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A Semiotic Analysis of Two Linear A Inscribed Ladles

Leah Rosen

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Introduction

On the peak sanctuary Agio Georgios on the island of Kythera, and at the archaeological site of Troullos on Crete, two Linear A (LA) inscribed ladles have been found. They are unique in that they are the only inscribed Minoan ladles found to date.¹ Because inscription is not a common feature of Minoan ladles, the purpose of these two inscriptions is of particular interest. However, Linear A, the writing system of the Minoans, remains undeciphered and is unlikely to be translated for the foreseeable future. In the meantime, other approaches to studying Linear A inscriptions can still provide insight into their possible functions and messages to the Minoan audience reading them. I propose that through semiotic analysis focusing not on the denotation of these inscriptions, but rather their connotations, we can get a better idea of the general purpose and even subject of Linear A inscriptions, an approach I will put in practice by conducting a semiotic analysis of two Linear A inscribed Minoan ladles: The Archanes ladle TL Za 1,² and the ladle from Agios Georgios, KY Za 2.

Historical Background

The Minoans were a Bronze Age civilization existing primarily on the island of Crete from 3000 to 1200 BCE, though there is evidence of groups of people on the island as early as 7000 BCE. Minoan sites are best known for large ‘palace’ structures, featuring courtyards,

¹ Yannis Sakellarakis, “Minoan Religious Influence in the Aegean: The Case of Kythera,” *Annual of the British School at Athens* 91, no. 4 (1996): 82.

² I am choosing to use the document names employed by Godart and Olivier in the *Recueil Des Inscriptions En Linéaire A*. TL Za 1 refers to the ladle found at Troullos while KY Za 2 refers to the ladle found at Agios Georgios on Kythera. The first two letters of a document name refer to the location the document was found, for example TL refers to Troullos. The second pair of letters refer to the material the object is made out of, here the code Za means the object is made out of stone. The number following the material code refers to how many objects of this type have been found at that site. For example KY Za 2 is the second stone LA document to be found on Kythera, while TL Za 1 is the first stone LA document to be found at Troullos. Additional lower case letters refer to the line or face the LA term being discussed appears on, and any number following that letter indicates which term on that line or object face is being discussed. For example TL Za 1b.1 refers to the first term inscribed on the second side on the stone Troullos ladle. For a full explanation of LA document naming conventions please see the appendix.

workshops, many rooms, and frescos. Following the construction of these palaces, Minoan history can be broken down into four periods: the Prepalatial period, the Protopalatial period, the Neopalatial period, and the Postpalatial period (Figure 1).³ This paper will focus on finds from the Neopalatial period. This period spans from approximately 1790-1450 BCE, or MMIIIA-LM IB (Late Minoan IB),⁴ and saw the reconstruction and expansion of old palaces as well as new palaces being built.

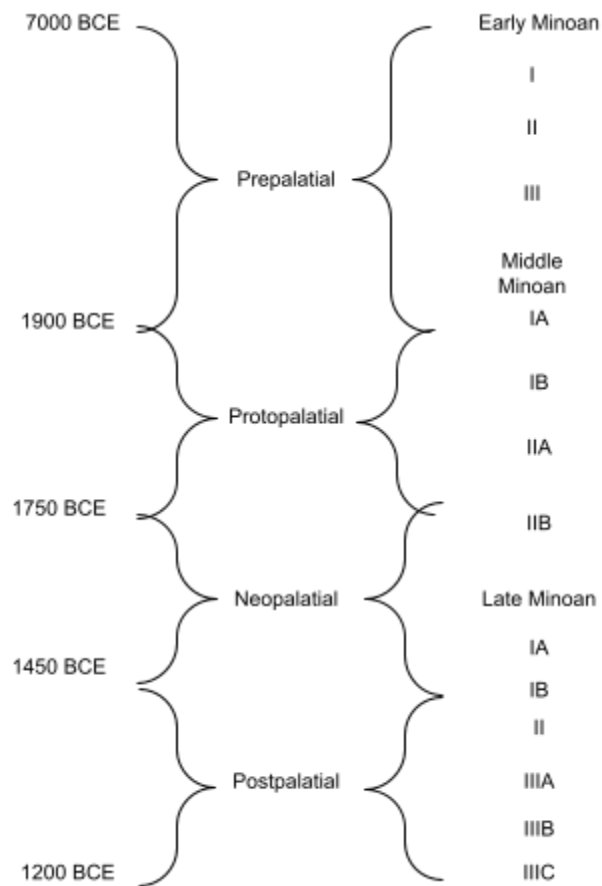


Figure 1: Three Dating Systems for Minoan History

³ The Prepalatial dates from 7000-1900 BCE and coincides with the Early Minoan period (EM) and partially through the Middle Minoan IA period (MM IA). The Protopalatial, also known as the First Palaces period, lasts from 1900-1750 BCE (MMIB-MMIIIB) and was the stretch of time during which the first iterations of many Minoan palaces were constructed. The Postpalatial period, also sometimes called the Mycenaean period, spanned from 1450-1200 BCE (LMII-LMIIC). It is theorized that the Mycenaean, those living on what would become mainland Greece, took over Minoan palatial sites.

⁴Evangelos Kyriakidis, *Ritual in the Bronze Age Aegean Minoan Peak Sanctuaries* (London: Duckworth, 2005), 3.

In addition to the palaces, another prominent type of Minoan site is peak sanctuaries. A peak sanctuary is an open-air, non-domestic site located on a mountain.⁵ Peak sanctuaries are located in sight of Minoan settlements and other peak sanctuaries.⁶ Peak sanctuaries are generally agreed to be religious sites. Kyriakidis identifies a few reasons for this. Peak sanctuaries show no sign that people lived there. They are open air and therefore able to accommodate a large number of people, with unique finds like figurines that do not appear at most other sites.⁷ Large numbers of cups and figurines indicate repeated, possibly ritual, participation at these sites. The frequent use of images such as horns of consecration and double axes of these sites indicate symbolism. Together these factors indicate both ritual activity and ritual value present at these sites,⁸ generally expected of religious spaces. A large number of objects that lack a clear functional purpose and are considered offerings, like figurines, have been found at peak sanctuaries, providing further evidence for interpreting them as religious sites.⁹ The peak sanctuaries were all constructed in the Protopalatial or Neopalatial periods, coinciding with the appearance of Minoan palaces.¹⁰ These sites were most likely the location of religious ritual.¹¹ Although the exact details of Minoan religious beliefs and practices are still unknown, examinations of the material evidence and comparisons of those objects to those of later Greek civilization provides a general understanding of some basic features of Minoan religion and ritual. For example, it was common practice during the Bronze Age to pour libations, which was the ritual pouring of wine as an invocation of a deity.¹² Objects like figurines found at peak sanctuaries are generally considered to be votive, meaning they were an

⁵ Kyriakidis, 18-19.

⁶ Kyriakidis, 19.

⁷ Kyriakidis, 52.

⁸ Kyriakidis 53-54.

⁹ Kyriakidis, 63.

¹⁰ Kyriakidis, 20.

¹¹ Kyriakidis, 97.

¹² Walter Burkert, *Greek Religion*, trans. John Raffan.(Harvard University Press, 1985), 70.

offering made to gods as a part of a vow.¹³ Additionally, altars have been found at Minoan religious sites and, like libations, were commonly used by the Minoans.¹⁴ While these basic aspects of Minoan religion and ritual can be inferred based on the archeological evidence, many of the specifics of Minoan religion are unknown. This is largely because we do not have access to any written record referencing the gods or beliefs of those practicing at these peak sanctuaries. That is not to say that the Minoans did not leave behind writing, but rather that the Minoan writing system remains undeciphered.

Linear A

The Minoans used the Linear A (LA) writing system. This script first appeared in Crete during the Middle Minoan IB-II (MM IB-II) period, or approximately 1800 BCE. It was used alongside the preceding writing system of the region, Cretan Hieroglyphics, outliving the script by about a century until Linear A too was completely superseded by Linear B in Late Minoan 1B (LM 1B).¹⁵ Linear B was the script used by the Mycenaeans to transcribe Mycenaean Greek. Current theories take the presence of Linear B tablets at Minoan sites as evidence of Mycenaean control over these locations from LM II to LM IIIB.¹⁶ Although Linear A and B do not transcribe the same language, the scripts themselves share many features. Like Linear B, Linear A is thought to be a syllabic system supplemented by various ideograms.¹⁷ The two are so similar that Linear B is widely thought to have been adapted from Linear A.¹⁸ However, more recent work done by Salgarella doubts that assumption, pointing out that the scripts are not only remarkably

¹³ Burkert, 68.

¹⁴ Burkert, 35.

¹⁵ P. M. Steele, "Introduction: The Aegean Writing Systems." In P. M. Steele (Ed.), *Understanding Relations Between Scripts: The Aegean Writing Systems* (Oxbow Books., 2017), 1-6.

¹⁶ J. Day, "Counting Threads: Saffron in Aegean Bronze Age Writing and Society," *Oxford Journal of Archaeology* 41, no.4 (2011): 369.

¹⁷ Carpenter, R. *Linear B*. Phoenix 11, no.2 (1957): 48-49

¹⁸ Steele, 1.

similar visually, but similar in usage.¹⁹ She argues that instead of viewing Linear B as descendant from Linear A, it may be more accurate to consider the two as variations of the same script, similar to how English and French both use the Latin alphabet with some minor adjustments.²⁰ In spite of the great similarities between the two scripts, only Linear B has been deciphered.

The vast majority of surviving Linear B texts are small clay tablets, accidentally fired when the palaces burned down during the Late Helladic IIIB period.²¹ These tablets were deciphered in 1956, primarily by Michael Ventris with the benefit of decades of research from other scholars.²² Translation was extremely valuable to the study of Mycenaean society and revealed that Linear B was used primarily for record-keeping and administrative purposes.²³ The tablets list goods being stored and traded, land, and military equipment.²⁴ Additionally, Linear B was used to record exchanges between palatial sites,²⁵ further revealing to archeologists which communities were in contact with each other and helping them track the flow of goods in the Mycenaean world.²⁶ Archeologists using these records are able to infer the economic and social structuring of these societies, giving insight into the lives of these peoples beyond what material evidence can reveal.

Deciphering the Linear B script greatly expanded our understanding of Mycenaean civilization. As mentioned, unlike Linear B, Linear A remains undeciphered. This is a result of a few major obstacles. First, there are far fewer known Linear A documents today than Linear B documents at the time of Linear B's decipherment. As of 1956 more than 3000 Linear B texts

¹⁹ Ester Salgarella, *Aegean Linear Script(s) Rethinking the Relationship between Linear A and Linear B*. (Cambridge: St John's College, 2020): 22.

²⁰ *ibid.*

²¹ Day, 369.

²² Steele, 3.

²³ *ibid.*

²⁴ J Bennet, "The Structure of the Linear B Administration at Knossos." *American Journal of Archaeology* 89, no. 2 (1985): 241–249 .

²⁵ Day, 369.

²⁶ *ibid.*

had been discovered to be used in the decipherment process.²⁷ In comparison, today there are still only approximately 1400 known Linear A texts, the majority from the Neopalatial period.²⁸ That puts the currently available Linear A sources at about half of the Linear B available around the time of its translation. Less source material means fewer examples of each character and unique characters to compare and contrast. Additionally, the Minoan language transcribed by Linear A continues to confound scholars because it lacks a clear connection to any modern-day language. Linear B transcribes Mycenaean Greek.²⁹ Not only did researchers have access to modern Greek, but Ancient Greek has been well preserved and studied extensively. This provided scholars with a jumping-off point for comparison, and they were able to understand the grammar of Mycenaean Greek in relation to Greek grammar, the pronunciation of characters in relation to Greek, and the meaning of the vocabulary as it relates to Greek.³⁰ Linear A lacks that level of connection with any other known language. Some scholars theorize that the unknown Minoan language is related to Indo-European languages and possibly Semitic languages however, this historical linguistic approach has yet to provide the desired result, and no direct descendent language has been identified.³¹ Without this connection there is very little reference for scholars to use in order to understand the grammar and meaning of the script. Given these problems, it is unlikely Linear A will be deciphered and the unknown Minoan language translated until more examples of Linear A are discovered.

Despite these obstacles, Linear A could be even more beneficial to the study of Minoan civilization than Linear B was for the study of Mycenaeans. This is because Linear A was used in a much larger variety of contexts than Linear B. Linear A has been found on

²⁷ *ibid.*

²⁸ Salgarella, 42.

²⁹ Ventris and Chadwick, *Documents in Mycenaean Greek* (Cambridge University Press, 1957): 10-27.

³⁰ *ibid.*

³¹ Davis, S. "Some Ideograms in Linear A and Linear B." *Classical Philology* 55, no.2 (1960): 114–115.

non-administrative documents,³² such as jewelry, libation tables, construction blocks, and, the focus of this study, two ladles. The script has also been found on administrative tablets, most likely used for recording keeping like their Linear B inscribed counterparts. Linear A has been found primarily in Minoan palatial sites on Crete, but also appears in peak sanctuaries, in Minoan settlements on the nearby islands, and in some Mycenaean sites.³³ These varied contexts that Linear A has been found in indicate that its use included and extended beyond administrative record keeping; it may have been used to record information about the religious life of Minoans as well as the lives of Minoans outside of an administrative class. Linear A documents could provide tremendous insight into the socio-political structures of Minoan society, economic systems, as well as religious life and ritual practices. The script holds essential information about Minoan life, and therefore the study of Minoan society and culture is necessarily the study of Linear A. In this paper I will attempt to study Linear A by examining two inscribed Minoan ladles: The Troullos ladle and the Agios Georgios ladle.



Figure 2: Geographical distribution of LA documents on Crete, by Yannis Galanakis and Ester Salgarella³⁴

³² *ibid.*

³³ *ibid.*

³⁴ Salgarella, 2

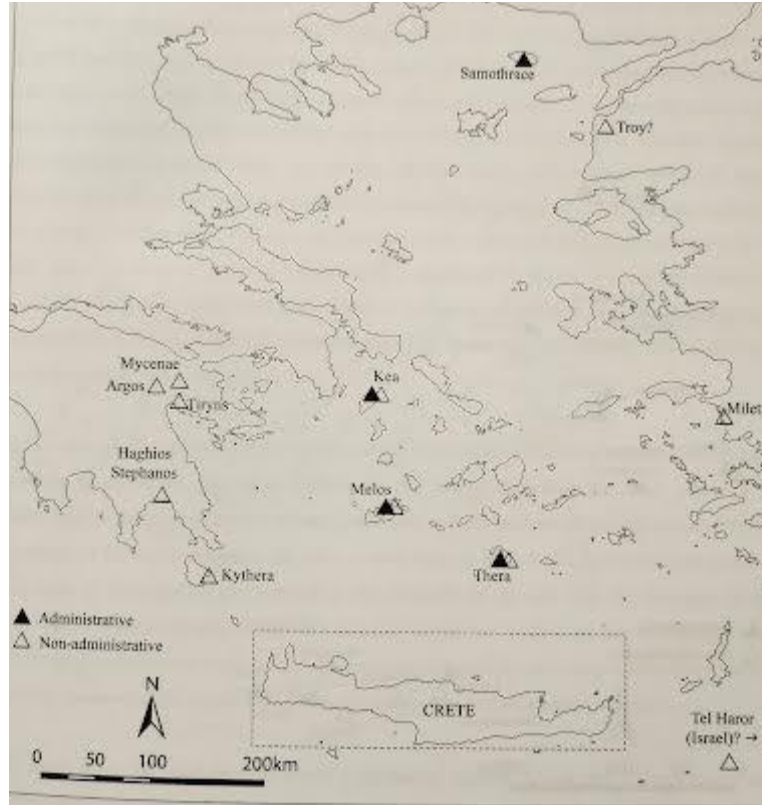


Figure 3: Geographic Distribution of LA documents outside Crete by Yannis Galanakis and Ester Salgarella³⁵

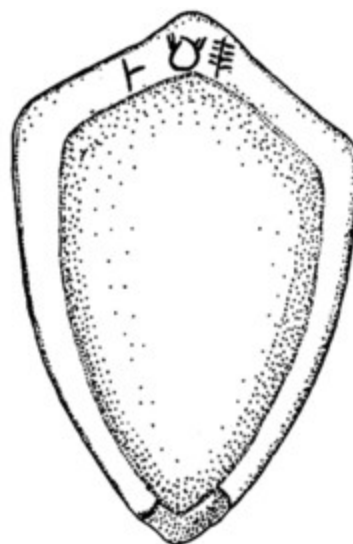
The Ladles

The Agios Georgios ladle (Figure 4), KY Za 2, is a black steatite ladle from the Minoan peak sanctuary on Agios Georgios, near the settlement of Kastri on Kythera.³⁶ The ladle is inscribed with a single word composed of the characters AB01-AB80-AB04, which can be transliterated as DE-MA-TE. While it is often theorized that this term references Demeter,³⁷ there is little evidence to support that claim, and I argue that it is unlikely the inscription is meant to reference the goddess.

³⁵ Salgarella, 3.

³⁶ Olivier and Sakellarakis, "Un vase en pierre avec inscription en linéaire A du sanctuaire de sommet minoen de Cythère," *Bulletin de correspondance hellénique* 118, livraison 2, (1994): 325.

³⁷ Olivier; Sakellarakis, 349-350.

Figure 4: Agios Georgios Ladle³⁸Figure 5: Drawing of Agios Georgios Ladle³⁹

The Troullos ladle (Figure 6), also commonly referred to as the Archanes ladle, is a translucent alabaster ladle dated to sometime during the Neopalatial period.⁴⁰ It is inscribed with five Linear A terms. These terms in this order are attested on several Minoan objects and are generally referred to as the libation formula.⁴¹ The libation formula appears in several iterations, but consists of different forms of the same three to four terms, and always features a hapax⁴² as the second term. It is not known what the libation formula says, nor its function. It is often speculated to be a religious dedication or prayer,⁴³ however, this theory remains unproven. While I will acknowledge where the semiotic analysis supports or disputes this theory, the focus of this study is what information semiotic comparison reveals about these inscriptions, and so the analysis will be solely focused on this object. Likewise, there are numerous debates surrounding the study of Linear A and Minoan society. The lack of available evidence and translatable

³⁸ Olivier; Sakellarakis, 345.

³⁹ *ibid.*

⁴⁰ Sakellarakis, 24.

⁴¹ Davis, Brent. "Syntax in Linear A: The Word-Order of the 'Libation Formula.'" *Kadmos* 52, no. 1 (2013): 35–52

⁴² A hapax is "a term of which only one instance of use is recorded" Knowles, Elizabeth. "hapax legomenon." In *The Oxford Dictionary of Phrase and Fable*. Oxford University Press (2005).

⁴³ Davis, 35.

writing has resulted in considerable disagreement between scholars. While I avoid assuming any theory is correct and drawing conclusions that are outside of the scope of this study, understanding the assumptions, agreement, and contradictions of the sources that informed my research is essential to ensuring the accuracy of this paper and acknowledging any biases or limitations of this study.



Figure 6: The Archanes Ladle, TL Za 1⁴⁴

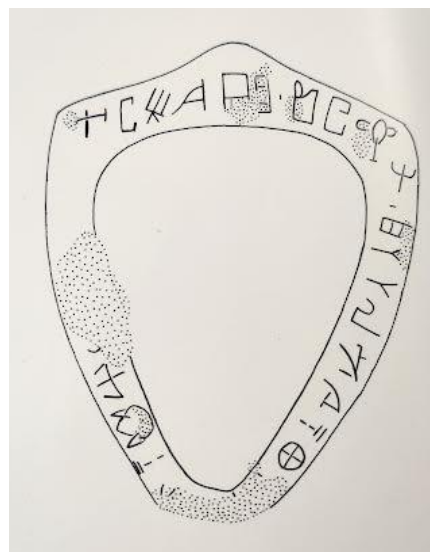


Figure 7: Drawing of the Archanes Ladle⁴⁵

Current Scholarship on Linear A

The available primary sources and scholarship for the study of Linear A are extremely limited. This has two major consequences: overlap between authors and disagreement between sources. Many authors cite the same sources, such as Schoep 1996⁴⁶ for its chronology, or volumes of *Recueil Des Inscriptions En Linéaire A*, which are the most complete and recent

⁴⁴ Godart; Olivier, *GORILA V*, 58.

⁴⁵ *ibid.*

⁴⁶ Ilse Schoep, “Minoan Administration on Crete: an Interdisciplinary Approach to Documents in Cretan Hieroglyphic and Linear A (MM I/II-LM IB)” *Katholieke Universiteit Leuven*, (1996).

index of Linear A texts. Duhoux,⁴⁷ who critiqued Schoep's 2002 book⁴⁸ on Minoan administrative structures, was frequently cited by Davis⁴⁹ for his work on libation formulas. This overlap means that if there is an issue with one source, the problem carries over into the arguments of many available texts. The other major consequence is considerable disagreement between sources. While many of the texts in this bibliography agree and build off of one another's conclusions, many also present arguments in total opposition to one another. This disagreement does not indicate inaccuracy or unreliability in any of these sources; instead, it most often indicates that the authors took different approaches to the same question or examined different kinds of evidence.

