1 Introduction and Theoretical Framework

1.1 SETTING THE SCENE

The Linear A and Linear B scripts (henceforth LA and LB) sit within the broader context of writing and writing practices in use in the Late Bronze Age Aegean. LA is the older form, attested in the period *c.* 1800–1450 BCE (MM IIB–LM IB) and used to write the still poorly understood Minoan language. LB is slightly later, spanning *c.* 1400–1190 BCE (LM/LH II–IIIA1–LH IIIC) and rendering the most archaic Greek dialect known to us, deciphered only in 1952 (Table 1).[1]

Table 1 *Chronological framework of LA and LB*[2]

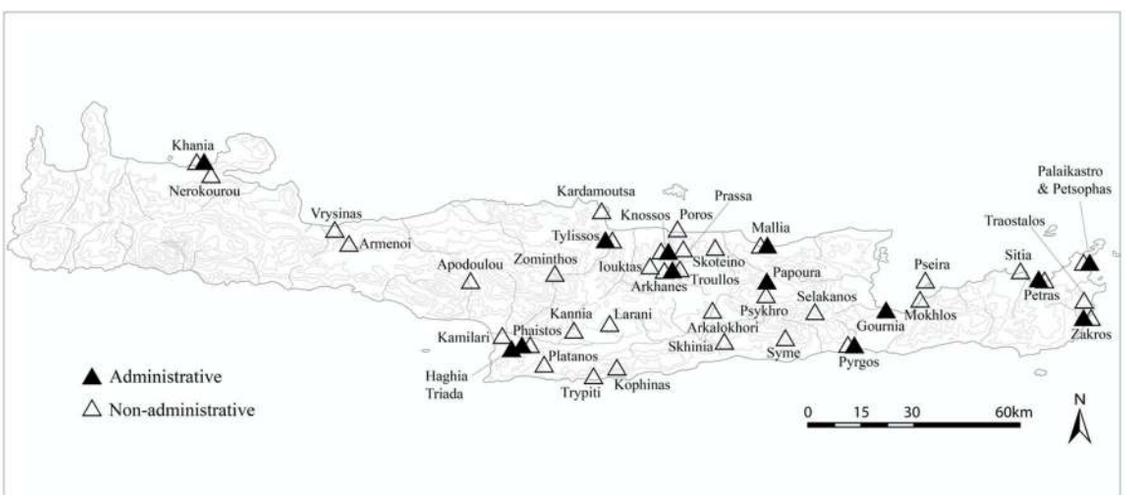
Chronology	**Crete**			**Mainland**		
High Dating	**Pottery Phase**	**Cultural Phase**	**Scripts**	**Pottery Phase**	**Cultural Phase**	**Scripts**
1900–1800	MM II	Proto-Palatial	CH; LA	MH III		-
1800–1700	MM III		CH; LA	MH III		-
1700–1600	LM IA	Neo-Palatial	LA	LH I	Early Mycenaean	LA
1600–1450	LM IB		LA	LH IIA		?
1450–1400	LM II	Final-Palatial	LA?	LH IIB		?
1400–1375	LM IIIA1		LB	LH IIIA1	Late Mycenaean	LB
1375–1300	LM IIIA2	Post-Palatial	LB	LH IIIA2		LB
1300–1200	LM IIIB		LB	LH IIIB		LB
1200–1050	LM IIIC		-	LH IIIC		LB

As to geographical distribution, LA has been recovered on Crete and the Aegean islands, with some sporadic attestations in Mainland Greece, western Anatolia, and the Levant (Figures 1–2). By contrast, LB shows a more limited distribution, as it is only attested in Mainland Greece and on Crete. In Mainland Greece it is widespread within the area that in the first millennium was Greek-speaking, but on Crete it was discovered only at two sites (Knossos and Khania,

