

On the iconicity of Greek Mycenaean MA-KA

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Abstract

This paper analyses the relationship between the phonemes and the meanings of seven ancient Greek words which are formed from the Mycenaean (Linear B) syllables MA and KA. In this analysis, it considers the graphemic iconicity of the two syllables, within the Minoan and Mycenaean cultural context that was significantly linked with the worship of Mother Goddess throughout the lunar and solar cycles. The aim is to show that the differences between their meanings can be described as isomorphic to the differences between their phonemes, which, in turn, are depicted and/or justified in their graphemic iconicity. The paper concludes to the non-arbitrary relationship between the phonemes, graphemes and meanings of words, suggesting MA-KA as a historical marker.

Key-words: language symbolism, Linear AB scripts, Mother Goddess

Introduction

Independently of the existing debate over the meaning of MA-KA syllable combination in Mycenaean tablets (cf. DEL FREO, 2014), the study discusses the iconicity of its graphemes in relation to the meanings of those ancient Greek (AG) words whose etymology lies on this specific combination. Thus, MA-KA is examined in AG words that start with the equivalent nasal and velar syllables: *μακα-*, *μαγα-*, and *μαχα-*. In this examination, the study focuses on *diagrammatic iconicity* (WAUGH, 1994: 56; GIACALONE RAMAT, 1995: 122), which is relational in nature, and whose forms (e.g. the encircled cross) are considered as *diagrams* or *icons* that “represent the relations of the parts of one thing by analogous relations in their own parts” (WAUGH, 1994: 56), thus resembling and/or imitating objects in respect to these relations. Moreover, following Murray (1989), the examination and understanding of the nature of symbolic systems, such as the two particular Linear B symbols, requires a focus on the processes of performance and enactment, hence on their use during their Mycenaean era, and even

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earlier, as Linear A symbols in Minoan times. The forms (phonemic and graphemic) of MA-KA are examined in a systematic interdependence of elements, in their specific meaningful context, non-arbitrary and isomorphic. An interpretative framework of symbolism is also adopted (BOYER, 1993; ENGLER, 1995) for understanding such cultural manifestation in its different configurations.

Iconic representations of MA-KA

Following Changizi and Shimojo (2005), the analysis of their forms shows that MA and KA (inclusive of their Minoan variations in Linear A) consist of both round and linear forms. Firstly, MA (Figure 1) appears to represent the head of a feline animal that scholarship so far suggests to be a cat (cf. BRICE, 1969: 125), a suggestion that agrees with the frequent depiction of the cat as a Minoan hieroglyph, and later, in the iconography of the Mother Goddess Isis (Figure 2). With regards to this latter relationship between the cat and the worship of Mother Goddess, Plutarch in *De Iside et Osiride* 63,²³ while explaining the parts and symbolism of the sistrum (see Figure 5), informs about the Isis's relation to the moon, which is represented by the cat at the top of the sistrum. The animal's relation to the moon is explained due to its nocturnal activity, fecundity, as well as due to the growing of its eye pupils at full moon.

“Τοῦ δὲ σειστρου περιφεροῦς ἄνωθεν ὄντος ἡ ἀψὶς περιέχει τὰ σειόμενα τέτταρα. Καὶ γὰρ ἡ γεννωμένη καὶ φθειρομένη μοῖρα τοῦ κόσμου περιέχεται μὲν ὑπὸ τῆς σεληνιακῆς σφαιράς, κινεῖται δ' ἐν αὐτῇ πάντα καὶ μεταβάλλεται διὰ τῶν τεττάρων στοιχείων, πυρὸς καὶ γῆς καὶ ὕδατος καὶ ἀέρος. Τῇ δ' ἀψίδι τοῦ σειστρου κατὰ κορυφὴν ἐντορεύουσιν αἴλουρον ἀνθρώπου πρόσωπον ἔχοντα, κάτω δ' ὑπὸ τὰ σειόμενα πῆ μὲν Ἴσιδος πῆ δὲ Νέφθυος πρόσωπον, αἰνιττόμενοι τοῖς μὲν προσώποις γένεσιν καὶ τελευτῇ (αὗται γὰρ εἰσι τῶν στοιχείων μεταβολαὶ καὶ κινήσεις), τῷ δ' αἰλούρω τὴν σελήνην διὰ τὸ

²³ The arch, which is the circular upper part of the sistrum, contains the four elements that are shaken. Because the part of the world that is born and dies is contained in the moon's sphere, and everything moves according to it and changes through the four elements: fire, earth, water, and air. At the top of the arch of the sistrum they construct a cat with a human face, and below, under the elements that are shaken, the face of Isis on one side, and on the other the face of Nephthys, symbolizing with these faces birth and death (because these are the changes and movements of the elements), and by the cat, the moon because of the varied colour, nocturnal activity, and fecundity of the animal. For the cat is said to give birth first one, then two and three and four and five, and in this way they add by one each time until she reaches seven, so that she gives birth to all twenty-eight, as the moon's illuminations are. Perhaps this is mythical. But the pupils in her eyes (of the cat) appear to grow large and round at full moon, and to become thin and shine at the wanings of the star. And the anthropomorphism of the cat is indicated in the intelligence and reason of moon's changes (Author's translation).

ποικίλον καὶ νυκτουργὸν καὶ γόνιμον τοῦ θηρίου. Λέγεται γὰρ ἔν τίκτειν, εἴτα δύο καὶ τρία καὶ τέσσαρα καὶ πέντε, καὶ καθ' ἓν οὕτως ἄχρι τῶν ἑπτὰ προστίθῃσιν, ὥστ' ὀκτὼ καὶ εἴκοσι τὰ πάντα τίκτειν, ὅσα καὶ τῆς σελήνης φῶτ' ἔστιν. Τοῦτο μὲν οὖν ἴσως μυθωδέστερον· αἱ δ' ἐν τοῖς ὄμμασιν αὐτοῦ κόραι πληροῦσθαι μὲν καὶ πλατύνεσθαι δοκοῦσιν ἐν πανσελήνῳ, λεπτύνεσθαι δὲ καὶ μαραυγεῖν ἐν ταῖς μειώσεσι τοῦ ἄστρου. Τῷ δ' ἀνθρωπομόρφῳ τοῦ αἰλούρου τὸ νοερόν καὶ λογικὸν ἐμφαίνεται τῶν περὶ τὴν σελήνην μεταβολῶν” (PLUTARCH, *De Iside et Osiride*, 63).

