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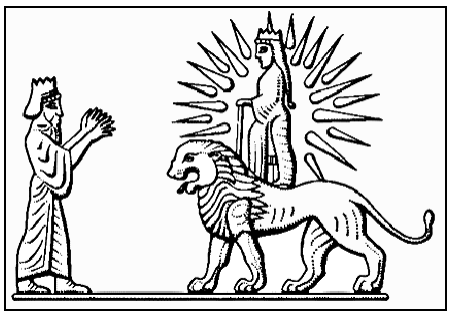

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Published in Melammu Symposia 5:

Robert Rollinger and Christoph Ulf (eds.),
Commerce and Monetary Systems in the Ancient World.
Means of Transmission and Cultural Interaction.
Proceedings of the Fifth Annual Symposium of the
Assyrian and Babylonian Intellectual Heritage Project.
Held in Innsbruck, Austria, October 3rd-8th, 2002
(Stuttgart: Franz Steiner Verlag 2004), pp. 420-43.
Publisher: http://www.steiner-verlag.de/

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TRACING THE BIBLICAL ACCOUNTING REGISTER: TERMINOLOGY AND THE SIGNIFICATION OF QUANTITY

Baruch A. Levine

No economy can grow in scope and complexity unless adequate accounting methods are developed to record its activity, and to communicate accurate information about the extent of its wealth. *The Economist* of April 26, 2003 contains a special report entitled "The future of accounts" (pp. 61-63), which discusses "the crisis in accounting" in the United States, and what is being proposed to correct for the loss of faith in current procedures. Alongside those who merely seek to fix what is wrong in the current system are others who propose more pervasive change:

> Looking further into the future, however, some see the crisis in accounting as an opportunity to change the *shape* and *content* of accounts more fundamentally (page 61; italics mine).

The report goes on to say that present-day economies, on a global scale, have become too complex for the existing accounting systems, which seem unable to record with clarity and accuracy such factors as revenue recognition, market value, the reliability of estimates, and the like. When this happens, new forms and methods must be put in place so as to manage further economic development.

The generative role of written accounts in antiquity was succinctly analyzed by C.C. Lamberg-Karlovsky (1999), in a study of some of the earliest Mesopotamian household economies, showing how the utilization of accounts contributed to urban growth, both economic and political. Long before the invention of writing, as a matter of fact, the use of figurative seals had made extended communication and recording possible. Over the millennia, the great economies of the ancient Near East, those of Egypt, Syria and Mesopotamia, produced myriads of administrative records and fiscal accounts, and even the smaller societies of the West-Semitic sphere, operative during the Late Bronze and Iron Age, left financial records that are highly informative.

In a broader sense, information about ancient economies can be retrieved across generic lines, not only from records specifically fashioned for this purpose. One can glean such information from epics and chronicles, treaties and law codes, and rituals and narratives. To do so makes it necessary, however, to perfect proper methods for evaluating the realism of such sources, so as to correct for ideological *Tendenz* and imaginative depiction. Thus it is that we can approach biblical texts, as an example, with economic questions in mind, if we have reliable methods to distinguish between history and tradition. An excellent paradigm is the study of Ezekiel's oracles against Tyre and Sidon (Ezekiel 26-28) by Igor Diakonoff (1992), in which that scholar verifies, in historical terms, that the Phoenician city-states traded in the very commodities enumerated in the biblical prophecies during the contemporary period. In the same vein, my former student, Martin Corral (2002), inspired in large measure by Diakonoff's example, accomplished an informative doctoral dissertation, in which he elucidates the economic

background of these same prophecies of Ezekiel. For my own part, I have investigated the economic aspects of land tenure and urbanism in biblical Israel, endeavoring to evaluate the realism of the biblical references (Levine 1996, 1999). In the present study it is my purpose to explore biblical accounting terminology, as well as the systems of quantity signification employed in biblical reports, as we have them.

My interest in ancient accounting stems from the comparative study of biblical cult and ritual, directing my attention to Near Eastern temple records and economic texts, which often tabulate allocations for cultic use. This interest was first expressed in a study of the priestly Tabernacle texts of the Pentateuch (Levine 1965), and has since informed much of my work. It should be borne in mind that there are virtually no original records in the Hebrew Bible; all have been adapted in some degree to narrative style, making it necessary to visualize what their original form might have been. The challenge is to establish a correlation between biblical terminology and formats, and those employed in epigraphic texts discovered in archeological excavations. Because the extent of Hebrew epigraphy is so limited, and because inscriptional materials in the most proximate Canaanite languages of the biblical period are also scarce, it becomes necessary to reach out to comparative sources, principally to Aramaic and Phoenician-Punic epigraphy, but also to a wider range of western sources in several languages and scripts. My ultimate objective is to identify the "register" of adapted biblical accounting texts, and their constituent formulas. In a recent study of Egyptian writing systems, my colleague, Ogden Goelet, defined "register" as follows:

> Register is a term used to describe the variety of language employed according to such social factors as class and context. For example, the way in which people speak and write in academic discourse, in religious contexts, or in legal documents are all considerably different from each other and different from how those same individuals might speak in their daily lives. Each situation represents a different register (Goelet 2003: 4).

In earlier studies, I have been able to trace some biblical cultic terminology back to the royal administration. Thus, the term תמיד "regular, daily offering" (Exod 29: 42) essentially means "daily ration, allocation" (2 Kings 25: 29), specifically, what royal captives of the Babylonian king received. The cult of the First Temple of Jerusalem was sponsored by the royal establishment, and the same was true in northern Israel, and the Second temple served as the central administrative agency in the post-exilic period, under Persian imperial rule. It should be no surprise, therefore, coming from the other direction, to find that most biblical accounting terms, and numeration sequences are concentrated in courtly and priestly texts. This is their "register."

Selected Biblical Accounting Terms

Note: The list of terms to follow will not include numbers and fractions, or weights and measures, both of which are of importance in comprehending biblical accounting procedures. The reader is referred to two recent, and informative entries in the *Anchor Bible Dictionary* (1992): "Numbers and Counting " by Joran Friberg (4: 1139-1146), and "Weights and Measures" by Marvin A Powell (6: 897-908). These articles provide extensive bibliography, and are comparative in scope.

