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Is it a weight? Methodological challenges in metrological research. A study case of the Late Bronze Age site of Apliki-*Karamallos* (Cyprus)

*És això un pes? Reptes metodològics dins la recerca metrològica. Estudi de cas procedent d'Apliki-*Karamallos*, Xipre datat del Bronze recent*

One of the main issues profoundly affecting the discipline of metrology is the ability of researchers to identify and interpret artefacts as weights. This study, after a critical assessment of the issue, offers a methodological framework serving to determine weights based on testing a group of stones from the site of Apliki-*Karamallos* (Cyprus). Furthermore, this study allows dismissing the possibility of interpreting these objects as weights and sheds light on its key results of the method

Keywords: weights, methodology, metrology, Apliki-*Karamallos*, Late Bronze Age, Cyprus.

Dins dels estudis metrològics, una de les qüestions principals i que a més té un impacte profund a la disciplina és la capacitat dels investigadors d'identificar i/o interpretar els objectes com pesos. En aquest article, després d'una avaluació crítica de la qüestió, s'establirà un quadre metodològic que permeti interpretar els objectes com pesos i es testarà sobre un grup d'artefactes en pedra trobats a Apliki-*Karamallos*, Xipre. Aquest mètode permet descartar la possibilitat d'interpretar aquests objectes com pesos i il·luminar les importants conseqüències d'aquesta qüestió metodològica.

Paraules clau: pesos, metodologia, metrologia, Apliki-*Karamallos*, Bronze Recent, Xipre.

Introduction

Metrological research, throughout its history, has faced—and continues to face—several issues that have strongly influenced its development. It is possible to distinguish these issues into two main categories: problems and dilemmas. A problem could be defined as a question involved in a syllogism of which the conclusion is the solution (Oxford Dictionary 1993: 2354). On the other hand, a dilemma could be defined as a choice between two (or several) alternatives that are equally unfavorable (Oxford Dictionary 1993: 684). This distinction is quite important because it can allow us to better understand the nature of these issues. This is essential to develop frameworks that can allow us to address them more effectively. Unfortunately, some of these issues are likely to never find an exhaustive and definitive solution for many reasons. First of all, it is important to remember that the available archaeological and textual data are just a minimal fraction of the original data corpus. The second is that, because of the previous reason, our capabilities of fully understanding archaeological contexts could be quite limited and this leaves us with important shortcomings that make elaborating effective interpretations of archaeological data difficult. However, the constant efforts made by scholars allowed us to improve our awareness of limitations and shortcomings. These efforts are essential because they set the basis for the development of new theoretical and methodological frameworks that can assist us in tackling some heterogeneous issues.

In the context of metrological studies, there are some key problems and dilemmas. Among them, it is possible to mention the definition of effective typological classifications for scales and weights, the definition of a functional metrological framework to provide metrological interpretations for weights, how to define the data samples to be analyzed through statistical methods, and how to interpret these results, and the definition of an accurate and reliable error margin in the context of metrological interpretations. In the present paper, I focus on one of the dilemmas of this discipline, which can be summed up in a simple question: Is this object a weight? In the following pages I will introduce the issues involved in interpreting objects as weights and what challenges and risks are involved in this operation from the perspective of evidence from the Late Bronze Age site of Apliki-*Karamallos* (Cyprus).

The Dilemma

How to interpret an object as weight is probably the main dilemma that affects metrology. Often it is possible to identify and/or interpret certain objects as weight with a good degree of certainty because they find satisfying iconographic comparisons or bear unequivocal inscriptions. A good example of the first case is given by the copper-based zoomorphic weights. This type of weight, crafted by the lost wax technique (von Rüden *et al*. 2016: 270-271) has been found in Cyprus, Egypt, Levant, Rhodes, and Crete (Courtois 1983a; Evans 1906: 353; Frankfort and Pendlebury 1933: pl. XXVIII; Anderson 1988: 640-641, pl. 39 n. 12; Levine *et al*. 2011). Often, they were filled up with lead to reach a specific mass value. Their shape can be distinguished into two main categories: full-body resting position, and head-only shapes. The most common animal represented in these two main categories is cattle. Less common are felines, gazelle, frogs, birds, boars, fishes, and humans. It is possible to interpret these objects as weights because they find good comparisons in Egyptian wall paintings (de Garis Davies 1943: pl. LV; Wilkinson 1983: 36). Similarly, it is possible to identify certain stone objects with sphendonoid, elliptical, and duck shapes as weights. A good number of these objects bear univocal cuneiform inscriptions that state the weight unit represented by the object (Holland 1975; Bordreuil 2006: 205 and 207; Soutzo 1911: 6-7).