Within this bibliography, I identified four debates of particular relevance. Questions regarding who was using the Linear A script and for what purpose are addressed by Schoep in her 1996 text and again in her 2002 book, by Duhoux's 2002 article, Kyriakidis' 2005 article,⁵⁰ Pendlebury's 1963 book,⁵¹ and finally Sakellarakis 1996 text.⁵² The possible reference to Demeter on the ladle KY Za 2 is discussed by Olivier and Sakellarakis in 1994⁵³ and another by the same Sakellarakis written in 1996. Davis and Thomas⁵⁴ both explore the possible syntactic structure of Linear A, and their theories facilitate my paradigmatic comparisons of the inscriptions. Finally, Godart and Olivier propose functional categories of Linear A signifiers⁵⁵ in volume 5 of *Recueil Des Inscriptions En Linéaire A*⁵⁶ and Salgarella provides her own functional

⁴⁷ Yves, Duhoux, *L'Antiquité Classique* 73, (2004): 491.

⁴⁸ Schoep, Ilse. *The Administration of Neopalatial Crete A Critical Assessment of the Linear A Tablets and Their Role In the Administrative Process*. (Ediciones Universidad de Salamanca, 2002) 9-10.

⁴⁹ Davis, 35-41.

⁵⁰ Evangelos Kyriakidis, *Ritual in the Bronze Age Aegean Minoan Peak Sanctuaries* (London: Duckworth, 2005).

⁵¹ J. Pendlebury, *The Archaeology of Crete: An Introduction* (New York: Bilbo and Tannen, 1963).

⁵² Sakellarakis, 96.

⁵³ Olivier; Sakellarakis, 343

⁵⁴ Thomas, Rose. "Some Reflections on Morphology in the Language of the Linear A Libation Formula." *Kadmos* 59, no. 1 (2020).

⁵⁵ See discussion of semiological terms below in *Barthes' Semiology in Elements of Semiology* section.

⁵⁶ Godart, Louis; Olivier, Jean-Pierre. *Recueil Des Inscriptions En Linéaire A Addenda, Corrigenda, Concordances, Index et Planches Des Signes*. v.5 (Paris: Librairie Orientaliste Paul Geunther, 1985).

organization of characters in *Aegean Linear Script(s) Rethinking the Relationship between Linear A and Linear B*.⁵⁷ Acknowledging the contentions between these texts is necessary in order to clearly establish the assumptions and perspective this paper is built from. With no clear consensus in many of these areas, I have attempted to consider all proposed perspectives when applicable to my analysis, avoid taking positions in debates outside of the scope of this study, and, when it is necessary to weigh in on these larger discussions, approach critique with caution and only argue based on material evidence, not assumption or disputed interpretations of those materials.

Who was Using Linear A and How Were They Using It?

The most contentious debate within this bibliography concerns the organization and reach of the Minoan administration in the Neopalatial period. While Duhoux, Sakellarakis, and Kyriakidis all advocate to some extent that Neopalatial Crete was governed by a centralized administration, Schoep stands firm in her assessment that the Minoan world was made up of several administratively similar polities.⁵⁸ Schoep argues that the polities had fairly uniform administrative practices, but were ultimately independent of each other, lacking any notable hierarchy or power imbalance.⁵⁹ She pulls this claim from the document styles found at each palace site, which vary in some aspects like size but are consistent in style and usage.⁶⁰ Schoep makes the case that if these palaces were all part of one administration, there would be no consistent differences in the documents from site to site. The similarities indicate a common type

⁵⁷ Salgarella, Ester *Aegean Linear Script(s) Rethinking the Relationship between Linear A and Linear B*. (Cambridge: St John's College, 2020).

⁵⁸ Schoep, Ilse, "Minoan Administration on Crete : an Interdisciplinary Approach to Documents in Cretan Hieroglyphic and Linear A (MM I/II-LM IB)," (1996): 586.

⁵⁹ Ibid.

⁶⁰ Ibid.

of administration and shared practices, but the existence of differences speaks to the independence of the polities.

In her 2002 book *The Administration of Neopalatial Crete A Critical Assessment of the Linear A Tablets and Their Role In the Administrative Process*, Schoep reaffirms her argument, claiming that Linear A documents were used primarily to mark and track goods, each document type (nodule, roundel, tablet, ect.) serving a different function in the trade process.⁶¹ Schoep's argument sprouts from her initial claims that "The purpose of any administration is to keep track of the incoming and outgoing movements of goods."⁶² This assumption is critiqued by Duhoux, who points out that while Schoep may believe it to be the purpose of an administration, it is not universally agreed upon and is not an assumption that doesn't require defending.⁶³ Assuming that this was the central function of Minoan administrations would have biased Schoep's interpretation of the documents and skewed her conclusions to favor an economic focus.

In addition to expanding on the argument originally made in her 1996 text, Schoep gives more attention in this book to the non-administrative uses of Linear A than she did in her earlier article. She points out that while Linear A seems to have only been used at Phaistos during the Protopalatial period, by the Neopalatial period the script could be found all over Crete, a spread which coincided with the appearance of Linear A on non-administrative documents.⁶⁴ This widespread and non-administrative usage might indicate literacy beyond the administrative elites in Minoan society.⁶⁵ These non-administrative uses are supported by Pendlebury's 1963 book, which identifies ink graffiti on household objects from the Neopalatial period.⁶⁶ This indicates

⁶¹ Schoep, Ilse. *The Administration of Neopalatial Crete A Critical Assessment of the Linear A Tablets and Their Role In the Administrative Process*, 9-10.

⁶² Schoep, *The Administration of Neopalatial Crete*, 9.

⁶³ Duhoux, 1.

⁶⁴ Schoep, *The Administration of Neopalatial Crete*, 13.

⁶⁵ Ibid.

⁶⁶ Pendlebury, 68.

literacy outside of the palaces, and that the script could be used for non-administrative and non-religious purposes. The use of Linear A outside of those contexts provides evidence against the idea that Linear A had a deciding group, and instead, the language was shaped by the speech of its users in and outside of the palaces. This does not necessarily prove that there was no centralized administration, but that no centralized administration was controlling the usage of Linear A.

By contrast Sakellarakis theorizes that there was a centralized administration in Crete.⁶⁷ Sakellarakis bases this conclusion on finds at peak sanctuaries, rather than palatial sites. He argues that the abundance of bronze objects found at Kythera and the sanctuary's strategic location overlooking the sea, as well as the abundance of buildings at the peak sanctuary Iouktas and the wealth of finds there, indicate these sanctuaries were under the financial influence of a palace.⁶⁸ Because there are signs of palatial influence at multiple Neopalatial peak sanctuaries, and because of the wealth indicated by these objects and structures, Sakellarakis argues that peak sanctuaries most likely had a relationship with one centralized Minoan administration, rather than many smaller administrations.⁶⁹

Kyriakidis' book presents a very similar argument to Sakellarakis, though published considerably earlier and focusing more so on architectural evidence. Kyriakidis, like Sakellarakis, argues that some sort of centralized institution most likely exercised influence over peak sanctuaries.⁷⁰ Kyriakidis points out evidence of elites at peak sanctuaries, shown by small rooms for limited ritual.⁷¹ Again, this argument focuses on signs of palatial influence, rather than looking at administrative habits or documents, to determine the reach of Minoan administrations.

⁶⁷ Sakellarakis, Y. "Minoan Religious Influence in the Aegean: The Case of Kythera." 96.

⁶⁸ Ibid.

⁶⁹ Ibid.

⁷⁰ Kyriakidis, Evangelos *Ritual in the Bronze Age Aegean Minoan Peak Sanctuaries*, 101.

⁷¹ Kyriakidis, 84.

This relies on the assumption that in order to influence the peak sanctuaries throughout Crete, the administration must have been centralized.

Sakellarakis, Kyriakidis, and Schoep draw their conclusions from two different sources: peak sanctuaries and palaces. Additionally, they rely on two different types of evidence: votive objects and Linear A documents. Sakellarakis and Kyriakidis' analysis relies on identifying the influence of a palatial administration in non-palatial parts of Minoan society, whereas Schoep's argument is based on material tied to the inner workings of the trade and administration.

Understanding the centralization or independence of Minoan administrations would most likely require a consideration of both of these factors. However, since each of these authors only focus on one of these factors, they all present an argument with considerable gaps requiring more evidence. That being said, these authors identify possible usages of Linear A: Schoep observes that Linear A could have been used for record-keeping and that its usage extended beyond religious and administrative sites, while Sakellarakis describes Linear A inscribed on libation tables, most likely for a religious purpose. They all provide evidence to justify their claim and so it follows that Linear A was most likely used for both religious and administrative purposes, but also could have been used in secular contexts outside of administration.

Determining the extent of centralization and influence Minoan administrations had in the Neopalatial period is beyond the scope of this project. However, it does affect the possible purposes for inscriptions and my interpretation of them. It remains unclear whether Neopalatial Crete had a centralized administration or many similar polities however, I believe within this debate these texts have provided evidence of a great number of ways Linear A could be used, extending beyond administrative purposes. The presence of Linear A outside of palaces and sanctuaries and in domestic settings indicates Linear A was being used by non-elites for

non-administrative purposes. People outside of the administration and sanctuaries, which may or may not have been under the influence of palaces, were using Linear A for speech. This is striking evidence against the idea that there was a deciding group for the script. This is because when there is a deciding group for a language, they are in control of all speech using that language. Any person who understands traffic lights can't make a traffic light or choose to use them to indicate when other cars should stop and go, drivers are outside of the deciding group for the language of traffic lights. Had Linear A had a deciding group, people outside of that group would similarly not be able to use Linear A for speech. Thus, the non-administrative usages of Linear A identified by these articles indicate that, regardless of any centralization of the administration or lack thereof, the Linear A script was not controlled or regulated by them, but rather shaped by the speech of the language's speakers.

Presence of Demeter in the Minoan Pantheon

Within the bibliography, two authors make the argument that the ladle KY Za 2's inscription is most likely the Minoan version of the name Demeter. The article "Un vase en pierre avec inscription en linéaire A du sanctuaire de sommet minoen de Cythère" by Jean-Pierre Olivier, and Yannis Sakellarakis discusses the merits and shortcomings of the argument that the KY Za 2 ladle is inscribed with the name Demeter. They point out that based on the equivalent Linear B signs,⁷² the inscription can most likely be transliterated as DE-MA-TE, which is very similar to the 'Demeter'. The authors also point out that in Mycenaean Greek DE-MA-TE does not refer to the goddess Demeter, but regardless they still conclude the most probable meaning of the term is 'Demeter.'

⁷² See discussion of semiological terms below in *Barthes' Semiology in Elements of Semiology* section.

“Minoan Religious Influence in the Aegean: The Case of Kythera” is written by the same Yannis Sakellarakis, and he cites the earlier article when claiming that the inscription refers to Demeter. KY Za 2 is not a central focus of “The Case of Kythera” so it was practical for Sakellarakis to cite his own article to provide evidence for the conclusion rather than spend time repeating it. However, some of Sakellarakis’s observations about the finds at Kythera in “The Case of Kythera” appear to provide evidence against the earlier article’s conclusion. Sakellarakis points out that, unlike most peak sanctuaries, very few figurines depicting animals or food were found at Kythera, from where KY Za 2 originates. Sakellarakis argues this absence may have been a reflection of the non-agriculture based economy on the island.⁷³ While this provides a compelling explanation for the absence of plant and animal imagery in the votive objects, it conflicts with the idea that the ladle would be dedicated to a Minoan form of Demeter. While domains of deities are undoubtedly subject to change as their depictions and the cultures that worship them change, by explicitly tying the inscription on KY Za 2 to Demeter, Sakellarakis and Olivier inevitably impose a modern understanding of the goddess and her domain onto the Minoan version they are proposing. Yet, the apparent lack of agricultural motifs in the votive objects from Kythera and the general unimportance of agriculture to the island of Agios Georgios contrasts the alleged dedication to an agricultural deity. This conflict on its own does not provide enough evidence to definitively disprove Olivier and Sakellarakis’ argument, however, the observations in “The Case of Kythera” create considerable doubt, and it should not be assumed that the inscription refers to Demeter based on possible phonetic similarities.

In addition, Olivier and Sakellarakis’ interpretation is indirectly addressed by Davis and Thomas’s respective articles. Olivier and Sakellarakis suggest that two votive axes found at

⁷³ Sakellarakis, “Minoan Religious Influence in the Aegean: The Case of Kythera,” 88.

Archanes may bear a related inscription.⁷⁴ The relation of their inscription, I-DE-MA-TE, relies on “I” functioning as a prefix in Linear A. Both Davis and Thomas argue that this may be the case. Davis and Thomas use a linguistic perspective to determine the most probable standard word order in the Minoan language. Davis makes the point the “I” could serve as a prepositional prefix,⁷⁵ while Thomas likewise refers to an instance of the “I” prefix.⁷⁶ This does not support the conclusion that the KY Za 2 inscription references Demeter however, it does support the connection between the ladle and the axes and suggests that the term inscribed on the Archanes axes is a noun with a possible preposition, and if that is the case, DE-MA-TE would be a noun. Thus, while this paper is skeptical of the connection with Demeter that Sakellarakis and Olivier identify, enough evidence has been provided between these four texts to suggest that the inscribed word’s form of content⁷⁷ (the part of speech it is) is likely a noun. Additionally, the arguments made for the “I” prefix in Thomas and Davis are enough for the Archanes axes to be tentatively placed in KY Za 2’s system for comparison.

Linear A Syntax and Morphology

The aforementioned articles by Davis and Thomas both attempt to identify the syntactic structure of Linear A based on the libation formula, a variation of which appears on the Troullos ladle this paper is examining. Both articles discuss the same primary evidence pulled from the *Recueil Des Inscriptions En Linéaire A*. Davis argues that based on the syntactic structures of languages in the region, Linear A most likely uses a verb-subject-object word order.⁷⁸ From there

⁷⁴ Olivier; Sakellarakis, “Un vase en pierre avec inscription en linéaire A du sanctuaire de sommet minoen de Cythère,” 342-344.

⁷⁵ Davis, Brent. “Syntax in Linear A: The Word-Order of the ‘Libation Formula.’” (*Kadmos* 52, no. 1. 2013): 50.

⁷⁶ Thomas, “Some Reflections on Morphology in the Language of the Linear A Libation Formula,” 5.

⁷⁷ See discussion of semiological terms below in *Barthes’ Semiology in Elements of Semiology* section.

⁷⁸ Davis, 36.

Davis further argues that the fact that the second word of the phrase is a hapax suggests that it is most likely a name,⁷⁹ that the adjectives most likely follow the nouns they modify with some exceptions,⁸⁰ that there may have been prepositional prefixes,⁸¹ and that the changing suffixes and prefixes on the stable root i-*301 in the first word of the phrase suggest that word is a verb.⁸²

Thomas builds on Davis's arguments. In addition to sharing *Recueil Des Inscriptions En Linéaire A* as a source, both authors rely on Greenberg's 1963 book on language universals, as well as referring to Duhoux's works on the libation formula. Thomas delves into possible meaning more than Davis, who was careful to stay away from the subject. Thomas pushes back against the assumption, present in Davis's paper, that AS-SA-SA-RA-ME is most likely the name of a deity, though she does seem open to the idea that the word acts as a name or at least a noun.⁸³ Overall however, Thomas agrees with Davis, echoing his central argument that the Minoan language uses a verb-subject-object word order.

For this paper, the arguments presented by these two authors seem reliable and compelling. Their research specifically addresses the form of content of the Linear A words, in part by examining their substance of expression, here the monemes⁸⁴ that make up each word. Their analysis shows how information about the purpose of an inscription can be derived from the form of content and the substance of expression,⁸⁵ the kind of analysis this paper aims to do. These articles identify the form of content and indicators of the form of content within the system that I use for TL Za 1, the theories presented in these two articles provide a foundation for the paradigmatic comparison outlined later in this paper.

⁷⁹ Davis, 39.

⁸⁰ Davis, 41-42.

⁸¹ Davis, 50.

⁸² Davis, 38-39.

⁸³ Thomas, 5.

⁸⁴ A moneme is "a minimal and indivisible morphological unit" "moneme, n." OED Online. *Oxford University Press*, (2022).

⁸⁵ See discussion of semiological terms below in *Barthes' Semiology in Elements of Semiology* section.

Related to this debate is the argument of another Davis. S. Davis also considers the languages in the region in order to better understand the Minoan language. In the 1960 article “Some Ideograms in Linear A and Linear B”, S. Davis explores a possible connection between the Minoan language and Semitic languages based on Linear A logograms. S. Davis is less interested than Davis in the syntax of Linear A and more interested in the formation of the terms themselves and logograms. S. Davis’s argument is beyond the scope of this paper, which does not examine scripts outside of Linear A. Rather I have included S. Davis in this bibliography as an example of the limited success of cross-language comparisons of Linear A, which have not produced a translation even seventy years after S. Davis’s article was published.

Linear A Functional Categories

Another debate within this bibliography is the categorization of Linear A characters by function. In volume five of *Recueil Des Inscriptions En Linéaire A*, Olivier and Godart propose six categories of Linear A characters: isolated signs,⁸⁶ mono-syllabic signs, transaction signs, logograms, punctuation signs, and countermarks.⁸⁷ These categories are based on what limited knowledge is available on how characters function in Linear A terms. Isolated signs are characters that appear on their own, while mono-syllabic signs are those that appear within a larger term, indicating some syllabic phoneme.⁸⁸ Transaction signs and punctuation signs function as the names imply, while countermarks are additional marks added to texts later, probably indicating a purchase or change of a similar nature. The final category of logograms

⁸⁶ The naming conventions used by Godart and Olivier as well as Salgarella use the term sign. This does not refer to the semiotic definition of sign but rather Linear A characters.

⁸⁷ Godart, Louis; Olivier, Jean-Pierre. *Recueil Des Inscriptions En Linéaire A Addenda, Corrigenda, Concordances, Index et Planches Des Signes*. v.5 138-139

⁸⁸ A phoneme is “the smallest distinct sound unit in a given language” Matthews, P. H. "phoneme." In *The Concise Oxford Dictionary of Linguistics*. Oxford University Press (2014).

refers to characters that on their own represent a complete idea, like a cow or a cat, rather than spell out the word.

In *Aegean Linear Script(s) Rethinking the Relationship between Linear A and Linear B*, where in she cites *Recueil Des Inscriptions En Linéaire A*, Salgarella proposes her own functional categories of signs: phonetic, sematographic, and sematophonetic signs.⁸⁹ While these two authors may seem to be at odds, Salgarella proposing fewer and different categories, the two texts are largely in agreement. Salgarella categories are in part built from Godart and Olivier's, supplemented by her own research and advancements in the field occurring in the almost four decades between the two texts' publication. Salgarella's phonetic signs are very similar to Godart and Olivier's mono-syllabic signs: both are signs denoting a syllabic phoneme. Salgarella's sematographic sign is almost interchangeable with the logogram category, both are signs that on their own represent a word or idea, rather than a phoneme. However, the categories are not one to one. Salgarella, when categorizing, puts focus on what the sign indicates; a sound, an idea, or both. Godart and Olivier on the other hand, categorized based on the role the sign plays in an inscription. The result of these two different approaches is overlapping; where sematophonetic signs would be able to fit into the logogram category, but also act as a mono-syllabic signs in some contexts.⁹⁰ Even though these sources disagree on how exactly to categorize the signs, their differences are not a result of a fault in one's argument or two fundamentally different approaches to the same question, instead, Salgarella's categories evolve from Godart and Olivier, founded on their ideas.

For the purposes of this paper, I will work from the basis of Salgarella's categories. This is because her categorization is much more compatible with a practical semiotic comparison.

⁸⁹ Salgarella, *Aegean Linear Script(s) Rethinking the Relationship between Linear A and Linear B*, 53.

⁹⁰ Salgarella, 54.

Godart and Olivier's categories only provide two possible categories for characters that form or express actual terms: logograms and mono-syllabic signs. Their categories do not take into account characters that can act as both. Any sematophonetic character would be difficult to place in Godart and Olivier's categories because it both has a phonetic form of expression and thus a mono-syllabic function, as well as acts as a complete semiotic sign, functioning as a logogram. Thus, Godart and Olivier's categories are more limited in their ability to express function than Salgarella's categories.

That being said, while this framework will inform my interpretation of Linear A terms, this paper is more concerned with the semiotic categorization of those terms, and will discuss and categorize them based on the divisions outlined in Roland Barthes's *Elements of Semiology*. Regardless, it is still important to clarify which system of categorization I will be working from, as Salgarella's categories influence my analysis of whether individual LA characters have the potential to be inherently meaningful, which has shaped which paradigms I determined to have potentially meaningful patterns.