1) אחז (= *ʾāḥūz*) "(amount/unit) withheld" (Num 31:30, 47; 1 Chron 24:6). The Hebrew verb *ʾ-ḥ-z* means "to hold, take hold" so that the Qal passive participle, *ʾāḥūz* would mean "held, taken," hence, in context: "held apart, withheld." 1 Chron 24:6 yields a clear meaning, even though the Massoretic text probably reflects a scribal error. This reference comes within a register of priestly "divisions," and the listing of their respective assignments. Thus, we read: בית-אב אחד אחז לאלעזר *ואחד* אחז לאיתמר "One patrilineal family 'held' for Eleazar, and *one* 'held' for Ithamar." (The error was undoubtedly triggered by the similarity of the word for "one" and the verb "to hold." The Aramaic cognate of Hebrew *ʾ-ḥ-z* is written with a *daleth,* as *ʾ-ḥ-d*, in later phases of that language). The sense of אחז in the passage from Chronicles is best defined as: "reserved, held apart; selected." This meaning is attested for the comparable Palmyrene Aramaic Pe´il form: *ʾḥyd* (*PAT*, Glossary, 336). As an example:*ʾ[t]r ʾḥyd* "a place reserved"- for a certain person (*PAT* 51, s.v. BS III, 68:1).

As for Numbers 31, it is a war narrative belonging to the priestly stratum of Pentateuchal literature. Within this chapter, verses 25-54 ordain the division of the spoils of war, a large portion of which were to be donated in support of the cult. The formulation of the text is discrete: "And from the half-share (וממחצית) assigned to the Israelite people you shall appropriate one (unit) withheld out of fifty (אחד אחז מן החמשים), "and so forth (Num 31: 30). Further on, in Num 31: 47, where the fulfillment of this instruction is acknowledged, the word order is reversed: את-האחז אחד מן החמשים.literally: "the (unit) withheld, one out of fifty." Quite possibly, this set of meanings goes back to Akkadian *leqû* "to take," which in mathematical texts can mean "to subtract, take off; extract a square root" (*CAD L*, 136, s.v. *leqû*, meaning 1d). It bears notice that Old Aramaic *ʾ-ḥ-z* at times functions as a loan translation of Assyrian *laqāʾu* in the sense of "to receive, acquire by purchase," and that this meaning in fact establishes the functional equivalence of the two verbs (Fales 1986: 179). In turn, Biblical Hebrew אחז would represent a back-formation of the Aramaic, not at all improbable during the Late Biblical period, to which both of the biblical references belong, in our view.

2) Verbal Pi''el חשב (=*ḥiššēb*) " to reckon, keep an account"(Lev 25:27, 50, 52, 27:18, 23; 2 Kings 12:16). This specialized connotation derives from the basic sense of the root *ḥ-š-b,* namely, "to figure out, conceive." Its turns out that the chronicle of temple renovations, 2 Kings 12, is the locus of technical usage conveyed by the Pi''el *ḥiššēb*. The relevant passage reads: "And they do not keep an accounting of the men (ולא יחשבו את האנשים), through whom they remit the

silver to be paid to the craftsmen, for these perform under terms of trust" (2 Kings 12:16). For the rest, we have only the 3rd masculine singular, in the inverted perfect, occurring in priestly laws governing land tenure. Thus, Lev 25: 27: "He shall compute (וחשב) the years since its sale." Or, Lev 27: 18: "The priest shall compute for him (וחשב לו הכהן) the silver according to the years remaining." The term חשבון occurs three times in Koheleth (7,25,27, 9:10), where it seems to mean "a reasoned calculation." In his search for wisdom and meaning, the Sage arrives at such awareness in steps: "One by one to arrive at a reasoned calculation (אחת לאחת למצא חשבון "- Koh 7:27). In Post-biblical Hebrew usage, the term חשבון was taken to mean "account, calculation" (Kasovsky 1957, 2: 737-738), and Pi''el forms continued to be used with the same Biblical Hebrew connotation. Later dialects of Aramaic also attest nominal forms. Thus, the term *ḥšbn* occurs in the great Tariff from Palmyra, line 155 (=*PAT* 1259= C3913), and see *ibid*., Glossary, 369, s.v. *ḥšb* v., and *ḥšbn*, and *DNWSI* 411, s.v. **ḥšbn[1] .** In the same Tariff, line 53 we read: *mks' dy qṣb' 'py dnr ḥyb lmtḥšbw* "The tax on butchers must be computed in dinars" The form *lmtḥšbw* represents the Ithpa''al, a reflex of the Pa''el. Also note the form חושבנא "account, calculation" in Jewish Babylonian Aramaic (*DJBA* 443). The term חשבן occurs in an Aramaic signature to a Greek legal document from the Babatha archive at Nahal Hever:

> די קבלת מן .. לחשבן פקדון כסף דנרין תלתמאה
>
> "That I have received from PN .. on account; a deposit of silver (in the amount of) 300 dinars" (Greenfield 1989:141, s.v. no. 17, line 41).

Important evidence also comes from Punic sources, which attest the title, or office known as מחשב, plural מחשבם "accountant, treasurer; the exchequer." (*PhPD* 277-278, s.v *MHŠB*). Thus *KAI* 160 lists various officials associated with the sodality, including: מחשב שעת "the treasurer/ accountant of the sodality (*apud PhPD* 277, and cf. *ibid*, 476, s.v. *Š'T).* More specifically, the plural מחשבם (cf.Latin *quaestores*), taken as a collective, can designate the exchequer, the agency that imposes fines, and collects taxes." The legend on some Carthaginian coins from Sicily attests this title.

3) כל (= *kōl*) "total." The technical meaning is restricted to contexts in which quantities are tallied, and where it would be insufficient merely to translate "all, all of-." Our attention is directed, therefore, to the very types of biblical texts that give evidence of having been adapted from records. We may compare Sumerian šu.nigin, Akkadian *napḫāru*, Ugaritic *tgmr* (*DUL* 2003: 861-862), all of which mean "total." Clear examples of this technical sense include the following: (a) The absolute form כל (=kōl):[a[1]] Jos 21: 39: כל ערים ארבע "Total: towns - four." [a [2]] 2 Sam 23:39: כל שלשים ושבעה "Total: thirty seven" (following the list of David's elite warriors). [a[3]] 2 Chron 26:12: כל מספר ראשי האבות לגבורי חיל אלפים ושש מאות "Total number of the heads of the patrilineal (households), of elite warriors: two thousand and six hundred." (b) The construct form כל (=kol): [b[1]] Gen 46:22: כל-נפש ארבעה עשר "Total of persons: fourteen." (cf. Gen 46:26-27, Exod 1:5). [b[2]] Num 2:9: כל-הפקדים למחנה יהודה מאת אלף ושמנים אלף וששת-אלפים וארבע-מאות לצבאתם "Total of the musters of the Judahite encampment: 186,400,

by their divisions." Numbers 7, the record of the Tabernacle dedication, attests both the absolute and construct forms. Also note הכל מאה שלשים ותשעה "The total: one hundred thirty and nine," concluding a list of personnel (Ezra 2:42, and see below, "**The Signification of Quantity**").