However, it is important to recognize that certain objects could have been used as weights even if they present a morphology and shape which is different from recognizable weights. This represented a primary issue for scholars because there could be the possibility to interpret objects which were not weights as such, or there could be the risk of excluding objects which were weights but do not present any diagnostic feature.

This is a well-known issue (Alberti *et al*. 2006: 5-6; Hafford 2012: 23) and could be better exemplified by a specific class of objects which are usually interpreted as weights. These are pebble-shaped stone objects. Often, they could present a more or less smooth surface and in certain instances, they bear simple incisions such as straight lines and/or dots (for example Ascalone 2019; Bobokhyan 2009: 24, figs. 4, 5, 7, 8 and 37, fig. 13; Müller-Karpe 2015: 152-160). They have been interpreted as weights since the very beginning of the discipline (Soutzo 1911: 9-12), but no background information that can clarify why they have been interpreted as such is usually provided. This is an issue that affects also recent studies (Rahmstorf 2023: 27).

Some scholars addressed directly this key issue. Michailidou adopted a methodology in which a more in-depth analysis of the context is paired with metrological analysis (Michailidou 2006). Rahmstorf addressed this issue from the perspective of central and Western Europe context (Rahmstorf 2019: 1). First, two macro-categories are designed: canonical and non-canonical weights. According to Rahmstorf, the first category is substantially unproblematic in terms of identification, while the latter is more challenging. He provided then a methodological framework to assist scholars in identifying non-canonical weights. He also acknowledges the importance of context and especially the eventual presence of other weighing equipment such as parts of a scale. Rahmstorf also considers the Cosine Quantogram Analysis as a valid instrument to allow interpretations to be testable on a quantitative scale.

Chambon and Otto (Chambon and Otto 2023: 4-5) adopted another approach. They define a first macro category, irregular-shaped weights, which is further divided into two sub-groups: irregular weights and pebble weights. The first are described as weights of various amorphous forms which show traces of intentional working. The latter is described as made of unworked stones used as weights and can be detected only by their archaeological context or if they bear marks or inscriptions.

Ascalone (Ascalone 2022: 1-20) recognized the challenges in designing an effective typological classification for weights. In doing so, the author sees a non-interpretative typology as the only viable option to escape this impasse. In his framework, Ascalone defines three groups to classify the objects: weights, potential weights, possible weights, and associated finds. The first group is defined by their standardization in shapes and mass value, combined with the textual evidence from Mesopotamia, that easily allowed their identification as weights. The second includes all objects that most likely were not used as balance weights, but that nevertheless cannot be outright rejected as weight. They include pebbles from Mesopotamia and cylinder-shaped weights from Susa. Associated finds include objects that cannot be considered weights. Only in two cases, further interpretative analyses were considered for the typologies proposed. These are spherical objects that are classified into 'pebble' and 'rounded' types to distinguish between naturally occurring (pebble) and artificially modified (rounded) forms. Additionally, cuboid and discoid-shaped terracotta objects are considered specific subcategories of the main types. Ascalone also notes how most weights lack a precise archaeological context or associated finds, making their chronological classification complicated. He considers understanding how these objects were used and how to securely identify them as weights to be the greatest challenge.

