267
T076F005	2	3	3	2	5	0.0131	0.0189	0.0297	0.0135	0.0333
T076F013	1	0	0	0	3	0.0065	0.0000	0.0000	0.0000	0.0200
T076F014	1	0	0	0	1	0.0065	0.0000	0.0000	0.0000	0.0067
T080F001	5	3	3	3	2	0.0327	0.0189	0.0297	0.0203	0.0133
T080F002	6	5	3	4	3	0.0392	0.0314	0.0297	0.0270	0.0200
T081F001	1	3	2	2	1	0.0065	0.0189	0.0198	0.0135	0.0067
T081F002	1	2	1	1	0	0.0065	0.0126	0.0099	0.0068	0.0000
T091F002	1	1	1	2	2	0.0065	0.0063	0.0099	0.0135	0.0133
T091F011	1	1	1	3	2	0.0065	0.0063	0.0099	0.0203	0.0133
T093F001	11	9	5	6	4	0.0719	0.0566	0.0495	0.0405	0.0267
T100F001	2	2	2	2	0	0.0131	0.0126	0.0198	0.0135	0.0000
T104F001	18	22	11	13	8	0.1176	0.1384	0.1089	0.0878	0.0533
T104F002	15	19	10	11	7	0.0980	0.1195	0.0990	0.0743	0.0467
T104F003	13	17	10	11	7	0.0850	0.1069	0.0990	0.0743	0.0467
T109F003	30	26	18	19	16	0.1961	0.1635	0.1782	0.1284	0.1067
T111F012	14	15	10	9	8	0.0915	0.0943	0.0990	0.0608	0.0533
T113F002	1	1	0	1	1	0.0065	0.0063	0.0000	0.0068	0.0067
T113F008	9	10	7	6	6	0.0588	0.0629	0.0693	0.0405	0.0400
T114F001	0	0	0	0	1	0.0000	0.0000	0.0000	0.0000	0.0067
T114F003	1	4	4	5	3	0.0065	0.0252	0.0396	0.0338	0.0200
T114F004	0	3	3	3	5	0.0000	0.0189	0.0297	0.0203	0.0333
T114F005	0	0	0	0	1	0.0000	0.0000	0.0000	0.0000	0.0067
T114F007	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
T114F008	0	4	3	3	3	0.0000	0.0252	0.0297	0.0203	0.0200
T114F011	2	6	5	5	4	0.0131	0.0377	0.0495	0.0338	0.0267
T118F001	10	9	7	7	8	0.0654	0.0566	0.0693	0.0473	0.0533
T118F003	17	18	16	14	11	0.1111	0.1132	0.1584	0.0946	0.0733
T118F105	21	17	14	14	13	0.1373	0.1069	0.1386	0.0946	0.0867
T118F107	20	15	12	12	12	0.1307	0.0943	0.1188	0.0811	0.0800
T118F132	35	33	23	25	17	0.2288	0.2075	0.2277	0.1689	0.1133
T119F004	3	5	5	7	4	0.0196	0.0314	0.0495	0.0473	0.0267
T120F001	19	17	12	11	6	0.1242	0.1069	0.1188	0.0743	0.0400
T125F109	29	29	16	16	12	0.1895	0.1824	0.1584	0.1081	0.0800
T130F001	13	17	8	9	7	0.0850	0.1069	0.0792	0.0608	0.0467
T130F004	8	12	7	6	6	0.0523	0.0755	0.0693	0.0405	0.0400
T130F005	7	13	7	7	6	0.0458	0.0818	0.0693	0.0473	0.0400
T132F004	9	10	7	8	6	0.0588	0.0629	0.0693	0.0541	0.0400
T137F001	26	22	16	18	13	0.1699	0.1384	0.1584	0.1216	0.0867
T137F013	15	14	11	13	12	0.0980	0.0881	0.1089	0.0878	0.0800
T137F021	10	9	7	8	10	0.0654	0.0566	0.0693	0.0541	0.0667
T137F025	19	15	12	15	14	0.1242	0.0943	0.1188	0.1014	0.0933
T137F038	2	4	3	4	7	0.0131	0.0252	0.0297	0.0270	0.0467
T137F043	5	4	3	5	8	0.0327	0.0252	0.0297	0.0338	0.0533
T137F051	3	5	3	5	6	0.0196	0.0314	0.0297	0.0338	0.0400
T137F062	1	3	2	4	6	0.0065	0.0189	0.0198	0.0270	0.0400

APPENDIX B (continued)

TABLE LXXV. RAW COUNTS AND PERCENTAGES OF VISIBLE SETTLEMENTS FOR EACH CHURCH IN THE BYZANTINE, OTTOMAN I, VENETIAN, AND OTTOMAN II PERIODS, AS WELL AS THE RANDOMLY GENERATED VIEWSHED (continued)

ID	Byz: Raw	Ott1: Raw	Ven: Raw	Ott2: Raw	Rand: Raw	Byz: Norm	Ott1: Norm	Ven: Norm	Ott2: Norm	Rand: Norm
T137F124	0	1	1	3	5	0.0000	0.0063	0.0099	0.0203	0.0333
T137F125	0	1	1	3	5	0.0000	0.0063	0.0099	0.0203	0.0333
T138F001	1	1	1	1	1	0.0065	0.0063	0.0099	0.0068	0.0067
T138F013	1	2	1	2	2	0.0065	0.0126	0.0099	0.0135	0.0133
T138F033	2	3	1	3	3	0.0131	0.0189	0.0099	0.0203	0.0200
T138F083	4	6	2	4	3	0.0261	0.0377	0.0198	0.0270	0.0200
T139F009	19	16	9	15	10	0.1242	0.1006	0.0891	0.1014	0.0667
T145F001	2	7	6	7	4	0.0131	0.0440	0.0594	0.0473	0.0267
T145F002	0	5	3	3	1	0.0000	0.0314	0.0297	0.0203	0.0067
T149F002	0	0	0	2	2	0.0000	0.0000	0.0000	0.0135	0.0133
T149F004	1	1	1	6	2	0.0065	0.0063	0.0099	0.0405	0.0133
T149F006	1	1	1	5	2	0.0065	0.0063	0.0099	0.0338	0.0133
T152F003	34	30	19	23	16	0.2222	0.1887	0.1881	0.1554	0.1067
T152F012	33	28	19	22	15	0.2157	0.1761	0.1881	0.1486	0.1000
T155F002	28	25	16	19	16	0.1830	0.1572	0.1584	0.1284	0.1067
T155F006	38	36	21	24	20	0.2484	0.2264	0.2079	0.1622	0.1333
T161F002	6	4	4	4	3	0.0392	0.0252	0.0396	0.0270	0.0200
T161F004	3	2	1	2	1	0.0196	0.0126	0.0099	0.0135	0.0067
T164F001	19	21	14	15	10	0.1242	0.1321	0.1386	0.1014	0.0667
T169F003	14	17	11	13	4	0.0915	0.1069	0.1089	0.0878	0.0267
T169F008	16	19	11	14	5	0.1046	0.1195	0.1089	0.0946	0.0333
T169F010	13	16	10	11	5	0.0850	0.1006	0.0990	0.0743	0.0333
T170F011	3	2	1	2	0	0.0196	0.0126	0.0099	0.0135	0.0000
T170F104	2	2	1	1	1	0.0131	0.0126	0.0099	0.0068	0.0067
T170F106	1	0	0	0	1	0.0065	0.0000	0.0000	0.0000	0.0067
T170F111	5	3	3	3	2	0.0327	0.0189	0.0297	0.0203	0.0133
T170F118	1	0	0	0	0	0.0065	0.0000	0.0000	0.0000	0.0000
T171F002	6	6	5	5	2	0.0392	0.0377	0.0495	0.0338	0.0133
T171F009	7	8	6	7	3	0.0458	0.0503	0.0594	0.0473	0.0200
T171F011	5	6	4	5	3	0.0327	0.0377	0.0396	0.0338	0.0200
T172F003	13	15	10	9	8	0.0850	0.0943	0.0990	0.0608	0.0533
T181F001	15	18	10	12	8	0.0980	0.1132	0.0990	0.0811	0.0533
T181F004	14	18	9	11	9	0.0915	0.1132	0.0891	0.0743	0.0600
T182F001	0	0	0	0	2	0.0000	0.0000	0.0000	0.0000	0.0133
T182F009	0	0	0	0	3	0.0000	0.0000	0.0000	0.0000	0.0200
T189F001	6	6	5	7	7	0.0392	0.0377	0.0495	0.0473	0.0467
T189F027	14	12	8	8	7	0.0915	0.0755	0.0792	0.0541	0.0467
T191F003	35	33	22	27	23	0.2288	0.2075	0.2178	0.1824	0.1533
T191F006	43	44	30	36	29	0.2810	0.2767	0.2970	0.2432	0.1933
T191F101	10	9	7	4	9	0.0654	0.0566	0.0693	0.0270	0.0600
T191F103	50	54	34	38	30	0.3268	0.3396	0.3366	0.2568	0.2000
T191F104	52	55	34	40	31	0.3399	0.3459	0.3366	0.2703	0.2067
T191F105	50	51	32	36	26	0.3268	0.3208	0.3168	0.2432	0.1733
T191F107	52	55	34	39	31	0.3399	0.3459	0.3366	0.2635	0.2067
T192F101	3	3	1	3	2	0.0196	0.0189	0.0099	0.0203	0.0133
T194F002	21	24	16	20	15	0.1373	0.1509	0.1584	0.1351	0.1000
T199F001	6	8	6	6	7	0.0392	0.0503	0.0594	0.0405	0.0467

APPENDIX B (continued)

TABLE LXXV. RAW COUNTS AND PERCENTAGES OF VISIBLE SETTLEMENTS FOR EACH CHURCH IN THE BYZANTINE, OTTOMAN I, VENETIAN, AND OTTOMAN II PERIODS, AS WELL AS THE RANDOMLY GENERATED VIEWSHED (continued)

ID	Byz: Raw	Ott1: Raw	Ven: Raw	Ott2: Raw	Rand: Raw	Byz: Norm	Ott1: Norm	Ven: Norm	Ott2: Norm	Rand: Norm
T199F002	8	9	7	5	9	0.0523	0.0566	0.0693	0.0338	0.0600
T201F002	0	1	1	0	0	0.0000	0.0063	0.0099	0.0000	0.0000
T212F014	6	4	3	4	7	0.0392	0.0252	0.0297	0.0270	0.0467
T215F001	25	22	15	14	11	0.1634	0.1384	0.1485	0.0946	0.0733
T220F002	1	1	1	1	0	0.0065	0.0063	0.0099	0.0068	0.0000
T222F001	5	4	3	3	1	0.0327	0.0252	0.0297	0.0203	0.0067
T225F001	1	1	1	1	0	0.0065	0.0063	0.0099	0.0068	0.0000
T233F001	18	18	16	15	13	0.1176	0.1132	0.1584	0.1014	0.0867
T240F001	5	6	4	7	5	0.0327	0.0377	0.0396	0.0473	0.0333
T261F002	11	14	7	11	4	0.0719	0.0881	0.0693	0.0743	0.0267
T269F001	2	8	8	8	7	0.0131	0.0503	0.0792	0.0541	0.0467
T271F001	1	2	2	2	2	0.0065	0.0126	0.0198	0.0135	0.0133
T271F003	2	3	3	3	1	0.0131	0.0189	0.0297	0.0203	0.0067
T280F002	1	1	0	0	1	0.0065	0.0063	0.0000	0.0000	0.0067
T290F002	2	1	1	6	3	0.0131	0.0063	0.0099	0.0405	0.0200
T293F011	0	1	0	0	0	0.0000	0.0063	0.0000	0.0000	0.0000
T293F013	0	1	0	1	0	0.0000	0.0063	0.0000	0.0068	0.0000
T297F001	0	0	0	0	2	0.0000	0.0000	0.0000	0.0000	0.0133
T301F017	4	10	8	10	8	0.0261	0.0629	0.0792	0.0676	0.0533
T302F002	1	1	1	1	0	0.0065	0.0063	0.0099	0.0068	0.0000
T316F001	0	0	0	4	4	0.0000	0.0000	0.0000	0.0270	0.0267
T327F002	3	7	3	4	2	0.0196	0.0440	0.0297	0.0270	0.0133
T327F003	10	10	7	10	4	0.0654	0.0629	0.0693	0.0676	0.0267
T341F006	1	2	2	2	4	0.0065	0.0126	0.0198	0.0135	0.0267
T359F001	0	0	0	0	2	0.0000	0.0000	0.0000	0.0000	0.0133
T364F001	6	5	4	6	6	0.0392	0.0314	0.0396	0.0405	0.0400
T364F002	5	5	4	6	5	0.0327	0.0314	0.0396	0.0405	0.0333
T364F003	5	5	4	6	4	0.0327	0.0314	0.0396	0.0405	0.0267
T365F010	27	27	14	16	11	0.1765	0.1698	0.1386	0.1081	0.0733
T373F001	9	5	3	6	2	0.0588	0.0314	0.0297	0.0405	0.0133
T374F001	27	26	16	18	13	0.1765	0.1635	0.1584	0.1216	0.0867
T375F003	14	10	8	9	10	0.0915	0.0629	0.0792	0.0608	0.0667
T378F001	1	4	4	5	6	0.0065	0.0252	0.0396	0.0338	0.0400
T381F003	22	18	12	17	13	0.1438	0.1132	0.1188	0.1149	0.0867
T382F001	35	34	20	24	17	0.2288	0.2138	0.1980	0.1622	0.1133
T382F003	16	17	13	15	8	0.1046	0.1069	0.1287	0.1014	0.0533
T384F001	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
T385F001	2	2	2	3	3	0.0131	0.0126	0.0198	0.0203	0.0200
T386F001	15	14	8	9	7	0.0980	0.0881	0.0792	0.0608	0.0467
T387F001	2	2	2	5	4	0.0131	0.0126	0.0198	0.0338	0.0267
T388F001	2	4	4	5	2	0.0131	0.0252	0.0396	0.0338	0.0133
T400F001	13	18	10	12	7	0.0850	0.1132	0.0990	0.0811	0.0467
T400F002	13	18	10	12	7	0.0850	0.1132	0.0990	0.0811	0.0467
T401F001	16	22	10	13	9	0.1046	0.1384	0.0990	0.0878	0.0600
T404F007	18	18	11	12	7	0.1176	0.1132	0.1089	0.0811	0.0467
T405F001	30	30	16	21	12	0.1961	0.1887	0.1584	0.1419	0.0800
T409F001	13	13	6	11	8	0.0850	0.0818	0.0594	0.0743	0.0533

APPENDIX B (continued)

TABLE LXXV. RAW COUNTS AND PERCENTAGES OF VISIBLE SETTLEMENTS FOR EACH CHURCH IN THE BYZANTINE, OTTOMAN I, VENETIAN, AND OTTOMAN II PERIODS, AS WELL AS THE RANDOMLY GENERATED VIEWSHED (continued)

ID	Byz: Raw	Ott1: Raw	Ven: Raw	Ott2: Raw	Rand: Raw	Byz: Norm	Ott1: Norm	Ven: Norm	Ott2: Norm	Rand: Norm
T416F001	25	25	15	20	13	0.1634	0.1572	0.1485	0.1351	0.0867
T416F004	27	27	17	22	15	0.1765	0.1698	0.1683	0.1486	0.1000
T420F002	19	15	11	12	13	0.1242	0.0943	0.1089	0.0811	0.0867
T429F005	4	7	5	3	7	0.0261	0.0440	0.0495	0.0203	0.0467
T431F001	3	1	1	2	0	0.0196	0.0063	0.0099	0.0135	0.0000
T432F002	3	2	1	2	2	0.0196	0.0126	0.0099	0.0135	0.0133
T473F001	5	5	4	6	6	0.0327	0.0314	0.0396	0.0405	0.0400

APPENDIX B (continued)

TABLE LXXVI. RAW COUNTS AND PERCENTAGES OF VISIBLE SETTLEMENTS FOR BYZANTINE-PERIOD CHURCHES FROM THE BYZANTINE AND RANDOMLY GENERATED VIEWSHEDS

