The study of ancient Near Eastern metrology is a specific field of research that offers the possibility to connect information from economic texts with objects that were used in the pre-monetary system either for everyday exchange operations or for “international” commercial transactions.

The importance of an approach that takes into consideration metrological standards with all the technical matters concerned, as well as the archaeological context of weights and the relationships between specimens and other broad functional classes of materials (such as unfinished objects, unworked stones or lumps of metals, administrative indicators, and precious items), has been noted in connection with the weights from Ebla and Ugarit (Courtois 1990; Ascalone and Peyronel 1999).

The subject of this brief article is the analysis of two remarkable hematite weights found inside the cella of Temple N at Tell Mardikh-Ebla during the 1972 excavation season. These weights, first published by Archi in his work on Eblaite metrology (1987: nn. 33, 45), provide an interesting link between economic functions and symbolic values connected to cultic activities, and with concepts such as equality and justice, concepts that were undoubtedly associated with ancient metrology.

Temple N (figs. 1, 2) lies in the northeastern part of the Lower Town (Matthiae 1985: pl. 54; 1989a: 150–52, fig. 31, pls. 105, 106), not far from the slope of the Acropolis, to the east of the sacred area of Ishtar (Temple P2, Monument P3 and the Cistern Square with the favissae). It was probably built at the beginning of Middle Bronze I (ca. 2000–1900 BC) and was destroyed at the end of Middle Bronze II, around 1650–1600 BC. The temple is formed by a single longitudinal cella (L.2500) with a low, 4 m thick mudbrick bench along the rear wall (M.2501), while the north (M.2393) and south (M.2502) walls are 3 m thick. The cella is 7.5 m wide and measures 12 m on the preserved long side. It has an axial entrance reconstructed through the short facade wall. This part of the building was badly damaged due to pillage of the area during the Iron and Persian periods.

This type of building is well-known at Ebla. Together with Temple B1 and with the monumental
Fig. 1. Schematic plan of Temple N.
Fig. 2. The cella L.250 of Temple N.

Temple P2, it represents the main Syro-Palestinian sacred architectural tradition, which was probably developed in middle or northeastern Syria during the third millennium and that continued during the Late Bronze and Iron Ages.  

The cultic equipment of the temple includes a limestone basin (TM.72.N.468) with carved reliefs (fig. 3; Matthiae 1985: pls. 61–62; 1989: 192–94, pls. 131–32), a basalt offering table with a sort of spout, probably used for liquid sacrifices, a basalt base (TM.72.N.565) carved with figures of bull-men (fig. 4; Matthiae et al. 1995: 393 n. 238), and several worked basalt fragments that could be regarded as part of other sacred stone installations.

The representations on the basin and the base have been taken as clues for an attribution of the temple to the cult of the sun-god (Matthiae 1986: 346–52). The back side of the basin was carved with an unusual scene showing three pairs of bearded characters; four of them are embracing each other, touching each other’s face with one hand. This scene, which has no known parallels,
might be connected with cultic acts and could be associated with a specific historical event, such as a treaty between two equal parties. There are reliefs of bull-men on the basalt base. During the Old Babylonian period they were attendants of Shamash, although at Ebla a bull-man is present on a stela of Ishtar (see Matthiae 1987: 481–82; 1989b). Note that Temple N is the only sacred building at Ebla with an entrance facing east, with the rays of the rising sun illuminating the front of the building.

The weights were discovered inside the cela, L.2500. TM.72.N.437 (fig. 5b) was found in the center, directly on the floor of level 4 below a layer of collapsed mudbrick, ashes, and fragments of plaster (level 3). TM.72.N.463 (fig. 5a) is associated with the destruction level 3, and was found near M.2393. Diagnostic MB II sherds found in these layers date the last building phase to approximately 1800–1600 BC.

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### TM.72.N.463 (fig. 5a)
- **weight**: 6.80+x gr
- **material**: hematite
- **shape**: ovoidal; short ends and flattened base
- **measures**: length 2.3 cm; width max. 1.4 cm
- **condition**: slightly chipped
- **square**: FfVII2i
- **locus**: L.2500
- **level**: 3
- **references**: Archi (1987: n. 33), Ascalone and Peyronel (1999: n. 7)

### TM.72.N.437 (fig. 5b)
- **weight**: 15.60 gr
- **material**: hematite
- **shape**: ovoidal; flattened short ends
- **measures**: length 3.0 cm; width max. 2.0 cm
- **condition**: good, only some scratches
- **square**: FfVII2iii
- **locus**: L.2500
- **level**: 4
- **references**: Archi (1987: 45), Ascalone and Peyronel (1999: n. 19)

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1. The sun deities—male or female—shared the roles of guarantors of rectitude and justice, as evidenced by the economic and juridical texts from Ebla and Ugarit.