The Cypriot perspective

This issue not surprisingly concerns also Cypriot archaeology. It emerged when dedicated metrological-focused studies were carried out. What we know about metrology in Cyprus must be credited mainly to Courtois, who was the first to study objects he interpreted as weights found in different sites on the island (Courtois 1983a; 1983b; 1984a: 43-45 and 107-134; 1984b; 1985a; 1985b; 1988; 1990). If we review his work, it is possible to note how he adopted a metrological framework strongly influenced by Parise's theory (Parise 1970-1971; 2009) to provide metrological interpretations. Even more important for the present article, he interpreted objects as weights without an explicit methodological framework. This is possibly one of the reasons why more recent contributions about metrology in Cyprus focused on objects that can be safely interpreted as weights (Petruso 1984; Lassen 2000; Alberti 2006).

In the following pages, I present a study case from Cyprus for which I adopt a framework to assess the nature of certain stone objects to determine if they could be interpreted as weights. These objects come from the site of Apliki-*Karamallos*, located in the northern part of the Troodos mountains (fig 1). Some of the stone objects found on the site have been interpreted as polishers, and it has also been suggested that they served as weights (Kassianidou 2007: 281). This again underlines the difficulties in recognizing weights in the archaeological record.

The framework here proposed to analyze the objects is based on five analytical parameters: material, morphology, context, mass, and incised features. These parameters must be considered organically to assess the nature of a given object as weight.

Material: Material analysis consists of assessing the nature of the material of the object. One of the main requirements of weight is that their mass must be reliable in time. Materials that are susceptible to mass fluctuations and/or present challenges in controlling their mass, especially during the crafting process, could be excluded. A good example of that is clay. In fact, besides being fragile after firing, this material also does not allow control over mass, as the firing process alters the mass of the raw objects. Therefore, it is possible to hypothesize that resistant and stable materials were usually selected to produce weights.

Morphology: Morphology and wear analysis are also important parameters because they allow us to identify traces of wearing and pecking that are incompatible with an object being used a weight, and instead make it highly likely that it was used as a polisher, hammer, pounder, etc. On the other hand, features such as a flattish base are an essential feature of most weights because they provide stability during the weighing process and greatly reduce errors in the process.

Context: When available, it provides an essential contribution not only to understanding the context of the use of weighing equipment but allows also to accept or dismiss the interpretation of certain objects as weights. If certain objects that perform well in the other parameters are also found in contexts in which they are associated with other weighing equipment, then they can be quite safely considered as weights. It is also important to assess whether activities that required weighing practices were carried out in the context.

Mass: This is an essential parameter because weights are produced to represent specific mass values corresponding to units of a given weight standard. Therefore, the mass value of weights cannot be casual. The framework adopted to provide metrological interpretations is based on metrological texts and considers Mesopotamian and Syrian standards (De Benedictis 2024; De Benedictis and Meneghetti 2024). The Mesopotamian standard is based on the absolute value of the main unit, the shekel, which is 8.33 grams (Powell 1987-1990: 510) and by the subdivision of this unit into 180 smaller units (še or grains), while 60 shekel make 1 mina and 60 mina form 1 talent (Marti and Chambon 2019: 53). As it concerns the Syrian standard, interpretations are based on a unit of 9.3 grams which has been proven to be statistically consistent (Ialongo and Lago 2021: 4). The units used for the interpretations are provided by the entries found in metrological texts from Ugarit and other metrological texts (Nougayrol *et al.* 1968: 254-256, Bordreuil 2006: 216-217, 223-224; Friberg 2007: 101-121). Then, once the theoretical mass values of these units are calculated, an error margin of 3.4% is considered (De Benedictis 2024; De Benedictis and Meneghetti 2024).

Incised features: When incised features are present on the surface of weights, they can be distinguished into two categories: univocal and disputable. Univocal incisions are those that convey indisputable and straightforward meaning, for example, objects bearing cuneiform and hieroglyphic inscriptions informing us about the metrological unit represented by the weight. Disputable are those incisions (usually straight lines) that do not convey a straightforward and clear meaning. When a given object presents a univocal incision, it could be interpreted as a weight. Otherwise, disputable features alone are not a solid ground for interpretation (De Benedictis forthcoming).

