Trade and exchange in the Neolithic Near East: Implications of obsidian remains from Ais Yiorkis, Cyprus

Megan M. Melson
University of Nevada, Las Vegas

Follow this and additional works at: https://digitalscholarship.unlv.edu/thesesdissertations

Part of the Archaeological Anthropology Commons

Repository Citation
https://digitalscholarship.unlv.edu/thesesdissertations/873

This Thesis is brought to you for free and open access by Digital Scholarship@UNLV. It has been accepted for inclusion in UNLV Theses, Dissertations, Professional Papers, and Capstones by an authorized administrator of Digital Scholarship@UNLV. For more information, please contact
digitalscholarship@unlv.edu.
TRADE AND EXCHANGE IN THE NEOLITHIC NEAR EAST:
IMPLICATIONS OF OBSIDIAN REMAINS
FROM AIS YIORKIS, CYPRUS

by

Megan Melson
Bachelor of Arts
University of Nevada, Reno
2005

Master of Arts
University of Nevada, Las Vegas
2010

A thesis submitted in partial fulfillment
of the requirements for the

Master of Arts Degree in Anthropology
Department of Anthropology
College of Liberal Arts

Graduate College
University of Nevada, Las Vegas
May 2010
THE GRADUATE COLLEGE

We recommend the thesis prepared under our supervision by

Megan Michelle Melson

entitled

Trade and Exchange in the Neolithic Near East: Implications of Obsidian Remains from Ais Yiorkis, Cyprus

be accepted in partial fulfillment of the requirements for the degree of

Master of Arts in Anthropology

Alan Simmons, Committee Chair
Levent Atici, Committee Member
Debra Martin, Committee Member
Ed Nagelhout, Graduate Faculty Representative

Ronald Smith, Ph. D., Vice President for Research and Graduate Studies and Dean of the Graduate College

May 2010
ABSTRACT

Trade and Exchange in the Neolithic Near East: 
Implications of Obsidian Remains from 
Ais Yiorkis, Cyprus 

by

Megan Melson

Dr. Alan Simmons, Committee Chair 
Professor of Anthropology 
University of Nevada, Las Vegas

Lithic material has proven to be the most prevalent artifact to come out of the Ais Yiorkis strata, but there is also a plentitude of other artifacts, such as fauna, seeds, and the more elusive obsidian bladelets. There are currently about 42 obsidian artifacts (both fragmented and complete) in the Ais Yiorkis collection, and curiously enough, they are all in bladelet form, suggesting these artifacts were traded in from elsewhere due to the lack of obsidian debitage at the site. This obsidian has been sourced to the Chiftlik region in Anatolia (Turkey), which suggests some degree of trade within the broader Mediterranean world (Simmons 2003). Little has been done analytically on the obsidian artifacts from Ais Yiorkis, so I plan on delving further into the possible trade that was occurring during the Neolithic Period in Cyprus and the surrounding Mediterranean region and what this meant for the small hamlet that was Ais Yiorkis. Since the whole of the obsidian artifacts that have come out
of the Ais Yiorkis context are in bladelet form, I believe that the transportation of these artifacts from Anatolia to Cyprus may have been the result of one single trade event. Possible questions include: Who was involved in this trading event? How did these artifacts make their way to Cyprus? What were the people of Ais Yiorkis trading in return for these obsidian bladelets? What were these obsidian bladelets being used for? Who was using them? What did this trade event mean for Ais Yiorkis in the broad spectrum of the entire Mediterranean world?
# TABLE OF CONTENTS

ABSTRACT .............................................................................................................................. iii

ACKNOWLEDGMENTS ........................................................................................................... vii

CHAPTER 1    INTRODUCTION ......................................................................................... 1
  Purpose of Research ........................................................................................................... 1
  Research Questions .......................................................................................................... 2
  The Neolithic Revolution ............................................................................................... 4
  Chronology ....................................................................................................................... 8
  Cyprus ............................................................................................................................. 8
  The Sites .......................................................................................................................... 10
  Kritou Marottou-Ais Yiorkis ......................................................................................... 11
  Obsidian ......................................................................................................................... 14
  Delineation of Chapters ................................................................................................. 15

CHAPTER 2    BACKGROUND INFORMATION .................................................................. 17
  Cypriot Archaeological Summary ................................................................................... 17
  Akrotiri-Aetokremnos .................................................................................................... 20
  Khirokitian Culture ......................................................................................................... 24
  Cypro-PPNB ................................................................................................................... 27
  Ritual and Symbolism ..................................................................................................... 35
  Mediterranean Obsidian Trade ....................................................................................... 38

CHAPTER 3    THE BROADER NEAR EASTERN PERSPECTIVE ........................................... 44
  Near Eastern Environmental Summary ......................................................................... 45
  Near Eastern Archaeological Summary ......................................................................... 49
  Near Eastern Neolithic Obsidian Evidence .................................................................... 54
  Research Developments in the Anatolian Neolithic ....................................................... 59

CHAPTER 4    METHODOLOGY AND PRESENTATION/ANALYSIS OF DATA ...................... 61
  Methodology ................................................................................................................... 61
  Presentation of Data ........................................................................................................ 63

CHAPTER 5    FINDINGS AND CONCLUSIONS ................................................................. 65
  Findings .......................................................................................................................... 65
  Conclusions ..................................................................................................................... 71
  Significance of Research and Future Work ..................................................................... 73

APPENDIX 1    PHOTOS ..................................................................................................... 75
ACKNOWLEDGMENTS

I would like to thank my committee chair Dr. Alan Simmons for all of his guidance throughout my career as a graduate student. He allowed me to work with him in Cyprus for three consecutive summers from 2006-2008, and without his support, this research would never have been possible. Also, I would like to thank Dr. Levent Atici, Dr. Debra Martin, and Dr. Ed Nagelhout for their comments and overall academic support. I would also like to thank Susan Thompson and the International Studies Abroad Program for their financial support. Lastly, I would like to thank my family for their everlasting love and support, both emotionally and financially. Without them, the completion of this thesis would not have been possible.
CHAPTER 1
INTRODUCTION

Purpose of Research

Obsidian artifacts from the Neolithic Near East, generally in the form of bladelets, carry significant information allowing archaeologists to make inferences about probable trade and exchange patterns. This is particularly true on the island of Cyprus, since obsidian had to be imported from the mainland. “Obsidian is for us the indicator that contact was taking place, but not necessarily the prime object of such contact” (Renfrew et al. 1966: 50). Other items were most definitely moving around with the obsidian, but we see the evidence of obsidian clearly because of its good preservation. Relating to the issue of obsidian as an ‘artistic’ expression Banning (1998) states that different kinds of sculpted or painted art are a relatively common occurrence, at least at the larger sites, almost throughout the Neolithic. He claims that while the intent of the makers of these artifacts is far from obvious, there is a strong possibility that ideology was a factor. Great pains were taken to create each bladelet; this can be seen in the intricate craftsmanship in each tiny piece. Perhaps the manufacturers who sculpted or “knapped” these obsidian bladelets were making an artistic statement, as most artists generally try to do. In addition to craftsmanship, obsidian artifacts are also possible indicators of some form of ritual behavior.
Thus, the presence of obsidian in Neolithic sites, even in limited amounts, can convey considerable information on a variety of topics.

Research Questions

The overall (umbrella) research theme of this thesis is to examine and evaluate patterns of exchange and/or trade for the early aceramic Neolithic site of Ais Yiorkis in the broader spectrum of both Neolithic Cyprus and the wider circum-Mediterranean world. To address aspects of this with available data, five research questions have been developed. These are presented in Table 1 along with data required to address them (see Appendix 2). This is followed by a discussion of data expectations.

Research Question 1. a) It is helpful to look at Cypriot Neolithic chronologies to determine how close or far apart they are. If close in chronology, the expectation is that perhaps a single episode is represented. If, however, the chronology is wide, the expectation would be that there were multiple events. b) If the obsidian artifacts exhibit a considerable difference in technology and/or typology, the expectation might be that multiple events are represented. c) If chemical sourcing shows multiple sources, the expectation might be that multiple events are represented, but if the same source is indicated, that might support the expectation of a single episode.

Research Question 2. a) We can look at the evidence (or lack there of) of obsidian reduction at the site. Evidence of “chaine
d’operatorie”—presence of debris, debitage, cores, microflakes, tools, etc. would support the expectation that the obsidian bladelets were reduced at the site. Lack of reduction material might carry the expectation that the bladelets were reduced off-site and transported there as finished products.

Research Question 3. a) To find out how obsidian artifacts made their way to Cyprus, we can take a look at the theories of Cypriot colonization. When people settled on Cyprus, they likely brought many mainland materials with them, whether for subsistence, trade, ritual, or something else. Obsidian was one of these materials, and presumably made its way to Cyprus as part of the island’s colonization “package.” b) Also, the chemical sourcing of the bladelets indicates the region where they originated and can hold up the expectation that the place of origin on the mainland was near the likely “jumping-off” point for the voyage to Cyprus.

Research Question 4. a) The exotic materials at the site could possibly have been traded for obsidian. Materials such as picrolite, indigenous to Cyprus, may have been items mainlanders prized. If this was the case, the expectation might be that the inhabitants of the site traded these exotic materials directly for the obsidian bladelets from the mainland. b) Another expectation might be that the inhabitants of the site were trading subsistence items for obsidian bladelets, such as domestic and wild plant sources and animal products.
Research Question 5. a) Perhaps these obsidian bladelets were being used for ritual purposes. If we see other evidence of ritual practices at the site, this would support the expectation that the obsidian was being used ritually. b) Patterns of use-wear might carry the expectation that the obsidian was being used for cutting or scraping, which may or may not have been related to ritual behavior. c) If the obsidian bladelets are found in close proximity to other exotic materials at the site, the expectation might be that these materials were being used together in ritual activity.

The Neolithic Revolution

The Neolithic marks the beginning of a major transitional phase in human prehistory—the shift to an agricultural way of subsistence (Simmons 2007; Banning 1998; Bar-Yosef 1980). Before this time, humans relied on a hunting and gathering way of life that consisted of a primarily nomadic pattern of residence. Before ca. 10,000 years ago, only limited evidence of sedentary living (i.e., architecture or other indications of permanence) have been found. It was not until the advent of domestication of plants and animals around the beginning of the Holocene that people began to stay in one place and reside in villages. V. Gordon Childe coined this period in prehistory the “Neolithic Revolution” because it perpetually changed the course of human life (Childe 1928).
It is difficult to imagine an “agriculture-free” world. Without agriculture, humans would be left to basic instincts to procure resources and hunt for food. This was the way of life up until the end of the Pleistocene. Hunters and gatherers wandered the landscape in search of nourishment, and ultimately, survival. Despite the urgency for finding provisions in order to stay alive, this way of life was much simpler than food production. Hunters and gatherers most likely worked very few hours during the day gathering plant foods and hunting wild game. The majority of labor efforts were spent processing these various plant foods and animals for human consumption (Diamond 2002).

That being said, it is difficult to ascertain why farming began in the first place. If people were subsisting on a hunting and gathering lifestyle and making ends meet with no apparent problems, than why was there this sudden shift to domestication of plants and animals as the main method of food production? “If hunter/gatherers had actually foreseen the consequences of farming, they would surely have outlawed the first steps towards domestication, because the archaeological and ethnographic record throughout the world shows that the transition from hunting and gathering to farming eventually resulted in more work, lower adult stature, worse nutritional condition, and heavier disease burdens” (Diamond 2002: 700). Many theories concerning this issue have been proposed to explain the Neolithic Revolution. These theories range from the very plausible (processual) to the more fanciful (post-processual), yet
they are still theories, and theories are here to explain phenomena (Banning 1998). The Neolithic Revolution was a momentous period during human existence that changed the course of the world forever, so it is important to remember that, in all probability, there was not just one single reason for the switch to agriculture but rather many factors that contributed to it origins.

The island of Cyprus has not always been considered a primary archeological destination for investigation of the Near Eastern Neolithic:

Not too long ago, many scholars working within the Near Eastern Neolithic thought that there was little new to be learned by looking at Cyprus. The traditional paradigm of Cypriot Neolithic archaeology was that there were few parallels to the mainland (Simmons 2003: 61).

Over the past 20 years, this perception of the importance of Cyprus within the greater Near Eastern context has changed dramatically. No longer is Cyprus a mere reference to the more prominent Neolithic sites of the Levant—it has “rewritten the entire prehistory of the eastern Mediterranean” (Simmons 2003: 61). Many important discoveries have been made in the last two decades to help Cyprus stand out as a major player in the Near Eastern Neolithic world, and the simple fact that it is an island adds to its importance. An island can be viewed as a sort of ‘test tube’ in the sense that it is removed from the sort of influences that occur on the mainland. Being an island, Cyprus’ geographical and cultural boundaries are fixed. Systematic excavations render it possible to obtain a general view of its ancient remains (Steel 2004:1). An
insulated culture like Cyprus is special because it is without the typical influences of a mainland society. For that reason it is the perfect destination for pure, precise archaeological study. But at the same time, Cyprus played an important role in the Mediterranean world—it served as a geographical link between the Orient and the Occident and as a result connected many cultures (Steel 2004: 1).

Swiny sums up the significance of discovery of early Cyprus when he describes it as ‘revolutionary’. In the past few decades, Cyprus has undergone an influx of discovery of sites dating much earlier than 7,000 B.C.E., the Khirokitian culture, which Vassos Karageorghis’ standard survey from 1982 suggested as the earliest human presence on the island (Swiny 2001: xi). Until recently, there has been a shortage of sites documenting the presence of foragers or hunter-gatherers on Cyprus (Ammerman et al. 2006; Simmons 2008). These new early sites, if their ages can be verified, have changed the picture of Cypriot prehistoric archaeology in a drastic way.

Chronology

Currently, the Aceramic Neolithic of the Levant is comprised of three phases (the following are calibrated dates): the Pre-Pottery Neolithic A (PPNA, ca. 9500-8500 BC), the Pre-Pottery Neolithic B (PPNB, ca. 8500-7000 BC), and the Pre-Pottery Neolithic C (PPNC), which has been characterized as a transitional period to the Pottery Neolithic.
Corresponding with this Aceramic Neolithic period of the Levant are the Cypro-PPNB and Khirokitian periods on Cyprus, as illustrated in Table 2 (see Appendix 2).

Cyprus

Cyprus is an island located in the far eastern portion of the Mediterranean Sea just south of the Anatolian peninsula of the Asian mainland. It is located at precisely 35’00” North latitude and 33’00” East longitude. Next to Sicily and Sardinia respectively and larger than Crete, it is the third largest island in the Mediterranean (9,250 km²). The modern nation of Turkey is located only 75 kilometers to the north and other nearby countries include Syria, Israel, Jordan, and Lebanon to the east, Greece to the northwest, and Egypt to the south. The physical setting of the island of Cyprus includes three main mountain masses, the Troodos, Pentadactylos, and Kyrenia ranges, and the central plain they surround known as the Mesaoria. There are also scattered but significant plains along the southern coast. Coastal lowlands surround the island on its edges. The island’s highest point is at the pinnacle of Mount Olympus, measuring to 1,952 meters tall (6,404 ft), in the center of the Troodos range. The Mediterranean climate characteristic of Cyprus is temperate and favorable for agricultural activities. Typically, Cypriot winters are mild and wet and the summers hot and dry. Summer temperatures range from warm in the higher elevations
(Troodos range) to very hot in the surrounding lowlands. Winter
temperatures are mild in the lower elevations, where snow occurs
sometimes, but are significantly colder in the higher elevations (Steel
2004: 5).

