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INTERDISCIPLINARITY IN ARCHAEOLOGY AND HISTORICAL LINGUISTICS: THE CASE OF ALPHA

INTERDISCIPLINARIDADE EM ARQUEOLOGIA E LINGUÍSTICA HISTÓRICA: O CASO DO ALPHA

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Interdisciplinarity in Archaeology and Historical Linguistics: the case of ALPHA

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Abstract: Through a comparative analysis of archaic Greek alphabets with the Minoan hieroglyphs, the Linear A and B signs, the Cypro-Minoan and Classical Cypriot syllabaries, as well as other ancient scripts in Mediterranean and Mesopotamia areas (e.g., Egyptian hieroglyphs), the paper examines (a) the graphical shaping of the letter alpha, and (b) its suggested phonetic value throughout the years. In doing so, an interdisciplinary approach is applied, combining research from the areas of historical linguistics, epigraphy archaeology, and phonosemantics-linguistics. This is an ongoing research and its existing data so far combat the wide spread belief that the archaic Greek alphabet is originated by the Phoenician alphabet, demonstrating evidence of language similarities (in terms of (a), and (b)), even in early Neolithic Greece and the Balkans. The paper proposes the adoption of an interdisciplinary methodology in examining and revisiting research in epigraphy and historical linguistics.

Keywords: Greek Alphabet, History of Alphabet, Letter Alpha, Phonosemantics of Alpha, Interdisciplinary Methodology.

Resumo: Através de uma análise comparativa dos alfabetos gregos arcaicos com os hieróglifos minoicos, os sinais da escritas Linear A e B, Cypro-minóica e cipriotas clássicos, bem como outras antigas escritas no Mediterrâneo e na Mesopotâmia (por exemplo, hieróglifos egípcios), o artigo examina (a) a formação gráfica da letra alfa, e (b) seu valor fonético ao longo dos anos. Uma abordagem interdisciplinar é seguida, combinando a investigação das áreas de linguística histórica, arqueologia, epigrafia e fonosemântica-linguística. Esta é uma pesquisa em andamento e seus dados já existentes combatem até agora a ampla crença de propagação que o alfabeto grego arcaico é originado pelo alfabeto fenício, demonstrando a evidência de semelhanças de linguagem (em termos de (a) e (b)), mesmo no início do Neolítico Grécia e nos Balcãs. Este artigo propõe a adoção de uma metodologia interdisciplinar na análise, a fim de examinar e rever a investigação em epigrafia e linguística histórica.

Palavras-chave: alfabeto grego, história do alfabeto, letra alfa, fonosemântica de alfa, metodologia Interdisciplinar.

INTRODUCTION

The theory that dominates international scholarship (e.g. CLODD, 1900; DEFRANCIS, 1989; HORROCKS, 2010; JEFFERY, 1990; MANDEL, 1982; PORUCIUC, 2009) with regards to the origin of the alphabet is the one that considers Phoenicians the transmitters of the letters to the Greeks, who in turn, invented the vowels, and the following three consonants: Φ, Χ, Ψ, thus, transferring the alphabet in the form and order we know it today. In particular, it is broadly supported that:

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(a) The name 'alphabet' is derived from the names of the two letters: alpha and beta, which stand at the beginning of the Greek alphabet, and which are identical with the names 'aleph' and 'beth' born by the corresponding Hebrew characters.

(b) The names 'aleph' and 'beta' were meaningless in Greek, but significantly meaningful in Hebrew; aleph means an 'ox' and beth a 'house'.

(c) Due to these meanings (that exist in Hebrew), the names of the Greek letters testify to a Semitic origin. The arrangement of the characters evidenced that they were handed over in the form of a complete alphabet by the Semites to the Greeks.

Morpungo Davies (1986, p. 57) position summarizes and explains the above theses[2]:

> […] it [*the Semitic alphabet*] is the ancestor of our own alphabet. Letter shapes, letter values, letter ordering, and letter names are derived from forms of writing used for Semitic languages (probably Phoenician). We are back again to an Indo-European language which borrows a script used for Semitic. The traditional view is that the Greeks borrowed an alphabet where each sign represented a consonant but the vowels were ignored: their great contribution consisted in adapting some of the old signs or devising new signs for the vowels; a less traditional view is that we ought to understand the so-called Semitic alphabets as syllabaries where each sign indicated a consonant followed by a potential vowel and we ought to attribute to the Greeks the discovery of the alphabetic principle according to which different signs are used in correspondence to different segments, be they vowels or consonants.