A case study: a group of stone objects from Apliki-*Karamallos*

The site is located in the northwestern foothills of the Troodos mountains (fig. 1). It was discovered in 1938 when the Cyprus Mines Corporation began explorations at the Apliki copper mines, fortuitously uncovering the remains of a large storage jar, stone tools, and architectural remains. Following these discoveries, Joan du Plat Taylor, at the time assistant curator of the Cyprus Museum, was sent to the site to carry out rescue excavations for a total of seven weeks between 1938 and 1939. These excavations did not identify Late Bronze Age mines or smelting installations, but the evidence found at the site has been interpreted as compatible with metallurgical activities (du Plat Taylor 1952). Because primary copper production sites in Cyprus for the Late Bronze Age are still unknown, Muhly in 1985 reexamined the metallurgical material from Apliki to enhance our understanding of the copper industry and society for this period. However, this effort was strongly hampered by the fact that the site was obliterated by modern mining activities, and also because the site is located in the buffer zone created after the Turkish army invasion of 1974. This latter issue means that the area is not accessible (Kling and Muhly 2007: xi).

Apliki is located on the high slopes of the Troodos foothills on the east coast of the Marathasa River. The area where it is located is considered part of a copper-rich area which is known as the Solea axis. The Apliki copper mines are well known by archaeologists because Lead Isotope Analyses show that it is most probably the mine that generated the copper used to produce the vast majority of copper oxhide ingots found in Cyprus and abroad (Gale 2011: 218; Kassianidou 2018: 346). Considering the dimensions of the copper slag heaps found in the area it is estimated that in antiquity this area probably issued more than 50% of the total amount of copper produced in Cyprus (Kassianidou 2018: 346). The site is interpreted as a copper production center and its output was exported through a non-better-identified center on the coast. The area of the modern village of Karavostasi could have been the perfect location for a coastal emporium (Kassianidou 2018: 352-354).

Several trenches were excavated on the site (du Plat Taylor and Kling 2007: 7) (fig. 2). The most important finds are reported from Trench A (on the map called Site A). Here remains of an L-shaped building which was destroyed by a fire were found. In Trench B the architectural remains were instead untouched by the fire and were abandoned at the end of the occupation of the site. In Trench C architectural features are re-