There is a great deal of interaction within this bibliography. Almost all of the articles discussed use some volume of *Recueil Des Inscriptions En Linéaire A*, which is to date the most complete and reliable index of Linear A documents and signs. Agreement between authors lends credibility to their arguments, but disagreement should not be taken as a sign that a source is unreliable. Due to the extremely limited available evidence, scholars' theories and inferences may differ greatly, as is the case with the discussion surrounding the centralization of the Minoan administration. Depending on what evidence the author looks at, as well as their own biases, their conclusions may contradict. Disagreement within this bibliography helps identify gaps in current scholarship and helps this project avoid presumptive arguments.

From these sources I have pulled the following premises: first, the Linear A script was used for administrative, religious, and secular purposes. The type of document and the location where it was found can give insight into what kind of purpose the text was created with, but no one category serves as the presumptive default. Additionally, Linear A was used by non-administrative persons outside of a religious context, therefore it stands to reason that literacy extended beyond members of the government. Thus, the Linear A language most likely didn't have a deciding group controlling all acts of speech and the conventions of the language, further supporting the idea that inscriptions could be non-administrative and non-religious. Second, the Linear A language likely used a verb-subject-object word order, wherein prefixes could act as prepositions. Therefore, Linear A words with prefixes attached to the root and no suffixes could possibly be interpreted as nouns, and those with changing prefixes and suffixes on a stable root could be verbs. However, a prefix alone would not be enough evidence to make that argument. Third, Linear A characters can be placed into three categories: phonetic, sematographic, and sematophonetic. It should be considered whether a character that can function as a logogram, is alone, or is placed in the middle of a word before treating the character as a complete semiotic sign. The semiotic analysis that will follow will be founded on these premises: should one prove to be false, so would the conclusions of this project.

Barthes' Semiology in *Elements of Semiology*

Roland Barthes was a French semiologist writing in the mid-twentieth century.⁹¹ Using the components of language outlined by Ferdinand de Saussure⁹² as his basis, Roland Barthes

⁹¹ Genosko, Gary. "Barthes, Roland." In *Encyclopedia of Semiotics*. (Oxford: Oxford University Press, 1998).

⁹² Ferdinand de Saussure was a linguist whose theories provided much of the foundation of semiotics. He spent most of his career focusing on historical linguistics, but in the latter part of his life changed his focus to structuralism. His

spent the first half of his career taking a structuralist approach to semiotics.⁹³ It was during this early portion of his career he developed much of his semiotic theory, including his ideas about two-ordered semiological systems, which he first debuted in his book *Mythologies* in 1957.⁹⁴ Barthes would later develop his idea of the two-order system to include connotation instead of mythology, as well as incorporate Hjelmslev's ideas of form, substance, content, and expression in his 1964 book *Elements of Semiology*.⁹⁵ While in the latter part of his career, Barthes would move from a structural approach to a textual approach to semiology, resulting in his famous concept of the death of the author, his structuralist ideas are far more applicable to the study of undeciphered languages. It is difficult to fruitfully explore the relationship between author, text, and reader when the author is unknown and the text is untranslated. By contrast, *Elements* focuses on understanding the components and function of language and speech, and provides the tools for analysis in the absence of translation. Using the theories in *Elements*, this paper seeks to gain insight into the function of the Linear A inscriptions on the Neopalatial ladles TL Za 1 and KY Za 2 found at Minoan peak sanctuaries.

The Fundamentals of Communication

To understand Barthes' theory it is best to start, as he did, with the basic building blocks of language (*langue*). Pulling from Saussure, Barthes first identifies language as the source of

ideas language (*langue*) and speech (*parole*), as well as of signs, signifiers, signifieds, associations, and syntagms, provide much of the foundation not only for Barthes' theories, but for much of semiology in general. Saussure never published his semiological work, but notes from his lectures on the topic were assembled by some of his students and in 1916 was posthumously published into *Course on General Linguistics*.

⁹³ Genosko, "Barthes, Roland."

⁹⁴ *ibid.*

⁹⁵ *ibid.*

knowledge which everyone in a group draws from in order to communicate.⁹⁶ The most essential quality of language is its communal nature. Language is shared by everyone who speaks it, which will from now on be referred to as the ‘speaking group’. The entirety of a language isn’t known by any one individual:⁹⁷ an individual might speak English, but encounter English words they don’t know. Therefore the language is composed of the collective knowledge of all members of the speaking group. Similarly, because language is made up of shared knowledge, an individual can’t change the language on their own.⁹⁸ A person can make up a word and use it alongside English words, but it won’t be understood by the other members of the speaking group, so it is not a part of the language. Language is a social institution. It is made up of the knowledge of many people, and can’t be changed by one person; those who speak the language draw from that collective knowledge to communicate.

There are two languages of concern in this project: the Minoan language transcribed by Linear A and the language of Neopalatial objects found at archaeological sites. Although there are no living members of the speaking group for these languages, it can still be understood that the meaning of Linear A terms was understood by the members of said speaking group when they were alive. Our inability to understand the language does not mean it stops being a language.

The second language, that of Neopalatial objects, is not a linguistic language but does still function as a language by Barthes’ definition. The precedent of non-linguistic languages was well set by Barthes himself, who discussed the language of fashion,⁹⁹ food,¹⁰⁰ and even

⁹⁶ Roland Barthes, *Elements of Semiology*, trans. Annette Lavers and Colin Smith ed. Nathaniel Tarn (London: Jonathan Cape Ltd, 1967), 14.

⁹⁷ *ibid.*

⁹⁸ *ibid.*

⁹⁹ Barthes, 25-27.

¹⁰⁰ Barthes, 27-28.

furniture.¹⁰¹ These objects each have certain functions and ideas associated with them, they communicate their functions and associations to those familiar with their usage. At peak sanctuaries the speaking group would be those who frequented these sites. As established, one feature shared by all peak sanctuaries is that they are within sight of a Minoan settlement.¹⁰² As a result of this proximity, it is most probable that the people living in these settlements are the ones who would travel up to the peak sanctuaries and are the ones responsible for the numerous votive figurines and other objects found there. Because the people living at these settlements were the ones close enough to travel to and use the peak sanctuaries, they are most likely the ones introducing those votive objects. Therefore, not only were they participating in the language of these objects by witnessing and gaining meaning from them, but they were speaking the language of these objects by introducing new items to the peak sanctuaries. This concept of non-linguistic languages will be elaborated further during the discussion of sign-functions, but for now understand that, because those who encountered these objects in the Neopalatial period were familiar with their usage and associations, these objects acted as a non-linguistic language. Just as there are non-surviving members of the Linear A speaking group, today there are no members of the speaking group of Neopalatial objects, and so what exactly these objects communicated is uncertain, but the existence of such a language is not affected by a person's inability to understand that language.

Closely associated with language is speech (*parole*). Where language is communal, speech is individual. Speech is when a person “strings together” selective pieces from the collective language in order to communicate a specific message.¹⁰³ Just as this sentence is just a few words pulled from the English language and laid out on this page, every instance of speech

¹⁰¹ Barthes, 28-30.

¹⁰² Kyriakidis, *Ritual in the Bronze Age Aegean Minoan Peak Sanctuaries*, 19.

¹⁰³ Barthes, 16.

is a process of one person's selection and organization of components from the larger language. Speech and language have a dialectical relationship: speech can't be formed without drawing on a language, but language is made up of words and syntax spoken by one member and understood by others.¹⁰⁴ Speech acts must be performed and comprehended for the language to exist.

In this project, speech is the inscriptions and objects from the sites under investigation. The inscriptions that appear on ladles TL Za 1 and Ky Za 2, are specific Linear A words selected and strung together in a specific order, they are instances of speech drawn from the Minoan Language transcribed by Linear A. For the language of Neopalatial objects, speech is a little more abstract. Think of each type of object, ladles, libation tables, figurines, as a word in the language of Neopalatial objects. Certain items appear at each site and together they communicated to visitors what activities were occurring at that site. Not every object appears at every site, so the ones that do appear are selected from the larger language of Neopalatial objects to communicate a specific idea about the activities there.

Barthes, still following Saussure's model, broke down speech and language into smaller components: signs. Signs are the complete unit formed by a signifier and a signified.¹⁰⁵ The signifier serves as the visual or auditory indicator for the signified, it represents and communicates an idea, but is not itself that idea.¹⁰⁶ Meanwhile, the signified is what is being represented; it is the idea the signifier communicates to members of the speaking group.¹⁰⁷ It is important to specify here that the signified is not a physical object, but very explicitly the mental construction of the object.¹⁰⁸ Reading the word does not manifest the physical object, but does prompt the mental construction of the object. Additionally, the signifier is arbitrary in most

¹⁰⁴ *ibid.*

¹⁰⁵ Barthes, 39.

¹⁰⁶ *ibid.*

¹⁰⁷ *ibid.*

¹⁰⁸ Barthes, 42.

instances.¹⁰⁹ There is no reason that the signified must be represented by that particular moneme. This is shown by the fact that different languages will use wildly different sounds and graphic symbols to represent the same idea. There's no reason the word "ox" should symbolize an ox: those sounds have nothing to do with the idea of an ox other than the association between the two imposed by the English language.¹¹⁰ This association between the word and the idea it represents is called signification.¹¹¹ Through signification the signifier becomes exchangeable for the signified, and together the two form a complete sign.

Applying this breakdown of language to the ladles TL Za 1 and KY Za 2 provides the means to begin to discuss and explore what can be known about them despite not having access to their meaning. For example, the Linear A terms are not complete signs. Because the Minoan language is untranslated, the signifieds are unknown. Therefore, for modern audiences the Linear A terms are only signifiers. This project will not be attempting to translate any Linear A signs, and so for clarity's sake the signs under investigation will from here on out be referred to as the Linear A signifiers and Linear A terms.

The Neopalatial objects are a little less easily categorized. On one hand, we are not a part of the speaking group for these objects, making the signifieds seem unknown. It can be inferred based on their structure what these objects' functional purposes were, but how exactly each item was used, and thus the precise function they communicated, is impossible to know with absolute certainty. Although we cannot be certain in our interpretation of these objects' signifieds, understanding these objects as sign-functions makes those signifieds more accessible to us.

¹⁰⁹ Barthes, 50.

¹¹⁰ Barthes, 50.

¹¹¹ Barthes, 48.

Sign-functions are objects designed for a functional purpose, which by nature of being used in a society, are standardized.¹¹² For instance, a fork is recognizable as a fork, it is designed that way to serve a purpose, and if it were created differently, it would not exist as a fork. Through this societal usage and standardization, "function becomes pervaded with meaning."¹¹³ That is to say, the object becomes a signifier for the mental construction of itself as well as its function.¹¹⁴ Returning to the fork, it denotes not only the idea of a fork, but also the action of eating. Likewise, the artifacts denote both the concept of themselves and their function. A libation table denotes the object of a libation table and the act of pouring libations. A ladle denotes a ladle, as well as the pouring of liquid. In this way, these signifieds of archeological objects are somewhat comprehensible to a modern audience. On this basis, the Neopalatial objects in this project will be interpreted as complete signs.

Barthes provides the framework to further analyze these signs by breaking them down into even smaller components. Beyond just signifier and signified, Barthes borrows the concepts of planes of expression and content as well as substance and form from Hjelmslev¹¹⁵ to further break down the components of a sign. He says the sign is made up of two planes: content and expression. The signified exists on the plane of content and the signifier is on the plane of expression.¹¹⁶ Both planes can be broken down into terms of substance and form, where substance is "aspects of linguistic phenomena" which can't be described without using non-linguistic terms, and form is what can be described in purely linguistic terms.¹¹⁷ As a result

¹¹² Barthes, 41.

¹¹³ *ibid.*

¹¹⁴ *ibid.*

¹¹⁵ Louis Hjelmslev was a Danish linguist who, like Barthes, expanded and built off the ideas of Saussure. Hjelmslev's best known theory is glossematics, which elaborates the concept first proposed by Saussure that defines language as form. Barthes applies Hjelmslev's concept of the planes of expression and content to improve the two-order system he first introduced in *Mythologies*.

¹¹⁶ Barthes, 39.

¹¹⁷ Barthes, 40.

there are four categories that comprise a sign: the substance of expression, the form of expression, the substance of content, and the form of content. The substance of expression is the articulatory components of the sign, the sounds or markings that form a signifier.¹¹⁸ For example, the name ‘Roland Barthes’ is made up of written letters from the Latin alphabet. Those written letters are the substance of expression for that sign. The form of expression is the category of signifier. The name ‘Roland Barthes’ is composed of these written Latin letters, so the form of expression for this sign would be a written expression. If ‘Roland Barthes’ was said out loud, rather than written out, the form of expression would be a spoken word. The substance of content is the “positive” meaning of the signified,¹¹⁹ most simply, it is what is actually signified in the sign, the meaning of it. Turning back to the ‘Roland Barthes’ example, the substance of content of that sign is the idea of Roland Barthes. It is the signified for that signifier. Finally, the form of content is the category of the signified, what it is in the absence of a semantic mark.¹²⁰ For ‘Roland Barthes’ the form of content is a name, a term used to reference a person.

In this project, the signs can similarly be understood in terms of these four categories. For the ladle TL Za 1, the substance of expression would be the Linear A markings that constitute the inscription. The form of expression on TL Za 1 is a written Linear A inscription. We can more specifically say that the form of expression is a libation formula. For KY Za 2, our understanding of the form of expression is much more limited. KY Za 2 is also a Linear A inscription, but the form of expression cannot be more specifically categorized than that. Furthermore, the substance of content is lost because Linear A remains untranslated. The form of content meanwhile refers to the function of Linear A terms, and is the central concern of this project. More specifically defining what the form of content is for these inscriptions, that is, their functional purpose, is the

¹¹⁸ *ibid.*

¹¹⁹ *ibid.*

¹²⁰ *ibid.*

main goal of this paper. Identifying the form of content is identifying the purpose of the inscription for the Minoan audience. If the form of content is a dedication, our understanding of what the Minoans were writing about, the significance and the purpose of the inscribed object is wildly different than if the form of content is graffiti, or instructions, or a label. Understanding the form of content is the closest we can get to understanding the meaning of the inscription without translation.

The planes of content and expression provide an excellent framework for understanding value. Value coexists with signification as a means of understanding a sign. However, where signification focuses on components of an individual sign, value considers signs in relation to each other. Barthes explains that a sign requires both, where signification is the “exchange of dissimilar things” and the value is the comparison of similar things,¹²¹ a concept that is best understood through example. One example Barthes uses is the word “mutton.” First and foremost, the word “mutton,” as a signifier, is exchangeable for the idea of mutton, the exchange of the word and idea is the signification of this sign. Barthes goes on to explain that “mutton” coexists with the word “sheep” and can be understood in comparison to it.¹²² The two words are similar in their form of expression, both are written nouns, and in their substance of content, both denote the same animal. Because of these similarities the two are comparable. Through that comparison, one also observes dissimilarities between the two. The two terms have different substances of expression, they are made up of different letters in a different order, as well as different forms of content, as “mutton” denotes a food item and “sheep” denotes a living animal. These differences are what make the two terms distinguishable from one another. “Mutton” is not

¹²¹ Barthes, 55.

¹²² *ibid.*

‘sheep’ because of these things, therefore ‘mutton’ is, in part, defined by these differences. This meaning through opposition is the value of the term.

The form of content can’t be identified with one hundred percent certainty however, Barthes’ two-order system (Figure 8) provides the tools necessary to make theories supported by evidence. In this structure, the initial, complete sign can be called the first-order system.¹²³ The signified of this first sign is the denotation of the sign. The second sign derived from that first sign, that is, the sign which uses another sign as its signifier, is the second-order sign. The signified of the second-order sign is called connotation. Take for example the linguistic sign ‘umbrella’ (Figure 9). In this example, the first-order signifier is the written word ‘umbrella’ while the first-order signified is the mental image of an umbrella prompted by the word. The second-order signifier then is the entire sign, not just the letters on the page, but also the mental construction it prompts. A second-order signified, or connotation, for this sign, would be rain. When a person thinks of an umbrella, they’ll think of rain, even though the word ‘umbrella’ doesn’t mean rain. It is denoted by the complete idea of an umbrella, but not the first-order signifier, the word ‘umbrella’.

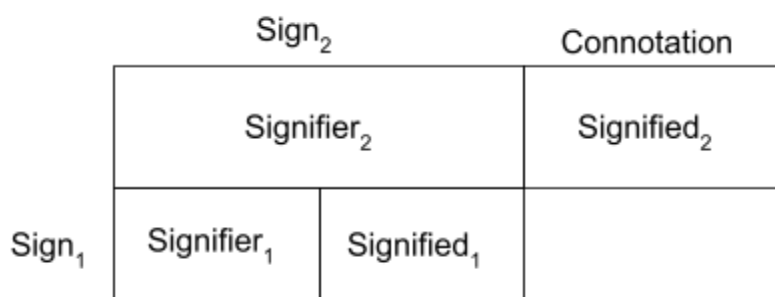


Figure 8: Adapted from Barthes’ “Connotation” diagram. *Elements*, 90

¹²³ Barthes, 90.

	Sign ₂		Connotation
	Umbrella		Rain
Sign ₁	"U-M-B-R-E-L-L-A"	Mental Construction of an umbrella	

Figure 9: Two-order system for the sign

‘umbrella’

This concept can be applied to the Linear A inscriptions by examining the objects associated with each Linear A term. The objects that a term appears on are the same objects that the Minoans would have seen the term on. These objects and their meanings as sign-functions become associated with the term and form the term’s connotation (Figure 10). Likewise, the Neopalatial objects found alongside each ladle also make up a portion of the term’s connotations. These connotations can be used to rule out certain forms of content, such as graffiti or labels, and provide evidence towards other possible forms of content, like ritual prayers or instructions.

	Sign ₂		Connotation
	(Incomplete)		Ladle sign-function Objects term appears on Objects found alongside ladle
Sign ₁	Linear A Term	(Unknown)	

Figure 10: Two-order system for Linear A terms

In this paper the connotations of these inscriptions will be uncovered through Barthes’ paradigmatic and syntagmatic comparison; two different forms of comparison through which the associations of the LA signifiers and the inscribed objects themselves can be identified. Once the associations of the terms are identified they can be analyzed and combined for a partial

reconstruction of the connotations of the entire inscription. It is impossible to uncover the complete connotations of these inscriptions because without the first-order signifieds (the meaning of the LA terms), the second-order signifier is incomplete, and therefore the second-order sign is incomplete. However, the partial understanding of the inscriptions that comes from this semiotic analysis still provides more meaning and knowledge about these terms than simply focusing on their unknown signifieds. Paradigmatic and syntagmatic comparison of TL Za 1 and Ky Za 2 reveals that inscriptions most likely have different religious functions: where TL Za 1 most likely expresses the religious purpose of libation pouring and KY Za 2 references neither libations nor addresses a deity.

Applying Lotman to Critique Barthes' Two-Order System

Barthes' approach to semiotics was not universally applied, and he had contemporaries whose theories starkly contrasted his own. One such theorist was Juri Lotman, who, although he himself never wrote a critique of Barthes work, proposed an alternative approach to semiology that at times contradicted Barthes'. Daniele Monticelli contrasts the thinking of these two authors in her paper "Critique of Ideology or/and Analysis of Culture? Barthes and Lotman on Secondary Systems" wherein she focuses specifically on the authors' opposing definitions of secondary semiotic systems, which will be a fundamental piece of this paper's analysis of Linear A inscribed ladles. By contrasting the two authors, she critiques what she identifies as a paradox in Barthes' structure of two-order systems, as well as questions the functionality of focusing on isolated sign systems.

Like Barthes, Juri Lotman focused on the relationship between natural language and other sign systems using Saussure as a starting point from which his theories developed.¹²⁴ Born in 1922,¹²⁵ Juri Lotman studied Philology at Leningrad University.¹²⁶ A co-founder of the Tartu-Moscow school of thought,¹²⁷ Juri Lotman taught at the Tartu Teacher's Institute and Tartu University in Estonia¹²⁸ and published more than 800 works in his life concerning history, literary criticism, and semiotics.¹²⁹ Interestingly, despite the similarities in their subjects and often in their theories, Lotman and Barthes did not engage with one another's ideas in their published works. However, due to their similarity, the notable divergences of Lotman's own thinking can fairly reasonably be applied to Barthes' works as, if not a direct critique, an ideological alternative. It is interesting that Lotman and Barthes both proposed the idea of second-order systems, as the concept is not present in the work of Saussure that served as their shared foundation,¹³⁰ but more so is the way that their theories diverge.

Barthes and Lotman's approach to two-order systems in semiotics differ in two major ways: the relationship between the first and second-order, and the connection between culture and the second system. The first difference reveals a concerning narrowness to Barthes' approach. Barthes identifies the second-order, connotation, as derivative from the first, denotation. The signifier of the second is the sign of the first. There is a linear relationship of influence in Barthes' structure, where the first-order shapes the second, but the second is unable to shape the first. Monticelli, however, points out that despite this hierarchical relationship, in

¹²⁴ Monticelli, Daniele. "Critique of Ideology Or/and Analysis of Culture? Barthes and Lotman on Secondary Semiotic Systems." *Sign systems studies* 44, no. 3 (2016): 433.

