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Source: *Bulletin of the American Schools of Oriental Research*, No. 378 (November 2017), pp. 71-94

Published by: The American Schools of Oriental Research

Stable URL: <https://www.jstor.org/stable/10.5615/bullamerschoorie.378.0071>

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Contexts and Repetitions of Cypro-Minoan Inscriptions: Function and Subject Matter of Clay Balls

SILVIA FERRARA AND MIGUEL VALÉRIO

This article follows the trail of previous suggestions that the so-called clay balls inscribed in the Cypro-Minoan script bear personal names and titles, possibly of high-ranking individuals responsible for industrial and cultic activities at Enkomi, in other Cypriot centers, and at Tiryns on the Greek mainland. We examine attestations of sign-sequences and single signs found on these spherical objects, which occur also in other inscriptions, and cross-check them with the available find contexts of the balls vis-à-vis the structure of their inscriptions. Beyond the likelihood that these objects bear designations of individuals, we suggest that the single signs that often follow a specific sign-sequence on the balls may represent an abbreviated version of the second “word” found on the balls that bear two sequences and no single sign. Furthermore, it is argued that these words in the second position represent a qualifying description of the individual designated by the first sequence. Finally, it is suggested that these objects were possibly used for lot-casting—specifically, for calling individuals to certain tasks.

Keywords: Cypro-Minoan; Cypriot clay balls; Ugarit

*A rapt contemplation
Of the thought, of the thought, of the thought of his name:
His ineffable effable
Effanineffable
Deep and inscrutable singular Name.*
—T. S. Eliot, “The Naming of Cats”

*However, for some unknown reason, (. . .) when people ask Senhor
José what his name is, or when circumstances require him to
introduce himself, I’m so-and-so, (. . .) the people he is talking to only ever
retain the first part, José, to which they will later add, or not,
depending on the degree of formality or politeness, a courteous
or familiar form of address.*
—José Saramago, “All the Names”

Introduction

The island of Cyprus used a syllabic writing system during the whole of the Late Bronze Age (1525–1050 B.C.E.), known as Cypro-Minoan, which to this day remains un-

deciphered. Part of the inscribed material is a set comprising fewer than 100 relatively small (ca. 2 cm diameter on average) spherical clay objects (incidentally, the type of object most often inscribed in Cypro-Minoan), commonly defined as “balls,” which bear very short texts. The focus of this article is a threefold investigation: a descriptive analysis of the structure of these inscriptions, a computation of the patterns of repeated sequences or “words” (some of which are also found on other types of objects on the island), and an investigation of the possible subject matter they treat through a cross-matching of their recovery contexts. As a corollary to this descriptive and interpretive approach, we advance a hypothesis as to the practical role the balls may have played in Cypriot daily life.

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Fig. 1. Geographical distribution of clay balls inscribed with Cypro-Minoan text. (Map by M. Valério)

This contribution takes its cue from other publications that have discussed the topic and have sought to establish lines of investigation similar to the ones outlined here (Masson 1971; Vetters 2011; Ferrara 2012; 2015; Steele 2014; Valério 2016). Our premise, however, is that both the textual and archaeological evidence, once studied synergistically, can yield further inferences than those advanced previously, and, crucially, frame the question of subject matter and function of these objects in a much more comprehensive and, arguably, persuasive manner than has been hitherto possible.

Ninety-one examples of clay balls inscribed in Cypro-Minoan are attested overall, mainly from Cyprus but also from the broader Aegean.¹ Most come from the site of

Enkomi, in the east of the island, with the exception of five specimens, which come from Hala Sultan Tekke and Kition, and a recently discovered example that comes from Tiryns on the Greek mainland (Fig. 1). All specimens date to the same approximate horizon—namely, the Late Cypriot IIC–IIIB phase—to be situated, not without stratigraphic problems (Dikaios 1969–1971: 487–95), to the final phases of the Bronze Age.

The Cypriot balls have identical counterparts in two balls found at Ugarit, inscribed in the local cuneiform alphabet (Dalix 2008; Vetters 2011: 12, n. 99; Ferrara 2012: 111–12, fig. 3.13; 2015: 112–13; Steele 2014: 62). The fact that only two such objects have been found there, whereas Enkomi has so far yielded 86, suggests their use was not as widespread in the Syrian port-town. There is reason to believe that the two clay balls from Ugarit are more likely to have carried names than references to commodities (Ferrara 2012: 111–12).

Theories on the function of the Cypro-Minoan balls have abounded since their discovery. Early on, they were variously identified as weights (Persson 1932), gaming

¹ This count does not include two anepigraphic balls included in Jean-Pierre Olivier's collection of inscriptions (Olivier 2007; see also Ferrara 2013a): ENKO Abou 016bis ##019 and ENKO Abou 069ter ##073. Four uninscribed balls have also been discovered at Tiryns (Vetters 2011: 18–19). Our count does include, however, ENKO Abou 084 ADD##247 (Inv. A.72.13), which was not compiled in Olivier 2007 and Ferrara 2013a. The inscription on this ball was first disclosed by Émilie Masson (1978b: 808, fig. 1g) and has now been recovered by Maurizio Del Frio (2010: 310–11) and Miguel Valério (2014: 3–4). We have managed to identify this ball as the one discovered in 1972 in

a building in the Quartier 6W of Enkomi, in the chantier de la rue 5 (Pelon, Lagarce, and Lagarce 1973: 113, n. 3).



Fig. 2. An example of a clay ball: ENKO Abou 045 ##048. (Photo by S. Ferrara)

marbles (Dikaios 1969–1971: 108, 884–85), or devices of exclusively religious function (votive offerings [Evans 1935: 761] and divination pieces [Rutkowski 1979: 226]). These interpretations were dismissed in later discussions (Masson 1971: 27; Ferrara 2012: 94–97, 117; 2015: 105), and the consensus nowadays converges around Masson's (1971) idea that the first sign-group on the balls represents a personal name, and the second sequence and isolated sign(s) are a “complement” of some sort (Ferrara 2012: 122; 2015; Steele 2014: 63; Valério 2016: 409–12, 420–25). Agreement is somewhat weaker on Masson's proposal that the balls functioned as workmen's identification tokens or “identity cards.” Melissa Vetters (2011: 14) and Philippa Steele (2014: 63) cautiously favor this hypothesis, and Ferrara (2012: 120–22; 2015) suggests as a nuance that some of the repeated sequences on the balls are also inscribed onto high-value objects, which could mean we are dealing with the identifications of members of the Cypriot elite rather than of common personnel. Here, we will not reiterate these earlier arguments and conclusions but simply refer to the publications that summarize the inferences (Vetters 2011: 11–14; Ferrara 2012: 117–24), as we maintain that the most convincing interpretation is one that considers the balls as name-bearing devices.

Text Structures of the Clay Balls

Starting from this proposition, our first line of inquiry seeks to establish the patterns in which texts are arranged on the objects (an example of which is shown in Fig. 2, rolled out in separate photos to show all the signs), to cast light on a very simple question: If the texts on the balls represent onomastics, whose names do they record? This can be achieved by assessing the percentages of one-sequence texts (i.e., inscriptions formed by one “word”) and multiple-sequence texts (inscriptions formed by more than one “word”), and their relation to the frequent attestation of an isolated sign, which is for-

mally separated from the rest of the inscription by means of a division marker. In its basic details, this exercise was already the focus of other analyses (Ferrara 2015: 109, fig. 4; Valério 2016: 409–12). The conclusions, which were reached independently, are integrated and summarized as follows.

The majority of the clay balls whose texts are clearly legible (precisely 60 out of 74) contain only one sequence of signs, or “word.” More than half of these (exactly 37) are accompanied by an isolated sign, which is separated by means of a division marker. With one exception, this isolated sign always comes after the sequence. Texts with multiple sequences, which never number more than two, are comparatively less frequent: 13 specimens. Finally, there is a unique case in which the text of the ball contains no sequence at all, exhibiting instead two isolated signs separated by a divider (ENKO Abou 058 ##061).² To sum up, four main types of arrangements are attested: one sequence alone (23 balls), one sequence with an isolated sign (37 balls), two sign-sequences (13 balls), and two isolated signs (1 ball) (Table 1). Seen from another perspective, we either have one textual element (23 balls) or two (51 balls). This corrects a previous assumption (Ferrara 2015: 109, following in part and adding a correction to Olivier 2007: 75) that ball ENKO Abou 021 ##024 is divided into three sequences. The reading of this

² According to the convention inaugurated by Olivier (2007: 26–32), Cypro-Minoan inscriptions are cataloged with an absolute number (e.g., ##001) and a label (e.g., ENKO Atab 001). Labels are composed of the abbreviation of the place of provenance with four capital letters (ENKO), an abbreviated typological description in French that combines material and morpho-functional referents of the inscribed object (e.g., Atab for *argile* + *tablette* [i.e., “clay tablet”]), and a sequential number (thus, ENKO Atab 001 is the first clay tablet from Enkomi to be cataloged). Following Silvia Ferrara (2013a), the absolute numbers of newly cataloged inscriptions are preceded by “ADD.” For the sake of clarity, in this article each inscription is cited by its label immediately followed by its absolute number in the catalog (e.g., ENKO Atab 001 ##001).

TABLE 2. Isolated Signs and Their Number of Occurrences

<i>Sign</i>		<i>Occurrences</i>	<i>Sign</i>		<i>Occurrences</i>
04	𐎧	2	44	𐎧	1
05	𐎧	1	46	𐎧	2
06	𐎧	3	50	𐎧	2
13	𐎧	1	53/55	𐎧	1
15/21	𐎧	2	64	𐎧	2**
19	𐎧	2	73	𐎧	2***
23	𐎧	1	82	𐎧	1
25	𐎧	3	102	𐎧	3
27	𐎧	1	110	𐎧	2
35*	𐎧	1	112	𐎧	3
39	𐎧	1			

* The sign is supposedly attested in ENKO Abou 059 ##062, but the reading is very doubtful (even upon autopsy) and complicated by the fact that it is not clear whether 𐎧 is a variant of sign CM 34 𐎧 or 35 𐎧.