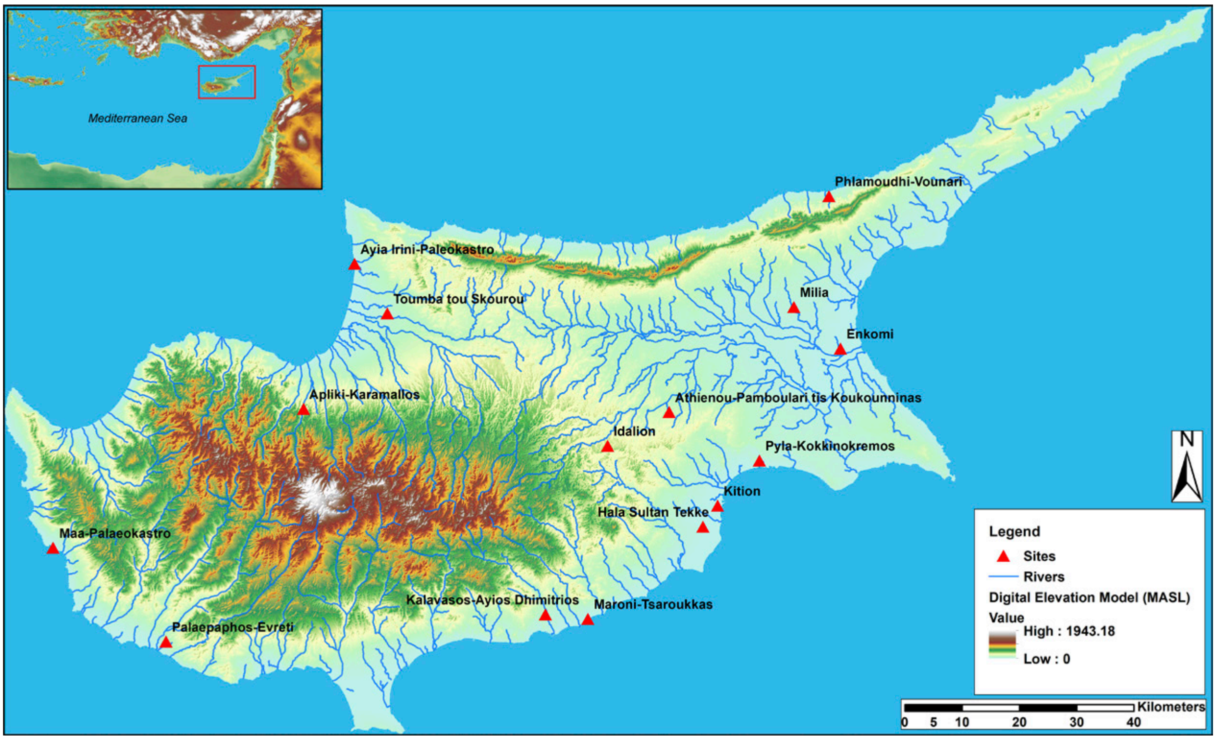

Figure 1. Location of Apliki-*Karamallos* and other Late Bronze Age sites (De Benedictis).

ported but are not fully described. Trenched D-H provided no architectural remains but only Late Bronze Age pottery. Finally, in trench F a possible old shaft entrance was found. Trench A is considered to provide the most interesting finds because the fire that destroyed the building also sealed the floor and the objects that were lying on it after the wooden roof collapsed. Radiocarbon dating samples taken from this context attest how the building was built just after 1300 BC and was destroyed between 1200 and 1180 BC. This data confirmed the Late Cypriot IIC date provided by pottery analysis. The L-shaped building is composed of eight rooms arranged around a courtyard. In these spaces, large storage vessels were found together with baskets that contained legumes, cereals, barley, bread wheat, horsebean, lentil, grape, olive, and coriander. What appears important is that none of these plants could have been cultivated in the area where the site was located and must have been brought there. In the storage rooms, large amounts of copper slags and unused tuyeres were found attesting to metallurgical activity, even if no metallurgical installations were identified. Among the stone tools retrieved, some were used to process cereals, while perforated stone hammers and large and heavy pounders must have been used for copper ore beneficiation (du Plat Taylor and Kling 2007: 10; Kassianidou 2018: 348-349).

In room 5 of this building six stone objects were found together in a niche located in the northern wall (du Plat Taylor 1952: 135) (fig. 2 B and C). Five of them have been interpreted as loom weights and polishers, while the last was tentatively interpreted as a weight (du Plat Taylor and Kling 2007: 31; Kassianidou 2007: 281). This last interpretation is based on the wide and shallow cross-shaped grooves on the surface of the object, on the fact that it was found together with other stone objects in a niche, and on the similarities in mass between some of these objects. Based on these parameters and a metrological framework borrowed from Courtois, it has been hypothesized that this object conforms to the Syro-Egyptian standard (Kassianidou 2007: 281). The context of these findings is not what could be defined as informative from a metrological perspective. Besides a few pottery (bowls, jars, jugs, pithoi, and a stirrup jar), other finds include polishers, hammers, a grinder, a rubbing stone, a whetstone, a funnel, spindle whorls, a bronze drill, a bronze 'engraving tool', a slag, a tuyere, a pottery scraper, a wall bracket, and a crucible fragment (du Plat Taylor and Kling 2007: 28-32). But, considering the possible interpretation of one of them as a possible weight, it is necessary to examine this object together with others that were found together in the niche because weights often are found in groups. It was possible to study only four of these six objects (fig. 3) because it