[1] For a detailed account of the LB decipherment process, see esp. Chadwick 1967, Pope 2008, pp. 1–23.
[2] This Table follows the 'high' dating for the Aegean absolute chronology (Warren and Hankey 1989). Absolute dates are rounded for ease of reference, but should be used cautiously. As reflecting the results of more recent dating techniques based on work in the physical sciences (esp. radiocarbon dating), the high chronology is here preferred over the traditional 'low' chronology, based on archaeological-historical dating. There is still considerable controversy over which chronology to take as more reliable and scholars' opinions differ significantly (for a collection of papers discussing the unreconciled high and low Aegean absolute chronologies, see Manning and Bruce 2009). Relative chronology is here expressed by means of pottery phases, with their internal subdivisions, to be put in correlation with geographically based cultural phases (for cultural phases as an alternative to the traditional pottery phase system in the Aegean, see Renfrew 1972). Illustrative discussions of absolute and relative Aegean chronologies and the main points of debate are given in Shelmerdine 2008, Manning 2010.

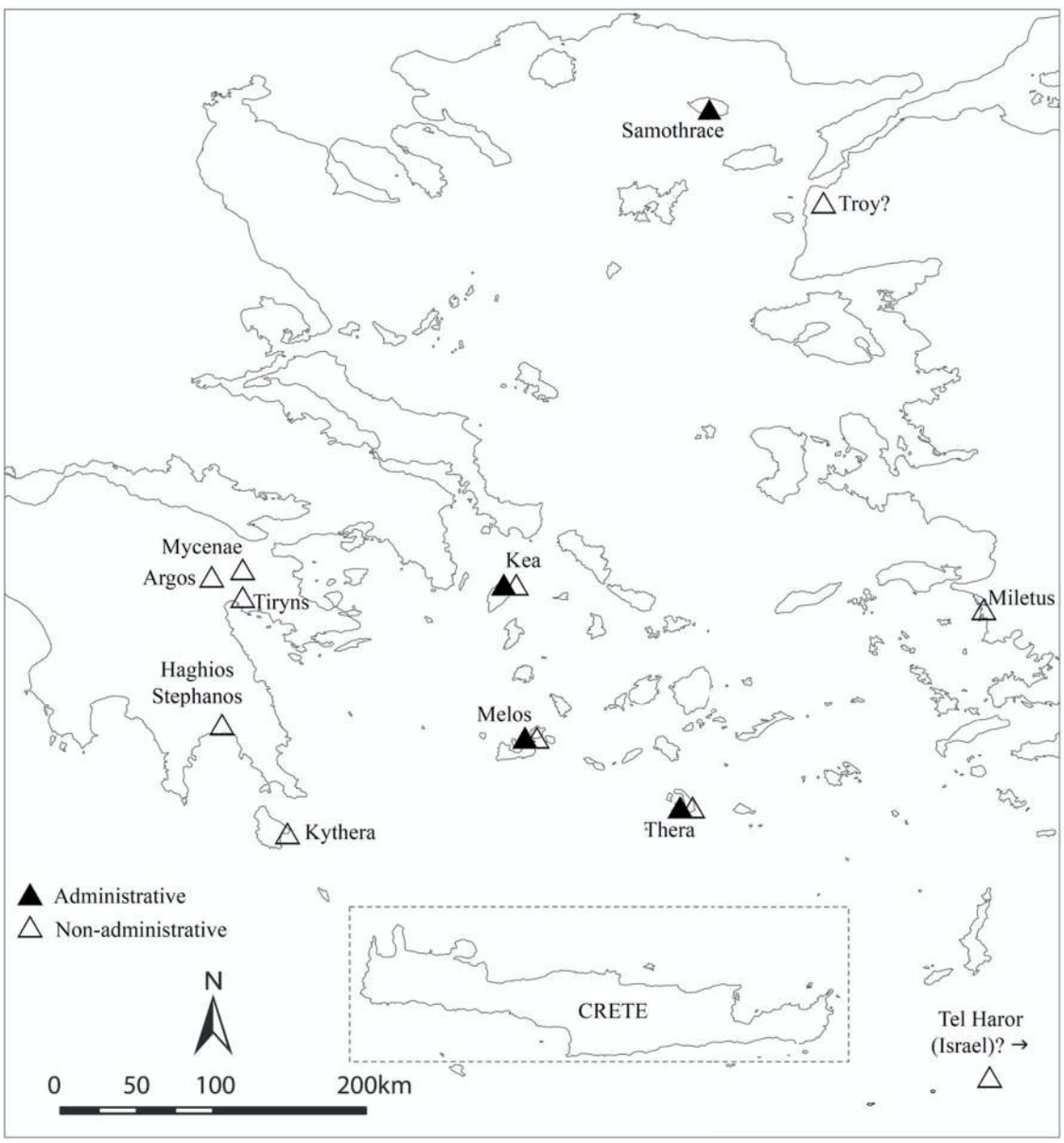
and possibly also Sissi)[3] and is sporadically attested painted on vessels (transport stirrup jars) elsewhere on the island (Figure 3).[4]