4) מכס (=*mekes*) "customs, tax rate" (Num 31: 37-41); cf. feminine מכסה (=*miksāh*) "quota, calculated amount" (Exod 12:4, Lev 27:23). In the war narrative of Numbers 31, this term refers to the rate of taxation to be applied to spoils of war, so as to determine what percentage of the spoils was to go to the priests and Levites (see above, no.1, אחז). On the precise meaning of the feminine form, מכסה in Lev 27:23, see below, no.8, under ערך. In Exod 12:5, במכסת נפשות is best translated " according to the quota of persons, "namely, according to the number of persons in the household, so many sheep shall be offered. The connection to accounting is indicated by use of the verb *ḥiššēb* "to reckon, keep an account" in Lev 27:23. The priest was to calculate the value of the field depending on how many years remained until the Jubilee. Punic attests a likely cognate, *MKS* (= *mōkēs*?) "customs official."(*PhPD*: 281, s.v. *MKS* II). Akkadian attests *mākisu* "tax collector" (*CAD M* I:129-130), and verbal *makāsu* "to collect a tax, a share" (*CAD M* I: 127-128), and the term *miksu* "tax, share of the yield" (*CAD M* II: 63-65). Of considerable interest is the fact that Aramaic also attests the term מכס in two actual accounts, one a brief record from Saqqara, dated 416 B.C.E. (*TAD* III, C 11), and the other from Elephantine (*TAD* III, C 28), an extensive record pieced together from many fragments, and dated to the 3rd century B.C.E.

TAD III, C11 contains two headings: כספא זי קים בשנת 6 "silver/funds 'on hand' in year six" (line 1), and: הוה יתרן כסף זי קים בשנת 6 "The surplus of funds 'on hand' in year 6 was-" (line 8). One entry under the latter heading reads: כספא פטאסי בר Xזי אתוסף על מ "The sum that was added on the tax of PN, son of PN" (line 8). A second reads: מכס גבריא זי יתוספו בשנת 6 "Tax of the men who will be added in year 6" (line 10). *TAD* III, C28, records several types of transactions, including sales of wine and wheat, and deposits of various sorts. Column 4 (consisting of lines 47-50) is not entirely comprehensible; it lists quantities of unidentified items in the house of a person named Yashib, and "in our house," as well as נחושים , presumably "objects of bronze," and then in line 50 we read:

שנתא זא במכס כרשן 8 ש 4 "This year, (owed) in tax: *karš* 8, shekels 4."

The most elaborate Aramaic source relating to the term *mks* is the great Tariff from Palmyra (*PAT* 0259= C3913), variously preserved in Greek and Palmyrene Aramaic. The Tariff is dated 147 C.E. and was written on stone slabs. It was issued by the council (Greek *boulē*, Aramaic *bwl'*), and provides us not only with a Greek equivalent for Aramaic *mks*, namely, *telos*, but with composite terminology, including: *nmws' dy mks'* "the law of taxation" (col.II, line 1), the formulas *mks' gby "*the tax shall be levied" (col. II, line 14), *mks' ḥyb'* "liable for tax, owes tax" (col.II, line 146, and cf. the negative: *mks' l' ḥyb'* "not liable for tax."), and more. The determined plural, *mksy'* "taxes" is also attested (col.II, line 194), and the *nomen agentis,* participial *mks* (=*mākēs*) "tax collector."

It is clear that Aramaic *mks* derives from Akkadian *miksu* (Kaufman *AIA* 72), but the question remains as to the derivation of Hebrew *mekes*, fem. *miksāh*. In our view, the priestly Torah texts in which these terms occur exclusively are post-exilic, and date from the Achemenid period, which dating, if correct, would suggest that this terminology may have entered Hebrew via Aramaic, not directly from Akkadian. In any event, the term *mekes* is connected to the Aramaic accounting system, evidence its frequent occurrence in later Aramaic dialects. Note the rare occurrence of feminine מכסה in a Hebrew tenancy agreement from Murabba'at, originally edited by J. Milik in *DJD* II, 1961, 122-134; Yardeni 2000, 107, s.v. Mur 24, col. VI, line 11).

5) מרבית (= *marbît*), also: תרבית (= *tarbît*) "interest, increment" Lev 25: 36-37, Ezek 18:8, *et passim*; Prov 28:8). All attested forms derive from the Common Semitic root *r-b-*3rd –weak - *rabû* in Akkadian, *r-b-y* (secondarily Hebrew *r-b-h*) in West-Semitic. "to grow, increase." The primary law in Lev 25:36-37 pertains to indebtedness incurred by a fellow Israelite, in which case it is forbidden to charge interest, or to take a 'bite," (Hebrew נשך). More specifically, the term מרבית applies to foodstuffs that are supplied to one in need, in which case no increment could be demanded in repayment (see Levine 1989: 178, s.v. Lev 25:36). The formula is: נתן במרבית "to give out with interest." In a sort of "Holiness Code," presented as a wisdom mashal, Ezekiel 18 includes among the virtues of the righteous person the avoidance of תרבית (Ezek 18:8), whereas the proverbial, wicked son is guilty of this very offense (Ezek 18:13). Finally, Prov 28:8 cautions the greedy that their unjust gain will ultimately be lost to a truly generous person: "He who aggrandizes his wealth by 'bite' and interest (בנשך ובתרבית), will have amassed it to (the benefit of) one who is gracious to the needy."

The Aramaic cognate מרביתה/א "interest, increment," is well- attested in Aramaic loan documents from Elephantine (*DNWSI*: 690, s.v. *mrby*, and *TAD* II, xxxiv, Glossary. s.v. *mrby*). In no. 9, below, it is explained that this term contrasts with ש(א)ר "capital, principal sum." In Elephantine Aramaic we find the formula: יהב במרביתה -"to give out (=to lend) with interest," parallel with the Hebrew - נתן במרבית (Lev 25: 37, cf. *TAD* II, B3.1, lines 2-3). In another loan document from Elephantine (*TAD* IV, D2.18, lines 1-2), we read that the obligation of paying interest was considered part of the overall debt, so that one's heirs inherited the interest obligation as well as the principal. The same terminology is evident in Judaean Desert documents from the 1st and 2nd centuries C.E. Late Hebrew and Aramaic attest the form ר(י)בית "interest." Thus, in a Nabatean-Aramaic debenture, Papyrus Yadin 1, line 19, we read: ומשכון נכסיא דנה ורביתה "And the mortgage on these properties, and its interest" (*JDS* III: 178, and cf. in JPA and JBA (*DJPA* 513; s.v. רבי; *DJBA* 1073, s.v. ריבית).