We see the earliest well-documented evidence of human occupation
in Cyprus at Akrotiri Aetokremnos around 12,000 years ago, immediately
prior to the Neolithic, and temporally contemporary with the mainland
Natuflan culture. Neolithic culture appeared in the Levant from the late
Epipaleolithic Natufian, which was one of the first groups to employ
partial sedentism. Some have even coined the Natufian period as “proto-
Neolithic” (Belfer-Cohen 1991).

The Sites

The site of Akrotiri Aetokremnos is indisputably the earliest known
site on Cyprus. At this site, otherwise known as “Site E”, there are
substantial amounts of endemic Cypriot pygmy hippopotami (Phanourios
minutus) remains as well as possible evidence of processing activities
(Simmons 1999, 2001, 2004). These endemic Pleistocene animals had
not previously been associated with cultural remains. Akrotiri
Aetokremnos, although controversial due to its early date and the
connection between pygmy hippo bones and cultural materialis
considered one of the earliest foundational sites in Cyprus for human
colonization. No obsidian was found here.
Recently, more work has been done on the presumed Late Epipaleolithic sites of Nissi Beach and Akamas-Aspros (Ammerman et al. 2006) and on Agia Varvara-Asprokremnos, which appears to represent a very early Neolithic (Pre-Pottery Neolithic A, or PPNA) (McCartney et al. 2008). These sites have contributed to our understanding of the first human inhabitants of the island of Cyprus and have contested the idea that Akrotiri is the earliest known site on the island. The chipped stone assemblages from these sites suggest they may date back to pre-Neolithic times. These sites will be discussed in more detail in Chapter Two.

Other sites, such as Kissonerga-Mylouthkia, Parekklisha-Shillourokambos, and Kritou-Marottou-Ais Yiorkis (the focus of this research) represent what has come to be known as the newly identified Cypro-PPNB (Pre-Pottery Neolithic B) phase of Cypriot prehistory (Peltenburg et al. 2001), beginning ca. 8400 BC and lasting until ca. 7000 BC. This is an important phase in the chronology of Cyprus prehistory because up until about twenty years ago, there was no classification for the approximate 3,000 years separating the Akrotiri and Khirokitian phases. Now the discovery and excavation of more sites on Cyprus is helping to bridge this gap and aid in the understanding of the early inhabitants of the island. The Khirokitia Culture is the end result of a colonizing process that started in Cyprus at the end of the 9th millennium BC. This phase in Cypriot prehistory can be characterized
by well-organized, developed societies who participated in farming, hunting, and herding.

Kritou-Marottou-Ais Yiorkis

_Ais Yiorkis_ (please see Appendix 3) is an aceramic Neolithic upland site approximately 526 m above sea level, located near the city of Paphos, on the western coast of Cyprus originally thought to date to the Khirokitian Culture (Simmons 2003). Cypriot sites are typically “coastal” in regards to location, making _Ais Yiorkis_ somewhat peculiar in its own right. It is a smaller (in comparison with village sites such as Khirokitia or Kalavassos _Tenta_) aceramic Neolithic site that now has been dated to the middle Cypro-PPNB (10,100-9500 calibrated BP), prior to the Khirokitian culture (9000-7500 calibrated BP) (Simmons 2003).

Although it is smaller than sites such as Khirokitia, _Ais Yiorkis_ is extremely rich in cultural material and faunal remains. When recorded during survey, it was noted that: “In addition to being an upland site, _Ais Yiorkis_ is also intriguing because its recorders thought it reflected a small hamlet possibly related to deer and pig exploitation” (Fox 1987, 20-2, 26). The University of Nevada, Las Vegas (UNLV) has conducted excavations at _Ais Yiorkis_ beginning with a brief testing season in 1997, and more full-scale investigations from 2002 through 2009. Artifacts recovered include a large assemblage of chipped stone (over 180,000 artifacts including 42 obsidian bladelets), fauna, marine shell, and
carbonized seeds. A substantial amount of animal bone has been recovered; this includes a high proportion of fallow deer, as well as remains of pig, caprines, cat, and fox (Simmons 2003). Faunally speaking, what is most significant at Ais Yiorkis is the occurrence of cattle:

    The biggest surprise, however, was the presence of four definite cattle bones as well as another five of cattle size. That these could have been intrusive was quickly dispelled by a radiocarbon date 7007-6468 cal B.C. on one of the bones (Simmons 2003: 66-67).

Several additional cattle remains have since been recovered, amounting to approximately 1.7% (n=252) of the entire faunal assemblage to come out of the soil at Ais Yiorkis thus far.

    It is likely that Ais Yiorkis was a partially sedentary community where such activities as flint knapping and animal processing were taking place. Sites of this type are extremely rare in Cyprus and little has been done in terms of research on these specialized sites. More focus has been centered on the larger architectural sites, but in recent excavation efforts, Ais Yiorkis has yielded some interesting architecture itself. Circular stone and plastered structures have now been documented. They have no counterparts in Cyprus and their function is unknown. They could possibly represent structural foundations or “dancing platforms” (Garfinkel 2003). Lithic material has proven to be the most prevalent artifact to come out of the Ais Yiorkis strata, but there
is also a plentitude of other artifacts, such as fauna, seeds, and the more elusive obsidian bladelets. “Groundstone implements have also been common in recent excavations, as are a variety of personal artifacts, such as an incised picrolite ‘thimble’ and other picrolite ornaments” (Simmons 2003: 7). These more extensive excavations have demonstrated that Ais Yiorkís likely functioned as a small village that may have been occupied for the greater part of the year.

Obsidian

Obsidian, a black volcanic glass, was first recognized by Colin Renfrew and his colleagues J.E. Dixon and J.R. Cann in the 1960s as a uniquely sensitive indicator of prehistoric trade, both because of the great desirability of this material before the use of metals, and also because the trace-elements it contains are usually diagnostic of individual sources (Sheratt 2005: 1).

As Cyprus (and the Levant) has no natural local obsidian sources, it was brought to the island from an outside source—the closest identified is Anatolia (modern-day Turkey). There are two major source areas in Anatolia: Central Anatolia and Eastern Anatolia (Balkan-Atl 1999; Binder 2002; Briois and Guillaine 1997; Renfrew, Dixon, and Cann 1968).

The obsidian artifacts that have been found to date at various Neolithic Cypro-PPNB sites such as Shillourokambos and Akanthou, as well as later Khirokitian sites, have been sourced to Anatolia. Two main obsidian arteries have been identified as the prominent sources for
Cyprus: Nemrut Dag in Eastern Anatolia and Gollu Dag in Central Anatolia (Yellin et al. 1996). Obsidian was likely a valuable commodity for the early settlers of Cyprus since they were procuring it in one way or another from the mainland. This exchange system allowed not only obsidian artifacts to make their way across the Mediterranean Sea, but possibly other trade items as well and ideas in what has come to be known as the “Neolithic package.” Along with the movement of obsidian came the incorporation of the Neolithic Revolution out of the mainland into other areas such as Cyprus.

Delineation of Chapters

This thesis is divided into the following chapters: Chapter Two will provide a background summary discussion of Neolithic archaeology in both the Near East and more specifically, Cyprus. This will include an explanation of both Levantine and Cypriot chronology and their major differences. Also, the newly-defined Cypro-Pre-Pottery Neolithic B period will be addressed as Ais Yiorkis has been placed within it.

In Chapter Three, a summary of Mediterranean obsidian will be given, including the two major Anatolian obsidian sources where the majority of Cypriot and Levantine obsidian remains have been sourced to. Also, an examination of trade, exchange, and ritual in the Mediterranean will be provided. Cypriot obsidian could only have been obtained through some sort of exchange network with the mainland.
This trade network is very important for understanding Cyprus’ role within the greater Mediterranean context. Ritual and ideology is essential for discussing the function of these materials—there is ample evidence that obsidian was a highly-prized commodity for the early inhabitants of Cyprus. Possible reasons for this include functionality and ritual.

In Chapter Four, methodology will be discussed. This methodology consists of three sections. The first section is a detailed literary review of the history of obsidian study in the Near East and Cyprus. Following the discussion of the obsidian literary review will be an explanation of the field methods used during the 2006 and 2007 summer archaeological field seasons that took place at Ais Yiorkis. Finally, a discussion of laboratory and independent methods will be given. This will include a description of all photography and sketching of the obsidian remains from the site.

The end of Chapter Four consists of a breakdown of the Ais Yiorkis obsidian assemblage itself and how it fits into the much larger lithic assemblage from the site. It is a detailed analysis of the obsidian remains from Ais Yiorkis with a detailed description of each artifact, including measurements and physical characteristics.

Chapter Five incorporates evidence of obsidian from both the aceramic Near Eastern Neolithic and the aceramic Cypriot Neolithic. This is followed by an interpretation of the Ais Yiorkis obsidian
assemblage (possible functions, ritual), which includes a comparison of Ais Yiorkis to other Cypriot sites containing obsidian. Lastly, Ais Yiorkis will be placed into the greater Near Eastern context in terms of obsidian presence.

Finally, the end of Chapter Five will conclude this thesis with a discussion of the significance of the research. Ais Yiorkis was a unique site that existed at an extremely pivotal time in human prehistory. This was a time when many humans were becoming agriculturists and using farming as the primary method of subsistence. These ideas originated in various parts of the Near East, such as the Levantine Corridor and other areas of the “Fertile Crescent” and spread outwards to the surrounding areas, including Anatolia and Cyprus. Ais Yiorkis can be seen as one end result for this spread of ideas, or “Neolithization.” In addition to the obsidian, faunal remains, carbonized plant remains, and architectural remains all characterize Ais Yiorkis as a potential channel and end point for the spread of Neolithic ideas. Lastly, ideas for possible future work dealing with the Ais Yiorkis obsidian assemblage will be discussed.
CHAPTER 2

BACKGROUND INFORMATION

Cypriot Archaeological Summary

“One of the most intriguing developments in recent years in Cypriot archaeology is the extension of evidence of human activity back to the epi-Paleolithic” (Steel 2004:23). It is known that the mainland regions surrounding Cyprus were settled before the Mediterranean islands, but the time of the first appearance of humans on Cyprus is still up for debate. Up until recently, it has been believed that the earliest human activity on Cyprus took place during the Neolithic, but pre-Neolithic evidence of faunal extinction has led to speculation of possible human involvement. Kill-sites of endemic Pleistocene fauna have been identified on Mallorca and it is suggested that extinction of these fauna in the islands of the Western Mediterranean was anthropogenic (Steel 2004:24). Similar evidence has been brought forth for Cyprus in regards to the extinction of the pygmy hippopotamus and pygmy elephant (Simmons 1999). Certainly, it has been clearly demonstrated that there was a clear overlap between humans and endemic Pleistocene fauna on several of the Mediterranean islands at the Pleistocene-Holocene interface (Steel 2004:24). Stanley-Price (1977) has also hypothesized about the early human settlement of Cyprus. He argues for …the possibility of a Pleistocene or epi-Paleolithic landfall by humans on the island, but argues that any such landfall represents an abortive settlement phase, and did not mark the
beginnings of a continuous cultural sequence on the island (Stanley-Price 1977a: 43).

What came before the Neolithic, if anything, in terms of early human settlement on Cyprus, is a difficult question to answer indefinitely. As Simmons (1999: 18) states, “Any claims for pre-Neolithic materials must demonstrate both a chronological antecedence to the Neolithic and an artifact assemblage distinct from the Neolithic to warrant separate culture classification”. Two claims for pre-Neolithic settlement on Cyprus were made by Stockton (1968) and Vita-Finzi (1973). “Stockton’s claim for early flint artifacts from three locations near Kyrenia in northern Cyprus is based on surface materials with little or no context that were not diagnostic of any known early assemblages” (Simmons 1999: 21). Stockton believed he was dealing with an abundance of debitage and lithic tools, but in actuality it was questionable whether or not these ‘artifacts’ were ever manipulated by humans at all. It is likely that these collections were made from road debris that had been transported inland from particular beaches and were naturally fractured cobbles (Simmons 1999: 22). Likewise, Stockton’s claim for pre-Neolithic occupation of Cyprus was not supported.

Vita-Finzi, on the other hand, was a researcher with more formal archaeological training than Stockton. He believed that he had found several pre-Neolithic flint artifacts on a fossil beach within red clay silt
near the mouth of the Moronou River east of Ziyi, on the south coast of the island. But just as in the case of Stockton’s claim, Vita-Finzi’s ‘artifacts’ were completely undiagnostic and unlike any sort of Middle Paleolithic implements. And also like Stockton’s assemblage, these specimens could easily have been naturally-made and were not suitably distinct to merit a pre-Neolithic origin (Simmons 1999: 22).

While it is unlikely that people existed on Cyprus during the Paleolithic, this does not mean that the possibility should be ignored. We still have a limited knowledge base of the Paleolithic and the more archaeological data we can obtain from this time, the more understanding we will have. Despite the numerous pre-Neolithic claims of human occupation of Cyprus, few have stood up to critical scrutiny (Simmons 1999: 25). It is the folly of some archaeologists to seek out the ‘oldest’ of something, meanwhile passing by the valuable information that can be gathered from the sites we have now. We have a tricky enough job of making sense of what we know now (Simmons 1999: 25).

One of the main arguments against the early, pre-Neolithic settlement of Cyprus is the inability of humans at the time to travel across water. Cyprus has always been an island; at no point was it connected to the mainland, so the chance of humans existing on the island all along is not possible. “As a natural architecture, water, in the form of rivers, streams, lakes, etc., creates physical boundaries and divides the encountered world” (Rainbird 1999: 230). The question is not
whether or not people made the sea voyage to Cyprus from the mainland; it is when they were first able to make that trip. “In the Mediterranean, for example, there is evidence from Franchthi Cave on the Greek mainland that at least 10,000 years ago people were making return journeys to the island of Melos to collect obsidian” (Cherry 1981: 45). Evans (1973) points out that islands naturally have a restricted range of locally available resources. Because of this, it is relatively simple to pick out certain objects that have come from elsewhere, and consequently, understand the available contacts. How early during prehistory did people make the sea voyage to Cyprus remains a hot debate amongst experts in the field, but more and more evidence concerning the early inhabitation of the island is surfacing, shedding some long-awaited light on the mystery.

Akrotiri-Aetokremnos

Akrotiri-Aetokremnos or Site E, located on the southernmost tip of Cyprus on the Akrotiri peninsula, is presently the oldest known site on the island. The site was first discovered in 1961, by the son of a British serviceman stationed in the RAF Western Sovereign Base Area, who collected some chipped stone artifacts and bones, noted the site location and designated it Site E (Steel 2004: 25). Since the site has yielded a huge assemblage of some 300,000 bones, mostly pygmy hippopotamus
(Simmons 1999), it has undoubtedly raised more questions than it has answered about the earliest human inhabitants of Cyprus.

