

Vitali Bartash. *Establishing Value: Weight Measures in Early Mesopotamia.* (Studies in Ancient Near Eastern Records 23) Berlin: De Gruyter, 2019. ISBN: 978-1-5015-1714-3. 270 pp., 13 figs., 33 tables.

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With the publication of his new book, Vitali Bartash aims to offer a comprehensive study of weights and measures during the early periods of urban civilization in southern Mesopotamia. Described as an economic practice, weighing is investigated in early Mesopotamia (c.3350–2000 BCE) in order to understand the reasons for its first emergence and the changes to the system that took place in the third millennium BCE, as well as the ways in which it shaped the socio-economic relations in early Mesopotamian society.

In the introductory chapter (2019: 1–15), Bartash clarifies the main concepts and methodological approach of his study. Weighing is seen as an economic practice and a cultural phenomenon. As such, the study aims to analyse in depth the full range of interrelated aspects of weighing, namely, the contexts and the actors involved in the weighing operations, the metrological system and the different goods that were measured by weight. The book also looks at the tools used in weighing operations and the economic significance of the process, as well as the major socio-economic forces that determined weighing and its impact on society.

Chapters 2 to 6 (2019: 16–111) define the backbone of Bartash's work. Each unit of weight – the talent, the mina, the shekel and the little mina – is discussed in the light of an in-depth investigation of cuneiform texts of the late fourth and third millennia BCE, texts that more precisely stem from the Late Uruk, Early Dynastic, Sargonic and Ur III periods. Bartash is able to show how the weight system of southern Mesopotamia changed during the third millennium BCE under different political, economic and social contexts. For each of the weight norms, the author discusses the goods the weights were regularly used to measure. Bartash observes that the “load”, which later corresponds to the talent unit (gun_2), did not have a standardized mass in the Early Dynastic period, and it is possible that the practice of cutting and transporting reeds and timber promoted the use of the load as a prototype of the later talent measure. Concerning the mina (ma-na), relying on texts from Ur and Šuruppak the author concludes that this weight unit emerged in script for the first time in the Early Dynastic I–II period (c.2900–2600 BCE). This proves that a system of weights and measures was already in use at the beginning of the third millennium BCE. It is interesting to observe that the mina and weight metrology were confined to the measurement of metals (especially copper) and fibres, as well as manufactured products. It is clear from Bartash's observations that the mina constituted the highest unit of the weight system before the Sargonic metrological reforms. The origins of the shekel ($gi\check{g}_4$) are unknown. Bartash's study reminds us that this unit appeared first in the Early Dynastic period. It is attested for the first time

in script around 2600 BCE, but it is probable that it was in use earlier. It seems that the shekel was commonly used to measure smaller quantities of expensive commodities, usually metals and wool, as well as resins and gems, in a context characterized by the use of silver as money. The author also suggests that the emergence of weight metrology in Mesopotamia possibly started when the ratio of 1:60 between the mina (the measure unit for copper) and the shekel (the measure unit for silver and other expensive goods) was first established. The mass of the shekel was the most precise of these two units, and this led to a more precise definition of the mass of the “correct” mina. The author also discusses the writing NINDA₂ x ŠE+N ma-na, the linguistic realization of which poses difficulties. This grapheme, which was in use until the Neo-Sumerian phase, was poorly understood in the Presargonic period, and Sargonic reforms tried to eliminate it through the introduction of the “little mina” and the “barleycorn”.

What we see in the written record of weight measures in the Sumerian system reflects accounting practices that were in use well before metrology was introduced in cuneiform script. These weighing practices and their values were then adopted by the state households (palaces and temples). These institutions standardized them according to the specific goods (primarily metals and wool) that were circulating within the economic space governed by these socio-political organizations and based on their needs. In light of the available written sources, Bartash (2019: 91–92) observes that the use of these weight measures by a fraction of the upper social stratum of the urban population prevents us from reaching a reliable understanding of the weight measures in question. These remarks lead the reader into Chapter 6, which is devoted to an overview of the developments that took place with the Sumerian weight system during the third millennium BCE. The author illustrates the reforms that were promoted during the Sargonic period (c.2350–2150 BCE) and the Ur III Dynasty period (c.2110–2003 BCE). Bartash underlines that changes that are normally considered “Sargonic” can actually be seen as changes that were introduced over a longer period, starting from the reign of the founder of the Akkad “empire” to that of Sargon’s grandson, Naram-Suen. It is interesting to discover that the Sargonic weight metrology was artificial and impractical in real life, as evidenced by the “little shekel” (gig₄-tur), a completely new weight unit. Meanwhile, the introduction of the talent in the metrological system represented a positive innovation that predated Naram-Suen’s reign. The Neo-Sumerian stage of the weight system shows that scribes’ choices of standardization were more practice-oriented. Innovations were also promoted by Ur-namma, the founder of the Ur III state. The reforms of this Neo-Sumerian king, characterized by simplification and unification, generally concerned the written notations of the measures (2019: 108). These observations on third-millennium BCE reforms are useful when attempting to understand the background of the metrology that we find in later civilizations of the Near East, such as in Babylonia and in Assyria.