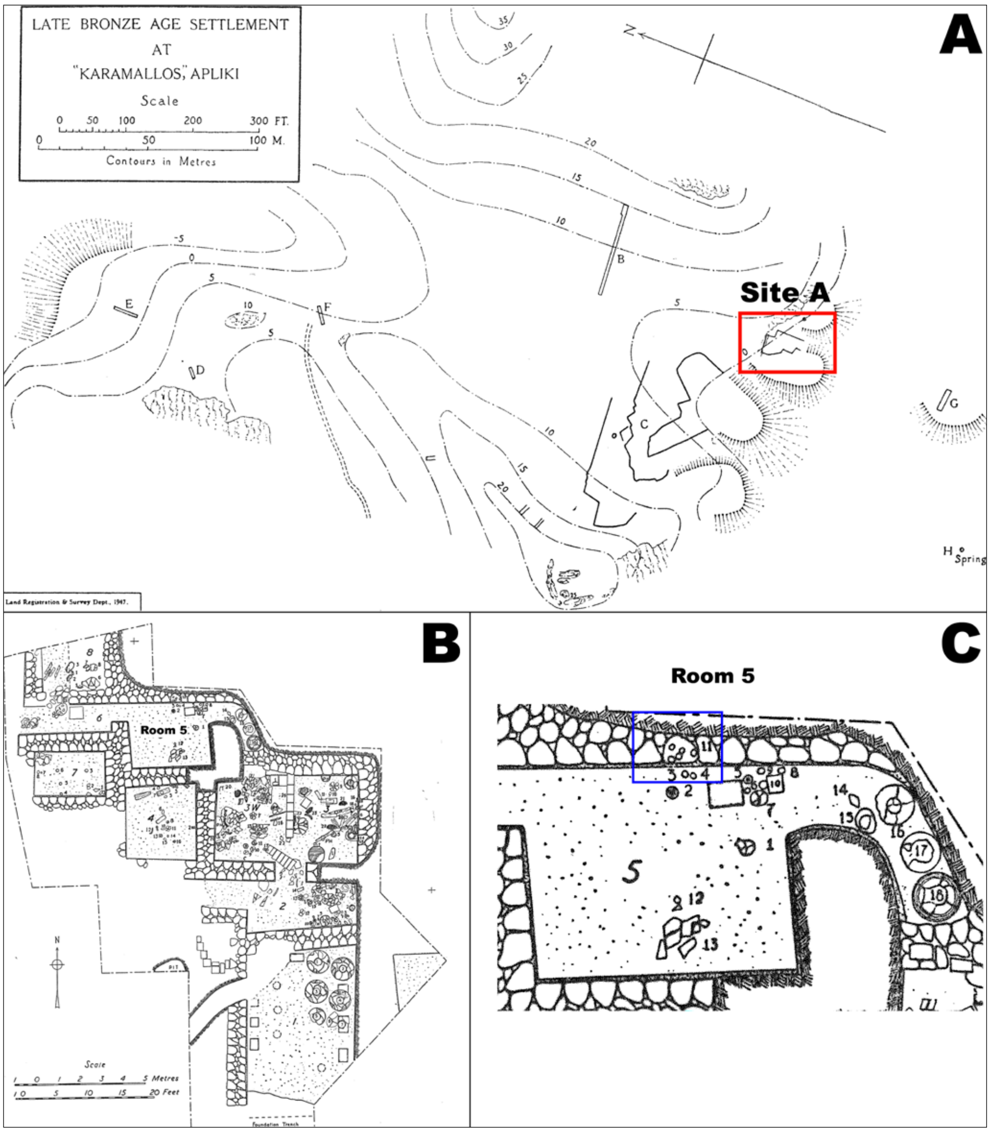

Figure 2. Maps of the site of Apliki-*Karamallos*. A: The entire site of Apliki-*Karamallos*. B: Site A. C: Room 5 of Site A. In blue the findspot of the analyzed objects (after du Plat Taylor 1952).

was not possible to locate two of them (inv. n. Apliki R.5 11 A; Apliki R.5 11 B) in the museum storerooms:

Inv. No. Apliki R.5 11 C: the object is made of an unidentified rock. It presents a discoid convex shape. Good preservation state, grey color, black dot-size inclusions. The surface is rough and does not reflect light. The top and bottom surfaces present two incised features each. They are composed of two orthogonal lines forming a cross. These features are shallow and wide and appear not to be incised but possibly the result of the abrasion technique. On the side of the object, eight short carved short lines are present along the edge. Also, these latter features are shallow. The object is very weakly paramagnetic. Its mass value is 238.38 grams.