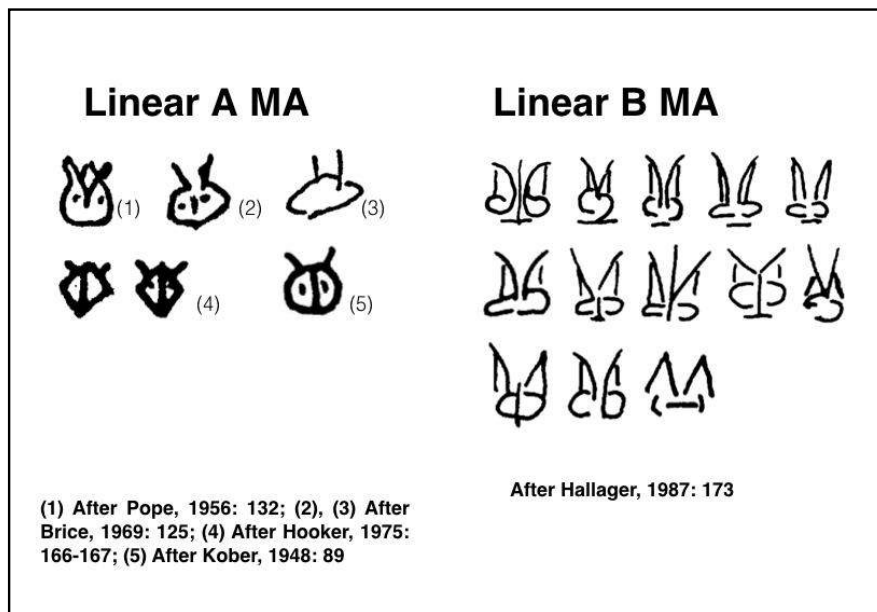


Figure 1 MA and its variations in Linear A and B scripts

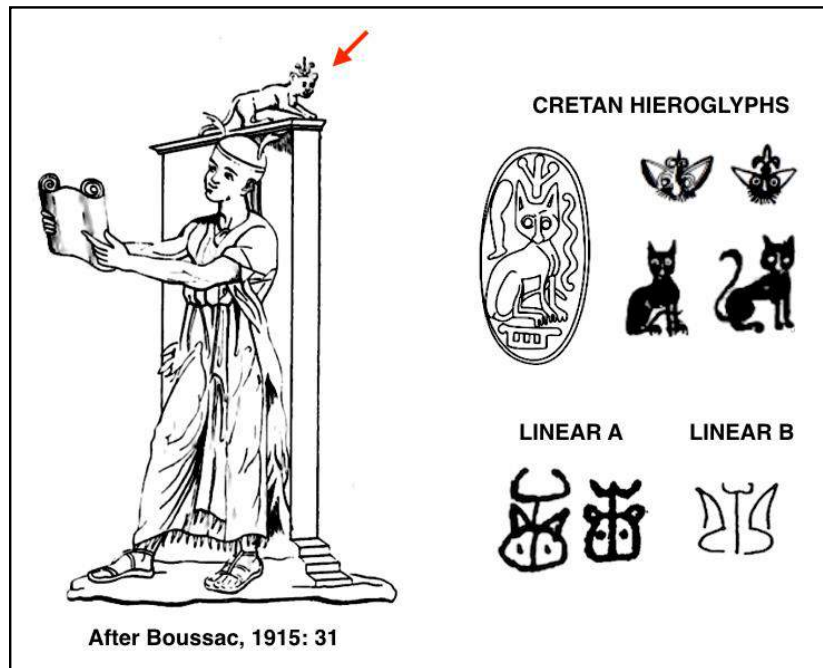


Figure 2. Linear AB MA in relation to Isis iconography and Cretan hieroglyphs

The relationship of the Mother Goddess with feline animals (a cat, a lion, a leopard, etc.) is very well attested in archaeology since early neolithic. Usually, she is depicted among two felines, and in Minoan times she stands on a mountain top flanked by lions, or holds snakes, having on her headress a quadruped feline (ALEXIOU, 1973: 72; MARINATOS, 1993: 55, 158), a representation detail that strongly reminds Plutarch's account. Elsewhere, her mountaintop shrine has the form of a quadripartite MA (Figure 3) (MARINATOS, 1993: 173), which also reminds the quadripartite form of KA. In fact, as the analysis demonstrates, the base form of MA is one KA variation (Figure 4). As a cat then, she is connected to the symbolism of the moon and night, and by extension to the underworld and death, as well as to fertility²⁴ (analogical to the fecundity of the animal) following the moon's lunations. It is reminded that in ancient central and south America civilizations such representation is found in the entrances of caves, which were depicted by the open mouth of a jaguar (cf. BENSON, 1972).

²⁴ The mark of her fertility powers was mythologically her son Horus or Harpocrates. Additionally, Plutarch mentions (*De Iside et Osiride*, 56) that Plato interpreted her name as the womb, the place from which Horus sprang (HORNBLLOWER, 1941: 94).

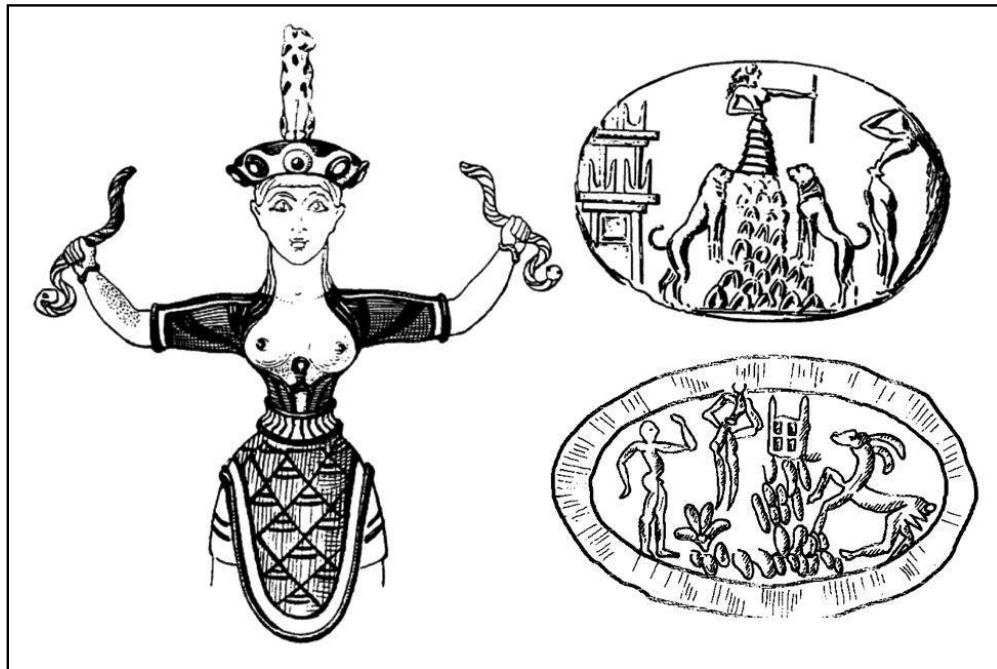


Figure 3. Mother Goddess depictions in Minoan era

This Plutarch's association of the cat with the sistrum and the Mother Goddess Isis also reminds the symbol combination in Figure 5, which Evans suggested to represent the sistrum (cf. BRICE, 1969: 125). Myres (1946) and Kober (1948) connected it with the Linear B QA, which in archaic Greek alphabets is the letter *koppa* (modern Qq), used for the writing of the name of Mother Goddess *Cybele* (*Κυβηλας*) (WOODARD, 2014: 17). Thus, both KA and QA strongly relate to the symbolism of the Mother Goddess, who was also the cow, representing this time the sun (MERTZANI, 2017: 76, 87). This relationship is also supported by a well known Minoan and Mycenaean iconography depicting the head of a bull/cow with a cross on the animal's forehead. Thus, the cat and the bull/cow were the sacred animals of the Mother Goddess, symbolising the cycles of the moon and the sun accordingly. The fact that the cat is depicted on the top of the sistrum is another symbolism of the moon's supremacy over the solar year in ancient calendars.