ID	Name	Byz: Raw	Rand: Raw	Byz: Norm	Rand: Norm
T005F002	Unidentified church	20	12	0.1307	0.0800
T007F001	Unidentified chapel	19	10	0.1242	0.0667
T008F002	Ay. Yeoryios	9	6	0.0588	0.0400
T008F003	Ay. Nikolaos	16	8	0.1046	0.0533
T008F004	Ay. Dimitrios	16	10	0.1046	0.0667
T012F001	Ay. Ilias	31	16	0.2026	0.1067
T014F103	Ay. Stratigos	9	4	0.0588	0.0267
T024F001	Ay. Yeoryios	30	13	0.1961	0.0867
T024F002	Ay. Leo	22	10	0.1438	0.0667
T024F017	Ay. Dimitrios	31	15	0.2026	0.1000
T024F035	Ay. Nikolaos	23	10	0.1503	0.0667
T024F043	Unidentified ruined church	23	11	0.1503	0.0733
T027F021	Ay. Nikolaos	4	5	0.0261	0.0333
T028F001	Ay. Sotiras	30	18	0.1961	0.1200
T028F005	Ay. Taxiarchis	33	19	0.2157	0.1267
T028F018	Unidentified chapel	7	9	0.0458	0.0600
T034F001	Ay. Spyridon?	14	5	0.0915	0.0333
T034F011	Unidentified	6	3	0.0392	0.0200
T034F019	Ay. Stratigos	1	0	0.0065	0.0000
T035F008	Panayia	2	7	0.0131	0.0467
T036F001	Ay. Theodoros	31	14	0.2026	0.0933
T036F003	Ay. Yeoryios	29	15	0.1895	0.1000
T036F005	Ay. Andreas	34	15	0.2222	0.1000
T038F002	Ay. Varvara	10	7	0.0654	0.0467
T038F005	Soulani	19	12	0.1242	0.0800
T038F114	Ruined church	15	10	0.0980	0.0667
T042F001	Ay. Petros	13	8	0.0850	0.0533
T042F003	Sotira	5	5	0.0327	0.0333
T051F001	Ay. Nikolaos	2	3	0.0131	0.0200
T055F005	Ay. Yeoryios	11	6	0.0719	0.0400
T063F019	Ay. Andreas	4	5	0.0261	0.0333
T063F024	Ay. Kyprianos	10	6	0.0654	0.0400
T066F001	Ay. Ioannis	19	12	0.1242	0.0800
T066F003	Ay. Yeoryios	7	6	0.0458	0.0400
T066F004	Ay. Dimitrios	6	6	0.0392	0.0400
T066F115	Asomatos	2	4	0.0131	0.0267
T067F007	Ay. Paraskevi	6	10	0.0392	0.0667
T072F002	Ay. Philippos	3	1	0.0196	0.0067
T072F005	Ay. Charalampos	1	0	0.0065	0.0000
T075F002	Asomatos	10	8	0.0654	0.0533
T075F008	Taxiarchis	8	6	0.0523	0.0400
T076F005	Unidentified ruined church	2	5	0.0131	0.0333
T076F013	Ay. Kyriaki?	1	3	0.0065	0.0200
T080F001	Unidentified chapel	5	2	0.0327	0.0133
T081F001	Ay. Zacharias	1	1	0.0065	0.0067
T081F002	Ay. Nikolaos	1	0	0.0065	0.0000
T093F001	Ay. Asomati	11	4	0.0719	0.0267
T100F001	Unidentified church	2	0	0.0131	0.0000

APPENDIX B (continued)

TABLE LXXVI. RAW COUNTS AND PERCENTAGES OF VISIBLE SETTLEMENTS FOR BYZANTINE-PERIOD CHURCHES FROM THE BYZANTINE AND RANDOMLY GENERATED VIEWSHEDS (continued)

ID	Name	Byz: Raw	Rand: Raw	Byz: Norm	Rand: Norm
T104F001	Ay. Anargyroi	18	8	0.1176	0.0533
T104F002	Ay. Ioannis	15	7	0.0980	0.0467
T104F003	Unnamed chapel	13	7	0.0850	0.0467
T111F012	Panayia?	14	8	0.0915	0.0533
T113F002	Ay. Nikolaos	1	1	0.0065	0.0067
T113F008	Panayia	9	6	0.0588	0.0400
T114F011	Ay. Yeoryios Stephanopoulianos	2	4	0.0131	0.0267
T114F012	Sotiras	1	1	0.0065	0.0067
T118F001	Asomatos	10	8	0.0654	0.0533
T118F105	Unidentified church	21	13	0.1373	0.0867
T118F107	Unidentified church	20	12	0.1307	0.0800
T118F132	Unidentified church	35	17	0.2288	0.1133
T120F001	Ay. Petros	19	6	0.1242	0.0400
T130F001	Unidentified church	13	7	0.0850	0.0467
T130F004	Ay. Nikolaos	8	6	0.0523	0.0400
T130F005	Archangelos Michail	7	6	0.0458	0.0400
T132F004	Unidentified chapel	9	6	0.0588	0.0400
T137F025	Ay. Ioannis	19	14	0.1242	0.0933
T137F043	Ay. Isidoros	5	8	0.0327	0.0533
T137F124	Ay. Yeoryios	0	5	0.0000	0.0333
T138F001	Unidentified chapel	1	1	0.0065	0.0067
T138F083	Unidentified chapel	4	3	0.0261	0.0200
T145F002	Ay. Yeoryios	0	1	0.0000	0.0067
T161F002	Ay. Konstantinos	6	3	0.0392	0.0200
T164F001	Ay. Theodoroi	19	10	0.1242	0.0667
T169F003	Ay. Nikolaos / Ay. Yeoryios	14	4	0.0915	0.0267
T169F008	Unidentified chapel	16	5	0.1046	0.0333
T169F010	Unidentified chapel	13	5	0.0850	0.0333
T170F104	Ay. Panteleimon kai Sozon	2	1	0.0131	0.0067
T170F111	Ay. Dimitris?	5	2	0.0327	0.0133
T171F002	Ay. Yeoryios	6	2	0.0392	0.0133
T172F003	Ay. Theodoroi	13	8	0.0850	0.0533
T182F001	Ay. Paraskevi	0	2	0.0000	0.0133
T182F009	Ay. Theodoroi / Ay. Nikon	0	3	0.0000	0.0200
T189F001	Ay. Therapon	6	7	0.0392	0.0467
T189F027	Taxiarchis	14	7	0.0915	0.0467
T191F003	Ay. Philippos	35	23	0.2288	0.1533
T191F107	Ay. Theodoroi	52	31	0.3399	0.2067
T192F101	Ay. Paraskevi	3	2	0.0196	0.0133
T194F002	Ay. Sotira	21	15	0.1373	0.1000
T201F002	Episkopi	0	0	0.0000	0.0000
T212F014	Panayia	6	7	0.0392	0.0467
T225F001	Koimisi	1	0	0.0065	0.0000
T240F001	Ay. Nikolaos	5	5	0.0327	0.0333
T261F002	Panayia, Dormition	11	4	0.0719	0.0267
T271F001	Ay. Yeoryios	1	2	0.0065	0.0133
T271F003	Ay. Nikolaos	2	1	0.0131	0.0067
T279F001	Ay. Yeoryios	0	1	0.0000	0.0067

APPENDIX B (continued)

TABLE LXXVI. RAW COUNTS AND PERCENTAGES OF VISIBLE SETTLEMENTS FOR BYZANTINE-PERIOD CHURCHES FROM THE BYZANTINE AND RANDOMLY GENERATED VIEWSHEDS (continued)

ID	Name	Byz: Raw	Rand: Raw	Byz: Norm	Rand: Norm
T280F002	Unidentified chapel	1	1	0.0065	0.0067
T302F002	Ay. Yeoryios	1	0	0.0065	0.0000
T316F001	Ay. Vasilios	0	4	0.0000	0.0267
T327F003	Ay. Varvara	10	4	0.0654	0.0267
T341F006	Ay. Nikolaos	1	4	0.0065	0.0267
T363F018	Ay. Petros	27	16	0.1765	0.1067
T364F003	Ay. Vasilios	5	4	0.0327	0.0267
T365F010	Ay. Ilias	27	11	0.1765	0.0733
T375F001	Trisagia	20	11	0.1307	0.0733
T375F003	Unidentified ruined church	14	10	0.0915	0.0667
T378F001	Panayia	1	6	0.0065	0.0400
T382F001	Ay. Petros	35	17	0.2288	0.1133
T384F001	Ay. Asomatos	0	0	0.0000	0.0000
T386F001	Ay. Petrakis	15	7	0.0980	0.0467
T392F005	Unidentified chapel	5	3	0.0327	0.0200
T400F001	Ay. Sergios and Vachos	13	7	0.0850	0.0467
T401F001	Ay. Charampos	16	9	0.1046	0.0600
T404F007	Ay. Solomonis	18	7	0.1176	0.0467
T405F001	Ay. Yiannis Prodromos	30	12	0.1961	0.0800
T409F001	Ay. Nikolaos	13	8	0.0850	0.0533
T416F001	Ay. Varvara	25	13	0.1634	0.0867
T416F004	Unidentified chapel	27	15	0.1765	0.1000
T420F002	Panayia Ayitria	19	13	0.1242	0.0867
T422F001	Ay. Panteleimon	14	5	0.0915	0.0333
T473F001	Ay. Theodoroi	5	6	0.0327	0.0400
T483F001	Ay. Asomatoi	1	2	0.0065	0.0133

APPENDIX B (continued)

TABLE LXXVII. RAW COUNTS AND PERCENTAGES OF VISIBLE SETTLEMENTS FOR EACH BAY IN THE BYZANTINE, OTTOMAN I, VENETIAN, AND OTTOMAN II PERIODS, AS WELL AS THE RANDOMLY GENERATED VIEWSHED

Bay ID	Byz: Raw	Ott1: Raw	Ven: Raw	Ott2: Raw	Rand: Raw	Byz: Norm	Ott1: Norm	Ven: Norm	Ott2: Norm	Rand: Norm
0	0	0	0	1	3	0.0000	0.0000	0.0000	0.0068	0.0200
1	0	0	0	1	1	0.0000	0.0000	0.0000	0.0068	0.0067
2	1	2	1	0	0	0.0065	0.0126	0.0099	0.0000	0.0000
3	0	1	1	0	0	0.0000	0.0063	0.0099	0.0000	0.0000
4	3	3	2	2	1	0.0196	0.0189	0.0198	0.0135	0.0067
5	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
6	0	0	0	0	1	0.0000	0.0000	0.0000	0.0000	0.0067
7	1	1	0	1	1	0.0065	0.0063	0.0000	0.0068	0.0067
8	1	0	0	0	0	0.0065	0.0000	0.0000	0.0000	0.0000
9	4	1	1	4	1	0.0261	0.0063	0.0099	0.0270	0.0067
10	3	2	2	2	0	0.0196	0.0126	0.0198	0.0135	0.0000
11	5	4	2	1	2	0.0327	0.0252	0.0198	0.0068	0.0133
12	4	3	2	1	1	0.0261	0.0189	0.0198	0.0068	0.0067
13	2	2	2	3	2	0.0131	0.0126	0.0198	0.0203	0.0133
14	1	3	3	5	3	0.0065	0.0189	0.0297	0.0338	0.0200
15	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
16	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
17	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
18	1	2	2	2	0	0.0065	0.0126	0.0198	0.0135	0.0000
19	0	1	1	1	0	0.0000	0.0063	0.0099	0.0068	0.0000
20	0	1	1	2	0	0.0000	0.0063	0.0099	0.0135	0.0000
21	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
22	9	12	6	10	4	0.0588	0.0755	0.0594	0.0676	0.0267
23	1	2	1	1	0	0.0065	0.0126	0.0099	0.0068	0.0000
24	0	1	0	0	0	0.0000	0.0063	0.0000	0.0000	0.0000
25	1	4	0	3	2	0.0065	0.0252	0.0000	0.0203	0.0133
26	4	2	1	2	0	0.0261	0.0126	0.0099	0.0135	0.0000
27	4	4	1	1	0	0.0261	0.0252	0.0099	0.0068	0.0000
28	10	9	5	8	3	0.0654	0.0566	0.0495	0.0541	0.0200
29	15	14	9	13	8	0.0980	0.0881	0.0891	0.0878	0.0533
30	0	0	0	4	3	0.0000	0.0000	0.0000	0.0270	0.0200
31	1	2	2	5	3	0.0065	0.0126	0.0198	0.0338	0.0200
32	1	1	1	5	5	0.0065	0.0063	0.0099	0.0338	0.0333
33	2	4	3	7	6	0.0131	0.0252	0.0297	0.0473	0.0400
34	1	2	2	5	4	0.0065	0.0126	0.0198	0.0338	0.0267
35	2	1	1	1	2	0.0131	0.0063	0.0099	0.0068	0.0133
36	6	9	4	6	2	0.0392	0.0566	0.0396	0.0405	0.0133
37	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
38	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
39	1	1	1	1	3	0.0065	0.0063	0.0099	0.0068	0.0200
40	1	1	1	1	2	0.0065	0.0063	0.0099	0.0068	0.0133

APPENDIX B (continued)

TABLE LXXVIII. CENTRALITY MEASURES FOR EACH NODE IN THE BYZANTINE-PERIOD PATHWAY NETWORK

Unit ID	Name	All pathways			Primary pathways (walled paths and *kalderimia*)		
		Degree	Betweenness	Closeness	Degree	Betweenness	Closeness
T005	Ayia Varvara	0.059	0.004	0.249	0.059	0.004	0.122
T006	Ayia Varvara (Phtio)	0.059	0.004	0.249	0.059	0.004	0.122
T008	Ayios Yeoryios	0.086	0.000	0.252	0.086	0.000	0.117
T012	Akia	0.020	0.000	0.237	0.020	0.000	0.116
T013	Piontes	0.013	0.000	0.202	0.013	0.000	0.085
T014	Alika	0.086	0.158	0.248	0.072	0.133	0.106
T020	Areopoli (Tsimova)	0.079	0.027	0.198	0.079	0.035	0.121
T021	Aryilia	0.132	0.259	0.306	0.112	0.243	0.112
T024	Briki	0.092	0.003	0.252	0.092	0.002	0.117
T027	Charia	0.046	0.000	0.197	0.046	0.000	0.121
T028	Charouda	0.026	0.005	0.227	0.026	0.030	0.128
T029	Chimara	0.053	0.016	0.215	0.039	0.177	0.121
T035	Dry	0.046	0.000	0.217	0.046	0.000	0.105
T036	Dryalos	0.092	0.019	0.276	0.066	0.014	0.123
T038	Erimos	0.072	0.000	0.246	0.072	0.000	0.116
T044	Gonea	0.053	0.009	0.247	0.046	0.000	0.109
T051	Kaphiona	0.079	0.059	0.278	0.079	0.177	0.128
T055	Karynia	0.092	0.038	0.277	0.086	0.011	0.117
T063	Kechrianika	0.072	0.023	0.237	0.066	0.033	0.112
T066	Keria	0.046	0.000	0.217	0.046	0.000	0.105
T068	Kita	0.105	0.040	0.268	0.099	0.064	0.119
T072	Korogonianika	0.026	0.003	0.178	0.007	0.000	0.079
T075	Kouloumi	0.118	0.205	0.292	0.118	0.332	0.125
T076	Kounos	0.099	0.029	0.239	0.092	0.038	0.113
T081	Layia	0.039	0.096	0.236	0.039	0.096	0.092
T089	Leontakis	0.026	0.004	0.214	0.026	0.011	0.096
T093	Loukadika	0.105	0.115	0.258	0.079	0.163	0.117
T100	Nyphi, Mesa Chora	0.072	0.052	0.293	0.059	0.049	0.105
T104	Mina	0.086	0.026	0.275	0.086	0.011	0.117
T106	Mountanistika	0.026	0.085	0.259	0.007	0.000	0.089
T111	Nomia	0.118	0.055	0.269	0.112	0.085	0.119
T113	Ochia	0.059	0.001	0.218	0.053	0.001	0.105
T114	Oitylo	0.033	0.000	0.167	0.026	0.000	0.111
T118	Pangia	0.066	0.000	0.226	0.059	0.000	0.111
T120	Palaiochora	0.072	0.059	0.275	0.072	0.169	0.128
T130	Polemitas	0.053	0.060	0.288	0.020	0.011	0.107
T132	Porachia	0.039	0.025	0.178	0.033	0.054	0.091
T137	Pyrgos Dirou	0.066	0.026	0.217	0.066	0.126	0.128
T138	Pyrrichos (Kavalos)	0.105	0.095	0.223	0.079	0.319	0.126
T139	Riganochora	0.053	0.009	0.247	0.053	0.130	0.116
T146	Skaltsotianika	0.059	0.014	0.247	0.053	0.003	0.109
T149	Skoutari	0.046	0.020	0.212	0.026	0.135	0.121
T161	Tsikalia	0.046	0.039	0.207	0.039	0.028	0.098
T169	Ano Boularioi	0.046	0.008	0.216	0.039	0.015	0.104
T170	Kotraphi	0.020	0.001	0.201	0.020	0.005	0.098
T171	Kato Boularioi	0.086	0.036	0.239	0.079	0.066	0.113
T172	Kato Meri	0.059	0.004	0.249	0.059	0.004	0.122

APPENDIX B (continued)

TABLE LXXVIII. CENTRALITY MEASURES FOR EACH NODE IN THE BYZANTINE-PERIOD PATHWAY NETWORK (continued)