¹²⁵ Andrews, Edna, IŮ. M. Lotman, and IŮ. M. (IŮrii Mikhaïlovich) Lotman. *Conversations with Lotman : Cultural Semiotics in Language, Literature, and Cognition*. Toronto ;: University of Toronto Press, 2003. XIV

¹²⁶ Andrews, 6.

¹²⁷ Andrews, XIV.

¹²⁸ Andrews, 7.

¹²⁹ Andrews, 9.

¹³⁰ Monticelli, 433.

terms of ideology the second-order system paradoxically “subjugates” the first, “replacing it as the surreptitious starting point (natural basis) of the semiological chain as a whole.”¹³¹ That is, despite the apparent one-way influence of the first-order system, the second-order does in fact influence the first. The way that the connotation influences denotation is through ideology. Essentially, the signified of the second-order system acts as a piece of a larger ideology, and functions “as a retrospective anchoring... of the otherwise ungrounded and possibly drifting signs of the primary system.”¹³² The second-order signifieds are inevitably a part of a greater ideology. The existence of that ideology and the connection to it through the second-order system creates a context that connects and clarifies the primary system.

Monticelli contrasts this proposed paradox with the structure of Lotman’s two-order system. Lotman places the orders in parallel with one another. Rather than the second being a result of the first, the very existence of one order necessitates the existence of the other. As Monticelli explains, there is an “impossibility for any system, be it primary or secondary, of being thought of in isolation; any attempt to do so brings about an idealized (and, therefore, ideological) description of the given system.”¹³³ All systems require another system as the medium through which to describe and consider them. These systems are not equal because they are not identical, but they are equivalent. As a result, their relationship is one of interaction, they are “two juxtaposed systems, which interact and intersect, entering into a complex relationship of dialogue and conflict.”¹³⁴ In this structure there is no paradox because there is no derivation or hierarchy, the mutual interaction is built in.

¹³¹ Monticelli, 436.

¹³² Monticelli, 439.

¹³³ Monticelli, 442.

¹³⁴ Monticelli, 442.

Contrasted with Lotman's system, Barthes' system does at first appear incomplete. However, Monticelli is incorrect in identifying ideological naturalization as a means for the second-order to influence the first. First, it may be beneficial to more clearly define ideology. In *Elements* Barthes describes ideology as "the form (in Hjelmslev's sense of the word) of the signifieds of connotation,"¹³⁵ Form, as discussed, means that which can be described in exclusively linguistic terms.¹³⁶ Therefore, ideology simply refers to the connection and organization of connotative signifieds as expressible in semantic terms, that is, the types of ideas that make up the connotation of a sign. The ideological naturalization that Monticelli describes then, is the subsumption of any particular connotative signified into the order of its larger ideology. This provides the structure for a paradigmatic comparison of the various connotative signs, and by extension, a paradigmatic comparison of the denotative signs that act as signifiers for said connotative signs. However, this opportunity for comparison does not change the denotative sign in any way.

This can be shown by examining all three parts of the denotative sign. To do so, return to the previous example of the sign 'umbrella'. The first-order system, the denotation of umbrella, is the word and the mental construction of the object, an umbrella. The second-order system here are the associations of an umbrella, such as rain. Rain is part of a larger ideology of weather. Yet, the ideology of weather has no bearing on the fact that an umbrella is signified by the word 'umbrella', which is an arbitrary collection of letters. The ideology of weather does not change the object 'umbrella' signifies. Finally, the ideology of weather has no bearing on the signification, it does not impact whether 'umbrella' is exchangeable for the mental image of an umbrella. Connotation provides the associations of a sign, ideology gives it context in a larger

¹³⁵ Barthes, 92.

¹³⁶ Barthes, 40.

paradigm, but neither reshapes nor fills in any part of that first-order sign. Therefore, what Monticelli identifies as a paradox in Barthes' second-order structure, can be understood to just be an overarching paradigm in which the second-order, and therefore the first-order system, exists.

This overarching paradigm that the connotation is placed in is part of what makes Barthes' theory so applicable to this project. As mentioned, the aim of this project is to gain insight into the purpose, or the form of content in Barthes' terms, of the inscriptions on ladles TL Za 1 and KY Za 2. In the absence of a substance of content (a translation) for any of the signifiers in these inscriptions, the connotation is far more accessible. The connotation only becomes meaningful in this project because of the ideology. Comparisons of the signs, as mentioned, will help identify some general connotations of the signs, but it is because these connotations exist in systems that they can be compared. The comparison of signs sharing a system will allow these connotations to become more specific because said comparison will help define them in opposition to one another. More specific connotations in turn will give more specific insight into their first-order signs: the Linear A signifiers and the ladles. The paradox identified by Monticelli is actually the means by which connotations can be compared and information can be gathered about these inscriptions and their functions.

The apparent simplicity of Barthes' semiotic theory is what makes it so applicable to the incomplete languages under examination in this paper. The components Barthes identifies and the methods of interpreting them enable us to clearly define what aspects of the signs are known, unknown and can be theorized about. The methods of comparison he identifies allow us to further that understanding even in the absence of explicit definition. While the entirety of the plane of content of the first-order of the LA signifiers is unknown, the second-order provides a backdoor to understanding the form of content of these signs. Although we only have access to

the plane of expression of Linear A signs, their signifiers, it is possible to understand the plane of content of the connotation of these signs. The contexts these signs are found in, what other items they appear with and are associated with, the locations they are associated with (peak sanctuaries) as well as other signs they are associated with (the other objects and other Linear A signifiers) provide information about the context of their usage. This information can be derived from a paradigmatic analysis of these inscriptions and ladles. Then, a syntagmatic comparison can be used to look at these associated contexts in opposition to one another and develop some general connotations for these signs. Having done so, this connotation can be used as the basis to theorize possible forms of content, that is, purposes, for these inscribed ladles.

Paradigmatic Comparison¹³⁷

In order to conduct a paradigmatic analysis of the signs inscribed on TL Za 1 (the Troullos ladle), and KY Za 2 (the Agios Georgios ladle), I determined all documents that had a comparable substance of expression (Linear A characters) to each term in the inscriptions. I then organized each group of documents into systems based on which graphic feature they had in common with that term. Doing so revealed the connotations of each term on the ladles and indicated some possible functions of the inscriptions.

Before a paradigmatic comparison can be performed, it must be established what Barthes means by paradigm and system. The system, also known as the paradigm, is adopted by Barthes from Saussure and can be defined as a “series of associative fields,”¹³⁸ that is, a group of terms or objects that share a common element.¹³⁹ To use Barthes’ own example, in the language of

¹³⁷ For tables showing all systems see Appendix 3.

¹³⁸ Barthes, 71.

¹³⁹ Barthes, 72.

garments every article of clothing is a sign. If a person wears a baseball cap, every kind of hat would form the system of that baseball cap. They share the quality of being hats, but they have various different features which keep them from being equivalent.¹⁴⁰ Signs in a system may be connected through similarities in their expression or in their content, but they must also possess a quality that is in opposition to each other: they must be dissimilar in some way.¹⁴¹

A system is based on the value of a sign. Value is essentially definition through opposition:¹⁴² a term is defined by the ways that it differs from a similar term. Conducting a paradigmatic comparison identifies which specific qualities signs share, and which of their components differ. Returning to the hat example, a paradigmatic comparison might be a comparison of baseball hats, top hats, and sun hats. They are able to be compared because they are all hats, but the paradigmatic comparison would identify that it is the size of the hat, the brim, the situations in which they are worn, and other such differences that define a hat as a baseball cap rather than a top hat or sun hat. This is the value of a baseball cap. A paradigmatic comparison therefore seeks to gain some deeper insight about signs that are part of the same system by examining their differences.

A paradigmatic comparison is the first step in gaining insight into the purpose of the inscriptions on the ladles. The system for the ladles compares KY Za 2 and TL Za 1.¹⁴³ The two objects share the qualities of being ladles and inscribed but differ in their place of origin and the

¹⁴⁰ Barthes, 63.

¹⁴¹ Barthes, 72.

¹⁴² Barthes, 55.

¹⁴³ This system is incomplete as there is little available scholarship on uninscribed ladles, which on their own do not provide much information to researchers. I chose to proceed with the paradigmatic comparison despite this limitation for two reasons: although site each ladle is found at may give it a slightly different connotation, because each object in the system shares the quality of being a ladle, these sign-functions would not denote anything different than the two ladles under examination other than material. The value of this paradigmatic comparison is primarily the comparison of the KY Za 2 and TL Za 1 ladles, as this allows for the comparison of their inscriptions and the use of inscriptions on ladles. The insight this system provides is limited, but I concluded these limitations would not cause the conclusions to be misleading or meaningless. Future study into this object system should be conducted to further enhance our understanding of the functions of these inscriptions.

terms inscribed on them. This comparison reveals how the contexts and associations of TL Za 1 and KY Za 2 differ from each other, providing insight into how their inscriptions differ.

For the LA terms themselves, systems based on content are impossible because the LA signifieds are unknown. However, systems based on expressions are possible. In this project I looked at the substance of expression for each term, the specific LA characters that make them up, and constructed systems based on terms that include those same characters in similar positions. More concisely, I constructed paradigms for each term based on inscriptions that shared graphic features with them. Their similar quality is the LA characters, while the opposing quality is their connotation. Each term in the system is found on a different object, which itself is a sign-function and the connotation of the term. Where this comparison becomes truly insightful is the comparison of the connotations of these sign-functions.

As established, sign-functions denote themselves and their use, but Barthes argues they also communicate meaning through their connotation. A functional object is associated with the circumstances in which the object is used, and so the object itself comes to symbolize these circumstances.¹⁴⁴ Take for example an umbrella. I previously demonstrated how the term ‘umbrella’ has a denotation and a connotation; a sign-function works in the same way. As a sign-function, an umbrella both denotes itself and the action of using an umbrella to stay dry. Umbrellas are used when it’s raining, so if an umbrella is being used, it communicates to us that it is currently raining. Rain is therefore a connotation of an umbrella.

Likewise, the connotation of the artifacts is the circumstances of their usage. This cannot be entirely known, but the sites where they are found and the use of the same or similar objects by later Greeks can give us a general idea. The objects communicate these circumstances, and so the context of use is a part of the connotations of the LA term that appears on the object. If a

¹⁴⁴ Barthes, 42.

term appears on a libation table, then the context in which a libation table is used is a part of the connotation of the term. The comparison of these connotations provides insight into the potential forms of content (function) of each term. Knowing how and in what context an associated object was used can rule out and cast doubt on certain forms of content and provide evidence for which forms of content are possible for each term.

There are a few factors that limit the insights that can be gained from these comparisons. The limited number of Linear A documents makes these systems extremely small, and therefore it would be irresponsible to draw sweeping conclusions about the function or meaning of certain character sequences based on these systems alone. Additionally, I lack the necessary linguistic background to draw meaningful conclusions about the syntax of these inscriptions or the structure of these terms. I will make a note where my findings align with or contradict the findings of Davis and Thomas as well as point out any observable patterns but I will avoid drawing conclusions about Minoan syntax or word structure. The primary purpose of this initial paradigmatic comparison is to establish what documents are comparable to TL Za 1 and to determine the associations of each term in the inscription. Similarities in their connotations can be applied to the inscription as a whole, while differences may give insights into the associations and functions of specific terms.

Systems for TL Za 1a.1¹⁴⁵

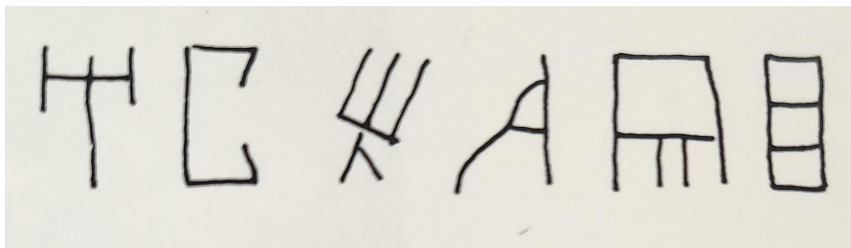


Figure 11: TL Za 1a.1, from Godart and Olivier, GORILA 4, p.59

Pulling from the GORILA V, I identified 26 documents sharing some graphic feature with the terms¹⁴⁶ of TL Za 1,¹⁴⁷ which I was able to narrow down into six systems. The comparison of these systems provides insights into the connotations of each of these terms. Paradigmatic comparison alone will not reveal concrete forms of content (function) for these terms, rather, the connotations this comparison identifies serve as the basis from which I determine those forms of content. The paradigmatic comparison will identify connotations. The

¹⁴⁵ Excluded from this grouping are the inscriptions IO Za 2a.1, IO Za 3, IO Za 4, KO Za 1a, PK Za 12a, Sy Za 1, SY Za 2a, and SY Za 3, as these inscriptions contain the complete and identical term TL Za 1a.1.

¹⁴⁶ In order these terms are TL Za 1a.1, TL Za 1a.2, TL Za 1b.1, TL Za 1b.2, and TL Za 1c, where the lower case letter indicates which of the three sides of the ladle's lip the term appears, and the following number indicates which of the terms in that section is being referenced. For clarity's sake I will forgo the site and object indicators when talking about the terms outside of comparison with those on other documents, and will refer to them as a.1, a.2, b.1, b.2, and c respectively.

¹⁴⁷ I chose to exclude from consideration inscriptions that shared just one similar character with TL Za 1, as well as inscriptions which had multiple characters in common, but none in the same sequence. While I cannot say with certainty that these documents don't have meaningful graphic similarities, these documents have too little in common with TL Za 1 to gain any insight from their comparison. I therefore limited my systems to inscriptions which shared one or more character pairs (two characters in the same order without any additional characters between them,) with TL Za 1. I established twelve such systems for the inscription: four systems of documents comparable to a.1, one system for a.2, four systems for b.1, one system for b.2, and two systems for term c. Excluded from these systems for purposes of this comparison were inscriptions that contained an identical and complete term. These inscriptions were necessarily excluded from this initial graphic comparison because, with no graphic differences, there was nothing to compare. These documents are considered however when examining the differences in object type based on the character sequences they have in common. In this later comparison they are able to be included because they appear on different, non identical objects to TL Za 1. From those initial systems I was able to disregard objects that do share graphic features with the LA signifiers, but do not demonstrate a consistent enough connotation to indicate any meaning inherent to the shared graphic feature. This is how I arrived at two systems for each term, with the exception of a.2 which is a hapax.

syntagmatic comparison will make those connotations more specific and reveal possible functions for this inscription.

System 1 AB08-AB59

The terms in this system all include the character pair AB08-AB59. Interestingly, the characters appear in the first and second positions of every term. The object type, site of origin, and characters that follow the AB08-AB59 pair differ and so are comparable within this system. Six documents are tablets, of which four are from the palatial site Zakros. Three documents are from the palace at Khania: a tablet, a pithos,¹⁴⁸ and a libation table. The two other objects in the system are a tablet from the non-palace site Palaikastro, and a gold pin for which the specific site of origin is unknown. Comparing this system does not reveal clear connotations of a.1, but is valuable because it indicates that AB08-AB59 is not meaningful on its own and may be a prefix on the AB28-A301 root. Analyzing this system reveals that although there are patterns of objects and sites associated with a.1 through the AB08-AB59 pair, they should not be taken into account when determining the connotations of the term.

The abundance of tablets in this system appears to imply that the AB08-AB59 pair has some association with record keeping or administration. This is further supported by the fact that all but two objects in the system were found at known palatial sites, which are generally agreed to have served some administrative function. However, it is not possible to speculate on potential associative meanings for the character pair, as the tablets could track any assortment of goods or people. Similarly, although the character pair is most prominently found at Zakros, it cannot be assumed AB08-AB59 denotes that site in any way, as it is not found exclusively at that site. Even

¹⁴⁸ In the case of the pithos and golden pin, no clear connotation can be observed. In both instances the character pair does not exist in isolation. This indicates that the characters do not on their own denote any of the objects they are inscribed on. No inherent meaning or specific connotation is clear from this system.

so, this trend appears to establish a connotation of tablets, palaces, and administrative texts for a.1. However, patterns in the position of the character pair in these terms indicate that these connotations may not actually be applicable to a.1.

AB08-AB59 appears in the first and second positions in every term in the system, indicating it may act as a modifying prefix. If the two terms appeared in all of these inscriptions, but at various spots within each term, it would be reasonable to assume that the characters are not serving the same function within each term. Because these characters appear in the same position in every term, it is possible that those terms are meaningful when in that position. There is not enough information available to determine how the characters modify the terms they appear in, nor is that the focus of this study. However, the possible function of the pair as a modifying prefix makes it unsurprising that there are no clear patterns of association in this system, AB08-AB59 itself likely doesn't denote a specific meaning.

PK Za 11 is the exception, as it shares other characters with TL Za 1a.1. PK Za 11 is a stone libation table from Palaikastro.¹⁴⁹ The top of the table is square and on each side of the square is a portion of the inscription. The first word of the designated A side is AB08-AB59-AB28-A301-AB54-AB38.¹⁵⁰ This term is incredibly similar to TL Za 1a.1. Both feature AB08-AB59 in the first two positions, immediately followed by AB28-A301-AB54. The only difference between the two is the final character. This indicates that the two terms may share a common stem, where the final character is a changeable ending. This connection is strengthened by the fact that another term on the same document, PK Za 11 b-c, shares three out of four characters with TL Za 1b.1, and a third term, PK Za 11c, shares three characters¹⁵¹ with

¹⁴⁹ GORILA IV, 32.

¹⁵⁰ GORILA V, 163.

¹⁵¹ The sequence AB10-AB06-AB26-AB77-AB06-AB37 appearing on PK Za 11c almost contains the string AB10-AB06-AB77, as it appears in TL Za 1b.2, with the exception of the additional sign AB26. This difference will be further discussed later, but due to other similarities I have decided to count it as a possible variation of TL Za 1b.2.

TL Za 1b.2. Considering these many similarities it is very likely that PK Za 11 is inscribed with a form of the same phrase as TL Za 1, lining up with Thomas's identification of PK Za 11 as an example of the libation formula.¹⁵² The libation table can't be determined to be part of AB08-AB59's connotation because the similarities between the two terms extend beyond that character pair. The AB28-A301 group also appears in the PK Za 11 inscription. If AB08-AB59 is a prefix without inherent meaning, AB28-A301 is most likely what connects the term to the libation table. Regardless, the libation table is a part of the term's connotations.

In addition to denoting themselves and their function, libation tables also carry a religious and ritual connotation. Libation tables are frequently found in Minoan peak sanctuaries and rarely found at other sites. Libation tables do not serve a clear functional purpose, indicating their function is ritual.¹⁵³ The pouring of libations has no clear functional value, but does make sense as an offering. The pouring of libations is a repeated ritual action with ritual value. Therefore, there is substantial evidence that libation tables were objects involved in religious ritual activity and as a result, have religious and ritual connotations. Because a.1 is associated with a libation table, it has a connotation of libations, libation pouring, and religious activity.

This system is valuable to the analysis of a.1 and the inscription as a whole because it establishes that any meaning a.1 has comes from the other character groups and not AB08-AB59. By extension, the connotations of the term also come from other character groups. This comparison helped rule out possible connotations and functions for a.1. The apparent lack of meaning in this system makes the associations of the other system more weighty; it indicates that the remaining characters include the stem of the term, the inherently meaningful part.

¹⁵² Thomas, 3.

¹⁵³ Kyriakidis, 63.

System 2 AB59-AB28-A301

The four documents in this system share the character sequence AB59-AB28-A301. These documents differ in their object type, in the location they were found, and in the characters that precede or follow the AB59-AB28-A301 sequence. Comparison of this system reveals that the AB28-A301 root is associated with liquid, liquid storage, and liquid pouring

Two inscriptions in this system, PK Za 11a and ZA Zb 3.2 both appeared in system 1 as well. However, this system suggests more specific possible connotations. All objects in the system, two libation tables, a pithoi, and a bucket, all have purposes surrounding liquid. Libation tables are used for the pouring of libations, buckets for transporting liquid, and pithos were used for the storage and transport of goods, including liquids. In addition, TL Za 1 is a ladle, which would have also been used to pour liquid. Because all of these objects have this aspect of their denoted function in common, liquids are a part of the connotations of this character sequence and by extension, the a.1 term.

As discussed, PK Za 11a is very likely the same term as TL Za 1a.1. It is also possible, though less certain, that the bucket IO Za 6 contains a version of the a.1 term. IO Za 6 reads: AB59-AB06-AB28-A301-AB10-AB37-AB55. The first character of TL Za 1a.1 does not appear, AB06 interrupts the AB59-AB28-AB301 sequence, and AB10-AB37-AB55 takes the place of AB54-AB57. This list of differences at first appears to indicate that IO Za 6 is a completely different term however, when looking at the document as a whole in comparison to TL Za 1, it is revealed that IO Za 6 also contains the entirety of TL Za 1b.1, making the inscriptions much more closely related than first appears. If the final character of TL Za 1a.1 is a changeable ending, as PK Za 11c implies, and AB08 or AB08-AB59 is a prefix, then it is not impossible for IO Za 6 and TL Za 1a.1 to be the same term with different endings. However, there is not enough

information within the system to draw this conclusion with any degree of certainty. Instead, IO Za 6 is tied to TL Za 1 through their other shared term, b.1, and the similarities between IO Za 6 and a.1 help strengthen that connection.