6. For the presence of figures embracing each other as secondary motifs in some Old Syrian cylinder seals see Matthiae (1986: n. 22).

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7. Two main different stratigraphical layers were singled out: level 3 is related to the wall collapse (baskets TM.72.N.653 and TM.72.N.665) and level 4 is associated to the floor level (basket TM.72.N.669).
Both specimens should be correlated to the so-called “Syrian” shekel of 7.80 gr.\(^9\) TM.72.N.463 should represent the Syrian unit (6.80 gr\(\times\)3) and TM.72.N.437 is related to two Syrian shekels (7.80 gr \(\times\) 2 = 15.60 gr).

A few other small finds were discovered inside the cella: a bronze tool (TM.72.N.410), two fragmentary clay female figurines (TM.72.N.391 and TM.72.N.568), an unfinished cylinder (seal?) in red stone (TM.72.N.546), a bone handle (TM.72.N.409; Matthiae 1989: pl. 167) and seven beads made of semi-precious stones (carnelian, lapis lazuli) and faience (TM.72.N.451–456, 465).

If the bone handle could be considered a part of a ritual knife,\(^{10}\) the numerous beads, collected together near the bench, should be regarded as ritual offerings stored inside the temple.

Another Middle Bronze Age weight (TM.72.N.383; Archi 1987: n. 31, fig. 3:31)\(^{11}\) was found in Area N, in the dwelling area immediately northwest of the temple, in a level not directly correlated to architectural structures but dated from the Middle Bronze Age.

The significance of the presence of weights in Temple N seems to be confirmed if we look at the archaeological evidence from other Syro-Mesopotamian sacred buildings dating from the last quarter of the third and the first centuries of the second millennium BC.\(^{12}\)

The nineteenth century excavations of Old Babylonian period temples do not provide any documentation pertinent to our inquiry. Recently published documentation from the temples of Ishchali (Hill et al. 1990), however, provides the opportunity to look at Old Babylonian metrological material found at this important Diyala region site. Several barrel and duck-shaped hematite weights can be related to the Temple of the Ishtar Kittitum, to the so-called Temple of the Gate, and to the “Serai” area (Hill et al. 1990: pls. 44–46).\(^{13}\) Notably, seven specimens were found in the sacred building dedicated to Shamash or Sin, located

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8. The “Phoenician Standard” or Syrian system (7.80 gr) is well-documented in Syria and Palestine from the Early Bronze to the Iron Ages. This weight unit was the royal local system during the Early Bronze Age IVA (2400–2300 ac) at Ebla (Archi 1987: 47–48, 53, nn. 1–4, 11, 17, 19, 21, 24–26). During the first half of the second millennium ac two other systems (“Egyptian” unit of 9.40 gr and Mesopotamian unit of 8.40 gr) were used together with the previous local weight standard (Archi 1987: 48–49; Ascalone and Peyronel 1999). If the Egyptian system was attested also at the end of the third millennium ac at Tell Mardikh as in other Syro-Palestinian settlements, it is probable that the Mesopotamian shekel became the main standard in the city during the Middle Bronze Age, reflecting the radically changed political conditions of inner Syria. In the same period, the Mesopotamian shekel seems to be used at Mari (cf. Joannès 1989: 21 and n. 21).

9. The specimen is slightly chipped on one short end; the missing part is very small and should not exceed one gram.

10. Another kind of ritual dagger characterized by a crescent-shaped handle, also called “Hyksos dagger,” attested in Syria and Mesopotamia from the late third millennium ac, has been recently analyzed by F. Pinnock (1997), who suggests specific ideological and religious functions for the object.

11. The specimen weighs 5.9 gr; it is a barrel-shaped basaltic weight with several scratches on the surface.

12. A forthcoming article by the authors will deal with the metrological evidence related to the sacred architecture of Syria and Mesopotamia during the Early and Middle Bronze Age: we present here only some preliminary observations on the contextual analysis.