Moreover, in support of (a) to (d) theses, usually the Greek alphabet is compared with the letters and/or symbols found north and/or south of Egypt and the Levant (e.g. early Egyptian or proto-Sinaitic script; early Phoenician or proto-Canaanite; Byblos syllabary), which date in the second millennium BCE. Through such comparisons some scholars claimed that: the Greeks changed the alphabet without being aware of the fact that the phonetic symbols of the Phoenicians consisted exclusively of signs for independent consonants (DEFRANCIS, 1989, p. 177; MANDEL, 1982, p. 32). Consequently, Greeks adopted the names of the letters; constructed the vowels through a number of Phoenician consonantal signs; and added a number of non-Phoenician signs, of obscure origins (MANDEL, 1982; PORUCIUC, 2009). This transformation took place during

[2] Some scholars have criticized such theses. For example, Bernal (1987) argued that in the 1920s, the 'Aryan model' was raised as an extreme one, the Phoenicians were very like the Jews (Semites) and the alphabet was seen as the remnant of Semitic cultural influence on Greece. Additionally, Eco (1995) pointed out that language (its sounds and letters) was seen not as a representation of pre-existing things, but the very form by which the elements of the universe are molded. Thus, "the language of creation was perfect not because it merely happened to reflect the structure of the universe in some exemplary fashion; it created the universe. Consequently it stands to the universe as the cast stands to the object cast from it" (ECO, 1995, p. 31-32). Therefore, Hebrew remained the sacred mother (since the names were given by Adam), and in this sense, was considered the proto-language. Also, for a more recent criticism, see Haarmann (2009).

the latter part of the 9th c. BCE when examples of the novel alphabet appear on the 8th c. BCE pottery. Others like Jeffery (1991) supported the transmission of the symbols from Greeks living in Phoenicia (rather than from Phoenicians visiting Greece), hypothesizing that linguistically unsophisticated Greek traders heard alien sounds and saw their equivalent odd-looking scribings, which equally unsophisticated Phoenicians demonstrated them.

However, due to the archaeological discoveries in Egypt and Levant that pushed back the invention and/or use of the alphabet around 2000 BCE, urged some scholars to observe - on purely epigraphic grounds - how little the alphabet changed during the entire first millennium BCE. This latter claim is supported by the fact that there is a remarkable unity of alphabet (from the 13th to the 8th c. BCE) in widely separated countries (e.g. BERNAL, 1987; JENSEN, 1970; ULLMAN, 1934).

Other research focused on comparing the letters of the alphabet with symbols from Egypt and Mesopotamia and thus, favoring the idea of Mesopotamia as the cradle of civilization. Hence, it was also widely believed that many European languages were derived from the Phoenician alphabet through their Sumerian parent. This notion of *ex oriente lux* dominated and produced well-known, wide-spread, misconceived truisms: (i) that the Sumerian civilization is the oldest known in the world (an assumption which does not hold true), thus serving as a prototypical model for research on ancient cultures; and (ii) since Sumerian civilization is canonical, "research looks for a Mesopotamian fabric of high culture, wherever an ancient civilization might have emerged" (HAARMANN, 2009, p. 9).

However, archaeological discoveries in Egypt from the pre-dynastic period, and artefacts with symbols in the Neolithic cultures of South-Eastern Europe, are older than the oldest texts from Uruk, thus calling for a revision of such established conceptions (HAARMANN, 2009; MERLINI, 2011). The present paper takes the following stance, in view of the growing evidence, mainly short inscriptions found in Old Europe (GIMBUTAS, 1982) such as the Vinča–Turdaș tablets ca. 5300– 5000 BCE, that writing emerged independently in Europe. These inscriptions bear not only pictograms but also letters (MERLINI, 2011, p. 274-275) that are detectable in Greek hieroglyphic and linear scripts and archaic alphabets.

It is the aim of this paper to present such a comparison through an interdisciplinary approach (THOMPSON KLEIN, 1990), discussing the case of the letter Alpha and its phonetic value, involving current assessments[3] of epigraphic and archaeological outcomes, in conjunction with recent findings in the fields of historical linguistics and phonosemantics.

[3] Historical linguistics was always based on the results of epigraphy and archaeology. In this case, when two (or more) different sciences are forced into partnership, "each discipline should in the first place operate independently with its own techniques on its own material. For the linguist this is all the more imperative in the present instance … He will naturally choose the version more easily reconcilable with his own analyses and conclusions, for a satisfactory answer must match the linguistic and the archaeological evidence" (PALMER, 1980, p. 16). For the purposes of this study, each discipline was approached independently, following its established scholarship. In these, techniques and material of phonosemantics were also added.

A CASE STUDY FOR LETTER ALPHA

Archaeological and palaeographical research after Ventris' decipherment of Linear B script, highlighted a new era in exploring the origin of the alphabet. Therefore, archaeology now proves that during the 2nd millennium BCE, Greeks were using four scripts, for some period even in a parallel fashion: the Minoan hieroglyphic script, Linear A, Linear B, and Cypro-Minoan scripts. In addition, considering the new evidence in Egypt, Anatolia and Mesopotamia, it is shown that alphabetic and syllabic scripts were used concurrently (MORPURGO DAVIES, 1986, p. 62). Some research also indicates the existence of some continuity of old symbolism, since certain symbols are used across the scripts, even when they are compared to the inscriptions from Greece and the Danube basin (without though implying continuity of the scripts too) (PORUCIUC, 2009, p. 39).