In the **COMMENTARY** to Papyrus Yadin 1 (*JDS* III: 192-193, s.v. lines 16-18) the specialized sense of the verb *r-by*, namely, "to accrue as interest" is explained against the background of the Elephantine Aramaic material. We may add that this provides the most direct link to Akkadian usage of the cognate verb

rabû "to grow, increase." *CAD* R: 43-44, under *rabû* A, meaning 4, cites many sources, from various periods, where this verb refers specifically to the accrual of interest. Also see Y.Muffs 1969; reprint 2003: 185 for a discussion of the functional equivalence of the Aramaic and Akkadian formulas. Thus, Akkadian KÙ.BABBAR *ina muḫḫija i-rab-bi* = Aramaic - וירבה עלי כסף "The silver of - will accrue (as interest) against me / to my debit" (cf. *TAD* II, B4.2, line 2).

6) Aramaic נפקה, determined: נפקתא (=*nipqəṯā'*) "expenditure, costs; what was paid out" (Ezra 6:4,8), literally" "what goes out," from the Aramaic verb *n-p-q*. This term has a long and full history in the Official Aramaic of Elephantine (*DNWSI* 743-744, s.v. *npqh*) It is also attested at Palmyra, in the masculine plural *npqyn*. The most recent Nabatean evidence comes from Nahal Hever, in P.Yadin 1, line 40: וכל דרא ונפקה "And any return or expenditure (or: "any 'scattering' or expenditure)" See *JDS* III: 198-199, where there is reference to Arabic *nafaqatun* "expense, maintenance" at Hirbet Mird. Also see *DJPA*[2] 358.

7) עדף, in העדף (= *hā'ōdēp*) "which is in excess; surplus." (Exod 16: 23, 26:12-13, Lev 25:27, Num 3:46, 48-49, Hiph'il העדיף "to exceed*"* in Exod 16:18). Biblical Hebrew usage refers to excess of number and quantity, namely "surplus," which is our interest here, and also to measurements, such as greater length. The provisions of Lev 25:27 may be explained as follows: All sales of ancestral land were functionally equivalent to long-term leases, which would terminate at the next, scheduled Jubilee year. One who wished to redeem land he had sold under stress was obliged to compute (the Pi''el *ḫiššēb*; see no. 2, above) the value of the crop years since its sale, "and pay (only) the excess (והשיב את-העדף) to the one to whom he had sold it." In other words, the redeemer of the land could deduct for the years that the purchaser had already benefited from his purchase, and didn't have to pay the entire purchase price to get his land back. Numbers 3 ordains that the tribe of Levi is to be devoted to Tabernacle service in payment to the God of Israel for having spared the firstborn of the Israelites in Egypt. A census indicated, however, that there were 273 more firstborn Israelites than there were adult, male Levites, so that five shekels a head, totaling 1, 365 shekels, had to be collected from the firstborn of Israel and remitted to Aaron, the priest. Those 273 firstborn are referred to as העדפים על הלוים "who were in excess of the Levites" (Num 3:46). We also find formulas such as פדוי העדפים בהם "the redemption payments of those among them who were in excess" (Num 3: 48), and העדפים על פדוי הלוים "those in excess of the redemption payments of the Levites" (Num 3:49). Imagine an account like the following:

Total firstborn males among the Israelites.
(one month of age and over) : 22,273
Subtract total males among the Levites
(one month of age and over): 20, 000
העדפים "those in excess:" 273
פדוים "redemption payments"
(at 5 shekels a head X 273) : 1,365 shekels

Comparative evidence on the root *ʻ-d-p* is elusive. All we have are later Hebrew and Jewish Aramaic forms based on this root, and a very rare, though often cited Arabic cognate, *ġadafa* "to be profuse" (Lane 2232). Later Hebrew preserves interesting connotations reflecting the theme of abundance, profusion and surplus, but I have not found usage as an accounting term until quite late (Ben-Yehudah, *Thesaurus* V: 4343- 4346; and see *DJBA* 846, s.v.עודפא). The origin of the Biblical Hebrew forms remains unknown.

8) ערך (= ʻēr*ek*) "assessed value, equivalent" (Lev 27:3, et passim; 2 Kings 12:5; cf. the bound form ערכך , and verbal Hiphʻil העריך "to assess, assign a value." It is probable that all meanings share a semantic field, and derive from a common root *ʻ-r-k* "to set up, arrange." Specialization would account for the connotations "to fix a value, to assess; to offer (as a sacrifice); to array (for battle)," and more. Forms of this root are attested in Ugaritic (*DUL* 182-183), in Classical Hebrew and Phoenician- Punic, but only rarely in Aramaic (*HALAT* 837-838, *DNWSI* 887-888). Speiser (1960: 30-33) explained the suffixed ערכך, literally "your assessed value" as a bound form, on the analogy of באכה "your coming, as you arrive" hence: "as far as, all the way to-" (Gen 10:19, 1 Kings 18:46, etc.). He also notes Akkadian *mimma šumšu* "whatever be its name," which can be declined as *mimmušunšu –ya* "my 'what's its name," namely, "anything of mine." One may add (if the Massoretic text is accepted) the Hebrew השוק והעליה "the thigh-section and the 'what's on it'," namely: "its covering" (1 Sam 9:24). Once bound, the form ערכך can be determined, yielding: הערכך "the 'your value," hence: "your value," and it can also be prefixed: בערכך "in/according to the value" (Lev 5: 15, 18), and the like.

This terminology is discussed briefly in my Leviticus commentary (Levine 1989: 30-31, s.v. Lev 5:15, and *ibid*., 192-200, on Leviticus 27). For the most part, the context pertains to the votary system of biblical Israel. It was customary, as an act of piety, for Israelites to devote their established value (ערך) to the Temple, a value scaled according to age and gender. They also donated animals and property to the Temple, whose values were fixed by the priesthood for this purpose. In most cases, the Temple wanted cash, so that the donors would pay the Temple the value of what they had donated, with a surcharge added, according to the laws of Leviticus, and thereby "redeem" it. This system is outlined in detail in Leviticus 27. In several instances, one guilty of certain offenses was required to bring a sacrificial offering, with the option of paying for the animal "according to the fixed value" (בערכך) in silver shekels (Lev 5:15-26).