Inv. No. Apliki R.5 11 D: the object has a pebble shape and is made of an unidentified reddish color stone, maybe red jasper. It presents a barely smooth surface and reflects light poorly. It has a very small flattish base and has almost no stability. It is not paramagnetic. No apparent traces of wearing and/or pecking are visible. Its mass value is 159.34 grams.

Inv. No. Apliki R.5 11 E: it is made of an unidentified dark grey rock and has a fairly smooth surface that does not reflect light. The object does not present a flat surface and has poor stability. It does not show traces of wearing and/or pecking. The object is barely paramagnetic. Its mass value is 113.61 grams.

Inv. No. Apliki R.5 11 F: the object is made of a grey color stone which shows dark reddish spots

Figure 3. Photos of the objects studied. A: Inv. No. Apliki R.5 11 C. B: Inv. No. Apliki R.5 11 D. C: Inv. No. Apliki R.5 11 E. D: Inv. No. Apliki R.5 11 F (Ph. by Enrico De Benedictis, Courtesy of the Department of Antiquities).

on the surface which seems to be the product of iron oxidation. Its surface is rough and does not reflect light. It has a barely flattish surface which allows it to have mediocre stability. No traces of wearing, but it appears to show traces compatible with pecking at both ends. It is weakly paramagnetic. Its mass value is 188.35 grams.

Observing the material of these objects, they appear to be made of different solid stones. However, it was not possible to scientifically determine the types of stone because it requires the acquiring of samples to perform specific analyses and that is not possible. Their surfaces appear to be not highly polished. Most of the objects appear to be weak paramagnetic, suggesting that the stones contain an unknown amount of iron. As it concerns morphology, most of the objects do not show traces of wearing and/or pecking and inv. n. Apliki R.5 11 F appears to be the exception. Their morphology does not show any flattish base which allows the objects to have stability. If we analyze the context of these findings, it is possible to note how no weighing equipment was reported, while several objects are compatible with metallurgical activity, namely: a whetstone, a slag, a tuyere, and a crucible fragment. At the same time, the context does not provide evidence for the necessity of weighing practice.

If we consider the mass parameter (fig. 4), it is possible to provide the following metrological interpretations based on the text-based metrological framework (De Benedictis 2024; De Benedictis and Meneghetti 2024). In two cases, the mass values of the objects appear to be compatible with the theoretical mass value of the units of the two standards (inv. n. Apliki R.5 11 E; Apliki R.5 11 D). In one case (inv. n. Apliki R.5 11 F) the object appears to have a mass compatible with a unit of the Mesopotamian standard only. Inv. No. Apliki R.5 11 C, which was the only specimen that has been tentatively interpreted as weight, does not appear to be relevant to any standard.

Inv. N.	Mass value (Gr.)	Metrological interpretation (3.4% Error margin)
Apliki R.5 11 E	113.61	14 Mesopotamian shekel (116.67 gr.)
		12 Syrian shekel (111.6 gr.)
Apliki R.5 11 D	159.34	19 Mesopotamian shekel (158.34 gr.)
		17 Syrian shekel (158.1 gr.)
Apliki R.5 11 F	188.35	1/3 Syrian mina (186 gr.)
Apliki R.5 11 C	238.38	-
Apliki R.5 11 A	-	-
Apliki R.5 11 B	-	-

Figure 4. Metrological interpretations (De Benedictis).

Discussion

The first conclusion that can be reached concerns the inventory number Apliki R.5 11 C. Although the object is made of solid rock, its shape does not find any comparison with other objects interpreted as weight, and this last characteristic together with the lack of a flattish base, makes this object unlikely to be interpreted as weight. Instead, two close comparisons found for this object are loom weights. These are two stone loom weights from Amorgos (Greece) and Jemdet Nasr (Iraq) dated respectively to 3100-2700 and 3100-2900 B.C. (https://www.ashmolean.org/collections-online#/item/ash-object-447497 ; https://www.ashmolean.org/collections-online#/item/ash-object-469203). Furthermore, mass appears not to be metrologically meaningful. All these elements could allow us to dismiss its possible interpretation as weight. inv. n. Apliki R.5 11 F shows traces of pecking on both ends and it could be interpreted as a hammer or as an object which had a similar function.