Some symbols share geometrical roots inherited by even the rich Mesolithic and Upper Palaeolithic (20000 - 5000 BCE) inventories, thus having the same form (MERLINI, 2005, p. 241). For instance, three types of signs are met: (a) abstract, simple linear signs (e.g. V, M, X, and the cross); (b) signs based on strokes or dots; and (c) naturalistic motifs such as sun, boat, animal heads, ring, star, tree roots, ladder etc. It is the aim of this paper to show the inter-relationship of such symbols, in the aforementioned Greek scripts (and in conjunction with the scripts in Egypt, Anatolia and Mesopotamia), so as to discuss their connection to the letter Alpha. Such similarities are researched in close relation to the cultural context in which they appear, as they might not have the same signification in all encountered cases (ANDREESCU, 2009, p. 79). Part of the present hypothesis is also the assumption that the values of the symbols (see the following sections) were conservative. Once they were established, there was not any radical innovation undertaken, even in the case of the alphabet, thus contradicting the established notion of viewing the alphabet as an overall script innovation.

THE ALPHA IN NEOLITHIC GREECE

Short inscriptions are found in Greece, dating from the Neolithic period. For example, in the Cave of Cyclope on Youra island (Northern Sporades, Greece), an inscribed small-sized ceramic shard (5000–4500 BCE), bears symbols that are aligned in a row and resemble[4] the classical Greek letters Alpha, Epsilon and Delta.

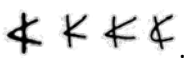
[4] Sampson (2008) argues for a proto-script detected on ceramic, stone or wood, in Macedonia, Greece, which is also connected with other inscriptions found in the Balkan area (e.g. in Serbia, Bulgaria and Romania) and in other Neolithic settlements in Greece (e.g. in Yali of Nisyros and Tharrunia of Evia). Their early symbols can be connected with those of Linear A and B, and with the letters (and their variations) of the classical alphabet. Extended information about the inscription (e.g. its chronology and content) is provided in SAMPSON, Adamantios. *The Cyclops Cave on the island of Youra, Greece. Mesolithic and Neolithic networks in the Northern Aegean Basin*. Vol I, Philadelphia: INSTAP Monograph

Hence, this fragment proves that (i) the outlines of the letters of the classical Greek alphabet are older than it was believed; and (ii) some symbols remained in use or were remembered down the millennia (MERLINI, 2005, p. 246), thus challenging the traditional theory wanting the origin of the Greek alphabet to be derived from the Phoenician script. In addition, the inscription found at Ftelia is composed of "many symbols/letters made up of geometric abstract signs rather than naturalistic motifs, with uniform dimensions organized in a linear alignment" (MERLINI, 2005, p. 247); the inscription found at Yannitsa (5250–5000 BCE) is made up of geometric abstract [5] signs rather than naturalistic motifs, linear, expressing X, V or inverted V forms. Interestingly, the signs are conventional, following a standardized model, since some occur more than once.

The Dispilio-Kastoria inscription (ca. 5260 BCE) (HOURMOUZIADIS, 2002), published with another inscribed artefact from the same area, comprises another indication of such an early script. In the "Neolithic Treasure" (confiscated by the Hellenic Police in 1997), possibly from Macedonia and Thessaly in northern Greece, there were 53 gold objects dated to the Final Neolithic period (ca. 4500-3200 BCE). Additionally, from Sesklo, among many clay stamps, there is one which bears incisions of early symbols. Some of these (e.g. no. 12, 16 and 53) have marks "which some would possibly consider to be signs of a script", which resemble signs from Linear A (OWENS, 2009, p. 195).

In the following comparisons, this study partly accepts Owens' suggestion (2009, p. 197): that there was a proto-Minoan language, spoken by the first Neolithic inhabitants of Crete (perhaps Pelasgians?), in the Neolithic Aegean (Crete, Hellas, Thrace, and Anatolia). Comparisons among European Neolithic and Minoan scripts also demonstrate similarities; that is, half of the signs are similar to Linear A scripts.

THE ALPHA ACROSS SCRIPTS

For many years the Greek letter Alpha is believed to originate from the Phoenician symbol:  . Its sound was described as a 'coughed ah', a glottal stop, thus, a consonantal one (DEFRANCIS, 1989, p. 178). Its putative adoption by the Greeks was seen as their need to represent the vowel /a/, and thus, as mechanically using it. For others, following Taylor's (1883) theory on the Hebrew origin of the alphabet, the 'alpha' originates in the Hebrew word 'aleph', which means 'ox'. This ox symbol is also met in the proto-Sinaitic scripts in Egypt, as well as in Egyptian hieroglyphs.

The present study agrees with the claim that the symbol of the ox/cow/bull head is connected to the letter Alpha, demonstrating that: (i) the symbol is met in Neolithic Greece and later Minoan scripts; (ii) both

Series, 2008. Also in SAMPSON, Adamantios, *The Cave of the Cyclops*, vol. II. Philadelphia: INSTAP Monograph Series, 2011.