Unit ID	Name	All pathways			Primary pathways (walled paths and *kalderimia*)		
		Degree	Betweenness	Closeness	Degree	Betweenness	Closeness
T189	Glezou	0.066	0.030	0.217	0.066	0.128	0.128
T190	Goulas	0.007	0.000	0.176	0.007	0.000	0.091
T191	Ippola	0.059	0.000	0.225	0.053	0.000	0.111
T197	Kourines	0.138	0.052	0.268	0.125	0.057	0.119
T199	Karavas	0.105	0.039	0.240	0.099	0.054	0.113
T200	Kastri	0.033	0.000	0.152	0.026	0.000	0.085
T201	Katayioryis	0.145	0.055	0.268	0.132	0.059	0.119
T212	Mantophoros	0.039	0.010	0.228	0.039	0.060	0.128
T215	Marmatsouka	0.059	0.003	0.243	0.046	0.000	0.123
T224	Passava Fortress	0.039	0.003	0.178	0.039	0.006	0.111
T225	Pepo	0.026	0.006	0.215	0.020	0.000	0.096
T233	Skaphidianika	0.059	0.000	0.225	0.053	0.000	0.111
T255	Makrynaros	0.079	0.001	0.248	0.072	0.003	0.109
T261	Drymos (Driali)	0.092	0.083	0.313	0.046	0.013	0.104
T271	Palaia Karyoupolis	0.066	0.009	0.186	0.053	0.004	0.115
T278	Korakianika	0.086	0.181	0.322	0.059	0.049	0.105
T293	Dimaristika	0.046	0.022	0.274	0.039	0.000	0.098
T301	Palaia Tserova	0.039	0.002	0.185	0.039	0.006	0.118
T302	Paliochori	0.059	0.018	0.283	0.007	0.000	0.096
T307	US 10	0.086	0.002	0.252	0.079	0.000	0.117
T327	Vata	0.079	0.001	0.248	0.072	0.000	0.109
T341	Yerma	0.046	0.001	0.169	0.039	0.002	0.114
T356	Yeroyiannoukou Kalyvia	0.033	0.000	0.152	0.000	0.000	0.043
T359	Moni Spiliotissas	0.033	0.000	0.167	0.020	0.000	0.111
T360	Proskephalia	0.013	0.000	0.163	0.000	0.000	0.043
T362	Kouvouklia	0.079	0.064	0.252	0.066	0.190	0.129
T363	Koulouvades	0.053	0.015	0.216	0.053	0.090	0.128
T364	Males	0.046	0.010	0.197	0.039	0.000	0.121
T365	Skyphianika	0.079	0.013	0.275	0.053	0.000	0.122
T372	US 4	0.026	0.068	0.217	0.020	0.011	0.085
T373	US 5	0.013	0.002	0.230	0.013	0.022	0.097
T374	Avles	0.033	0.000	0.214	0.000	0.000	0.043
T375	Lakkos	0.020	0.000	0.200	0.020	0.000	0.111
T382	Soulia	0.059	0.024	0.250	0.046	0.066	0.129
T383	US 8	0.053	0.002	0.243	0.039	0.003	0.123
T385	Moni Panayias Tsipiotissas	0.046	0.004	0.185	0.046	0.005	0.114
T386	Moni Panayias Phaneromenis	0.099	0.042	0.269	0.086	0.133	0.129
T389	US 67	0.026	0.012	0.193	0.007	0.000	0.080
T390	US 9	0.007	0.000	0.172	0.007	0.000	0.091
T391	US 12	0.020	0.011	0.214	0.013	0.000	0.091
T392	Korines	0.105	0.070	0.270	0.092	0.224	0.129
T396	US 13	0.013	0.005	0.190	0.000	0.000	0.043
T397	Pachia	0.007	0.000	0.176	0.000	0.000	0.043
T398	US 15	0.059	0.134	0.213	0.026	0.075	0.098
T403	US 20	0.086	0.000	0.252	0.086	0.000	0.117

APPENDIX B (continued)

TABLE LXXVIII. CENTRALITY MEASURES FOR EACH NODE IN THE BYZANTINE-PERIOD PATHWAY NETWORK (continued)

Unit ID	Name	All pathways			Primary pathways (walled paths and *kalderimia*)		
		Degree	Betweenness	Closeness	Degree	Betweenness	Closeness
T404	US 21	0.026	0.001	0.227	0.020	0.000	0.117
T405	US 22	0.039	0.003	0.263	0.007	0.000	0.111
T406	US 23	0.086	0.000	0.252	0.086	0.000	0.117
T407	Palaia Kokkinoyia	0.033	0.000	0.152	0.026	0.000	0.085
T409	US 25	0.046	0.097	0.268	0.039	0.104	0.098
T410	Sela	0.053	0.005	0.252	0.020	0.000	0.102
T411	US 27	0.046	0.000	0.245	0.046	0.000	0.109
T414	Vlistiko	0.020	0.000	0.208	0.013	0.003	0.113
T416	Parapodas	0.026	0.002	0.208	0.026	0.002	0.122
T417	Divola	0.039	0.001	0.185	0.033	0.003	0.118
T420	Moni Panayias Ayitrias	0.059	0.000	0.225	0.053	0.000	0.111
T421	US 33	0.039	0.002	0.261	0.039	0.002	0.120
T422	Katsipos	0.033	0.004	0.209	0.033	0.018	0.103
T423	US 35	0.046	0.026	0.178	0.033	0.011	0.085
T424	Nyphi, Exo Chora	0.059	0.034	0.293	0.059	0.071	0.105
T429	Vlacherna	0.059	0.000	0.248	0.059	0.000	0.116
T432	US 36	0.007	0.000	0.188	0.007	0.000	0.083
T436	US 41	0.013	0.005	0.230	0.013	0.011	0.075
T437	US 42	0.013	0.001	0.206	0.013	0.022	0.080
T438	US 43	0.033	0.020	0.235	0.013	0.033	0.085
T441	US 46	0.007	0.000	0.172	0.007	0.000	0.091
T442	US 47	0.079	0.001	0.248	0.072	0.003	0.109
T444	US 49	0.020	0.000	0.212	0.000	0.000	0.043
T445	US 50	0.053	0.000	0.246	0.046	0.000	0.109
T446	US 51	0.059	0.012	0.253	0.039	0.000	0.109
T447	Vikolias	0.053	0.000	0.246	0.039	0.000	0.109
T451	Lakka Sangia	0.066	0.018	0.242	0.000	0.000	0.043
T452	Lakka Armaka	0.013	0.000	0.230	0.000	0.000	0.043
T454	US 73	0.026	0.000	0.270	0.013	0.000	0.096
T455	US 53	0.086	0.087	0.295	0.000	0.000	0.043
T456	US 54	0.059	0.018	0.284	0.000	0.000	0.043
T458	US 55	0.026	0.000	0.259	0.000	0.000	0.043
T459	US 56	0.059	0.000	0.225	0.000	0.000	0.043
T461	Stou Gorgona	0.086	0.110	0.303	0.033	0.001	0.120
T462	US 74	0.026	0.000	0.270	0.013	0.000	0.096
T463	Lakoi	0.033	0.014	0.257	0.000	0.000	0.043
T464	Trilangado	0.046	0.015	0.277	0.007	0.000	0.098
T466	Sarantaria	0.046	0.015	0.277	0.000	0.000	0.043
T467	Kako Vouni	0.046	0.007	0.219	0.000	0.000	0.043
T468	Nikolakkos	0.013	0.002	0.222	0.000	0.000	0.043
T469	Pano Oros	0.059	0.126	0.292	0.007	0.000	0.071
T470	US 57	0.013	0.008	0.201	0.007	0.000	0.085
T473	Phranezi	0.053	0.001	0.197	0.053	0.002	0.121
T474	US 61	0.039	0.005	0.226	0.033	0.013	0.111
T475	US 62	0.013	0.000	0.217	0.000	0.000	0.043
T476	US 63	0.013	0.000	0.165	0.000	0.000	0.043

APPENDIX B (continued)

TABLE LXXVIII. CENTRALITY MEASURES FOR EACH NODE IN THE BYZANTINE-PERIOD PATHWAY NETWORK (continued)

Unit ID	Name	All pathways			Primary pathways (walled paths and *kalderimia*)		
		Degree	Betweenness	Closeness	Degree	Betweenness	Closeness
T477	US 64	0.013	0.003	0.183	0.000	0.000	0.043
T479	US 66	0.059	0.000	0.225	0.053	0.000	0.111
T480	US 68	0.033	0.000	0.152	0.026	0.000	0.085
T481	US 69	0.033	0.003	0.261	0.033	0.002	0.120
T482	US 70	0.026	0.022	0.241	0.000	0.000	0.043
T483	US 71	0.013	0.001	0.210	0.000	0.000	0.043
T484	US 75	0.059	0.043	0.292	0.053	0.038	0.105
T485	US 76	0.013	0.002	0.230	0.000	0.000	0.043
T486	US 77	0.039	0.019	0.232	0.013	0.011	0.090
T487	US 78	0.039	0.005	0.252	0.007	0.000	0.097
T488	US 79	0.007	0.000	0.227	0.007	0.000	0.096
T489	Rizakia	0.013	0.000	0.200	0.007	0.000	0.085
T491	US 81	0.013	0.000	0.229	0.007	0.000	0.096
T492	US 82	0.020	0.013	0.248	0.007	0.000	0.096
T493	US 83	0.007	0.000	0.199	0.000	0.000	0.043

APPENDIX B (continued)

TABLE LXXIX. CENTRALITY MEASURES FOR EACH NODE IN THE OTTOMAN I-PERIOD PATHWAY NETWORK

Unit ID	Name	All pathways			Primary pathways (walled paths and *kalderimia*)		
		Degree	Betweenness	Closeness	Degree	Betweenness	Closeness
T005	Ayia Varvara	0.057	0.000	0.236	0.057	0.000	0.161
T006	Ayia Varvara (Phtio)	0.057	0.000	0.236	0.057	0.000	0.161
T008	Ayios Yeoryios	0.108	0.000	0.245	0.108	0.000	0.153
T012	Akia	0.070	0.011	0.254	0.070	0.004	0.161
T013	Piontes	0.038	0.013	0.219	0.025	0.011	0.137
T014	Alika	0.089	0.094	0.228	0.070	0.121	0.148
T020	Areopoli (Tsimova)	0.146	0.041	0.234	0.146	0.029	0.165
T021	Aryilia	0.108	0.238	0.304	0.089	0.160	0.153
T024	Briki	0.120	0.111	0.267	0.120	0.153	0.164
T027	Charia	0.089	0.002	0.231	0.076	0.000	0.163
T028	Charouda	0.063	0.001	0.229	0.057	0.000	0.162
T029	Chimara	0.051	0.070	0.239	0.032	0.216	0.166
T034	Diporo	0.032	0.006	0.201	0.032	0.023	0.136
T035	Dry	0.051	0.001	0.203	0.044	0.000	0.142
T036	Dryalos	0.120	0.111	0.271	0.114	0.079	0.173
T038	Erimos	0.108	0.000	0.245	0.108	0.000	0.153
T042	Gardenitsa	0.108	0.000	0.245	0.108	0.000	0.153
T044	Gonea	0.038	0.006	0.213	0.038	0.005	0.142
T047	Kainouryia Chora	0.057	0.027	0.219	0.044	0.052	0.144
T049	Kalonioi	0.032	0.012	0.211	0.019	0.000	0.140
T051	Kaphiona	0.082	0.084	0.273	0.082	0.117	0.170
T054	Karea	0.000	0.000	0.083	0.000	0.000	0.071
T055	Karynia	0.057	0.017	0.246	0.025	0.011	0.137
T063	Kechrianika	0.070	0.014	0.226	0.070	0.027	0.152
T064	Kelepha	0.089	0.006	0.199	0.082	0.011	0.148
T068	Kita	0.139	0.047	0.255	0.139	0.054	0.158
T072	Korogonianika	0.057	0.027	0.219	0.038	0.047	0.143
T073	Kotronas	0.051	0.009	0.248	0.051	0.004	0.147
T075	Kouloumi	0.044	0.112	0.277	0.044	0.155	0.167
T076	Kounos	0.082	0.016	0.226	0.082	0.029	0.152
T077	Koutrela	0.114	0.054	0.267	0.114	0.075	0.164
T079	Kryoneri	0.019	0.000	0.167	0.013	0.000	0.137
T080	Kyparissos	0.025	0.019	0.210	0.025	0.103	0.143
T081	Layia	0.076	0.167	0.272	0.057	0.127	0.146
T089	Leontakis	0.032	0.014	0.214	0.013	0.000	0.123
T093	Loukadika	0.101	0.111	0.266	0.076	0.207	0.160
T100	Nyphi, Mesa Chora	0.057	0.022	0.275	0.038	0.000	0.142
T104	Mina	0.146	0.106	0.273	0.120	0.041	0.154
T109	Nikandreio	0.089	0.002	0.231	0.076	0.000	0.163
T111	Nomia	0.165	0.068	0.256	0.165	0.085	0.159
T113	Ochia	0.057	0.000	0.203	0.051	0.000	0.142
T114	Oitylo	0.089	0.006	0.199	0.082	0.003	0.148
T117	Pachianika	0.063	0.096	0.289	0.006	0.000	0.127
T118	Pangia	0.051	0.000	0.214	0.051	0.001	0.146
T132	Porachia	0.044	0.002	0.187	0.038	0.097	0.141
T133	Porto Kayio	0.038	0.000	0.181	0.032	0.000	0.134
T137	Pyrgos Dirou	0.089	0.002	0.231	0.076	0.000	0.163

APPENDIX B (continued)

TABLE LXXIX. CENTRALITY MEASURES FOR EACH NODE IN THE OTTOMAN I-PERIOD PATHWAY NETWORK (continued)

Unit ID	Name	All pathways			Primary pathways (walled paths and *kalderimia*)		
		Degree	Betweenness	Closeness	Degree	Betweenness	Closeness
T138	Pyrrichos (Kavalos)	0.120	0.046	0.237	0.095	0.170	0.171
T139	Riganochora	0.051	0.019	0.214	0.051	0.016	0.142
T145	Skala	0.089	0.015	0.199	0.082	0.011	0.148
T146	Skaltsotianika	0.038	0.000	0.213	0.038	0.004	0.142
T152	Sotiras (Kouskouni)	0.146	0.041	0.234	0.146	0.029	0.165
T155	Stavri	0.139	0.030	0.252	0.139	0.036	0.158
T161	Tsikalia	0.038	0.020	0.191	0.032	0.019	0.138
T163	Vachos	0.120	0.025	0.218	0.101	0.004	0.155
T167	Vatheia	0.044	0.018	0.226	0.019	0.098	0.140
T169	Ano Boularioi	0.032	0.000	0.202	0.025	0.005	0.141
T170	Kotraphi	0.019	0.001	0.187	0.019	0.003	0.132
T171	Kato Boularioi	0.089	0.035	0.228	0.082	0.060	0.153
T172	Kato Meri	0.051	0.000	0.235	0.051	0.000	0.161
T181	Chalopyrgos	0.032	0.000	0.243	0.019	0.021	0.137
T191	Ippola	0.044	0.000	0.214	0.044	0.000	0.146
T199	Karavas	0.082	0.016	0.226	0.082	0.029	0.152
T215	Marmatsouka	0.082	0.002	0.231	0.070	0.000	0.163
T219	Neasa	0.044	0.000	0.203	0.044	0.000	0.142
T224	Passava Fortress	0.057	0.000	0.181	0.057	0.000	0.144
T225	Pepo	0.032	0.005	0.210	0.013	0.000	0.123
T231	Psio	0.114	0.003	0.245	0.114	0.002	0.153
T236	Tigani	0.108	0.000	0.245	0.108	0.000	0.153
T238	Tserasia	0.095	0.001	0.199	0.095	0.002	0.154
T261	Drymos (Driali)	0.070	0.076	0.295	0.044	0.011	0.142
T269	Kaliazi	0.101	0.001	0.199	0.095	0.004	0.154
T271	Palaia Karyoupolis	0.108	0.012	0.217	0.095	0.003	0.154
T278	Korakianika	0.057	0.094	0.299	0.051	0.021	0.142
T279	Kozia	0.101	0.001	0.199	0.095	0.004	0.154
T293	Dimaristika	0.038	0.026	0.266	0.025	0.011	0.139
T299	Olympies	0.032	0.030	0.278	0.019	0.000	0.139
T301	Palaia Tserova	0.063	0.005	0.215	0.063	0.023	0.160
T302	Paliochori	0.032	0.005	0.259	0.006	0.000	0.127
T321	Soloteri	0.057	0.181	0.293	0.057	0.118	0.148
T327	Vata	0.070	0.008	0.251	0.057	0.003	0.147
T341	Yerma	0.114	0.014	0.200	0.108	0.011	0.155
T343	Kelepha Fortress	0.082	0.000	0.198	0.082	0.000	0.148
T352	Kondili	0.019	0.008	0.232	0.006	0.000	0.141
T356	Yeroyiannoukou Kalyvia	0.038	0.000	0.181	0.000	0.000	0.071
T359	Moni Spiliotissas	0.019	0.000	0.167	0.006	0.000	0.131
T365	Skyphianika	0.063	0.007	0.258	0.057	0.000	0.161
T366	US 3	0.051	0.033	0.271	0.000	0.000	0.071
T374	Avles	0.025	0.000	0.201	0.000	0.000	0.071
T378	US 6	0.006	0.000	0.166	0.006	0.000	0.131
T385	Moni Panayias Tsipiotissas	0.101	0.001	0.199	0.101	0.004	0.155
T386	Moni Panayias Phaneromenis	0.127	0.056	0.254	0.114	0.079	0.173