In Chapter 7, the author reconsiders the topic of stone weights, a theme often discussed in previous archaeological scholarship but never systematically investigated from the point of view of the evidence of these objects from early southern Mesopotamia. From the author’s analysis of groups of weight standards we learn that weight-masters in third-millennium BCE Sumer used one-talent stones exclusively for wool and flax quantities and for textile manufactured products. In contrast, for goods such as metals, resins and gems, higher levels of precision were necessary, leading to the use of sets of weights comprising shekel and barleycorn units. Bartash’s book also investigates the links between stone weights and balances, a topic often neglected in previous studies. The author’s observations in Chapter 8 allow scholars to study in

much greater depth the intricacies of the Sumerian terminology of balances and their structure. The phenomena of standardization also involved the regulation of weighing implements used by staff in large central households and elite private households. In the field of the textile industry, which represents the most documented socio-economic sector of urban civilization of ancient Mesopotamia (the others are metalworking and trade), weight-masters not only used standard weights for wool and textile end products, but also specific weighing balances, characterized by large and small sizes and capacities.

We are faced with problems concerning the agents in charge of weighing and the context in which these professionals operated, but Bartash offers detailed and accurate answers to these issues in Chapter 9, showing that the role of weight-masters in southern Mesopotamia could be played by weight-masters in *stricto sensu* as well as merchants, craftsmen and state officials. He reminds us that objects interpreted as early weights are still unpublished and their context cannot therefore provide decisive insights into the locations at which weighing operations were executed. Relying on Rahmstorf's conclusions that the third-millennium BCE Syro-Mesopotamian contexts of weighing were palace/administrative buildings, temples and domestic contexts, and that the majority of weights originate from domestic scenarios, Bartash shows that weighing places in early southern Mesopotamia were not only institutional contexts (palaces and temples), but also locations of production and private houses of state officials.

Chapter 10 comprises a pivotal point of Bartash's study. In this part of the work, he investigates the goods that were commonly weighed in early southern Mesopotamia. We need to look at these commodities for the reasons why weight measures, standardization, implements of weighing and the representation of weights in script developed in the way that we know today. This topic has long been neglected by scholars interested in Mesopotamian metrology, although it is hard to believe that weight metrology emerged in Mesopotamia without a pre-existing relationship with state-controlled production (primarily of wool textiles) and the interregional trade of metals and textile products, as well as luxury goods. Copper, silver, bronze and gold are metals that were regularly weighed in Mesopotamian cities. Resins were an expensive merchandise in Sumer and were measured either by weight or units of capacity. Another category of luxury goods is represented by precious stones, which were also weighed. Occurrences in written sources showing that these items were weighed in their raw state are rare in comparison with attestations of manufactured objects. Given the large investment in sheep husbandry and textile production in the first urban society of Mesopotamia, it is no surprise that many weighed products are quantities of wool and manufactured textile goods, although the author notes that the presence of wool in Late Uruk accounts is lower than that of the third millennium BCE. It is possible that wool and textiles were measured in rolls of cloth of variable length, which would explain why Mesopotamian accountants recorded cloth in pieces, adding their weight to this notation afterwards. However, wool recorded in third-millennium BCE texts was probably also counted in fleeces, a unit that was followed in the script by the notation of their weight. In addition, the author observes that different types of measuring and accounting practices coexisted in the Early Dynastic period, one based on the use of sexagesimal numbers, possibly referring to pieces, rolls or fleeces, the other using weight notations such as minas and shekels. It is not clear why the author treats ropes and nets in association with mineral substances and bread together in a separate paragraph, since the first two commodities were an integral part of the textile end products that resulted from the processing of vegetal fibres in southern Mesopotamian cities. The mineral called im-babbar₂ in Sumerian texts (corresponding to

Akkadian *gaššu*) also played a significant role in textile processing. Along with alkali, gypsum was used as a cleansing agent by Mesopotamian fullers and washers (see CAD G, 55 s.v. *gaššu* and U-W, 49 s.v. *uḫūlu*). The tables included in this chapter enable the reader to see more details about the weighed commodities that constituted the “core goods” of the early Mesopotamian urban economy, their terminology, the corresponding weights and relevant textual references. Also of great relevance are the conclusions reached by the author concerning the description of metals and textiles as “core goods”. Through the study of the extensive use of metals and the relevant interregional trade in these commodities, as well as the concentration of textile production within central urban households, we can determine the main factors that promoted the emergence of the weight metrology in southern Mesopotamia (2019: 229).

In the author’s words, this is “the first comprehensive analysis of weighing as an economic practice in Mesopotamia” (2019: 1). However, especially bearing in mind the author’s interest in weighing tools (proved by the accurate analysis of stone weights in Chapter 7), the reader will be surprised to find that no images of stone weights from museum collections are included in this monograph. Given the socio-economic perspective of this work and the interpretation of weighing not only as an economic but also cultural phenomenon, a selection of images documenting the material evidence of weighing implements would have enhanced the quality of this study. This does not detract in any way from the significance of Bartash’s book as an important tool to help us understand the social and economic history of southern Mesopotamia in one of its most crucial phases of development.

In conclusion, the author of *Establishing Value* deserves our appreciation for giving scholars an important contribution to the study of early Mesopotamian weighing from the point of view of both the methodological approach and the analysis of textual evidence.