Technical usage of the verb *ʻ-r-k* and related forms with the meaning "to assess" is not limited to priestly texts; it was part of the administrative vocabulary. Pertaining to the votive system we read in 2 Kings 12: 5: "All of the silver brought into the House of YHWH, in silver currency, as sacred donations, the silver of each person's 'life equivalent' (איש כסף נפשות ערכו), all silver that a person may be minded to bring to the House of YHWH." In 2 Kings 23: 35 we read that Jehoiakim, after having been installed by Pharaoh Neco "made an

assessment on the land (הערים את-הארץ)," and that "he exacted from the people of the land the silver and gold to be paid Pharaoh Neco, according to each man's assessment (איש כערכו)."

There is additional West-Semitic evidence bearing on forms of the root *'-r-k*. We will begin with Ugaritic usage, citing *KTU* [2] 4.728, lines 1-3: *'rk. b'l. ḫlb dt. l ytn. šmn* "Prepared account of citizens of ḪLB (Aleppo?) who did not deliver oil" (*DUL* 182, s.v. *'rk* I, n.m.). Although this source does not attest the specific meaning "value, equivalent" for the term *'rk*, its occurrence in and list of persons who have not met required deliveries makes it relevant to the biblical term under discussion. Later Punic evidence demonstrates the survival of the old West – Semitic vocabulary, but it is relatively sparse, and at times difficult to interpret confidently. In a Neo-Punic statuary inscription from Tripoli in North Africa, dated to the early 1st century B.C.E., we read: "The senate and the entire nation of Lepcis mutually resolved to pay back to that gentleman, to Aderbal, for his contributions at the expense of the city, in accordance with the full valuation (לפי כל ערך אמלא) of [the statue <that Aderbal made>, as is] incumbent upon them" (*KAI* 119, lines 4-6, *apud PhPD* 387). Under a separate entry, Krahmalkov (*PhPD* 387) lists the feminine form 'RKT which he renders "bureau of public works, following a suggestion by M.Dahood that ערכה means "building." An alternative interpretation, followed by others (cf. *DNWSI* 888, s.v. *'rkh*) would take the form ערכת to mean: "bureau of assessment." One Phoenician and two Punic sources attest this form. Thus, *RSF* 7 (1979), no.48, col. I, lines 1-2 (from Nebi Yunis): "This is the Molk-offering table that the bureau of assessment (הערכת)… devoted and presented to their lord, Esmun." A Punic text from Malta (*KAI* 62, lines 1-4), dated to the 2nd century B.C.E., reads as follows: "The people of Gaulos rebuilt these three sanctuaries during the time of the chief of the bureau of assessment [Latin *Censor*] (בעת ר אדר ערכת), PN son of PN." Finally, *KAI* 130, lines 5-6, also from Tripoli, tentatively dated 180 C.E. reads: "The bureau of assessment in charge of the ports (ערכת אש על המחזם) made four of the benches with (funds derived from) fines."

In summary, the specialized meaning of *'-r-k* "to assess," and related nominal forms, belong to the West-Semitic vocabulary, not specifically to the Aramaic vocabulary, as is true of many of the accounting terms examined here. Biblical terminology is utilized extensively in Rabbinic Hebrew sources, where legislation governing priestly activity is a major concern, and even rarely in JBA and in Syriac (*DJBA* 881, s.v. 1# ערך , *LS*[2] 548) for the same reason.

9) ראש (= *rō'š*) "capital, principal, original amount" (Lev 5: 24, Num 5:7). Biblical usage is limited to two priestly Torah texts (in Rabbinic Hebrew "head" is replaced by "horn," Hebrew קרן). Operative verbs are Pi''el שלם "to pay out, repay," and השיב "to make restitution." Thus Lev 5:24, speaking of one who had taken a false oath regarding the misappropriation of assets: "And he shall repay it equal to the amount of its principal (ושלם אתו בראשו), adding to it one fifth of the amount." Or, Num 5:7, speaking of one who misappropriated sancta: "And he must make restitution for his liability equal to the amount of its principal (והשיב את

אשמו בראשו), adding to it one fifth of the amount." In 1911, the Assyriologist, Arthur Ungnad, first noted the equivalent connotation of the Akkadian term *qaqqadu* "head, principal sum" (*CAD Q*: 109-111, under meaning 6). The correspondence of Akkadian and West- Semitic usage is quite remarkable; in both, "principal" is contrasted with "interest," *ṣibtu* in Akkadian, and the accompanying verbs in Akkadian also mean "to pay, repay" (*apālu, mullû,* and the like).

There is considerable comparative evidence from Aramaic sources, where ר(א)ש similarly means "principal, capital," and מרביתא means "interest" (cf. no.5, above) Quite possibly, the biblical usage of Hebrew ראש to mean "principal" is Aramaistic. Thus, in an Aramaic loan document from: Elephantine (5th century B.C.E.) we read, regarding the compounding of interest:

> הן מטת מרביתא לרשא ירבה מרביתא כרשא חד כחד
>
> "Should the interest reach the (amount) of the principal, the interest (on the interest) shall increase at the same rate as the (interest on the) principal" (*TAD* II: 54, B3.1, lines 6-7, and see above, in no. 5, מרבית , for additional references).

A similar clause appears in a broken loan document, *TAD* II, B4, lines 4-5:

> וירחא זי לא אנתן לך בה מרבית יהוה ראש וירבה ואשלמנהי לך ירח בירח
>
> "And any month in which I do not pay you interest, it shall become principal, and shall accrue (as interest), and I will pay it to you month by month."

In a business letter from Elephantine (3rd century B.C.E.), we read: שלמת על ראשי עקרן "I completed payment covering the principal sums of the real property" (*TAD* IV: 36, D1.17, line 5 = Cowley 82). The same formula, ראש עקרן. "the principal sum of the real property" occurs in a later Nabatean-Aramaic legal document from Nahal Hever, Papyrus Yadin 1, line 15, dated ca. 103 C.E., (*JDS* III:178). In a deed of pledge from Wadi Daliyeh (late 4th century B.C.E.) we read: 1 יתיחט לראש כספא שקל "It shall be weighed out as the principal amount of silver; shekel, 1"(*DJD* XXVIII: 98, s.v.*WDSP* 10:7 [text broken]).

10) תכונה (=*tᵊkûnāh*) "weighted, measured currency; convertible wealth" (Nah 2:10; [for different nuances see Ezek 43:11, Job 23:3], and cf. הכסף המתכן "the weighted silver" in 2 Kings 12:12).The term תכונה has been studied in depth by J.C.Greenfield (2001: 258-262, and literature cited), and we may review his findings in the context of biblical accounting terminology, adding some considerations of our own. Speaking of the flooding of Nineveh at the time of its siege, the prophet declares:

> Plunder silver! Plunder gold!
> There is no limit to the *ready currency* (תכונה);
> It is a weighty (hoard) of every precious object! (Nah 2:10).