Despite not having promising surface remains, Akrotiri proved to be a major point of interest in early Cypriot archeology:

When initially discovered by amateur archaeologists, *Aetokremnos* did not appear promising. The collapsed rockshelter contained a surface scatter of bones identified as belonging to pygmy hippopotami, a layer of marine shell, and a few chipped stone artifacts. The likelihood of intact materials appeared slight, and there was no evidence to suggest that the artifacts were contemporary with the bones (Simmons 2001:3).

*Aetokremnos* sits on the edge of a steep cliff some 40 meters above the Mediterranean Sea—this called for urgent excavation and study of the site because of the risk of erosion. Immediate excavation was also necessary because of the association of extinct animals with cultural material.

Until excavation of *Aetokremnos* took place in 1987, it was believed that the earliest human occupation of Cyprus occurred during the Neolithic (Simmons 2001). Now it is evident that *Aetokremnos* is a significant site for understanding the earliest prehistory of Cyprus, for at least two reasons. Some evidence that suggests the direct connection of pygmy hippopotami with cultural activities includes 1) the near total disarticulation of all faunal remains, 2) the burning of approximately 30% of the hippopotamus remains, 3) the ‘clean’ shelter floor—no accumulation of sediments between floor and the hippopotami remains
suggests a prepared floor, 4) the presence of an assemblage never mentioned in Cyprus, and 5) the presence of cultural features (Simmons 2001). “First, it is one of the oldest well-documented sites on any of the Mediterranean islands. Second, it suggests that humans may well have been responsible for the extinction of endemic fauna, notably the Cypriot pygmy hippopotamus, *Phanourious minutus*” (Simmons 2001: 3).

It cannot be said in what year exactly *Aetokremnos* was occupied by humans, nor can it be said how long exactly the human occupation lasted (Simmons 1999). It is likely that *Aetokremnos* enjoyed a short life span, but from the artifacts and other archaeological evidence that have come out of this site, it is safe to say that this community lays claim to the earliest group of humans yet discovered to have settled on the island of Cyprus. Based on over 30 radiocarbon samples of various bone, sediment, shell, and charcoal, the duration of site occupation at *Aetokremnos* is said to be centered around the calibrated calendar age of 9825 B.C. (range of 9702-10,005, single standard deviation) (Simmons 1999: 208).

Nissi Beach, Akamas-Aspros, and Agia Varvara-Asprokremnos

It was only recently that Akrotiri was not considered the single earliest possible human occupation site on Cyprus. There have been two findings in recent years that have added to our understanding of the first human inhabitants of the island, Nissi Beach and Akamas-Aspros. Like
most other sites of their type, Nissi Beach and Aspros are situated in close proximity to the coast--Nissi Beach is located on the west side of the town of Agia Napa and Aspros in the southern part of the Akamas. Based on their chipped stone assemblages, these sites may date back to the pre-Neolithic. Neither site shows convincing data that people were settled on Cyprus before the Neolithic (ca 8,200 cal. B.C.), but Nissi Beach and Aspros can be best described in terms of camps of settlers who made visits to Cyprus on a seasonal basis; when these groups actually began to put down roots on the island is still open for discussion (Ammerman et al 2006.: 19). Despite the lack of settlement evidence from either site, Ammerman et al. (2006) stresses the importance of the Nissi Beach and Aspros as having considerable potential for the study of the oldest offshore seafaring in the entire Mediterranean.

Agia Varvara-Asprokremnos is located approximately in the center of the island of Cyprus on the east side of the Yialias River (McCartney 2007: 3). Asprokremnos, which likely dates to the PPNA and along with Nissi Beach and Aspros, is one of the recently discovered primary sites that exhibit evidence of human occupation on Cyprus either before the Neolithic or early into it. Like its pre-Neolithic counterparts, Asprokremnos lacks any indication of human sedentism at the site. The shallowness of the occupation deposits, ephemeral nature of the structural features, and lack of burials argue against any type of permanent settlement (McCartney 2007: 10). What is interesting about
Asprokremnos, however, is its distinct similarities in chipped stone with mainland Early Neolithic/PPNA sites. The use of unidirectional blade/bladelet cores showing distal correction, small lozenge points with a convex basal truncation, and well-made scrapers provide significant parallels to assemblages of the late PPNA (McCartney 2007: 8).

After the Akrotiri phase, there is an unexplained 1,000 year gap where no evidence of human occupation has been uncovered. New finds from the recently-defined Cypro-PPNB (Bolger 2003) on the island have helped to partially bridge this gap. These newly discovered sites will be discussed later in another chapter.

Khirokitian Culture

The Cypriot aceramic Neolithic is traditionally known as the Khirokitian Culture. This time period is problematic in more ways than one. There is the apparent time lag between the inception of the Neolithic in Cyprus and its supposed antecedents in the Levant (Steel 2004: 33). It has been accepted that Cyprus was a late recipient of knowledge, namely what has come to be known as the ‘Neolithic package,’ which comprises many elements of a domestication way-of-life. While the earliest Neolithic to flourish on Cyprus were aceramic, contemporary farming communities in the Levant and southern Anatolia had begun to use pottery receptacles (Steel 2004: 33). There is no rectangular aceramic Neolithic rectangular architecture found on
Cyprus, and there is a lack of ‘mega-sites’ on the island—two important
difference between Cyprus and the mainland. Some have harshly coined
Cyprus as ‘backwards’ and even ‘retarded,’ but it has been suggested
that Cyprus’ island status allowed for it to create its own brand of
culture, separate but still reminiscent of the mainland (Simmons 2007:
245). Its insularity allowed for an individual way of life to be utilized; not
to say that Cyprus was without outside influences—rather it was able to
‘pick and choose’ certain elements of the Neolithic package.

The Khirokitian Culture is characterized by farming villages such
as Khirokitia-Vounoi, Kalavassos-Tenta, and Kholetria-Ortos. Most of
Khirokitian Culture sites (with the exception of a few inland sites) are
situated along or near the coast of the island. It is unknown whether or
not there was interaction between these sites. “There is very little
evidence for intercommunications, though presumably the densely
wooded and mountainous interior would have acted as a major barrier to
movement overland” (Steel 2004: 46). There is, however, dispersion of
picrolite, a natural mineral resource found on Cyprus that was used for
ornamentation, throughout almost all of these sites. This suggests some
form of movement across the landscape (Steel 2004). An interesting
factor regarding interaction between these contemporary groups is the
lack of marine resources found at the sites. With their proximity to the
Mediterranean Sea, it would be standard to assume regular exploitation
of these resources, but the evidence is scarce.
Khirokitia (sometimes spelled ‘Choirokoitia’) is the largest aceramic Neolithic site on Cyprus. It is situated on a hill in the Maroni River valley towards the south central coast of the island (Le Brun 2001). It is in close proximity to another well-known Khirokitian Culture site, Kalavassos-Tenta. Khirokitia fits the typical pattern of aceramic sites characterized as being located on hills, promontories, or some other naturally protected feature, near the coast (Le Brun 2001). Khirokitia has been characterized as a well-organized, developed society mainly engaged in farming, hunting, and herding. Four species of mammal have been discovered at the site (fallow deer, pig, sheep, and goat)—the absence of cattle sets Khirokitia apart from the other prominent mainland Neolithic sites (Le Brun 2001). Farming consisted mainly of cereal crops, and the inhabitants of the site also picked fruit from the trees growing wild in the surrounding areas. These wild resources included pistachio nuts, figs, olives, and plums. Khirokitia is known for a long, linear stone structure crossing the settlement from north to south that was possibly built to provide artificial protection at one time (Le Brun 2001). Architecture at the site consists of a series of circular structures constructed from stone and mud, which implies some architectural handiness. “The basic architectural unit is a structure with a circular ground plan and not a rectangular one as seen in most contemporaneous villages in the Near East. This cultural choice remains constant throughout the occupation
of the site and buildings are round from the earliest level to the latest” (Le Brun 2001: 111). There is evidence of segmentation within the floor plans of the structures, implying compartmentalization and possibly engendered spatial patterning (Bolger 2003).

Despite the size and architectural skill exhibited at Khirokitia, the chipped stone industry is rather small. The chipped stone is rough and shows little technical variation and thedebitage consists mainly of flakes with very developed, plain butts, rarely dihedral, forming an open angle with a bulbar surface exhibiting a sharply protruding bulb of percussion (Le Brun 2001: 113). Other chipped stone artifacts found at the site include scrapers, burins, cores, notched and denticulated pieces, and some rare perforating tools. The chipped stone assemblage found at Khirokitia is negatively characterized by the absence of pressure retouch and the complete lack of projectile points, as well as by its certain rudimentary character (Le Brun 2001). As large and influential as Khirokitia may be compared with other Cypriot sites, the obsidian numbers here are surprisingly low.

Cypro-PPNB

As was mentioned earlier in this chapter, it was the discovery of Akrotiri-Aetokremnos that created a rather large chronological gap in human occupation during the early prehistory of Cyprus. Some 3,000 years separated the Akrotiri and Khirokitian phases, but recent
discoveries on the island of Cyprus have helped to partially close this gap. The newly-defined Cypro-PPNB started approximately 1,000-1,400 years before the Khirokitian Culture (Peltenburg 1998; Peltenburg 2001) and has visible similarities with the mainland PPNB, namely its chipped stone technology. This new early phase of the Cypriot Aceramic Neolithic is still being defined—the discovery of sites such as Parekklisha-Shillourokambos, Kissonerga-Mylouthkia, early Kalavassos-Tenta, Akanthou-Arkosyko, and Kritou Marottou-Ais Yiorkis is helping to better understand this new phase of Cypriot prehistory.

In the earliest levels at Shillourokambos, comprising 8,200-7,500 B.C.E., the site is characterized by deep wells and large wooden enclosures probably for livestock, due to the presence of cow remains. Obsidian is very common, which denotes frequent contact with the mainland at that time (Briois and Guilane 2001). There is a large chipped stone assemblage from Shillourokambos, and even though the obsidian only accounts for two percent of this assemblage, it is still very important for understanding the trade and exchange network that was in place with the mainland. “Cappadocia seems to have been the only source and most pieces consist of small regular bladelets requiring knowledge of pressure flaking, a technique not practiced in Cyprus despite the island’s connection with the mainland” (Briois and Guilane 2001: 47). Evidence of possible cult practices and symbolism can be seen at Shillourokambos as well. The earliest levels have yielded
information in the form of a few pebbles engraved with checkerboard patterns on one or on almost all surfaces (Briois and Guilane 2001). What is also interesting and maybe even more striking are the figurines that have been discovered at the site. A small lime plaster figurine 5.5 centimeters high with a broad, upturned, slightly rounded face connected to a cylindrical neck was found in well 117 from the early phase, and a carefully carved figurine head with almost ‘cat-like’ protruding ears was also found in one of the early levels (Briois and Guilane 2001). Felines are not a part of the indigenous faunal assemblage of Cyprus; they were brought over from the mainland along with the ideology associated with them that is so obviously illustrated at Shillourokambos. If this find indeed has a connection with the introduction of rituals from the mainland, it should be noted that a small carved head of a cat has been recorded at Jerf El Ahmar on the Euphrates and is dated to the PPNA around 9000 B.C.E. (Briois and Guilane 2001: 52).

Kissonerga-Mylouthkia is a coastal site located at the northern end of the Ktima Lowlands in the Paphos District, western Cyprus (Peltenburg et al. 2001: 65). One of the most prominent discoveries to come out of Mylouthkia are the deep wells. During excavations during the late 1980s and early 1990s, shaft-like features became visible in a soil quarry at the northwest part of the site. These features proved to be two of the earliest known water-wells (Peltenburg et al. 2001). The wells
have yielded a plethora of artifacts, including animal remains, human remains, plant remains, chipped stone artifacts, and ground stone vessels. “The considerable effort which was clearly invested in securing a water supply at Mylouthkia implies a strong desire on the part of a Neolithic community to utilize this particular place, and most probably to reside, on an occasional basis at the very least, in the close vicinity” (Peltenburg et al. 2001: 77). The chipped stone assemblage from the site is closely linked with the mainland PPNB lithic technology, thus providing ample evidence of an early phase of the Cypriot Aceramic Neolithic.

Kalavassos-Tenta, a primarily Khirokitian site, lies adjacent to the southern coast, between Limassol and Larnaca. This Aceramic Neolithic site consists of a village on a small hill 3.2 kilometers from the coast and very close to Khirokitia (Todd 2001). Tenta can be characterized by circular, or at least curvilinear domestic structures clustered on the upper reaches of a hill, surrounded, in an early phase of the settlement, by a substantial encircling wall and a ditch cut in the havara (secondary limestone) immediately outside it (Todd 2001). Although Tenta is characterized as Khirokitian, the stratigraphy, radiocarbon dates, and the occurrence of diagnostic early chipped stone artifact types at certain levels (namely level 5) strongly suggests that the site also is chronologically to be equated to with the earlier Aceramic phases at Shillourokambos, dating to the mainland PPNB (Todd 2001).
For many years, despite a few unsubstantiated claims for pre-
Neolithic occupations, there simply was no evidence for an
occupation earlier than about 7000 B.C. Conventional wisdom
held that the island was settled by relatively late Pre-
Pottery Neolithic peoples who arrived from the discovery of the
controversial site of Akrotiri-Aetokremnos (Simmons 2001: 61).

The discovery of such sites as Shillourokambos, Mylouthkia, Tenta,
and Ais Yiorkis (the focus of this thesis) have assisted in bridging the
human occupational gap on the island of Cyprus. As more information
from these sites is unveiled, the early settlement during the prehistory of
Cyprus can be better understood.

Cypriot Aceramic Neolithic Obsidian Evidence

In order to place Ais Yiorkis in the greater Mediterranean and
Levantine contexts of obsidian procurement and exchange, it is essential
to discuss the whole of Cyprus in terms of its involvement in prehistoric
obsidian trade. In other words, at what Neolithic Cypriot sites in
particular do we find notable obsidian assemblages and how do they
compare to Ais Yiorkis? The purpose of the following analysis is to
examine the role of Cyprus in the Mediterranean obsidian trade network
and furthermore, its role in the spread of new ideas, namely those of the
Neolithic Revolution.

Shillourokambos, along with Akanthou which will be discussed
later in this section, is one of the most well-known sites on Cyprus for
obsidian remains. Even though obsidian makes up only two percent
(2%) of the chipped stone assemblage at this site, its role is qualitatively important (Guilane and Briois 2001). Like most of the other prehistoric Cypriot sites possessing obsidian, these artifacts all come in the form of small bladelets, suggesting they were manufactured on the mainland and brought over as finished (or exhausted) products. Also, the production of these bladelets required a knowledge of pressure flaking, which is a skill not practiced in Cyprus during this time despite its obvious connections with Anatolia (Guilane and Briois 2001). The whole of obsidian found in Cyprus that has undergone analysis has been shown to originate in Central Anatolia. Almost all of the obsidian tested from Shillourokambos came from Gollu Dag, from the Komurcu and Kabaktepe sources (Briois 1997: 108-110). Shillourokambos in particular has uncovered hundreds of obsidian bladelets with central Anatolian origin, changing the importance of the arrival of obsidian from a single journey to a continuous supply (Sevketoglu 2002: 98-99).