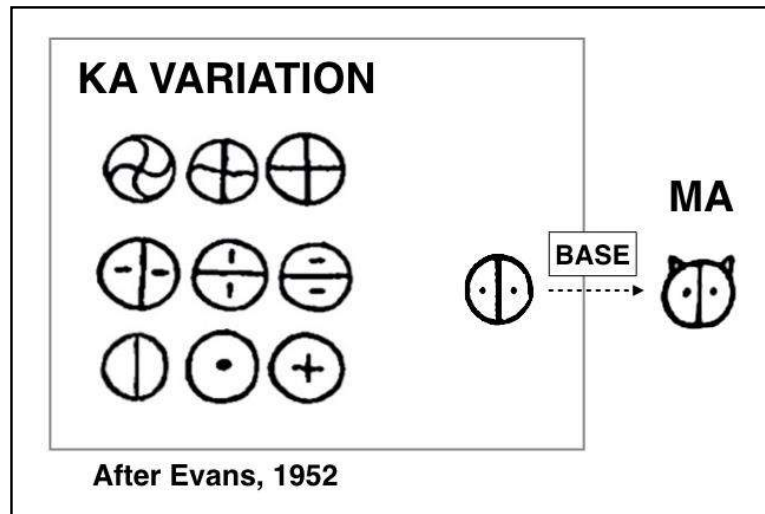


Figure 4. The base of MA on a KA variation

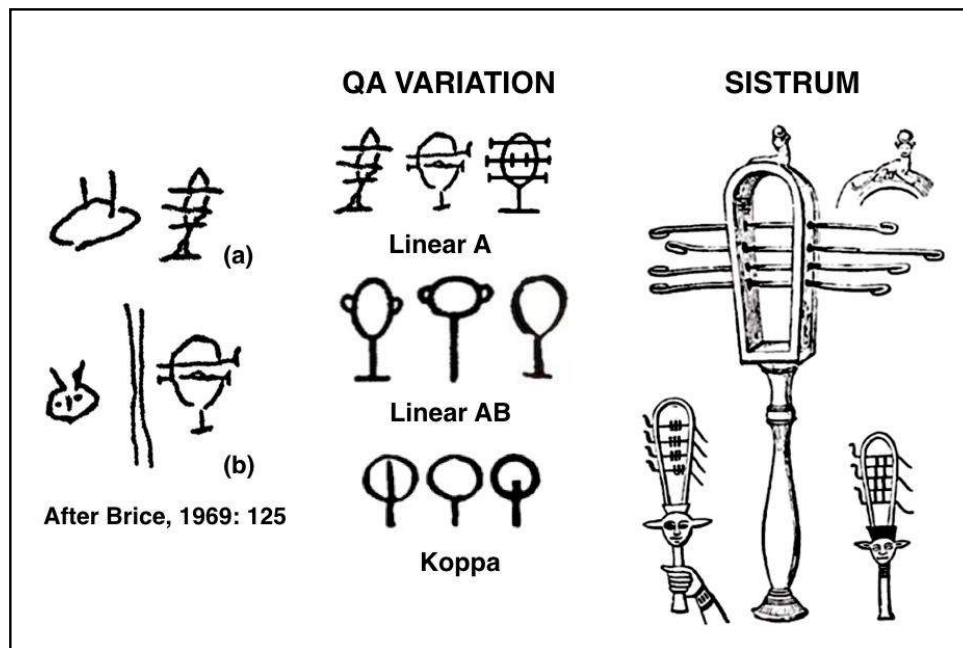


Figure 5. Association of MA with QA, Koppa and the sistrum

Following again Plutarch's account in *Romulus* 9.4 and 11.1-2,²⁵ the syllable KA symbolises the earth as a reflection of the sky. He describes the foundation of Rome

²⁵ Romulus, after burying Remus in the Remonia together with his foster-fathers, he was building the city, after he summoned Tyrrhenian men who were leading such sacred ordinances and writings, and to teach as in a rite. A circular trench was dug around what is now the Comitium, and primal offerings of all things, of which they used by custom as good, by nature as necessary, they deposited there. And finally, every man bringing a small portion of the soil of his land of origin, they were casting in it and mixing. And they call

through a cyclical ritual, which divided the city in four quarters (*κουαδράταν*, *urbs quadrata*). This round planning of the city with its centre (*ὀμφαλός*, the *omphalus*) reflected the celestial heaven. In *Romulus* 11.1-2 it is the *μοῦνδον*. In fact, its centre represented the polar star (*ἄρκτον ὀμφαλόεσσαν*), the axis of the earth, and by extension, to the heavens, the Milky Way, with the planets and certain stars rotating around it every night.

“Ὁ δὲ Ῥωμύλος ἐν τῇ Ῥεμωρία θάψας τὸν Ῥέμον ὁμοῦ καὶ τοὺς τροφεῖς, ᾤκιζε τὴν πόλιν, ἐκ Τυρρηνίας μεταπεμψάμενος ἄνδρας ἱεροῖς τισι θεσμοῖς καὶ γράμμασιν ὑφηγουμένους ἕκαστα καὶ διδάσκοντας ὥσπερ ἐν τελετῇ. βόθρος γὰρ ὠρύγη περὶ τὸ νῦν Κομίτιον κυκλοτερῆς, ἀπαρχαί τε πάντων, ὅσοις νόμῳ μὲν ὡς καλοῖς ἐχρῶντο, φύσει δ' ὡς ἀναγκαίοις, ἀπετέθησαν ἐνταῦθα. καὶ τέλος ἐξ ἧς ἀφῆκτο γῆς ἕκαστος ὀλίγην κομίζων μοῖραν ἔβαλλον εἰς ταῦτόν καὶ συνεμείγνουσιν. καλοῦσι δὲ τὸν βόθρον τοῦτον ᾧ καὶ τὸν ὄλυμπον ὀνόματι μοῦνδον. εἴθ' ὥσπερ κύκλον κέντρῳ περιέγραψαν τὴν πόλιν. ὁ δ' οἰκιστὴς ἐμβαλὼν ἀρότρῳ χαλκῆν ὕνιν, ὑποζεύξας δὲ βοῦν ἄρρενα καὶ θήλειαν, αὐτὸς μὲν ἐπάγει περιελαύνων αὐλακα βαθεῖαν τοῖς τέρμασι, τῶν δ' ἐπομένων ἔργον ἐστίν, ἃς ἀνίστησι βώλους τὸ ἄροτρον, καταστρέφειν εἴσω καὶ μηδεμίαν ἔξω περιορᾶν ἐκτρεπομένην.” (PLUTARCH, *Parallel lives: Romulus*, 11. 1-2).

In line with these associations, this paper supports that MA-KA refers to these cycles of the moon and the sun, in relation to the earth and the cycles of other planets and constellations, and in the order they appear, as discussed below.

MA-KA and calendar cycles

Following the movement of the sun and moon (daily, monthly, annually, etc.), time overall was perceived round, depicted in the round forms of MA and KA. As a matter of fact, their form i.e., as a half cycle (vertical/horizontal) and/or quadripartite (cf. POWERS, 1986: 131, 142), represent, for example, the sun's highest position on the sky in the summer solstice, and the first/third quarter of the moon. When the sun settles onto the ecliptic, it spends half the year above the earth giving light and warmth, and the

this trench, as they do the seat of the gods (the heaven) by the name of 'mundus.' Then, taking this as a centre, they marked out the city in a circle round it. And the founder, having shod a plough with a brazen ploughshare, and having yoked to it a bull and a cow, he led on by driving a deep furrow round the boundary lines, while those who followed after him the work is to turn the clods inwards, which the plough threw up, and to look over no clod to lie turned outwards (Author's translation).

other half below the earth, giving a period of cold and dark. Dividing the year's weather in quarters, the months refer to wind and rainy weather (spring); to harvest and heat; to wind and rainy weather again (autumn); and to cold (winter) (COHEN, 1993: 7; cf. MACGILLIVRAY, 2004). Likewise, the month is divided in four quarters, having four weeks of seven days equating to a 28-day cycle (see Plutarch above).

In this parallel lunar and solar motion, MA-KA as the Mother Goddess, symbolised the agricultural and fertility cycle (of some 260 days) around the time of the equinoxes (from March to September), during which the earth is fertilised by rain and consequent river inundation (COHEN, 1993; MAGINI, 2015; ŠPRAJC, 1993). This period also symbolised the cycle of human gestation (GREEN, 2014a: 26). In this cycle, the onset and end of the rainy season coincides with the Venus's extremes, who forms an extension to the moon's and sun's symbolism as an evening and morning star (ŠPRAJC, 1993: 42). Therefore, MA-KA also refers to Venus and its cycles in relation to earth. In each 8-year cycle,²⁶ which represents a quarter of the *mean sun* (RICHER, 1994: 1, 105), one northerly/southerly Venus extreme is greater than others (around the beginning of May/November), delimiting the rainy season more exactly than other extremes (ŠPRAJC, 1993: 42).

²⁶ The 8-year cycle is known as *octaeteris*, equating to 99 lunations (MAGINI, 2015: 16).

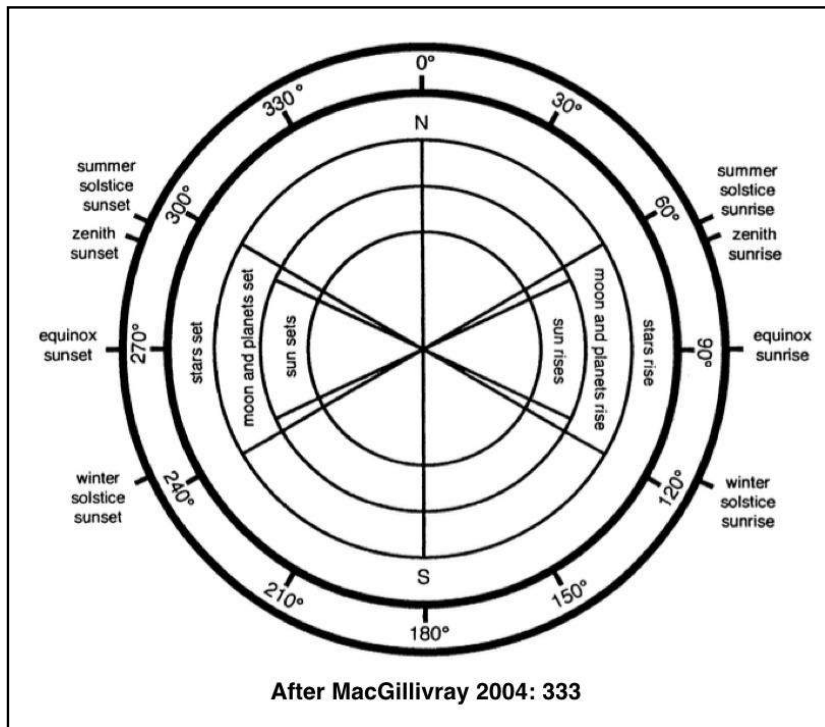


Figure 6. Cyclical representation of the equinoxes, solstices and planets' sets and rises

In a cyclical representation (Figure 6), these fixed phenomena correspond to the schematic symbolism of MA-KA. Thus, on a two dimensional cycle, the solstices create a cross and/or a double axe (another symbol of the Mother Goddess), whose conjunction midpoint, the centre of the cycle, represents the equinoxes, the sun's equal position in the sky. On a spherical representation, the sun's zenith defines the earth's, and by extension, the celestial meridian (the centre of Milky Way) (MAGLI, 2016: 9). Apart from the axe representation in the middle of the Minoan and Mycenaean horns of consecration, this schematisation is also supported by Hathor's²⁷ iconography in Egypt, as the sun rising among the horns (cf. MERTZANI, 2017). In this case, the trees at the left and right top of the horns represent the celestial axis.

