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R. DE BOER AND J. G. DERCKSEN

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Supervision over Weighing in Early Dynastic and Sargonic Mesopotamia

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Introduction

Administrative and legal documents from Early Dynastic and Sargonic Mesopotamia (ca. 2900–2200 B.C.) deliver abundant references to metals and other highly valuable materials, which were measured by weight. However, very little is known of professionals and individuals who were involved in the process of weighing either as those controlling the procedure or – using implements for weighing such as scales and stone weights – those who performed the weighing themselves. Both must have had definite knowledge and experience to do it. This paper tries to answer the question: who were these specialists and could they have been “private” individuals not connected to larger socioeconomic and political organizations such as the palace or other state-run households?

The question of weigh-masters and their ties to the state-run households remains largely neglected in past and modern research. However, this issue is of enormous importance because of the simple fact that people who could weigh controlled the circulation of materials which were used as (a) money such as copper and then silver, (b) metals for the manufacture of weaponry and tools, (c) luxury goods such as aromatic substances, which were highly demanded by the elite. The large proportion of export and import goods such as textiles, copper, and other metals were all accounted in units of weight. In other words, people who supervised, controlled, and did the weighing of these goods could have been *de facto* economic power brokers, grey eminences of early Mesopotamian societies.

Sources and Method

The corpus of administrative and legal texts from the Early Dynastic and Sargonic periods exceeds 12,000 texts, and ca. 10–15% of these texts – depending on the period and site – refer to materials and objects which were measured by weight in antiquity.¹ It is needless to say that these texts are the earliest sufficiently

Author’s note: I would like to thank Aage Westenholz for reading the draft of this paper and suggesting several important corrections and ideas which considerably improved the overall work. All remaining faults rest upon the author of this paper.

1. For a comprehensive discussion of the system of weight units and related matters in early Mesopotamia, see my forthcoming book *Sumerian Weight Measures: The Historical Perspective*.

understood documents from Ancient Mesopotamia. Therefore, this material is especially interesting in the investigation of the role of people and organizations involved in weighing.

How to identify the process of weighing in cuneiform records? It was expressed in Sumerian by using the verb la_2 . This is one of the most productive verbs of Sumerian: it has a broad semantic field and is used in numerous compound verbs. The basic meaning of la_2 is “to hang.” The meaning “to weigh” of la_2 had been derived likely from the notion of weighing, that is, the suspending of measured goods onto one arm of the weighing scales and stone weights onto another arm of the same scales. Cf. Powell 1971: 139–49 for a review of lexical data on the verb la_2 and its compounds.

The Akkadian counterparts of la_2 are the verbs *šaqaalum* and *hiatum* both meaning “to weigh out, to pay,” both occur very rarely in the written evidence from Early Dynastic and Sargonic texts and are insignificant for the present study.²

Another way to trace weighing activities in cuneiform records is the mentioning of tools for weighing. These are na_4 “stone weights” and $geš-rin_2$ “balance scales.” Both terms occur rarely in the corpus; however, they provide sometimes unique and valuable information for the reconstruction of the weighing practices in Ancient Mesopotamia.

Finally, the last approach in identifying weigh-masters of early Mesopotamia is assuming that some professions were closely connected to weighing or possibly even associated with it. Moreover many people are referred to in administrative and legal texts as agents of weighing: as those who weigh something themselves. Compare a common form $e-na-la_2$ “he has weighed it out for him.” Combining all possibly available information which hints on weighing, one would come to a highly desirable “ideal reference” which would mention (a) a person who weighs, (b) the materials being weighed, (c) the implements being used for weighing, and (d) an organization or a place where the weighing takes place. The last is especially significant for the present discussion since the place of weighing would hint to the “sector” of Mesopotamian economy, either “private” or “state.”

It is appropriate to start with the discussion of the occupations that may have been associated with weighing.

Libripens in Ancient Mesopotamia?

The existence of a distinct professional in charge of weighing only has been debated for some time in the Assyriological literature. This discussion revolves around the morphologically similarly constructed terms $lu_2-ku_3-la_2$ “weigher of silver,” $ma-na-la_2$ “weigher of minas,” and the term TUN_3-la_2 or/and GIN_2-la_2 interpreted by some as $giĝ_4-la_2$ “weigher of shekels.”