13. Six weights were found in the Shamash Temple; they came from the cella (3–V. 30) and from two peripheral rooms located in the southwest part of the complex (14–V. 32 and 16–V. 32), probably connected with administrative functions. The specimens are in hematite (Hill et al. 1990: pl. 45e) and two are duck-shaped. The weight (?) Ish. 35: 37, coming from the cella, is particularly interesting for his shape: it seems that the specimen represents a lion head (Hill et al. 1990: pl. 46a). The references concerning the weight in grams are known only for Ish. 35: 43 (1.362 gr) (Hill et al. 1990: 148–50). Eighteen weights can be associated to the Ishtar Kittitum temple (I–IV periods) (Hill et al. 1990: 133–42); two of them (Ish. 34: 42 and Ish. 34: 43; Hill et al. 1990: pl. 44a–b) are probably lion-shaped amulets in carnelian as supposed also by the author in the catalogue (Hill et al. 1990: 138–39) and as revealed by two similar carnelian beads found in the fawissae of the Square of the Cisterns at Ebla (Marchetti and Nigro 1997: 27 and n. 73). We have the weight in grams only for two specimens that could be related to the Mesopotamian shekel: Ish. 34: 29 (519 gr) and Ish. 34: 62 (4.375 gr; Marchetti and Nigro 1997: pl. 44d and m). A group of eleven
near the city gate. Four hematite ovoidal weights came from the cella 3-V.30 together with a group of tablets and some bronze objects (Hill et al. 1990: 80). We would like to point out that the contents of other goblets, found in room 5-V.31, which can be considered a sort of scribal courthouse, concern judgements performed in “the gate of Sin-ša-kamanim.” Also in the cella was found a contract “in which the god Sin himself headed the list of witnesses implying that this contract had been concluded in front of the god, that is, in his cella” (Hill et al. 1990: 82). These epigraphic references allow us to suggest a link between the cella and the “judge,” and, moreover, that the weights were used as symbolic/cultic and metrological/practical instruments.

An important goldsmith’s hoard was found inside a jar deliberately buried below a floor in the Ebabbar, the temple of Shamash at Larsa. Sixty-seven weights of various shapes (mostly barrels and duck weights) and materials (mostly hematite and agate; Arnaud et al. 1979: 24–34) were found together with gold and silver jewels, semi-precious beads, copper tools, clay sealings and one hematite cylinder seal.

Without discussing here the divergent interpretations concerning the identity of the owner and the function of room 13, we would like to point out that the place used to hide the hoard was de facto a room pertaining to the Ebabbar sacred complex, and a possible connection between the objects and, generally speaking, the activities of the temple (administrative, handicraft and/or cultic) should not be ruled over. As a parallel, we cite the nine weights discovered inside the ED III Shrine I of the Square Temple of Eshnunna, probably together with other precious objects (Delougaz and Lloyd 1942: 181–83). The high number of stone weights could be indicative of a relationship between this class of artifacts and the cultic activities performed in the cella.

The presence of two weights inside a sacred building at Ebla, together with the peculiarity of this temple, allows us to propose some interpretative hypotheses regarding the possible symbolic and/or ideological values of the weights. The archaeological context (the cella of Temple N) represents a critical point in our analysis since this is the only temple at Ebla in which weights were

14. For this temple see Hill et al. 1990: 77–82, 148–50, pl. 24b. The cultic attribution remains uncertain (Sin or Shamash). Whatever the attribution (and we must remember that the name of the moon-god appears on the cuneiform documents) it seems probable that one of the god’s functions relates to the administration of justice.

15. The closed jar (L.76.77) was found in Room 13 of Court I during the seventh campaign of the French excavations directed by J.-L. Huot (Huot et al. 1978: 195–96). The contents were published in detail and the hoards of the room were related to a presumed goldsmith, Ishu-ibnishu, because of the presence of an inscribed cylinder seal inside the jar (Arnaud et al. 1979; Huot 1980), although it is possible to advance other suggestions also (see Bjorkman 1993; Huot 1995).

16. The weights are simply listed in the catalogue of the objects, without any information on the shape, material and weight in grams. In the absence of drawings and photos, the identification of these artifacts as scale-weights is hypothetical and needs further confirmation.

17. A hypothetical correlation between the Shrine I and the mother goddess was proposed because of the presence of a bronze mirror and precious ornaments (Delougaz and Lloyd 1942: 182). Weights were found in other Early Dynastic temples, for example at Mari, Temple of Ishtar and Ninnizzara (from the cella 13: Parrot 1967: 198, figs. 241–242) and at Khafajah, temple of Nintu VI and Oval Temple I–III (Delougaz 1940: 155–64).