MA-KA also symbolises greater time cycles like the earth's axial precession. In such time scales, MA-KA's association with the cat and taurus is more evident, since, for example, archaeoastronomy demonstrates that the annual cycle begun at the summer solstice, when the sun and the full moon was in Leo, and Sirius²⁸ and Orion were perfectly

²⁷ According to Hesychius, *Ἀθήρ* meant the month (*μῆν*), the bull/cow (*βοῦς*) and metaphorically, the mother. All these meanings agree with the Mother Goddess symbolism.

²⁸ In particular, the heliacal rising of Sirius used to occur five days after the summer solstice (WELLS, 1985: 279).

aligned (MAGLI, 2016: 70-71). In fact, this alignment occurred when Sirius was heliacally born (WILLIS & CURRY, 2004: 22), with whom Isis was also recognised (HOLBERG, 2007: 4; WELLS, 1985: 258-259). This alignment remained fixed for centuries, announcing in certain calendars the beginning of the year at the summer solstice (RICHER, 1994: 119).

For example, during the Attic octaetiris, in Olympia - a site dedicated to the Earth goddess Γαῖα (PERROTTET, 2004) - the Olympic games²⁹ started with the full moon of the summer solstice, during which the heliacal rising of Sirius was also taking place in Leo (HANNAH, 2012: 80; RICHER, 1994: 111, 119), marking the beginning of the year as well. From around 3400³⁰ to 2000 BCE, a period that clearly defines the Minoan era, the spring equinox was in the sign of Taurus (MAGLI, 2016: 42; RICHER, 1994: 80, 129), a detail that also justifies the association of MA-KA with the sacred animals of the Mother Goddess. In particular, during this age, the equinoxes were housed in the signs of Taurus and Scorpio, and the solstices in Leo and Aquarius. In this axis, Aquarius was represented by a vessel, which, in turn, was the womb symbol of Mother Goddess, and/or by the panther (p. xxxvii) that also agrees with MA feline representation. More importantly, the Lesser and Greater Eleusinian Mysteries of Demeter used to take place in this equinoctial axis.

²⁹ The Olympic games alternated between a period marked by the rising of Sirius and Arcturus in the months Parthenios and Apollonios that corresponded to the Egyptian months Messori (25 July – 23 August) and Thoth (29 August – 27 September) (HANNAH, 2012: 80). Considering the Sothic cycles of Sirius (cf. HOLBERG, 2007: 3, 11), the heliacal rising of the star in late July (ca. July 19 and 20 in the Julian calendar; August 4 in Gregorian calendar), corresponds to scholar consensus that the games began with the second full moon after the summer solstice (CHRISTESEN, 2007: 18).

³⁰ This chronology coincides with Maya's world creation on 8 September 3114 BCE (Julian calendar) or 13 August 3114 BCE (Gregorian calendar), at full moon, when the Orion's belt was the celestial meridian, and the sun reached its zenith (MENDEZ & KARASIK, 2014: 100).

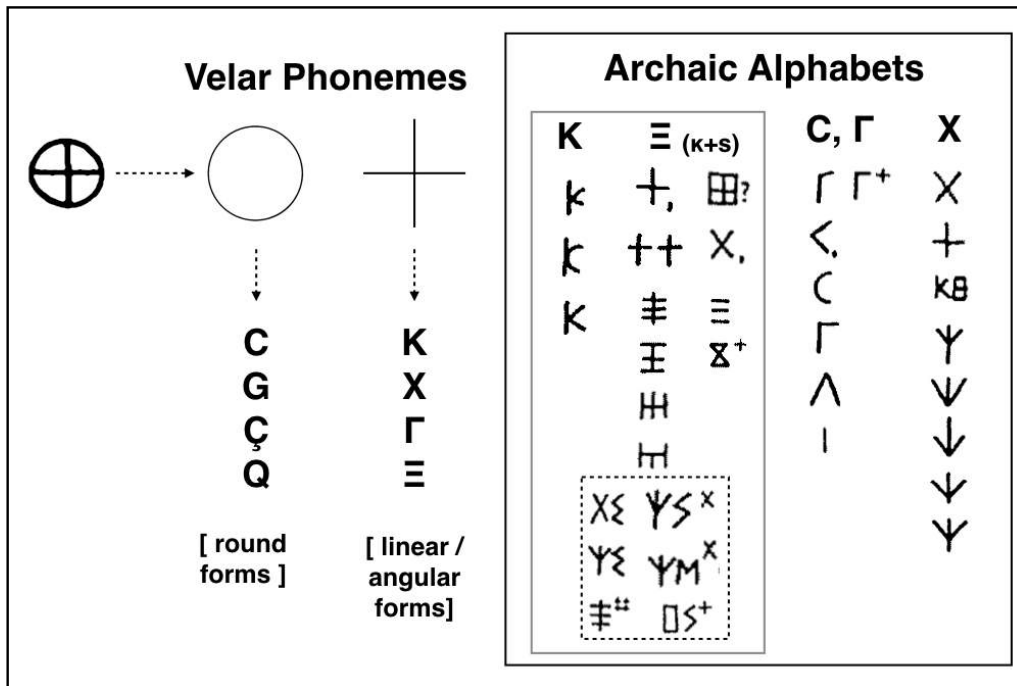


Figure 7. KA analysis and its relation to velars in archaic Greek alphabets

MA-KA in the Greek alphabets

The form analysis of MA-KA helps to recognise a continuum of graphemic symbolism that the archaic Greek alphabets adopted for the representation of <M> (mi; Greek, *μν*), and the velars <K> (kappa; Greek, *κάππα*), <Γ> (gamma; Greek, *γάμμα*), and <X> (chi; Greek, *χει*). To present, such graphemic examination does not exist, since the alphabetic letters-symbols are never compared to the Linear B symbols, and/or even to the symbols of Cypriot syllabary that, as a Greek script, was used until the 4th century and in a parallel fashion with the alphabet. Based on Jeffery (1990), the analysis of MA and KA justifies the early forms of the specific letters (Figures 7-8). For instance, the semi-circular representations of gamma and mi correspond to the circle of MA and KA. They are products of it. For mi, additional indications emerge from the Cypriot syllabary, especially from MO, whose round form conforms to MA. Additionally, the arrow-like forms of the velars map to the well-known representation of the cross as a weapon, and the crosses correspond to the cross of KA. This association with KA is reinforced by the double representations of the letter ksi, whose kappa appears as a cross and an arrow, an allograph of the cross. Moreover, the square (and quadripartite) form of <K> is linked to

KA, since current linguistics (cf. BOLTZ, 1994) and psycholinguistics (cf. DINGUO, 2003; GIBSON, 1929) confirm the square as an alternate form to the circle.