These differences in the two terms indicate that the similarities in the connotations, both appearing on an object denoting functions pertaining to liquid, are connected with the graphic feature they share. It doesn't make sense that the connotation the terms have in common comes from a different group of signs in each term. Examining the differences in IO Za 6 and TL Za 1 narrows down which characters within the term connote liquid and liquid pouring. Their differences provide further evidence that it is AB59-AB28-A301, or more likely AB28-A301, that is associated with liquids.

Connotations of a.1

Considering these two systems, I have determined the a.1 term has the connotation of liquid, specifically liquid-centered actions or functions. This does not necessarily mean that the signifier denotes a word meaning liquid or a specific liquid, but whatever the term does denote is associated with liquid in some way. The bucket, libation table, and pithos in system two are associated with liquid-centered functions. Because these objects have function in common it is possible that a.1 denotes or has a connotation specifically of function, and is possibly a verb. System 1, though it contains an abundance of tablets, does not indicate any such specific connotation. This may be because AB08-AB59 functions as a prefix that does not denote anything on its own. If this is the case, it is most likely that AB28-A301 connotes liquid and liquid pouring, and AB59 is part of the aforementioned prefix, AB08-AB59. Syntagmatic comparison will further reveal the function of the term by putting it in the context of the entire

inscription, but for now, it can be said that this term has a connotation of liquid and possibly of function or action.

The Implications of a.2

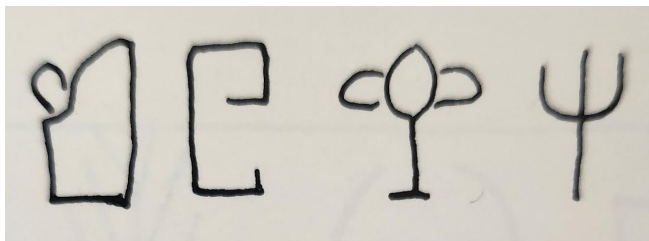


Figure 12: TL Za 1a.2, from Godart and Olivier, GORILA 4, p.59

TL Za 1a.2 has no systems because it is a hapax. There are no other attestations of the term on any other known document. Almost no inscriptions share a term with any graphic similarities to a.2. The only two documents with any graphic similarity are tablets HT 111a.2 and HT 132, both from the palace Haghia Triada. The tablets share the sequence AB16-AB27¹⁵⁴ with TL Za 1a.2. In neither case do these characters appear in the same positions as they do in TL Za 1a.2, nor do any other terms from TL Za 1 appear on the tablets. It is most likely that this graphic connection is not an appearance of the same or similar terms, and there is no meaning inherent to the sequence AB16-AB27 that can be determined from this system.

Davis argues that a.2 is most likely a person's name.¹⁵⁵ While being a hapax does not necessarily guarantee that the term is a name, it does suggest that it was not a term in common usage. The term is very unlikely to be the name of a deity, which would presumably be referenced on multiple documents and not just on a ladle. For the same reasons, a.1 is unlikely to

¹⁵⁴ GORILA V, 172.

¹⁵⁵ Davis, 39.

be the name of a prominent or well-known figure. The term probably doesn't reference the function of the ladle or instruct the reader on how to use it, as TL Za 1 is not the only ladle nor inscribed ladle. Because this is the only instance of this term, it cannot refer to some essential function of the object, as if it did all other iterations of this sequence would lack that meaning, despite their shared function. Additionally, because the term appears in a sequence otherwise attested on multiple other objects across Crete, the libation formula, it is unlikely to be graffiti.¹⁵⁶

Considering the many functions a.2 makes unlikely, Davis's theory that a.2 is a name is compelling. A name is specific and personal, it is unlikely to appear outside the context of personal communication, dedication, signature, and graffiti. Having ruled out the other possibilities, if a.2 is a name as Davis argues, the inscription may be a sort of dedication or personal declaration, but there are some issues with this theory.

The idea that a.2 is a name implies that in other iterations of the libation formula the second term, which is always a hapax, is also a name. However, considering the objects inscribed with the formula, it seems peculiar that a name would be inscribed. The objects tend to be stone, rather than clay. This is significant because clay can be written on temporarily and easily, while inscriptions on stone are permanent and must be chiseled in. The objects inscribed with the formula are, most often libation tables and most often found at peak sanctuaries. These objects are large and these locations, by virtue of being separate though reachable from Minoan settlements, were public, and not centers of habitation. It is not clear why Minoans would permanently carve the name of a person not widely known into a large stone object in a public space. Similarly, it is not likely that these objects were personal items, and at the very least it should not be assumed that they were. Yet, an individual's name is personal. These

¹⁵⁶ Ibid.

contradictions cast doubt on Davis' theory, but cannot rule out a name as a possible function of a.2.

There is a great deal of uncertainty surrounding this term, and it is likely that a clear purpose or connotation of the term cannot be determined until further examples of Linear A are discovered. For now, its function remains uncertain and without a system for comparison, no conclusions can be drawn about its connotations.

System for TL Za 1b.1¹⁵⁷

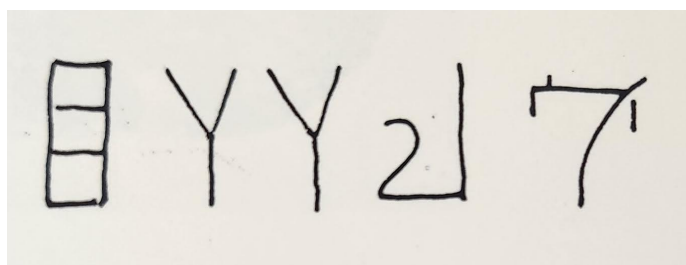


Figure 13: TL Za 1b.1, from Godart and Olivier, GORILA 4, p.59

System 1: AB57-AB31-AB31

The documents in this system are comparable because they all contain the AB57-AB31-AB31 sequence. In addition, all three documents are libation tables. Although they are the same object type and share graphic features, they differ from TL Za 1b.1 in the characters that follow AB57 and the sites where these documents were found. A paradigmatic comparison of this system establishes libations, libation tables, religion, and ritual activity as connotations of b.1.

¹⁵⁷ There are 20 LA documents that share graphic features with b.1, four of which can be excluded because they are identical terms to b.1. Of the remaining sixteen, eight make up two systems that reveal connotations of the term.

Two of the documents in this system are from the peak sanctuary Iouktas and one is from the palace Knossos. All three inscriptions appear on libation tables. This indicates that the AB57-AB31-AB31 sequence, and by extension the b.1 term, is associated with libation tables. This means b.1 has a connotation of libations, libation pouring, and religious and ritual activity. This connotation is emphasized by the presence of Iouktas, a probable religious site, in the system.

It is possible that all three terms in this system are actually the exact same term as b.1. IO Za 2-c.1 shares all but the final character with TL Za 1b.1 and may have also had AB13 as its final character, though damage casts doubt on the identification of AB13. IO Za 9¹⁵⁸ has three characters in common with TL Za 1b.1. All three appear in the same location as they do in TL Za 1b.1. Damage cuts off the inscription after AB31 however it is likely that it is the same or a variation of the same term. This is because the document IO Za 9 also contains the term AB10-AB06-AB77, identical to TL Za 1b.2. KN Za 10a-b is almost identical to TL Za 1b.1 except for its final two terms: AB80-AB06. Because the majority of the term is an identical sequence, it is possible that it is a different form of the same term as TL Za 1b.1.

Due to its small size and the consistency of object types, the connotation of this system is apparent. While for purposes of this comparison, I chose to consider each term as graphically distinct, if the terms in this system are all versions of b.1 it would only strengthen the association of the term with libation tables.

System 2 AB31-AB31-AB60

Six documents have the AB31-AB31-AB60 sequence in common with b.1. The sites they were found at, the other characters in the terms, and the type of object they

¹⁵⁸ GORILA V, 32-33.

appear on are all comparable differences in this system. Almost every object in this system has religious connotations, which indicates that within the b.1 term, AB31-AB31-AB60 specifically is the meaningful portion of the term and the source of this connotation.

Two terms in this system, IO Za 2c.1 and KN Za 10a-b are libation tables and have already been discussed. There are two other libation tables in the system: PK Za 11b-c and PR Za 1c, and an altar fragment, IO Zb 10. The only difference between these three terms (PK Za 11b, PR Za 1c, and IO Zb 10) and TL Za 1b.1 is their first character; b.1 begins with AB57, while these three terms all begin with AB08. Because this is the only difference in the terms, it is very possible that they are different forms of the same term.

The four libation tables in this system strongly associate b.1 with libations, libation pouring, religion, and ritual activity. This latter part of the connotation, religious and ritual activity, is strengthened by the altar fragment in the system. Like libation tables, altars serve no clear functional purpose but do have a function in ritual religious offerings. Altars are used in a religious context, so this altar fragment adds to the ritual connotation of b.1. Two types of objects in the system with religious connotations strengthen the religious connotations of the term as a whole.

This system also includes a conical cup, PK Za 4. The conical cup may add the additional connotation of eating or drinking to b.1. At the same time there is no reason to assume that the conical cup is religious. These cups had a practical use, rather than an exclusively symbolic one, and were not just used to pour liquid, as some have been found

filled with the carbonized remains of food.¹⁵⁹ While conical cups have been found at peak sanctuaries and in tombs,¹⁶⁰ this cup was found in the Minoan town Palaikastro. It is possible that this object has a religious connotation, but because it is uncertain I will side with caution and assume that it does not. This object adds the actions of eating and drinking to the connotations of b.1. However it may indicate any number of possible functions. The inscription on the cup does not necessarily reference the function of the cup. The inscription could be decorative or dedicative. This object could support numerous forms of content but does not narrow down the possibilities.

The libation tables PK Za 11b-c and PR Za 1c and the altar fragment IO Zb 10 share an additional character with b.1, AB13. All three of these terms are identical inscriptions reading: AB08-AB31-AB31-AB60-AB13.¹⁶¹ Only one inscription in the system, the conical cup PK Za 4 has no characters in common with b.1 beyond the AB31-AB31-AB60 sequence. However, there is a break on PK Za 4 following AB60. This damage means it is possible that AB60 was followed by AB13 in this term as well, but damage prevents us from knowing for certain.¹⁶²

Connotations of b.1

Both systems for b.1 are dominated by libation tables. The connotation of libation tables for the b.1 term comes from both the AB57-AB31-AB31 system and the AB31-AB31-AB60 system. This overlap in associations can most easily be explained by the overlap of AB31-AB31 in both systems. Rather than AB57-AB31-AB31 having a

¹⁵⁹ Wiener, Malcom H. "Crete and the Cyclades in LM I: The tale of Conical Cups," *The Minoan Thalassocracy: Myth and Reality* (1984): 20.

¹⁶⁰ *ibid.*

¹⁶¹ GORILA V, 197.

¹⁶² *ibid.*

connotation of libation tables, and separately AB31-AB31-AB60 also having a connotation of libation tables, it makes much more sense that the shared sequence AB31-AB31 is the source of the connotation.

Looking at AB31-AB31 on the conical cup can help specify these connotations. There are two major interpretations of this sequence on the cup. The first is that the characters are associated specifically with the pouring aspect of libation tables. This makes sense when considering the functional denotation of a conical cup. The other interpretation is that the characters are specifically associated with the religious or ritual aspect of libation tables. In this interpretation, the inscribed term on the conical cup would not reference the function of the cup in any way, and instead is a dedication, prayer, or decorative text on the cup. With the information in this paradigm, neither interpretation can be ruled out.

There is very little opposition in the systems of b.1, which makes it difficult to narrow down possible functions for the term. A syntagmatic comparison of the terms will be necessary to gain further insight into its specific form of content. This paradigmatic comparison indicates that b.1 has a connotation of libation, libation pouring, ritual activity, eating, and drinking.

System for TL Za 1b.2

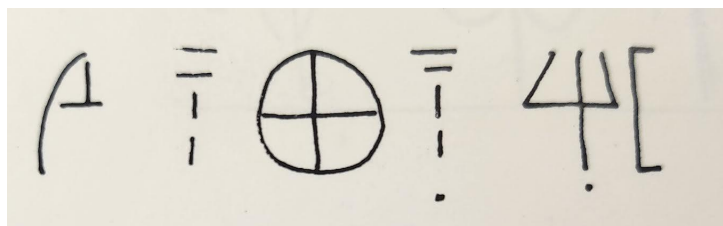


Figure 14: TL Za 1b.2, from Godart and Olivier, GORILA 4, p.59

All inscriptions sharing graphic features with TL Za 1b.2 fall into one system, as all of them include the sequence AB10-AB06. The inscriptions in this system are comparable to b.2 because they appear on different objects and come from different sites. The terms within this system do vary from b.2 and include different characters, but overall there is very little graphic difference between them. Four documents feature the entirety of the b.2 term, followed by the characters AB06-AB41. It is very possible that b.2 may have also ended with these characters, but damage obscures the term's final characters. In addition to the lack of graphic variation in this system, the majority of the objects associated with b.2 are libation tables, meaning the comparable differences in the system's objects is limited. Several objects in this system overlap with the systems of a.1, and b.1. The paradigmatic comparison of this system provides little new information about the TL Za 1 inscription but does reveal b.2 has a connotation of libations, libation pouring, and ritual actions.

All but three objects in this system¹⁶³ are libation tables, all of which contain at least one additional term from TL Za 1, and all of which have been identified as instances of the libation formula.¹⁶⁴ Like the previously discussed terms, this indicates that libation tables, libation pouring, and religious ritual activity are all a part of b.2's connotations. Of the three objects in the system that are not libation tables; one is the parallelepiped base KO Za 1 and the other two

¹⁶³ Two inscriptions in the system only share the AB10-AB06 sequence with b.1, and they are located in a different relative position within the term, so although part of the system, their connection to TL Za 1b.2 is weak and likely insignificant. Two other terms, PK Za 11c and PK Za 12c are nearly identical. PK Za 11c reads AB10-AB06-AB26-AB77-AB06-AB37, while PK Za 12c read AB10-AB06-AB26-AB77-AB06?-AB57-AAB41, where the identification of AB06 is uncertain due to damage. These two terms only differ from TL Za 1b.2 in that the character AB26 precedes AB77, and their endings. Because the two inscriptions have different endings and TL Za 1b.2's are obscured by damage, little insight can be gained from those characters beyond the fact that different characters can be attached to the end of AB10-AB06-AB26-AB77. It is possible that AB26 indicates a different form of the same word, however there is not enough evidence to confidently say what the effect of this additional character is. Additionally, the pithos KN Zb 40 1-2 cannot be excluded from the system, but due to the few characters it shares with b.2, and the different position of AB10-AB06 within the terms, it is unlikely that they are meaningfully related.

¹⁶⁴ Thomas, 3.

are only connected to TL Za 1b.1 through the characters AB10-AB6. This pair appears on both the tablet MA 2c.1, and on the pithoid jar KN Zb 40.1-2,¹⁶⁵ neither object has inherent religious associations, and both come from palatial sites. Additionally, while KN Zb 40.1-2 does have the characters A10-AB06, its lack of additional shared characters and the different positions of the character sequence within it. This does not provide much insight into the possible purpose of the inscribed term, but it does indicate that the ritual associations of the term do not stem from the character pair AB10-AB06.

The parallelepiped base does not lend itself to any specific connotation. It's not known exactly what the base supported, and without that information both what the object denotes and its connotations remain unclear. A stone base can support a statue, though the presence of a base does not necessarily mean a statue was present. Inscribed onto a base can be a caption of what is depicted in the object it is supporting, it can be a dedication or the artist claiming credit for their work. It could be a label or simply graffiti. This object demonstrates the possibility of any number of functions for the term, but the object does not rule out many possible forms of content.

Connotations of b.2

TL Za 1b.2's system is primarily made up of libation tables. Like a.1 and b.1, this term has the connotations of libations, libation pouring, and ritual activity. The repetition of these connotations across terms continues to emphasize that these are connotations that can be applied to the inscription as a whole. B.2 is also associated with a parallelepiped base. This object does not provide specific connotations because it's not known what was displayed on the base. However, it does indicate some possible functions for TL Za 1, such as a description or a

¹⁶⁵ GORILA IV, 83.

dedication, as these are common functions of written speech on statue bases. Ultimately, there is not enough opposition within this system to provide more specific connotations or possible functions for b.2. The objects that share the AB10-AB06 sequence with b.2 are composed of different characters than b.2. However damage on the Troullos ladle obscures the final characters of the inscription and makes it impossible to contrast them and compare their value.

System for TL Za 1c

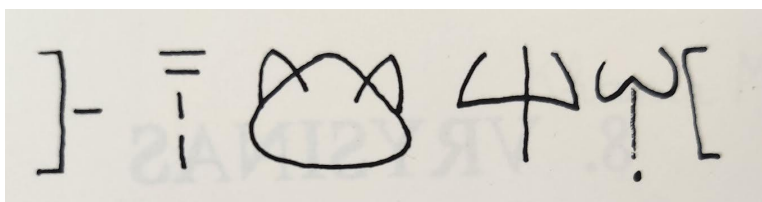


Figure 15: TL Za 1c, from Godart and Olivier, GORILA 4, p.59

Both the first and last few positions within the term TL Za 1c are obscured by damage.¹⁶⁶ Only the characters AB06-AB80-AB41 survive to be compared. There is one system for TL Za 1c where all terms share the sequence AB06-AB80. The graphic features of these terms are almost identical and therefore do not provide many points for comparison. However, the terms in this system are comparable based on object type. The paradigmatic comparison of this system identifies the sequence AB06-AB80 as the probable stem of the term and identifies the connotations of this term as libations, libation pouring, and ritual activity.

Every term in this system but one is identical. AP Za 2.1, IO Za 2d.1, KO Za 1c-d, and VRY Za 1a all contain the identical sequence AB28-AB39-AB06-AB80.¹⁶⁷ Because every term in this system but one contains this sequence, it is very likely that the characters preceding AB06

¹⁶⁶ GORILA IV, 58-59.

¹⁶⁷ GORILA V, 188-189.

in TL Za 1c were AB28-AB39. Either way, all of the inscriptions seem to feature the same stem, so any associations can easily be applied to all of them.

Connotations of TL Za 1c

Three of the inscriptions appear on libation tables, indicating this term too has the connotation of libation tables, libation pouring, and religious activity. In addition to the libation tables, there is also the previously mentioned parallelepiped base, KO Za 1, in the system. The remaining inscription in the system, HT Zd 155 does not provide much insight into the term. The piece of stucco was found at the palatial site Hagia Triada. As stucco, this object was most likely wall decoration, though it's unclear what images the inscription appeared alongside. The inscription is unlike all others in the system, only sharing the AB28-AB39 pair with them and no other characters. However, this contrast does not give enough information to analyze the term in opposition to the others and ultimately yields little insight into the possible form of content of TL Za 1c. For these reasons, the connotations of the terms cannot be stated for certain beyond the connotation of libation tables, libation pouring, and ritual activity.

Comparison Results

The paradigmatic comparison of the terms in the TL Za 1 sequence reveals consistent and strong associations with libation tables. While the connotations of even one term would impact the connotations of the inscriptions as a whole, this shared connotation firmly establishes libations, libation pouring, and religious activity as connotations of TL Za 1. The terms with these connotations likely communicate some religious idea or appear in inscriptions with a religious form of content. The terms associated with libation tables do not just associate the

inscription with religion. A.1 includes objects in its systems other than libation tables that have a liquid-centered function. These terms are not just associated with religion, but also liquid storage and pouring. This emphasizes the presence of libations themselves in the connotations of these terms and the inscription. While the religious connotations may be more generally applicable to all of these terms, it is important not to disregard the more specific parts of the term's connotations.

The presence of possible prefixes on both a.1 and b.1 indicates that the terms are being modified in some capacity. Not enough information is available to point to a specific meaning or change brought about by these potential prefixes. In the case of a.1, when considered in the context of the shared functional denotation of the objects in its system, it suggests the possibility that the term may be a verb. Further research into the AB08-AB59 character and the a.1 term is necessary to determine if this is the case.

Performing the paradigmatic comparison has not revealed any concrete form of content for these LA signifiers or for the inscription as a whole however, it does provide some connotations for each of these terms. Performing a syntagmatic comparison will provide additional insight into how these connotations affect the form of content of the TL Za inscription overall. This is because the connotations of each of these terms provide insight into what kinds of inscriptions they can logically appear in. In the syntagmatic comparison of these terms, these connotations, and resulting possible forms of substance, can be compared and contrasted. Doing so will narrow down the possible forms of substance for the inscription as a whole, narrowing down what its function on the ladle may have been.