** One of the instances of CM 64 𐎧 is doubtful and could well be 107 𐎧 (ENKO Abou 068 ##071).

*** Both instances of CM 73 𐎧 (ENKO Abou 073 ##077 and HALA Abou 002 ##089) are considered doubtful by Olivier (2007: 102, 108) but are confirmed by the palaeographical assessment by Valério (2016: 142–43).

it may be simply a monosyllabic word or could represent a commodity (possibly spelled in shortened form, using only the first syllable for its name, as suggested in Ferrara 2012: 121–22; 2015: 109)—and concentrate on the function of abbreviation. If indeed this is its function, what could the isolated sign abbreviate? To answer this question, we have probed into the possible correspondences between the signs used in isolation and the signs that begin first and second sequences. The goal was to ascertain if the isolated sign could be an abbreviation of either of the other two types of textual elements. Predictably, no isolated sign repeats or correlates with the initial syllable of a first sequence in a significant way. More telling is the fact that the second sequence always occurs in an inverse relationship with the isolated sign, meaning that when one is present, the other is not. While we cannot prove that the correlation is direct, due to the limited number of attestations available, we can discern a pattern that may suggest a legitimate inference: There are instances of initial signs of second sequences that correspond to or are identical with several of the isolated signs (as highlighted in gray in Table 3), which means these may work as abbreviations of those very sequences. The validity of such a claim needs further strengthening, of course, as it would be ill advised to claim that the correspondence is stable and consistent. Nevertheless, such a prospect should be highlighted at the outset, as it has direct bearing on the discussion that follows.

TABLE 3. Signs that Begin Second Sequences and Occur as Isolated Signs

<i>Sign</i>	<i>Occurrences in Second Sequence</i>	<i>Sign</i>	<i>Occurrences in Second Sequence</i>		
04	𐎧	1	50	𐎧	1
06	𐎧	1	64	𐎧	1
12b	𐎧	1	81	𐎧	1
13	𐎧	1	107	𐎧	2
23	𐎧	2	110*	𐎧	1

Note: Gray highlights indicate attestations as isolated signs.

* This depends on our interpretation of ENKO Abou 021 ##024 as containing two different sequences, 𐎧𐎧𐎧𐎧𐎧𐎧 <𐎧𐎧𐎧𐎧𐎧𐎧> 102-73-04-97 <𐎧𐎧𐎧𐎧𐎧𐎧> 110-73-96 (see below).

Even if the script were deciphered, we would not be certain of the meaning of the isolated sign. However, second sequences and isolated signs mutually exclude one another. Thus, we can deduce that isolated signs play the role of modifiers or qualifiers of the first sequence, serving the same function as second sequences.

Juggling Text Structures

Three conditions are crucial for the interpretation of the isolated signs. First, inscriptions of two sequences never appear together with a single (i.e., isolated) sign; in other words, the isolated sign is meaningful only when one sequence is recorded, not two (Ferrara 2015: 109). Second, in the most frequent type of inscription (i.e., one following the pattern of one sequence plus an isolated sign), the sign-group may be found on more than one ball, but the single sign that follows it is always different (Valério 2016: 409). This suggests that the first sequence has a coherent function but can be modified or qualified further by adding *either* a second sequence *or* an isolated sign. The third and perhaps most crucial datum comes from a single attestation, but it is key in addressing the structure of the balls' inscriptions, the semantic categories registered, and their specific syntactical function. The attestation is from the inscription on ENKO Abou 021 ##024 (Fig. 3; Table 4).

This ball presents two epigraphic problems of some importance: (1) The only possible division marker, as signaled by Olivier (2007: 75), is not consistent with the placement and ductus of the majority of the dividers on the other clay balls; and (2) even if we accepted its presence there, it would leave us with a first sequence composed of six signs, which is unparalleled on any other ball. The only way ENKO Abou 021 ##024 can present a coherent structure within the balls' attestations is if we assume the scribe meant to write two separate sequences, as shown in Table 4. Olivier (2007: 75) also considers sign

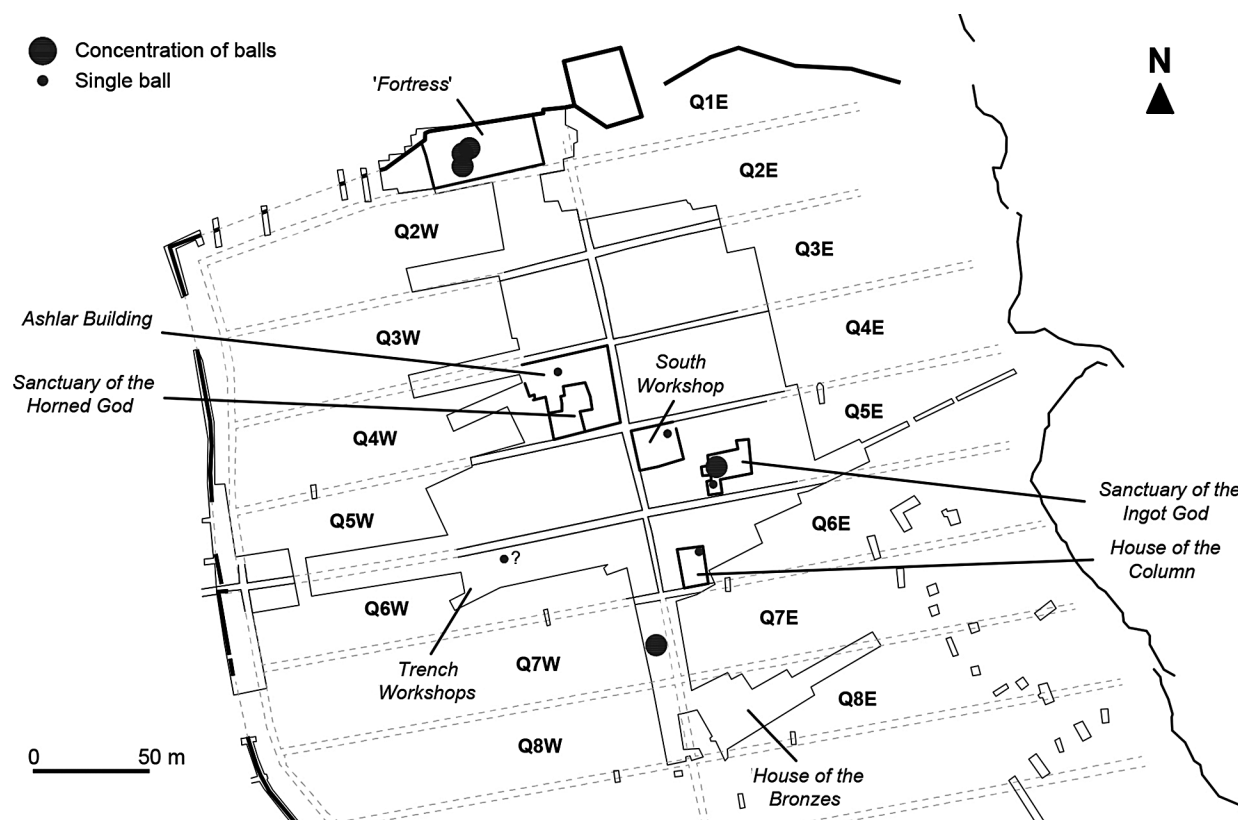


Fig. 4. Distribution of the contextualized balls across buildings at Enkomi (map adapted from Schaeffer 1971: plan IV, and Courtois, Lagarce, and Lagarce 1986: fig. 1).

the balls have, generically speaking, a nominal function (i.e., they name something, hence the apparent lack of suffixation), it is possible to infer that the first sequence constitutes a proper noun (probably a personal name [see above]), and the second sequence registers a common noun or an adjective that describes or qualifies the former. If this qualifier can be taken as a title or official designation of some sort, be it occupational, a patronymic, or a nickname, then it would not be surprising to find it also in the position of a proper noun—namely, in the first sequence—in certain instances.

This idea is corroborated by the second row of two lines of inscription on an ivory pipe from Kition (KITI lins 001##161): $\Upsilon\Upsilon\Upsilon$ | $\text{𐀀𐀃𐀆}(\Delta)\text{𐀀}$ 82-96-88 | 110-23-59 (-21)-23. Forms of these two sign-sequences appear also on clay balls: $\Upsilon\Upsilon\Upsilon$ 82-96-88 is found on ENKO Abou 031 ##034, where it is followed by an isolated sign 25 𐀀 ; and 𐀀𐀃𐀆 110-23-59, which looks like a non-suffixed form of the $\text{𐀀𐀃𐀆}(\Delta)\text{𐀀}$ 110-23-59(-21)-23 from Kition, is attested as a single sequence on ENKO Abou 062 ##065. This suggests that on the Kition pipe we may be dealing with a possessive or dedicatory construction such as “X of Y” or “X, to Y,” and each of these entities was in turn named on the mentioned clay balls from Enkomi. The

role of these entities is discussed further below (see also **Appendix 1**, Groups 10 and 14).

Find a Match: Repetitions across Types of Objects and Their Contexts

The text structures on the clay balls may be significant in themselves, but they cannot be fully interpreted without considering the contexts in which the balls have been found. This is an important avenue to add to our analysis, because archaeological contexts help to illuminate both the function and subject matter of the balls. While these contexts were investigated in a separate, introductory analysis, in terms of the general distribution of the balls (Ferrara 2012; 2015), a cross-comparison between context and patterns of sequence repetitions had never been fully undertaken before.

The distribution of balls across buildings within the urban center shows that almost half come from a religious setting (Ferrara 2015). The other half are predominantly involved in the industrial production of copper. This is a significant correlation at Enkomi (**Fig. 4**) (wherever secure contexts for the balls at this site have been recognized), Kition, and Tiryns. Such distribution echoes a significant

association between the religious sector and the exploitation of the copper resources of Cyprus and reinforces the suggestion that the two spheres were closely engaged in the manipulation of the island's resources for political legitimization (Knapp 1986). This idea is substantially supported by the patterns of repeated sign-sequences on the balls when these are matched to the recovery contexts and other repeated sequences found on other types of objects. Correspondences and possible subject matters can thus be established and identified, despite the fact that half of the balls are published without contextual associations or details reported (Ferrara 2012: 48–50). To achieve this goal, three parameters must be taken into account: integrating internal typological repetition, cross-typological repetition, and geographical distribution of the repetitions across the different sites of recovery.

Mapping Repetitions

Interesting patterns emerge when the sequences that happen to be repeated on the balls are tested across the contexts of their recovery, mainly from the same site of Enkomi but also from other sites on the island. **Appendix 1** lists all of the observable repetitions, divided into 14 sets, and provides further details of epigraphic importance for each, such as *possible* hand identifications. When it comes to specific archaeological contexts, certain groupings (1, 4, 7, and 13) are consistent in both their repetition schemes (e.g., in Group 1 the “word” $\text{I}\Lambda\text{B}\text{I}\text{V}$ 01-23-72-85 is always used within the formula sequence + isolated sign) and in the coherence of their find spots, the majority having been discovered within contexts that have generally been identified as ritual installations. But two caveats are worth stressing here. Sanctuaries at Enkomi and Kition have been interpreted as such on account of the types of installations and object concentrations found therein that point to religious practices tied to sacrifice, libations, and votive dedications (bovine skulls, bronze statuettes, votive paraphernalia, etc.). However, such identifications are at times problematic, as the evidence can equally be applicable to secular activities (Webb 1999: 10–11). The second word of caution refers to the lacunae in our mapping of all the clay balls' contexts. Despite these shortcomings, we propose that the only clear inference we can make is that the religious sector is the better-represented sphere of activity in which repetitions are detected.