The etymology of תכונה , a term also occurring in Aramaic legal documents from Elephantine (see further) warrants clarification. Ultimately, this form may go back to *k-w-n* "to stand;" more immediately, it derives from a probable secondary root *t-k-n* "to contain; to measure, weigh." In Isa 40:12, the Pi''el תקן is parallel with

mādad "to measure," and in Ezek 43:10 they measure the תכנית "plan" of the Temple. Other forms exhibit related meanings (*HALAT*:1596-1597, s.v. תכן v., תכן s.). The form תכונה is one of many *Tau*-preformatives in Hebrew and Aramaic (cf. תמורה (no. 9, below), and literally means: "that which has been weighed, measured." Functionally, תכונה compares with כסף עבר לסחר "silver transferable to/ current with merchants" (Gen 23: 16), namely, in a form that merchants will accept, such as ingots, or weighted coins. In fact, earlier in the same account, in 2 Kings 12:5, we find the designation כסף עובר "silver currency"(see above, no. 7, s.v. ערך).

In 2 Kings 12: 12, the form מתכן (= *mətukkān*) is denominative of תכונה , namely: "made into weighted units." As noted by Greenfield, the parallel passage recording payments to craftsmen in 2 Kings 22:4 reads: "Go up to Hilkiahu, the chief priest, and let him melt down (read: ויתך = *wəyattēk*) the silver that has been brought into the Temple of YHWH." Once the silver had been converted into ingots, or weighted coins, it was dispensed as payment to the craftsmen. Applying this to the statement in 2 Kings 12:12, we read, with Greenfield and others: *wayyişrû* "they cast," namely, they cast the silver that had been collected from the people.

The term תכונה occurs in two Aramaic legal documents from Elephantine.(*TAD* II, B2.6, and B3.8) in both the absolute and the determined form (תכונתא, תכונתה). *Pace* Greenfield, there is no reason to regard it as a Hebraism. It is more likely a common Hebrew-Aramaic term, which actually draws our attention to Aramaic accounting terminology. *TAD* II, B2.6 and B3.8 are both contracts of marriage, wherein the items of dowry "brought in" by the wife include: תכונה זי כסף: "weighted coins/ingots of silver," followed by the specification of value as *karš* and *ḥallur*, both measures of weight, along with shekels. This silver was in addition to clothing and other commodities made of cloth, as well as bronze objects.

In summary, both the biblical and the Elephantine contexts pertain to accounting. In renovating the Temple in Jerusalem, funds had to be provided in negotiable form to pay the craftsmen. In fact, 2 Kings 12:16, 22: 7 both employ the key verb *hiššēb* "to reckon, keep an account" (see above, no.2). In the Elephantine marriage contracts the value of the "cash" contributed by the bride is designated "*təkûnāh* of silver." Greenfield directs the reader to important sources of information on methods of casting and minting weighted coins in the Achemenid period, and refers to hoards of such coins and ingots from all over the ancient Near East (Greenfield 2001, notes 13, 16).

11) תמורה (= *təmûrāh*) "item of exchange" (Lev 27: 10, *et passim*). The form with *Tau*-preformative connotes the result of the Hiph´il המיר "to exchange, replace" (for cultic usage, cf. Lev 27: 10, 33, Ezek 48:14), namely, that which was exchanged. This term is widely used in Rabbinic sources, in laws dealing with cultic materiel. The underlying verb, Hebrew *m-w-r,* may be cognate with rare NB *māru* "to buy," which, in context, functionally connotes "to barter, exchange" (*CAD* M I, 317, s.v.

māru), and is listed as an Aramaic loanword. Although it is attested in Syriac (*LS*[2] 377, s.v. *mr),* it is not a typical, Aramaic word.

The above accounting terms, when studied in comparative perspective, indicate that procedures operative in ancient Israel were representative of a West-Semitic system, especially evident in Aramaic and Phoenician-Punic records.

The Signification of Quantity

Accounts register quantities with cardinal numbers (and fractions), sequenced in different ways. Certain languages employ dual forms to register two of an item. In the ancient Near East, as in other systems, ancient and more recent, we find two, primary sequences: (1) quantity + item [Example: "five (5) cows"], and (2) item + quantity. [Example: "cows – five (5)"]. A second factor is the type of numeral employed in a given record. In ancient Near Eastern records we find two, primary types: (1) ideographic numerals, in which case what is written signifies a certain number [Example:"1," "2", "3"], (2) non-ideographic, or word numerals, in which case what is written spells out the word for that number [Example: "one", "two", "three"]. There are variations on these primary categories, representing specific formats. For example, in certain types of administrative lists numerals may not function as direct modifiers of nouns, but merely to record quantities, or totals of commodities, personnel, and the like, that have been identified in the title of the record. In other words, instead of registering: "Personal Name – cows, 5," the record will be look something like the following:

Archers:
Place Name A – 5,
Place Name B – 6
Place Name C – 7, etc

It needs to be said that of the two features under discussion, sequence is more significant than the type of numeral used. Whereas it is possible that unrelated cultures would have independently fixed certain forms as ideographic numerals (as for example, a single, vertical marking to signify "1"), the preference for identifying the person, place, or item first, and then the quantity, reflects a discrete perception, or disposition, and may even demarcate between one *Kulturkreis* and another, as will be seen. And yet, there is a close correlation between the utilization of ideographic numerals and the sequence "item + quantity," so that the two features are best considered together.

Anticipating the discussion to follow, we can say that in the cuneiform writing system (with the exception of the Ugaritic alphabetic cuneiform), "quantity" precedes "item" in accounting records; in other words, the numeral comes before the noun. In contrast, accounts and administrative records from the Aegaean and Eastern Mediterranean, both alphabetic (Ugaritic, Hebrew, Aramaic, Phoenician-Punic) and ideographic-syllabic (Linear A and B) also exhibit the sequence "item + quantity," variously utilizing both word numerals, and ideographic numerals of various shapes.

a) The sequence "item + quantity" in biblical records.

In manuscripts of the Hebrew Bible there are no ideographic numerals, but it may be that some, or all biblical records which employ the rather abnormal sequence "item + quantity" were modeled after accounts that registered ideographic numerals. The Ugaritic evidence suggests, however, that word numerals might have been employed originally in such records, because there we find exact examples of this pattern (see just below, and under "**The Signification of Quantity**," c) In any event, as regards sequence, it is more normal in the Hebrew Bible to find quantity preceding item, meaning that the numeral comes before the noun This sequence can be formulated in two ways: a) with a word numeral in the construct: שבעת כבשים literally: "seven of sheep" (Lev 23:18); b) with a word numeral in the absolute: שבעה כבשים "seven sheep" (Num 28:27). When item precedes quantity, however, only the word numeral in the absolute is employed, as we would expect.