[5] The term "abstract" defines linear symbols rather than pictographic ones (e.g. symbols depicting usually plants and/or animal heads).

the letter Alpha and the bucranium symbol were associated to a divine deity, whose names exist in the earliest Greek alphabetic scripts; (iii) the phonetic value of Alpha involved symbolic variations across the scripts, including mainly quadrilateral and triangular signs; and that (iv) these shapes were connected to the deity depicted in various archaeological artefacts. Such a comparison combats the aforementioned belief regarding the origin of the letter Alpha. The (iii) and (iv) points are supported by current research in historical linguistics and phonosemantics.

THE BUCRANIUM SYMBOL ACROSS SCRIPTS

Table 1 displays the semantic relationship between the bucranium sign, and early syllabary and alphabetic scripts. In the symbol  (and its varied versions) many scholars recognize the likeness of the ox/cow/bull head, mainly an A in a reverse position (horns down).

The above comparison, in others (e.g. DIRINGER, 1948, p. 46), involves the bucranium symbol with the proto-Sumerian pictographic script and later cuneiform scripts (Table 2).

A first comparison of the bucranium symbol with cuneiform signs was demonstrated in Taylor (1883, p. 41), who argued that the Assyrian cuneiform symbol *alpu* (=ox) is also seen in the cuneiform script during the Kassite period (1500-1100 BCE), and that from *alpu* the Hebrew word 'aleph' was derived. However, (i) the cuneiform signs postdate the Linear A and B scripts; and (ii) the bucranium sign is found in both linear scripts (as well as in Neolithic period). Thus, the bucranium symbol is not Hebrew (and hence, Semitic) since it is found in other earlier scripts. Additionally, the claim that the word 'alpha' derives from the Hebrew 'aleph' is no longer valid. Moreover, this study, examines the semantic relationship of *alpu* with Linear A and B scripts. Table 2 is expanded, considering the sign development information by Haarmann (2009, p. 19).

THE BUCRANIUM SYMBOL IN EARLY GREEK SCRIPTS

Following the Neolithic period, the bucranium symbol is met in Minoan hieroglyphs (2200-1700 BCE) and later, in Linear A and B scripts (Table 3).

The following animal-like heads also appear on Phaistos disk, in Crete, with their suggested phonetic values when compared to Luwian: no.29  , its Luwian hieroglyph counterpart no.97  ,  (= /u/, based on the acrophonic principle and internal evidence), and no.30  with its Luwian hieroglyph counterpart no.110  (= /ma/, based on its identical value). It appears that the bucranium sign (in most cases) is related

to plosives (voiced and voiceless) and the nasal /m/, combined with two main vowels: /a/ and /u/. The specific sign was used for at least two millennia (from 3100 to 1100 BCE) across the Aegean, Anatolian, and Mesopotamian areas, in a similar way, so as to depict specific values of plosives, without though distinguishing voiced and voiceless stops, such as /b/ and /p/, /g/ and /k/ etc. This study hypothesizes that, due to the continuity of its symbolism, a similar, generic, value is being transferred and inherited to modern alphabetic scripts. Such relationship is traced in the old scripts, for each letter, (in this case study for the letter alpha), supported by data from archaeology, historical/comparative linguistics, and phonosemantics.

THE BUCRANIUM SYMBOL AND THE NUMBER FOUR

It appears that the bucranium sign was related to number four. As Table 3 displays, the Luwian word for the number four was 'mauwa' or 'miw-', depicted with four strokes on the cow's head, which meant /mu/ (MORPURGO DAVIES, 1986, p. 62). Additionally, in cuneiform scripts, quadrilateral signs are seen as the continuity of the bucranium (see Table 2), thus, carrying the numerical value of four, and expressing plosives. Interestingly, the square symbol existed in Cypro-Minoan syllabary (no.75 ), and in classical Cypriot syllabary  having the nasal value /mu/ (Best and Woodhuizen, 1988: 100-101). Also, in Luwian hieroglyph, plosives /ku-hu/ were attributed in similar square symbols:  (in the name of the deity Kubaba) (DEROY, 1954, p. 37). Moreover, the square symbol in pictographic proto-Sumerian script holds the following meanings, which in their majority, most probably, symbolize a goddess: no. 27  the bosom; no.28  the womb; no. 29  (the plural of no. 28) the descendants/offspring; no. 46 the 'dress'; and no. 47  the woman (DIRINGER, 1948, p. 44). Furthermore, the square symbol is met in Egyptian hieroglyphics, and in Sinai/proto-Canaanite scripts in Egypt and the Levant. Table 4 demonstrates its forms and values.