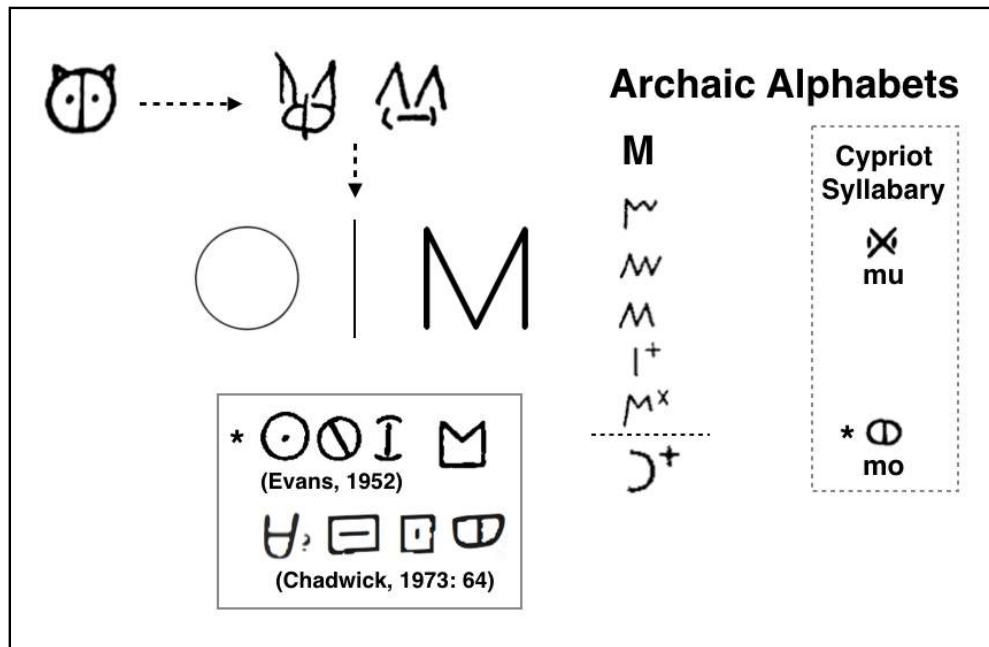


Figure 8. MA analysis and its relation to mi in archaic Greek alphabets

MA-KA in ancient Greek words

Appendix A presents the AG words which are built on the MA-KA root. Its direct and strong correspondence to the Mother Goddess is the phrase $\mu\tilde{\alpha} \gamma\tilde{\alpha}$ for $\mu\tilde{\eta}\tau\epsilon\rho \gamma\tilde{\eta}$ (mother earth), as a worship exclamation by women to Demeter. In particular, $\mu\tilde{\alpha}$ was the shorter form in Greek Aeolic and Doric for $\mu\acute{\alpha}\tau\eta\rho$ (also, $\mu\tilde{\eta}\tau\eta\rho$; Lat. *mater*), which meant the mother, the dam, the womb, the grandmother, and a form of address to old women. Additionally, the word $\eta \text{ M}\tilde{\eta}\tau\eta\rho$ was the title of Demeter, Isis, and Aphrodite. It also meant one's native land, the earth, the Olympia (see above), the night, and the mother of day. All these meanings agree with the aforementioned interpretations of MA-KA.

$M\tilde{\alpha}$ was also the shorter form for the word $\eta \mu\tilde{\alpha}\tilde{\iota}\alpha$, which meant the mother, the good mother/true mother, the midwife, and the grandmother. It also referred to the earth, especially in the phrase $\iota\tilde{\omega} \gamma\tilde{\alpha}\tilde{\iota}\alpha \mu\tilde{\alpha}\tilde{\iota}\alpha$, together with $\gamma\tilde{\alpha}\tilde{\iota}\alpha$ (the earth). $M\tilde{\alpha}\tilde{\iota}\alpha$ ($M\tilde{\alpha}\tilde{\iota}\eta$ and $M\tilde{\alpha}\tilde{\iota}\acute{\alpha}\zeta$) was also the mother of Hermes, who gave him birth at the dawn (as the mother of the day) in the cave of the river Alpheus, whose delta corresponded to the spring equinox

of Taurus, and the summer solstice in Leo (RICHER, 1994: 99). Metaphorically and/or metonymically, the cave is the womb, and the river Alpheus the beginnings of the lunar and solar calendars by referring to the spring equinox and the summer solstice correspondingly. In fact, these associations of Alpheus (especially of the equinox in Taurus) strongly remind the letter alpha that traditionally is considered to represent the head of a bull/cow as KA does.

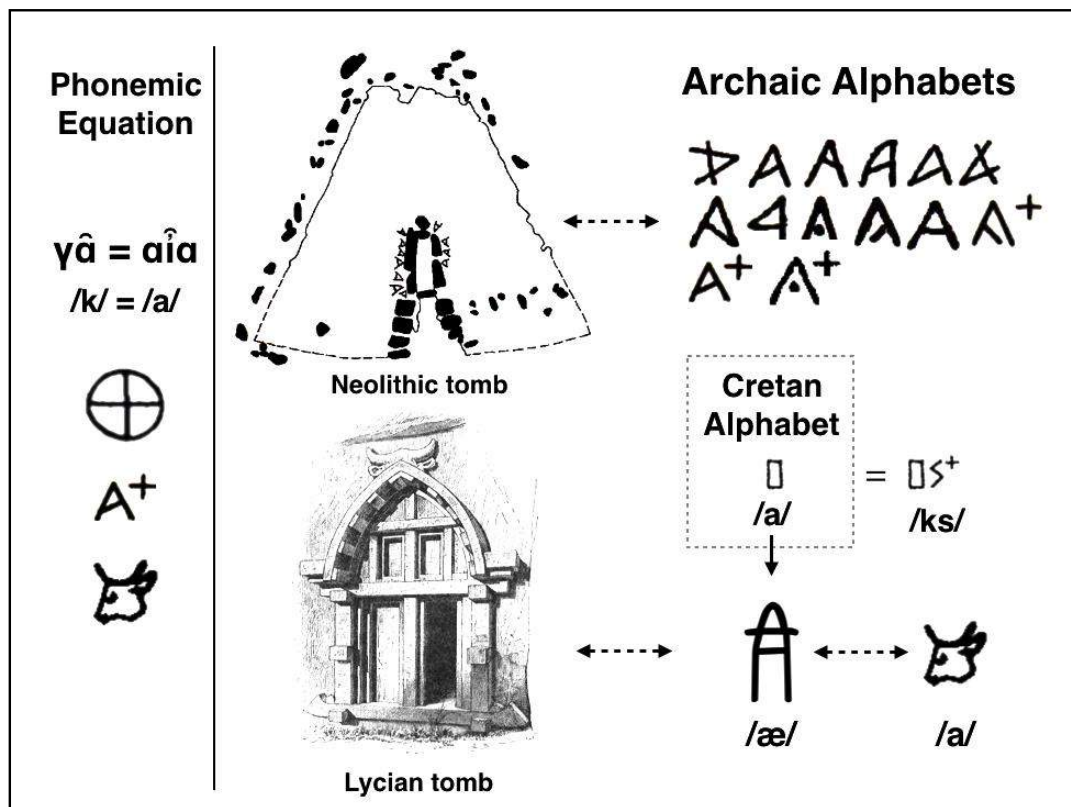


Figure 9. The phonemic equation of velars with alpha and their symbolic associations

Interestingly, this latter relationship is met in the semantic and phonological equation $\mu\tilde{a}\tilde{\alpha} = \gamma\tilde{a}\tilde{\alpha} = \tilde{a}\tilde{\alpha}$, in which the word $\tilde{a}\tilde{\alpha}$, starting with the letter alpha, also meant $\mu\tilde{a}\tilde{\alpha}$ and $\gamma\tilde{a}\tilde{\alpha}$ (cf. *ai* and *aĩkã*, an enclosed place), hence incorporating all their aforementioned meanings and symbolisms. Moreover, in relation to earth/land meanings, it meant the Colchis, and/or a city in Thessalia (cf. *Aiaín*, the island of Circe); and in relation to the water, the spring of the river Axios in Macedonia. Thus, the alpha equates with MA and KA, a relationship that archaeology meets in Neolithic tomb entrances decorated by the symbol of alpha (GIMBUTAS, 1989) (Figure 9). As water, analogical

to the shorter forms $\mu\tilde{\alpha}$ $\gamma\tilde{\alpha}$, $\tilde{\alpha}\tilde{\alpha}$ is also the word $\tilde{\alpha}\alpha$, which meant water as well as the dawn, morning, day, life, East, and the goddess of the dawn (cf. $\eta\tilde{\alpha}\alpha\varsigma$).