APPENDIX B (continued)

TABLE LXXIX. CENTRALITY MEASURES FOR EACH NODE IN THE OTTOMAN I-PERIOD PATHWAY NETWORK (continued)

Unit ID	Name	All pathways			Primary pathways (walled paths and *kalderimia*)		
		Degree	Betweenness	Closeness	Degree	Betweenness	Closeness
T391	US 12	0.019	0.000	0.179	0.013	0.000	0.124
T392	Korines	0.133	0.061	0.254	0.120	0.084	0.173
T396	US 13	0.013	0.002	0.193	0.000	0.000	0.071
T398	US 15	0.025	0.005	0.223	0.013	0.000	0.133
T400	Marassi	0.114	0.009	0.246	0.114	0.004	0.153
T401	US 18	0.120	0.011	0.246	0.114	0.010	0.153
T402	US 19	0.013	0.000	0.216	0.006	0.000	0.123
T403	US 20	0.108	0.000	0.245	0.108	0.000	0.153
T407	Palaia Kokkinoyia	0.038	0.000	0.181	0.032	0.000	0.134
T410	Sela	0.057	0.005	0.253	0.006	0.000	0.136
T412	US 28	0.006	0.000	0.176	0.006	0.000	0.127
T413	US 29	0.013	0.000	0.177	0.013	0.000	0.127
T414	Vlistiko	0.019	0.001	0.223	0.013	0.007	0.146
T417	Divola	0.070	0.006	0.215	0.070	0.028	0.161
T420	Moni Panayias Ayitrias	0.108	0.000	0.245	0.108	0.000	0.153
T421	US 33	0.076	0.079	0.272	0.076	0.113	0.170
T422	Katsipos	0.019	0.001	0.185	0.013	0.000	0.132
T424	Nyphi, Exo Chora	0.051	0.019	0.275	0.051	0.021	0.142
T425	Nyphi, Chalikia	0.038	0.000	0.271	0.038	0.000	0.142
T427	Stavrikio	0.108	0.000	0.245	0.108	0.000	0.153
T429	Vlacherna	0.108	0.000	0.245	0.108	0.000	0.153
T430	Achillio Fortress	0.038	0.000	0.181	0.025	0.000	0.134
T433	Liostypha	0.108	0.000	0.245	0.108	0.000	0.153
T434	Skourka	0.076	0.011	0.251	0.057	0.004	0.147
T435	US 39	0.076	0.011	0.251	0.057	0.004	0.147
T439	US 44	0.146	0.041	0.234	0.146	0.029	0.165
T440	US 45	0.019	0.000	0.228	0.006	0.000	0.124
T441	US 46	0.006	0.000	0.161	0.006	0.000	0.124
T443	US 48	0.019	0.000	0.212	0.013	0.000	0.136
T445	US 50	0.051	0.001	0.249	0.038	0.000	0.147
T447	Vikolias	0.063	0.015	0.253	0.038	0.000	0.147
T448	US 52	0.013	0.000	0.180	0.000	0.000	0.071
T449	US 72	0.006	0.000	0.180	0.006	0.000	0.123
T450	Lakka Kalantrea	0.057	0.029	0.242	0.000	0.000	0.071
T451	Lakka Sangia	0.032	0.008	0.221	0.000	0.000	0.071
T452	Lakka Armaka	0.019	0.001	0.212	0.000	0.000	0.071
T453	Lakka Achrada	0.051	0.002	0.215	0.000	0.000	0.071
T454	US 73	0.019	0.000	0.253	0.006	0.000	0.127
T455	US 53	0.038	0.030	0.256	0.000	0.000	0.071
T456	US 54	0.013	0.000	0.224	0.000	0.000	0.071
T457	Throkalou	0.057	0.093	0.285	0.000	0.000	0.071
T458	US 55	0.019	0.000	0.250	0.000	0.000	0.071
T460	Bastounes	0.057	0.038	0.281	0.032	0.001	0.158
T461	Stou Gorgona	0.051	0.028	0.262	0.032	0.001	0.158
T463	Lakoi	0.038	0.022	0.251	0.000	0.000	0.071
T464	Trilangado	0.063	0.017	0.261	0.013	0.011	0.123

APPENDIX B (continued)

TABLE LXXIX. CENTRALITY MEASURES FOR EACH NODE IN THE OTTOMAN I-PERIOD PATHWAY NETWORK (continued)

Unit ID	Name	All pathways			Primary pathways (walled paths and *kalderimia*)		
		Degree	Betweenness	Closeness	Degree	Betweenness	Closeness
T465	Stou Laou	0.032	0.000	0.233	0.006	0.000	0.112
T466	Sarantaria	0.057	0.015	0.261	0.000	0.000	0.071
T467	Kako Vouni	0.013	0.002	0.193	0.000	0.000	0.071
T468	Nikolakkos	0.025	0.005	0.219	0.000	0.000	0.071
T469	Pano Oros	0.070	0.123	0.257	0.006	0.000	0.130
T471	US 58	0.019	0.010	0.217	0.000	0.000	0.071
T472	US 59	0.076	0.000	0.228	0.076	0.000	0.163
T474	US 61	0.044	0.006	0.217	0.044	0.010	0.147
T475	US 62	0.013	0.000	0.208	0.000	0.000	0.071
T476	US 63	0.044	0.002	0.205	0.000	0.000	0.071
T477	US 64	0.013	0.000	0.192	0.000	0.000	0.071
T478	Mesopangi	0.063	0.001	0.217	0.063	0.001	0.147
T479	US 66	0.051	0.001	0.214	0.044	0.000	0.146
T481	US 69	0.038	0.055	0.276	0.038	0.076	0.166
T483	US 71	0.025	0.007	0.209	0.000	0.000	0.071
T485	US 76	0.006	0.000	0.203	0.000	0.000	0.071
T486	US 77	0.038	0.016	0.253	0.006	0.000	0.127
T487	US 78	0.038	0.010	0.254	0.006	0.000	0.127
T489	Rizakia	0.032	0.002	0.233	0.013	0.000	0.130
T490	US 80	0.019	0.000	0.216	0.013	0.000	0.130
T493	US 83	0.006	0.000	0.216	0.000	0.000	0.071

APPENDIX B (continued)

TABLE LXXX. CENTRALITY MEASURES FOR EACH NODE IN THE VENETIAN-PERIOD PATHWAY NETWORK

Unit ID	Name	All pathways			Primary pathways (walled paths and *kalderimia*)		
		Degree	Betweenness	Closeness	Degree	Betweenness	Closeness
T012	Akia	0.110	0.009	0.288	0.110	0.009	0.197
T013	Piontes	0.050	0.000	0.225	0.030	0.000	0.153
T014	Alika	0.170	0.051	0.281	0.170	0.062	0.203
T020	Areopoli (Tsimova)	0.140	0.133	0.309	0.140	0.161	0.204
T024	Briki	0.140	0.036	0.308	0.120	0.046	0.213
T027	Charia	0.080	0.019	0.245	0.080	0.038	0.177
T034	Diporo	0.060	0.002	0.225	0.040	0.000	0.164
T035	Dry	0.100	0.011	0.286	0.090	0.000	0.196
T036	Dryalos	0.120	0.000	0.271	0.120	0.000	0.188
T042	Gardenitsa	0.040	0.007	0.257	0.040	0.003	0.172
T044	Gonea	0.080	0.030	0.227	0.060	0.034	0.161
T047	Kainouryia Chora	0.160	0.041	0.287	0.150	0.035	0.195
T049	Kalonioi	0.000	0.000	0.111	0.000	0.000	0.091
T054	Karea	0.150	0.051	0.303	0.130	0.016	0.188
T055	Karynia	0.110	0.022	0.251	0.110	0.040	0.182
T063	Kechrianika	0.120	0.008	0.25	0.110	0.016	0.180
T064	Kelepha	0.070	0.002	0.236	0.060	0.000	0.175
T067	Kipoula	0.150	0.024	0.286	0.150	0.035	0.195
T068	Kita	0.080	0.030	0.227	0.050	0.026	0.161
T072	Korogonianika	0.070	0.010	0.305	0.070	0.003	0.177
T073	Kotronas	0.110	0.119	0.307	0.110	0.151	0.209
T075	Kouloumi	0.090	0.017	0.249	0.090	0.029	0.181
T076	Kounos	0.130	0.058	0.304	0.130	0.072	0.203
T077	Koutrela	0.030	0.000	0.203	0.020	0.000	0.164
T079	Kryoneri	0.080	0.145	0.272	0.060	0.093	0.165
T081	Layia	0.050	0.010	0.251	0.020	0.000	0.155
T089	Leontakis	0.160	0.225	0.339	0.110	0.164	0.197
T093	Loukadika	0.070	0.085	0.331	0.060	0.043	0.181
T100	Nyphi, Mesa Chora	0.140	0.035	0.3	0.130	0.016	0.188
T104	Mina	0.140	0.036	0.308	0.120	0.046	0.213
T109	Nikandreio	0.180	0.043	0.288	0.180	0.054	0.196
T111	Nomia	0.120	0.008	0.25	0.110	0.005	0.180
T114	Oitylo	0.130	0.022	0.282	0.130	0.025	0.193
T118	Pangia	0.060	0.004	0.197	0.050	0.063	0.159
T132	Porachia	0.050	0.000	0.187	0.040	0.000	0.151
T133	Porto Kayio	0.140	0.036	0.308	0.120	0.046	0.213
T137	Pyrgos Dirou	0.150	0.083	0.309	0.110	0.147	0.208
T138	Pyrrichos (Kavalos)	0.050	0.015	0.269	0.050	0.022	0.187
T139	Riganochora	0.110	0.020	0.249	0.110	0.016	0.180
T145	Skala	0.170	0.051	0.281	0.170	0.062	0.203
T152	Sotiras (Kouskouni)	0.150	0.018	0.283	0.150	0.018	0.194
T155	Stavri	0.050	0.011	0.216	0.030	0.000	0.155
T161	Tsikalia	0.160	0.052	0.288	0.140	0.006	0.188
T163	Vachos	0.120	0.082	0.316	0.120	0.096	0.210
T164	Vamvaka	0.080	0.037	0.239	0.040	0.066	0.161
T167	Vatheia	0.030	0.000	0.222	0.030	0.003	0.164
T169	Ano Boularioi	0.090	0.019	0.25	0.090	0.034	0.181

APPENDIX B (continued)

TABLE LXXX. CENTRALITY MEASURES FOR EACH NODE IN THE VENETIAN-PERIOD PATHWAY NETWORK (continued)

Unit ID	Name	All pathways			Primary pathways (walled paths and *kalderimia*)		
		Degree	Betweenness	Closeness	Degree	Betweenness	Closeness
T171	Kato Boularioi	0.070	0.002	0.236	0.060	0.000	0.175
T191	Ippola	0.140	0.036	0.308	0.120	0.046	0.213
T215	Marmatsouka	0.080	0.000	0.229	0.080	0.000	0.172
T224	Passava Fortress	0.050	0.003	0.248	0.020	0.000	0.155
T225	Pepo	0.110	0.000	0.27	0.110	0.000	0.187
T236	Tigani	0.130	0.001	0.251	0.130	0.004	0.187
T238	Tserasia	0.100	0.061	0.316	0.060	0.016	0.177
T261	Drymos (Driali)	0.140	0.002	0.251	0.140	0.006	0.188
T269	Kaliazi	0.150	0.036	0.287	0.130	0.004	0.187
T271	Palaia Karyoupolis	0.060	0.166	0.324	0.030	0.083	0.170
T293	Dimaristika	0.090	0.012	0.282	0.090	0.025	0.193
T301	Palaia Tserova	0.050	0.008	0.281	0.010	0.000	0.155
T302	Paliochori	0.100	0.032	0.31	0.070	0.003	0.177
T327	Vata	0.160	0.024	0.253	0.150	0.017	0.188
T341	Yerma	0.110	0.000	0.249	0.110	0.000	0.180
T343	Kelepha Fortress	0.020	0.000	0.266	0.010	0.000	0.170
T352	Kondili	0.050	0.000	0.187	0.000	0.000	0.091
T356	Yeroyiannoukou Kalyvia	0.030	0.000	0.203	0.010	0.000	0.157
T359	Moni Spiliotissas	0.100	0.011	0.286	0.090	0.000	0.196
T365	Skyphianika	0.010	0.000	0.2	0.010	0.000	0.157
T378	US 6	0.140	0.002	0.251	0.140	0.006	0.188
T385	Moni Panayias Tsipiotissas	0.130	0.031	0.307	0.120	0.046	0.213
T386	Moni Panayias Phaneromenis	0.020	0.001	0.193	0.000	0.000	0.091
T396	US 13	0.050	0.005	0.236	0.030	0.000	0.155
T398	US 15	0.020	0.000	0.214	0.020	0.000	0.163
T413	US 29	0.100	0.015	0.282	0.100	0.032	0.193
T417	Divola	0.110	0.000	0.27	0.110	0.000	0.187
T420	Moni Panayias Ayitrias	0.110	0.184	0.353	0.070	0.059	0.182
T424	Nyphi, Exo Chora	0.110	0.000	0.27	0.110	0.000	0.187
T427	Stavrikio	0.050	0.000	0.187	0.030	0.000	0.150
T430	Achillio Fortress	0.050	0.000	0.291	0.010	0.000	0.159
T431	Moni Panayias Kournou	0.070	0.018	0.265	0.000	0.000	0.091
T450	Lakka Kalantrea	0.050	0.014	0.269	0.000	0.000	0.091
T451	Lakka Sangia	0.030	0.001	0.22	0.000	0.000	0.091
T452	Lakka Armaka	0.030	0.006	0.258	0.000	0.000	0.091
T453	Lakka Achrada	0.050	0.015	0.258	0.000	0.000	0.091
T455	US 53	0.020	0.000	0.219	0.000	0.000	0.091
T456	US 54	0.080	0.031	0.275	0.000	0.000	0.091
T457	Throkalou	0.020	0.000	0.249	0.000	0.000	0.091
T458	US 55	0.060	0.011	0.29	0.020	0.000	0.180
T460	Bastounes	0.050	0.014	0.282	0.020	0.000	0.180
T461	Stou Gorgona	0.060	0.013	0.303	0.000	0.000	0.091
T463	Lakoi	0.090	0.062	0.332	0.030	0.016	0.164
T464	Trilangado	0.050	0.000	0.291	0.010	0.000	0.145
T465	Stou Laou	0.090	0.062	0.332	0.000	0.000	0.091

APPENDIX B (continued)

TABLE LXXX. CENTRALITY MEASURES FOR EACH NODE IN THE VENETIAN-PERIOD PATHWAY NETWORK (continued)

Unit ID	Name	All pathways			Primary pathways (walled paths and *kalderimia*)		
		Degree	Betweenness	Closeness	Degree	Betweenness	Closeness
T466	Sarantaria	0.020	0.003	0.234	0.000	0.000	0.091
T467	Kako Vouni	0.040	0.006	0.26	0.000	0.000	0.091
T468	Nikolakkos	0.090	0.095	0.292	0.010	0.000	0.146
T469	Pano Oros	0.030	0.000	0.257	0.000	0.000	0.091
T475	US 62	0.050	0.003	0.239	0.000	0.000	0.091
T476	US 63	0.020	0.001	0.238	0.000	0.000	0.091
T477	US 64	0.040	0.005	0.242	0.000	0.000	0.091
T483	US 71	0.020	0.010	0.216	0.010	0.000	0.146
T490	US 80	0.100	0.080	0.261	0.080	0.088	0.170

APPENDIX B (continued)