Discussing purchase practices during the Ur III period, Claus Wilcke (1976–1980: 503) interpreted $lu_2-ku_3-la_2$ as the term for a distinct specialist in weighing, comparable to the Roman official *libripens* (Lat. *libra* “pound; scales” + *pendere* “to weigh”). This official took part in sale procedures by acting as the authority that

2. For the verbs, see CAD Š/2 1ff.; CAD H 159ff. Cf. Steinkeller 1989: 96 + n. 279 for the use of the last verb in an Ur III document from Susa.

held the scales and thus controlled the weighing of copper used as the means of payment in early Rome.

Piotr Steinkeller also noted the resemblance between the Mesopotamian lu_2 - ku_3 - la_2 and Roman *libripens*. His discussion of the term lu_2 - ku_3 - la_2 in Ur III sources is the only comprehensive study of the term hitherto (Steinkeller 1989: 92–97). Basing on the evidence from fifteen Ur III documents, he discussed professionals who acted as weighers of silver. It turns out that these individuals bore such ordinary professional titles as *simug* “smith,” ku_3 - dim_2 “goldsmith,” and *dam-gara₃* “merchant”; that is—in Steinkeller’s words—“those professionals who owned balances and had the necessary experience to do the weighing accurately.” Further Ur III references prove also that ku_3 - la_2 was an attribute to such well-known titles as *ugula* “supervisor; commissar” and *ġuruš* “corvée-worker.”³

(lu₂)-ku₃-la₂ “silver weigher”

The earliest reference to the term ku_3 - la_2 is found in an ED IIIa list of personnel published by Giovanni Pettinato (1997: no. 3) and re-edited by Aage Westenholz (2014: no. 151). The term is mentioned two times:

obv. iii	1 Ab-ba-tur muhaldim	<i>Abbatur</i> , the cook,
	ku_3 - la_2	the silver-weigher;
	1 U ₂ .KA-il	<i>UKAil</i> ,
	ku_3 - la_2	the silver-weigher.

This and further texts show that (lu_2) - ku_3 - la_2 had been a complimentary term applied to a certain number of professionals who were able to weigh silver and probably other commodities. For instance the text Banca d’Italia 1, 29 from Early Sargonic Adab mentions a *simug* ku_3 - la_2 “smith, weigher of silver” in rev. i 2. This peculiarity corresponds to the Ur III evidence discussed by Steinkeller. Therefore individuals marked (lu_2) - ku_3 - la_2 cannot be considered to have been “professionals” whose job consisted purely of weighing.

ma-na-la₂ “weigher of minas”

Another term associated with the “weigh-master” is *ma-na-la₂*, literally “the one weighing (with) mina (weights).” Both this word and ku_3 - la_2 occur together in lexical lists where they are found among the specialists associated with trade. When comparing *Old Babylonian Proto-Lu* with *Canonical Lu = ša* the following correspondences exist (MSL 12: 58, 137):

<i>OB Proto-Lu</i>	<i>Lu = ša</i>	Translation of the Akkadian
ku_3 - la_2	= <i>ša-qi-il kas-pi</i>	“weigher of silver”
<i>ma-na-la₂</i>	= <i>ša-ma-lu-u</i>	“merchant’s assistant”
<i>dam-gara₃</i>	= <i>tam-ka-ru</i>	“merchant”
<i>šagan-la₂</i>	= <i>ša-ma-lu-u</i>	“merchant’s assistant”
<i>ga-eš₈</i>	= <i>ka-eš-šu</i>	“merchant; customs official”

Thus the specialist *ma-na-la₂* was understood by the editors of *Canonical Lu = ša* as a synonym to *šamallû* “assistant, agent of a merchant, trading agent” (CAD Š/1

3. Cf. for instance Berens no. 64 rev. 4 for *ugula* ku_3 - la_2 -a . . . “supervisor of those who weigh silver” and ITT 2, no. 627 rev. ii 10–12 for *ġuruš* ku_3 - la_2 “corvée-worker, silver-weigher”.

291ff.). Still further evidence, the list SIG₄.ALAN = *Nabnitu* compares ma-na-la₂ with *hā'itū* “official concerned with the weighing of silver used as currency” (CAD H 32; MSL 16: 96).