18. The supposed ideological value of the weights could be suggested by the archaeological contexts. For example they often occur in funerary assemblages where, beside the socioeconomic functions and the intrinsic value of the object, they could express specific symbolic meanings.
found. Moreover, as previously mentioned, Temple N could be considered the building of Shamash on the basis of topographic and iconographic considerations. The weights should be regarded as a further factor confirming the identity of the occupant of the temple. Therefore, the specimens are not just metrological and commercial tools, but more importantly, are symbolic objects related to religious activities.

Measuring instruments had symbolic links with concepts such as justice and equality in antiquity as in modern times. In the ancient Near East there is ample textual and iconographic evidence for the association of the god Shamash with justice, although other deities also show similar attributes. The best-known example is represented by the upper part of the Code of Hammurabi (1792–1750 BC), originally erected in Sippar, the city of the sun-god Shamash (fig. 6). Here we can see the god, sitting on his throne, holding the ring and rod, with the king of Babylon in front of him. These objects are normally but not unequivocally related to Shamash, and they are considered instruments for linear measures, which the god holds in his power as symbols of divine justice. This justice had to be necessarily “measured” and “weighed” and the correctness of the acts of the kind human must be indicated directly from the gods, and from the sun-god in primis.

If we look at Akkadian and Old Babylonian and Syrian glyptics we can see that the traditional iconography of Utu/Shamash depicts the god with rays issuing from his shoulders, “cutting decisions” with a saw or serrated knife in one hand and with one foot upon a mountain. The most common scenes on Sargonid seals show Shamash rising from a mountain while twin attendants throw open

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19. The code, found at Susa by R. de Mecquenem, was probably transferred from Sippar to Susa with other Babylonian booty during the victorious campaigns of the Elamite king Shutruk-Nakhunte (ca. 1170–1155 BC). There is evidence, however, that other stele with copies of the “code” were placed in all major Mesopotamian cities.

20. The rod (staff) and ring are always represented together held in one hand by a god and never by mortals or deified kings. The symbols appear for the first time on the Ur-Nammu stela (Van Buren 1949: 435–38) where the moon-god Nanna consigns to the king the measuring rod and line with in order to determine the dimensions of the ziggurat. However, on this monument the ring is depicted as a coiled rope, while the usual iconography on the cylinder seals is a solid circular and inflexible ring. Frankfort (1939: 179) considers the ring and staff to be measuring instruments accord-
the gates of the heavens, or in contest with other gods, or worshipped on his throne, or finally in his boat symbolizing the trip of the sun across the heavenly or subterranean waters. (see e.g., Boehmer 1965: Tafn. 37, 38, 40; Collon 1982: nn. 164–77). An interesting Akkadian cylinder seal found at Nippur (fig. 7) depicts Shamash under an architectural structure supported by twisted columns with the bull-men holding the gate posts on both sides. This scene probably represents the god inside his sacred building. During the Old Babylonian period the sun-god is usually depicted enthroned, holding the saw or the rod and ring, with bull-men as attendants and usually with a worshipper offering a kid. The earlier iconography of the god with one foot placed on a stylized rectangular mountain, found earlier, persists in this period as well (see e.g., al-Gailani Werr 1988: 8–10, 38, 48; Collon 1986: nn. 317–83).

A unique seal from the Late Akkadian period in the Moore Collection (fig. 8; Eisen 1940: n. 42; Boehmer 1965: n. 1105, pl. 38 n. 458) shows Shamash sitting on a throne with the saw in one hand and the rays protruding from his shoulder. In front of him stands a human attendant holding a scale-pan balance; this person is followed by another carrying a goat as ritual offering and behind him there is a smaller personage holding an unidentified object over an altar.