In certain cases, we can take this evidence further, as some inscriptions can be recognized as having been drafted by the same hand. For instance, Group 1 in **Appendix 1** shows not only a predominant association with religious activity but also that the drafting of balls ENKO Abou 042 ##045 and Abou 040 ##043 may have been

done by the same writer. This suggests that there may have been a consistent regulation of this sphere of activity on the island. Moreover, repeated sequences can be seen on balls coming from the same sanctuary (Group 4) and, even more significantly, on balls recovered in different sanctuaries at the same site (i.e., Enkomi, Group 7).

There is evidence, moreover, that this contextual harmony is not restricted to Enkomi. Two repeated attestations correlate religious facilities at Enkomi and Kition (Groups 12 and 14). Thus, an inscription on an ivory plaque depicting the Egyptian god Bes found in Temple 4 at Kition mirrors a sequence found on a ball from the Sanctuary of the Ingot God at Enkomi (as well as on a pithos rim, which is now missing, inventoried as also originating at Enkomi) (Group 12). The individual named, however, is not merely attested from sanctuaries, as he (or she) is also represented in an important concentration of balls coming from the industrial area of this site, where a copper workshop had been installed during the previous phase. Whether the name is as closely linked to metallurgy as it is to religion is yet a moot point, but it reminds us of the ties between cult and an ideological exploitation of the island's natural resources.

We certainly see an emphasis on repeating names in the religious sphere, at least on the available evidence. A sign group inscribed on an ivory pipe from the same Kition temple (Temple 4) matches a single sequence on a ball found at the same Enkomi sanctuary (Sanctuary of the Ingot God) (Group 14). Even more important is the fact (repeated below) that on the items from Kition Temple 4, the sequences in question occur with the likely possessive suffix (characteristic of Cypro-Minoan and Eteocypriot [see below]). Names in the possessive form are of notable importance.

The sequence repeated in Group 6 is particularly significant, as it signals an interregional and cross-typological distribution. Besides having been recently discovered on a ball coming from Tiryns, continental Greece (TIRY Abou 001 ADD##244), the word recorded is attested also on an object that in part contains what is likely to be a list of individuals (the clay cylinder from Enkomi or ENKO Arou 001 ##097) and stands in isolation on the rim of a large pithos from the West Acropolis of Idalion-*Ambileri* (IDAL Avas 001 ##123). An industrial/commercial connection is clear from the Tiryns find spot, identified as a workshop, and a link to the sphere of production or distribution of goods would also accord with the instance on the large ceramic container from Idalion. Unfortunately, it is as yet unclear what kind of entity this sequence may represent.

It is notable that the same coherence of repetition that we find on balls from religious settings is not paralleled in the other contexts where balls have been recovered, at

least not to the same extent. This is the case despite the fact that industrial quarters (especially the north section on Enkomi, where roughly a dozen balls were found in the copper-refining workshops by Porphyrios Dikaios [1969–1971]) account for a large number of find spots for these objects (Ferrara 2015: 107, fig. 3). Therefore, names associated with religion are more frequently repeated than names linked to copper working or residential quarters, which are admittedly better-documented contexts for at least half of the clay balls recovered. This might mean that “religious” designations were fewer than those of individuals involved in the productive sector. Also crucial is the fact that balls recording names involved in cultic buildings and spaces (be they at Enkomi or Kition) find matches on objects of high intrinsic value, such as ivories and possibly a metal vessel. This is getting us closer to the possibility that names or titles involved in cultic activity denote particularly high-profile individuals or positions, which resonates with their attestations across the whole island and possibly beyond.

Cross-matches between repeated names and archaeological settings implicated in the religious sphere clearly give us more to work with in trying to delve further into the official roles played by the individuals whose names or titles are recorded on the balls and other objects alike. This opens up a window on the titles, functions, and roles spelled out with named individuals whose position and importance can be further defined and, crucially, whose meaning can be further fine-tuned.

Evidence from Experimental Readings

Indeed, the inferences outlined above, which we have derived from a neutral assessment of the sequences and their positioning, help us to recognize syntactical elements carried in the balls’ inscriptions. While this pattern assessment is significant in itself, it also presents the possibility of advancing the reading process further than has been attainable before now. Great progress has been made toward establishing a methodology that can yield substantial results on a path to reading the script with a certain degree of confidence.

Toward Reading Cypro-Minoan

This progress has not been made in a vacuum, as attempts to decipher the script proliferated during the 1950s through to the 1980s, with claims that Cypro-Minoan registered well-known languages, such as Mycenaean Greek, Hurrian, Aramaic, or a language belonging to the Anatolian branch (for summaries, see Hiller 1985 and Ferrara 2012). However, most of these inconclusive efforts were founded largely on linguistic speculation and

were never accepted by the scholarly community as cogent readings. This contributed to a significant impasse in Cypro-Minoan studies, and only in recent years has research been notably revitalized. Despite this, at present there is a general tendency to emphasize the quantitative limitations of the corpus (fewer than 4,000 signs distributed over ca. 250 inscriptions), which substantially hinders the possibility of a definitive decipherment.

We believe that this emphasis may have been excessive, and the obstacles, while undoubtedly tangible, may be more challenging than insurmountable. In more pragmatic terms, reading the script, at least partially, has less to do with the quantitative shortcomings of the corpus than with the existence of particularly informative texts. With this contribution, we aim to take this possibility forward. This effort will build on a new investigation that has sought to establish a methodology for the decipherment of Cypro-Minoan (Valério 2016). While this work still awaits publication and the scrutiny of an ample audience of specialists, its fundamental aim is to redress the balance between linguistic guesswork and quantitative skepticism, by concentrating on specific qualitative elements of the Cypro-Minoan script that allow for tangible progress. Indeed, to this day there has been no systematic line of analysis focusing first on differentiating the individual signs of the script through a meticulous palaeographical examination and, in turn, on investigating their possible sound values.

This approach to the repertoire of signs moves away from the construction of an internal division of the script into subgroups (Cypro-Minoan 1, 2, and 3), which we believe is based on preconceived assumptions about what constitutes an independent grapheme. Rather, we use as points of departure subsets of inscriptions that are homogeneous in style and relatively long, since it is easier to appreciate how many individual signs they employ. It has become clear that no subgroup contains more than 57–59 syllabograms, and, overall, the total number of individual Cypro-Minoan signs is somewhere between 57 and 70 (Valério 2016: 73–165). This number presents a new vision of the syllabary (**Appendix 2**), which differs from Olivier’s repertoire of 96 Cypro-Minoan syllabograms (2007: 413) but constitutes a much more fluid transition from Linear A (ca. 90 syllabograms) to Cypro-Greek (54 syllabograms). At the same time, a conclusion stemming from this, which had been reached previously by some scholars (Palaima 1989; Davis 2011; Ferrara 2012; 2013a; 2013b; Valério 2013), is that the current division of Cypro-Minoan into multiple scripts is to be considered invalid.⁵

⁵ Proving that the *current* division is invalid is not the same as proving there was no division. While we believe there is substantial

The investigation of the values of Cypro-Minoan syllabograms is structured around a three-step methodology. The goal of the first two steps, which work independently, is to propose hypothetical sound values for the signs. Drawing on the affinities with deciphered (Cypro-Greek) and partially legible (Linear A) syllabaries of Aegean-Cypriot tradition, the signs of Cypro-Minoan and the signs of these closely related scripts are compared in terms of *form* and *phonetic value*. For the first time, instead of using normalized drawings of the signs, the palaeographical variation of each writing system is considered for making comparisons. In parallel, a series of internal features, such as distribution and frequency of signs, alternations of graphemes of similar value resulting from morphological activity, and possible scribal mistakes are analyzed. The phonetic values proposed through these two methods are then *tested* by a third, which consists of provisionally transliterating a limited set of Cypro-Minoan inscriptions, to see whether they yield readings corresponding to linguistic elements known from external sources. In this way, the experimental sign values can be validated and new ones proposed. The idea of a multi-step approach to Cypro-Minoan is not in itself novel, as it has been advocated by other authors (Nahm 1981; Facchetti, Negri, and Notti 2013); however, it has never been put into practice in a systematic and detailed way, until now.

The results are substantial and encouraging. Pending their full publication, we will only present them here in a synoptic manner. For instance, clay tablet RASH Atab 004 ##215, found at Ugarit (and better known as RS 20.25 in Ugaritic studies), has yielded significant phonetic evidence. In terms of structure, the tablet features a list, with many entries containing an often-repeated, crucial sequence, 𐀀𐀁 51-28, which has long been interpreted as the word for “son” in patronymic constructions (this was first suggested by Claude Schaeffer *apud* Olivier Masson 1969: 392, n. 22, but elaborated on by Masson 1974). The methodology outlined above has led to a series of readings that correspond closely to well-known Semitic and Hurrian personal names, including West Semitic patronymic constructions and toponymic adjectives that refer to well-known Syrian towns. In general, the results discussed by Valério (2016: 346–442) are in line with earlier assessments (Masson 1974; Saporetti 1976), especially the readings suggested by Werner Nahm (1981);

evidence pointing toward Cypro-Minoan representing one script (with Cypro-Greek and the Carian alphabet as examples of scripts that were highly varied but unitary), we also recognize that at this stage the existence of more than one Cypro-Minoan system cannot be fully excluded. In particular, the script of the later clay tablets from Enkomi (i.e., “CM 2”) shows a number of idiosyncrasies that need to be explained.

but, some new sign values and interpretations have been proposed.⁶

Against the negative predictions made by Olivier (2013: 13) that such an approach might lead to circularity, the results extend beyond the material from Ugarit and beyond the domain of onomastics. Thus, another important conclusion is the confirmation that Cypro-Minoan features a suffix directly comparable to the well-known *-o-ti* suffix of Eteocypriot, a native Cypriot language recorded on a small number of syllabic inscriptions from the 1st millennium B.C.E. It has long been noted that a number of sign-sequences end with CM 23 𐀀 . There is already some consensus on reading this sign as *ti* (Olivier 2013: 8; Egetmeyer 2013: 111; Steele 2013: 58), and since sequences ending with it are often found on portable objects of high intrinsic value, scholars have suspected that this represents an equivalent to the Eteocypriot *-o-ti* suffix, which probably has a possessive function.⁷ The experimental values offered by Valério (2016) indicate that 20 of 27 (74%) Cypro-Minoan sequences having four signs or more and ending with 𐀀 -23 $\rightarrow$ *-ti* also have a syllabogram with a potential phonetic value of the type *Co* (consonant + vowel *o*) in their penultimate position. In other words, the final part of these sequences would read as *-o-ti*. Among the most telling examples is 𐀀𐀁𐀀𐀁𐀀 82-06-82-88-23 $\rightarrow$ *sa²-pa²-sa²-jo-ti*, a sign-group inscribed on a bronze bowl (PPAP Mvas 001 ##186).⁸ The form of the word without the suffix, **sa²-pa²-sa²-j(o)-*, would compare well with the nominative of the Ugaritic name *špšy* (see *DULAT* 826), probably vocalized as **šāpšāyu*.⁹ It would not be surprising to find an Uga-

⁶ A crucial case is the very sequence 𐀀𐀁 51-28. Given its importance as a key “reading” and early acceptance that it meant “son,” Masson (1974) forced the reading *bi-nu* on these signs, on the assumption that the underlying language had to be West Semitic. Nahm (1981), instead, transliterated it as *pi-ru* and made the unlikely claim that the language was Old Aramaic. Conversely, Valério (2016) suggests the reading *pi²-lu²*, which, without forcing the material or the interpretation, can be accounted for as an approximate Cypro-Minoan transcription of West Semitic */binu/*.