Unfortunately, I was unable to identify any case in which ma-na-la₂ or šagan-la₂ or ga-eš₈ refers to a person in charge of weighing in early administrative or legal records. The only reference to the term ma-na-la₂ in an administrative context occurs in an Ebla text MEE 10, no. 26, obv. x 3, and is doubtful. Pietro Mander reconstructs *ma-[na?]-lum* in the publication of this document. He suggests with reservation that this writing may be compared to the forms *ma-na-a-lum* and *ma-na-lu-um* in Ebla vocabularies (Mander 1990: 123, 128). These forms are equated there with the Sumerian term *addir* “hire.” Although the semantic link between the Eblaite and the Sumerian counterparts is not apparent, the shape of the Eblaite word itself suggests that the term ma-na-la₂ may have been borrowed into Semitic in the form **manālum* as early as Early Dynastic IIIb.

TUN₃-la₂ vs. GIN₂-la₂

The last term which is believed by some to have a connection to weighing is TUN₃-la₂. It does not occur either in the corpus under consideration to denote a specialist in weighing, nor does it occur together with tradesmen in lexical lists. However, I offer a brief review of the discussion of this unclear occupation for the sake of completeness.

Walther Sallaberger and Pascal Attinger identified the group of professionals written GIN₂-la₂-me-eš₂ in Ur III sources as “weighers of shekel” by reading the sign GIN₂ as giĝ₄ “shekel.” Sallaberger (1994: 138 + n. 13) compared the term with the already discussed ku₃-la₂ “weigher of silver.” Hans Neumann doubted the hypothesis of Sallaberger and suggested to understand the term as not connected with weighing practices. He followed the translation of Edzard “he who has the instrument TUN₃ hanging (on his belt)” (Neumann 2001: 41 n. 20). However, Sallaberger in a personal communication, pointed out to me that the sign employed in the Ur III writing of the term is indeed GIN₂ and not TUN₃. The issue deserves further investigation.

Summarizing the discussion of the terms for occupations which might have been connected to weighing one should stress that these “specialists” cannot be compared to the Roman scales holder *libripens*. Firstly, the term ku₃-la₂ “silver weigher” could have been applied to different professions. Secondly, the term ma-na-la₂ does not occur in administrative texts in the corpus under consideration. Finally, the relationship of the Ur III occupation GIN₂-la₂ to weighing cannot be confirmed so far.

The following is a discussion of those professionals who can be unreservedly identified as persons who performed weighing in early Mesopotamia.

1. Merchants in Charge of Weighing

The evidence from Early Dynastic and Sargonic administrative and legal records allows to distinguish three groups of occupations which acted as weigh-masters. They are: (a) merchants, (b) craftsmen, and (c) officials of public households. This classification is certainly a modern notion. However, it serves to show the position which weighers occupy in the circulation of those goods and commodities which were measured by weight. According to this, merchants are those who acquire and weigh the goods, officials are those who execute weighing as a controlling procedure

and are responsible for the redistribution of the goods, whereas craftsmen need to know the weight of a given material in connection with the manufacture of goods they are entrusted with. Data from cuneiform texts show that officials of public households were the pivotal point of the circulation of goods and were the ultimate authority who controlled weighing.

Coming to the role of merchants in weighing the goods they bought as the result of long-distance trade (for instance with Elam, Dilmun, Magan and Meluhha) and inner Mesopotamian trade, it is logical to suppose that they must have known how to weigh. They must have been able to establish the exact quantity of merchandise at their disposal. This is particularly interesting if one takes into account their necessary knowledge in local, Sumerian systems of mensuration but also the acquaintance with those of the localities where they ran their trade. Merchants must have known how to correlate and exchange the Sumerian units of weight with those of other lands. Documents from Early Dynastic IIIb Ġirsu verify this reflection. Several accounts (DP 513; MVN 3, 10) relate about trade activities of merchants from Ġirsu with the city of Der (BAD₃.AN^{ki}) situated on the border with the Zagros Mountains. These texts refer to two “weighing norms,” n₄-BAD₃.AN^{ki} “stone of Der” being the “local norm” and the term n₄-si-sa₂ “correct stone” designating the “weighing norm” commonly used in ED IIIb Ġirsu.