TABLE LXXXI. CENTRALITY MEASURES FOR EACH NODE IN THE OTTOMAN II-PERIOD PATHWAY NETWORK

Unit ID	Name	All pathways			Primary pathways (walled paths and *kalderimia*)		
		Degree	Betweenness	Closeness	Degree	Betweenness	Closeness
T001	Ayeranos	0.068	0.001	0.197	0.068	0.001	0.157
T008	Ayios Yeoryios	0.082	0.051	0.274	0.082	0.071	0.176
T012	Akia	0.102	0.016	0.271	0.102	0.010	0.174
T013	Piontes	0.034	0.000	0.189	0.020	0.000	0.130
T014	Alika	0.088	0.097	0.229	0.068	0.123	0.151
T018	Archia	0.068	0.012	0.226	0.068	0.026	0.158
T020	Areopoli (Tsimova)	0.150	0.092	0.255	0.150	0.075	0.183
T024	Briki	0.041	0.030	0.286	0.041	0.033	0.181
T027	Charia	0.129	0.039	0.286	0.116	0.036	0.188
T028	Charouda	0.075	0.000	0.257	0.075	0.000	0.173
T029	Chimara	0.061	0.048	0.247	0.041	0.155	0.184
T030	Chosiari	0.122	0.011	0.214	0.122	0.018	0.170
T031	Kalyvia	0.054	0.000	0.179	0.054	0.000	0.150
T033	Pera Dimaristika	0.068	0.036	0.266	0.068	0.058	0.150
T034	Diporo	0.061	0.014	0.223	0.061	0.027	0.152
T035	Dry	0.054	0.003	0.204	0.048	0.000	0.145
T036	Dryalos	0.095	0.018	0.270	0.088	0.000	0.173
T041	Phlomochori	0.082	0.069	0.278	0.061	0.060	0.167
T044	Gonea	0.041	0.015	0.235	0.041	0.010	0.160
T046	Kauki - A	0.129	0.011	0.215	0.129	0.018	0.171
T047	Kainouryia Chora	0.082	0.053	0.191	0.061	0.049	0.136
T049	Kalonioi	0.102	0.038	0.255	0.095	0.040	0.167
T051	Kaphiona	0.088	0.000	0.258	0.088	0.000	0.173
T054	Karea	0.014	0.000	0.157	0.014	0.000	0.135
T055	Karynia	0.095	0.045	0.275	0.075	0.004	0.161
T056	Karioupoli (Miniakova)	0.129	0.013	0.215	0.129	0.027	0.171
T063	Kechrianika	0.068	0.012	0.226	0.068	0.026	0.158
T064	Kelepha	0.095	0.007	0.221	0.088	0.013	0.172
T067	Kipoula	0.027	0.003	0.204	0.027	0.003	0.146
T068	Kita	0.095	0.026	0.254	0.095	0.040	0.167
T072	Korogonianika	0.082	0.053	0.191	0.054	0.043	0.136
T073	Kotronas	0.061	0.048	0.272	0.061	0.060	0.167
T075	Kouloumi	0.116	0.212	0.294	0.116	0.211	0.184
T076	Kounos	0.061	0.016	0.225	0.061	0.026	0.157
T079	Kryoneri	0.034	0.009	0.185	0.027	0.007	0.153
T080	Kyparissos	0.027	0.031	0.196	0.027	0.108	0.143
T081	Layia	0.061	0.179	0.226	0.048	0.119	0.140
T089	Leontakis	0.034	0.007	0.223	0.014	0.000	0.135
T091	Limeni	0.082	0.000	0.217	0.082	0.000	0.164
T093	Loukadika	0.061	0.032	0.253	0.054	0.080	0.174
T100	Nyphi, Mesa Chora	0.082	0.049	0.282	0.075	0.046	0.157
T101	Mezapos	0.082	0.051	0.274	0.082	0.071	0.176
T104	Mina	0.102	0.165	0.304	0.088	0.091	0.176
T107	Neochori	0.075	0.002	0.197	0.075	0.002	0.157
T109	Nikandreio	0.129	0.039	0.286	0.116	0.036	0.188
T111	Nomia	0.109	0.043	0.255	0.109	0.064	0.167
T113	Ochia	0.054	0.000	0.204	0.054	0.000	0.145

APPENDIX B (continued)

TABLE LXXXI. CENTRALITY MEASURES FOR EACH NODE IN THE OTTOMAN II-PERIOD PATHWAY NETWORK (continued)

Unit ID	Name	All pathways			Primary pathways (walled paths and *kalderimia*)		
		Degree	Betweenness	Closeness	Degree	Betweenness	Closeness
T114	Oitylo	0.102	0.022	0.219	0.095	0.017	0.164
T115	Omales (Krelianika)	0.068	0.000	0.243	0.068	0.000	0.176
T117	Pachianika	0.088	0.147	0.304	0.054	0.000	0.144
T118	Pangia	0.088	0.030	0.253	0.088	0.035	0.166
T122	Parasyros	0.075	0.004	0.210	0.068	0.009	0.167
T132	Porachia	0.068	0.004	0.166	0.054	0.090	0.135
T133	Porto Kayio	0.061	0.000	0.162	0.048	0.000	0.128
T137	Pyrgos Dirou	0.136	0.040	0.287	0.122	0.037	0.188
T138	Pyrrichos (Kavalos)	0.116	0.056	0.257	0.088	0.135	0.189
T139	Riganochora	0.054	0.043	0.245	0.048	0.075	0.166
T145	Skala	0.109	0.018	0.222	0.109	0.018	0.173
T146	Skaltsotianika	0.054	0.058	0.256	0.041	0.057	0.174
T149	Skoutari	0.088	0.074	0.223	0.082	0.086	0.165
T152	Sotiras (Kouskouni)	0.150	0.092	0.255	0.150	0.075	0.183
T154	Spira	0.054	0.017	0.265	0.054	0.030	0.149
T155	Stavri	0.082	0.013	0.247	0.082	0.011	0.161
T161	Tsikalia	0.027	0.010	0.192	0.020	0.012	0.138
T162	Tsopakas	0.088	0.000	0.258	0.088	0.000	0.173
T163	Vachos	0.156	0.020	0.233	0.143	0.011	0.175
T164	Vamvaka	0.109	0.018	0.271	0.109	0.014	0.174
T167	Vatheia	0.054	0.029	0.194	0.027	0.100	0.138
T169	Ano Boularioi	0.027	0.000	0.202	0.027	0.002	0.145
T170	Kotraphi	0.020	0.000	0.188	0.007	0.000	0.123
T171	Kato Boularioi	0.082	0.016	0.227	0.082	0.031	0.158
T176	Ayioryis	0.068	0.000	0.246	0.068	0.000	0.161
T179	Agriokampi	0.054	0.000	0.162	0.048	0.000	0.128
T184	Elaia	0.068	0.011	0.226	0.068	0.019	0.158
T186	Gatis	0.027	0.001	0.186	0.020	0.001	0.139
T190	Goulas	0.007	0.000	0.144	0.007	0.000	0.119
T207	Koureloi	0.061	0.000	0.162	0.007	0.000	0.115
T212	Mantophoros	0.143	0.070	0.287	0.129	0.069	0.189
T215	Marmatsouka	0.129	0.039	0.286	0.116	0.036	0.188
T218	Mianes	0.054	0.000	0.162	0.048	0.000	0.128
T222	Paliros	0.068	0.014	0.162	0.061	0.024	0.128
T224	Passava Fortress	0.129	0.010	0.214	0.129	0.015	0.170
T225	Pepo	0.034	0.003	0.220	0.014	0.000	0.135
T226	Petomoniastika	0.020	0.014	0.168	0.020	0.012	0.133
T227	Pyrgaki	0.007	0.000	0.140	0.007	0.000	0.115
T237	Trochalakas	0.041	0.004	0.214	0.041	0.004	0.151
T238	Tserasia	0.129	0.005	0.223	0.129	0.008	0.174
T261	Drymos (Driali)	0.109	0.122	0.296	0.082	0.058	0.157
T262	Drosopigi (Tserova)	0.136	0.007	0.223	0.136	0.011	0.174
T269	Kaliazi	0.143	0.007	0.224	0.143	0.011	0.175
T271	Palaia Karyoupolis	0.150	0.019	0.232	0.136	0.011	0.174
T280	Kato Pachianika	0.075	0.036	0.276	0.054	0.000	0.144
T284	Kozounas	0.041	0.000	0.255	0.041	0.000	0.144

APPENDIX B (continued)

TABLE LXXXI. CENTRALITY MEASURES FOR EACH NODE IN THE OTTOMAN II-PERIOD PATHWAY NETWORK (continued)

Unit ID	Name	All pathways			Primary pathways (walled paths and *kalderimia*)		
		Degree	Betweenness	Closeness	Degree	Betweenness	Closeness
T290	Menenianika	0.034	0.002	0.213	0.014	0.000	0.152
T293	Dimaristika	0.034	0.001	0.231	0.027	0.000	0.138
T301	Palaia Tserova	0.061	0.002	0.225	0.061	0.011	0.178
T302	Paliochori	0.034	0.003	0.246	0.007	0.000	0.138
T308	Pirgaros (Kato Dimaristika)	0.027	0.026	0.231	0.027	0.056	0.144
T313	Ayia Lia	0.061	0.048	0.275	0.054	0.031	0.149
T327	Vata	0.075	0.061	0.278	0.061	0.060	0.167
T328	Vathy	0.109	0.007	0.213	0.109	0.011	0.170
T341	Yerma	0.163	0.046	0.225	0.156	0.041	0.175
T342	Kato Karea (Konakia)	0.020	0.005	0.185	0.020	0.005	0.153
T343	Kelepha Fortress	0.088	0.000	0.218	0.088	0.000	0.164
T352	Kondili	0.020	0.003	0.234	0.007	0.000	0.151
T356	Yeroyiannoukou Kalyvia	0.048	0.000	0.162	0.000	0.000	0.071
T359	Moni Spiliotissas	0.020	0.000	0.185	0.007	0.000	0.150
T375	Lakkos	0.082	0.000	0.258	0.082	0.000	0.173
T377	Ano Dimaristika	0.034	0.025	0.238	0.027	0.053	0.143
T378	US 6	0.007	0.000	0.182	0.007	0.000	0.150
T379	Moni Sotira	0.014	0.000	0.197	0.014	0.000	0.145
T381	Moni Ay. Dimitriou	0.068	0.000	0.243	0.068	0.000	0.176
T385	Moni Panayias Tsipiotissas	0.136	0.006	0.223	0.136	0.009	0.175
T386	Moni Panayias Phaneromenis	0.129	0.037	0.286	0.122	0.037	0.188
T387	Moni Panayias Kotroniotissas	0.061	0.001	0.196	0.061	0.000	0.157
T388	Moni Dekoulou	0.007	0.000	0.180	0.007	0.000	0.144
T396	US 13	0.014	0.001	0.165	0.000	0.000	0.071
T399	US 16	0.020	0.000	0.186	0.007	0.000	0.123
T413	US 29	0.034	0.005	0.207	0.027	0.006	0.151
T417	Divola	0.116	0.011	0.230	0.109	0.021	0.181
T418	Phlitsos	0.075	0.001	0.195	0.075	0.001	0.162
T420	Moni Panayias Ayitrias	0.061	0.000	0.246	0.061	0.000	0.160
T424	Nyphi, Exo Chora	0.109	0.086	0.284	0.082	0.070	0.157
T430	Achillio Fortress	0.061	0.000	0.162	0.041	0.000	0.128
T431	Moni Panayias Kournou	0.041	0.014	0.239	0.014	0.012	0.139
T432	US 36	0.007	0.000	0.193	0.007	0.000	0.124
T450	Lakka Kalantrea	0.054	0.026	0.259	0.000	0.000	0.071
T451	Lakka Sangia	0.034	0.012	0.241	0.000	0.000	0.071
T452	Lakka Armaka	0.020	0.001	0.216	0.000	0.000	0.071
T453	Lakka Achrada	0.020	0.001	0.220	0.000	0.000	0.071
T455	US 53	0.034	0.022	0.261	0.000	0.000	0.071
T456	US 54	0.014	0.000	0.212	0.000	0.000	0.071
T457	Throkalou	0.048	0.022	0.265	0.000	0.000	0.071
T458	US 55	0.014	0.000	0.243	0.000	0.000	0.071
T460	Bastounes	0.041	0.020	0.265	0.014	0.000	0.151
T461	Stou Gorgona	0.034	0.011	0.241	0.014	0.000	0.151

APPENDIX B (continued)

TABLE LXXXI. CENTRALITY MEASURES FOR EACH NODE IN THE OTTOMAN II-PERIOD PATHWAY NETWORK (continued)

Unit ID	Name	All pathways			Primary pathways (walled paths and *kalderimia*)		
		Degree	Betweenness	Closeness	Degree	Betweenness	Closeness
T463	Lakoi	0.041	0.008	0.255	0.000	0.000	0.071
T464	Trilangado	0.061	0.017	0.279	0.020	0.012	0.153
T465	Stou Laou	0.034	0.000	0.239	0.007	0.000	0.135
T466	Sarantaria	0.061	0.017	0.279	0.000	0.000	0.071
T467	Kako Vouni	0.014	0.002	0.216	0.000	0.000	0.071
T468	Nikolakkos	0.027	0.008	0.239	0.000	0.000	0.071
T469	Pano Oros	0.075	0.200	0.269	0.007	0.000	0.124
T475	US 62	0.020	0.000	0.234	0.000	0.000	0.071
T476	US 63	0.041	0.004	0.225	0.000	0.000	0.071
T477	US 64	0.014	0.000	0.205	0.000	0.000	0.071
T483	US 71	0.027	0.004	0.218	0.000	0.000	0.071
T490	US 80	0.014	0.005	0.186	0.007	0.000	0.124

APPENDIX B (continued)

TABLE LXXXII. RAW COUNTS OF ROUTE CONNECTIONS FOR EACH SETTLEMENT IN THE BYZANTINE PERIOD

Unit ID	Name	Type	Kalderimia	Walled paths	Goat paths	Total connections
T005	Ayia Varvara	Permanent	0	9	0	9
T006	Ayia Varvara (Phtio)	Permanent	0	9	0	9
T008	Ayios Yeoryios	Permanent	0	13	0	13
T012	Akia	Permanent	0	3	0	3
T013	Piontes	Permanent	0	2	0	2
T014	Alika	Permanent	0	11	2	13
T020	Areopoli (Tsimova)	Permanent	3	9	0	12
T021	Aryilia	Permanent	1	16	3	20
T024	Briki	Permanent	0	14	0	14
T027	Charia	Permanent	5	2	0	7
T028	Charouda	Permanent	1	3	0	4
T029	Chimara	Permanent	3	3	2	8
T035	Dry	Permanent	0	7	0	7
T036	Dryalos	Permanent	1	9	4	14
T038	Erimos	Permanent	0	11	0	11
T044	Gonea	Permanent	2	5	1	8
T051	Kaphiona	Permanent	1	11	0	12
T055	Karynia	Permanent	0	13	1	14
T063	Kechrianika	Permanent	0	10	1	11
T066	Keria	Permanent	0	7	0	7
T068	Kita	Permanent	1	14	1	16
T072	Korogonianika	Permanent	0	1	3	4
T075	Kouloumi	Permanent	0	18	0	18
T076	Kounos	Permanent	0	14	1	15
T081	Layia	Permanent	1	5	0	6
T089	Leontakis	Permanent	3	1	0	4
T093	Loukadika	Permanent	2	10	4	16
T100	Nyphi, Mesa Chora	Permanent	1	8	2	11
T104	Mina	Permanent	0	13	0	13
T106	Mountanistika	Permanent	0	1	3	4
T111	Nomia	Permanent	1	16	1	18
T113	Ochia	Permanent	0	8	1	9
T114	Oitylo	Permanent	2	2	1	5
T118	Pangia	Permanent	0	9	1	10
T120	Palaiochora	Permanent	0	11	0	11
T130	Polemitas	Permanent	1	2	5	8
T132	Porachia	Permanent	0	5	1	6
T137	Pyrgos Dirou	Permanent	6	4	0	10
T138	Pyrrichos (Kavalos)	Permanent	3	9	4	16
T139	Riganochora	Permanent	3	5	0	8
T146	Skaltsotianika	Permanent	0	8	1	9
T149	Skoutari	Permanent	3	1	3	7
T161	Tsikalia	Permanent	0	6	1	7
T169	Ano Boularioi	Permanent	2	4	1	7
T170	Kotraphi	Permanent	0	3	0	3
T171	Kato Boularioi	Permanent	0	12	1	13
T172	Kato Meri	Permanent	0	9	0	9
T189	Glezou	Permanent	2	8	0	10
T190	Goulas	Permanent	0	1	0	1

APPENDIX B (continued)

TABLE LXXXII. RAW COUNTS OF ROUTE CONNECTIONS FOR EACH SETTLEMENT IN THE BYZANTINE PERIOD (continued)