The remaining two objects cannot be interpreted as weights because even if their mass value could be metrologically relevant their characteristics relative to the remaining parameters are inconclusive in that sense. In conclusion, the analyzed objects, despite in some cases being metrologically and materially relevant, cannot be interpreted as weights because these parameters alone do not allow a reliable interpretation. However, it is also important to remember that two other stone objects that were impossible to locate in the museum storerooms, and this does not allow a complete analysis of this context. Therefore, their interpretation as weights cannot be considered conclusive.

Conclusions

The framework adopted in this study to analyze these objects from Apliki has many points in common with the one adopted by Ascalone (Ascalone 2022: 1-2) in his study about weights from Iran and the Indus Valley. Summing up, it is possible to note how the interpretation of certain objects as weights appears to be a complex issue with no definitive and widely acknowledged solutions at hand. Of course, certain objects can be interpreted as such with a good level of certainty. This is the case with sphendonoid weights, as abundant data provide a clear morphological profile of these objects, allowing us to interpret them easily. However, for other objects, despite the efforts made by different metrologists, unfortunately, there is no solution in sight to this issue, making it a dilemma. It is possible to define this status of affairs as a dilemma because the deadlock described previously does not have a definitive solution, but it brings us to a situation in which we have to select an interpretative framework (or create a new one) that, despite all the efforts, will always present issues and will inevitably expose the analysis to risk. This risk could be exemplified in two possible main scenarios. One is to have a relatively open approach following which objects that do not present a shape and morphology easily interpretable as weights, are included in the data sample. The risk here is to reach metrological and statistical conclusions based on a data sample that includes also non-weight objects, making them potentially biased. The second option is to adopt a strict methodological approach following which only objects that can be safely identified as weights are included in the data sample. This could potentially expose the analysis to a different type of bias, that is not considering objects that were potentially used as weights.

However, any selected method involves the creation of definitions and parameters. These elements can be questioned or accepted depending on the reader. But despite all the uncertainties of the case, it is necessary when we acknowledge (or not) a given object as weight, to state clearly what are the parameters behind that decision. In this way, the reader can have full insight into this *chaine operatoire* and then accept, improve, or reject the interpretation. A possible middle-ground solution could be to first analyze a data sample composed of objects that can be safely interpreted as weights, then create and analyze a second sample composed of more problematic objects. Finally, the third stage is to create and analyze a data sample inclusive of both groups. After that, it could be possible to perform analytical comparisons between the results by adopting a critical approach.

The Apliki-*Karamallos* study case proves how pebble-shaped objects were, are, and unfortunately will be a problem for metrological studies. These objects can be interpreted as weights only if they are made of adequate material, are morphologically and metrologically coherent. Finally, their context must be compatible with this interpretation. For example, they must be in close association with parts of a scale to interpret them as weights or at least the context in which they are found must hint to the necessity of weighing practices. Otherwise, there is the concrete risk of analyzing objects that are not weights, creating a bias in our analysis. Considering the status of Cypriot metrological studies and its issues, it is necessary to reexamine the evidence to assess previous conclusions. In this context, it could be a good idea to reassess previous interpretations by starting to focus on objects that can be safely interpreted as weights and then analyze the remaining objects. This could help in avoiding biased interpretations that could lead to misleading conclusions that could eventually propagate further.

In other words, this approach allows the creation of a solid base that could be expanded further by testing other potential weights such as pebble-shaped objects. It is also important to note how one framework cannot necessarily apply to all geographical areas and chronological periods because these could have their specific characteristics and peculiarities which must be considered. But at the same time, it could provide a valid contribution to establish standardized base parameters that can be adequately updated to the necessities of specific contexts.

The evidence discussed in this paper shows how metrological studies have and will always deal with what could be defined as a structural issue. It originates mainly from the characteristics of archaeological contexts which often limit scholars' capabilities to provide reliable interpretations. That is why it is essential to acknowledge the nature of the issue when defining the data sample for metrological studies. Even if it will not solve the issue, the methodology presented in this paper could provide some standardized methodological guidelines which can be adopted and/or adapted to try to minimize the impact of this structural issue on metrological studies.

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