These and many other synchronous and later documents illustrate the well-known role of merchants as acquirers of luxury goods for elites. However, there is evidence which implies that merchants “worked” not only for the large state-run households, but also as a neutral party between a seller and a buyer in sales contracts. This means that they acted as weigh-masters in the “private sector”.

The following document exemplifies this suggestion. MC 4, no. 61 (= Steinkeller and Postgate 1992; for the previous edition cf. Krecher 1973: 242–45) is a Sargonic text of unknown provenance which records a purchase of a person. Obv. 10–11 mentions a merchant holding the scales by which the silver was measured: En-za-ra dam-gara₃ lu₂ geš-rin₂ dab₅-ba-am₃ “It is Enzara, the merchant, who held the weighing scales.”

This implies that merchants had the scales and knowledge of metrology to control the weight of silver and other materials and, furthermore, that they could exercise these tasks outside the state-run households.

2. Craftsmen in Charge of Weighing

Coming to the second group, it should be stressed that references to craftsmen who are referred to in texts as weighers are extremely rare. If we imagine an ancient smith ordered to cast a certain amount of bronze axes, he would probably receive an already measured amount of copper and tin for its production. Moreover since the mold is used for the production of bronze axes, the smith would produce exactly the same “standard” axes. The evidence indicates in most cases that the weight of produced objects was checked by a controller from within the administration, such as scribes, supervisors, majordomos, etc. The role of these officials will be treated in the end of this article since the main bulk of the evidence shows that they were weigh-masters. Let us first consider several rare examples illustrating that at least some craftsmen were able to ascertain the weight of either raw materials or produced goods.

Any palace or temple of Early Dynastic and Sargonic times had at its disposal a rich variety of craftsmen who supplied its needs: smiths, carpenters, reed-workers, fullers, weavers, etc. Despite the abundance of documents depicting their labor for the palace and temple households, the references to the cases in which they measure or control the amount of materials they are given for production of the respective goods or checking the physical properties of an object upon output are uncommon. I was able to identify only two craftsmen – a smith and a fuller – in this capacity.

An account of copper from Sargonic Umma (CST 11) mentions a chief smith who established the weight of copper ore (rev. 2–3):

5 [?] ma-na ni ₃ -sahar-ra [uruda [?]]	5 [?] minas copper ore is of the land
ʿsa ₁₂ ʿ-du ₅ -kam	surveyor;
Du-du ʿsimug ¹ -[gal]-ʿe ¹ e-la ₂	Dudu, the chief smith has weighed it.

Nevertheless it is the scribe, being an administrator of the household for which Dudu is working, who makes the final count and weighs out this amount for Dudu (rev. 4–7):

[šū-niġin ₂] 33 13 giġ ₄ uruda ma-na	Total: 33 minas 13 shekels copper ore
ni ₃ -sahar-ra	
Da-da ʿdub ¹ -[sar]-e	Dada, the scribe,
Du-du simug-gal-ra	has weighed out for Dudu, the chief
e-na-la ₂	smith.

A characteristic case where a fuller ascertains the weight of a product is provided by a Sargonic document from Ġirsu, STTI 43, which delivers an example where a manufactured object undergoes the weighing by its manufacturer:

obv.	1 tug ₂ -du ₈ -a banšur-ra	1 table cloth.
	ki-la ₂ -bi 5 ma-na 15 giġ ₄ siki	Its weight (is) 5 minas 15 shekels wool.
rev.	A-KA-ʿdu ₃ ¹	AKAdu,
	tug ₂ -du ₈ -e	the fuller,
	i ₃ -la ₂	has weighed it.
	< . . . >	

Noteworthy is the use of the simple grammatical form i₃-la₂ which lacks any additional prefixes but the “conjugalional” i=/e=. This form conveys the notion of weighing as ascertaining the physical properties of an object. The form differs from, e.g., e-na-la₂ “he has weighed it out for him” which conveys the notion of issue; it also differs from e-ni-la₂ “he has weighed in/by . . .” which refers either to the place of weighing or the means by which the weighing has been conducted.