In most cases it was used to indicate the values /a/ and/or /wa/, thus combined with plosives. The continuity of such quadrilateral symbolism is later seen (from the 9th century BCE and onwards) in pure alphabetic scripts across Greece and Anatolia (Table 5). In these, (i) the vowels /a/ and /o/ (even the longer /o/ - the omega), and (ii) the plosives (voiced and voiceless) were interchangeably symbolized by square-like and/or circular letters. This outcome agrees with Bayley's (1919) position that the letters A and O were used interchangeably, as well as with Tovar's (1951) claim that the Iberian scripts, although they did not differentiate voiced and voiceless plosives, they perfectly accommodated both functions according to their position in the syllables. Lastly, square symbols are found throughout the Danube basin and Aegean area during the Neolithic period (MERLINI, 2005, p. 244). However, square graphic forms were not the only ones that depicted the sound /a/.

FROM SQUARES TO STAR COGNATES

Concerning the signs no.8 and no.54 of Linear A and B, Best and Woodhuizen, (1988) and Palaima (2011) demonstrated its cognates in Cypro-Minoan and classical Cypriot syllabary (Table 6), thus indicating its relation to the vowel /a/ and subsequent consonantal values referring to (i) plosives (voiced and voiceless); (ii) the nasal /m/; and (iii) fricatives /s/ and /z/. Hence, from a square-like shape, they demonstrated their relationship to star-like forms, which carried similar sound values.

Many forms, similar to the above signs, appear in Neolithic scripts (MERLINI, 2011, p. 305-306), thus indicating another possible symbolic continuity throughout the Neolithic and Bronze Age years, in the specific areas. As Table 6 illustrates, the Linear A and B signs retained their /a/ values in forms that in both classical Cypriot syllabary and archaic Greek approximated a star-like form. This finding corroborates with the star symbol in proto-Sumerian pictographic (no. 192), which had the value ATU (thus carrying a plosive value as well), meant the 'god/goddess', and was considered a solar and/or a vegetation sacred symbol (MERLINI, 2011, p. 294) (Table 7). The star sign is also found in Egypt and Minoan hieroglyphs, as well as inside the Luwian square hieroglyph  . Furthermore, for some scholars, the star sign (and its cognates) (Table 8) is seen as the development and/or deployment of the bucranium sign. Usually, no.8 and 54 linear signs, the cross and the Y sign are regarded as the cow's / bull's head (DEROY, 1954; GIMBUTAS, 1982).

In particular, Gimbutas (1982, p. 89) associated the cross symbol (and its complex derivations) with "the moon, the vegetal life-cycle, the rotation of seasons, the birth and growth essential to the perpetuation of life." The cross, with its arms directed to the four cardinal directions, in Neolithic decorations comprised the symbol of birth and growth of plant, animal, human life; it was the symbol of luck, assuring the continuance of the cosmic cycle, and was associated with the Great Goddess of Life and Death, and the Goddess of vegetation, "moon goddesses par excellence". The Great Goddess emerges from the dead bull (GIMBUTAS, 1982, p. 91). Furthermore, the fact that the cross was present on female statues , on breasts or immediately below them, or on arms supporting breasts (in most cases with chevrons, and triple vertical lines), suggests an identification of rain with milk, a widespread belief "which induced people to see women's breasts or cow udders in the clouds" (GIMBUTAS, 1982, p. 116). Considering these symbolism interpretations, the Linear A and B symbols of Tables 6 and 8 are met in the cross and the so-called triple-lines symbol, which this study suggests to connect with the Linear A and B sign no.54. This symbolism also corroborates with Best (1988, p. 6) whose comparisons demonstrate the ox/cow/bull head present in the cognate signs of no. 54, such as no.131 (=Vinum) in Linear A and B. Therefore, the symbols  ,  and the bucranium sign appear to relate semantically to each other.

FROM THE OX/COW/BULL HEAD TO MODERN ALPHA A

Apart from the square and star forms, the bucranium symbol is also connected to triangle forms (Table 10). For example, in Best's comparisons (Table 9), the Y, cross, and bucranium signs are replaced by triangle forms, attaining many variations in Neolithic artefacts, many of which are met in Proto-Sumerian, Egyptian, Minoan hieroglyphs and, in archaic Greek alphabet. This continuous symbolism is another evidence of the symbols' pre-existence, prior to early Egypt and/or Phoenician scripts, and perhaps its relation to the sounds under comparison. As table 10 displays, the triangular symbols refer to the value /a/ combined with plosives and the nasal /m/; and to the values /e/ (and/or /ae/), and /i/ combined with plosives and the nasal /m/ as well. Hence, these values corroborate with the previous ones for square and star-like symbols. Across the scripts, the triangular symbols indicate again a feminine anthropomorphic statuette, inclosing, in most cases, the cross symbol, which later appears in the archaic forms of the Greek alphabet next to the letter A. In addition, the Linear A and B signs  are also met in the archaic Greek alphabets in the forms:  or .