Akanthou stands high above Shillourokambos when it comes to sheer numbers of obsidian artifacts. And when looking at long-distance trade, it is one of the most important Neolithic Cypriot sites to date. Akanthou's obsidian is special for the island of Cyprus because here there is evidence of bladelet production which is not seen elsewhere on the island. It is generally thought that ready-made blades were imported to the island, but the presence of obsidian debitage at Akanthou is changing the tide of current ideas. Even in preliminary rescue
operations, 422 obsidian artifacts were discovered. Of this assemblage, there were 193 blades, 8 chunks, one core, and 221 fragments of various blades and flakes (Sevketoglu 2002: 101). To date, the amount of obsidian artifacts to come out of excavations at Akanthou is over 5,000, including complete tools and debitage (Sevketoglu 2008: 65), far surpassing that of the obsidian assemblage found at Shillourokambos. The size of the obsidian blades vary from 70 mm (the longest discovered at Akanthou) to 10 mm long (Sevketoglu 2002: 103). From this varied assemblage, it can be confirmed that obsidian tool manufacture occurred at the site. This is uncharacteristic for the island of Cyprus. The majorities of sites possessing obsidian have the material in small amounts and do not have any evidence of debitage. From the obsidian remains found at Akanthou, it can be said that it was possibly a major processing and redistribution center for the island. The large amounts of obsidian found at Akanthou suggest that the people of this community likely maintained strong ties to the mainland areas of central and southeast Anatolia, ensuring continued supplies of the material (Sevketoglu 2002: 106).

The low amount of obsidian pieces at Khirokitia is surprising due to the sheer size and influential span of the site. It appears as if the Anatolian source from which these pieces came from had suddenly dried up (Le Brun 2001). Other sites such as Kalavasos Tenta and Cape Andreas Kastros show this same obsidian paucity (Le Brun 2001).
Renfrew et al. (1968) reports only six pieces of obsidian were found at Khirokitia in a total lithic industry of 1,051 pieces. “Compared to the number of obsidian pieces found at Shillourokambos and considering the volume of soil removed, the contrast is striking” (Le Brun 2001: 113). I will discuss later how Ais Yiorkis displays a striking contrast to these sites in terms of obsidian numbers. Ais Yiorkis is a relatively small site, but the obsidian presence there would suggest a much larger community.

The low numbers of obsidian we see at other larger sites on the island suggest the disproportionate nature of Ais Yiorkis in terms of its imported artifacts, and this raises some very important questions that will be discussed at a later time. But it is important to note that although Ais Yiorkis seems to display an unusually high percentage of obsidian, it is not yet possible to directly compare this percentage with other sites. Ais Yiorkis’ entire chipped stone assemblage to date has been accounted for; this is not the case for most other sites on the island. Shillourokambos is one site that’s chipped stone has been published in its entirety, and it has yielded 2% obsidian to date.

Unlike the sites of Akanthou and Shillourokambos, obsidian is absent at the early sites of Akrotiri-Aetokremnos, Nissi Beach, Akamas-Aspros, and Agia Varvara-Asprokremnos. From this lack of obsidian at the early sites, it can be hypothesized that human occupation of the island of Cyprus during the pre-Neolithic was not related to the
expansion of trade in obsidian originating from Central Anatolia during the Cypro-PPNB, or the E/MPPNB on the mainland.

**Ritual and Symbolism**

“We are fortunate that Neolithic sites often yield multiple types of data for belief systems of their inhabitants” (Banning 1998: 222). Cyprus is no exception to this rule. At Khirokitia, for instance, as well as most other aceramic Cypriot sites, small stone objects, such as beads, pendants, and other sorts of decorative ornaments are common. On the central and western sides of the island, however, enigmatic engraved pebbles have only been found at the sites of Khirokitia, Kholetria Ortos, and Shillourokambos (Simmons 1996).

Some of the more interesting symbolic finds come out of the Cypro-PPNB site of Shillourokambos. “The excavations at Shillourokambos have shed light on the art and/or cultic beliefs of its Neolithic inhabitants” (Guilane and Briois 2001: 47). The majority of information concerning cult and symbolism comes from the early phases of the site, in the form of a few pebbles engraved with checkerboard patterns on one or almost all surfaces; one pebble is completely covered with incised lines, sometimes arranged in scatters branching out from a single point (Guilane and Briois 2001: 47). Of greater interest at Shillourokambos are the face figurines. The most striking feature of one of the figurines is a pair of small upright ears providing a feline-esque appearance, or
perhaps a “hybrid”: part cat, part human creature (Guilane and Briois 2001: 51). Since felines are not included in the indigenous fauna of Cyprus, it must be assumed that these animals were imported from the mainland. One might also wonder if associated ideological ideas concerning felines were imported from the mainland as well (Guilane and Briois 2001: 51). Also of interest are the human burials at Shillourokambos. A pit containing a funerary deposit with an aged adult male placed in a huddled position lying above the partial remains of at least 3 other individuals was discovered 1.8 m below the ground. There is ideological significance in the burial itself and the manner in which these individuals were placed in this grave.

Ais Yiorkis has its own collection of possible ritualistic/symbolic culture. As mentioned earlier, the signature small stone objects found at so many aceramic Cypriot sites are also found at Ais Yiorkis. Some of the more interesting pieces include a handful of small engraved picrolite items, one in the shape of an almond and the two others in the shape of what appears to be thimbles (Simmons 2003). The almond-shaped pendant is engraved with a criss-cross pattern and what is most striking about the piece is the obvious wear around the center, implying the pendant was probably worn around the neck as a necklace and worn down where the pendant made contact with skin.

Another interesting small find from Ais Yiorkis is the picrolite ‘platter’. Only a portion of this intricate platter was recovered, but it is
safe to say that this artifact is quite unique for this period (Simmons 2003: 7). An item such as this one, as well as large groundstone vessels, suggests some sort of ritual feasting was taking place at the site.

Another feature at Ais Yiorkis that suggests ritual behaviors are the semi-circular structures discovered in-situ; this is significant because other architecture is quite rare at Ais Yiorkis. “This consists of a foundation layer of small boulders topped by numerous smaller cobbles. The feature appears to be seated on bedrock or havara (secondary limestone). In front is a hard-packed surface that appears to be plastered” (Simmons 2003: 7-8). The function of this feature is still unknown, despite the ashy midden deposit and cache of intricately manufactured blades found adjacent to it; this ‘rotunda’ could have served as a residence, a tower, a platform, a corral, or the foundation of a larger structure (Simmons 2007). Garfinkel (2003) argues that dancing dates back ten thousand years ago where some of the earliest scenes of this activity can be seen in engravings and plaster floor paintings. This rotunda at Ais Yiorkis could also possibly have acted as some type of dancing ‘platform’. Recent excavation efforts have uncovered similar structures at Ais Yiorkis, making the rotunda no longer unique, but characteristic, of the site.

What is also remarkable about Ais Yiorkis is the presence of cattle bones. Cattle are not indigenous to Cyprus, so it can be safely assumed that they were transported to the island from the mainland. Cattle were
not previously present in Cyprus until the mid-to-late third millennium calibrated B.C.E. during the Bronze Age. This is when they made their first appearance at Sotira *Kaminoudhia*, even though they were already present in the seventh millennium calibrated B.C.E. at many sites on the mainland (Simmons 2007; Held 1993: 28). There is reason to believe that cattle may have met not only the economic needs of these islanders, but also their ritualistic needs. Until recently, it was thought there was an absence of cattle during the Neolithic in Cyprus, but now there is substantial faunal evidence from both *Ais Yiorkis* and *Shillourokambos*, and possibly *Akanthou*, to suggest otherwise. “There clearly is considerable evidence for ritual treatment of cattle throughout the Near East during the Neolithic, epitomized perhaps by Catal Huyuk in Anatolia” (Simmons 2003: 8). If the ideas of ritual treatment of these bovids transferred, along with other things, from the mainland, than this can be considered part of the ‘Neolithization’ of Cyprus and thus helping to place it within the broader context of the Mediterranean world and the early colonization of Cyprus.

**Mediterranean Obsidian Trade**

During the Neolithic period, interregional exchange played an important role in the everyday lives of these prehistoric peoples. This likely was true in Cyprus and elsewhere. The aceramic Neolithic culture of Cyprus, with its famed stone bowls and distinctive human and animal
representations but undeveloped chipped stone industry, does not exhibit close ties with its likely parent cultures on the mainland. The presence of Anatolian obsidian, however, proves that contacts with the outside world were maintained (Swiny 1989: 181). Obsidian was a prized commodity sought out by many prehistoric groups in the Near East. What it was used for in each of these communities is uncertain (cutting and scraping are the most common theories), but its importance is manifest. Since obsidian is much more plentiful on the mainland, some uses of the material are more evident in comparison with obsidian found on Cyprus. One site in Anatolia, Asikli Huyuk, contains a lithic assemblage that is 100% obsidian (6,200 pieces). This is clearly due to the site’s close proximity to the Anatolian obsidian sources. Most of these artifacts were tools or tool fragments, and any obsidian flakes that did not show signs of use were not collected (Wright 1969: 27). So it can be assumed that the entire lithic assemblage (including debitage) at this site was much larger than 6,200 pieces.

Obsidian first shows up during the PPNA at Jericho and Nahal Oren and in both cases makes up less than one percent of the raw material in the lithic industries (Wright 1969: 25). As in Cyprus, there are no natural obsidian sources in the Levant. Any obsidian found in this area must have been traded from the mainland, likely from Central Anatolia, Lake Van in Eastern Anatolia, or Iran (Wright 1969: 25). If a material used by a community does not occur locally in the raw state,
one must conclude it was imported, and the possibility exists that it was obtained in trade with another population (Dixon et al. 1968: 108).

For the purposes of this research, both of the terms ‘trade’ and ‘exchange’ will simply refer to the swap of one commodity for another. The Neolithic communities that existed on Cyprus had to go above and beyond the mainland methods to procure their obsidian supply. The inevitable sea voyage was undoubtedly a trying task. “Some of the obsidian from Turkish sources was distributed over distances of more than 600 miles in the early Neolithic period” (Dixon et al. 1968: 114).

The challenges of traveling across the Mediterranean Sea are evident from the limited amounts of obsidian found at Cypriot sites, as compared with contemporary mainland Levant sites. Geographical factors other than distance obviously had an effect on the Cypriot obsidian supply; the necessary ocean trip evidently inhibited or restricted trade (Dixon et al. 1968).

Obsidian is a volcanic rock of a glassy variation of rhyolite, and is the result of immediate cooling of the lava. It is connected only to acidic rock formations thus, it is not a common product of every volcanic formation (Balkan-Atli et al. 1999). We see the most extensive evidence of Near Eastern obsidian in Anatolia (modern-day Turkey), concentrated mainly in Cappadocia and in the east. According to geological evidence, the only other prominent obsidian source in the Near East is located in modern-day Iran. This means that every prehistoric village in the
surrounding areas where farming first began had to import its obsidian (Dixon et al. 1968: 113). Figure 2 depicts the pattern of obsidian distribution from Anatolia throughout the Levant. Cypriot, Anatolian, and Levantine villages obtained obsidian primarily from three sources: Acigol and Ciftlik in Anatolia, and the rest came from Iran. The villages of the Fertile Crescent, in turn, depended on the main obsidian sources in Armenia, namely Nemrut Dag and Bingol (Dixon et al. 1968). “A few sources have not yet been located precisely, but the basic pattern of sources and destinations is now clear enough to provide a good picture of the movement and trade routes of obsidian in the period when the first steps toward civilization were taking place” (Dixon et al. 1968: 113) (see Appendix 3).

Obsidian seems to be the most promising approach towards understanding the extent to which the different Early Neolithic cultural and ecological regions were in contact. It should help to suggest how the early spread in the knowledge and use of animal and plant domestication took place in the Near East (Renfrew et al. 1966: 30). By learning more about the relationship between the obsidian source areas in Anatolia and the recipients in the surrounding regions, we can better understand the peoples involved in this exchange system themselves. When the distances between early Neolithic villages and their sources of obsidian became known, it opened a window on what would proved to be a

Colin Renfrew and his colleagues formulated an idea called ‘down the line’ distribution in hopes of explaining the mechanics of the obsidian trade in the Neolithic Near East. Renfrew suggests that variations in the abundance of obsidian as distance from the source increases may provide evidence of what kind of exchange system distributed it (Banning 1998).

By the time the first farming villages were founded, probably a little after 8000 B.C., obsidian had come into rather general use. Naturally the extent of adoption of the material varied with distance from the sources of supply, and this is clearly traceable in the obsidian objects found at the sites of the ancient villages (Dixon et al. 1968: 114).

Renfrew was one of the first researchers to employ a multidisciplinary approach when studying Anatolian obsidian. He localized some of the sources and defined the geologic and archaeological samples by spectrometry. By doing this, he tried to analyze the distribution of obsidian, proposing a complicated social model: the material travels through the territory, passing different regions as a result of a succession of exchanges (Balkan-Atli et al. 1999: 134). As a result of this intricate trade system, certain territories became exchange centers. Other regions in the surrounding area, like Cyprus, did not become trade centers but were certainly a part of the trade network.
A few pieces of Ciftlik obsidian have been found even at a Neolithic settlement on Cyprus, which indicates at least a trading contact across the water. Some of the obsidian from Turkish sources was distributed over distances of more than 600 miles in the early Neolithic period (Dixon et al. 1968: 114).

The required sea voyage from Anatolia to the island of Cyprus undoubtedly hindered trade, despite Cyprus’ close proximity to the mainland. The reduced supply of obsidian on Cyprus (as compared with other mainland Levantine Neolithic sites) in spite of its nearness to the sources on the mainland is an example of the influence of geographical factors other than distance on the trade network (Dixon et al. 1968). What is most important about this complex exchange system that was in place during the Neolithic in the Near East is not only the exchange of obsidian, but the traffic of new ideas from community to community. By the time farming reached the island of Cyprus, obsidian had come into rather general use. The network of contacts arising from the trade in goods must have been a major factor in the rapid development of the economic and cultural revolution that within a few thousand years transformed mankind from a hunting animal to a builder of civilization (Dixon et al. 1968: 115). Before the onset of an exchange system, these communities were independent entities relying on only themselves and were not connected to separate cultures from their own. This mutual contact undeniably influenced their previously bound worlds and overall social views.
CHAPTER 3
THE BROADER NEAR EASTERN PERSPECTIVE

Near Eastern Environmental Summary

The Levant can be defined as a large area bounded in the west by the Mediterranean Sea, in the north by the Taurus Mountains, the east by Upper Mesopotamia, and the south by the northern Arabian Desert. There is early evidence of human occupation in the Levant during the Lower Paleolithic. It was not until much later that people decided to make the journey to the Mediterranean islands and settle there. This may have been due to lack of resources to make the trip across the Mediterranean Sea, or simply for lack of desire to leave the mainland, for particular regions of the Levant were very suitable for agricultural and domestic activities. There are five vegetation zones in the Levant: Mediterranean, steppe, mountain, riverine (rare and restricted), and desert. Vegetation is determined by several important factors, like temperature, elevation, soils, and rainfall. The coastal areas can be characterized by a typical Mediterranean environment that is richest in the north (Anatolia) and dryer in the south (Israel). The vegetation is variable in the mountainous regions (Lebanon) with pine trees growing prominently in the higher areas and oak and pistachio forests growing in the lower areas (Bar-Yosef 1980: 101). In still lower areas, olive trees are present but a lack of trees overall is characteristic. The lowest areas are steppe and desert. Most of the Levant has a typical Mediterranean
climate—short, wet winters and long, dry summers. Generally, rain hits the Mediterranean coast from the northwest and moves inland in a southwest direction. The Lebanon/Anti-Lebanon range is the main mountain range in the Levant. It is smaller than the nearby Hindu Kush and Zagros ranges and stretches from north Lebanon to the Negev and Sinai deserts in the south (Goldberg 1998).