3. Officials of Central Households as Weighers

The largest group of professionals who were occupied with weighing are the officials of central state-run households. Evidence from the Early Dynastic and Sargonic periods reveals that these were: agrig “household steward,” dub-sar “scribe,” ensi₂ “governor,” lugal “king,” an official ensi₂-gal, gu-sur “field assessor,” nu-banda₃ “supervisor,” and ugula-e₂ “overseer over the household”.

Many references describe both *ensi*₂ “governor” and *lugal* “king” as well as their wives as persons who weighed out goods for certain individuals. For instance, DP 517 (ED IIIb Girsu) records the case where Baranamtara, the wife of the governor Lugalanda, ascertains the weight (*e-la*₂) of silver brought to the *Emi*-household by a certain merchant. Obviously, statements of this sort should not be taken at face value: she did authorize the weighing of silver, but it is uncertain whether she herself could weigh. The wording “she has weighed the silver” should be compared to the usual phrasing of royal inscriptions where rulers “build” temples.

Avoiding the discussion of numerous references where the abovementioned officials act as weigh-masters or controllers, I will confine this discussion to elucidating the role which the *dub-sar* “scribe” played in supervision over weighing. It is necessary to discuss this issue because several of the highest officials – such as *nu-banda*₃, *agrig* – were scribes at the early stages of their career (Waetzold 2009: 252). This last observation is hardly surprising since the duties of these officials required literacy and the knowledge of metrology. A lexical tablet published by J. Friberg (2007: 426–29) shows that literacy and knowledge of metrology went hand in hand.

A remarkable document illustrating the role of scribes as weigh-masters is CST 8 (Early Sargonic Umma). The material being measured by weight here is copper. Obv. ii 2–3 states that this copper is weighed out for respective recipients:

urudu En-ki-aĝ ₂ dub-sar-e	This is the copper which Enki’aĝ, the scribe,
e-ne-la ₂ -am ₃	weighed out to them.

The evidence discussed hitherto stresses the role of employees and officials of central households in measuring materials and objects by weight. Moreover, the example with scribes implies that people need to have knowledge to do it and be able to record it in writing. Therefore the question arises: was it possible at all that individuals unconnected to central households could weigh in the Early Dynastic and Sargonic periods?

Conclusions: Weighing by “Private” Individuals?

The answer to this question requires a better understanding of the Early Dynastic and Sargonic societies of the Southern Mesopotamian city-states, in particular whether or not there existed individuals who were socially, politically or economically completely unconnected to central public state households. I believe that the majority of the free population belonged to urban and rural communities. Discoveries of weighing tools in private houses throughout the ancient Near East by archaeologists suggest that “private” people could do very well without the state and knowledge of writing in managing the measurement of metals, etc. However, the rarity of private archives from the Early Dynastic and Sargonic periods makes these people and their transactions virtually invisible.

An example of a “private archive” might be the famous “Enlilemaba archive” published by Aage Westenholz in OSP 2: 59–86. The financial transactions of the private companionship called *e*₂-ad-da “Father’s house” are its contents. Several persons act as weigh-masters in these texts. However, their titles – for instance *šandana* “administrator of date orchards” (OSP 2, 62 rev. i 5–8: ^dEn-lil₂-le dam-

gara₃-ra ṽLugal¹-ḡeš šandana-ke₄ in-na-la₂ “Lugalḡeš, the administrator or orchards, has weighed it (silver) out for Enlile, the merchant” – hint at the probability that these persons may have been employed at central households and ran the enterprise of the “Father’s house’s” parallel to that. If a person bears the title “administrator of orchards,” these orchards must have belonged to some state-run household.

Summarizing the discussion, it should be stressed that there is no positive evidence of any professional in Early Mesopotamia comparable to the Roman weigh-master *libripens*. On the contrary, documents from the Early Dynastic and Sargonic periods reveals that numerous officials and merchants and – to a lesser extent – craftsmen were able to exercise or control the weighing of goods.

Second, literacy proves to have played an important role in the measurement of goods, since several officials mentioned as weigh-masters were trained in writing and metrology. However, it is impossible to imagine that only literate persons could weigh. Local weighing norms in places distant from learned urban centers suggest that there must have been people lacking any theoretical knowledge in mensuration but still acting as weigh-masters.

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