ALPHA IN HISTORICAL LINGUISTICS

So far, it is demonstrated: (a) the graphemic relationship of the letter Alpha throughout the millennia, from the Neolithic down to the 8th c. BCE; and (b) its phonetic relationship with these forms from Mycenaean times (with Linear A and B scripts) down to the 8th c. BCE. Next to these comparisons, data from historical and comparative linguistics can support the above relationships. In doing so, the following Greek words[6] (mostly Homeric), produced by the root αλφ-,were chosen to depict these relationships: ἀλφάνω (Od.17.250; 15.452; 20.383; and Il.21.79), which means (i) bring in, yield, fetch, and (ii) change; ἀλφαδεῖ to find; ἀλφαίνει, and ἀλφαίει to appear, to be shown; ἄλφα, carpenter's square; ἀλφάριον, plumb-line, level; Ἀλφειός, (i) a river in Arcadia and Elis (flowing past Olympia), and (ii) the river god Alpheus; ἀλφεσίβοιος, bringing in oxen, usually met with the word παρθένοι (=maidens who yield their parents many oxen as presents from their suitors) (Il.18.593, h.Ven.119); and or with the word ὕδωρ, water of the Nile that yields fat oxen (by enriching pastures); ἀλφή, produce, gain; ἄλφησις, gloss; ἀλφηστής, the earner (from ἀλφάνω), enterprising man, trader or seafarer(Od.1.349; 6.8; 13.261); ἀλφίσκω, (Od.22.57); ἀλφιταμοιβός, dealer in; ἀλφιτεῖον, mill for grinding; ἀλφιτεύω, grind barley; ἄλφιτον, barley-groats (Il.11.631, Od.2.355, 14.429);

[6] The examples are not exhaustive but they are illustrative of the relationships under study.

Ἀλφιῷος, name of month at Elis; ἀλφός, (i) the one who changes its color, whiteness, and (ii) dull-white leprosy; ἀλφώδης, leprous; ἀλφῶ, to find.

These words are indicative of their connection with: (i) the bucranium sign and its relation to the above shapes (e.g. the square shape is seen in the meanings of the words: ἄλφα and ἀλφάριον); (ii) the moon and the water life in relation to the Great Goddess (e.g. the river Alpheus[7] in Greek mythology is connected to Hercules tasks and goddess Artemis); and (iii) the light, the white color and/or whiteness, which are meanings with strong connotations to an early Minoan deity that was associated with the Milky Way and a high pillar, and later with the worship of Zeus[8] (Cook, 1925: 47); and (iv) the expression of plosives. From these, such as from ἀλφός >albus, comparative and historical linguistics demonstrate current cognates in modern European languages; in English: alb, abele, albino; in Italian: albo, alba; in Spanish: albo, alba; in Romanian: alb, albă, alba; in Portuguese: alvo, alva; in French: aube; which clearly depict the inter-changeability of the plosives /b-w-ph/, and carry similar meanings to the above concepts.

Additionally, based on the inter-changeability of /a/ and /o/, as well as of plosives /p-b-ph-w/, the root ἀλφ- can be traced in the root ολβ- such as in the words: Ὄλβια, an older form for Ἄλπια (= the Alps), thus, indicating the mountain symbol used from the Neolithic period down to Minoan era (see Table 10); ὄλβιος, meaning happy, blessed (e.g. ὄλβιε Ζεῦ) or, only in Odyssey and in neuter, meaning the rich gifts. Furthermore, the root can take the value /t/ instead of /p-ph/, such as in Ἄλτις (in Latin: altus[9]), meaning the sacred precinct of Zeus at Olympia (in Elean for ἄλσος, meaning the sacred grove), as well as in ἅλς, meaning the sea, the shallow water near shore. In this context, is it possible to trace the root ἀλφ- in the Linear A and B symbol:  ? It seems that it combines both signs:  /pa/ and  /a/, and thus, it can be read as a-pa (= alpha), carrying four strokes.

ALPHA IN PHONOSEMANTICS RESEARCH

More evidence, in support of the above, comes from the field of phonosemantics[10]. For example, Magnus (2001) showed that the /l/ with plosive consonants falls within the Natural Classes of 'light' and 'seeing' as in the case of the ἀλφ-, ολβ-, αλτ-, αλπ-words. Furthermore, due to the existence of the plosives in these words, and in accordance with Halloran's study (2012) on Sumerian language, certain sets of abstract

[7] According to Etymologikon to Mega, the word itself holds the meaning of the one who heals the leprous; or the one who benefits in general. In Greek mythology the river is connected to Hercules' task to cleanse the stable of Augeas, by diverting the river Alpheus (BAYLEY, 1919, p. 241).

[8] The reader is advised to consult the work of Arthur Bernard Cook on 'Zeus'. Owens (2004) also states that in Minoan religion, the Great Mother Goddess could be seen on the top of the mountain.

[9] From 'altus' see modern 'altar' and other derivatives.

[10] In brief, phonosemantics is the non-arbitrary connection between the phonemes of languages and their meanings.

ideas are found to associate with the consonants: /b:p/= cavity, receptacle, container; to take, choose, allocate, choice; /d:t/ = edge; side; to approach; to leave; to interact with; to act, do, perform; /g:k/ = throat; circle; entrance; base; long, narrow; to consume; to kill; to utter; /m/ = female; to cause to be; to be; to make go out; to go; transportation; to speak. All three cases, in this study, seem to occur, but of course more data[11] are needed to support such claims. The work is in progress.