⁷ This inference had already been made by Masson (1971: 25–26) and Yves Duhoux (2009: 66–69). See Valério 2016: 399–400 for an argument that two Eteocypriot inscriptions from Kouklia, written in the Cypro-Greek syllabary, constitute evidence of a genitive use of *-o-ti*. Still, the possibility that this suffix had a dedicatory function cannot be wholly excluded at this stage, especially as in some languages (e.g., Etruscan) a genitive case can be used to indicate both possession and the addressee in dedications (Rix 2008: 150).

⁸ Markus Egetmeyer (2013: 111; 2014: 110) reads this sequence tentatively as *sa-pa-sa-la-ti*; yet the fourth sign is not CM 87 𐀀 $\rightarrow$ *la²* but rather CM 88 𐀀 $\rightarrow$ *jo*.

⁹ The key to interpreting this name is the attestation of two related onomastic forms, *špšyn* = ^dUTU-*ia-nu*, one written in alphabetic and the other in logo-syllabic script (*DULAT* 826). Together with *špšy*, they must represent hypocoristic forms of anthroponyms compounded with the Ugaritic divine name *špšy*. *špšy* is likely to contain the well-known

ritic anthroponym on this type of object on Cyprus and not just because of the geographical proximity of Ugarit. At Hala Sultan Tekke, a silver bowl has been discovered that bears an inscription in the Ugaritic script (KTU 6.68) containing the name of the manufacturer or owner of the vessel (Vita 2003: 404, with references).

The third set of results concerns some sequences found on the clay balls and related forms seen on other media, and is the focus of the next section. As remarked above, in more recent publications scholars maintain a cautious stance toward assigning phonetic values to the script. Several phonetic values suggested in the 1970s and 1980s are often disregarded, and only between 10 and 14 signs are consensually considered to have clear cognates in syllabograms of Linear A and Cypro-Greek (see, e.g., Duhoux 2009: 42, n. 15; Olivier 2013: 8; and Steele 2013: 50–60). Yet it is a telling sign that scholars are at the same time beginning to return to experimenting with phonetic values (Duhoux 2009: 42, n. 5; Egetmeyer 2013; 2014; Steele 2014). We hope that the results provided below help to demonstrate that the methodology outlined above, which recovers many overlooked sign values, provides a feasible way to start reading the inscriptions.

Evidence for Onomastics

In the following section, several sign-sequences found on the clay balls are transliterated. But first, a note is needed on the nature of the phonetic values proposed by Valério (2016) and used here: These values are the outcome of a sequence of three independent methods (comparative and internal analyses, and testing of the readings). The reliability of each phonetic value is ranked according to a system of question marks that reflects how many of these analytical steps support it. If a value is suggested by one of the steps but is not positively supported by the remaining two, then it bears two question marks (e.g., $za_2^{??}$); values suggested by two steps take only one question mark (e.g., $pa^?$); finally, values supported by the three steps, thus yielding readings of Cypro-Minoan sequences that can be interpreted in light of external evidence, are considered validated and no question mark is added (e.g., *li*). This guarantees control, at all times, on the feasibility of any given reading.

The focus here is on sequences that produce interpretable readings that match words known from external sources, especially the cuneiform documentation from the neighboring Levant. A second filter consists of nar-

rowing down this approach to sequences composed of four or more signs. This filter is intended to avoid accidental matches, which are more likely to occur when transliterating short sequences of two or three signs.

SINGLE SEQUENCES IN CLAY BALLS

𐎶𐎵𐎶𐎵 104-09-06-09 → *i-li-pa²-li* (ENKO Abou 080 #084)

This reading was already proposed by Masson (1974: 40; see also Egetmeyer 2014: 111). Masson compared it to the Ugaritic name *ilb²l* “My god is Ba²lu,” for which we would expect the vocalization /*ʔiliba²lu*/ (DULAT 51, 206). In this way, *i-li-pa²-li* would correspond to a person with a name drawn from Ugaritic or a closely related West Semitic language spoken across the sea. Although the last syllable seems to show a different vocalism, the identification is compelling. The inexact match might owe to an approximate Cypro-Minoan transcription of a foreign name or perhaps to a yet-unclear orthographic rule of the script.

FIRST SEQUENCES IN CLAY BALLS

𐎶𐎵𐎶𐎵 102-04-08-50 | 25 → *a-ta²-na²-pi²* | *ka²* (ENKO Abou 005 #006)

The sequence *a-ta²-na²-pi²* is comparable to /At(ta)nabi/, a Hurrian name attested at Ugarit, not only in alphabetical form as *atnb*, but also syllabically as *at-ta-na-bi* and *at-na-bi* (Gröndahl 1967: 222, 323; DULAT 119).

𐎶𐎵𐎶𐎵 | 𐎶𐎵 102-73-04-97 | 𐎶𐎵 → *a-mo²-ta²-ro* | 𐎶𐎵 (ENKO Abou 015 #016)

𐎶𐎵𐎶𐎵 | 𐎶𐎵 102-73-04-97 | 23 → *a-mo²-ta²-ro* | *ti* (ENKO Abou 045 #048)

𐎶𐎵𐎶𐎵 | 𐎶𐎵 102-73-04-97 <|> 110-73-96 → *a-mo²-ta²-ro* <|> *ke/u²-mo²-ri* (ENKO Abou 021 #024)

The sequence 𐎶𐎵𐎶𐎵 102-73-04-97 → *a-mo²-ta²-ro*, which repeats three times in first position (see above), is one of the most instructive. The same reading was already proposed by Nahm (1981: 62). He identified the sequence with *Amutaru*, a non-Semitic personal name attested at Ugarit, where it is spelled in the logo-syllabic cuneiform script as *a-mu-ta-ri* (genitive) and *a-mu-ta-ra* (accusative) (Nougayrol 1968: 98). Nahm (1981) did not fail to notice that this personal name was, in addition, similar to another anthroponym known from the documentation found at Ugarit, which is spelled alphabetically as *amtrn* and syllabically as *a-ma/u-ta-ru-nu* (among other orthographic variants) (DULAT 72, 73).

Amutaru was the name of an official sent by Ammistamru II (ca. 1260–1235 B.C.E.), king of Ugarit, to the court of Karkemiš, with the assignment of acquiring two expensive horses and a bow (Nougayrol 1968: 97–100; Lackenbacher 2002: 96). It has been argued that

suffix /-āyu/, whereas *špšyn* = ^dUTU-*ia-nu* could be interpreted as an extended form with /-ānu/, */šapšayānu/, although */šapšiyānu/ is also possible. For these suffixes and derivational processes involved, see van Soldt 2010; 2012.

this Amutaru and a certain Ama/utarunu, who received lands from the same Ugaritian monarch, are the same individual (Singer 1983: 8, n. 10; 1999: 655, n. 152). Both names are rare and lack Semitic or Hurrian etymologies, factors that only add to the suspicion that they could be foreign to Ugarit. There is a further clue that strengthens the idea that Amutaru and Ama/utarunu are variants of the same non-Ugaritic name. The likely predecessor of Amutaru as an envoy at Karkemiš was an individual called Taguhlinu/Takḫulinu (Singer 1999: 655), and documents from outside Ugarit mention a Taguhli, who is believed to be the same person (Singer 1983: 6, n. 5, 12–13; Lackenbacher 2002: 311, n. 1132). If this is correct, then Taguhlinu is simply an extended—possibly hypocoristic—form of Taguhli, and the same could be the case with Amutaru > Ama/utarunu. The importance of this possible equation is hardly secondary to our purposes. Notice that Ama/utarunu features a variation in vocalism in the second syllable, perhaps reflecting the attempts of the scribes at Ugarit to render a vowel that was close, but not exactly the same as Semitic /a/ and /u/. This squares well with the *o*-vocalism seen in the second syllable of Cypro-Minoan *a-mo²-ta²-ro* (Valério 2016: 423–25).

OTHER SEQUENCES ON CLAY BALLS

Some other sequences of three signs reveal, upon transliteration, similarities to onomastics or titles known from external sources. For example, 𐎶𐎶𐎶 82-50-09, the single sequence in ENKO Abou 002 ##003, would read *sa²-pi²-li*. This reading is consistent with the Ugaritic personal name *ṭbil* = *ša-bi-DINGIR(-li)*, probably vocalized as /ṭabi²ilu/ or /Sabi²ilu/ in the nominative (DULAT 883; cf. also the anthroponym *sa-bi₄-lu* / *sa-bi-i-la* at Alalah [Sivan 1984: 282]). Again, the ending would seem to feature the attestation of final Ugaritic *-u* as Cypro-Minoan *-i*, also seen above in 𐎶𐎶𐎶 104-09-06-09 → *i-li-pa²-li*. And like *i-li-pa²-li*, this *sa²-pi²-li* would be named on a ball without any kind of complement.