The seal makes it possible to connect in an unequivocal and explicit manner the weighing instruments with the sun-god Shamash, who is the depository of divine justice, which must be, as previously remarked, “measured” and “weighed.” In our opinion, the relationship between the balance and the god should be considered as evidence of how the weights are strictly associated with the judicial role played by Shamash. Therefore it would be possible to express new and different routes about the functions of the metrological materials, strengthening the hypothesis of a two-fold value (economic and ideological) of the weights. According to this, the funerary context of many balance weights (e.g., at Ugarit, Susa, and Ur) could indicate, besides the activities in which the dead persons were involved, also specific, but only generically definable, symbolic meanings. Another important clue is found in the recently published volume of sealings from Kültepe/Kanish (ca. 1950–1850 BC; Tessier 1994). Two sealings depict a seated male figure with a scale in one hand (fig. 9). The lack of distinctive iconographic elements such as the horned or peaked hat makes it difficult to identify this figure as a ruler or a deity. Nevertheless, we suggest that this is a ruler who is depicted as being involved with weighing operations with specific ideological meanings. This glyptic evidence makes it possible to link between such acts in the earthly and celestial domains: both gods (such as Shamash) and kings were respon-

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21. Concerning the different interpretations of the gate post see During Caspers (1971/72).
22. Collon 1987: n. 765. The seal is of pinkish limestone; it was found in locus TB 196 IV 2 (Scribal Quarter) from level IV, and is ascribed to the Ur III period.
sible for the correctness of economic transactions and—at a higher level—of justice (Ascalone-Peyronel 2000: 7–13, fig. 2a–b).

If we look at the epigraphic documentation, it is possible to find other hints for this kind of research, confirming the link between Shamash, the concept of justice and the symbolism used to express rectitude, correctness and equality (see Edzard 1962: 126–27). Without claiming to being exhaustive, we would like to review briefly some examples from administrative, lexical and religious texts. The Akkadian term *abnum* (Sumerian na₃), which has the general meaning of “stone,” was the word most used in order to indicate the weight (CAD, s.v. *abnu*, §A4 d). It appears several times in administrative texts followed by names of kings, officials, stone cutters and private citizens (Powell 1979: 85 and n. 48). It seems that in these cases we are facing examples indicating effective property (personal or craftsmen names) or references to weight standards of a local administrative bureau guaranteed by the highest authority of the city (royal and officers names). The only deity associated with this term is the sun-god Utu/Shamash: In this case the most appropriate translation of na₃ Shamash would be “standard of Shamash,” indicating a weight used as a “correct” standard of measure, which certainly represents strong evidence for the above mentioned concept of justice.¹²³

It seems certain that the weight “of the king,” “of the palace” or “of the land” explains the existence of an official metrological standard, reflecting an economical centralization through the standardization of weights and measures (Ascalone and Peyronel 2000; contra Rainey 1965).²⁴ The so-called “weight of Shamash” requires a more complex explanation. If it is probable that this weight also represents an effective and functional unit of measure linked to a specific public bureau (temple), we can suggest that the specimens related to the sun-god were considered as standard metrological units for their own symbolic/religious value, granted by the god of justice.

“The weight of Shamash” (na₃ ULONG-i) is also attested in the series HAR-ra = hubullu (XVI: 375; Landsberger and Reiner 1970). This is the only reference of a connection between gods and weights in the lexical texts, representing an important correlate to the administrative documentation.

Finally, several hymns and religious texts are dedicated to Shamash: they permit a better understanding of the different aspects of the sun-god in...
relation to mankind. Particularly interesting for our analysis is the role of the god in respect of the merchants and tradesmen: Shamash is in fact described as a judge who establishes favorable or unfavorable fates according to their behavior in the weighing transactions (see e.g., Seux 1976: 51–63, esp. lines 106–15).

In summary, the two weights from Temple N could be regarded as among the few pieces of archaeological evidence for the relationship between Shamash and ancient metrology. At the same time they constitute a confirmation of the attribution of the Eblaite temple to the cult of the sun. It is also interesting to point out that, as known for the “weights of the palace” or “of the king,” some stone weights were used as standard of reference for the common implements used by the palatine administration, by merchants, or by private citizens. In our case it could be possible that the two specimens were inside the temple as examples of “correct” shekels for the local metrological system, guaranteed by the god of justice, Shamash. That our weights are related to the “Syrian” standard of 7.8 gr suits this hypothesis well, because it seems quite probable that the local cult of Shamash was symbolized by indigenous specimens, in spite of the presence of weights using foreign systems (“Egyptian,” “Anatolian”) or to the recently introduced (probably at the beginning of the second millennium BC) “Mesopotamian” one (see also Ascalone and Peyronel 1999: §1). Finally we have tried to demonstrate that ancient weights must be studied as a class of archaeological artifacts in which economic, symbolic and ideological meanings are strictly correlated, and that it is necessary to consider all these aspects for a deeper evaluation of ancient Near Eastern metrology.

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