It is precisely in texts which exhibit the features of accounts, or records that we find the sequence "item + quantity" most often. To illustrate, let us begin with Joshua 12, which preserves a list of thirty-one kings of Canaanite city-states conquered by the Israelites.

מלך יריחו אחד מלך העי אשר מצד בית-אל אחד
מלך ירושלם אחד מלך חברון אחד

כל- מלכים שלשים ואחד

King of Jericho one; King of the Ai, which is near Bethel one
King of Jerusalem one; King of Hebron one, etc.

Total of kings: thirty and one (Jos 12: 9-24, with omissions)

In this record, the numerals do not serve as direct modifiers of nouns, but merely to register quantities. Otherwise, this list, as it is formatted in printed Bibles, is probably the least adapted of all biblical records, once we get past its title, which is part of the introductory narrative (Jos 12: 7-8). Another example of the sequence "item + quantity" is to be found in the report of the donations of the tribal chieftains (Hebrew נשיאים) at the dedication of the wilderness Tabernacle. (Num 7: 12-88). We find repetitive entries that are formulated as follows

ולזבח השלמים:
שנים– בקר
אילים- חמשה
חמשה– עתודים
כבשים בני-שנה- חמשה

For the sacred gifts of greeting:
oxen - two
rams - five

he-goats - five
yearling lambs- five

Here we have word numerals being utilized as direct modifiers of nouns. Still another example is Ezra 1:9-11, a list of Temple appurtenances returned to the Judean Premier, Sheshbazzar, by Cyrus pursuant to his edict:

Following is their quantity (ואלה מספרם):
golden sashes - thirty
silver sashes - one thousand
suits of clothes - nine and twenty (תשעה ועשרים)
golden bowls - thirty
silver bowls (of various types) - four hundred and ten
other vessels - one thousand
Total of vessels (כל-כלים) of gold and silver: five thousand four hundred [incorrect]
Additional examples of biblical records and accounts employing the sequence "item + quantity" are to be found embedded in the festival calendar of Numbers 28-29; in the genealogies of Genesis 46; in the town lists of Joshua 15, 18, 19; and 21; and in many of the genealogies of I and II Chronicles.

2) The sequence "item + quantity" in 1st millennium West-Semitic epigraphy:
We can identify near- contemporary models of the type of texts we are positing as the *Vorlage* of the above biblical reports. The closest in time and place are Hebrew ostraca, such as those found at Lachish, and at Arad in the Negev, largely dating from the end of the 7th to the early 6th centuries B.C.E. As an example, we take Arad ostracon no.1, written in Paleo-Hebrew script. It is a brief letter to one in charge at Arad, instructing him to provide foreign mercenaries from Kition, on Cyprus, with wine and flour. We provide a hand copy, taken from the *editio princeps* by Yohanan Aharoni (1975: 12), and his transcription into the customary Hebrew script, followed by our English translation. (Figure 1)

Translation of Arad, no.1:
(1) To Eliashib: And (2) now then: Provide the Kittim (3) wine; *bat* 1, [*hîn*] 3, and (4) register the date. (5) And from the remainder of the flour (6) of first grade you shall (7) mix *hōmer* 1 of flour (8) to make for them (9) bread. From the wine (10) in bowls you shall provide.

Notes: For our purposes, it is most relevant to take note of the markings used as ideographic numerals. In fact, the Arad ostraca attest two, different sets of ideographic numerals, one West-Semitic and the other Hieratic. We are concerned only with the West-Semitic markings. In line 3, we have the acronym ב , for Hebrew: בת (= *bat*), a liquid measure containing approximately 22 liters. The horizontal marking following the letter ב signifies the numeral "1", of course, and

we assume, from similar designations in other ostraca, that the three following markings, signifying the number "3," refer to the Hebrew liquid measure הין, of which six constituted one בת. Hence: "wine, *bat* 1, [*hîn*] 3," as translated. In line 7, the first marking is usually taken as an ideograph representing *ḥōmer*, or *kûr*, a measure containing approximately 220 liters, avoirdupois. On the markings, themselves, see. J. Naveh (1992).

Most importantly, in this ostracon item precedes quantity, although this is not consistently the case in the Hebrew ostraca from Lachish and Arad. Furthermore, there is an observable flexibility in sequence. Thus, in line 7, we do not find: "flour, *ḥōmer* 1," which would be entirely consistent with the formulation of line 2, but rather: "*ḥōmer* 1 of flour." And yet, we do not find "1 *ḥōmer* of flour!"

The same markings are employed in Aramaic ostraca from Arad, dating from the Persian period, edited by Joseph Naveh (Aharoni 1975:196), which leads us directly to the Aramaic papyri from Elephantine, dating to the 5th century B.C.E., where one likewise encounters the sequence "item + quantity" (see further). We begin with a brief example, merely to show graphically how this type of record appears. *TAD* IV, D3.26 dates from ca. 400 B.C.E., and is an inventory of some sort. The papyrus is fragmentary, but the three lines that are preserved should suffice as illustration. It preserves a partial list of boards, or planks, with their length, width and thickness specified. We provide Ada Yardeni's hand copy, with the transcription given in *TAD* IV:101, accompanied by our translation (Figure 2).

Translation:

(2) Inside: a [board]: cubits 12; width: cubit 1; thickness: handbreadths 4.
(3) Inside, another board: cubits 9, and a half; width: cubit 1; thickness: handbreadth[
(4) Another board: cubits 5; width: cu[bit 1 + handbreadth] 1; thickness: handbreadth[

Notes: The noun לוח is common West-Semitic, and has a variety of meanings. The rendering "board" is only conjectural. In line 2, the word for "thickness" is most likely written with a *resh*, and is to be read דורה (=consonantal *dwrh* = *dûrāh*) (*DNWSI* 243-244). The word for handbreadth, פשך, is cognate with Akkadian *pušku* (*DNWSI* 946). In line 2, we have in addition to the usual markings for 1, a marking for 10, so that "12" is registered as "10 + 2."