Another interesting example is 𐎶𐎶𐎶 46-70-17 → *t/su²?-ki²-no*, attested in ENKO Abou 073 ##077 as a first sequence followed by isolated 𐎶 73 → *mo²*. In this case, the reading is suggestive of Canaanite /t²ōkinu/, which appears as *sū-ki-ni/a* in two of the El-Amarna letters sent from Canaan (EA 256.09, 362.69) and is roughly translated as “commissioner” or “prefect, governor” (Tropper 2012: 47; Rainey 2015: passim). Yet, if Cypro-Minoan *t/su²?-ki²-no* represented an official’s title, we would need to hypothesize that it was specifically borrowed from a Canaanite dialect, since in the Ugaritic (*s/skn* = *Lū saki(n)ni*) and Akkadian (*sākinu*) cognates of the word, the vocalism of the first syllable is different (CAD 15: 354; DULAT 746–47). At Ugarit, the *sākinu* was the most important person after the king and was in charge of all

matters related to the governance of the city, “whether internal or external, political, commercial or juridical,” to the extent that he would cover the monarch’s place in case of absence or minor age (Vita 1999: 469). However, there were also officials titled “*sākinu* of the palace” or “of the king’s/queen’s house,” not to mention that other Syrian towns under the aegis of Ugarit had their own *sākinu* (van Soldt 2006). This shows that the title had a generic sense of “supervisor, governor.” It would be tempting to postulate that Cyprus had a similar high-ranking office, inspired by Levantine officialdom.¹⁰ Another comparandum worth mentioning is Ugaritic *skn*, a personal name of obscure etymology and vocalization (see *skn* (IV) in DULAT 748).

Be that as it may, the two identifications we have considered here for 𐎶𐎶𐎶 82-50-09 *sa²-pi²-li* and 𐎶𐎶𐎶 46-70-17 → *t/su²?-ki²-no* should be cautiously left as speculative for now. The reasons are those stated at the beginning of this section: The probability of fortuitous similarities is relatively higher. Moreover, the reading of 𐎶𐎶𐎶 46-70-17 as *t/su²?-ki²-no* is problematic in itself, as the phonetic value of the first sign is quite uncertain.¹¹

The number of compelling identifications is therefore restricted to three personal names, ²Ilba²lu, At(ta)nabi, and Amotaro. This may seem comparatively meager in light of the total number of inscribed clay balls, but it is hardly surprising, as the recognizable material is inevitably limited to anthroponyms known from external sources, particularly the cuneiform documentation from Ugarit. If the majority of the balls do register Cypriot personal names and words that are unattested outside Cyprus, it is only natural that the contents of their texts remain largely unidentifiable also after a valid transliteration. As we argue below, however, the few elements that are legible with a degree of confidence square well with what we have managed to extrapolate from the textual patterns of the balls in terms of subject matter.

¹⁰ It is interesting that the title *skn* “(city) governor?” appears in two Phoenician inscriptions from Cyprus, even though these are dated to the 8th century B.C.E. (Steele 2013: 231, with references).

¹¹ Sign CM 46/47 𐎶 represents the palaeographical bridge between Linear A *du²* 𐎶 and Cypro-Greek *su* 𐎶 (Nahm 1981: 56, Abb. 3; Valério 2008; 2016: 289, table 3.109). The two sound values may seem irreconcilable at first, but the palaeographical development is so compelling that we can attribute the differences to structural rearrangements in the Cypro-Minoan syllabary. If we consider that signs of the Linear A *d* and *t* series appear to correspond to a single *t²* series in Cypro-Minoan (as only five or six Linear A “dental” signs survive in the Cypriot script: *da*, *te*, *ti*, *to*, *du*, and possibly *tu*), a suitable way to account for this development is postulating that the syllable represented by CM 46/47 𐎶 reflects the progressive assibilation of a dental before /u/: *tu* > *t²u* > *su* (Valério 2016: 292–99).

TABLE 6. Patterns of Use and Interactions between the Textual Elements of the Clay Balls

<i>Text Element</i>	<i>Interaction with Other Elements</i>	<i>Interpretation from Reading</i>	<i>Examples</i>
W (Single sequence)	Self-standing Can be equal to Y	PN or qualifier	<i>i-li-pa²-li</i> <i>ke/u^{??}-mo²-ri</i> <i>ke/u^{??}-ti-zo²??</i>
X (1st sequence)	Is modified by Y or Z	PN (or qualifier?)	<i>a-mo²-ta²-ro</i> <i>a-ta²-na²-pi²</i> <i>sa²-ri-jo</i>
Y (2nd sequence)	Modifies X Can be equal to W	Qualifier	<i>ke/u^{??}-mo²-ri</i>
Z (Isolated sign)	Modifies X Mostly in complementary distribution with Y Replaces X once	Qualifier(?)	

A Pyramid of Names?

Having ascertained that a number of sign-sequences have matches in known onomastics, the next step is to introduce them and others into a functional framework. This means that we can (1) establish the semantic categories registered on the clay balls; (2) extend them across the repetitions on other objects; (3) cross-match the function of the isolated signs; and (4) speculate on the roles played by certain individuals whose names are safely identified. In order to do this, we have tabulated a tentative “pyramid” of attestations that reflects a hierarchy of functions for each type of textual element on the balls (Table 6).

We start from the premise that the balls bearing a single sequence (see W in Table 6) will record designations that are significant and recognizable by themselves. In other words, they do not need a second sequence or isolated sign to refine their meaning. The occurrences of single sequences at our disposal run across industrial and religious associations (three come from the Sanctuary of the Ingot God: ENKO Abou 057 ##060, ENKO Abou 062 ##065, and ENKO Abou 082 ##086) but are very seldom repeated. This implies, with the due caution that is customary, that they may represent in several instances, but crucially not all, personal names (PN). We have already discussed the pattern of first sequences (X), which can lead to a second sequence (Y) or run alongside an isolated sign (Z). In turn, we can assume that second sequences (Y) will modify first ones by qualifying them further but can also stand alone (W). An example of the latter case is shown on ball ENKO Abou 037 ##040, where the single sequence 𐎗𐎠𐎶 110-73-85 readable as *ke/u^{??}-mo²-ri* is also found as the second sequence on the already discussed ball ENKO Abou 021 ##024. This happens to be the case where a single sequence may actually *not* represent a PN but a title. If it is indeed a title, it must

be an important one, to be recognizable *also* as W.¹² On ENKO Abou 021 ##024, it is likely to be a qualifier of a personal name, 𐎗𐎠𐎶 102-73-04-97, which is readable as *a-mo²-ta²-ro*, and is also recorded on another ball (see section above), the pithos rim, and on the Kition plaque, in the possessive form. This is either a central individual, whose position is emphasized across the island and whose property is marked by naming the owner in full spelling (see also Appendix 1, Group 12), or a very common Cypriot name.¹³ The fact that the same anthroponym occurs at Ugarit would support this notion.

Coherent with X representing PNs is the attestation for *i-li-pa²-li* (in quite a serendipitous occurrence) on ENKO Abou 080 ##084, which stands alone and could indicate a theophoric Semitic name (as shown above). PNs that stand alone are easily recognizable without further information necessary to specify their function or title. This means that they are very important individuals within the society (or else that the ball was inscribed in circumstances that made the identification of the single PN with the individual unambiguous). For instance, 𐎗𐎠𐎶 110-23-59 → *ke/u^{??}-ti-zo²??* standing alone on ENKO Abou 062 ##065 (Appendix 1, Group 14) is also repeated

¹² In fact, 𐎗𐎠𐎶/𐎶 110-73-96/85 → *ke/u^{??}-mo²-ri* is another example of a three-sign sequence with a possible but unprovable Semitic interpretation. The reading is similar to another sequence found on a ball, 𐎗𐎠𐎶 110-39-97 → *ke/u^{??}-mu²-ro* (ENKO Abou 018 ##021), and both are reminiscent of Middle Assyrian Akkadian *kumru* “priest,” as well as Hebrew *kōmer* and Aramaic *kumrā* (CAD 8: 534–35; Huehnergard 2008: 137), as pointed out to one of us by Nahm (pers. comm., November 2012). However, it is uncertain how widespread the title was in the Levant during the Late Bronze Age. (There is a single possible attestation of *kmr* in Ugaritic that is very problematic [see Huehnergard 2008: 137; DULAT 441, 562], thus the uncertainty whether the borrowing into Cyprus is plausible.)

¹³ Although the recognizability factor is the most intriguing explanation, we cannot exclude that *ke/u^{??}-mo²-ri* may refer to more than one individual bearing the same name.

on the Kition ivory pipe with the likely possessive suffix, therefore signposting that he (or she) is involved, linked, or in charge of 𐤊𐤍𐤏𐤔 82-96-88 $\rightarrow$ $sa^2-ri-jo$, the individual preceding him (or her) on the pipe. $sa^2-ri-jo$ is in turn mentioned elsewhere, several times (Appendix 1, Group 10), twice himself (or herself) in the possessive. In the interface between these individuals, we can establish a link between two very important characters that not only are repeated in specific contexts ($ke/u^{??}-ti-zo_2^{??}$ is invariably tied to religion), but whose role is tightly knit. One is the x of the other ($sa^2-ri-jo$ | $ke/u^{??}-ti-zo_2^{??}(-ko^2-)-ti$), and the x himself ($sa^2-ri-jo$) can be involved, linked, or in charge of what we can assume are other people (?) (mo^2-sa^2 | $sa^2-ri-jo-ti$). In this way, traces of a functional pyramid can be gleaned, albeit within a most patchy and tentative framework. We can speculate further as to the possibility that $ke/u^{??}-ti-zo_2^{??}$ may be a god, if not a very important personality in the religious sphere, and that $sa^2-ri-jo$ is the name of his “employee,” most likely in a title role. If the former case is valid, $sa^2-ri-jo$ could be a priest or high religious official. Having a reliable context for ball ENKO Abou 031 ##034 would be most helpful; but, regrettably, this is as far as the inference takes us. We can conclude that not every X sequence standing in isolation need necessarily point to a PN. X sequences can point to specific roles or qualifiers, easily recognizable because they do not need further introduction unless to specify that they are tied to someone whose importance is even superior (or perhaps, but less likely, to distinguish between two homonymous entities).