Near Eastern Archaeological Summary

Lower Paleolithic

The longest chapter in mankind’s history, the Lower Paleolithic, began with the earliest tool makers, about two million years ago in East Africa, and ended during the Last Interglacial, sometime between 128,000-75,000 years B.P. (Bar-Yosef 1980). The most prominent artifacts to come out of the Lower Paleolithic are stone tools and animal remains. The Oldowan and Acheulian tool typologies are characteristic of the Lower Paleolithic. The Oldowan tradition comes out of Africa and includes mostly crude core tools. The Acheulian tradition originated in Europe and has more sophisticated characteristics defined by bifacial handaxes. Acheulian sites are few and poorly documented and have no absolute dates.

Positioned near the Sea of Galilee 200 meters below sea level, the site of 'Ubeidiya has yielded some interesting information concerning the Lower Paleolithic. “Ubeidiya still remains the most intensively and
extensively excavated Lower Paleolithic site in the Levant” (Bar-Yosef 1980: 107). Located in the Jordan Valley, ‘Ubeidiya is distinctly known for its peculiar stratigraphy that is tilted almost 90°. “The exposed layers of the ‘Ubeidiya Formation accumulated within a freshwater lake and its surroundings, and later, during an unknown age of the Middle Paleolithic, were tilted, folded, and faulted” (Bar-Yosef 1980: 107).

‘Ubeidiya is at least 60,000 years old and has at least 62 archaeological layers. Level 1-15 is considered the most significant level at the site because it contains angular blocks of stone and a possible “living floor.” There is still debate as to whether this “living floor” is man-made or natural. Moshe Stekelis, one of the original excavators of ‘Ubeidiya, believes the floor is man-made, but others have disagreed. Many animal remains were also found at the site, both modern and Villafranchian (much older Pliocene and Pleistocene), including several rodent species (Bar-Yosef 1980). Human remains at ‘Ubeidiya are few and far between and comprise barely any diagnostic information to make any useful analyses.

Two other well-known Lower Paleolithic sites are Latamne and Berekhat Ram. Latamne is a middle Acheulian site located on a high terrace of the Orontes Valley (Bar-Yosef 1980) in modern-day Syria.

A level containing a large number of tools and a few bones was uncovered, with the major concentration of bifaces around a cluster of limestone cobbles. Additional mammalian bones were collected in adjacent gravel quarries, stratigraphically located under the site (Bar-Yosef 1980: 109).
The site appears to have been rapidly buried after desertion, thus providing good preservation for artifacts, which include large limestone blocks and some faunal remains of modern species. Berekhat Ram is also a middle Acheulian site located in modern-day Syria. Standardized tool manufacturing techniques featuring end scrapers and burins characterize the site. Notably, a human female figure was discovered, postulating a possible sense of artistic creativity in this Lower Paleolithic community (Goren-Inbar 1998: 101).

**Middle Paleolithic**

The Middle Paleolithic has obtained a huge amount of literature. There are hundreds of documented sites all over the Levant in varied eco zones. Additional observations concerning travertine accumulations in wadis and their alluvial deposits, the formation of the Lisan lake which covered almost the entire surface of the Jordan valley, etc. has given us an idea of the changing environments through which Mousterian man lived (Bar-Yosef 1980: 113). During this period, Anatomically Modern Homo Sapiens (AMHS) emerge. We can also see very skilled tool technologies and more specific tool types (switch from Acheulian to Mousterian) as well as specific site types. A vast majority of what is known about the Middle Paleolithic comes from one site in particular: Tabun. At Tabun Cave, there were differences between the major units named by Dorothy Garrod as layers. Layer D, the earliest, was
characterized by numerous elongated points and blades made by Levallois technique. Layer C was dominated by wide oval flakes and racloirs, and layer B by small broad Levallois points (Bar-Yosef 1980).

The Middle Paleolithic is summed up by the following. There is an increase in cultural complexity, more distribution of specialized sites, and an overall more progressive culture than the Lower Paleolithic. There is evidence of megafauna hunting practices and even favoritism of certain animals and the occupation of a very wide geographic range. The first evidence of human burials was recorded from the Middle Paleolithic, alluding to possible ritual behavior particularly at Shanidar Cave where there is indication that flowers were buried with the deceased. There are different varieties of the Mousterian tradition and the Levallois tradition is definitely more prevalent in the earlier Middle Paleolithic sites. One of the main research problems with this period is the lack of sturdy chronological data.

Upper Paleolithic

There was a transitional phase from the Middle to Upper Paleolithic. In terms of climate, the transitional period from the Mousterian to the early Upper Paleolithic was basically cold and dry (Bar-Yosef 1980). “On the whole, the Upper Paleolithic period, when compared to the Early Mousterian, was drier and colder” (Bar-Yosef 1980: 115). The technological tradition of the Levallois technique was carried on in the production of flakes, points, and blades in Lebanon and
points in Boker Tachtit. The latter was an interesting example of the manufacture of both blades of Upper Paleolithic character and points of Levallois style from the same blade cores (Bar-Yosef 1980: 116). The two main ‘cultures’ to come out of the Upper Paleolithic were the Ahmarian and the Levantine Aurignacian, which has been called a less-sophisticated version of the European Aurignacian. Summing it up, it seems that the small mobile band of hunter-gatherers formed the basic social unit during that period, but that several bands retained their own technological traditions for thousands of years (Bar-Yosef 1980: 118).

Epi-Paleolithic

The Epi-Paleolithic (a.k.a Mesolithic) has been called the ‘last breath of the Paleolithic’ (20,000-10,000 B.P.). During this phase, we see dramatic changes in economic processes and social organization. There is a stronger emphasis on plant products and the introduction of a microlithic tool industry is evident. There are three main divisions of the Epi-Paleolithic: the Mushabian, the Geometric Kabaran, and the Natufian. The Natufian period formed the foundations for the Neolithic; during this period we see the first evidence for possible ‘villages’. There is a wide range of variety of Natufian sites. The lunate (half moon-shaped lithic artifact) defines the typical Natufian site (Valla 1998: 172).

This period has come, during the last 15 years, to be one of the major foci of Levantine prehistoric research (Bar-Yosef 1980: 118). The Epi-Paleolithic has changed the image of prehistoric man as a ‘cave
caves and rockshelters were the exception rather than the most common habitation locales (Bar-Yosef 1980). Open-air sites were much more common. It was also during the late Epi-Paleolithic that Cyprus was first occupied by humans, as reflected by Akrotiri-Aetokremnos.

Neolithic Overview

Some of the most important milestones in human history include the earliest permanent villages, the earliest substantial architecture, the earliest agricultural communities, the earliest pastoral nomadism, and some of the earliest steps toward economic inequality and political complexity (Banning 1998). Each of these milestones occurred during the Neolithic period which began more than 10,000 years ago and continued until around 4500 B.C.E. Defining the Neolithic is no easy task. Scholars argue that the Neolithic was ‘an economic transformation that involved the domestication of wild food resources and the establishment of permanent settlements’ (Simmons 2007: 4), but in reality it is much more complex than that. The Neolithic occurred in different areas of the world and over a large span of time. The Neolithic Revolution was not a single event, but rather a series of independent happenings that developed in few certain regions of the world and then diffused to other areas (Simmons 2007).

The Neolithic is often referred to as a technological transformation due to the classes of projectile points that emerged in the Near East
during this time, but the Neolithic can also be classified as a
transformation in the social and symbolic aspects of human life
(Simmons 2007). The elements of what has come to be known as the
‘Neolithic package’ include not only economic and technological changes,
but also the overall attitudes people had towards food and their
surroundings. The effects of the Neolithic have carried over into the
world in which we live today (Simmons 2007: 6).

If people were subsisting on a hunting and gathering lifestyle and
making ends meet with no apparent problems, than why was there this
sudden shift to domestication of plants and animals as the main method
of food production? Many theories concerning this issue have been
proposed to explain what has come to be known as the Neolithic
Revolution—when humans shifted from hunting and gathering to
farming as the main food production method (Simmons 2007). The
Neolithic Revolution was a momentous period during human existence
that changed the course of the world forever, so it is important to
remember that, in all probability, there was not just one single reason for
the switch to agriculture but rather many factors that contributed to its
origins.

Pre-Pottery Neolithic A (PPNA)

The increasing number of radiocarbon dates for the Neolithic has
made possible the creation of a framework for the earliest stage, also
commonly known in the southern Levant as Pre-Pottery Neolithic A that
varies from ca. 10,500/10,200 to 9600/9200 B.P. (Simmons 2007: 89). We see a wide variety of type sites from this period, which include specifically Jericho, Nahal Oren, Mureybit, Tell Aswad, and Netiv Hagdud. These populations, in comparison with the preceding Natufian culture, occupied rounded or oval structures constructed from the local raw materials available, either undressed stones or unbaked bricks (Bar-Yosef 1980). There is an obvious advance in lithic tool technology. Byblos points are generally large projectile points with convex edges and relatively rounded shoulders leading to a fairly short, broad, tapered tang. Jericho points show a similar size and a medium-sized tang, but their shoulders are marked by pointed or squared-off, downturned barbs (Banning 1998: 202). The flint industry was dominated by axes-adzes, sickle blades, and arrowheads. Technical innovations were the polishing of stones axes and the baking of flints in order to facilitate their final shaping (Bar-Yosef 1980: 127). Residents of these communities were mainly interested in hunting gazelle; evidence can be seen particularly at Jericho and Nahal Oren. At Mureybit, wild ox and wild ass were more common (Bar-Yosef 1980).

Pre-Pottery Neolithic B (PPNB)

We see the most complex sites in the Levant during the Pre-Pottery Neolithic B period (7500/7300-6000/5800 B.C.), including the addition of a temple at Jericho. Some more commonly known sites from the Levantine PPNB include Jericho, Mureybit, Beidha, Ain Ghazal, and
Catal Huyuk. The first appearance of rectangular structures occurred during this period and most sites seem to be on virgin soil. Another technological improvement was the knapping of blades from ‘naviform’ cores (having two opposed striking platforms) in order to obtain long blades were modified into finely serrated sickle blades with straight profiles (Bar-Yosef 1980: 128).

Economically speaking, the Levant was experiencing a radical change at this time. There was a much more intensive concentration on animal domestication and all wild cereals of the region that eventually become domesticated have been so by this point. Most PPNB sites are archaeobotanically-dominated by wheat, barley, and lentils. More carbonized seeds are required for more detailed analysis of the agricultural activities that were taking place at these sites, but with the evidence that has been uncovered as of yet, we have a good grasp on the sorts of plants these communities were exploiting. The cultivation of einkorn wheat in Jericho has indicated the existence of trade, and farming in semiarid areas has brought about the hypothesis of the early origins of irrigation. They also had long-distance connections, as evidenced in the following merchandise moved in the Levant: Anatolian obsidian, the idea of plaster floors, einkorn wheat, sheep, and green stone were all brought from the northern Levant to its southern fringes (Bar-Yosef 1980: 128, 130).
The origins of agriculture in the Levant remain one of the most significant topics for study because of the combination of the very large number of sites known from the end of the Pleistocene and early Holocene and the uniqueness of this region in the Old World (Simmons 2009). As time goes on however, only more information will be gained concerning this extraordinary time in human existence and the true impact it had on the world. New techniques in archaeological research are helping this investigation along, making the discoveries possible all the time.

Near Eastern Neolithic Obsidian Evidence

Since the bulk of obsidian to make its way through the Near East and Mediterranean islands is of Anatolian origin, we see a large amount of obsidian at the Anatolian sites themselves. Catal Huyuk may be one of the foremost mainland Neolithic sites with an impressive obsidian assemblage. Of special note are the obsidian ‘mirrors’ that have been discovered there. These mirrors were made from hunks of obsidian by several stages of grinding and polishing. The flat surface was not polished to the edge, the quality of the surface is not exceptional but the image is good, and they were apparently well used (Vedder 2001: 579). It is thought that the mirrors were made to improve a reflection that was seen in a naturally flat face on a lump of obsidian, a reflection in a pond, a reflection from a dark stone ground flat and retaining a residual thin
film of water on its surface (Brigham 1902: 398-9). These obsidian mirrors are rare in the Near Eastern Neolithic context, and what is also remarkable about them is they are found only in the graves of women (Vedder 2001: 618). The purpose of the mirrors is still unknown, but some theories have been proposed. One conventional theory interprets the mirrors of Catal Huyuk as being used by women for the application of cosmetic materials to beautify themselves, much like modern-day mirrors are used. There has also been reference to the more arcane properties of the mirrors, suggesting they were used as a symbolic cult item. Others have suggested that the mirrors were used as signaling devices, and there are modern examples of glass used for the same purpose (Vedder 2001: 619). While these mirrors stand out as one of the more thought-provoking artifacts in the assemblage at Catal Huyuk, chipped stone remains the bulk of the obsidian at the site.

Another Anatolian site dating back to the late Neolithic, Domuztepe, has an impressive obsidian assemblage as well. Geographically, this site is well-located for communication south-westward towards Cilicia and the North Levant on the one hand and north-eastwards towards Malatya and eastern Anatolia on the other (Healey 2001: 389). Its position on the landscape could have possibly made it a major re-distribution site from the Anatolian obsidian sources. The lithic industries are substantial, with approximately 31,000 artifacts, of which 18.5% are obsidian, numbering over 4,000 pieces from the
limited excavated areas (Healey 2001: 390). The nearest sources of
obsidian are situated at least 250 km to the northwest. The uses of
obsidian at Domuztepe are various, but the most prominent product
appears to be blades, making up between 75% and 85% of the output
depending on color (opaque black, various translucent greys, completely
clear, green, etc.) (Healey 2001: 391). It has been speculated that
obsidian represented authority and prestige at Domuztepe. “The special
treatment accorded to obsidian at Domuztepe and other Halaf sites as an
exotic and visually attractive item must surely signify the presence of
people who were trying to assert themselves” (Healey 2001: 394).