KA clearly corresponds to the words $\eta\gamma\tilde{\alpha}$ (also $\eta\gamma\tilde{\eta}$) and $\gamma\tilde{\alpha}\tilde{\alpha}$, which meant earth, land, ground, inclusive of water (the sea) and living organisms, and the planet earth as a whole. This earth symbolism of KA is also supported by the words $\kappa\tilde{\alpha}$, $\kappa\tilde{\alpha}\varsigma$ (downwards) and $\kappa\tilde{\eta}$ (there, in that place, in another world, then) that also refer to meanings of place and the underworld. In the remaining $\mu\tilde{\alpha}\gamma\alpha$ words there is no meaning relating to Mother Earth, although the concept appeared in the word $\mu\tilde{\alpha}\gamma\alpha\rho\omega\nu$ (and $\mu\tilde{\epsilon}\gamma\alpha\rho\omega\nu$) that denoted the sacred pits to Demeter and Persephone, and the Mycenaean palace. The concept of earth/land does exist in the word $\eta\mu\tilde{\alpha}\chi\eta$ < $\mu\tilde{\alpha}\chi\alpha$ - (cf. $\mu\tilde{\alpha}\chi\alpha\iota\rho\alpha$, the knife) as the battle field, thus agreeing with the symbolism of KA, and with the symbolism of the letter chi as a cross/arrow and weapon (knife, sword, dagger, shear). The fact that MA-KA generated the word $\eta\mu\tilde{\alpha}\gamma\tilde{\alpha}\varsigma$ which related to cithara, also suggests an old symbolic connection of the instrument with the earth as the reflection of the celestial heaven. The most illustrative example is the city of Thebes, which had the form of a lyre (better, cithara?) and its seven doors symbolised the seven strings of the instrument and the seven planets (RICHER, 1994: xxxviii). It is noted that the lyre was another symbol of the autumn equinox (p. xxxvi).

This latter symbolism is met in $\mu\tilde{\alpha}\kappa\alpha$ words that meant the goat³¹ as $\eta\mu\tilde{\alpha}\kappa\tilde{\omega}\nu$ and $\mu\tilde{\eta}\kappa\tilde{\alpha}\varsigma$ ($*\mu\tilde{\alpha}\kappa\tilde{\alpha}\omega > \mu\tilde{\alpha}\kappa\tilde{\omega}\nu$; cf. $\mu\tilde{\eta}\kappa\tilde{\alpha}\omega\mu\alpha\iota$), and/or its bleat, hence connecting MA-KA with the autumn equinox in capricorn, which was also represented by the goat³² (the sea-goat) (Ibid.). In $\mu\tilde{\alpha}\kappa\alpha$ words, there is another indication of the association of MA-KA with the worship of the Mother Goddess. This is the word $\mu\tilde{\alpha}\kappa\alpha\rho$ (blessed), which was used as an appellation to the gods, and from which the adjective $\mu\tilde{\alpha}\kappa\alpha\iota\rho\alpha$ was derived as an appellation to Persephone, the daughter of Demeter. In many ancient civilisations, the king was regarded the sun-god, who in AG was the $\tilde{M}\tilde{\alpha}\gamma\eta\varsigma$ and/or $\tilde{M}\tilde{\epsilon}\gamma\alpha\varsigma$ (< $\tilde{M}\tilde{\alpha}\gamma\alpha\varsigma$, great; cf. $\tilde{M}\tilde{\alpha}\kappa\kappa\omega\varsigma$, king). According to Hesychius, the word $\mu\tilde{\epsilon}\gamma\alpha$ was also $\mu\tilde{\alpha}\tilde{\iota}$ (great) that strongly corresponds to MA. There was also the meaning of witch as $\eta\mu\tilde{\alpha}\gamma\alpha$.

Overall, MA-KA words did not carry any meaning of a feline and/or bull/cow. However, the feline was denoted in words having the syllable combinations ma-ra and

³¹ In AG, the goat was met in the words $\eta\tilde{\alpha}\tilde{\gamma}\alpha$ (the goat), and in the adjective of a goat $\mu\tilde{\alpha}\tilde{\lambda}\tilde{\omega}\varsigma$ meaning white. Both words involve MA and KA, although they are combined with different syllables. Cf. also the analogy $\tilde{\alpha}\tilde{\gamma}\alpha$ - $\tilde{\alpha}\tilde{\iota}\tilde{\kappa}\tilde{\alpha}$. See Figure 3.

³² In Luwian hieroglyphs, the syllable MA is depicted by the head of a goat.

ka-ta. Concerning ma-ra, MA related to the cat and the moon in the word ἡ Μαῖρα that denoted: the star Sirius, the subsequent heat season in August (after its heliacal rising), and the moon. Moreover, this syllable generated the verb μᾶραυγέω, which referred to the the cat's eyes and its pupil's contraction when exposed to light (see above Plutarch). In fact, as a compound word, its second part carries KA (as γᾶ > der. γέω-), thus carrying both the meaning of earth and light as discussed above. Moreover, considering the alternation between the laterals /l/ and /r/, ma-ra also produced the word μάλα, which meant the hilly altar³³ of the earth as a bull/cow, which, in turn, reminds the Minoan horns of consecration and the mountainous altars of the Mother Goddess. In relation to KA, the cat meaning is met in the words ἡ κάττα and ἡ γαλῆ³⁴ (from ka-ra; cf. MERTZANI, 2017). Interestingly, the cat and/or the eye of a cat was also the word ὁ, ἡ αἰέλουρος - αἰλουρος, whose first compound links to αῖα (and hence to the aforementioned equation αῖα - γαῖα - μαῖα), and the second compound to the word ὁ λῶρος (Lat. *lorum*) that was the omphalus.

Some phonological considerations

It was the aim of the study to analyse the relationship between the sounds and the meanings of MA-KA words, so as to show that any differences between their meanings are isomorphic to any differences between their phonemes. In doing so, MA-KA is described phonologically following Nobile's (2011: 109) *phonosemantic diagrammer* for the representation of phonemes within the oral cavity, according to which the consonants /m/ and /k/ are closed, articulated at the back of the cavity, and the vowel /a/ in the middle. Current sound symbolism research associates the specific phonemes with certain characteristics of their referents and meanings (size, shape, color, taste etc.).

For example, /ma/ in the pseudoword *maluma*, is found to connect with roundness and soft looking forms, whereas /k/ in the pseudowords *takete* or *kiki*, with angularity and/or linearity (D'ONOFRIO, 2014; KÖHLER, 1947; NIELSEN & RENDALL, 2011; NOBILE, 2015; PARISE & PAVANI, 2011). However, Spector and Maurer (2013)

³³ Its synonym is βούνισμα, which is met in the phrase ἰὼ γᾶ βοῦνι that demonstrates this exact relation. Note the phrase ἰὼ γαῖα μαῖα. Thus, there is an isomorphic analogy: ἰὼ γᾶ βοῦνι = ἰὼ γαῖα μαῖα, where βοῦνι/μάλα = μαῖα.

³⁴ The γαλῆ is also connected with the adjective καλή, for both deriving from ka-ra. In fact, this adjective is met in the Hamburg Amphora of the Eucharides painter, where Io as a bull is called Καλή, the beautiful maiden (GRIFFITHS, 1986: 476). Hence, ka-ra connects to both sacred animals. About the connection of Io (cf. ἰὼ, the moon) with KA and MA, also see the above footnote for the equation ἰὼ γαῖα μαῖα.

demonstrated that /k/ shows to appear for both angular and rounded shapes, a result that Magnus (2001) also supported for English. For example, the majority of /k/ words denote closeness, collection, containers, closure, as well as corners and crinkles. As a plosive consonant, it is perceived to predominate in words connoting large size, especially when is combined with back vowels (KLINK, 2000), and happy feelings with high activation (AURACHER ET AL., 2011: 3). Newman (1933) demonstrated that it associated with brightness too. In relation to /m/, Magnus (2001) demonstrated its frequent use in meanings of i.e., measure, move, mixing, madness, and less frequently, in meanings of earth and man. Newman (1933) showed its connection with largeness and darkness, Nobile (2015) with density, and Auracher et al. (2011: 3) with sad feelings, unpleasant mood and low activation.

The vowel /a/ is found to connote greater size, power, darkness, hardness, thickness, heaviness, slowness, warmth, sweetness and aggressiveness (KLINK, 2000). In Parise and Pavani (2011), /a/ was linked to dodecagons (which approximate the cycle), and to luminance and/or white colour. It's central position

“corresponds to the central position of the notion of a {structured spatiality} as the power to contain or be contained ... Not only because the concept of centre (centre of a figure, of a town, of a problem...) implies the idea of a space contained in another space. But also because the opening of the mouth connects the internal cavities allowing us to contain (lungs, stomach, intestine, bladder...) with the external cavities allowing us to be contained (holes, homes, houses, habitations, hotels, halls, hangars...). The mouth is the anatomical junction between inner space and outer space, the combination of which give rise to our physiological experience of spatiality as structured” (NOBILE, 2011: 114-15).