The probable possessive suffix $-o-ti$ also highlights the importance of another individual, 𐤊𐤍𐤏𐤔 27-08-110-97-23 $\rightarrow$ $si^2-na^2-ke/u^{??}-ro-ti$, recorded on a cylinder seal found at Kourion (KOUR Psce 001 ##202) and at the beginning of the text on the already mentioned clay cylinder seal from Enkomi (ENKO Arou 001 ##097). The name registered on the latter clearly marks the possessor of the seal, as is also common practice on seals from the Near East, 1st-millennium B.C.E. Cyprus, and elsewhere: It is not surprising to find the name of the owner of a high-prestige object spelled out in isolation. The occurrence on the Enkomi clay cylinder in conjunction with $ke/u^{??}-a-ma^2-ta^2$ (lines 3–4) is more enigmatic; but, it may well be working in analogy with the attestation of 𐤊𐤍𐤏𐤔 73-82 | 2-96-88-23 mo^2-sa^2 | $sa^2-ri-jo-ti$ just above it (line 2 of the cylinder). The mention of a 𐤊𐤍𐤏𐤔 55-10-70-12-23 $ma^2-li-ki^2-po^2-ti$ below in line 3 raises the possibility of an interesting etymological connection to the West Semitic root for “king,” $*mal(i)k-$ (Sivan 1984: 243), be it as part of a compounded anthroponym or a borrowed title. This not only resonates with the theophoric Semitic name encountered above ($i-li-pa^2-li$) but, again in a likely possessive form, also marks an analogy in function: whatever mo^2-sa^2 and $ke/u^{??}-a-$

ma^2-ta^2 are, they are closely linked, related to, and perhaps controlled by the high-end individuals mentioned after them and in conjunction.

This reconstruction of the possible roles played by the named individuals or entities shows that we can get a glimpse of religious personnel being active in the sanctuaries of Enkomi and Kition, and that some individuals of very high status and profile were officiating in the management of cultic practices. To what ends remains a mystery, but the tantalizing proposition that the name of a god may have been inscribed on a ball points to the possibility that priests (or priestesses) may have been mentioned in close association, and their ivory objects marked as specific possessions. In turn, the clay cylinder from Enkomi may have, at least at the beginning of the text, recorded a preliminary list of high-ranking individuals (with the same name or title), with further specification of their spheres of control ($ke/u^{??}-a-ma^2-ta^2$, mo^2-sa^2). This vague picture and tentative reconstruction would be less than helpful without a further probing into the ultimate function of the balls themselves. If notable persons were mentioned, what was the reason behind their being singled out? In the daily life of the literate Cypriot elites, what role did the clay balls play?

Balls, Calls, and Rolls

Masson (1971: 29) suggested that balls were used as identification cards or tags for workmen, arguing that the purpose seemed to be closely tied to carrying the inscription. This is not necessarily so, as flat writing surfaces would fit the bill much better.¹⁴ That the Cypriot balls were labels or tags in a general sense is also unlikely, as they were not suitable for attaching to other objects (as identifiers of contents, provenance, destination, or ownership) because they lack perforations for tying strings and hanging, or any other feature that might have made their coupling possible (Valério 2016: 411–12). Ferrara (2012: 117) mentions their portability, but these objects would have needed to be transported in some closed container, thus reducing their handiness. In fact, it is possible that portability was not crucial to the function of the balls, as they could have been produced in close proximity to the environment in which they were used. Hence, we must mention the possibility that they were manufactured at a variety of locations, as many of the industrial installations where they were found had pits where clay could have been stored and ovens where the objects could have been baked (Vetters 2011; Ferrara 2012).

¹⁴ In fact, this is the case with the objects she quotes as parallels, the inscribed clay tetrahedrons from the Arcadian city of Mantinea (5th–3rd centuries B.C.E.), which have been interpreted as tokens used to allocate seats in the public assemblies that met in the city’s theater (Robinson 2011: 37–38).

It follows that the simple round shape of the balls, which did not facilitate the process of inscribing them, must have been indicative of some other function. By virtue of physics, round shapes are suitable for rolling and tossing. In addition, baking the balls made them harder and therefore more resistant to being thrown from small distances or heights. If not game pieces carrying the names of the players, the attractive alternative is to interpret the balls as *sortes* or lots for casting (Valério 2016: 412).

The two closest comparanda for the Cypriot balls in terms of physical characteristics come from 5th-century B.C.E. Sicily, and both point in this direction. The first is a group of four bronze spheres from Himera, on the northern coast of the island (Sclafani 2007; Brugnone 2011). Each sphere was inscribed with a divine name or epithet: one with the name of Leukatheia in the nominative and the others with Zeus Soter, Herakles, and the “Liberator” in the genitive. Despite the greater material investment, as they are made of bronze, the Sicilian balls are analogous to the Cypriot ones in certain aspects: They measure 2.0–2.1 cm, bear incised Greek letters whose height is 0.4–0.8 cm, and one of them is somewhat flattened at the poles. Taking into account their inscriptions and physical characteristics, they have been interpreted as devices for cultic sortation or cleromancy (Sclafani 2007: 248, 251). It is unfortunate that, although two of the balls have been excavated in religious buildings at Himera, the archaeological contexts have not aided in making this more than a hypothesis. The second comparandum is a group of four balls of baked clay, three from Reggio and one from Pontecagnano (Lazzarini 1995). They measure between 2.6 and 3.1 cm, so both the material and the dimensions are consistent with the Cypriot balls. They also carry Greek inscriptions, although in this case, each one bears a personal name followed by a patronymic. M. L. Lazzarini (1995: 419) interprets them as devices used in the exercise of civic duties or lot-casting (which are not necessarily mutually exclusive), citing ancient authors (most interestingly Paus., *Descr.*, 4.3.5) as evidence for the use of ballots made of various materials for similar purposes.

Be that as it may, the practice of sortation or lot-casting is ubiquitous in the ancient eastern Mediterranean and surrounding areas, in different societies and historical periods. It was the choosing process par excellence, for example, in the division of lands, the election of officials, or the organization of cultic activities (Taggar-Cohen 2002: 97). The Homeric poems are filled with references to lot-casting in deciding matters of war, assigning order or place in competitive games, and dividing inheritances. The practice best described consisted of casting lots (*klēroi*)—for example, stones or sherds of pottery, previously marked with a personal “sign” (*sēma*)—into a bronze helmet, which was then shaken until one lot leapt out (*Il.* 3.325, 7.170–90, 23.352, 23.862, 24.400; *Od.* 9.331,

10.205–10, 14.209). The tossing of lots into a receptacle seems also to be recorded in Hittite texts (Taggar-Cohen 2002) and in the Bible (Ezek 24:6).

The mundane and frequent nature of lot-casting, combined with the variety of people that would be involved in it, would no doubt explain the choice of clay as the balls’ material—it was both cheap and hard enough to endure tossing. By contrast, Sicilians of classical Himera could afford to have their spheres made of bronze, as what they inscribed on them were the names of deities whose number was limited; and this way, the spheres were reusable. We expect the situation with the Cypriot balls would be different from the Himera example if they registered the names of several different individuals in a continuum of many decades. In this case, the choice of clay is comparable to the Sicilian specimens from Reggio and Pontecagnano.

Favorable to this view is Ferrara’s (2015: 108) insistence that the “variety of the contexts of recovery” of the balls “can be read as an indication of the objects’ ultimate function,” despite her inclination to support the hypothesis that the balls represent statements of identity for the elite. In her view, the balls served an “administrative function” relating to the management of industrial activities with purposes at home in the “sacred sphere” (2015: 114). “They had a fundamentally polyvalent role” and were “employed in the organization of communal activities” (2015: 108). This line of reasoning ties in well with the sortation hypothesis. The numerous references to lot-casting in the biblical narratives illustrate the range of possible applications of this practice. As with the Mesopotamians, Anatolians, and Greeks, lot-casting in the world of the Hebrew Bible was used for partitions of land, inheritance, and booty, matters of warfare and justice, election of rulers, organization of duties of temple officials, and sacrificial offerings (Lindblom 1962: 165–66). Thus, in everyday life, lot-casting could settle disputes (Prov 18:18), such as the sharing of loot (Ps 22:18; Prov 1:14), while in the sacred spheres it could decide which goat would be sacrificed (Lev 16:7–10) or which official was in charge of the duty of supplying firewood to the temple in Jerusalem (Neh 10:34). It is possible that, on Cyprus too, sortation was a means of assigning duties or deciding certain matters in workshops and sanctuaries.

Coming Full Circle

This article has sought to bring together four intertwined lines of examination, starting from the premise that the Cypro-Minoan texts on the clay balls record names. Our probe consisted of (1) investigating whose names or titles were recorded; (2) establishing a hierarchy of these designations by cross-matching the repeated sequences of inscribed signs with the archaeological contexts in which

the balls were recovered; (3) experimenting with reading the names or titles recorded in light of a possible methodology for decipherment recently initiated; and (4) testing the possibility that the balls were used for lot-casting purposes, in line with other traditions that utilized similar objects for the same purpose.

Our results show that it is only through a trans-disciplinary perspective, merging archaeology with epigraphy

and linguistics, that a deeper understanding of the Cypriot clay balls can be reached. If our approach has proven successful in throwing light on their use and significance in Late Bronze Age daily life, even before a thorough decipherment can be made, it is hoped that such success will be extended further into “reading” other classes of inscribed objects, while never losing sight of the powerful instrument that a combinatory methodology affords.

Acknowledgments

We are grateful to Bernard Knapp and Juan Pablo Vita for reading a previous draft of the article and for their advice and insight. We also thank the two anonymous reviewers for their

detailed and generous comments. All errors and shortcomings remain our own.

Appendix 1. Repeated Sequences

Transnumeration	Transliteration	Inscription	Object	Context*	Full text	Observations
Group 1						
1A 𐎠𐎡𐎢 01-23-72-85	<i>we₂^{??}-ti-ja²-ri</i>	ENKO Abou 040 ##043	Clay ball	Religious context. Zone 103, Sanctuary in the south. ¹ LC IIIA–B.	01-23-72-85 05 <i>we₂^{??}-ti-ja²-ri</i> <i>lo²</i>	CM 05 not repeated as isolated sign elsewhere; inscribed by Hand Zazie (as named by Olivier 2007), supposedly same as balls ENKO Abou 039 ##042 and 042 ##045 (both from “Zone 103. Sanctuary in the south of city”).
1A 𐎠𐎡𐎢 01-23-72-85	<i>we₂^{??}-ti-ja²-ri</i>	ENKO Abou 064 ##067	Clay ball	Trench 320 E, top. Point 1054 on the surface.	01-23-72-85 64 <i>we₂^{??}-ti-ja²-ri</i> <i>o²</i>	
1A 𐎠𐎡𐎢 01-23-72-85	<i>we₂^{??}-ti-ja²-ri</i>	ENKO Abou 066 ##069	Clay ball	Religious context. Sanctuary of the Ingot God, west area of the hall, floor III. LC IIIA–B.	01-23-72-85 112 <i>we₂^{??}-ti-ja²-ri</i> <i>z/ke^{??}</i>	Documents where 112 appears isolated: ENKO Abou 042 ##045, 043 ##046, 066 ##069, 079 ##083; KALA Arou 001 ##098 (line 10); KITI Avas 013 ##142; ENKO Mvas 002 ##183

¹ It is not clear whether the sanctuary located in “zone 103,” “quartier sud,” should be equated with the Sanctuary of the Ingot God, which was excavated by Schaeffer in 1961, the same year of the “zone 103” balls’ recovery (Ferrara 2013a: 29–35).