After the Levantine Neolithic, obsidian is even rarer. However, the
site of Gilat, located in the Negev Desert of northern Israel, has
interesting evidence of obsidian trade. The sources of these eight
obsidian artifacts have been identified as Nemrut Dagarea in eastern
Anatolia, Gollu Dag in central Anatolia, and Hotamis Dag, also in central
Anatolia (Yellin, Levy, and Rowan 1996: 361). Gilat is a Chalcolithic
site, setting it apart from the obsidian-bearing Cypriot Neolithic sites
discussed in Chapter 2, but its evidence of long-distance trade makes
worth mentioning nonetheless. What makes Gilat’s obsidian assemblage
special is the fact that there was an obvious scarcity of obsidian during
the Chalcolithic. Compared with Pre-Pottery Neolithic sites such as
Nahal Lavan, where some 356 obsidian pieces were uncovered, there is a
real paucity of obsidian during the Chalcolithic (Yellin, Levy, and Rowan
1996: 366). By no means is there a plethora of obsidian at Gilat, and this fact makes it difficult to analyze large-scale trade mechanisms for the site. But the ‘small quantity of obsidian found at Gilat and in other Chalcolithic contexts suggests the down-the-line model of exchange as outlined by Colin Renfrew (1975)’ (Yellin, Levy, and Rowan 1996: 367).

In the Levant, obsidian first appears in the archaeological record during the Pre-Pottery Neolithic A (PPNA) at Jericho and Nahal Oren around 7200 B.C. No artifacts have been sourced from Nahal Oren, but 6 pieces were sourced from Jericho and they originated from Central Anatolia (Wright 1969: 25).

Obsidian originating from the Lake Van area first appears, sparsely, in the Levant during the Pre-Pottery Neolithic B (PPNB), at Beisamoun, Beidha, and Ramad (Wright 1969: 5). The few remnants that reached these communities indicate that Lake Van obsidian was in the Levant by 6500 B.C. Specific sites, such as Azat, Yanik Tepe, and Hajji Firuz Tepe, contain obsidian of Lake Van origin. These sites are located in what Wright (1969) calls the ‘Zagros-Taurus Arc’ and date to c. 5500 B.C. From these data, it is clear that the Ciftlik obsidian source in Central Anatolian played the most important role as the leading supplier of obsidian in the Near East as early as 7500 B.C. (Wright 1969: 26). Lake Van was undoubtedly a vital resource for its surrounding populations, but the obsidian numbers from Ciftlik are much greater.
The middle Euphrates region of modern-day Syria was one of the major participants in the Neolithic obsidian trade. Mureybet, a preceramic Neolithic site excavated in 1965 by M. Van Loon and from 1971-1974 by J. Cauvin, has obsidian remains that have been sourced to Central Anatolian (Pernicka et al. 1997: 113). These remains come mainly in the form of blades, bladelets, and some flakes which indicate tool production on the spot (Pernicka et al. 1997: 115). Projectile points are also prevalent and come in many diverse forms. Halula, another middle Euphrates Neolithic site, is currently being excavated by M. Moilst; its very long archaeological sequence ranges from the middle PPNB at about 8700 B.P., when goat and cereal cultivation appeared, to the late PPNB (9900 B.P.) when sheep, then cattle and pigs were domesticated (Pernicka et al. 1997: 117). Obsidian is present everywhere at Halula in the form of bladelets or cortex flakes; the debitage was formed partially at the site (Pernicka et al. 1997: 117), suggesting that most tool manufacture was done at the Central Anatolian source.

Although the use of obsidian is seen before 7500 B.C. and after 3500 B.C., the most noteworthy period of its most widespread use falls between these two dates which roughly define the earliest appearance of settled villages in the Levant, with the exception of sites like Mureybet which are earlier (Wright 1969: 17). It was during this time that communities were connecting with one another for the exchange of materials. Obsidian was a major catalyst for this connectivity. We see
obsidian from Lake Van in the Levant during the PPNB. Although there are only a few pieces known in the Levant during this period, and there are far more samples from Central Anatolia, their importance is still paramount. The importance was not obsidian as a raw material, but rather the results of the contact between the prehistoric groups involved (Wright 1969: 78).

Recent Developments in the Anatolian Neolithic

Neolithic research, for many years, has remained “Levantine-centric”. Many still tend to talk about the Neolithic as if there were only one core—the Levant—when it is now known that there were likely multiple cores, including Anatolia. “Recent work on the exploitation and diffusion of Cappadocian obsidian shows concrete links between Central Anatolia and the Levant during the Holocene” (Binder 2002: 79; Balkan-Atli et al. 1999). It is evident that there has been a research bias for many years, but current findings indicate Central Anatolia was a major catalyst for the spread of “Neolithization” as well.

Since obsidian is a key archaeological artifact to come out of Neolithic Anatolia, it has provided new perspectives regarding the exploitation of the sources, the use of the obsidian itself, the forms of obsidian diffusion, and the status of obsidian (Balkan-Atli 99: 143). Much can be said about the social models of its exchange system
between different communities in different regions within Anatolia and beyond.

Binder makes the argument that obsidian was a driving force for prehistoric peoples to make the journey to Central Anatolia from surrounding areas, namely Eastern Anatolia and the Levant. In the process of procuring obsidian, whether by exchange or through their own means, these people were being acculturated. “Maybe the tropism to obsidian can help us to understand these links as a pioneer attitude: not colonists, but people investigating places in order to find raw materials used to reproduce society” (Binder 2002: 86). Carter et al. adds to Binder’s argument of regional relations in Central Anatolia:

“The importance of the exotic blades at Catalhoyuk lies in the fact that they reflect a reconfiguration of regional interaction in Anatolia. The handful of implements forms part of a range of new ideas, raw materials, technologies, and objects that served to link communities” (Carter et al. 2008: 907)

What remains to be found are the routes that were taken to form these connections between neighboring communities.
CHAPTER 4
METHODOLOGY AND PRESENTATION/ANALYSIS OF DATA

Methodology

The data requirements for the research directions of this thesis employed library, field, and laboratory methods. Extensive excavations took place at Ais Yiorkis in 1997 and every summer from 2002 to 2008—this has included careful artifact collection and recording. Chipped stone and faunal remains have proven to be the most common finds at the site, but there are other small finds that are of particular interest at Ais Yiorkis. One of these are Anatolian obsidian bladelets. Out of a massive chipped stone assemblage ranging somewhere around 200,000 pieces, 42 of these are obsidian bladelets. Needless to say, whenever one of these bladelets was discovered during excavation, it was surely a significant event.

Since obsidian only makes up approximately 0.02% of the entire chipped stone assemblage from Ais Yiorkis, it is necessary to mention the methods used to analyze the rest of the assemblage as well. The chipped stone were brought into the lab daily during the excavation season and organized by type. These particular artifacts made up the majority of finds from the site and many hours were spent on the organization and analysis of these materials. Organization and analysis of the chipped stone involved separating each piece into various techno-typological categories. For example, chipped stone categories that were employed...
include flakes, blades, cores, bladelets, microflakes, chunks, and chips. Once all of the pieces were separated into their proper categories, they were individually analyzed in terms of dimensions and physical attributes. Physical attributes include whether or not the piece was broken, evidence of retouch, and whether or not the piece had been burned, as well as others. When this process was completed, the artifacts for that particular field number (FN) were counted, bagged, and labeled according to their specific FN. When an obsidian bladelet was found, it was carefully recorded in the field and bagged separately from the rest of the artifacts included in that FN for later analysis. No photographs had been taken or drawings done until 2005 when the author began careful documentation of these artifacts. In the lab, each obsidian artifact was photographed and drawn separately in order to make detailed comparisons. Each of the 42 pieces is similar in size and shape, so any dimensional differences were important to record. Most bladelets that were discovered were broken fragments, but the few intact pieces found provide a clear view of what this prized commodity looked like at the actual time of its utilization during the Cypro-PPNB.

Library research was a key element to the successful completion of this thesis. Extensive exploration of such critical topics as Near Eastern prehistoric archeology, trade and exchange in the Mediterranean, ritual and symbolism in the Near East and Mediterranean, and Cypriot prehistory and archaeological background
was imperative for placing Cyprus within the greater Levantine and Mediterranean context, specifically in regards to prehistoric trade connections. The obsidian found at Ais Yiorkis is a sure sign that exchange was taking place between Cyprus and the mainland and thorough research on this topic was especially essential to the successful completion of this thesis.

Presentation of Data

Since the obsidian, along with any and all other artifacts from the site, cannot be removed from the island of Cyprus, photographic documentation was essential for the analysis and cataloguing of these artifacts back in the United States. Please see Appendix I for photographs of 36 of the 42 obsidian artifacts uncovered at Ais Yiorkis to date. Each photograph includes the field number of the individual piece, the date the artifact was discovered, the unit and level it originated, and the initials of the excavation participant who discovered it. A scale is also included to exemplify the truly petite size of these bladelets.

As mentioned earlier, each individual obsidian bladelet was measured and analyzed separately. The length, width, and thickness were measured, and each piece's provenience (unit and level) was recorded. The obsidian bladelets were examined for certain characteristics including general appearance, signs of retouch, and whether or not they had been burned. Also, the year in which the
bladelet was discovered was recorded. Tables in Appendix 2 illustrate the provenience and measurements of each piece, the average length, width, and thickness of the entire assemblage of obsidian, and their general descriptions and attributes.

From this data, it can be seen that the obsidian artifacts have been discovered at various points all over Ais Yiorkis. The quadrant 15 N 25 W has yielded the most bladelets (10) while quadrants 15 N 15 W and 20 N 30 W both have yielded 5 bladelets each. One of the bladelets discovered in quadrant 15 N 25 W was found in Feature 11 (a pit). Other than this, we do not see the obsidian bladelets coming out of the features at Ais Yiorkis. They appear to be dispersed randomly amongst most quadrants and levels throughout the site.

It is important to put this group of obsidian artifacts into perspective for the whole site of Ais Yiorkis. The site has yielded a large assemblage of chipped stone artefacts. After the 2008 field season, there have been 193,939 total pieces of chipped stone accounted for. This does not include the 42 pieces of obsidian. Please see Appendix 2 for a table showing the different types of chipped stone that have been recorded at Ais Yiorkis.
CHAPTER 5
FINDINGS AND CONCLUSIONS

The purpose of this research is to shed light on the Cypriot PPNB site of Ais Yiorkis, regarding its role in the broader Mediterranean and Near Eastern context. Research questions were proposed in Chapter 1, and they were as follows: 1) Were these obsidian bladelets traded onto the island during one single exchanging event or many events over an extended period of time? 2) Was obsidian knapped at the source and then transported to the site, or was the raw material being brought back to the site and manufactured there? 3) How did these artifacts make their way to Cyprus? 4) What were the people of Ais Yiorkis trading in return (if anything) for these obsidian bladelets? 5) Were these obsidian bladelets possibly being used for ritual purposes?

Findings

To answer these questions, it was necessary to look at the data as a whole and figure out how these artifacts fit into the community of Ais Yiorkis. Obviously, there is much that this impressive assemblage of obsidian can tell us about this small community and the level of significance to the people living there at the time. The research questions formulated in this thesis aim to shed light on this topic.

1) Was the obsidian in Neolithic Cyprus, and Ais Yiorkis, limited to a single episode or multiple events of importation? It seems a stretch to
propose that the whole of the obsidian from Ais Yiorkis arrived during one single exchange event. However, the expectation might be that if the same source is indicated, that might support a single episode. One sample of obsidian from the Ais Yiorkis site has been sourced to Central Anatolia. It is likely that the more material that was extracted from the source, the more trips were made to Cyprus for distribution and likely, trade. It would have taken a multitude of occasions to accumulate the vast assemblage of material uncovered at Akanthou alone; much less all of the obsidian found within the rest of the Cypriot sites.

It is helpful to look at Cypriot Neolithic chronologies to determine how close or far apart they are. If close in chronology, the expectation is that perhaps a single episode is represented. The site chronologies from Ais Yiorkis are not particularly wide and expansive, therefore suggesting one single trading event. Also, if the obsidian artifacts exhibit a considerable difference in technology and/or typology, the expectation might be that multiple events are represented. The obsidian bladelets from Ais Yiorkis do not exhibit any considerable differences in technology and/or typology, again suggesting they arrived during one single trading event.

As was mentioned earlier in Chapter 3, for the purposes of this research, the terms ‘trade’ and ‘exchange’ were used interchangeably. It is important to note however, that there is a slight distinction between the two types of networks. ‘Trade’ usually implies a more sophisticated
strategy, which might be viewed, for example, during the Bronze Age in Cyprus. ‘Exchange’, on the other hand, involves a simpler approach to the swapping of items.

2) Was the obsidian at Ais Yiorkis knapped at its source and then transported or was it reduced at the site? What is visible at Ais Yiorkis are obsidian ‘bladelets’. These are all exhausted pieces that were not manufactured at this site. This is clear due to the absence of obsidian cores and debitage. Akanthou is a great example of an obsidian tool processing center, where cores, debitage and finished and unfinished tools have been discovered. This widespread evidence of tool manufacture, or ‘chaine d’operatorie’, is not seen at Ais Yiorkis. Finished products were making their way to the site from elsewhere. Perhaps Ais Yiorkis’ inland location made it less appealing to traders; they would have had to haul in the amount of material it took to manufacture these bladelets.

3) How did obsidian artifacts make their way to Cyprus? If we examine the different theories of how and why people colonized Cyprus in the first place, we may be able to understand how obsidian originally came to Cyprus. For whatever reason people decided to make the overseas journey to Cyprus, it is likely they brought their possessions with them—or at least a portion of them. These possessions included obsidian bladelets.
By looking at the obsidian trade implications of the island of Cyprus and the site of Ais Yiorakis specifically, it is possible to construct interpretations of what everyday life for the inhabitants of this site was like. Was Ais Yiorakis just a small hamlet in the foothills of the Troodos Mountains, secluded and unattached to the surrounding sites on the island, and the rest of the Mediterranean world? The Anatolian obsidian evidence found there does not suggest so. It implies the Ais Yiorakis community had an invested connection with the outside world by means of an extensive trade network that involved some type of human mobility across the Mediterranean Sea. And this extensive network of communities stood for more than just the movement of commodities; these relations were the probable result of a very advanced, cooperative system among the members of these groups. “The scale of the endeavor required to convey material from the mainland and Anatolia would have required a sophisticated level of social organization and communication” (Sevketoglu 2008: 68). And the great lengths these people took to move this obsidian across 70 miles of water speaks volumes about the value of this item. The investment required to obtain obsidian during this time may indicate these objects had a certain intrinsic importance; perhaps these bladelets bestowed some sort of status on the owner or carried currency for exchange for goods or foodstuffs (Sevketoglu 2008: 68). But what that intrinsic value was is yet to be determined. Understanding the significance of Anatolian obsidian to the Ais Yiorakis community could
provide a unique glimpse into the lives of these prehistoric peoples and what was important to them, for means of subsistence and otherwise.