FIGURE 1 Geographical distribution of LA documents on Crete[5]



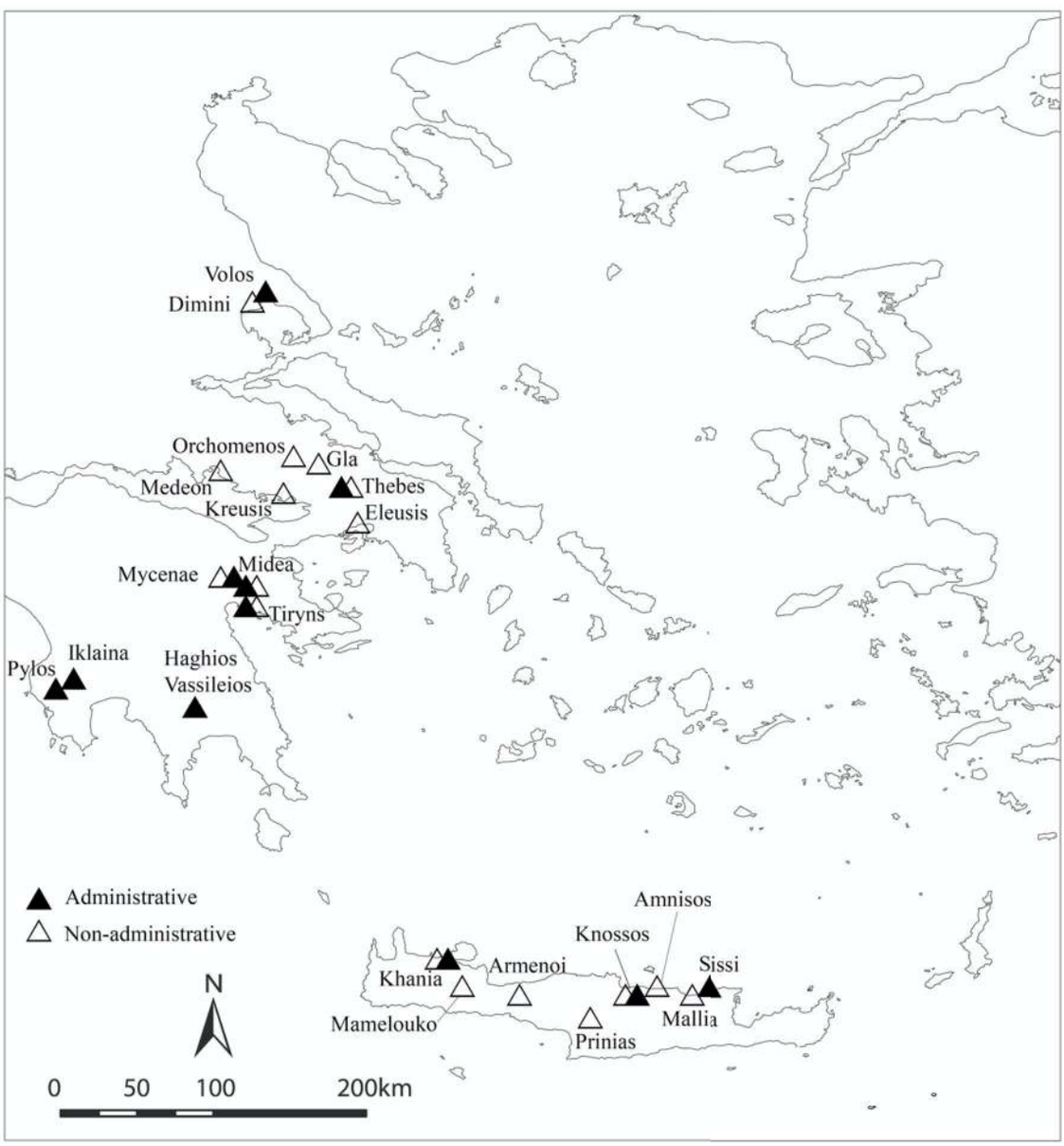
[3] A tablet fragment inscribed in LB was found at Sissi (Driessen *et al.* 2012, p. 24); however, it is not clear whether it was produced at that site.
[4] For an overview of the chronological and geographical distribution of LB evidence, see esp. Driessen 2008; for LA evidence, see below Chapter 2.1.1.
[5] Map prepared by Yannis Galanakis and Ester Salgarella.