Group 2

N.B.: Previously, Ferrara (2012: 114, table 3.1; 2015: 110, no. 2) had grouped together the sequences 12b-04-97, 04-04-97, and 81-97, but the last one is presented here as part of a separate set, Group 9 (see below). This stems from a reappraisal of the distribution of repeated sequences in light of the new palaeographical evidence discussed in Valério 2016. CM 81 𐎠𐎡, which is attested in other types of inscribed objects, must be considered, for the time being, a separate grapheme. Conversely, 04-04-97, 12b-04-97, and 12b-04-97 need to be considered together. Sign 12b 𐎠 has been differentiated by Olivier (2007: 24) based on two difficult instances; yet these may be simply two cases of incomplete CM 13 𐎠, while it is not impossible that the example in ENKO Abou 026 ##029 is a poorly executed 04 𐎠. These possible “solutions” make sense not just palaeographically. If CM 12b corresponds to CM 13, then 12b-04-97 reads *to²-ta²-ro*; if, conversely, CM 12b is a mistake for CM 04, then 12b-04-97 reads *ta²-ta²-ro*. Thus, 12b might even reflect a scribal mistake stemming from confusion between CM 04 → *ta²* and CM 13 → *to²*. It is noteworthy also that both readings would be comparable to 04-04-97 → *ta²-ta²-ro*.

Transnumeration	Transliteration	Inscription	Object	Context*	Full text	Observations
𐎠𐎡 12b-04	<i>to²-ta²</i>	ENKO Abou 017 ##020	Clay ball	T. point recorded on box: BT 20-22-1089-1144 Late LC IIIB.	44-61-97 12b-04 <i>se²-tu^{??}-ro</i> <i>to²-ta²</i>	Shape of 12b: 
𐎠𐎡𐎢 12b-04-97	<i>ta²/to²-ta²-ro</i>	ENKO Abou 026 ##029	Clay ball	N/R	12b-04-97 102 <i>ta²/to²-ta²-ro</i> <i>a</i>	Shape of 12b: 

<i>Transnumeration</i>	<i>Transliteration</i>	<i>Inscription</i>	<i>Object</i>	<i>Context*</i>	<i>Full text</i>	<i>Observations</i>
𐤠𐤕𐤕[04-13-97[	<i>ta²-to²-ro</i>	KITI Abou 002 ##091	Clay ball	Religious context. Area II, Temple 2, Courtyard B. LC IIIA.	Olivier (2007) reads 04-08-104 [[[]]] ? More probable is 04-13-97 ?	Unbaked
𐤠𐤕𐤕 04-04-97	<i>ta²-ta²-ro</i>	CYPR Mvas 002 ##179	Bronze bowl	Funerary context? Enkomi, tomb excavated between 1893 and 1896?	102-109-04-13- 23 04-04-97 06-12 <i>a-wa₂^{??}-ta²- to²-ti</i> <i>ta²-ta²-ro</i> <i>pa²-po²</i>	102-109-04-13-23 → <i>a-wa₂^{??}- ta²-to²-ti</i> is repeated on two other metal bowls, ENKO Mvas 002 ##183 and PPAP Mvas 002 ADD##254 (see Egetmeyer 2016).
Group 3						
𐤠𐤕𐤕 15-17-13	<i>ko²-no²-to²</i>	ENKO Abou 024 ##027	Clay ball	N/R	15-17-13 15 <i>ko²-no²-to²</i> <i>ko²</i>	
𐤠𐤕𐤕 15-17-13	<i>ko²-no²-to²</i>	ENKO Abou 027 ##030	Clay ball	N/R	15-17-13 50- 46-34-97 <i>ko²-no²-to²</i> <i>pi²-t/su²-ne²-ro</i>	
Group 4						
𐤠𐤕𐤕 27-50-12	<i>si²-pi²-po²</i>	ENKO Abou 041 ##044	Clay ball	Religious context. Zone 103, sanctuary in the south. LC IIIA–B.	27-50-12 50 <i>si²-pi²-po²</i> <i>pi²</i>	
𐤠𐤕𐤕(𐤠𐤕𐤕𐤕𐤕𐤕 27-50-12-05-102- 87-13	<i>si²-pi²-po²-lo²-a- la²-to²</i>	ENKO Abou 061 ##064	Clay ball	Religious context. Sanctuary of the Ingot God, west area of the hall, Floor III. LC IIIA–B.	Possibly 27-50-12 102- 87-13 → <i>si²-pi²-po²</i> <i>a-la²-to²</i>	
Group 5						
𐤠𐤕𐤕 41-28-21	<i>zi²-lu²-ko²</i>	ENKO Abou 003 ##004	Clay ball	Industrial context. Dikaioi Area III, Quartier 1W, Level IIB, Room 8 within the Fortress building, Floor V. LC IIC.	41-28-21 55 <i>zi²-lu²-ko²</i> <i>ma²</i>	Inscribed by Hand Zaza (Olivier 2007), the same responsible for ENKO Abou 001 ##002 and 016 ##018; the former even comes from the same area, level, and building.
𐤠𐤕𐤕 41-28-21	<i>zi²-lu²-ko²</i>	ENKO Abou 016 ##018	Clay ball	Industrial context. Dikaioi Area III, Quartier 1W, Fortress building, Room 8 (of original LC IIC date), adjoined to Room 77 (of LC IIIA date).	41-28-21 19 <i>zi²-lu²-ko²</i> <i>u</i>	See observations to the previous sequence.
Group 6						
𐤠𐤕𐤕 41-41-97	<i>zi²-zi²-ro</i>	ENKO Arou 001##097 (lines 10-11)	Clay cylinder	Unclear function. Likely to be in Quartier 4E and same room as ENKO Abou 076 ##080. LC IIA–B.	Entry: 04-87-25 41- 41-97 <i>ta²-la²-ka²??</i> <i>zi²-zi²-ro</i>	
𐤠𐤕𐤕 41-41-97	<i>zi²-zi²-ro</i>	IDAL Avas 001 ##123	Pottery, pithos rim fragment	Industrial context? Ambileros, Idalion. West acropolis, southwestern edge. LC IIIC.	41-41-97 <i>zi²-zi²-ro</i>	

<i>Transnumeration</i>	<i>Transliteration</i>	<i>Inscription</i>	<i>Object</i>	<i>Context*</i>	<i>Full text</i>	<i>Observations</i>
𐤆𐤆𐤓 41-41-97	zi ² -zi ² -ro	TIRY Abou 001 ADD##244	Clay ball	Industrial context. Tiryns, Lower Citadel, North, LXII 35/39. Workshop of small-scale metallurgical activity. LH IIIC Developed.	41-41-97 zi ² -zi ² -ro	
Group 7						
𐤕𐤕𐤕 44-61-97	se ² -tu ² -ro	ENKO Abou 017 ##020	Clay ball	T. point BF 20-22- 1089-1144 Late LC IIIB.	44-61-97 12b-04 se ² -tu ² -ro to ² -ta ²	Unlike the other sequences in this group, not inscribed by Hand Zozo (Olivier 2007). See Group 2 on the reading of 12b-04 → to ² -ta ² .
𐤕𐤕𐤕 44-61-97-	se ² -tu ² -ro-	ENKO Abou 044 ##047	Clay ball	Religious context. Zone 103, sanctuary in the south. LC IIIA-B.	44-61-97-19- 110 se ² -tu ² -ro-u- ke/u ²	Perhaps a mistake for 44-61-97 110 se ² -tu ² -ro ke/u ² ; inscribed by Hand Zozo (Olivier 2007), who is also responsible for ENKO Abou 048 ##051.
𐤕𐤕𐤕 44-61-97	se ² -tu ² -ro	ENKO Abou 048 ##051	Clay ball	Religious context. Zone 103, sanctuary in the south. LC IIIA-B.	44-61-97 15 se ² -tu ² -ro ko ²	Inscribed by Hand Zozo (Olivier 2007), who is also responsible for ENKO Abou 044 ##047.
Group 8						
𐤕𐤕𐤕 64-05-24	o ² -lo ² -le ²	ENKO Abou 067 ##070	Clay ball	Residential context. Quartier 4E, Trench 514/515, Topographic Point 1314, -0.55 m.	64-05-24 81- 13-09-72 o ² -lo ² -le ² 81-to ² -li-ja ²	
𐤕𐤕𐤕 64-05-24	o ² -lo ² -le ²	ENKO Abou 072 ##076	Clay ball	Trench 6.24, top. Point 1383, -0.90 m.	64-05-24 46 o ² -lo ² -le ² t/su ²	Sign CM 46 also isolated in ENKO Abou 055 ##058; but there is no contextual coincidence between the two balls.
𐤕𐤕𐤕 64-05-24	o ² -lo ² -le ²	HALA Abou 002 ##089	Clay ball	Industrial context. Hala Sultan Tekke, Area 22, Room 2, Layer 2. LC IIIA.	64-05-24 73 o ² -lo ² -le ² mo ²	Room 2 has been interpreted as a court, and Area 22 as a settlement inhabited by humble people (Ferrara 2013a: 48, with refs.); yet the assemblage is suggestive of a workshop environment: bronze plate, clay crucible, quern fragments, etc. Shape of sign CM 24 suggests same hand as HALA Abou 001 ##088. Ductus and position of 73 ##077 (isolated after the divider) identical with ENKO Abou 073 (Olivier 2007: 102).
Group 9						
𐤕𐤕𐤕 81-97	*81-ro	ENKO Abou 056 ##059	Clay ball	Topographic Point 770, Trench East 20, -0.50 m.	81-97 50 *81-ro pi ²	
𐤕𐤕𐤕 81-97	*81-ro	ENKO Abou 076 ##080	Clay ball	Unclear function. Room 13, Level IIB.	81-97 107- 39-••[*81-ro za ₂ ² -mu ² -••[	Possibly in contextual association with clay cylinder ENKO Arou 001 ##097.