Unit ID	Name	Type	Kalderimia	Walled paths	Goat paths	Total connections
T191	Ippola	Permanent	0	8	1	9
T197	Kourines	Permanent	0	19	2	21
T199	Karavas	Permanent	0	15	1	16
T200	Kastri	Permanent	0	4	1	5
T201	Katayioryis	Permanent	0	20	2	22
T212	Mantophoros	Permanent	2	4	0	6
T215	Marmatsouka	Permanent	2	5	2	9
T224	Passava Fortress	Permanent	0	6	0	6
T225	Pepo	Permanent	3	0	1	4
T233	Skaphidianika	Permanent	0	8	1	9
T255	Makrynaros	Permanent	7	4	1	12
T261	Drymos (Driali)	Permanent	2	5	7	14
T271	Palaia Karyoupolis	Permanent	0	8	2	10
T278	Korakianika	Permanent	1	8	4	13
T293	Dimaristika	Permanent	1	5	1	7
T301	Palaia Tserova	Permanent	3	3	0	6
T302	Paliochori	Permanent	1	0	8	9
T307	US 10	Permanent	0	12	1	13
T327	Vata	Permanent	3	8	1	12
T341	Yerma	Permanent	0	6	1	7
T356	Yeroyiannoukou Kalyvia	Seasonal	0	0	5	5
T359	Moni Spiliotissas	Monastery	0	3	2	5
T360	Proskephalia	Permanent	0	0	2	2
T362	Kouvouklia	Permanent	4	6	2	12
T363	Koulouvades	Permanent	3	5	0	8
T364	Males	Permanent	1	5	1	7
T365	Skyphianika	Permanent	0	8	4	12
T372	US 4	Permanent	0	3	1	4
T373	US 5	Permanent	2	0	0	2
T374	Avles	Permanent	0	0	5	5
T375	Lakkos	Permanent	0	3	0	3
T382	Soulia	Permanent	1	6	2	9
T383	US 8	Permanent	0	6	2	8
T385	Moni Panayias Tsipiotissas	Monastery	1	6	0	7
T386	Moni Panayias Phaneromenis	Monastery	6	7	2	15
T389	US 67	Permanent	0	1	3	4
T390	US 9	Permanent	0	1	0	1
T391	US 12	Permanent	0	2	1	3
T392	Korines	Permanent	0	14	2	16
T396	US 13	Seasonal	0	0	2	2
T397	Pachia	Permanent	0	0	1	1
T398	US 15	Permanent	0	4	5	9
T403	US 20	Permanent	0	13	0	13
T404	US 21	Permanent	1	2	1	4
T405	US 22	Permanent	0	1	5	6
T406	US 23	Permanent	0	13	0	13
T407	Palaia Kokkinoyia	Permanent	0	4	1	5

APPENDIX B (continued)

TABLE LXXXII. RAW COUNTS OF ROUTE CONNECTIONS FOR EACH SETTLEMENT IN THE BYZANTINE PERIOD (continued)

Unit ID	Name	Type	Kalderimia	Walled paths	Goat paths	Total connections
T409	US 25	Permanent	1	5	1	7
T410	Sela	Permanent	1	2	5	8
T411	US 27	Permanent	1	6	0	7
T414	Vlistiko	Permanent	0	2	1	3
T416	Parapodas	Permanent	0	4	0	4
T417	Divola	Permanent	3	2	1	6
T420	Moni Panayias Ayitrias	Monastery	0	8	1	9
T421	US 33	Permanent	0	6	0	6
T422	Katsipos	Permanent	2	3	0	5
T423	US 35	Permanent	0	5	2	7
T424	Nyphi, Exo Chora	Permanent	2	7	0	9
T429	Vlacherna	Permanent	0	9	0	9
T432	US 36	Permanent	0	1	0	1
T436	US 41	Permanent	0	2	0	2
T437	US 42	Permanent	0	2	0	2
T438	US 43	Permanent	0	2	3	5
T441	US 46	Permanent	0	1	0	1
T442	US 47	Permanent	0	11	1	12
T444	US 49	Permanent	0	0	3	3
T445	US 50	Permanent	1	6	1	8
T446	US 51	Permanent	1	5	3	9
T447	Vikolias	Permanent	1	5	2	8
T451	Lakka Sangia	Seasonal	0	0	10	10
T452	Lakka Armaka	Seasonal	0	0	2	2
T454	US 73	Permanent	1	1	2	4
T455	US 53	Seasonal	0	0	13	13
T456	US 54	Seasonal	0	0	9	9
T458	US 55	Seasonal	0	0	4	4
T459	US 56	Permanent	0	0	9	9
T461	Stou Gorgona	Seasonal	0	5	8	13
T462	US 74	Permanent	0	2	2	4
T463	Lakoi	Seasonal	0	0	5	5
T464	Trilangado	Seasonal	1	0	6	7
T466	Sarantaria	Seasonal	0	0	7	7
T467	Kako Vouni	Seasonal	0	0	7	7
T468	Nikolakkos	Seasonal	0	0	2	2
T469	Pano Oros	Seasonal	0	1	8	9
T470	US 57	Permanent	1	0	1	2
T473	Phranezi	Permanent	0	8	0	8
T474	US 61	Permanent	0	5	1	6
T475	US 62	Seasonal	0	0	2	2
T476	US 63	Seasonal	0	0	2	2
T477	US 64	Seasonal	0	0	2	2
T479	US 66	Permanent	0	8	1	9
T480	US 68	Permanent	0	4	1	5
T481	US 69	Permanent	0	5	0	5
T482	US 70	Permanent	0	0	4	4
T483	US 71	Seasonal	0	0	2	2

APPENDIX B (continued)

TABLE LXXXII. RAW COUNTS OF ROUTE CONNECTIONS FOR EACH SETTLEMENT IN THE BYZANTINE PERIOD (continued)

Unit ID	Name	Type	Kalderimia	Walled paths	Goat paths	Total connections
T484	US 75	Permanent	0	8	1	9
T485	US 76	Permanent	0	0	2	2
T486	US 77	Permanent	1	1	4	6
T487	US 78	Permanent	1	0	5	6
T488	US 79	Permanent	0	1	0	1
T489	Rizakia	Permanent	0	1	1	2
T491	US 81	Permanent	0	1	1	2
T492	US 82	Permanent	0	1	2	3
T493	US 83	Permanent	0	0	1	1

APPENDIX B (continued)

TABLE LXXXIII. RAW COUNTS OF ROUTE CONNECTIONS FOR EACH SETTLEMENT IN THE OTTOMAN I PERIOD

Unit ID	Name	Type	Kalderimia	Walled paths	Goat paths	Total connections
T005	Ayia Varvara	Permanent	0	9	0	9
T006	Ayia Varvara (Phtio)	Permanent	0	9	0	9
T008	Ayios Yeoryios	Permanent	0	17	0	17
T012	Akia	Permanent	0	11	0	11
T013	Piontes	Permanent	0	4	2	6
T014	Alika	Permanent	0	11	3	14
T020	Areopoli (Tsimova)	Permanent	9	14	0	23
T021	Aryilia	Permanent	7	7	3	17
T024	Briki	Permanent	0	19	0	19
T027	Charia	Permanent	7	5	2	14
T028	Charouda	Permanent	1	8	1	10
T029	Chimara	Permanent	2	3	3	8
T034	Diporo	Permanent	2	3	0	5
T035	Dry	Permanent	0	7	1	8
T036	Dryalos	Permanent	1	17	1	19
T038	Erimos	Permanent	0	17	0	17
T042	Gardenitsa	Permanent	3	14	0	17
T044	Gonea	Permanent	5	1	0	6
T047	Kainouryia Chora	Permanent	0	7	2	9
T049	Kalonioi	Permanent	0	3	2	5
T051	Kaphiona	Permanent	1	12	0	13
T054	Karea	Permanent	0	0	0	0
T055	Karynia	Permanent	0	4	5	9
T063	Kechrianika	Permanent	1	10	0	11
T064	Kelepha	Permanent	1	12	1	14
T068	Kita	Permanent	2	20	0	22
T072	Korogonianika	Permanent	0	6	3	9
T073	Kotronas	Permanent	2	6	0	8
T075	Kouloumi	Permanent	0	7	0	7
T076	Kounos	Permanent	0	13	0	13
T077	Koutrela	Permanent	0	18	0	18
T079	Kryoneri	Permanent	1	1	1	3
T080	Kyparissos	Permanent	0	4	0	4
T081	Layia	Permanent	1	8	3	12
T089	Leontakis	Permanent	2	0	3	5
T093	Loukadika	Permanent	3	9	4	16
T100	Nyphi, Mesa Chora	Permanent	1	5	3	9
T104	Mina	Permanent	1	18	4	23
T109	Nikandreio	Permanent	5	7	2	14
T111	Nomia	Permanent	2	24	0	26
T113	Ochia	Permanent	0	8	1	9
T114	Oitylo	Permanent	9	4	1	14
T117	Pachianika	Permanent	0	1	9	10
T118	Pangia	Permanent	1	7	0	8
T132	Porachia	Permanent	0	6	1	7
T133	Porto Kayio	Permanent	0	5	1	6
T137	Pyrgos Dirou	Permanent	8	4	2	14
T138	Pyrrichos (Kavalos)	Permanent	2	13	4	19
T139	Riganochora	Permanent	5	3	0	8

APPENDIX B (continued)

TABLE LXXXIII. RAW COUNTS OF ROUTE CONNECTIONS FOR EACH SETTLEMENT IN THE OTTOMAN I PERIOD (continued)

Unit ID	Name	Type	Kalderimia	Walled paths	Goat paths	Total connections
T145	Skala	Permanent	2	11	1	14
T146	Skaltsotianika	Permanent	0	6	0	6
T152	Sotiras (Kouskouni)	Permanent	3	20	0	23
T155	Stavri	Permanent	1	21	0	22
T161	Tsikalia	Permanent	0	5	1	6
T163	Vachos	Permanent	2	14	3	19
T167	Vatheia	Permanent	0	3	4	7
T169	Ano Boularioi	Permanent	0	4	1	5
T170	Kotraphi	Permanent	0	3	0	3
T171	Kato Boularioi	Permanent	0	13	1	14
T172	Kato Meri	Permanent	0	8	0	8
T181	Chalopyrgos	Permanent	2	1	2	5
T191	Ippola	Permanent	0	7	0	7
T199	Karavas	Permanent	0	13	0	13
T215	Marmatsouka	Permanent	5	6	2	13
T219	Neasa	Permanent	1	6	0	7
T224	Passava Fortress	Permanent	0	9	0	9
T225	Pepo	Permanent	2	0	3	5
T231	Psio	Permanent	0	18	0	18
T236	Tigani	Permanent	0	17	0	17
T238	Tserasia	Permanent	2	13	0	15
T261	Drymos (Driali)	Permanent	2	5	4	11
T269	Kaliazi	Permanent	0	15	1	16
T271	Palaia Karyoupolis	Permanent	0	15	2	17
T278	Korakianika	Permanent	1	7	1	9
T279	Kozia	Permanent	0	15	1	16
T293	Dimaristika	Permanent	1	3	2	6
T299	Olympies	Permanent	0	3	2	5
T301	Palaia Tserova	Permanent	3	7	0	10
T302	Paliochori	Permanent	1	0	4	5
T321	Soloteri	Permanent	0	9	0	9
T327	Vata	Permanent	4	5	2	11
T341	Yerma	Permanent	1	16	1	18
T343	Kelepha Fortress	Permanent	10	3	0	13
T352	Kondili	Permanent	0	1	2	3
T356	Yeroyiannoukou Kalyvia	Seasonal	0	0	6	6
T359	Moni Spiliotissas	Monastery	0	1	2	3
T365	Skyphianika	Permanent	0	9	1	10
T366	US 3	Permanent	0	0	8	8
T374	Avles	Permanent	0	0	4	4
T378	US 6	Permanent	0	1	0	1
T385	Moni Panayias Tsipiotissas	Monastery	2	14	0	16
T386	Moni Panayias Phaneromenis	Monastery	8	10	2	20
T391	US 12	Permanent	0	2	1	3
T392	Korines	Permanent	4	15	2	21
T396	US 13	Seasonal	0	0	2	2
T398	US 15	Permanent	0	2	2	4

APPENDIX B (continued)

TABLE LXXXIII. RAW COUNTS OF ROUTE CONNECTIONS FOR EACH SETTLEMENT IN THE OTTOMAN I PERIOD (continued)

Unit ID	Name	Type	Kalderimia	Walled paths	Goat paths	Total connections
T400	Marassi	Permanent	1	17	0	18
T401	US 18	Permanent	0	18	1	19
T402	US 19	Permanent	0	1	1	2
T403	US 20	Permanent	0	17	0	17
T407	Palaia Kokkinoyia	Permanent	0	5	1	6
T410	Sela	Permanent	1	0	8	9
T412	US 28	Permanent	0	1	0	1
T413	US 29	Permanent	0	2	0	2
T414	Vlistiko	Permanent	0	2	1	3
T417	Divola	Permanent	3	8	0	11
T420	Moni Panayias Ayitrias	Monastery	0	17	0	17
T421	US 33	Permanent	0	12	0	12
T422	Katsipos	Permanent	0	2	1	3
T424	Nyphi, Exo Chora	Permanent	2	6	0	8
T425	Nyphi, Chalikia	Permanent	0	6	0	6
T427	Stavrikio	Permanent	0	17	0	17
T429	Vlacherna	Permanent	0	17	0	17
T430	Achillio Fortress	Permanent	0	4	2	6
T433	Liostypha	Permanent	0	17	0	17
T434	Skourka	Permanent	4	5	3	12
T435	US 39	Permanent	3	6	3	12
T439	US 44	Permanent	2	21	0	23
T440	US 45	Permanent	1	0	2	3
T441	US 46	Permanent	0	1	0	1
T443	US 48	Permanent	0	2	1	3
T445	US 50	Permanent	1	5	2	8
T447	Vikolias	Permanent	1	5	4	10
T448	US 52	Permanent	0	0	2	2
T449	US 72	Seasonal	0	1	0	1
T450	Lakka Kalantrea	Seasonal	0	0	9	9
T451	Lakka Sangia	Seasonal	0	0	5	5
T452	Lakka Armaka	Seasonal	0	0	3	3
T453	Lakka Achrada	Seasonal	0	0	8	8
T454	US 73	Permanent	1	0	2	3
T455	US 53	Seasonal	0	0	6	6
T456	US 54	Seasonal	0	0	2	2
T457	Throkalou	Seasonal	0	0	9	9
T458	US 55	Seasonal	0	0	3	3
T460	Bastounes	Seasonal	0	5	4	9
T461	Stou Gorgona	Seasonal	0	5	3	8
T463	Lakoi	Seasonal	0	0	6	6
T464	Trilangado	Seasonal	2	0	8	10
T465	Stou Laou	Seasonal	1	0	4	5
T466	Sarantaria	Seasonal	0	0	9	9
T467	Kako Vouni	Seasonal	0	0	2	2
T468	Nikolakkos	Seasonal	0	0	4	4
T469	Pano Oros	Seasonal	0	1	10	11
T471	US 58	Permanent	0	0	3	3

APPENDIX B (continued)

TABLE LXXXIII. RAW COUNTS OF ROUTE CONNECTIONS FOR EACH SETTLEMENT IN THE OTTOMAN I PERIOD (continued)

Unit ID	Name	Type	Kalderimia	Walled paths	Goat paths	Total connections
T472	US 59	Permanent	6	6	0	12
T474	US 61	Permanent	0	7	0	7
T475	US 62	Seasonal	0	0	2	2
T476	US 63	Seasonal	0	0	7	7
T477	US 64	Seasonal	0	0	2	2
T478	Mesopangi	Permanent	0	10	0	10
T479	US 66	Permanent	0	7	1	8
T481	US 69	Permanent	0	6	0	6
T483	US 71	Seasonal	0	0	4	4
T485	US 76	Permanent	0	0	1	1
T486	US 77	Permanent	1	0	5	6
T487	US 78	Permanent	1	0	5	6
T489	Rizakia	Permanent	0	2	3	5
T490	US 80	Seasonal	1	1	1	3
T493	US 83	Permanent	0	0	1	1

APPENDIX B (continued)