FIGURE 2 Geographical distribution of LA documents outside Crete[6]



[6] Map prepared by Yannis Galanakis and Ester Salgarella.

FIGURE 3 Geographical distribution of LB documents[7]



[7] Map prepared by Yannis Galanakis and Ester Salgarella.

With respect to the amount and nature of the extant evidence, there are around 6,000 documents inscribed in LB, while only around 1,400 in LA. Both LA and LB show two main contexts of use, administrative and non-administrative, with the majority of the evidence coming from administrative contexts for accounting purposes. These are: in LA, clay tablets, sealings, and sealed documents; in LB, clay tablets, labels, and noduli.[8] LB shows a restricted usage, limited to the bureaucratic purposes of palatial administrations, with only a few inscribed objects coming from non-administrative contexts (clay vases and stirrup jars, metal and ivory objects).[9] On the other hand, LA shows a wider use outside administration, with a good variety of non-administrative objects (especially religious) bearing LA inscriptions.[10] The earliest evidence for Linear B comes from Knossos on Crete at a time when LA had apparently already – just – ceased to be used. There is, consequently, a significant time gap when neither of the two is attested (around *c.* 1450–1400 BCE). There is sufficient evidence, both palaeographical and epigraphical, to conclude that LB is derived from LA, but the precise nature of this relationship has not yet been fully understood.

The present monograph tackles the complex issue of the relationship between these two writing systems. In particular, this work focuses on the way(s) in which the latter script (LB), understood to have been developed out of the former (LA), was modified and adapted to suit the needs of the Greek language. In order to shed light on the LA to LB transmission process, two areas of investigation are explored in this analysis: on the one side, the structure, on the other side, the palaeography of both LA and LB. These two aspects are key to understanding the script transmission process as they represent the two main broad components of any writing system, accounting for functional (structure) and formal (palaeography) features.

To begin with, the backdrop is worth considering against which the nomenclature and definition of 'LA' and 'LB' were developed, as well as the way in which these scripts came to be understood as concepts, which is the focus of this chapter (especially 1.2, 1.3). Despite showing some clearly noticeable differences, initially LA and LB were approached as a single

[8] For a collation of images showing the different administrative document types, see: for LA, Tomas 2010c, p. 348, fig. 26.2; for LB, Palmer 2008, p. 61, fig. 2.1.
[9] The main editions of LB administrative documents are: *CoMIK* (Knossos); *PTT*, *PNPWM* (Pylos); *TITHEMY* (Tiryns, Thebes, Mycenae); *Fouilles Cadmée* (Thebes); Sacconi 1974b (Mycenae). For non-administrative evidence, see esp.: Sacconi 1974a, 2012, Raison 1968 (inscriptions on clay vases); van Alfen 2008, Haskell *et al.* 2011, Judson 2013 (inscriptions on stirrup jars).
[10] The main edition of LA inscriptions (both administrative and non-administrative) is *GORILA*. For LA roundels, see Hallager 1996; for stone vases, see Davis 2014. See also Chapter 2.1.1.