4) What did Ais Yiorkis have offer in exchange for obsidian? To answer this question, one must look at the small finds that have come out of the Ais Yiorkis context. Exotic materials including picrolite and various food products are potential exchange items these inhabitants may have used to obtain their obsidian. Small finds from Ais Yiorkis include various picrolite figurines, a stone plate possibly used for ‘feasting’ purposes, shell, and a prominent stone figurine of a female figure. Picrolite is a mineral found on Cyprus; its rare green color may have been attractive to prospective obsidian traders that came from regions where picrolite was not available. The picrolite figurines recovered from Ais Yiorkis are one of the most interesting, thought-provoking artifacts to come out of the ground at the site. The obvious time that was spent manufacturing one of these intricate picrolite ornaments is reminiscent of the time it must have taken to shape an obsidian bladelet like those found at Ais Yiorkis. An exchange of these two items is quite likely; however, we do not see evidence of picrolite on the mainland. This would indicate that picrolite was not being traded for Anatolian obsidian.

5) Was the obsidian at Ais Yiorkis possibly used for ritual or ceremonial purposes? If so, what might these uses have been? It is quite probably that these obsidian bladelets were being used for ritual...
purposes. Often times, highly-valued items of this kind possess some sort of sacred or ceremonial significance. And the distances traveled to obtain this material, whether it be from the probable Cypriot distribution site of Akanthou or across the Mediterranean Sea to the source in Anatolia, was a considerable distance. There was a special reason these people traveled far and wide to obtain this material. We see evidence of ‘feasting’ at Ais Yiorkis, which can be viewed as a ritual activity. There were likely other ritual activities taking place at the site, and these activities may have involved obsidian bladelets.

Another question raised by these artifacts is their functionality. If the obsidian bladelets were not being used for ritualistic reasons, what were they being used for? Obsidian is an incredibly sharp substance when properly shaped. We can see evidence of use-wear on a few of the pieces. This would suggest these pieces were being ‘used’ to do something, whether it be cutting or slicing of some sort. One could easily use a suitably-shaped piece of obsidian to cut or slice. It is unfortunate that there is no archaeological evidence yet discovered depicting the physical appearances of the inhabitants of Ais Yiorkis. If we had some sort of remnant of an early artist’s depiction of what these people looked like, we could learn a multitude more about how they lived. For instance, did the men of Ais Yiorkis have prominent facial hair? If they did not, their daily grooming habits would have required some type of cutting or shaving device, and one of these obsidian bladelets would have
served sufficiently—an ancient razor, perhaps. This hypothesis for obsidian bladelet functionality appears to be a possible one, but at the same rate, it is an obviously male-centered one. Gender is something that archaeologists have strived to pinpoint. Sometimes we can see it clear as day in the archaeological record—other times it cannot be seen at all. *Ais Yiorkis* is an example of the latter. There is a plenitude of artifacts to explain the probable daily activities of these people in this community, but gender roles have yet to be explained. Who did what in this possibly ‘feasting’ hamlet? What were the responsibilities of the men and women who at one time occupied this area?

**Conclusions**

So what did this pattern of exchange mean for *Ais Yiorkis* in the broader spectrum of the entire Mediterranean world? The communication between neighboring communities during the PPNB is unmistakable, as stated by Bellwood (2005: 64):

> Intercommunity contact within the PPNB is highlighted by the developing obsidian trade, with obsidian from sources in both central and eastern Anatolia now very widespread. During the PPNA, only central Turkish obsidian appears in the surrounding areas, but eastern Turkish sources were added in the PPNB.

The site of Akanthou was the probable distribution point for Anatolian obsidian throughout the whole of the island of Cyprus. Given the variable distances from Akanthou to the various obsidian-bearing sites
dotting the island landscape, distributing this prized item was not the easiest of tasks. Renfrew’s ‘down the line’ hypothesis may be the most viable explanation for such a vast allocation of obsidian during the Neolithic.

Although Cypriot Neolithic communities were rather isolated from one another, they still maintained interconnectivity through patterns of exchange. The numbers of obsidian artifacts found at various sites on Cyprus confirm Renfrew’s “down the line” model for exchange. At Akanthou, we see a plentiful supply of obsidian including the entire spectrum of artifacts (cores, debitage, tools, etc.). This abundant supply of obsidian was likely then passed “down the line” to other Cypriot sites through means of exchange. Shillourokambos for example has yielded much less obsidian than Akanthou, but has more types of obsidian artifacts than Ais Yiorkis. At Ais Yiorkis, we only see exhausted bladelets. By the time obsidian reached this upland site, it was in a sense “finished”. The inhabitants of Ais Yiorkis were receiving “the good stuff”, so to speak, because they were likely at the end of the “down the line” distribution system. This interconnectivity of communities likely promoted inter-group relations and helped groups gain access to needed goods (Peltenberg 1991: 117).

What is interesting about Ais Yiorkis is the amount of obsidian artifacts compared to its actual geographic size. Major Cypriot sites like Akanthou and Shillourokambos have substantial numbers of obsidian
artifacts, but when you compare their obsidian totals to the geographical size of these sites, Ais Yiorkis boasts the more impressive assemblage. Ais Yiorkis is quite a small hamlet to have such a notable collection of this prized item. If this is any indicator of the site’s social prowess within the Cypriot community as well as the broader Mediterranean region, Ais Yiorkis may have been more important than originally considered.

Significance of Research and Future Work

The obsidian bladelets that have come out of the Ais Yiorkis archeological context are representative of a time of early human interconnectivity in the Eastern Mediterranean region. At this time, people were actively participating in a cross-regional exchange system that connected various different communities. The 42 pieces of obsidian to come out of Ais Yiorkis so far have more meaning than their proposed physical uses imply. By obtaining this material from other distribution sites on Cyprus, and ultimately from the original Central Anatolian source, major connections were made between these island inhabitants and the communities of the mainland. The people of Cyprus were not isolated on an island in the middle of the sea; they were making associations with groups outside of their oceanic boundaries. With these associations came other, more indirect consequences, like the spread of other physical commodities as well as new ideas. This was the height of the Neolithic Revolution when fresh ideas were exploding out of the Near
East. It is likely that with the movement of obsidian bladelets also occurred the movement of new thoughts.

Future excavations at Ais Yiorkis will likely uncover more obsidian bladelets. The site fits into the broader context of the early colonization of Cyprus with evidence of cattle, as well as other animal remains, suggesting the site functioned in some sort of ‘ranching’ capacity at one time (Simmons 2003: 8). Also, the extensive chipped stone assemblage present at Ais Yiorkis suggests a decent amount of skilled flint-knappers were occupying the site for an extended period of time. These factors, paired with the future obsidian that has yet to be discovered at the site, make Ais Yiorkis a viable force in the early colonization of Cyprus and the connectivity of the broader Mediterranean world.
APPENDIX I

PHOTOGRAPHS OF OBSIDIAN BLADELETS FROM AIS YIORKIS

FN 781, obsidian bladelet.

FN 687, obsidian bladelet
FN 657, obsidian bladelet.

FN 610, obsidian bladelet.
FN 626, obsidian bladelet.

FN 507, obsidian bladelet.
FN 549, obsidian bladelet.

FN 656, obsidian bladelet.
FN 448, obsidian bladelet.

FN 417, obsidian bladelet.
FN 429, obsidian bladelet.

FN 1255, obsidian bladelet.
FN 1264, obsidian bladelet.

FN 940, obsidian bladelet.
FN 967, obsidian bladelet.

FN 1176, obsidian bladelet.
FN 1215, obsidian bladelet.

FN 1125, obsidian bladelet.
FN 1156, obsidian bladelet.

FN 894, obsidian bladelet.
FN 1129, obsidian bladelet.

FN 1163, obsidian bladelet.
FN 239, obsidian bladelet.

FN 213, obsidian bladelet.
FN 252, obsidian bladelet.

FN 290, obsidian bladelet.
FN 328, obsidian bladelet.

FN 329, obsidian bladelet.
FN 101, obsidian bladelet.

FN 171, obsidian bladelet.
FN 114, obsidian bladelet.

FN 88, obsidian bladelet.
FN 1528, obsidian bladelet.

FN 1403, obsidian bladelet.
FN 1330, obsidian bladelet.

FN 1174, obsidian bladelet.
APPENDIX 2

TABLES

<table>
<thead>
<tr>
<th>Research Questions</th>
<th>Data Required</th>
</tr>
</thead>
</table>
| 1. Was the obsidian in Neolithic Cyprus, and Ais Yiorkis, limited to a single episode or multiple events of importation? | a. specific site chronologies  
b. technological differences  
c. chemical sourcing |
| 2. Was the obsidian at Ais Yiorkis knapped at its source and then transported or was it reduced at the site? | a. obsidian “chaine d’operatorie”—presence of debris debitage, cores, microflakes, and tools |
| 3. How did obsidian artifacts make their way to Cyprus? | a. theories on colonization of Cyprus  
b. chemical sourcing |
| 4. What did Ais Yiorkis have to offer in exchange for obsidian? | a. exotic materials at Ais Yiorkis that could have been exchanged (e.g. picrolite, carnelian)  
b. food (domestic/wild plants and animals) |
| 5. Was the obsidian at Ais Yiorkis possibly used for ritual or ceremonial purposes? If so, what might these uses have been? | a. other evidence for ritual at the site  
b. use-wear  
c. association with other exotic material |

Table 1. Research questions

<table>
<thead>
<tr>
<th>PERIOD</th>
<th>Conventional (Uncalibrated) BP</th>
<th>Calibrated BP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Akrotiri Phase</td>
<td>10,800-10,200</td>
<td>12,000-11,500</td>
</tr>
<tr>
<td>Possible PPNA?</td>
<td>10,200-950</td>
<td>11,500-10,500</td>
</tr>
<tr>
<td>Early Cypro-PPNB</td>
<td>9500-9100</td>
<td>10,500-10,200</td>
</tr>
<tr>
<td>Middle Cypro-PPNB</td>
<td>9100-8500</td>
<td>10,100-9500</td>
</tr>
<tr>
<td>Late Cypro-PPNB</td>
<td>8500-8000</td>
<td>9500-9000</td>
</tr>
<tr>
<td>Khirokitia Culture</td>
<td>8000-6500</td>
<td>9000/8500-7800/7500</td>
</tr>
<tr>
<td>Gap?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sotira Culture</td>
<td>6100-5000</td>
<td>6900/6500-5900/5700</td>
</tr>
</tbody>
</table>

Table 2. Table showing the early chronology of Cyprus (dates from Simmons 2007: 234).
<table>
<thead>
<tr>
<th>FN</th>
<th>Year</th>
<th>Unit</th>
<th>LV</th>
<th>Length</th>
<th>Width</th>
<th>Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>72</td>
<td>2002</td>
<td>15N15W SEQ</td>
<td>1</td>
<td>15.9</td>
<td>12.9</td>
<td>4.3</td>
</tr>
<tr>
<td>81</td>
<td>2002</td>
<td>15N15W SWQ</td>
<td>1</td>
<td>21.9</td>
<td>11.9</td>
<td>3.3</td>
</tr>
<tr>
<td>83</td>
<td>2002</td>
<td>15N15W SEQ</td>
<td>1</td>
<td>11</td>
<td>8.1</td>
<td>3.1</td>
</tr>
<tr>
<td>92</td>
<td>2002</td>
<td>15N15W SEQ</td>
<td>1</td>
<td>32.6</td>
<td>10.7</td>
<td>4.5</td>
</tr>
<tr>
<td>101</td>
<td>2002</td>
<td>15N15W SEQ</td>
<td>2</td>
<td>10.5</td>
<td>6.4</td>
<td>2.8</td>
</tr>
<tr>
<td>114</td>
<td>2002</td>
<td>10N15W SecD</td>
<td>2A</td>
<td>11.3</td>
<td>7.4</td>
<td>2.3</td>
</tr>
<tr>
<td>171</td>
<td>2002</td>
<td>10N15W SecD</td>
<td>4</td>
<td>18.9</td>
<td>8.2</td>
<td>3.3</td>
</tr>
<tr>
<td>213</td>
<td>2003</td>
<td>10N20W SEQ</td>
<td>2A</td>
<td>17.5</td>
<td>10</td>
<td>1.9</td>
</tr>
<tr>
<td>239</td>
<td>2003</td>
<td>5N20W NEQ</td>
<td>2A</td>
<td>19.2</td>
<td>8.9</td>
<td>2.5</td>
</tr>
<tr>
<td>252</td>
<td>2003</td>
<td>5N15W NWQ</td>
<td>2B</td>
<td>9.2</td>
<td>7.6</td>
<td>1.5</td>
</tr>
<tr>
<td>290</td>
<td>2003</td>
<td>5N20W SEQ</td>
<td>2A</td>
<td>15.8</td>
<td>6.5</td>
<td>2.5</td>
</tr>
<tr>
<td>328</td>
<td>2003</td>
<td>10N20W SEQ</td>
<td>3B</td>
<td>20.3</td>
<td>11.3</td>
<td>3.4</td>
</tr>
<tr>
<td>329</td>
<td>2003</td>
<td>5N15W Feat1 Sec1</td>
<td>2</td>
<td>18</td>
<td>9.4</td>
<td>2.7</td>
</tr>
<tr>
<td>417</td>
<td>2004</td>
<td>20N40W TT2</td>
<td>5</td>
<td>28.7</td>
<td>11.1</td>
<td>3.6</td>
</tr>
<tr>
<td>429</td>
<td>2004</td>
<td>15N25W NEQ</td>
<td>5</td>
<td>16.8</td>
<td>15.6</td>
<td>3.2</td>
</tr>
<tr>
<td>448</td>
<td>2004</td>
<td>15N25W NEQ</td>
<td>9</td>
<td>24.6</td>
<td>9.4</td>
<td>4.3</td>
</tr>
<tr>
<td>507</td>
<td>2005</td>
<td>15N25W NWQ</td>
<td>2</td>
<td>20.3</td>
<td>10.4</td>
<td>4</td>
</tr>
<tr>
<td>549</td>
<td>2005</td>
<td>15N25W NEQ</td>
<td>10</td>
<td>30.5</td>
<td>11.3</td>
<td>3.7</td>
</tr>
<tr>
<td>610</td>
<td>2005</td>
<td>20N30W SWQ</td>
<td>1</td>
<td>9.6</td>
<td>9.6</td>
<td>1.3</td>
</tr>
<tr>
<td>626</td>
<td>2005</td>
<td>20N30W SWQ</td>
<td>1</td>
<td>26.7</td>
<td>9.1</td>
<td>2.2</td>
</tr>
<tr>
<td>656</td>
<td>2005</td>
<td>15N25W NWQ Feat</td>
<td>11.1</td>
<td>9</td>
<td>9.2</td>
<td>2.7</td>
</tr>
<tr>
<td>657</td>
<td>2005</td>
<td>15N25W</td>
<td>7</td>
<td>10.3</td>
<td>9.9</td>
<td>1.7</td>
</tr>
<tr>
<td>687</td>
<td>2005</td>
<td>20N30W SWQ</td>
<td>3</td>
<td>8.4</td>
<td>12.3</td>
<td>1.4</td>
</tr>
<tr>
<td>781</td>
<td>2005</td>
<td>20N45W SEQ Feat</td>
<td>13.3</td>
<td>4</td>
<td>38.1</td>
<td>9.1</td>
</tr>
<tr>
<td>894</td>
<td>2006</td>
<td>15N25W SWQ</td>
<td>4</td>
<td>16.8</td>
<td>9.1</td>
<td>2.2</td>
</tr>
<tr>
<td>940</td>
<td>2006</td>
<td>20N30W SWQ</td>
<td>2</td>
<td>13.4</td>
<td>8.9</td>
<td>2.1</td>
</tr>
<tr>
<td>982</td>
<td>2006</td>
<td>20N45W NEQ</td>
<td>1</td>
<td>14.9</td>
<td>13.9</td>
<td>4</td>
</tr>
<tr>
<td>1087</td>
<td>2006</td>
<td>5N25W NWQ</td>
<td>1</td>
<td>14.4</td>
<td>8</td>
<td>2.8</td>
</tr>
<tr>
<td>1125</td>
<td>2006</td>
<td>20N30W SEQ</td>
<td>6</td>
<td>17.1</td>
<td>8.8</td>
<td>3.1</td>
</tr>
<tr>
<td>1129</td>
<td>2006</td>
<td>15N25W SWQ wall extension</td>
<td>8</td>
<td>19.6</td>
<td>11.4</td>
<td>5.1</td>
</tr>
<tr>
<td>1156</td>
<td>2006</td>
<td>15N25W SWQ NWSQ</td>
<td>7</td>
<td>19.9</td>
<td>9.1</td>
<td>2.6</td>
</tr>
<tr>
<td>1163</td>
<td>2006</td>
<td>5N25W NWQ</td>
<td>3</td>
<td>24.8</td>
<td>13</td>
<td>2.8</td>
</tr>
<tr>
<td>1174</td>
<td>2006</td>
<td>20N45W NE/NWQ</td>
<td>9.1</td>
<td>24.6</td>
<td>12</td>
<td>3.4</td>
</tr>
<tr>
<td>1215</td>
<td>2006</td>
<td>15N25W SEQ SWSQ</td>
<td>7</td>
<td>16.3</td>
<td>8.7</td>
<td>2</td>
</tr>
<tr>
<td>1255</td>
<td>2006</td>
<td>20N45W NE/WQ</td>
<td>9.1</td>
<td>22.9</td>
<td>10.2</td>
<td>2.6</td>
</tr>
<tr>
<td>1264</td>
<td>2006</td>
<td>20N45W SEQ</td>
<td>4.5</td>
<td>17</td>
<td>6.4</td>
<td>3.6</td>
</tr>
<tr>
<td>1330</td>
<td>2007</td>
<td>20N35W SWQ</td>
<td>2</td>
<td>16.8</td>
<td>9.3</td>
<td>2.5</td>
</tr>
<tr>
<td>1340</td>
<td>2007</td>
<td>20N35W SWQ</td>
<td>3</td>
<td>13.3</td>
<td>7.2</td>
<td>1.9</td>
</tr>
<tr>
<td>1384</td>
<td>2007</td>
<td>20N40W SEQ</td>
<td>2</td>
<td>32.2</td>
<td>10</td>
<td>4.5</td>
</tr>
<tr>
<td>1403</td>
<td>2007</td>
<td>30N50W NEQ</td>
<td>19.5</td>
<td>22</td>
<td>10.9</td>
<td>2.2</td>
</tr>
<tr>
<td>1528</td>
<td>2008</td>
<td>30N40W SEQ (chip)</td>
<td>2</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Table 3. Statistics of obsidian bladelets from Ais Yiorkis.
<table>
<thead>
<tr>
<th>Length</th>
<th>Width</th>
<th>Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>18.8</td>
<td>9.8</td>
<td>2.9</td>
</tr>
</tbody>
</table>