<i>Transnumeration</i>	<i>Transliteration</i>	<i>Inscription</i>	<i>Object</i>	<i>Context*</i>	<i>Full text</i>	<i>Observations</i>
Group 10						
ሃዋሃ 82-96-88	<i>sa²-ri-jo</i>	ENKO Abou 031 ##034	Clay ball	N/R	82-96-88 25 <i>sa²-ri-jo</i> <i>ka²</i>	
ሃዋሃ 61-85-88	<i>tu^{??}-ri-jo</i>	ENKO Abou 068 ##071	Clay ball	Trench 413 E, Topographic Point 1187.	61-85-88 <u>64/107</u>	Possibly a mistake for 82-85-88 → <i>sa²-ri-jo</i> .
ሃዋሃ/ሰ 82-96-88-23	<i>sa²-ri-jo-ti</i>	ENKO Arou 001. ##097 (lines 02, 09 and 26)	Clay cylinder	Unclear function. Likely to be in Quartier 4E and same room as ENKO Abou 076 ##080. LC IIIA-B.	Entry in .02: 73-82 82-96- 88-23 <i>mo²-sa² sa²-ri- jo-ti</i> . Entry in .09: 82-96-88-23 <i>sa²-ri-jo-ti</i> . Entry in .26: 07-05(-)82-96- 88-23 <i>te²-lo²(-)-sa²-ri- jo-ti</i> . <u>102(-)82-85-88- 97-23</u> <i>a(-)sa²-ri-jo- ro-ti</i>	For the reading of ENKO Abou 076 ##080, see Group 9.
ሃዋሃ/ሰ 82-85-88-97-23	<i>sa²-ri-jo-ro-ti</i>	ENKO Avas 005 ##112	Pottery, amphora handle	N/R	<u>102(-)82-85-88- 97-23</u> <i>a(-)sa²-ri-jo- ro-ti</i>	
ሃዋሃ 82-96-88	<i>sa²-ri-jo</i>	KITI Iins 001 ##161	Ivory pipe	Religious context. Kition, Area II, Temple 4, Room 38c, in the so-called <i>sancta sanctorum</i> . LC IIIA.	.01: 107-104-23 .02: 82-96-88 110-23-59(-21-) 23 102. 01: <i>za²-i-ti</i> .02: <i>sa²-ri-jo</i> <i>ke/u^{??}-ti- zo²-(-ko²)-ti</i> <i>a</i>	
Group 11						
ዘፈሃ 102-09-82-85	<i>a-li-sa²-ri</i>	ENKO Abou 081 ##085	Clay ball	Unclear function. Quartier 7W, north of the House of the Bronzes, Topographic Point 1887. LC IIIA-B.	102-09-82-85 110 <i>a-li-sa²-ri</i> <i>ke/u^{??}</i>	
ዘፈሃ 102-09-82-85-15	<i>a-li-sa²-ri-ko²</i>	ENKO Abou 051 ##054	Clay ball	Religious Context. Zone 103, Sanctuary in the south. LC IIIA-B.	102-09-82- 85-15 <i>a-li-sa²-ri-ko²</i>	The last sign may have been meant to be isolated: <i>a-li-sa²-ri ko²</i> .
Group 12						
ዘፈሃ 102-73-04-97	<i>a-mo²-ta²-ro ••</i>	ENKO Abou 015 ##016	Clay ball	Industrial context. Dikaïos Area III, Quartier 1W, Room 26, neighboring room to Room 8. LC IIIA.	<u>102-73-04-97</u> •• <i>a-mo²-ta²-ro ••</i>	Isolated sign much damaged. Found in the same level as balls ENKO Abou 015bis ##017 (anepigraphic) and 008 ##009 (illegible).
ዘፈሃ 102-73-04-97-110 73	<i>a-mo²-ta²-ro- ke/u^{??}-mo²</i>	ENKO Abou 021 ##024	Clay ball	N/R	102-73-04-97- 110-73 <u>96</u> <i>a-mo²-ta²-ro- ke/u^{??}-mo² ri</i>	Probably mistake for 102-73-04-97 110-73- <u>96</u> (cf. Group 15).
ዘፈሃ 102-73-04-97	<i>a-mo²-ta²-ro</i>	ENKO Abou 045 ##048	Clay ball	Religious context. Zone 103, Sanctuary in the south. LC IIIA-B.	102-73-04-97 <u>23</u> <i>a-mo²-ta²-ro ti</i>	

Transnumeration	Transliteration	Inscription	Object	Context*	Full text	Observations
𐤏𐤍𐤏𐤕 102-73-04-97	<i>a-mo²-ta²-ro</i>	ENKO Avas 002 ##109	Pottery, pithos rim.	N/R	87-15-82 102-73-04-97 107-97 <i>la²-ko²-sa² </i> <i>a-mo²-ta²-ro </i> <i>za²^{??}-ro</i>	The reading of the last sign is tentative (cf. Olivier 2007: 176).
𐤏𐤍𐤏𐤕𐤕 102-73-04-97-23	<i>a-mo²-ta²-ro-ti</i>	KITI Ipla 001 ##163	Ivory plaque (Bes)	Religious context. Kition, Area II, Temple 4, Room 38c, in the so-called <i>sancta sanctorum</i> . LC IIIA.	<i>r. 81-110-109- 50-72 81-ke/u^{??}-wa²^{??}- pi²-ja² v. 102-85 102- 73-04-97-23 a-ri a-mo²-ta²- ro-ti</i>	<i>Recto:</i> For the penultimate sign, see Valério (2016: 494; differently, Olivier [2007: 235–36] sees a doubtful 64). <i>Verso:</i> <i>a-ri a-mo²-ta²-ro-ti</i> “This (is) Amotaro’s”(?) “I (am) Amotaro’s”(?)
Group 13						
𐤏𐤍𐤏𐤕 102-87-...-97	<i>a-la²-...-ro</i>	ENKO Abou 042 ##045	Clay ball	Religious context. Zone 103, Sanctuary in the south. LC IIIA–B.	102-87-...-97 112 <i>a-la²-...-ro </i> <i>k/ze^{??}</i>	Hand Zazie (supposedly same as ENKO Abou 039 ##042 and 040 #043).
𐤏𐤍𐤏𐤕 102-87-107-97	<i>a-la²-za²^{??}-ro</i>	ENKO Abou 052 ##055	Clay ball	Religious context. Zone 103, Sanctuary in the south. LC IIIA–B.	102-87-107-97 39 <i>a-la²-za²^{??}-ro </i> <i>mu^{??}</i>	
𐤏𐤍𐤏𐤕 102-87-104-97	<i>a-la²-i^{??}-ro</i>	ENKO Abou 069 ##072	Clay ball	Religious context. Sanctuary of the Ingot God, west area of the hall, Floor III. LC IIIA–B.	102-87-104-97 27 <i>a-la²-i^{??}-ro si^{??}</i>	Probably a mistake for 102-87- 107-97 <i>a-la²-za²^{??}-ro</i> .
𐤏𐤍𐤏𐤕 102-87-107-97	<i>a-la²-za²^{??}-ro</i>	HALA Abou 001 ##088	Clay ball	Hala Sultan Tekke, surface.	102-87-107-97 24 <i>a-la²-za²^{??}-ro</i> <i>le²</i>	
𐤏𐤍𐤏𐤕 102-87-107-97	<i>a-la²-za²^{??}-ro</i>	ENKO Abou 084 ADD##245	Clay ball	Unclear function. Quartier 6W (Pelon et al. 1973).	102-87-107-97 04 <i>a-la²-za²^{??}-ro</i> <i>ta²</i>	
Group 14						
𐤏𐤍𐤏𐤕 110-23-59	<i>ke/u^{??}-ti-zo²^{??}</i>	ENKO Abou 062 ##065	Clay ball	Religious context. Sanctuary of the Ingot God, west area of the hall, Floor II. LC IIIA–B.	110-23-59 <i>ke/u²-ti-zo²^{??}</i>	
𐤏𐤍𐤏𐤕(𐤏)𐤕 110-23-59(-21-)23	<i>ke/u^{??}-ti- zo²^{??}(-ko²-)ti</i>	KITI Iins 001 ##161	Ivory pipe	Religious context. Kition, Area II, Temple 4, Room 38c, in the so-called <i>sancta sanctorum</i> . LC IIIA.	.01: 107-104-23 .02: 82-96-88 110-23-59(-21-) 23 102. .01: <i>za²^{??}-i-ti</i> .02: <i>sa²-ri-jo</i> <i>ke/u^{??}-ti- zo²^{??}(-ko²-)ti a</i>	It remains uncertain whether the lines scratched after sign CM 59 are accidental or an instance of CM 21, although the reading 110-23-59-23 would be more consistent with attested patterns of “suffixation.”
Group 15						
𐤏𐤍𐤏𐤕 110-73-85	<i>ke/u^{??}-mo²-ri</i>	ENKO Abou 037 ##040	Clay ball	Topographic Point 314	110-73-85 <i>ke/u^{??}-mo²-ri</i>	
𐤏𐤍𐤏𐤕𐤕𐤕 102-73-04-97-110-73	<i>a-mo²-ta²-ro- ke/u^{??}-mo²</i>	ENKO Abou 021 ##024	Clay ball	N/R	102-73-04-97- 110-73 96 <i>a-mo²-ta²-ro- ke/u^{??}-mo² ri</i>	See subsection “Juggling Text Structures.”

* All locations are Enkomi, unless otherwise stated. Note that most contexts are not primary (see Ferrara 2012). Abbreviations in Context column: LC = Late Cypriot; N/R = Not reported.

Appendix 2. General Signary of Cypro-Minoan (adapted from Valério 2016: 164, table 2.98).

01	𐀀	21 / 15	𐀁	38	𐀂	65 / 67 / 99 / 100	𐀃	88 / 89 / 90	𐀄
02	𐀅	23	𐀆	39 / 49	𐀇	68	𐀈	91	𐀉
04	𐀊	24	𐀋	40	𐀌	69 / 71 / 72	𐀍	92	𐀎
05	𐀏	25	𐀐	41	𐀑	70	𐀒	95	𐀓
06	𐀔	26	𐀕	44	𐀖	72 ^b	𐀗	96 / 85 / 114	𐀘
07	𐀙	27	𐀚	46 / 47	𐀛	73	𐀜	97	𐀝
08	𐀞	28	𐀟	50 / 51	𐀠	74	𐀡	98	𐀢
09	𐀣	29	𐀤	52	𐀥	75	𐀦	102 / 101	𐀧
10	𐀨	30	𐀩	53 / 54 / 55	𐀪	76	𐀫	103	𐀬
11	𐀭	33	𐀮	59	𐀯	80	𐀰	104	𐀱
12	𐀲	34 / 56	𐀳	60	𐀴	81	𐀵	105	𐀶
13 / 78	𐀷	35	𐀸	61	𐀹	82	𐀺	107 / 108	𐀻
17	𐀼	36	𐀽	62	𐀾	86	𐀿	110	𐁀
19 / 79	𐁁	37	𐁂	64	𐁃	87	𐁄	112	𐁅

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