whole and referred to as 'Minoan' scripts.[11] After the decipherment of LB as Greek, LA and LB were approached separately, since linguistically different. Research focused primarily on LB from two perspectives: linguistic (allowing for diachronic linguistic comparison with later stages of Greek and for Indo-European reconstruction), and epigraphical, although historical, economic, sociological, and archaeological approaches were also found from the beginning.[12] Archaeological investigation, combined with textual evidence, played a major role in reaching as thorough an interpretation of LB documents as possible.[13] LA was dealt with primarily in relation to LB, and mostly from a linguistic perspective.[14] Scholars tried to understand how the two writing systems related to one another, in particular to find out how LB developed from LA.[15] A number of studies were dedicated to different aspects of LA alone, although to a much lesser extent if compared with the academic output on LB.[16]

In the 1970s work on the LA and LB scripts started off with an assessment of their respective palaeographical features.[17] By comparing LA and LB syllabaries, scholars analysed the formal overlap between the two in order to assess the degree of homomorphy in the sign repertory. Arguments have been put forward for homomorphy to also imply homophony (at least in some instances) and for taking the homomorphy-homophony principle, however controversial to an extent, as reasonably reliable.[18] As a result, LA sign sequences can be 'read' by retrospectively

[11] Evans, *SM I*. For terminological issues and the influence of Evans' interpretations, see Chapter 1.2.
[12] For a detailed introduction to LB studies and scholarship, see esp.: Duhoux and Morpurgo Davies 2008, 2011, 2014; Judson (forthcoming, introductory chapter). The main reference book for LB documents in context and their interpretation will soon become *Docs*^{3} (forthcoming). The most recent and comprehensive handbook dedicated to LB epigraphy is Del Freo and Perna 2019.
[13] An illustrative example of integration of different data is Bennett's grid of Rooms 7–8 (*Archive Complex*) at Pylos, which allowed us to understand the precise position of LB tablets. Knowledge of find-spots is of great importance as it helps to understand administrative (and palaeographical) relationships, and to disentangle the intricate strands of the tablets' chronology.
[14] Duhoux 1978 remains a cornerstone for an in-depth examination of LA from a linguistic standpoint. Davis 2014, pp. 143–278 represents the most recent overall attempt at a linguistic analysis of LA and the Minoan language.
[15] The most relevant studies on the origin of LB (chronologically listed) are: Pope 1961–2, pp. 310–19; Sacconi 1976; Olivier 1979; Hooker 1979, 1988; Heubeck 1982; Godart 1984; Duhoux 1985; Palaima 1988a–b; Palaima and Sikkenga 1999; Driessen 2000; Tomas 2003; Bennet 2008; Melena 2014a; Steele and Meissner 2017; Meissner and Steele 2017.
[16] See in particular the following: on LA fractional system, Bennett 1950, 1980, 1999, Facchetti 1994; on LA administrative documents, see esp. Hallager 1996, Schoep 2002; on LA scribes, see § *Linear A palaeography* below in 1.1.1; on LA and LB administrative systems, esp. Tomas 2003, 2010a, 2012.
[17] The most comprehensive work assessing LA in full after Evans' *SM I* was Packard 1974 (with an LA dictionary). Brice 1961 edited some LA inscriptions from Evans' and Myres' notes. Raison and Pope published on LA signs and vocabulary (1977, 1978, 1980, 1994). *GORILA* systematised and standardised the LA sign inventory and made available in print the whole corpus of LA inscriptions.
[18] Hooker 1975 and 1989–90 and Godart 1984 were the first to carry out this analysis by comparing LA-LB sign pairs. Duhoux 1989 verified most accurately the validity of the homomorphy-homophony equivalence by carrying out contextual tests (e.g. sign frequency and alternation). The legitimacy of the backward projection of LB sound values to LA has recently been discussed by Steele and Meissner 2017. The most relevant studies on LA phonetic

applying to LA homomorphic signs their respective LB phonetic values.[19] The possibility of reading LA brought to the fore the problematic question of the nature and linguistic affiliation of the Minoan language encoded in LA, which still remains open since the script remains undeciphered.[20] Since the analysis conducted in this monograph is primarily concerned with the structural and palaeographical aspects of LA and LB, a brief summary of the main contributions so far made in these two areas is given below. The point is to see what has been done so far (and with what results) and what is still missing.