TABLE LXXXIV. RAW COUNTS OF ROUTE CONNECTIONS FOR EACH SETTLEMENT IN THE VENETIAN PERIOD

Unit ID	Name	Type	Kalderimia	Walled paths	Goat paths	Total connections
T012	Akia	Permanent	0	11	0	11
T013	Piontes	Permanent	0	3	2	5
T014	Alika	Permanent	8	9	0	17
T020	Areopoli (Tsimova)	Permanent	0	14	0	14
T024	Briki	Permanent	5	7	2	14
T027	Charia	Permanent	2	6	0	8
T034	Diporo	Permanent	0	4	2	6
T035	Dry	Permanent	1	8	1	10
T036	Dryalos	Permanent	3	9	0	12
T042	Gardenitsa	Permanent	3	1	0	4
T044	Gonea	Permanent	0	6	2	8
T047	Kainouryia Chora	Permanent	1	14	1	16
T049	Kalonioi	Permanent	0	0	0	0
T054	Karea	Permanent	1	12	2	15
T055	Karynia	Permanent	0	11	0	11
T063	Kechrianika	Permanent	1	10	1	12
T064	Kelepha	Permanent	0	6	1	7
T067	Kipoula	Permanent	2	13	0	15
T068	Kita	Permanent	0	5	3	8
T072	Korogonianika	Permanent	2	5	0	7
T073	Kotronas	Permanent	1	10	0	11
T075	Kouloumi	Permanent	0	9	0	9
T076	Kounos	Permanent	0	13	0	13
T077	Koutrela	Permanent	1	1	1	3
T079	Kryoneri	Permanent	1	5	2	8
T081	Layia	Permanent	2	0	3	5
T089	Leontakis	Permanent	4	7	5	16
T093	Loukadika	Permanent	1	5	1	7
T100	Nyphi, Mesa Chora	Permanent	1	12	1	14
T104	Mina	Permanent	4	8	2	14
T109	Nikandreio	Permanent	2	16	0	18
T111	Nomia	Permanent	8	3	1	12
T114	Oitylo	Permanent	1	12	0	13
T118	Pangia	Permanent	0	5	1	6
T132	Porachia	Permanent	0	4	1	5
T133	Porto Kayio	Permanent	5	7	2	14
T137	Pyrgos Dirou	Permanent	2	9	4	15
T138	Pyrrichos (Kavalos)	Permanent	3	2	0	5
T139	Riganochora	Permanent	2	9	0	11
T145	Skala	Permanent	3	14	0	17
T152	Sotiras (Kouskouni)	Permanent	1	14	0	15
T155	Stavri	Permanent	0	3	2	5
T161	Tsikalia	Permanent	2	12	2	16
T163	Vachos	Permanent	0	12	0	12
T164	Vamvaka	Permanent	0	4	4	8
T167	Vatheia	Permanent	0	3	0	3
T169	Ano Boularioi	Permanent	0	9	0	9
T171	Kato Boularioi	Permanent	0	6	1	7
T191	Ippola	Permanent	4	8	2	14

APPENDIX B (continued)

TABLE LXXXIV. RAW COUNTS OF ROUTE CONNECTIONS FOR EACH SETTLEMENT IN THE VENETIAN PERIOD (continued)

Unit ID	Name	Type	Kalderimia	Walled paths	Goat paths	Total connections
T215	Marmatsouka	Permanent	0	8	0	8
T224	Passava Fortress	Permanent	2	0	3	5
T225	Pepo	Permanent	0	11	0	11
T236	Tigani	Permanent	2	11	0	13
T238	Tserasia	Permanent	2	4	4	10
T261	Drymos (Driali)	Permanent	0	14	0	14
T269	Kaliazi	Permanent	0	13	2	15
T271	Palaia Karyoupolis	Permanent	0	3	3	6
T293	Dimaristika	Permanent	3	6	0	9
T301	Palaia Tserova	Permanent	1	0	4	5
T302	Paliochori	Permanent	2	5	3	10
T327	Vata	Permanent	0	15	1	16
T341	Yerma	Permanent	8	3	0	11
T343	Kelepha Fortress	Permanent	0	1	1	2
T352	Kondili	Permanent	0	0	5	5
T356	Yeroyiannoukou Kalyvia	Seasonal	0	1	2	3
T359	Moni Spiliotissas	Monastery	0	9	1	10
T365	Skyphianika	Permanent	0	1	0	1
T378	US 6	Permanent	2	12	0	14
T385	Moni Panayias Tsipiotissas	Monastery	7	5	1	13
T386	Moni Panayias Phaneromenis	Monastery	0	0	2	2
T396	US 13	Seasonal	0	3	2	5
T398	US 15	Permanent	0	2	0	2
T413	US 29	Permanent	3	7	0	10
T417	Divola	Permanent	0	11	0	11
T420	Moni Panayias Ayitrias	Monastery	1	6	4	11
T424	Nyphi, Exo Chora	Permanent	0	11	0	11
T427	Stavrikio	Permanent	0	3	2	5
T430	Achillio Fortress	Permanent	1	0	4	5
T431	Moni Panayias Kournou	Monastery	0	0	7	7
T450	Lakka Kalantrea	Seasonal	0	0	5	5
T451	Lakka Sangia	Seasonal	0	0	3	3
T452	Lakka Armaka	Seasonal	0	0	3	3
T453	Lakka Achrada	Seasonal	0	0	5	5
T455	US 53	Seasonal	0	0	2	2
T456	US 54	Seasonal	0	0	8	8
T457	Throkalou	Seasonal	0	0	2	2
T458	US 55	Seasonal	0	2	4	6
T460	Bastounes	Seasonal	0	2	3	5
T461	Stou Gorgona	Seasonal	0	0	6	6
T463	Lakoi	Seasonal	3	0	6	9
T464	Trilangado	Seasonal	1	0	4	5
T465	Stou Laou	Seasonal	0	0	9	9
T466	Sarantaria	Seasonal	0	0	2	2
T467	Kako Vouni	Seasonal	0	0	4	4
T468	Nikolakkos	Seasonal	0	1	8	9
T469	Pano Oros	Seasonal	0	0	3	3

APPENDIX B (continued)

TABLE LXXXIV. RAW COUNTS OF ROUTE CONNECTIONS FOR EACH SETTLEMENT IN THE VENETIAN PERIOD (continued)

Unit ID	Name	Type	Kalderimia	Walled paths	Goat paths	Total connections
T475	US 62	Seasonal	0	0	5	5
T476	US 63	Seasonal	0	0	2	2
T477	US 64	Seasonal	0	0	4	4
T483	US 71	Seasonal	1	0	1	2
T490	US 80	Seasonal	0	8	2	10

APPENDIX B (continued)

TABLE LXXXV. RAW COUNTS OF ROUTE CONNECTIONS FOR EACH SETTLEMENT IN THE OTTOMAN II PERIOD

Unit ID	Name	Type	Kalderimia	Walled paths	Goat paths	Total connections
T001	Ayeranos	Permanent	0	10	0	10
T008	Ayios Yeoryios	Permanent	0	12	0	12
T012	Akia	Permanent	0	15	0	15
T013	Piontes	Permanent	0	3	2	5
T014	Alika	Permanent	0	10	3	13
T018	Archia	Permanent	0	10	0	10
T020	Areopoli (Tsimova)	Permanent	11	11	0	22
T024	Briki	Permanent	0	6	0	6
T027	Charia	Permanent	7	10	2	19
T028	Charouda	Permanent	2	9	0	11
T029	Chimara	Permanent	3	3	3	9
T030	Chosiari	Permanent	0	18	0	18
T031	Kalyvia	Permanent	0	8	0	8
T033	Pera Dimaristika	Permanent	1	9	0	10
T034	Diporo	Permanent	2	7	0	9
T035	Dry	Permanent	0	7	1	8
T036	Dryalos	Permanent	1	12	1	14
T041	Phlomochori	Permanent	4	5	3	12
T044	Gonea	Permanent	4	2	0	6
T046	Kauki - A	Permanent	0	19	0	19
T047	Kainouryia Chora	Permanent	0	9	3	12
T049	Kalonioi	Permanent	1	13	1	15
T051	Kaphiona	Permanent	1	12	0	13
T054	Karea	Permanent	0	2	0	2
T055	Karynia	Permanent	1	10	3	14
T056	Karioupoli (Miniakova)	Permanent	0	19	0	19
T063	Kechrianika	Permanent	0	10	0	10
T064	Kelepha	Permanent	1	12	1	14
T067	Kipoula	Permanent	0	4	0	4
T068	Kita	Permanent	2	12	0	14
T072	Korogonianika	Permanent	0	8	4	12
T073	Kotronas	Permanent	3	6	0	9
T075	Kouloumi	Permanent	1	16	0	17
T076	Kounos	Permanent	0	9	0	9
T079	Kryoneri	Permanent	1	3	1	5
T080	Kyparissos	Permanent	0	4	0	4
T081	Layia	Permanent	1	6	2	9
T089	Leontakis	Permanent	2	0	3	5
T091	Limeni	Permanent	3	9	0	12
T093	Loukadika	Permanent	2	6	1	9
T100	Nyphi, Mesa Chora	Permanent	1	10	1	12
T101	Mezapos	Permanent	3	9	0	12
T104	Mina	Permanent	1	12	2	15
T107	Neochori	Permanent	0	11	0	11
T109	Nikandreio	Permanent	5	12	2	19
T111	Nomia	Permanent	2	14	0	16
T113	Ochia	Permanent	0	8	0	8
T114	Oitylo	Permanent	10	4	1	15
T115	Omales (Krelianika)	Permanent	7	3	0	10

APPENDIX B (continued)

TABLE LXXXV. RAW COUNTS OF ROUTE CONNECTIONS FOR EACH SETTLEMENT IN THE OTTOMAN II PERIOD (continued)

Unit ID	Name	Type	Kalderimia	Walled paths	Goat paths	Total connections
T117	Pachianika	Permanent	0	8	5	13
T118	Pangia	Permanent	1	12	0	13
T122	Parasyros	Permanent	1	9	1	11
T132	Porachia	Permanent	0	8	2	10
T133	Porto Kayio	Permanent	0	7	2	9
T137	Pyrgos Dirou	Permanent	8	10	2	20
T138	Pyrrichos (Kavalos)	Permanent	1	12	4	17
T139	Riganochora	Permanent	5	2	1	8
T145	Skala	Permanent	2	14	0	16
T146	Skaltsotianika	Permanent	0	6	2	8
T149	Skoutari	Permanent	2	10	1	13
T152	Sotiras (Kouskouni)	Permanent	3	19	0	22
T154	Spira	Permanent	1	7	0	8
T155	Stavri	Permanent	1	11	0	12
T161	Tsikalia	Permanent	0	3	1	4
T162	Tsopakas	Permanent	0	13	0	13
T163	Vachos	Permanent	2	19	2	23
T164	Vamvaka	Permanent	0	16	0	16
T167	Vatheia	Permanent	0	4	4	8
T169	Ano Boularioi	Permanent	0	4	0	4
T170	Kotraphi	Permanent	0	1	2	3
T171	Kato Boularioi	Permanent	0	12	0	12
T176	Ayioryis	Permanent	0	10	0	10
T179	Agriokampi	Permanent	0	7	1	8
T184	Elaia	Permanent	0	10	0	10
T186	Gatis	Permanent	0	3	1	4
T190	Goulas	Permanent	0	1	0	1
T207	Koureloi	Permanent	0	1	8	9
T212	Mantophoros	Permanent	6	13	2	21
T215	Marmatsouka	Permanent	5	12	2	19
T218	Mianes	Permanent	0	7	1	8
T222	Paliros	Permanent	0	9	1	10
T224	Passava Fortress	Permanent	0	19	0	19
T225	Pepo	Permanent	2	0	3	5
T226	Petomoniastika	Permanent	0	3	0	3
T227	Pyrgaki	Permanent	0	1	0	1
T237	Trochalakas	Permanent	0	6	0	6
T238	Tserasia	Permanent	2	17	0	19
T261	Drymos (Driali)	Permanent	2	10	4	16
T262	Drosopigi (Tserova)	Permanent	1	19	0	20
T269	Kaliazi	Permanent	0	21	0	21
T271	Palaia Karyoupolis	Permanent	0	20	2	22
T280	Kato Pachianika	Permanent	0	8	3	11
T284	Kozounas	Permanent	0	6	0	6
T290	Menenianika	Permanent	0	2	3	5
T293	Dimaristika	Permanent	1	3	1	5
T301	Palaia Tserova	Permanent	2	7	0	9
T302	Paliochori	Permanent	1	0	4	5

APPENDIX B (continued)

TABLE LXXXV. RAW COUNTS OF ROUTE CONNECTIONS FOR EACH SETTLEMENT IN THE OTTOMAN II PERIOD (continued)

Unit ID	Name	Type	Kalderimia	Walled paths	Goat paths	Total connections
T308	Pirgaros (Kato Dimaristika)	Permanent	0	4	0	4
T313	Ayia Lia	Permanent	2	6	1	9
T327	Vata	Permanent	3	6	2	11
T328	Vathy	Permanent	0	16	0	16
T341	Yerma	Permanent	0	23	1	24
T342	Kato Karea (Konakia)	Permanent	0	3	0	3
T343	Kelepha Fortress	Permanent	9	4	0	13
T352	Kondili	Permanent	0	1	2	3
T356	Yeroyiannoukou Kalyvia	Seasonal	0	0	7	7
T359	Moni Spiliotissas	Monastery	0	1	2	3
T375	Lakkos	Permanent	0	12	0	12
T377	Ano Dimaristika	Permanent	1	3	1	5
T378	US 6	Permanent	0	1	0	1
T379	Moni Sotira	Monastery	0	2	0	2
T381	Moni Ay. Dimitriou	Monastery	0	10	0	10
T385	Moni Panayias Tsipiotissas	Monastery	2	18	0	20
T386	Moni Panayias Phaneromenis	Monastery	10	8	1	19
T387	Moni Panayias Kotroniotissas	Monastery	0	9	0	9
T388	Moni Dekoulou	Monastery	1	0	0	1
T396	US 13	Seasonal	0	0	2	2
T399	US 16	Permanent	0	1	2	3
T413	US 29	Permanent	1	3	1	5
T417	Divola	Permanent	4	12	1	17
T418	Phlitsos	Permanent	0	11	0	11
T420	Moni Panayias Ayitrias	Monastery	0	9	0	9
T424	Nyphi, Exo Chora	Permanent	1	11	4	16
T430	Achillio Fortress	Permanent	0	6	3	9
T431	Moni Panayias Kournou	Monastery	1	1	4	6
T432	US 36	Permanent	0	1	0	1
T450	Lakka Kalantrea	Seasonal	0	0	8	8
T451	Lakka Sangia	Seasonal	0	0	5	5
T452	Lakka Armaka	Seasonal	0	0	3	3
T453	Lakka Achrada	Seasonal	0	0	3	3
T455	US 53	Seasonal	0	0	5	5
T456	US 54	Seasonal	0	0	2	2
T457	Throkalou	Seasonal	0	0	7	7
T458	US 55	Seasonal	0	0	2	2
T460	Bastounes	Seasonal	0	2	4	6
T461	Stou Gorgona	Seasonal	0	2	3	5
T463	Lakoi	Seasonal	0	0	6	6
T464	Trilangado	Seasonal	3	0	6	9
T465	Stou Laou	Seasonal	1	0	4	5
T466	Sarantaria	Seasonal	0	0	9	9
T467	Kako Vouni	Seasonal	0	0	2	2
T468	Nikolakkos	Seasonal	0	0	4	4
T469	Pano Oros	Seasonal	0	1	10	11

APPENDIX B (continued)

TABLE LXXXV. RAW COUNTS OF ROUTE CONNECTIONS FOR EACH SETTLEMENT IN THE OTTOMAN II PERIOD (continued)

Unit ID	Name	Type	Kalderimia	Walled paths	Goat paths	Total connections
T475	US 62	Seasonal	0	0	3	3
T476	US 63	Seasonal	0	0	6	6
T477	US 64	Seasonal	0	0	2	2
T483	US 71	Seasonal	0	0	4	4
T490	US 80	Seasonal	1	0	1	2

APPENDIX C

ADDITIONAL FIGURES

Figures 109–164 are supplementary photographs of the case studies discussed in Chapter 7.

Figure 109. Kouvouklia: 11th-century church of the Taxiarchis, from the northeast (T189F027).

Figure 110. Kouvouklia: Modern reuse of an abandoned house as an animal shed (T362F045).

Figure 111. Kouvouklia: Typical "megalithic" structure at the site (T362F054).

Figure 112. Kouvouklia: Engraving on the door lintel of the largest houses (T362F001).

Figure 113. Kouvouklia: Panoramic view of potential "megalithic" tower foundation from the northeast corner. A scale bar in the foreground shows the width of the north wall (T362F009).

Figure 114. Kouvouklia: Typical medieval cistern at the site, with long limestone *makronia* (roof supports) displaced in the foreground, and an abandoned house in the background (T362F064).

Figure 115. Charouda: View of the landscape southeast of the site, showing limestone outcrops.

Figure 116. Charouda: Byzantine church north of the site (T028F018).

Figure 117. Charouda: Pathway leading north past the cluster of cisterns. The raised platform parallel with the field wall is the edge of a *kalderimi* (K0154S02).

Figure 118. Charouda: Carved hatch on a ruined cistern in the cluster north of the site (T028F023).

Figure 119. Charouda: Interior of the megalithic church of Ay. Sotiras (T028F001).

Figure 120. Charouda: 11th-century church of the Taxiarchis (T028F005).

Figure 121. US 5: Typical architecture at the site, showing rocky and steep slope (T373F003).

Figure 122. US 5: The church of Ay. Paraskevi, approaching along the *kalderimi* from Nyphi (T373F001).