These results correspond to the meanings of MA-KA words. As a matter of fact, their meanings are isomorphic to the sound differences between the plosive /k/ and the fricatives /γ/ and /χ/. For instance, the consonant /γ/, having a mid-back articulation, in conjunction with the centrality of /a/, denotes the earth (γα > ἡ μᾶγάς), as the central place of all life (man, animal, plants, etc.), and as a planet, it is mapped to its natural round shape. In the phrase μᾶ γᾶ, it denotes largeness and greatness, as in the title Μάγης that denotes a cosmic ruler. In contrast, the words with /k/ (καῶ, κάς, downwards; κῆ, there, in that place) denote more definite concepts of earth/land, contrary to the catholicity of /γ/ words. Moreover, words with the fricative /χ/, as they mean battle and/or weaponry (and

metonymically death/loss), express meanings of high activation, thus differing substantially from MA-KA words with /k/ and /γ/. It appears that their isomorphic difference depends on the phonemic magnitude scale of the velars; from plosive /k/, to /γ/, and to /χ/ fricative.

The consonant /m/ with /a/ associates with motherhood and thus with concepts of nourishment and breast feeding. This meaning maps to its round grapheme, and agrees with research showing the birth of the human figure with the circle (cf. Arnheim, 1974: 176). In fact, Liu (1997) and Liu and Kennedy (1993; 1994; 1997) argued that the circle can evoke sensory concepts that are not primarily visual (e.g. the concept *life*), and that is linked with words meaning (among others) mother, goodness, light, spring, warmth, and cat, meanings that this study discusses under the MA-KA symbolism. Round representations under these concepts are reported by Munn (1960; 1962; 1966) and Green (2014b) on the graphic systems of Australian aboriginal people, where basic round shapes portray roundish and non-elongate objects/phenomena (water, a camp, a tree base, a person, etc.), whereas straight lines represent items of a straight and elongate form (spears, straight paths, etc.).

Discussion

The Mother Goddess as $\mu\alpha\tilde{\iota}\alpha$ - $\gamma\alpha\tilde{\iota}\alpha$ - $\alpha\tilde{\iota}\alpha$ is the mouth/gate where people give birth, are born and die. Such symbolism exists until today in indigenous villages, whose physical structure is analogical to the encircled cross, meaning “the gate, the door, the mouth or the place of outlet (the vagina)” (HEALEY, 1977: 290), and the hole of their emergence. There are also examples of city plans that looked like a puma (MAGLI, 2009: 205), and/or roundhouses plans to reflect cosmos. In these latter, for instance, a circular inner room represents the sea, and its outer, divided radially into compartments for families to live, represents the land. Moreover, the roof symbolises the celestial dome, supported by the pillars of the stars and a horizontal crossbeam for the Milky Way (RUGGLES, 2005: 439 - 440).

In other words, MA-KA as a round phonemic equation ($\mu\alpha\tilde{\iota}\alpha = \gamma\alpha\tilde{\iota}\alpha = \alpha\tilde{\iota}\alpha$) is also a round graphemic equation, as its earliest graphemes depict and its imagistic cultural manifestations. This result is enhanced more by examining etymologically MA-KA in other languages, non Indo-European, mainly indigenous ones. The short syllables of these languages carry much iconicity and connect to notions discussed under the Mother

Goddess symbolism. For example, Bengtson and Ruhlen (1994) listed *mak-* words expressing meanings of man and offsprings (pp. 307-308), and *ma* words denoting place and/or earth meanings (e.g. *to dwell, inside/in*); state of being (e.g. *to be*) (p. 310); the head and mental activity (e.g. *to know, to think, to understand*) (p. 312); and question words like *what, why* (cf. *makan*) and *where* (pp. 313-315). Motherhood meanings (e.g. *to breast, breast, to milk*) were found in the reconstructed **maliq'a* (pp. 308-309), reminding the AG Μαῖρα, μᾶραυγέω, and μάλα.

In Lakota, the Mother Earth is *Maka Ina* and/or *Makakan* (POWERS, 1986: 30). In this second word, *kan* means anything that has existed for a long time (p. 30), and the wood (*can*) (p. 64), and the morpheme *ka* denotes the hand and/or the acting hand as in drumming and rattling³⁵ (p. 56). All these concepts strongly connote the worship of Mother Goddess and her Minoan and Mycenaean iconography as there is the analogy of the tree with the wood (and hence, the pole of earth), of the hand (*ka*) with her raised hand worship act, and/or of the rattling with the sistrum.

Elsewhere, she is the Milky Way (cf. in Quechua, *Mayu*³⁶) (WILLIS & ROY, 2004: 28), as the river in the night sky that reflects the terrestrial ones, the life-giving water that continuously circulates between the earth and the sky and falls on Earth as rain (MAGLI, 2009: 221). It is the primordial water that has created the earth, which, as a coiling snake, creates the limits of the world, symbolising the eternal cycle of the sun and moon, the eternity (*ἡ, ὁ αἰών > αἶα*) (EL-KHASHAB, 1984: 218-219). It runs through the earth's four cardinal points (representing the cross), dividing her into quarters that mirror the quadripartition of the heavens, which, in turn, are created by the seasonal movements of the galaxy. In Africa (e.g. in Tabwa people), the Milky Way is *Mwila*, reflected in a mountainous ridge (p. 29) and in the *medial linea negra* during pregnancy (p. 43) that again strongly reminds the AG μάλα and Μαῖρα, and hence the omphalus.

Considering the connection of the moon with fertility, and the linguistic alternation of the laterals, *Mwila* corresponds to Μαῖρα (the moon) from which *ἡ μοῖρα* was derived, meaning the thirtieth day of the moon, the full moon and new moon. The word *ἡ μοῖρα*

³⁵ The word *drum* is *cancega*, a compound by *can* (the wood), and *cega* (the earthen pot) that also connect with the Mother Goddess. The word *rattle* is *wagmuha*, from *wagmu* (the gourd) and *ha* (the skin, hide). In particular, the word gourd consists of the noun marker *wa*, and *gmu* < **gamu*. In indigenous communities, the gourd was always used as a storage vessel to hold seeds and water, a usage that reminds the vessel-womb of the Mother Earth. This connection is clearer in its planting season from September to October, as a common practice throughout the Pacific, during which gourds were cultivated on the full moon for rapid vigorous growth. This period coincides with the rain season and the Greater Eleusinian Mysteries of Demeter. The full moon was always the Mother Goddess, the cow (cf. Io).

³⁶ The Incas also called the Milky Way *Mayu* (MAGLI, 2009: 221).

also meant death and/or the goddess of death, and thus linked to the symbolism of the Mother Goddess as the night and death. By extension then, the earth is also death, not only the mother, as in death one returns to the earth (MAGLI, 2009: 299). Due to this connection, MA AG words also denoted death/loss such as *μάω-μῶ-μῶ* (to seek one's destruction; rage, be furious). Moreover, as the goddess of the dead, she was worshipped in Thebes (cf. *μαγάζ*) that was also considered the city of the dead (SPARAVIGNA, 2008).

Interestingly, in relation to *Μαῖρα* and the verb *μᾶραυγέω*, the meaning of the cat is met in the *Guaná* (or *Chané*) language of Brasil, where the words *maracaiá* meant the cat and *ungè-maracaiá* the cat's eye, with their corresponding Tupi-Guarani words: *mbaracaiá*, *maracayá* or *maracajá* (TAUNAY, s.d.: 73). The second compound of the words (-*caiá*) strongly corresponds to the AG *γαῖα* of the verb *μᾶραυγέω*. Moreover, in Hopi the moon is called *mu'uyawu* and the *muya* is suffixed to the name of each lunar month (WALTON, 2012: 338).

In the Pacific, MA-KA is met in words denoting the rising of Pleiades, who were always regarded to belong to the constellation Taurus³⁷ (HARTNER, 1965: 8). Thus, in Hawaiian, the year and the new year *makahiki* (or *makali'i-hiki*, and *makali'i*) also means the rising of the Pleiades (MAGLI, 2009: 177-178), signifying the beginning of the agricultural and fertility cycle, towards which the sun moves into the centre of “the great circle of stars” (Rigel, Sirius, Procyon, Pollux, Castor, Menkalinan, Capella, and the Pleiades). The belief is that out of this cycle emerges the buffalo that symbolised all life. Its head were the Hyades, its backbone the Orion's belt, its ribs the Betelgeuse/Bellatrix and Rigel, and its tail Sirius (p. 220). The *makahiki* and its corresponding words in Tonga (*mataliki*), Tahiti (*matari'i*), and Maori (*matariki*) (p. 337), strongly associate with the AG word *ἡ μάτηρ* (mother) to which MA refers, as well as with *ματίς* that meant *μέγας* (great).