1.1.1 Palaeography

Linear A palaeography

GORILA I–V (Godart and Olivier, 1976–85) still represents the only comprehensive work on LA palaeography as a whole. In particular, *GORILA* V offers a list of 'standardised' LA signs in numerical order (classification by shape), along with plates showing the main palaeographical variants. This classification and numbering system is the one currently used. Godart also drew up a *Concordance générale*,[21] advancing possible scribal hand attributions (eighteen hands detected, but allocation criteria not explained). Before this, the first analysis of LA scribal hands was carried out by Raison and Pope.[22] Further work on LA scribal hands

values are: Hooker 1975; Olivier 1975; Pope and Raison 1978; Duhoux 1978, 1989; Godart 1984; Consani and Negri 1999; Palaima and Sikkenga 1999; Steele and Meissner 2017; Meissner and Steele 2017. For further discussion of the homomorphy-homophony equivalence, with examples, see Chapter 1.4.

[19] A phonetic transcription of LA texts is given in Consani and Negri 1999, but not in *GORILA*, where sign sequences are simply transnumerated. Phonetic transcription of LA documents is also available online on Younger's webpage: http://people.ku.edu/~jyounger/LinearA/

[20] At present Minoan is understood to represent an isolated language (i.e. not affiliated to any of the linguistic families so far known), apparently showing agglutinative characteristics (see esp. Duhoux 1978, who demonstrated the heavy use of affixes in Minoan). By applying the etymological method, scholars have proposed to take Minoan as a Semitic language (esp. Gordon 1966, 1969; Best 1972, 2001) or Anatolian (esp. Palmer 1958, 1968; Finkelberg 1990–1; Brown 1990, 1993), or to be somehow connected to Hurrian (esp. Monti 2002, 2005, 2006; van Soesbergen 2017) or Etruscan (esp. Facchetti 2001; Facchetti and Negri 2003). Other proposals have also been advanced (see Davis 2014, p. 190 for further references). These attempts at identifying the language behind LA are not supported by enough probative evidence and cannot yet be deemed successful (until further research is carried out). The main reasons why LA still resists decipherment are the paucity of evidence, the limited (and apparently formulaic) vocabulary and syntax, and the lack of any agreed cognate language. For decipherment prospects and the most recent thorough and wide-ranging linguistic analysis of LA, see Davis 2014, pp. 156–278.

[21] *GORILA* V, pp. 83–113.

[22] Raison and Pope 1971.

at Haghia Triada only was undertaken by Militello,[23] and an appreciation of Haghia Triada scribal activity is given by Tomas.[24]

Linear B palaeography

Bennett laid the foundations for the study of LB palaeography in his doctoral dissertation (*The Minoan Linear Script from Pylos*),[25] where he set out the basic criteria for the identification of scribal hands, and in the seminal article 'Some Local Differences in the Linear B Script',[26] where he detected the existence of different graphic 'traditions'. Based on Bennett's criteria, two pivotal studies on LB palaeography followed: *Les Scribes de Cnossos*,[27] the first palaeographical analysis of Knossos tablets, and *The Scribes of Pylos*,[28] as an independent check on Bennett's work. A third significant contribution is Driessen's study of the tablets from the *Room of the Chariot Tablets* at Knossos,[29] where he advanced good reasons for regarding this deposit as earlier than the other Knossos tablet deposits. Recently, a new approach to palaeographical analysis has been developed by Skelton,[30] who used phylogenetic systematics as a statistical method to trace the evolution of LB sign shapes. Interestingly, her results match those obtained by Driessen, whose examination was carried out by means of traditional palaeograhical analysis. Finally, Judson's palaeographical analysis of LB undeciphered signs is worth mentioning as she demonstrates, remarkably, that 'there is no overall correlation between scribes' palaeographical similarities or differences and their administrative relationships',[31] as well as challenging the reliability of dating on stylistic grounds. A more detailed discussion on LB palaeography is given in Chapter 3.