Furthermore, this case study also revealed a possible geometrical relationship (and thus, graphemic) between the alpha letter and its combinations with plosives and nasals. In line with this, Parise and Pavani (2011) revealed a relationship between the geometrical shapes and vocalization intensities. They demonstrated that participants vocalized /a/ louder in response to dodecagons (a shape resembling O) as compared to triangles. Also, frequency was higher in response to triangles than to dodecagons. The size of stimuli did not significantly affect the intensity of vocalizations and the frequency of spectral components. Hence, visual information is consistently mapped into features of vocal sounds and, automatically, interacts with basic phonatory behavior even in the absence of explicit linguistic processing. These findings remind Plato's (in *Timaeus)* four constitutive principles of the physical world, which were associated with specific geometric shapes[12]: (i) the earth with the cube; (ii) water with the icosahedron; (iv) air with the octahedron; and (v) fire with the pyramid (LEONARDI, 2013). These shapes are also found in the study's comparisons for the value of /a/ combined mainly with nasals and plosives. But what can research show about articulating words with the above letters (and combinations), and in relation to above semantic relations? Once again, more data is needed to highlight this scientific query.

Interestingly, it was Flinders Petrie who argued the development of both the Phoenician and archaic Greek alphabet, together with those scripts of Anatolia, Egypt and the Levant, and the Cyprian syllabary, from geometric symbols that were employed throughout the Mediterranean (DIRINGER, 1948, p. 198). At his time, though, this theory did not receive general acceptance. Sir John Evans also saw "the possible resemblance of few early alphabetic letters to the objects denoted by their names, that the letters were once pictures used as ideograms" (DIRINGER, 1948, p. 199).

[11] Currently (2015), a year after the first submission and review of this paper, more data are available (MERTZANI, 2015a; MERTZANI, 2015b) which indicate the relationship of the closed phonemes (e.g. plosives /k/, /p/, /t/) and graphemes (e.g. cyclic and quadrilinear) with the meanings of earth, cavity, edge, and loss (as in the cases of words discussed in this section).

[12] For example, dodecagon, in mathematics, can be dissected into a central hexagon that alternates triangles and squares, thus carrying both shapes, but its overall shape, approximates that of a circle.

CONCLUSION

This case study is part of an ongoing research project that aims at bridging, through an interdisciplinary approach, data from archaeology, historical/comparative linguistics, and phonosemantics, so as to demonstrate the phonemic, graphemic and semantic relationships between old writing systems, current alphabetic spoken languages (Greek, Portuguese, and English), and sign languages (e.g. LIBRAS). The hypothesis is that old and new systems were and are continually and consistently mapped on the relationships of symbols employed so as to produce common semantic patterns.

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Appendix: Tables 1-10

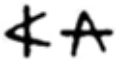
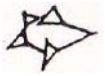
Egypt	Sinai	Canaanite	Phoenician	Archaic Greek
				

Table 1: The semantic relationship of Alpha and the bucranium sign.

Proto-Sumerian pictographic (3100-2600 BCE)	Early Sumerian cuneiform (2000-1800 BCE)	Early Babylonian (1900-1800 BCE)	Classic Assyrian (1200-700 BCE)	Meaning
				ox
				cow

Table 2: Semantic relationship between the bucranium symbol and cuneiform scripts.

						**/gu$_4$/ ox**
						**/áb/ cow**

Extended Table 2

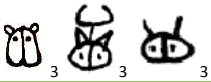
	/a/	/u/	script	date
ø	aw  1 au  1	uwi-/wawi/ u(wa)  2	[1]Linear B [2]Luwian	1450-1100 BC 1300-600 BC
h-		hu  hu hu_x 	Luwian	1300-600 BC
z-	za_4 		Luwian	1300-600 BC
m-	ma  1 ma  2 ma  3	mu /mauwa/miw/ mawa/ mu(wa)*  2	[1]Linear B [2]Luwian [3] Linear A	1450-1100 BC 1300-600 BC 2000-1300 BC
p-	p/ba  1 para  1 pte  2		[1]Luwian [2]Linear B	1300-600 BC 1450-1100 BC
s-	sà 		Luwian	1300-600 BC
t-	ta 		Luwian	1300-600 BC

Table 3: Bucranium and animal-like signs in Linear A and B scripts.

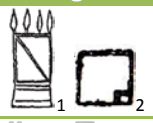
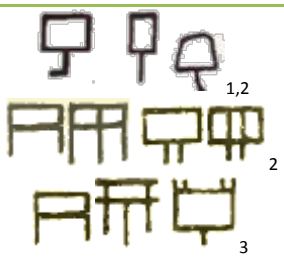
Script	Sign	Value	Date
Egypt Hieroglyph (5th Dynasty)		[1] /aha/ (king, palace) [2] /b/, /p/	2494 to 2345 BCE
Early Egypt (1st Dynasty[1]; 12th Dynasty[2]; 18th Dynasty[3])		[1]/a/	[1]3100 -2180 BC [2]2000-1700 BC [3]1543–1292 BCE
Minoan hieroglyph		[not deciphered]	2200 – 1700 BCE
Linear A		[1]/wa/ or /w/	2000-1300 BCE
Hittite hieroglyphs		/wa/?	1600 – 1300 BCE
Cypro-Minoan		/wa/	1550–1050 BC
Linear B		/wa/	1450 – 1100 BCE

Table 4: Quadrilateral symbols across scripts.