KY Za 2 Paradigm

The paradigm for Ky Za 2 is significantly smaller than that of TL Za 1. This is because the inscription only contains one three-character term: AB01-AB80-AB04. This three-character sequence is the shared feature of all terms in the system.¹⁶⁸ This exact iteration of the term does not appear on any other document; however, two inscriptions, AR Zf 1 and AR Zf 2, contain it in its entirety with the additional preceding sign: AB28. This additional character as well as the differences in object type are the opposing qualities in the system that make the terms comparable. Comparing AR Zf 1 and AR Zf 2 to KY Za 2, it is very possible that all three documents contain versions of the same term. Although Sakellarakis and Olivier are uncertain if AB28 can act as a prefix,¹⁶⁹ Thomas suggests there is evidence the character could function that way, and interprets it as a prefix in her analysis.¹⁷⁰ This strengthens the connection between these terms, supporting the idea that AB01-AB80-AB04 is a root that AB28 is modifying.

The comparison of objects in this system provides more insight into what the term does not mean than what it does. AR Zf 1 and 2 are both votive axes from the same site, Archanes, made of precious metals. Their only major difference is the material they are made out of, one being gold, the other silver. This difference is small, but it does provide the small insight that the term is not associated with the specific material either one is made out of. The same term appears in isolation on both objects, given no other terms to contextualize it or impact its meaning, it can be assumed that the term means the same thing on both objects. In that case, the meaning of the term is not going to pertain to the one difference between the two objects, the material they are

¹⁶⁸ One other document, PK 1.8, shares the sequences AB80-AB04 with KY Za 2. However, the characters are not in the same relative position within the term. AB80 being the first character in the term in PK 1.8 and the second in KY Za 2. PK 1.8's term additionally differs from KY Za 2 because it follows AB80-AB04 with AB37. While they do not rule out a meaningful connection between the terms, these significant differences make it unlikely that a comparison between the two inscriptions will yield any useful information or insights. No other inscriptions contain the sequence AB01-AB80.

¹⁶⁹ Olivier; Sakellarakis, 349.

¹⁷⁰ Thomas, 5.

made out of. Therefore it is reasonable to say that AB28-AB01-AB80-AB04 does not signify gold or silver, and is unlikely to signify anything pertaining to material at all. This understanding carries over to KY Za 2, which also differs in material from both axes, being made of black steatite.

It is also unlikely that the term is associated with the functional purpose of the objects. This is because the functional purpose of KY Za 2, a ladle, is pouring liquid, which the axes cannot be used to do. AR Zf 1 and 2 are axes made of thin precious metal, considering the double ax was a common votive image,¹⁷¹ it is probable these axes were also decorative and votive. Because the functions signified by the objects bearing these inscriptions are so different, it is unlikely that the term communicates or commands a specific action. Additionally, since the inscription is featured very visibly and prominently on all three objects, it is unlikely to be a mark from the artist. The term does not appear on any objects associated with food, storage, record keeping, skilled labor like weaving or pottery, or jewelry, and so presumably any relation to those topics can be ruled out of its meaning. The term does not appear on any construction blocks or pillars, so it is not associated with building or architecture and is less likely to be graffiti.

This small system gives little insight into what specific function the KY Za 2 inscription might have, though it makes a large number of functions unlikely. Due to the prominence of the inscription, the association of ladles with pouring and libation pouring, and the identification of the axes as specifically votive, it is possible that Ky Za 2 might have a religious connotation however the religious associations of the system are not prominent enough and the system is too small to draw that conclusion with any certainty. The inscription could be a dedication, though to whom or for what purpose remains unclear. In order to draw any specific conclusions about the

¹⁷¹ Burkett, 38.

possible functions of the inscription it is necessary to expand our understanding of its associations by performing a syntagmatic comparison. First however, additional insight can be gained through a paradigmatic comparison of Minoan ladles.

Object Paradigm

As discussed, objects can act as instances of speech called sign-functions. Because they are instances of speech, a paradigmatic comparison can also be performed on objects. For this system, the similar quality which makes the objects comparable is their object type, all of the objects in the following system are ladles. Their opposing and therefore comparable qualities are the locations they were found, the presence of writing, and the material they are made out of. Conducting this comparison will provide insight into why these two ladles may have been inscribed where others weren't, identifying what distinguishes them from these other ladles can further our understanding of the purpose of their inscriptions.

TL ZA 1 v.s. KY Za 2

The two ladles of this study are uniquely similar because they are both inscribed. These inscriptions differ considerably in length; the inscription on TL Za 1 consists of five terms, while KY Za 2 bears only one. Additionally, the two inscriptions share no LA signifiers in common. Given these differences, it is very possible that the two inscriptions have two different forms of content. Certainly, it should not be assumed that they serve the same purpose. That being said, the ladles share some physical similarities which may indicate similarities in their function.

On both objects, the inscription appears on the lip of the ladle, visible when looking at the mouth of the object, rather than the underside. This positioning indicates that the inscription

was visible during use, and possibly on display. More specifically, the inscription would be visible while there was liquid in the ladles. Had the inscriptions been on the undersides of the objects, they would not be visible without spilling the liquid. The location of the inscription could point to the potential audience of the inscription, as well as when in the libation pouring process the inscription would be viewed. It indicates the possibility that both inscriptions were placed to be readable during the libation pouring, rather than after. The exact ritual of Minoan libation pouring and the significance of different steps in that process is unknown, so no specific meaning can be reasonably concluded from the location of these inscriptions. Instead, the position is notable because it means both the KY Za 2 and TL Za 1 inscriptions were visible at the same point in the libation pouring process. This indicates a similar relationship between the act of pouring libations and both inscriptions.

Another notable similarity is that both inscriptions begin on the lip of the ladle opposite to the point. This end most likely faced the user during use, as the pointed end of the ladle would dip into liquid and fill the ladle easier. Given the orientation of the LA characters, where the bottom of the characters follow the innermost edge of the lip, the inscription would be facing away from the user during use, and thus not readable. This is the case for multiple different ways of holding the ladle. If the user held the ladle cupped in both hands, the text would be upside down from their perspective. If the user grabbed the ladle with one hand, thumb on the inside edge, and fingers around the bottom, part of the text would be covered by their hand. The text would still be oriented away from them unless they filled the ladle by pulling it towards them. This position is unlikely as it would require the user to uncomfortably bend their wrist toward their forearm to prevent the ladle from spilling. This means that the inscription was visible during use, but not for the purpose of the user reading it. As mentioned, the details of the ritual

surrounding the pouring of libations are unknown, so it can't be said if other people would have been present or close enough to read the inscription. If not for the benefit of the user, and if an audience was not present to read it during use, the text could also have been intended to be read while on display. For both ladles, this suggests that the inscription is not instructive, because if someone needed to reconfirm the instructions during use, they wouldn't have access to them. This is also supported by the graphic differences between the two ladles. As ladles, the objects share the same use. If one's form of content was instructive, the other's could not be, as they contain none of the same LA signifiers and thus cannot be giving the same instructions. If the user could not read the inscription during use, it increases the possibility that the inscriptions do not have a practical functional purpose. It is not impossible that they do, the function could be performed before the ladle is being used to pour liquid, or the function could be for those who could see the inscriptions while someone else uses it. If the inscription is meant to be visible during use, it indicates some relation or importance to that use, but if it serves no material function during that use, it is possible that its function is more abstract. Alternatively, it is also possible the text was intended to be read while on display. In both cases, however, the inscriptions serve a purpose, but not a functional one. This could be a dedication or a prayer, which could be related to the ritual activity, but doesn't play a functional role in the physical act of pouring libations. However, this is not the only possible explanation for the position of these inscriptions on the ladle, and the positioning is not evidence enough on its own to argue this as a likely form of content for these inscriptions.

Due to the similar locations and orientations of these inscriptions on the ladles, it is possible, though not guaranteed, that they serve the same function, but denote different meanings. In contrast, dissimilarities in their inscriptions' systems demonstrate further

differences between the two. Ky Za 2's system is much smaller than TL Za 1's and only consists of two metal votive axes. TL Za 1's systems are filled with libation tables and objects associated with liquid. As a result, TL Za 1 is far more associated with libations and libation pouring than KY Za 2. Ky Za 2 on the other hand, is more associated with precious metals and votive weaponry than TL Za 1. Despite this the connotations of the objects are very similar, both having a connotation of religious activity. In addition, while TL Za 1 is much more strongly associated with libations, it is a part of both objects' connotations. This is because as a sign-function, a ladle denotes both themselves and the pouring of liquid. Often, this liquid is libations. This is demonstrated by the abundance of ladles at peak sanctuaries like Iouktas.¹⁷² This indicates the possibility that both inscriptions express something religious, although they do not denote the same thing, and that that religious idea is tied to libation pouring. TL Za 1 is far more likely to specifically reference the libation pouring based on its systems, but both are connected to the action through their religious connotations and the denotation of the ladles themselves.

The two ladles also differ in terms of the site where they were found. Where KY Za 2 was found at the peak sanctuary of Agios Georgios on Kythera, TL Za was found at the edge of a palatial site on mainland Crete. Troullos is the Easternmost hill of the palatial site Archanes and is closely associated with the peak sanctuary Iouktas. This is both due to its proximity to Iouktas and the similarity in finds from both sites.¹⁷³ As a peak sanctuary, Agios Georgios is a religious site, therefore the objects found there are coming from a religious context and have a religious connotation. KY Za 2 was found at Agios Georgios, so it comes from a religious context.

Troullos is not an inherently religious site.¹⁷⁴ Therefore TL Za 1 lacks the religious context of

¹⁷² J. & E. Sakellarakis, *Archanes* Ekdotike Athenon S.A, Athens, 1991. p.24

¹⁷³ *ibid.*

¹⁷⁴ Sir Arthur Evans claimed that Troullos was the starting point of a religious procession to Iouktas. The main evidence for this argument, as it is presented in *Archanes*, is that the ladles at Iouktas are similar to the Troullos ladle. While the theory is possible, I am skeptical to take it as factual or probable without more material evidence.

KY Za 2. This does not discredit the religious connotations established by the paradigmatic comparison. Instead, it establishes additional religious connotations for KY Za 2 and also shows that objects with ritual connotations were not used exclusively at religious sites. The differences in the contexts of these items do not dispute the similarities between them but do indicate distance and therefore probable difference in their meaning and purpose. The position of the inscriptions on both ladles indicates a similar form of content. However, their substance of content (meaning) is likely very different, owing to the different contexts in which they were used. The distance and differences between them, combined with the lack of other examples, indicates the inscription of ladles was not a common or standardized practice. While they may have accomplished a similar function based on the positions of their inscriptions, their meanings may be unrelated.

Paradigmatic Comparison Conclusions

The paradigmatic comparison of TL Za 1 examined four systems based on shared Linear A character sequences. The two systems for the first term in the inscription, a.1, compared terms that contained the character sequences AB08-AB59 and AB59-AB28-A301. This comparison revealed that AB08-AB59 is a probable prefix, without inherent meaning, while AB28-A301 may be the stem of the a.1 term. The second system revealed that AB28-A301 pair, and by extension a.1, has a connotation of liquid and liquid-centered actions, most likely libation pouring.

The two systems of b.1 examined terms that included the sequence AB57-AB31-AB31, and AB31-AB31-AB60. This comparison determined that it is most likely the sequence AB31-AB31 that is inherently meaningful, or denotive, in the term. The abundance of libation

tables in these systems established a strong connotation of libations, libation pouring, religion, and ritual activity. The religious and ritual aspects of these connotations were strengthened by the presence of an altar fragment in the system, while a conical cup in the system established the additional connotations of eating and drinking for this term.

The system for b.2 included terms that contained the AB10-AB06. This system was primarily made up of libation tables and revealed b.2 has the connotation of libations, libation pouring, religion, and ritual activity. In addition, this system associated a parallelepiped base with b.1, not providing potential connotations for the term but indicating the TL Za 1 inscription could have functioned as a dedication or description.

The system for term c was made up of terms that contained the characters AB06-AB80. This system is very similar to that of b.2, and likewise, the presence of libation tables and the parallelepiped base in the system established the term c's connotations as libations, libation pouring, religion, and ritual activity.

This comparison also revealed that in addition to being a hapax, a.2 has no systems. This supported the interpretation of a.2 as a name and not a word with a specific meaning. While it is possible that a.2 is a name, it is unlikely to be the name of a deity or important person, which would have been recorded on multiple objects. While the lack of connotative systems does support the interpretation of a.2 as a name, there are some doubts in this theory and it should not be assumed that the term is a name. Together these six systems show the connotations of TL Za 1 are religion and ritual with a particular focus on libation pouring as a ritual act.

KY Za 2 only had one small system made of two votive axes. The comparison of this system revealed KY Za 2 has connotations of wealth and religion, though the limited size of the system prevented more specific conclusions. When compared to each other in an object

paradigm, KY Za 2 and TL Za 1 were shown to most likely have similar forms of content but very different substances of content. This is because the ladles are structured similarly and their inscriptions placed in a similar location, despite the objects having different connotations. KY Za 2 comes from a peak sanctuary site, strengthening its religious connotation, while TL Za 1 has strong religious connotations, but was not found in an inherently religious site, indicating that Minoan religious activities were not confined to sanctuary sites.

Based on these comparisons it is possible the TL Za 1 inscription expresses something about libation pouring to an audience either watching the libation being poured or examining the ladle when it is not in use. It is also possible that the inscription is directed at an absent or symbolic presence, this could be a deity, but it could be a person otherwise not well known, explaining the hapax in the inscription. After conducting this comparison, the form of content of the inscription is still unknown. However, certain functions are unlikely. TL Za 1 is most likely not meant to instruct, as the user loses access to the inscription as soon as they begin to use it. It is similarly unlikely to be an instance of personal communication, a potter's mark, or graffiti.

KY Za 2 carries a similar religious connotation however, its only association with libations is the denotation of the ladle itself. The inscription is much shorter and similarly inaccessible to the user. Given the religious connotations of the inscription's system, both objects being votive axes from a peak sanctuary, it is possible that the inscription makes some sort of religious reference, but does not communicate anything about the libation pouring itself. The presence of precious metal in the system indicates the inscription might communicate some idea about wealth or metal, but due to the small size of the system, it can't be said with any confidence. The limited associations of the KY Za 1 term make it impossible to put forward a

probable argument for its function at this time. A syntagmatic comparison will give additional insight into the inscription's form of content and narrow down its possible purposes.

Syntagmatic Comparison

Syntagmatic comparison compares parts of a group, such as words in a sentence or terms in an inscription, to each other. In syntagmatic comparison, this group is called a syntagm. Whereas a system groups terms together based on some similar quality, the terms in a syntagm are comparable because of their proximity. All of the terms in a syntagm are part of the same act of speech. For this project, the syntagm would be the TL Za 1 inscription, made up of the inscribed Linear A terms. For the Neopalatial objects, the syntagm would be the material objects found within one site. For example, all of the Neopalatial objects found alongside KY Za 2 at Kythera form a syntagm.

For this comparison to occur, the significant units must first be determined by means of the commutation test. For Barthes the commutation test is conducted by “artificially introducing a change in the plane of expression (signifiers)” and examining the impact that change has on the plane of content.¹⁷⁵ What Barthes means is that a syntagmatic unit can be identified by seeing if changing the signifier changes the signified. If so, the units are significant and thus syntagmatic. If the units are interchangeable, a commutation has not occurred, but a substitution.¹⁷⁶ For example, if one swaps out the word “cat” for the word “dog”, a person will picture a different animal. The signified has changed along with the signifier. To add a level of nuance, if a person swapped the word “dog” for the word “puppy” in a sentence, again the mental construction would change. While both words denote the same animal, the mental construction of a puppy

¹⁷⁵ Barthes, 65.

¹⁷⁶ Barthes, 66.

prompts the idea of a smaller, younger canine than the word “dog” does. However, if one were to swap the word “dog” for “canine”, as I did in the previous sentence, the mental construction does not necessarily change, and so a substitution has occurred rather than a commutation. In the first example, the species is the significant unit because it is what aspect of the signified changes with the change in the signifier. In the second example, age is the significant unit, as that is what changed about the signified when the signifier changed. In a syntagmatic comparison, these changing qualities are the significant units being compared.

This comparison is far more easily done for the Neopalatial objects in this project than the Linear A signifiers. The syntagm of the Neopalatial objects is the archeological context the objects were found in, that is, the other Neopalatial objects at the site. The commutation test for sanctuary objects can be done by considering if the Neopalatial object would denote the same object and function if the artifact were swapped out for another. In every case where two different types of objects are being compared, the denoted function would be different, and therefore the objects would not be able to be substituted for one another. These changes in the denoted function are significant units, so the purpose of each object can be compared in a syntagmatic comparison. In instances where multiples of the same type of object are found, even though the specific object changes, the denoted function would not, and so the objects would be substitutable for one another and not a significant unit. Two libation tables, even though they are not identical, have identical functions and are interchangeable. So, the objects sharing the archeological context of these sites can be easily compared as parts of the same syntagm in terms of function.

For the LA signifiers, on the other hand, the commutation test is nearly impossible to conduct. This is because we do not have access to the plane of content, the signifieds, and

therefore can't observe if changing the signifiers results in changes in the signified. Additionally, due to the limited examples of Linear A, there are too few instances of a single term being exchanged for another to observe the effects in even connotation. Interestingly, the commutation test is possible specifically for TL Za 1a.2, the hapax. This is because although this signifier is not seen on any other document, the libation formula, which is the specific order of terms around it, can be seen on several documents. This means there are instances in LA texts where a.2 is the only term being exchanged. The denotation is still unknown however, we can examine changes in connotation, and doing so reveals that there are none. Almost every instance of the libation formula appears on a libation table, which naturally shares the connotations that have been so far established for TL Za 1. This confirms that the connotations of the inscription do not come from a.2, but also demonstrates that a.2 is most likely not a significant unit. This suggests that, although all hapaxes, all the terms that fill the second position in iterations of this inscription share a form of content, they all serve the same function in the inscription.

The commutation test as Barthes establishes it is not possible to perform on the other terms inscribed on TL Za 1 and KY Za 2. A pseudo-commutation test can be performed by comparing their systems. In this test, if the terms are exchangeable with each other, they will have identical systems, and therefore identical connotations. Although each of these terms have very similar systems, no two are exactly identical. By this standard a.1, b.1, b.2, and c are all significant units. This is not a perfect replacement for the commutation test but does still demonstrate that, within available knowledge, the terms are not exchangeable.

Syntagmatic Comparison of LA Terms on the Troullos Ladle

The syntagm for TL Za 1 is made up of the five terms inscribed on the ladle. The paradigmatic comparison of each of these terms revealed what objects they have appeared on, and as a result what objects, functions, and ideas are part of their connotations. In the syntagm the similar feature that makes these terms comparable is their shared location, they all form a phrase on the same object. Their comparable differences are their connotations, each formed by the objects they are associated with.¹⁷⁷

In the TL Za 1 inscription, three signifiers were strongly associated with libation tables. A.1 appeared on ten libation tables, b.1 appeared on four, b.2 appeared on six. Because the majority of terms in the inscriptions are associated with this type of object, it is reasonable to apply that association to the entirety of the phrase. This means that included in the connotation of the TL Za 1 inscription are libations, libation tables, libation pouring, and religious activity.

Both a.1 and b.1 are associated with objects used for storage. A.1 appears on the pithos ZA Zb 3.2, and b.1 appears on the bucket IO Za 6. Both objects are similar in that they store and transport goods, often liquids, though they differ in the duration of their storage and their movability. A pithos, while movable, can function for long-term storage. A pithos has a mouth smaller than its body and can have a lid. A bucket meanwhile is smaller, with a large mouth and no lid. A bucket stores less but can be moved more easily and therefore more frequently. Unlike a pithos, a bucket does not provide long-term storage nor stores large quantities of liquid. Therefore, although these objects indicate both terms are associated with liquids, these opposing qualities indicate that b.1 is more closely associated with the transport or pouring of liquid, while

¹⁷⁷ Objects that identical iterations of each term appeared on were excluded from the paradigmatic comparison to better study which character sequences in the terms were meaningful. For the syntagmatic comparison, these terms are taken into consideration. To see the syntagm diagrams for these terms please see the appendix.

a.1, because it is associated with a larger, long-term storage vessel, is more closely associated with the liquid itself.

Potential functions of the inscribed terms themselves can also be compared. A.1, as it appears on the pithos, is unlikely to be a potter's mark. While it is possible, one would expect the term to frequently appear separate from other terms in inscriptions or in isolation and appear on many other pithoi. Because this is not the case, it is likely a.1 is not a potter's mark. It may be a label, but again one would expect it to then appear on numerous pithoi, and, if it is labeling the goods being stored in the pithos, on administrative tablets. The term could also be a command or reference to action. This could provide some explanation for why the pithos is inscribed with a.1 while the bucket is inscribed with b.1. Both are capable of holding the same things, but there are differences in their function.

The two terms, when compared, strengthen the connotations the TL Za 1 inscription already has. Because two different terms in the sequence are associated with liquids and their storage, and the inscription is already associated with libations and libation pouring, it is reasonable to say that these objects strengthen the inscription's association with liquid and further suggest the phrase may reference the ritual use of libations. Syntagmatic comparison of these terms allowed us to better define them in opposition revealing that a.1 is more associated with the liquids or libations themselves while b.1 is more associated with the actual action of pouring.