In Oceania and Southeast Asia languages the sun and the moon are translated literally as the *eye of the day/night* or the *face of the day/night* (Urban, 2009: 329). For example, in Indonesian, it is the *mata-hari* from *mata* (eye) and *hari* (day), which both correspond to AG *μάτηρ*, *ματίς* < MA, and to *γαλή*, *καλή* < KA-PA. This connection of the sun and the moon as the eye is met in the worship of Mother Goddess (as Hathor and Isis), who was perceived as the eye and was identified with the cat as the eye of the

³⁷ The Pleiades marked the left horn of Taurus, which becomes visible first in the course of the solar year (HARTNER, 1965: 8).

lunaries (EL-KHASHAB, 1984: 221). As a matter of fact, archaeology has unearthed numerous examples of blue pottery having the cat with the eye on the animal's side (ELWORTHY, 1895: 127). Moreover, considering the meanings of MA (i) as the Milky Way that gives birth to the planets (including the earth); and (ii) as the moon that precedes the sun controlling fertility, the cat's eye is the centre of this life-cycle on a micro (the day, month, year, etc.) and macro (the centuries, ages, etc.) time scale.

In the above associations, Taurus (the constellation) does not show the whole bull over the ecliptic, but only its forepart, the horned head (through Hyades), and its brightest star (Aldebaran) as the bull's eye. In antiquity, this particular star combination was depicted with bull heads having a star and/or a cross, like KA, on their foreheads (HARTNER, 1965: 4) and/or the rosette flower. In Egyptian hieroglyphs, KA was depicted by the cow/bull, and or the raised hands, which in certain instances were replacing the animal's horns on king's heads.

Such close etymology of MA-KA words across languages, and their corresponding symbolic and semantic associations, perhaps allow the speculation of a common worship/celebration of a celestial alignment between the sun (its solstice), the moon (full moon) and the galactic centre³⁸ (JENKINS, 2002: 12, 17). This alignment is suggested to be marked by this order of MA-KA syllables, especially in the phrase $\mu\tilde{\alpha} \gamma\tilde{\alpha}$. On a micro time frame, as aforementioned, this alignment used to be celebrated in the Olympic games, especially in August when the Lion (the big cat) culminated and the Pleiades rose acronychally³⁹ (HARTNER & ETTINGHAUSEN, 1964: 163). On a macro level, such an alignment meant the great cycle of the procession of equinoxes, which was conceived as the union⁴⁰ of the male principle (the solstice sun) with the female principle (the galaxy's centre) (JENKINS, 2002: 18).

³⁸ In Maya mythology the centre was regarded as the womb of the cosmic Mother (her birth canal) as well as the mouth of a snake or frog (JENKINS, 2002: 17-18). The head of a snake alternates with the head of a bird in Neolithic Mother Goddess idols (cf. GIMBUTAS, 1982; 1989). The Mother Goddess, the Milky Way and the bird are met between 15,000 - 12,000 BCE, when the Cygnus (the swan) constellation, the Northern Cross, marked the north pole. Back then, the pole star was delta Cygni as Ursa Minor is now (MAGLI, 2009: 11).

³⁹ At around 2,300 BCE., the Pleiades were the starting point of the house of Taurus at 0°, to which the spring equinox corresponded (SPARAVIGNA, 2008; RICHER, 1994: 80). Between the autumn equinox and the winter solstice, the Pleiades rose in the eastern sky after sunset, and hence, they were associated with mourning and funerals. In this acronychal rising, the Pleiades arriving at the zenith precisely at midnight (JENKINS, 2002: 21). From 2,300 BCE, the full moon passing the cluster at the autumnal equinox was also celebrated (SPARAVIGNA, 2008).

⁴⁰ In the summer solstice of ca. 2,300 BCE., a sacred marriage took place (RICHER, 1994: 104).

Conclusion

The paper examined the symbolism of MA-KA, following current research paradigms in phonemic and graphemic symbolism of languages. Firstly, the graphemic analysis showed the connection of Linear AB MA-KA syllables with their equivalent archaic alphabet letters, to which traditional scholarship has never linked until today. Secondly, it discussed MA-KA phonemes based on sound symbolism research and the meanings of their derivative AG words. These analyses highlighted its strong association with the worship of Mother Goddess and her round symbolism in reference to the cycles of the sun and the moon around earth, which was depicted in all aspects of culture (art, rituals, architecture, etc.). As a matter of fact, the MA-KA symbols are viewed within a cultural continuum (from Minoan to archaic Greek periods), contrary to the traditionally isolated study of scripts, especially because Greek developed and used symbols that need to be compared and examined in more detail. For example, the Cypriot syllabary that was used in parallel to the alphabet for centuries, is never compared with the Linear AB scripts and the alphabets in the historic continuum.

MA-KA was the focus of an overall cultural/ritualistic behaviour, in which the two symbols were used in symbolic activities (e.g. Rome's foundation ritual), and in symbolic objects (the bull rhytons with the cross, idols with raised hands, pottery decorations, etc.), due to which they retained their specific properties in the words they produced. In fact, such properties also explain their modern forms of M, such as the head of the cat (in particular, its ears), and the Milky Way as the cosmic river, the snake. Likewise, modern C, K, X, and Q are shown to originate from KA.

This MA-KA symbolism is supported by a wide spectrum of disciplines such as archaeology, sound symbolism research, archaeoastronomy, comparative linguistics and etymology. Therefore, their meanings coming from non Indo-European, indigenous languages suggest its use as a historical marker (cf. URBAN, 2009), expressing common concepts that ancient iconography and sound symbolism research indicate to map to real-world round referents (the sun, the moon, the galaxy's centre, the vulva, the head, etc.).

The phonological equation between the /a/ and the consonants /m/ and /k/ (through $\mu\tilde{\alpha}\tilde{\alpha}$ - $\gamma\tilde{\alpha}\tilde{\alpha}$ - $\tilde{\alpha}\tilde{\alpha}$) calls for further researching such phenomena across non-cognate language families. This relationship is even more interesting considering the angularity of alpha and the association of /k/ with angularity. This latter is latent and inclusive in the form of KA, demonstrating its symbolic bipolarity. Specifically, its two dimensional form

represents the three-dimensional pyramid (e.g. the cone) and/or the cube (WEBER, 2002: 20). Hence, looking at a pyramid from far above, its conical top is a small circle/dot, the centre of the cross,⁴¹ and from under it, the circle its base.

The analysis also corroborates with previous research that the structure of words is not arbitrary, although the passing of time fades the in-between-symbol relations. Some remains still do exist, such as in myths, rituals, and symbolic iconography, analogical to the graphemic forms, which under careful examination can highlight the symbolism of historic orthography. Such analogies between i.e., myth, rituals and symbols also means that the latter are the deities they represent (as the Mother Goddess), their myths and rituals. This is the case for MA-KA.

Appendix: MA-KA words and their meanings

WORD	MEANING
ὁ μάκαρ	: blessed, happy; prop. epith. of the gods, as opp. mortal men cf. μάκαιρα, of Persephone
μᾶκῶν < *μακάω; cf. μηκάομαι	: bleat, of sheep; of a hunted fawn or hare; scream, shriek of a wounded horse, stag, or boar; of a man (onomatopoeic word)
ἡ μᾶκῶν, μηκάς	: the goat
Μάγης < *Μάγᾱς	: Hesychius, μέγα = μαῖ. Ἴνδοί cf. μέγας: great, long, big, far; the spiral Pythagorean cycle; the Great Year circle
ἡ μάγα	: the witch
ἡ μᾶγᾱς	: bridge of the cithara
ἡ μᾶχη < μάχα-	battle, combat, field of battle cf. ἡ μάχαιρα: I. large knife or dirk, sacrificial knife; short sword, dagger; shears or scissors. II. name of a precious stone. III. part of the liver.

⁴¹ The cross dividing the cycle in four quarters, represents the sides of the pyramid. In this case, the base is square as well.

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