Figure 123. Kotraphi: Landscape along the lower ridge, with field wall in the foreground.

Figure 124. Kotraphi: View of the modern settlement on the upper ridge, from the south, with Mountanistika on the ridge beyond.

Figure 125. Kotraphi: Row of standing stones near a ruined Byzantine church.

Figure 126. Ippola: *Kalderimi* leading downhill from the site (K0120S02).

Figure 127. Ippola: Twin Byzantine churches of Ay. Theodoroi, from the southwest (T191F107).

Figure 128. Ippola: East end of megalithic structure, with Ay. Theodoroi in the background (T191F109).

Figure 129. Ippola: View of the rubble field at the site, with Ay. Theodoroi in the background.

Figure 130. Kaliazi: View of the site looking east, with ruins just visible through maquis.

Figure 131. Kaliazi: Cross-section of a house wall, showing tile and disintegrated mortar.

Figure 132. Kaliazi: Typical post-medieval tile fragments found at the site.

Figure 133. Kaliazi: Dedicatory inscription above entrance to the church of Ay. Sotiras (T269F001).

Figure 134. Kaliazi: One of the 18th-century monastic buildings west of the ruined settlement (T269F004).

Figure 135. Skala: View of the abandoned hilltop settlement looking north from the modern village.

Figure 136. Skala: Typical post-medieval tile fragments found at the site.

Figure 137. Skala: Residential structure with crevices in west wall (at left) for supporting floor beams (T378F030).

Figure 138. Skala: Ottoman II monastery complex (T378F003), in front of the church of the Panayia (white-washed building, T378F001).

Figure 139. Skala: Interior of the church of the Panayia (T378F001).

Figure 140. Pyrgos Dirou: Panoramic view of Diros Bay, looking west (left) to northwest (right).

Figure 141. Pyrgos Dirou: 12th-century church of Ay. Ioannis in Fourniata, with 16th-century arcosolium grave in the foreground (T137F025).

Figure 142. Pyrgos Dirou: 15th-century church of Ay. Sideros, north of the town (T137F043).

Figure 143. Pyrgos Dirou: Ay. Paraskevi, a typical Ottoman II-period church, with a dedicatory inscription of 1791 (T137F062).

Figure 144. Pyrgos Dirou: Ottoman II-period house built atop a "megalithic" foundation (T137F031).

Figure 145. Pyrgos Dirou: Private cistern within a walled house compound (T137F114).

Figure 146. Pyrgos Dirou: Front of the fortified compound of the Sklavounakos family (T137F004).

Figure 147. Pyrgos Dirou: Open cistern behind the Sklavounakos family church.

Figure 148. Pyrgos Dirou: Exposed *kalderimi* within the town.

Figure 149. Long-distance *kalderimi* connecting Pyrgos Dirou and Areopoli (K0016S01). Note the left edge is built up substantially from the ground below to create an even platform.

Figure 150. The same *kalderimi* connecting Pyrgos Dirou and Areopoli (K0016S01), passing over a bridge across a gully.

Figure 151. Spira: View of the settlement (on top of the hill at center), from the south.

Figure 152. Spira: View of the coastline, looking north.

Figure 153. Spira: Family compound dated to 1790 (T154F009).

Figure 154. Spira: Abandoned mill in the hilltop settlement (T154F006).

Figure 155. Spira: Abandoned windmill northeast of the village (T154F002).

Figure 156. Palaia Tserova: View of the settlement from the hilltop, looking northeast.

Figure 157. Palaia Tserova: The ruined church, from the south (T301F017).

Figure 158. Palaia Tserova: Typical "megalithic" architecture at the site, with weathered appearance (T301F038).

Figure 159. Palaia Tserova: Typical Ottoman-I residential structure at the site, showing regular coursing and an intact ledge for supporting floor beams (T301F005).

Figure 160. Palaia Tserova: A collapsed grave-ossuary in the cemetery at the site (T301F049).

Figure 161. Briki: Panoramic view of the ruined refuge above the modern village (ruined buildings in thick vegetation at center), looking east from the top of the Lagoudi tower.

Figure 162. Briki: Typical architecture in the uphill refuge (T024F014).

Figure 163. Briki: House occupied into the Early Modern period in the uphill refuge (T024F012).

Figure 164. Briki: 19th-century Lagoudi family tower (T024F026).

VITA

NAME
Rebecca Mears Seifried

EDUCATION

2016	Ph.D., Anthropology, University of Illinois at Chicago
2011	M.A., Anthropology, University of Illinois at Chicago
2007	B.A., Anthropology, Wheaton College, Wheaton, Illinois (*summa cum laude*)

RESEARCH GRANTS

2016	Norwegian Institute at Athens, stipend to conduct research in Greece (15,000 kr)
2014	DigitalGlobe Foundation, imagery grant of WorldView-2 and QuickBird multispectral imagery for The Diros Project, co-PI Dr. William Parkinson (valued at $26,000)
2014	National Science Foundation, Doctoral Dissertation Improvement Grant (BCS-1346694) for "Settlements on the Edge of Empire: Investigating the Effects of State Expansion in Rural Greece ($20,351)
2014	ArchaeoLandscapes Europe, grant to fund an exchange visit to the Institute for Mediterranean Studies – Foundation for Research and Technology, Hellas (€1,320)
2013	UIC Provost's Award for Graduate Research for "Weaving Tales with History: Contextualizing Archaeological Field Data with Archival Records" ($1,500)
2012	UIC Chancellor's Graduate Research Fellowship for "Understanding State-Border Interaction using Medieval and Modern Agricultural Terraces in Greece" ($8,000)
2012	National Science Foundation, International Research Experiences for Students Program (€900)
2011	Field Museum of Natural History, Anthropology Alliance Summer Fieldwork Internship ($2,000)

FELLOWSHIPS AND AWARDS

2014–2015	UIC, Dean's Scholar Graduate Fellowship ($25,000)
2012–2016	UIC LAS PhD Student Presenter Award (5 awards totaling $2,250)
2012–2015	UIC Graduate College Student Presenter Award (3 awards totaling $800)
2010–2016	UIC Graduate Student Council Travel Award (6 awards totaling $1,598)

PUBLICATIONS

Seifried, Rebecca M.
In Press "Situating the Paximadi Towers in the Classical and Roman Landscapes." In *Proceedings of the Norwegian Institute at Athens' International Scientific Conference, "An Island Between Two Worlds: The Archaeology Of Euboea From Prehistoric To Byzantine Times."* Eretria, Greece. July 13.

Gardner, Chelsea A. M. and Rebecca M. Seifried.
In Press "Euboean Towers and Aegean Powers: Insights into the Karystia's Role in the Ancient World." *Journal of Greek Archaeology.*

VITA (continued)

Pullen, Daniel J., Michael L. Galaty, William A. Parkinson, Wayne E. Lee, and Rebecca M. Seifried

In Press. "The Diros Project, 2011–2013: Surface Survey and Site Collection in Diros Bay." In *Alepotrypa: Festschrift in Honor of Dr. Giorgos Papathanassopoulos*, edited by A. Papathanasiou, W. A. Parkinson, M. Galaty, and D. Pullen.

Seifried, Rebecca M.

2015 "The Shifting Tides of Empires: Using GIS to Contextualize Population Change within the Landscape of Seventeenth to Nineteenth-Century Mani, Greece." *International Journal of Historical Archaeology* 19(1):46–75.

Seifried, Rebecca M. and William A. Parkinson

2014 "The Ancient Towers of the Paximadi Peninsula, Southern Euboia." *Hesperia* 83(2): 277–313.

Galaty, Michael L, William A. Parkinson, Daniel J. Pullen, and Rebecca M. Seifried

2014 "Mycenaean -scapes: Geography, Political Economy, and the Eastern Mediterranean World-System." In *Aegaeum 37: Proceedings of the 14th Aegean Conference PHYSIS*, edited by G. Touchais, R. Laffineur, and F. Rougemont, 449–454, plates 137-141. Leuven: Peeters.

TEACHING EXPERIENCE

2013	Wheaton College, Visiting Instructor, ANTH 360: Religion and the Human Body
2011	UIC, Teaching Assistant, ANTH 105: Human Evolution
2010	UIC, Teaching Assistant, ANTH 102: Introduction to Archaeology

ORGANIZED SYMPOSIA AT NATIONAL CONFERENCES

2014	Katy Meyers and Rebecca M. Seifried. "Place and Space in a Digital Landscape: New Perspectives on Analyzing and Sharing Geospatial Data in Archaeology." Symposium organized for the 79th Annual Meeting of the Society for American Archaeology. Austin, TX. April 23-27, 2014.

INVITED LECTURES

2014	"Building a GIS with Remotely Sensed Imagery, Archaeological Fieldwork, and Archival Records: Case Studies from Hungary and Greece." 1st Annual REmote Sensing Technologies in Cultural Heritage (RESTeCH) Workshop at IMS-FORTH. Rethymno, Greece. Feb. 20.
2013	"Incorporation or Isolation? Modeling the Material Signatures of Imperial Expansion in the Mani Peninsula, Greece." The Field Museum Anthropology Brown Bag Series. Chicago, IL. December 12.
2013	"Writing a Grant Proposal: The Byzantine and Ottoman Settlement Study." Invited lecture for ANTH 309: Writing Culture, University of Illinois at Chicago. November 14.
2013	"The Byzantine and Ottoman Settlement Study: A Dissertation Proposal Defense." University of Illinois at Chicago Department of Anthropology Brown Bag Series. Chicago, IL. November 11.

2011 “Rebels in the Mountains: Exploring Settlement Patterns on the Mani Peninsula, Greece, Using GIS and Historical Sources.” University of Illinois at Chicago Department of Anthropology Brown Bag Series. Chicago, IL. October 26.

CONFERENCE PAPERS

2016 “Dreaming of Fresh Water: Seascapes and Fresh Water Management in the Post-Medieval Mani Peninsula, Greece.” Presented at the International Workshop at the Orient-Institut Beirut and the University of Balamand: “Cross-disciplinary Approaches to the Hydraulic Landscapes of the Eastern Mediterranean, 1200–1900 CE,” April 21–23, Beirut, Lebanon.

2016 “The Post-Medieval Settlements and Road Network of the Mani Peninsula, Greece.” Symposium, Long-Term Settlement Dynamics and Land Use on the Mani peninsula of Southern Greece. 81st Annual Meeting of the Society for American Archaeology, April 6–10, Orlando, FL.

2016 “New Insights into the Abandoned ‘Palaiomaniatika’ from Ottoman Defters, Aerial Survey, and Field Reconnaissance.” 117th Annual Meeting of the Archaeological Institute of America. San Francisco, CA. January 6–9. AIA 117th Annual Meeting Abstracts 38: 269.

2016 Ridge, William P. and Rebecca M. Seifried. “Size Matters? A Case Study of Population Estimations from the Mani Peninsula in Greece.” 117th Annual Meeting of the Archaeological Institute of America. San Francisco, CA. January 6–9. AIA 117th Annual Meeting Abstracts 38: 39.

2015 Seifried, Rebecca M. and Chelsea A. M. Gardner. “Maintaining Distinction: Local Identity in the Remote Mani Peninsula, Greece, in the Classical, Byzantine, and Ottoman Periods.” 116th Annual Meeting of the Archaeological Institute of America. New Orleans, LA. January 8–11. AIA 116th Annual Meeting Abstracts 38: 21.

2014 “Keeping the Empire at Bay: Archaeological and Historical Signs of Social Boundaries in Ottoman-Period Mani.” 20th Annual Meeting for the European Association of Archaeologists, Istanbul, Turkey. September 10–14.

2014 “‘Victory or Death’: The Embedding of Resistance and Isolation in the Material Record of a Maniate Town.” 15th Annual Postgraduate Colloquium, Centre for Byzantine, Ottoman and Modern Greek Studies, University of Birmingham. Birmingham, UK. May 24.

2014 “Mapping Ottoman-Period Settlement Patterns with Remotely Sensed Imagery, GPS, and GIS.” Poster presented at the 1st Annual Meeting of the Computer Applications and Quantitative Methods in Archaeology – Greece Chapter. Rethymno, Greece. March 7–8.

2014 Gardner, Chelsea A. M. and Rebecca M. Seifried. “Asking New Questions of Old(er) Data: A Case Study from Southern Euboea.” 115th Annual Meeting of the Archaeological Institute of America. Chicago, IL. January 2–5. AIA 115th Annual Meeting Abstracts 37: 114–115.

2013 “Situating the Paximadi Towers in the Classical and Roman Landscapes.” Norwegian Institute at Athens’ International Scientific Conference, “An Island

	Between Two Worlds: The Archaeology Of Euboea From Prehistoric To Byzantine Times.” Eretria, Greece. July 13.
2013	“Conflict and Community Connection: A Geospatial Analysis of Medieval Ottoman Settlements in the Peloponnese.” Second City Anthropology Conference. University of Illinois at Chicago, Chicago, IL. March 9.
2013	“Rebels in the Mountains: Assessing the Ottoman-Period Human Landscape of the Mani Peninsula, Greece.” 114th Annual Meeting of the Archaeological Institute of America. Seattle, WA. January 3–6. AIA 114th Annual Meeting Abstracts 36: 43.
2011	“Run for the Hills! Settlement Patterns and Conflict on the Mani Peninsula, Greece.” Poster, 110th Annual Meeting of the American Anthropological Association. Montreal, Quebec. November 18.
2011	“Exploring Alternative Defensive Strategies: Spatial and Demographic Analyses on the Mani Peninsula, Greece.” Central States Anthropological Society Annual Meeting. University of Iowa, Iowa City, IA. April 8.

ARCHAEOLOGICAL FIELDWORK

2016	Kea Archaeological Research Survey, Kea, Greece. GIS specialist.
2013–2016	Norwegian Archaeological Survey in the Karystia, Euboea, Greece. GIS specialist, survey team member.
2011–2015	The Diros Project, Mani Peninsula, Greece. GIS specialist, ceramic analyst, survey team leader, survey team member.
2015	Cetina Valley Survey, Trilj, Croatia. GIS specialist.
2014	Byzantine and Ottoman Settlement Study, Mani Peninsula, Greece. Project manager.
2011–2012	Körös Regional Archaeological Project, Vésztö, Hungary. GIS specialist, survey and excavation team member.
2010–2011	Shivwits Research Project, Arizona, USA. Excavation team member.

MUSEUM AND LABORATORY EXPERIENCE

2012–2014	Intern in GIS and Remote Sensing Analysis, Laboratory of Geophysical and Satellite Remote Sensing and Archaeo-environment, IMS-FORTH, Rethymno, Crete
2013	Archival Researcher, Ottoman Archives of the General Directorate of State, Istanbul, Turkey
2011–2013	Research Assistant, Field Museum of Natural History, Chicago, Illinois
2009–2010	Research Assistant, University of Illinois at Chicago
2007–2008	Volunteer Museum Technician, Field Museum of Natural History, Chicago, Illinois

PROFESSIONAL DEVELOPMENT

2016	Northeast Arc Users Group (NEARC) conference held in UMass Amherst, MA, 9 May. Workshops on ArcGIS Online, WebApp Builder, and SQL.
2014	Workshop on “Computational Imaging – Field and Lab Recording,” Computer Applications and Quantitative Methods in Archaeology – Greece Chapter meeting (CAA-GR) held in Rethynmno, Greece, 7–8 March. Developed skills in

	Reflectance Transformation Imaging (RTI) and photogrammetry of archaeological objects.
2014	REmote Sensing Technologies in Cultural Heritage (RESTeCH) Workshop at IMS-FORTH in Rethymno, Greece, 17–28 February. Trained in innovative applications of remote sensing for archaeologists.
2013	Linked Ancient World Data Institute (LAWDI) at Drew University, Madison, NJ, 30 May–1 June. Workshops covered topics including linked open data, open access, RDF format, and software for mapping and sharing of data.
2012	Workshop on "Using Declassified CORONA Satellite Imagery in Archaeological Investigations" at the Society for American Archaeology 77th Annual Meeting, Memphis, TN, 18–22 April. Developed skill in obtaining and orthorectifying CORONA satellite imagery.

PROFESSIONAL ACTIVITIES AND PUBLIC SERVICE

2012–2016	Assistant Website Manager, UIC Department of Anthropology
2013–2016	Member, The Field Museum Women in Science Group
2013–2015	Member, The Field Museum GIS/Remote Sensing Group
2012–2015	Executive Board Member, Archaeological Institute of America Chicago Society
2012–2013	Anthropology Department Representative, UIC Graduate Student Council
2012–2013	Head of Funding Committee, UIC Second City Anthropology Conference

PROFESSIONAL MEMBERSHIPS

2016	Central European History Society
2011–2016	Archaeological Institute of America
2010–2016	Society for American Archaeology
2014	European Association of Archaeologists
2014	American School of Classical Studies at Athens, Visiting Student Associate Member