Another notable revelation of the syntagmatic comparison is the prevalence of the parallelepiped base. For the TL Za 1 inscription as a whole, the fact that the stone base is inscribed with multiple terms gives its associations more weight. This object indicates that the inscription is not solely focused on the action of pouring libations. If the inscription served to

instruct on how to use the Troullos ladle or libation tables, its terms would be very narrowly focused, centering around the libations themselves, the ladle, the libation tables, and the action of pouring. Because these terms appear on a stone base, it's unlikely they instruct how to pour libations. Such instructions would not be useful on a statue base. This is further evidenced by other objects in the syntagm unrelated to libation pouring. The silver pin featuring b.1, and the tablets possibly featuring term c, both indicate some part of the phrase extends beyond libation pouring.

Interpretation

The syntagmatic comparison of the Linear A terms inscribed on the Troullos ladle is limited by the absence of signifieds. However, the sign-functions in each term's connotations provide insights in the connotations of the inscription as a whole. Three of five terms appear on multiple libation tables, indicating the phrase as a whole is associated with libation tables, libation pouring, and religious activity. Due to the number of libation tables in the syntagm, these are the most concrete parts of the inscription's connotations. Aspects of these associations are strengthened by other objects in the syntagm: two containers, a bucket, and a pithos, provide further evidence that the inscription references liquid in some way. They demonstrate that the terms are not associated with libation tables solely because of their religious and ritual connotations, but specifically because libation tables denote liquid pouring. It is very probable the inscription references libations and liquids in a ritual and religious context. However, the syntagm also clearly indicates that the inscription is not solely associated with libations. The silver pin, stone base, and tablets have no clear relation to libations. Furthermore, the religious nature of libation pouring expands the connotations of the inscription beyond the activity itself to

the religious meaning of the activity. While this does not create a clear image of what the inscription's purpose or intended message is, it does make some functions unlikely. It is unlikely that the inscription is instructional, as libation pouring instructions have no relevance to a stone base or hairpin. Some terms in the inscription must have meaning outside of the context of libations and pouring.

The religious associations could provide some explanation for these other objects, a dedication on a statue base could reference a deity or act of worship, and because it is a personal item, a hair pin could potentially be inscribed with a religious term for protection, good fortune, or some other want. However, these objects themselves do not have religious associations on their own, so they cannot be used to confirm or strengthen the religious associations of the inscription. Even so, because libation tables have a religious connotation, that connotation is part of TL Za 1's connotation. It is possible that the inscription is a dedication or religious invocation, but there is not enough evidence to definitively draw that conclusion. Alone, this syntagm does not provide a definitive form of content for the inscription but indicates that to some extent the inscription communicates an idea about religious libations.

Troullos Site Syntagm

The archeological site of Troullos is located on the highest hill just East of the Minoan settlement Archanes on Crete.¹⁷⁸ The syntagm within the Troullos site would be objects found in the same area of the site dating to the MMIII-LM1A periods. While the Troullos finds are too abundant to discuss each object individually, stone vases with barbotine and floral decoration, rhytons, tripod offering tables, and beak-spout jugs are notable and common finds from the

¹⁷⁸ J. & E. Sakellarakis, 24.

period.¹⁷⁹ The abundance of liquid-pouring objects is notable. As sign-functions, rhytons, beak spout jugs, and vases, are all used to store or pour liquid in some way. Therefore, they all denote liquid pouring. Because TL ZA 1 was found in this context, it strengthens its connotation of liquid and libation pouring.

It is possible that religious activity could have taken place at Troullos. TL Za 1a was found alongside tripod altars. As mentioned, altars were fairly common religious objects in the Bronze Age, used to make offerings to deities. These objects were used for explicitly religious and ritual purposes. The presence of tripod altars adds a religious connotation to the site. However, I hesitate to say with certainty that this was a religious site. Sakellarkis does not list libation tables among the finds at Troullos. TL Za 1 does have a religious connotation, but specifically in regard to libations. If there are no libation tables at the site, it casts doubt on whether TL Za 1 was being used for a religious function at that location. The tripod altars do add a religious connotation to the site, but it is not enough to establish that the site itself was inherently religious or that all activity that occurred there was religious.

Interpretation

The connotations of both the ladle itself and the inscription paint a clear picture that the TL Za 1 inscription communicates an idea related to the pouring of libations. It is unlikely that the inscription's purpose is to instruct, and while it has religious connotations, the act itself of pouring libations is inseparable from the inscription. Therefore, it cannot be interpreted as a prayer or dedication outside of the context of libation pouring. This is not an inscription that appears on or could logically appear on objects unassociated with liquid, libations, or libation pouring. Whatever this inscription may translate to, it is very likely it specifically references the

¹⁷⁹ *ibid.*

action of libation pouring or the libations themselves, and any religious mention will pertain to the religious purpose of libation pouring.

KY Za 2 Syntagm

The inscription KY Za 2 is a one-word inscription. Therefore, it is not possible to construct a linguistic syntagm for the term based on the object the terms appear on. However, it is possible to construct an object syntagm for the ladle comparing finds from the Agios Georgios peak sanctuary.

Agios Georgios is a peak sanctuary located near the Minoan colony of Kastri on the island of Kythera. The KY Za 2 ladle dates to the Neopalatial period.¹⁸⁰ Other Neopalatial finds at the site include an abundance of bronze humanoid figurines, a bronze knife, bronze axe, bronze carvings of limbs, and fragments from stone and ceramic vases.¹⁸¹ Also found at the site were libation table fragments, a clay libation table, a cylindrical stone libation table, a bronze cut out of a man and another of a woman, metal jewelry, beads, clay horns of consecration, incense burners, conical cups, small jugs, tripod cooking pots, rhyton fragments, murex shells, and bronze ingot fragments.¹⁸² The most notable feature of this syntagm is the abundance of bronze. As Sakellarakis points out, no other peak sanctuary has so many bronze objects.¹⁸³ Sakellarakis interprets this to indicate the relative significance of the peak sanctuary, while the goal of this study is not to speculate on the social role or status of peak sanctuaries, the bronze does carry the possible connotation of wealth and status. The abundance of the material at Agios Georgios gives

¹⁸⁰ Olivier; Sakellarakis, 325.

¹⁸¹ Olivier; Sakellarakis, 324.

¹⁸² Sakellarakis, 84-87.

¹⁸³ Sakellarakis, 88.

the site a similar connotation, and the objects within it, like the ladle, carry some of that connotation as well by association.

The fact that KY Za 2 was found at a peak sanctuary and that it was found among libation tables and rhytons, demonstrates that it was found within a religious context, and so religion and religious activity can be reasonably assumed to be a part of the object's connotations. Most importantly, however, is that the objects in the syntagm lack any association with the goddess Demeter. Sakellarakis and Oliver argue that the KY Za 2 inscription likely references the goddess Demeter. The basis for this argument is the phonetic similarities between the inscription, most likely pronounced DE-MA-TE, and the name Demeter.¹⁸⁴ Sakellarakis and Olivier concede some faults in this argument in their article, primarily that there is no cult to Demeter attested at Kythera and that the name does not appear in Linear B,¹⁸⁵ from where the pronunciation of Linear A characters is derived. The syntagm for Ky Za 2 provides further evidence against a connection between the inscription and the goddess Demeter because of the lack of association with animals, food, and agriculture. Compared to other peak sanctuaries, there's very little animal and food imagery at Agios Georgios.¹⁸⁶ Sakellarakis suggests this may be because Kastris did not have an agricultural-based economy, and therefore would be unlikely to heavily feature animals and fruit in their votive objects.¹⁸⁷ It seems unlikely that a site that features very little agricultural imagery, near a settlement that does not place a high value on agricultural production, would be a place where a grain goddess is worshiped. The depiction of deities and their domains do change over time, and so the lack of associations with later forms of Demeter does not necessarily rule out the worship of an earlier Minoan form of the goddess. However, the

¹⁸⁴ Olivier; Sakellarakis, 349.

¹⁸⁵ Olivier; Sakellarakis, 350.

¹⁸⁶ Sakellarakis, 88.

¹⁸⁷ Sakellarakis, 89.

associations present in this syntagm do not demonstrate any connection with the goddess, therefore to interpret the inscription as referencing Demeter is not supported by and ignores the connotations established by the site's syntagm. Without evidence clearly connecting the deity to the site or the ladle, the inscription cannot be reasonably interpreted as a dedication or reference to Demeter.

Another significant part of the syntagm is the bronze double axe and the bronze knife. KY Za 2's system is made of two metal votive axes. As a result, part of the term's connotations includes precious metal and votive weaponry. The bronze double axe and blade at Agios Georgios similarly denote themselves and carry the connotations of precious metal and, by extension, the potential connotation of wealth. These objects in KY Za 2's syntagm and system are very similar. They are the same type of objects, denote similar meanings, and carry similar connotations. These similarities strengthen KY Za 2's association with precious metals, votive weaponry, and wealth.

Interpretation

This syntagm does not provide evidence supporting any specific function or meaning for the KY Za 2 inscription however, it does clarify its connotations. KY Za 2 is strongly associated with bronze and precious metals. These metals have been found at other peak sanctuaries, but not in the quantity they were found at Agios Georgios. KY Za 2's presence among these many bronze objects, as well as its connection to a gold and silver axe, indicate precious metal and wealth are a part of its connotation. This association does not necessarily mean that wealth or precious metals are denoted by the inscription. References to wealth do not necessarily indicate wealth is present. Likewise, a text found in the presence of wealth does not necessarily refer to

that wealth. The syntagm reveals the religious connotations of the KY Za 2 inscription. Not only was the ladle found at a peak sanctuary, a religious site, but it was found among votive figurines typical of peak sanctuaries,¹⁸⁸ as well as libation tables. These religious objects and the religious connotations of the site indicate that the object and inscription likely carry some religious connotations. This strengthens the possibility that the inscription is a dedication, but does not provide evidence for that specific function. Regardless it is highly unlikely that the inscription is a dedication specifically to Demeter, as it has often been interpreted to be.¹⁸⁹ Beyond the general religious connotations of the site, no objects in the syntagm indicate that Demeter specifically is being worshiped or is being referenced.

Syntagmatic Comparison Conclusions

On their own these syntagmatic comparisons do not reveal specific potential functions of these inscriptions. Comparing these objects to the objects that make up their archeological context do expand and strengthen our picture of the connotations of each of these inscribed ladles. however, and in doing so provide a greater understanding of the topics of the inscriptions and some of the ideas that the objects may have communicated to a Minoan audience. By examining these connotations, we grow closer to understanding what these inscribed objects communicated, despite not having access to what they denote. This comparison indicated that the TL Z a1 ladle was strongly associated with libation pouring, that the idea of libation pouring was not just communicated to Minoan audiences by the ladle itself, but is specifically communicated by the inscription itself. The inscription likely references the ladle's own function, though the strong religious association of the inscription and the fact that terms that appear on the ladle are

¹⁸⁸ Sakellarakis, 88.

¹⁸⁹ Olivier; Sakellarakis, 349. Sakellarakis, 84

present on other objects unrelated to libations indicates that the inscription is not merely instructions on how to use the ladle nor just a description of the action itself. It is likely that the inscription therefore communicates something about the pouring of libations in relation to another concept, possibly religious. Likewise, the syntagmatic comparison of Ky Za 2 revealed this ladle to have some religious connotations, as well as solidifying its association with precious metal and wealth. While this is not necessarily the subject the inscription denotes, the connotations of wealth and precious metal mean that those ideas may have been implied or indirectly communicated to Minoan audiences by the KY Za 2 inscription.

Conclusions

Having performed a paradigmatic and syntagmatic comparison on the ladles, their connotations and possible forms of content are much clearer. While both inscriptions have major differences in their connotations, the similar positioning of their inscriptions, their shared association with libations and libation tables, and their shared religious connotation, indicate some similarities between their forms of content. It is unlikely that the two inscriptions share identical functions, due to geographic distance, graphic differences, and differences in their connotations. However, these shared associations indicate that both may have some sort of religious function. Both inscriptions are directed at an audience that may not be the user themselves. Both inscriptions are placed on the lips of the ladle, beginning on the lip closest to the user. This shared placement indicates intentionality and direction towards a specific audience, someone other than the user. Based on this I have ruled out the possibility of the inscription being graffiti for both inscriptions. Beyond this determination, however, it is necessary to consider each ladle independently to determine its function.

The TL Za 1 ladle may be meant to express a dedication or prayer as pertains to the pouring of libation. The terms' connotations of liquid pouring make it very likely that the inscription is intended to communicate some idea about the libations. This idea is unlikely to be instructive and practical because the user cannot read it when they are pouring the libations. Likewise, the inscription most likely wasn't meant to be read aloud while using. It is unknown whether other people would be able to see the inscription during use, yet it is positioned where it would be visible. This indicates that the inscription is either meant to be read by people watching or that it is meant to be visible but not necessarily read. This could indicate that the inscription would be directed at a deity, visible but not needing to be readable for the people involved with the ritual. This is supported by the strong religious connotations of the inscription. However, if it does serve a religious function, I argue there is not enough evidence to suggest it names or directly addresses the deity. This is largely because this is the only attestation of the a.2 term, and other iterations of the libation formula have a different hapax in the second position. I argue then it is much more likely a general prayer. It is possible it is a dedication, but too many questions remain to draw that conclusion with absolute certainty. Therefore, the most probable form of content for this inscription is an expression of the religious function of the libation pouring. The exact nature of this is still subject to speculation, whether simply a description, a prayer, or a dedication, it cannot be concluded with any certainty. However, based on this semiotic analysis the inscription is religious in nature and denotes in the first or second-order an idea about libations.

Ky Za 2 on the other hand most likely communicates a religious idea in connection to wealth or metal. It is unlikely the inscription references or is meant to communicate anything about the libation pouring itself. Rather the term, which appears on two metal votive axes, likely

communicates to its audience something about the religious nature of those objects. However, the site syntagm, showing the abundance of bronze objects found alongside the ladle, combined with the presence of precious metal in the inscription's system, indicates that the term has the connotation of precious metal, and therefore may communicate an idea about it. With far fewer terms and objects for comparison, it is impossible to theorize in as specific terms as I did for TL Za 1. Rather, these comparisons provide evidence refuting the popular interpretation of the inscription as a reference to Demeter. While the system for KY Za 2 demonstrates a religious connotation, and the inscription itself, when transliterated based on the phonetics of Linear B, resembles the name Demeter, no other connotation of the object indicates that it is connected to the goddess, nor that it is a name at all. While the semiotic analysis does not rule out the possibility of the inscription being a name, there is also nothing to indicate it should be read as one either. Furthermore, the absence of many animal figurines and fruit imagery at Agios Georgios, the non-agricultural focus of Kastri's economy, the connotation of precious metals, and the connotation of votive weaponry, indicate no connection with Demeter as we know her. While this comparison cannot rule out the possibility completely, as it is possible the domain of Demeter according to Minoan beliefs was better aligned with these associations, there is no reason to assume that the inscription references or addresses the goddess. While it is probable that the inscription communicates a religious idea or serves a religious function, there is not enough evidence to conclude what that is, and any future study of it should approach its connection with any deity with skepticism.

These conclusions have limited specificity. Even so, they provide far more insight into how Linear A was used on these ladles than focusing on the unknown signifieds does. This analysis is a first step in analyzing these two inscriptions and applying semiotics to Linear A.

This study was not able to take into account numerous factors which could make the connotations of the Linear A terms more comprehensive and their functions more specific. This paper did not take into account the material that the objects were made of, or by extension the origin of those materials. What were these materials most commonly used for? How do these associations shape the connotations and functions of these inscriptions? Pursuing these questions will only improve upon the analysis performed in this paper. Similarly, I was not able to construct a comprehensive object system for the ladles. Further research into this specific aspect of the paradigmatic comparison could improve our understanding of why these two ladles were inscribed and no others. Syntagmatic comparison lends further precision to our interpretations of function by allowing us to examine how the connotations of terms in the same inscription build off of each other, but also conflict with and differ from one another. Translation will eventually allow for a more specific understanding of the Minoans and Linear A, but until that is achieved semiotic comparison provides insight into what general topics the Minoans were writing about, in what contexts, and for what purposes. Finally, applying this methodology to other inscriptions will reveal the connotations and possible functions of other terms, in other contexts. The more inscriptions this analysis is performed on, the better we will understand the different ways Linear A was used, and how its usage differed between object types and sites.

The methodology itself is also imperfect. Barthes' does not provide a clear method for determining which systems are meaningful when studying untranslated languages. While I tried to develop a consistent and logical method when determining which systems weren't valuable to include, ultimately it was a subjective choice. This could result in less accurate and more varied interpretations of what the connotations and functions of LA terms were. Additionally, syntagmatic comparison should be preceded by the commutation test however, this does not

translate well to the study of undeciphered languages, as the signifieds could not be compared and therefore it couldn't be determined if terms were interchangeable or actual significant features. These minor flaws however do not outweigh the benefits of using semiotics to study Linear A.

Semiotic comparison is not a substitution for translation and will not lead to translation. Semiotic comparison does however provide insight into the connotations and possible functions of Linear A terms. Building systems based on the objects Linear A appears on give us a look into the objects a Minoan audience would have also associated with those terms. Focusing on developing and comparing connotations allows us to gain further insight into the function and ideas associated with each term, while still grounding our understanding in the material evidence and archeological context.

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Appendix 1: Crete and Linear A

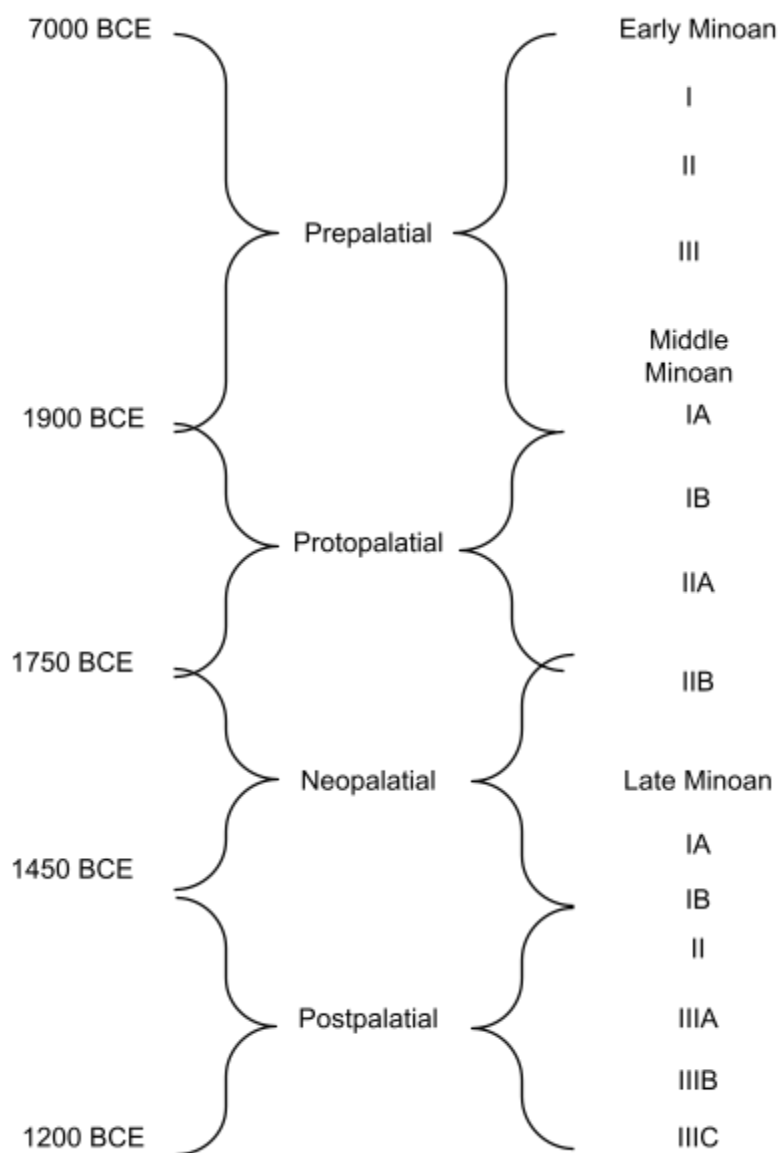


Figure 1: Three Dating Systems for Minoan History



Figure 2: Geographical distribution of LA documents on Crete, by Yannis Galanakis and Ester Salgarella