[23] Militello 1989. He identified twenty-four hands, and carefully compared and modified Raison and Pope's and Godart's classifications.
[24] Tomas 2011. See also Tomas 2003.
[25] Bennett 1947.
[26] Bennett 1947.
[27] Olivier 1967.
[28] Palaima 1988c.
[29] Driessen 2000.
[30] Skelton 2008, 2011.
[31] Judson 2016, p. 229.

1.1.2 Structure

Linear A structure

In her assessment of LA tablets for reconstructing Neopalatial administration, Schoep worked on the structure of the LA script, especially in terms of the function performed by sign-groups.[32] This represents the main attempt to analyse LA structure. Schoep also dealt with the language behind LA,[33] a topic which has been the main focus of the more linguistic-based approaches by Duhoux and Davis.[34] It is worth observing that any linguistic study of a corpus language is, to an extent, a structural examination of a writing system, inasmuch as it involves an investigation of the relationship between the phonemic and graphemic components, as well as the structural characteristics, of the given system (e.g. spelling rules).

Linear B structure

Most work on the structure of LB was done as a necessary step for the decipherment process (especially Kober and Bennett). LB signs are classified based on functional categories (syllabograms, logograms, adjuncts, monograms, ligatures etc.), but no further research on LB structure has been carried out apart from some work on attempting to correlate LA and LB logographic signs. This was done primarily by Schoep, who pinpointed cases where the same LA logograms seem to have continued into LB preserving the same function, and other cases where logograms only appear to be homomorph.[35] Following on, Tomas compared the LA and LB logograms attested in Haghia Triada (LA) and the *Room of the Chariot Tablets* at Knossos (LB) with the number of their occurrences.[36] Petrakis recently carried out a functional, as well as structural, analysis of LB logograms (which he prefers to call sematograms) in both their synchronic (nature and employment) and diachronic (historical development) aspects.[37]

However valuable these studies are, a comprehensive account assessing LA as a whole is so far lacking, as no one has recently put forward any thorough review of both LA palaeography and structure. For this reason, it is my intention to undertake this task, in order to establish firmer grounds on which to base further comparisons between these two writing systems, so as

[32] Schoep 2002, esp. pp. 36–7 and ch. 3.
[33] Schoep 2002, pp. 43–66.
[34] Duhoux 1978, Davis 2014.
[35] Schoep 2002, ch. 3.
[36] Tomas 2003, pp. 303–6.
[37] Petrakis 2017b.

to come to a better understanding of their precise relationship. Moreover, the way in which LB was studied before the decipherment (especially Kober's work on structure, and Bennett's focus on palaeography and sign classification) represents an instructive parallel, as a comparable approach, *mutatis mutandis*, is needed for LA. A formal (palaeography) and functional (structure) re-classification of LA signs is necessary and key to any future decipherment prospects. Therefore, in my view what is missing and needs to be done is set out below.

a) **Structure**: a thorough analysis of the structure of LA as a whole, to be compared with the situation observable in LB. This will allow us to see which categories of signs (especially those functionally working as logograms) and which sign configurations were carried on.

b) **Palaeography**: although we are in a better position as regards LB, much work still needs to be done. This is especially true for LA, since *GORILA*, our main and only palaeographical tool, has a number of flaws, as we shall see in the introduction to Chapter 2.

1.2 QUESTIONING CULTURAL (AND ETHNIC) 'LABELS'

Before analysing LA and LB as outlined above, it is worth exploring the context in which they 'were (re-)born' to us, i.e. the origin of their nomenclature and classification as separate writing systems, which is the way we currently interpret them. The research question addressed here is: why are LA and LB considered two different scripts?

1.2.1 Evans' legacy

1.2.1.1 The pioneering responsibility of definition

We owe to Evans two important classifications relative to the 'Minoan' civilisation whose remains he uncovered on Crete: the tripartite chronological subdivision of Bronze Age Crete, and the identification and classification of the Bronze Age Cretan scripts, as discussed below.