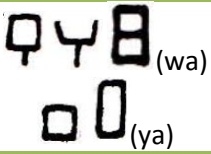
Script	/b/	/o/ - /ay/	longer /o/	/p/ - /w/- /ph/	/a/ - /wa/ - /ya/
Archaic Greek (Thera, Melos)					
Etruscan/Proto-tyrrenhian					
Carian					 (wa) (ya)
Iberian					

Table 5: Quadrilateral and circular letters in alphabetic scripts.

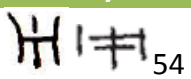
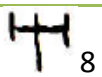
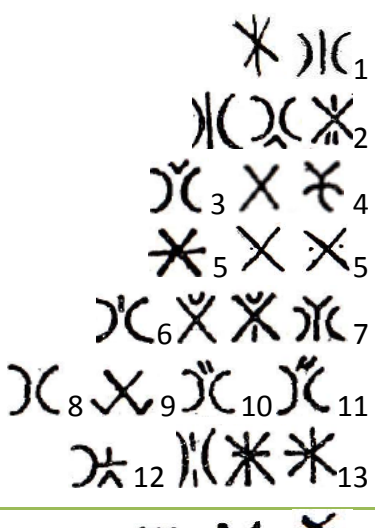
Script	Symbol	Value	Date
Linear A		/a/	2000-1300 BC
Linear B		/a/	1450–1100 BC
Cypro-Minoan		/a/	1550–1050 BC
Classical Cypriot		1 /a/ 2 /fa/, /va/ 3 /ma/ 4 /me/ 5 /mu/ 6 /fi/, /vi/ 7 /ku/ 8 /kha/ 9 /pa/ 10 /za/ 11 /ze/ 12 /su/ 13 /e/	
Lycian		1 /q/ 2 /m/ 3 /e/	
Iberian		2 /bo/, /po/ 3 /da/, /ta/	

Table 6: Symbol cognates between Linear and Cypriot-Minoan scripts.

Original pictograph	Pictograph in position of later cuneiform	Early cuneiform	Classic Assyrian	Meaning
				ATU_{192} heaven, god

Table 7: The star symbol in proto-Sumerian and its deployment in cuneiform scripts.

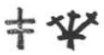
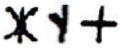
Script	/a-e-i-o/	/b-p-v-ph/	/k-g-kh-h/	/t-th/	/m/ /n/	/s/	/z/
Linear A							
Linear B							
Cypro-Minoan							
Classical Cypriot							
Archaic Greek							
Iberian							
Lycian							
Lydian							
Carian							

Table 8: Cognate symbols to Linear A and B.

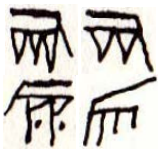
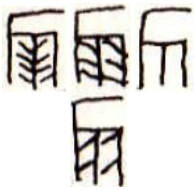
Egypt Hieroglyph	Minoan hieroglyphs	Linear A	Linear B
			

Table 9: Linear A and B signs cognates to no. 54.

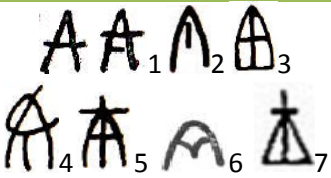
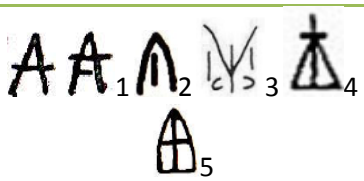
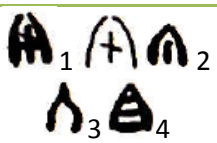
Script	Symbol	Value/meaning
Balkan/Danube script		
Proto-Sumerian pictographic	 4 8 36	[4]ox, [8]woman [36]milk
Egypt hieroglyph	 1 2 3	[1] /ah/, [2] god, [3] heart
Minoan hieroglyph		
Linear A	 1 2 3 4 5 6 7	[1]/e/, [2]/ti/, [3]/wi/, [4]/mi/, [5]/hi-qi/, [6]/wa/, [7]/pi/
Linear B	 1 2 3 4 5	[1]/e/, [2]/ti/, [3]/ma/, [4]/pi/, [5]/wi/
Cypro-Minoan	 1 2 3 4	[1]/ha-ka/, [2]/di-ti/ [3]/he-ke/, [4]/pe-be/
Archaic Greek alphabets		/a/

Table 10: The relationship of triangular forms with the bucranium sign.

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