Table 4. Average measurements of obsidian bladelets from Ais Yiorakis.
<table>
<thead>
<tr>
<th></th>
<th>Retouch</th>
<th>Description</th>
<th>Burnt</th>
</tr>
</thead>
<tbody>
<tr>
<td>72</td>
<td>no</td>
<td>Unretouched bladelet</td>
<td>no</td>
</tr>
<tr>
<td>81</td>
<td>no</td>
<td>Length broken</td>
<td>no</td>
</tr>
<tr>
<td>83</td>
<td>no</td>
<td>Length and width broken</td>
<td>no</td>
</tr>
<tr>
<td>92</td>
<td>no</td>
<td>Core trimming element; lateral retouch</td>
<td>no</td>
</tr>
<tr>
<td>101</td>
<td>no</td>
<td>Length broken</td>
<td>no</td>
</tr>
<tr>
<td>114</td>
<td>no</td>
<td>Length broken</td>
<td>no</td>
</tr>
<tr>
<td>171</td>
<td>no</td>
<td>Length broken</td>
<td>no</td>
</tr>
<tr>
<td>213</td>
<td>no</td>
<td>Retouch may not be intentional</td>
<td>no</td>
</tr>
<tr>
<td>239</td>
<td>yes</td>
<td>Retouch may not be intentional</td>
<td>no</td>
</tr>
<tr>
<td>252</td>
<td>no</td>
<td>Unretouched bladelet</td>
<td>no</td>
</tr>
<tr>
<td>290</td>
<td>yes</td>
<td>Retouch may not be intentional</td>
<td>no</td>
</tr>
<tr>
<td>328</td>
<td>yes</td>
<td>Light retouch on portions of edge</td>
<td>no</td>
</tr>
<tr>
<td>329</td>
<td>yes</td>
<td>Concave truncation</td>
<td>no</td>
</tr>
<tr>
<td>417</td>
<td>no</td>
<td>Unretouched bladelet</td>
<td>no</td>
</tr>
<tr>
<td>429</td>
<td>no</td>
<td>Unretouched bladelet</td>
<td>no</td>
</tr>
<tr>
<td>448</td>
<td>no</td>
<td>Unretouched bladelet</td>
<td>no</td>
</tr>
<tr>
<td>507</td>
<td>no</td>
<td>Tiny single-blow burin</td>
<td>no</td>
</tr>
<tr>
<td>549</td>
<td>no</td>
<td>Bottom of level 10, incur</td>
<td>no</td>
</tr>
<tr>
<td>610</td>
<td>no</td>
<td>Unretouched bladelet</td>
<td>no</td>
</tr>
<tr>
<td>626</td>
<td>no</td>
<td>Unretouched bladelet</td>
<td>no</td>
</tr>
<tr>
<td>656</td>
<td>no</td>
<td>Unretouched bladelet</td>
<td>no</td>
</tr>
<tr>
<td>657</td>
<td>no</td>
<td>Unretouched bladelet</td>
<td>no</td>
</tr>
<tr>
<td>687</td>
<td>no</td>
<td>Unretouched bladelet</td>
<td>no</td>
</tr>
<tr>
<td>781</td>
<td>no</td>
<td>Unretouched bladelet</td>
<td>no</td>
</tr>
<tr>
<td>894</td>
<td>yes</td>
<td>Unretouched bladelet</td>
<td>no</td>
</tr>
<tr>
<td>940</td>
<td>no</td>
<td>Unretouched bladelet</td>
<td>no</td>
</tr>
<tr>
<td>967</td>
<td>yes</td>
<td>Bilateral retouch, alternate retouch</td>
<td>no</td>
</tr>
<tr>
<td>1087</td>
<td>no</td>
<td>Very milky color; to S for sourcing</td>
<td>no</td>
</tr>
<tr>
<td>1125</td>
<td>no</td>
<td>Unretouched bladelet</td>
<td>no</td>
</tr>
<tr>
<td>1129</td>
<td>yes</td>
<td>Lateral retouch, possible tang/point?</td>
<td>no</td>
</tr>
<tr>
<td>1156</td>
<td>no</td>
<td>Unretouched bladelet</td>
<td>no</td>
</tr>
<tr>
<td>1163</td>
<td>no</td>
<td>Bifacial thinning flake</td>
<td>no</td>
</tr>
<tr>
<td>1174</td>
<td>yes</td>
<td>Lateral retouch on interior</td>
<td>no</td>
</tr>
<tr>
<td>1215</td>
<td>yes</td>
<td>Lateral retouch</td>
<td>no</td>
</tr>
<tr>
<td>1255</td>
<td>yes</td>
<td>Bilateral retouch</td>
<td>no</td>
</tr>
<tr>
<td>1264</td>
<td>no</td>
<td>Lateral split</td>
<td>no</td>
</tr>
<tr>
<td>1330</td>
<td>yes</td>
<td>Usewear; clear with black clouds</td>
<td>no</td>
</tr>
<tr>
<td>1340</td>
<td>yes</td>
<td>Usewear; very clear pale grey</td>
<td>no</td>
</tr>
<tr>
<td>1384</td>
<td>yes</td>
<td>Usewear; clear with black clouds</td>
<td>no</td>
</tr>
<tr>
<td>1403</td>
<td>yes</td>
<td>Usewear; very clear pale grey</td>
<td>no</td>
</tr>
</tbody>
</table>

Table 5. Descriptions and attributes of obsidian bladelets from Ais Yiorkis.
<table>
<thead>
<tr>
<th>Type</th>
<th>#</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tools</td>
<td>11,581</td>
<td>6</td>
</tr>
<tr>
<td>Cores</td>
<td>1,737</td>
<td>0.9</td>
</tr>
<tr>
<td>Debitage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary flakes</td>
<td>4,594</td>
<td>2.4</td>
</tr>
<tr>
<td>Secondary flakes</td>
<td>12,863</td>
<td>6.6</td>
</tr>
<tr>
<td>Tertiary flakes</td>
<td>71,316</td>
<td>36.8</td>
</tr>
<tr>
<td>Primary blades</td>
<td>647</td>
<td>0.3</td>
</tr>
<tr>
<td>Secondary blades</td>
<td>2,647</td>
<td>1.4</td>
</tr>
<tr>
<td>Tertiary blades</td>
<td>13,582</td>
<td>7</td>
</tr>
<tr>
<td>Bladelets</td>
<td>6,606</td>
<td>3.4</td>
</tr>
<tr>
<td>Core trimming elements</td>
<td>625</td>
<td>0.3</td>
</tr>
<tr>
<td>Core tablets</td>
<td>72</td>
<td>--</td>
</tr>
<tr>
<td>Burin spalls</td>
<td>457</td>
<td>0.2</td>
</tr>
<tr>
<td>Microflakes</td>
<td>16,678</td>
<td>8.7</td>
</tr>
<tr>
<td>Debris</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chips</td>
<td>46,038</td>
<td>23.7</td>
</tr>
<tr>
<td>Chunks</td>
<td>4,496</td>
<td>2.3</td>
</tr>
<tr>
<td>TOTAL</td>
<td>193,939</td>
<td>100</td>
</tr>
</tbody>
</table>

APPENDIX 3

FIGURES

Figure 1. Map of Cyprus detailing location of Ais Yiorkis (Simmons 2003:2).

Figure 2. Map of the “Fertile Crescent” detailing distribution of Anatolian obsidian.
REFERENCES

Ammermann, Albert, P. Flourentzos, C. McCartney, J. Knoller, and Daniel Sorabji

Balkan-Atli, Nur, Didier Binder, and Marie-Claire Cauvin

Banning, E. B.

Bar-Yosef, Ofer

Belfer-Cohen, Anna

Binder, Didier

Bolger, Diane
2003 *Gender in Ancient Cyprus: Narratives of Social Change on a Mediterranean Island*. Walnut Creek, CA: AltaMira Press.

Braudel, F.

Briois, Francois, B. Gratuze, and Jean Guilane
Broodbank, Cyprian

Burney, D.

Carter, T., S. Dubernet, R. King, F. Le Bourdonne, M. Milic, G. Poupeau, M. Shackley

Chataigner, C., J. L. Poidevin, and N. O. Arnaud

Cherry, John F.


Childe, V.G.

Colledge, Sue
Croft, Paul

Cucchi, Thomas, Jean-Denis Vigne, Jean-Christophe Auffray, Paul Croft, and Edgar Peltenburg

Diamond, Jared


Dikaios, Porphyrios

Dixon, J. E., J. R. Cann, and Colin Renfrew.

Evans, J.D.

Fox, William

Frame, Sheilagh
Garfinkel, Yosef

Goldberg, Paul

Gomez, Basil, M. D. Glascock, M. J. Blackman, and I. A. Todd

Goren-Inbar, Naama

Guilaine, Jean, Francois Briois, Jacques Coularou, Isabelle Carrere

Guilaine, Jean, Francois Briois, Jean-Denis Vigne, and Isabelle Carrere
2000 Decouverte dun Neolithique Preceramique Ancien Chypriote (fin 9e, debut 8e millenaires cal. BC), Apparente au PPNB Ancien/Moyen du Levant nord.

Guilaine, J and F. Briois

Hansen, Julie

Healey, Elizabeth
Held, Steven O.


Jacobsen, T. W.

Klejn, Leo S., Gary A. Wright, Colin Renfrew

Knapp, A. Bernard, Steve Held, and Stuart Manning


Leakey, L.S.B.

Le Brun, Alain


Martin, Louise

Ozdogan, Mehmet, and Nezih Basgelen (editors)

Patton, Mark

Peltenburg, Edgar


Peltenburg, Edgar, Sue Colledge, Paul Croft, Adam Jackson, Carole McCartney, and Mary Anne Murray

Peltenburg, Edgar, Paul Croft, Adam Jackson, Carole McCartney, and Mary Anne Murray

Pernicka, E., J. Keller, and M.C. Cauvin
1997 Obsidian from Anatolian Sources in the Neolithic of the Middle Euphrates Region (Syria). *Paleorient* 23: 113-122.
Rainbird, Paul

Reese, David

Renfrew, Colin

Renfrew, Colin, J. E. Dixon, J. R. Cann


Şevketoğlu, Müge


Sherratt, Andrew
2005 The Obsidian Trade in the Near East, 14,000 to 6500 BC. 

Simmons, Alan H.


Simmons, Alan H., and Renee F. Corona

Stanley Price, N.


Sullivan, A. P. and K. C. Rozen

Swiny, Stuart
Tykot, Robert and Albert Ammerman


Valla, Francois

Vedder, J.F.

Vigne, Jean-Denis

Wright, Gary A.

Yellin, Joseph; Thomas E. Levy; Yorke M. Rowan

Zohary, Daniel

Zohary, Daniel and M. Hopf
VITA

Graduate College
University of Nevada, Las Vegas

Megan Michelle Melson

Degrees:
   Bachelor of Arts, Anthropology, 2005
   University of Nevada, Reno

Thesis Title:  Trade and Exchange in the Neolithic Near East:
   Implications of Obsidian Remains from Ais Yiorkis, Cyprus

Thesis Examination Committee:
   Chairperson, Alan Simmons, Ph.D.
   Committee Member, Levent Atici, Ph.D.
   Committee Member, Debra Martin, Ph.D.
   Graduate Faculty Representative, Ed Nagelhout, Ph.D.