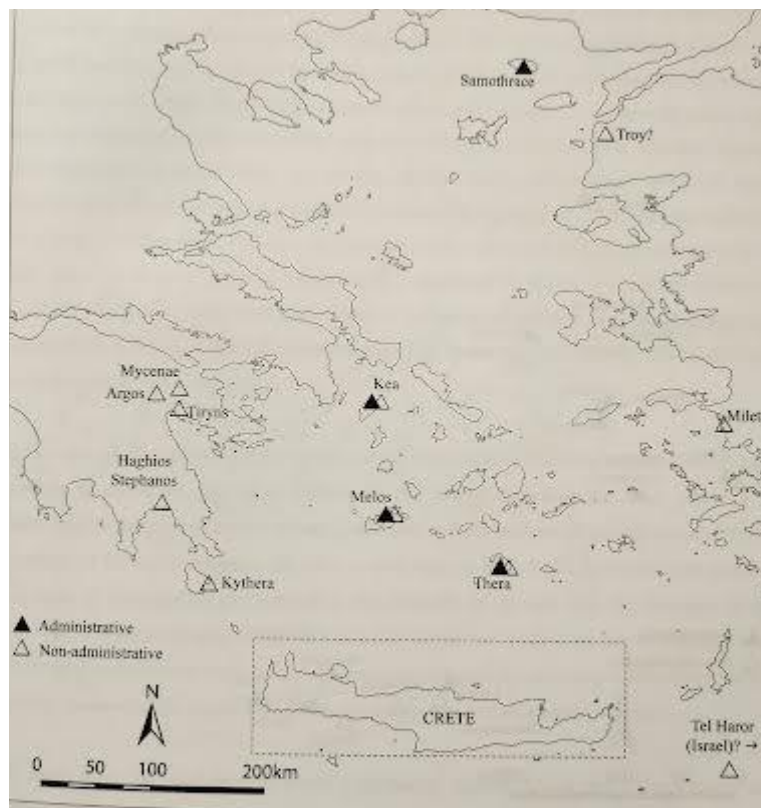


Figure 3: Geographic Distribution of LA documents outside Crete by Yannis Galanakis and Ester Salgarella



Figure 4: Agios Georgios Ladle¹⁹⁰

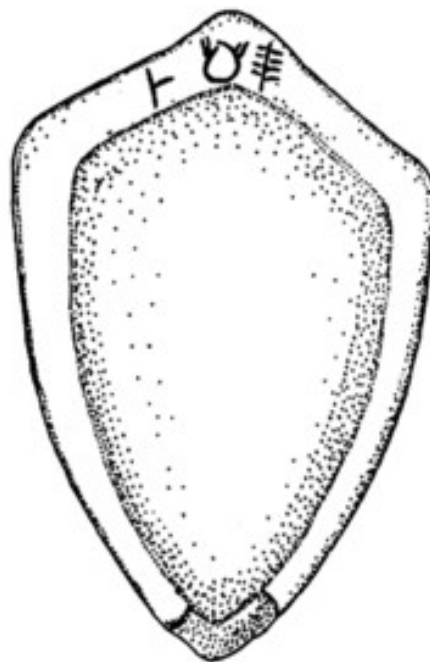


Figure 5: Drawing of Agios Georgios Ladle¹⁹¹

¹⁹⁰ Olivier; Sakellarakis, 345

¹⁹¹ *ibid.*



Figure 6: The Archanes Ladle, TL Za 1¹⁹²

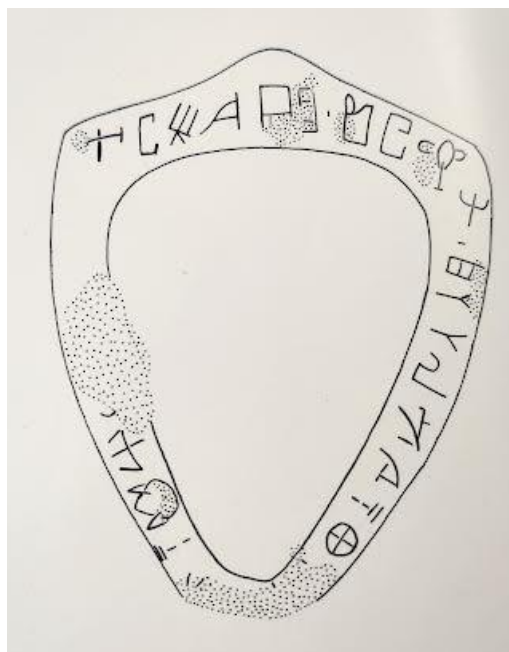


Figure 7: Drawing of the Archanes Ladle¹⁹³

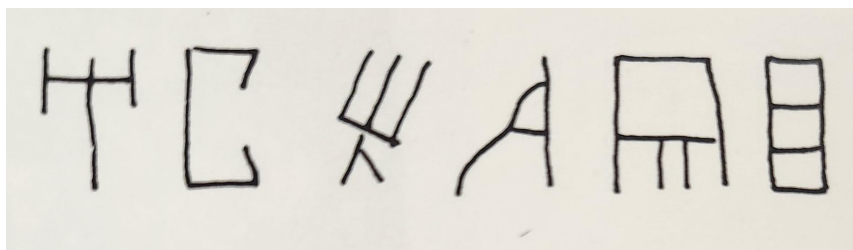


Figure 11: TL Za 1a.1, from Godart and Olivier, GORILA 4, p.59

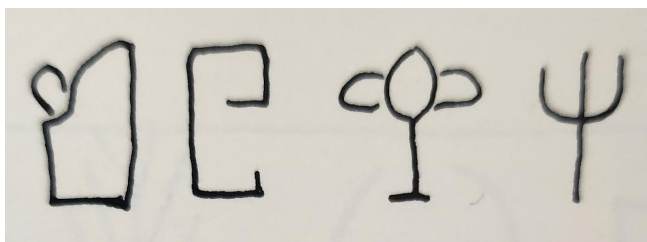


Figure 12: TL Za 1a.2, from Godart and Olivier, GORILA 4, p.59

¹⁹² Godart; Olivier, GORILA V, 58

¹⁹³ *ibid.*

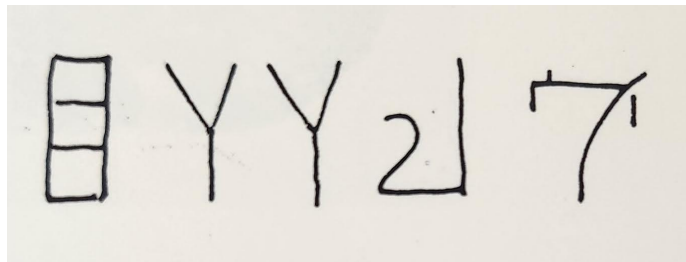


Figure 13: TL Za 1b.1, from Godart and Olivier, GORILA 4, p.59

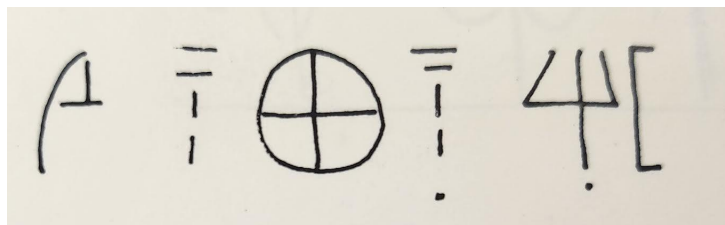


Figure 14: TL Za 1b.2, from Godart and Olivier, GORILA 4, p.59

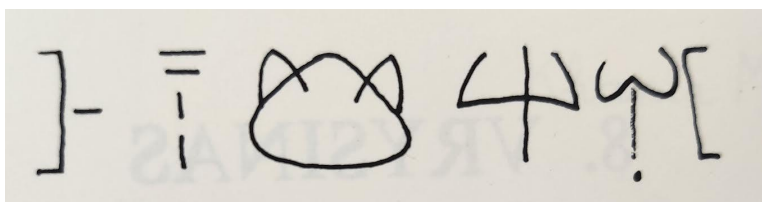


Figure 15: TL Za 1c, from Godart and Olivier, GORILA 4, p.59

Appendix 2: Semiotic Diagrams

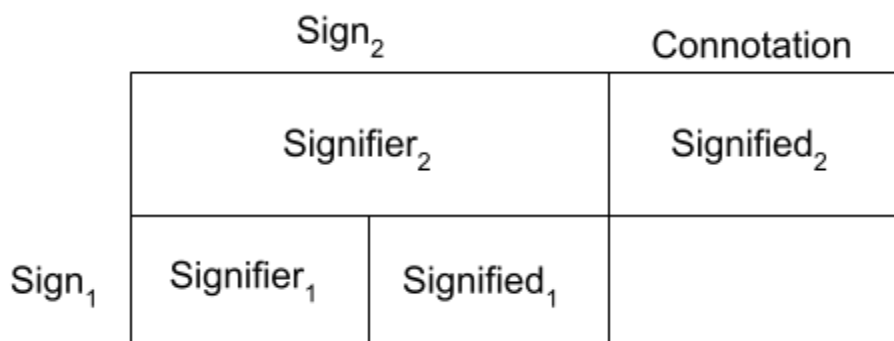


Figure 8: Adapted from Barthes' "Connotation" diagram. *Elements*, 90

	Sign ₂		Connotation
	Umbrella		Rain
Sign ₁	"U-M-B-R-E-L-L-A"	Mental Construction of an umbrella	

Figure 9: two-order system for the sign 'umbrella'

	Sign ₂		Connotation
	(Incomplete)		Ladle sign-function Objects term appears on Objects found alongside ladle
Sign ₁	Linear A Term	(Unknown)	

Figure 10: Two-order system for Linear A terms

Appendix 3: System Charts

The seven systems included in this paper were narrowed down from numerous other potential systems that did not demonstrate any meaningful patterns or provide insight into the terms. Included in this appendix are tables visualizing the documents associated with each Linear A term, as well as tables displaying the documents included in each system. At the end of this appendix is a comprehensive table of every document sharing at least one Linear A pair with a TL Za 1 term.

Comparison of Inscriptions Sharing Graphic Features with TL Za 1a.1 Based on Object Type

Key: O= The character appears in the same relative position in the term as it does on TL Za 1

X= The character appears in the inscription but not in the same relative position as in the term on TL Za 1
 /= Damage causes uncertainty for the identification for this character
 += All characters are the same as in TL Za 1, and the complete term appears just as it does on TL Za 1
 ?= there is a possibility this character appears, however it is too speculative to include in analysis
 -- = This character appears but damage makes it unclear if it appears in the same relative position within the term as in TL Za 1 or not

Document	AB08	AB59	AB28	A301	AB54	AB57	Object
IO Za 8	—			—	—	—	Libation Table
IO Za 2a.1	+	+	+	+	+	+	Libation Table
IO Za 3	+	+	+	+	+	+	Libation Table
IO Za 4	+	+	+	+	+	+	Libation Table
IO Za 7	+	+	+	+	+	+	Libation Table
KO Za 1a	+	+	+	+	+	+	Parallelepiped Base
PK Za 12a	+	+	+	+	+	+	Libation Table
SY Za 1	+	+	+	+	+	+	Libation Table
SY Za 2a	+	+	+	+	+	+	Libation Table
SY Za 3	+	+	+	+	+	+	Libation Table
CR (?) Zf 1.4	o	o					Gold Pin
KH 11.5	o	o					Tablet
KH 39.1	o	o					Tablet
KH 73.3	o	o					Tablet
PK Za 11a	o	o	o	o	o		Libation Table
ZA 10A.2	o	o					Tablet

Document	AB08	AB59	AB28	A301	AB54	AB57	Object
ZA 8.1	O	O					Tablet
ZA 9.4	O	O					Tablet
ZA Zb 3.2	O	O	O	O			Pithos
AP Za 1		O	O	O		O	Libation Table
HT 9b.1					X	X	Tablet
IO Za 6		X	X	X			Bucket
KH 16.2		O	O				Tablet
KH 7b.2		O	O				Tablet
KN 2.2			X	X			Tablet
PS Za 2.2		X	X	X			Libation Table

1a.1 System 1 AB08-AB59

Key: O= The character appears in the same relative position in the term as it does on TL Za 1
X= The character appears in the inscription but not in the same relative position as in the term on TL Za 1
/= Damage causes uncertainty for the identification for this character
+= All characters are the same as in TL Za 1, and the complete term appears just as it does on TL Za 1
?= there is a possibility this character appears however it is too speculative to include in analysis
-- = This character appears but damage makes it unclear if it appears in the same relative position within the term as in TL Za 1 or not

	AB08	AB59	AB28	A301	AB54	AB57	Object
CR (?) Zf 1.4	O	O					Gold Pin
KH 11.5	O	O					Libation Table

	AB08	AB59	AB28	A301	AB54	AB57	Object
KH 39.1	O	O					Pithos
KH 73.3	O	O					Tablet
PK Za 11a	O	O	O	O	O		Tablet
ZA 10A.2	O	O					Tablet
ZA 8.1	O	O					Tablet
ZA 9.4	O	O					Tablet
ZA Zb 3.2	O	O	O	O			Tablet

1a.1 System 2 AB59-AB28-A301

Key: O= The character appears in the same relative position in the term as it does on TL Za 1
X= The character appears in the inscription but not in the same relative position as in the term on TL Za 1
/= Damage causes uncertainty for the identification for this character
+= All characters are the same as in TL Za 1, and the complete term appears just as it does on TL Za 1
?= there is a possibility this character appears, however it is too speculative to include in analysis
-- = This character appears but damage makes it unclear if it appears in the same relative position within the term as in TL Za 1 or not

Document	AB08	AB59	AB28	A301	AB54	AB57	Object
PK Za 11a	O	O	O	O	O		Libation

Document	AB57	AB31	AB31	AB60	AB13	Object
PS Za 2.2	+	+	+	+	+	Libation Table
PL Zf 1	+	+	+	+	+	Silver Pin
KN Zc 7.2	O	O	X	X		Cup
IO Za 2-c.1	O	O	O	O	?	Libation Table
IO Za 9	O	O	O			Libation Table
KN Za 10a-b	O	O	O	O		Libation Table
ZA 15a.6	O	O				Tablet
IO Zb 10		O	O	O	O	Altar Fragment
PK Za 4		O	O	O		Conical Cup
PK Za 11b-c		O	O	O	O	Libation Table
PK Za 12b				—	—	Libation Table
PR Za 1c		O	O	O	O	Libation Table
HT 23a.4-5		X	X		O	Tablet
HT 27a.3			X	X		Tablet
HT 27a.5			—	—		Tablet
HT 30.3			X	X		Tablet
HT 62 [+] 73.1			X	X		Tablet
KH 5.2		O	O			Tablet
ZA 11a.1				—	X	Tablet

1b.1 System 1 AB57-AB31-AB31

Key: O= The character appears in the same relative position in the term as it does on TL Za 1

X= The character appears in the inscription but not in the same relative position as in the term on TL Za 1

/ = Damage causes uncertainty for the identification for this character

+ = All characters are the same as in TL Za 1, and the complete term appears just as it does on TL Za 1

? = there is a possibility this character appears, however it is too speculative to include in analysis

-- = This character appears but damage makes it unclear if it appears in the same relative position within the term as in TL Za 1 or not

Document	AB57	AB31	AB31	AB60	AB13	Object
IO Za 2-c.1	O	O	O	O	?	Libation Table
IO Za 9	O	O	O			Libation Table
KN Za 10a-b	O	O	O	O		Libation Table

1b.1 System 2: AB31-AB31-AB60

Key: O = The character appears in the same relative position in the term as it does on TL Za 1

X = The character appears in the inscription but not in the same relative position as in the term on TL Za 1

/ = Damage causes uncertainty for the identification for this character

+ = All characters are the same as in TL Za 1, and the complete term appears just as it does on TL Za 1

? = there is a possibility this character appears, however it is too speculative to include in analysis

-- = This character appears but damage makes it unclear if it appears in the same relative position within the term as in TL Za 1 or not

Document	AB57	AB31	AB31	AB60	AB13	Object
IO Za 2-c.1	O	O	O	O	?	Libation Table
KN Za 10a-b	O	O	O	O		Libation Table
IO Zb 10		O	O	O	O	Altar Fragment
PK Za 4		O	O	O		Concial Cup
PK Za 11b-c		O	O	O	O	Libation Table
PR Za 1c		O	O	O	O	Libation Table

Comparison of Inscriptions Sharing Graphic Features with TL Za 1b.2 Based on Object Type

Key: O = The character appears in the same relative position in the term as it does on TL Za 1

X = The character appears in the inscription but not in the same relative position as in the term on TL Za 1

/ = Damage causes uncertainty for the identification for this character

+ = All characters are the same as in TL Za 1, and the complete term appears just as it does on TL Za 1

? = there is a possibility this character appears, however it is too speculative to include in analysis

-- = This character appears but damage makes it unclear if it appears in the same relative position within the term as in TL Za 1 or not

Document	AB10	AB06	AB77	(further content/indication of further content)	Object
MA 2c.1	—	—			Tablet
IO Za 9	\	+	+	[-AB06-AB41	Libation Table
IO Za 2c-d.1	+	+	+	AB06-[-AB41	Libation Table
KO Za 1C	+	+	+	AB06-AB41	Parallelepiped base
PK Za 8b	+	+	+	AB06-AB41	Libation Table
SY Za 2b	+	+	+	AB06-AB41	Libation Table
PK Za 11c	O	O	AB26 precedes	AB06-AB37	Libation Table
PK Za 12c	O	O	AB26 precedes	AB57-AB41	Libation Table
KN Zb 40.1-2	X	X			Pithoid Jar

Comparison of Inscriptions Sharing Graphic Features with TL Za 1c Based on Object Type

Key: O= The character appears in the same relative position in the term as it does on TL Za 1
X= The character appears in the inscription but not in the same relative position as in the term on TL Za 1
/= Damage causes uncertainty for the identification for this character
+= All characters are the same as in TL Za 1, and the complete term appears just as it does on TL Za 1
?= there is a possibility this character appears, however it is too speculative to include in analysis
-- = This character appears but damage makes it unclear if it appears in the same relative position within the term as in TL Za 1 or not

	Preceding content/indication of preceding content	AB06	AB80	AB41	Further Content/ indication of further content	
AP Za 2.1	AB28-AB39	X	X			Libation Table
HT 43.1			—	—	AB51	Tablet
HT 5.2	Damage preceding AB80	?	—	—		Tablet
HT Zd 155		X	X			Stucco
IO Za 2d.1	AB28-AB49	X	X			Libation Table
KO Za 1c-d	AB28-AB39	X	X			Parallelepiped Base
VRY Za 1a	AB28-AB29	X	X			Libation Table
ZA 11a.2]-AB60		—	—		Tablet

Ic System

Key: O= The character appears in the same relative position in the term as it does on TL Za 1
X= The character appears in the inscription but not in the same relative position as in the term on TL Za 1
/= Damage causes uncertainty for the identification for this character
+= All characters are the same as in TL Za 1, and the complete term appears just as it does on TL Za 1
? = there is a possibility this character appears, however it is too speculative to include in analysis
-- = This character appears but damage makes it unclear if it appears in the same relative position within the term as in TL Za 1 or not

	Preceding content/indication of preceding content	AB06	AB80	AB41	Further Content/ indication of further content	
AP Za 2.1	AB28-AB39	X	X			Libation Table
HT Zd 155		X	X			Stucco
IO Za 2d.1	AB28-AB49	X	X			Libation Table
KO Za 1c-d	AB28-AB39	X	X			Parallelepiped Base
VRY Za 1a	AB28-AB29	X	X			Libation Table

KY Za 2 System

Key: O= The character appears in the same relative position in the term as it does on TL Za 1
X= The character appears in the inscription but not in the same relative position as in the term on TL Za 1
/= Damage causes uncertainty for the identification for this character
+= All characters are the same as in TL Za 1, and the complete term appears just as it does on TL Za 1
?= there is a possibility this character appears, however it is too speculative to include in analysis
-- = This character appears but damage makes it unclear if it appears in the same relative position within the term as in TL Za 1 or not

Document	Preceding	AB01	AB80	AB04	Following	Object Type
AR Zf 1	AB28	O	O	O		Gold Axe
AR Zf 2	AB28	O	O	O		Silver Axe
PK 1.8 ¹			X	X	AB37	Tablet

All Documents Sharing a Linear A Character Pair with TL Za 1

O= The character appears in the same relative position in the term as it does on TL Za 1

X= The character appears in the inscription but not in the same relative position as in the term on TL Za 1

/= Damage causes uncertainty for the identification for this character

+= All characters are the same as in TL Za 1, and the complete term appears just as it does on TL Za 1

?= there is a possibility this character appears, however it is too speculative to include in analysis

-- = This character appears but damage makes it unclear if it appears in the same relative position within the term as in TL Za 1 or not

	AB0 8	AB 59	AB 28	A 301	AB 54	AB 57	AB 61	AB 58	AB 16	AB 27	AB 57	AB 31	AB 31	AB 60	AB 13	AB 10	AB 06	AB 77	[]	AB 06	AB 80	AB 41	[
AP Za 1		O	O	O																				
AP Za 2.1																				AB 28- AB 39	X	X		
CR (?) Zf 1	O	O																						
HT 111a.2									X	X														
HT 132									X	X														
HT 23a.4-5												X	X		O									
HT 27a.3													X	X										
HT 27a.5													—	—										
HT 30.3													X	X										
HT 43.1																						—	—	AB 51