By far, the most elaborate example of the "item + quantity" sequence is the so-called "Ahiqar Palimpsest" from Elephantine (*TAD* III: 82-193; C3.7) discovered and ingeniously restored by Ada Yardeni. It is an extensive customs record, dated ca. 475 B.C.E., and composed of numerous columns. I have selected several lines from a relatively well- preserved section (DV 2, *TAD* III: 186, lines 1-6*)*. These are provided with Ada Yardeni's hand drawings, with the given transcription, and our translation. The bracketed restorations in the transcription are fairly certain, being based on recurring, conventional entries (Figure 3).

Translation
1) The [duty] accrued as surplus in year 10,
2) Ov[er and above the du]ty that accrued in year 11:
3) gold: *karš* 1, š (=š*∂qālîn*) 9, *ḫ* (=*ḫallûr*) 1, *r* (= *r∂bā'în*) 2.
4) silver: *karšîn* 100 + 40 + 10 +2, š 9.
5) Ionian wine: bowls 100 + 20 + 9 and a half.
6) Sidonian wine: jugs 100 + 40 + 10, etc.

Notes: The acronym ר (= *r*) signifies רבען "quarters," a fraction. Two types of containers are mentioned: (1) ספן (=*sappîn*) "bowls," and כנדן (= Hebrew כדים – *kaddîm*) "jars, jugs." It has been observed that utilization of the same vessels for particular commodities is not consistent. The sequence "item + quantity," using ideographic numerals persisted in Aramaic records long after the Achemenid period. It occurs in the great Tariff from Palmyra, to which reference has already been made.

The sequence "item + quantity," using ideographic numerals persisted in Aramaic records long after the Achemenid period. It occurs in the great Tariff from Palmyra, to which reference has already been made.

It also bears mention that some of the same ideographic markings for numerals are to be found in Phoenician-Punic records of the Achemenid period, and thereafter, where we also encounter the sequence "item + quantity." Thus, in the famous tariffs from Marseille, dated ca. 4th century B.C.E, we find entries such as the following: לכהנם כסף שקל 1 זר 2 באחד "For the priests: shekel 1, *zar* 2, for each one " (*CIS* 1, 165, line 7; Cooke 1903: 112);

3) Early western evidence bearing on the sequence "item + quantity."
Whereas the sequence "quantity + item" is a standard feature of cuneiform records, our search for the origins of the sequence "item + quantity" takes us to the Aegean and Eastern Mediterranean of the Middle-to-Late Bronze Age in, first to Linear A, the ideographic- syllabic script of the Minoan language of Crete (ca. 1660-1450 B.C.E.); then to Linear B, the proto-Greek ideographic-syllabic script of Mycenae (ca. 1450-1200 B.C.E.); and finally, to Ugaritic of the Syrian coastal region(ca. 1400-1200 B.C.E.), with its particular kind of alphabetic cuneiform.

Michael Ventris and John Chadwick (1956) deciphered the Linear B script and decoded its language, and they have analyzed script development in the Cretan languages, generally. They conclude that the system of numeral markings used in Linear B is the same as that of Linear A, only more developed (Ventris-Chadwick 1956: 53). What is more, the sequence "item + quantity" in the Cretan scripts harks back to the earlier Cretan 'hieroglyphs," such as those of the tablet from Phaistos (see the hand copy in Ventris-Chadwick 1956: 30). This sequence is also evident in Egyptian hieroglyphic writing (Gardiner 1957: 192, s.v. no. 261). Whatever the putative influence of Egyptian models on the Minoan scripts, it is clear that the sequence "item + quantity" is a western convention, which contrasts

with the eastern, cuneiform convention of registering quantity first, followed by item.

To be specific: C.H. Gordon (1966: 26-27, and Plate VIII) cites two Minoan inscriptions from Hagia Triada (nos.88 and 122) that exhibit markings signifying numerals. There are verticals for single digits, and horizontals for "10." In no. 88, we find a list of six personal names, each followed. By the vertical marking for "1", followed by a total, which Gordon reads: *ku-ro* 6 "Total: 6," shown as: 2 rows of three verticals, one on top of the other. (Figure 4). Gordon associates Minoan *ku-ro* with Hebrew כל. "total," and actually cites Jos 12: 24, as well as determined הכל "the total" in Ezra 2:42 (see discussion above, and under "Selected Biblical Accounting Terms," no.3). The Linear A material is sparse and difficult to decipher with certainty, whereas we possess a sizable corpus of economic and administrative texts, including lists of ritual offerings, in the proto-Greek of Linear B. The consistent pattern is "item + quantity," indicated by an ideographic numeral. The Linear B accounting system is actually quite sophisticated, and it exhibits ideographic numerals to signify large quantities, weights, and volumes.(Ventris-Chadwick 1956: 53-60). On the primary level, the sequence in Linear B is "item + quantity:" "MAN 1, OXEN 6," not: "1 MAN, etc. To cite a simple example, we reproduce the transcription of no.206 = Gg705 (D 1), appearing in Ventris-Chadwick 1957b: 310, with our translation: It records a ritual offering.

1)] *a-mi-ni-so / e-re-u-ti-ja* ME+RI AMPHORA 1
2)] *pa-si-te-o-i* ME+RI AMPHORA 1
3)]-*ke-ne* ME+RI AMPHORA 1

Translation:

1) Amnisos: To Eleuthia – honey, jar 1
2) To all the gods- honey, jar 1
3) [broken] – honey, jar 1

Notes: The Linear B script is ideographic-syllabic. Amnisos is a known site near Heraklion, and Eleuthia is the name of a goddess. Vocabulary: *me-ri* = Greek *meli* "honey;" and *pa-si-te-o-i* = Greek *pānsi theoi'i* "to all the gods," a frequent formula of address in the ritual tablets (see Ventris-Chadwick 1957b:303, note 'P').

Now, to contemporary Ugarit, where we encounter a particular kind of alphabetic cuneiform used to write a West-Semitic language. The signification of quantity is complex in economic documents, where three systems are in evidence: (1) Quantity + item, using a word numeral. Example: *KTU* [2] 4.63, line 34: *tt. qštm w. tn . ql´m* "six archers and two slingers." This sequence predominates in Ugaritic, and parallels the normal conventions of Biblical Hebrew. (2) Item + quantity, using a word numeral. It appears that this sequence is not attested in Ugaritic where the numeral serves as a direct modifier of the noun, but only for registering quantity. Example: *KTU* [2] 4: 48, lines 1-4, in a list of towns either

receiving or delivering wine, as the list's total indicates. The units of content are not given.

1) *ḫlb ʻprm. tt* Place Name A -six
2) *ḫlb qrd. tn, ʻšr* Place Name B - twelve
3) *qmy . arbʻ . ʻšr* Place Name C -fourteen
4) ṣʻ*q . arbʻ . ʻšr* Place Name D - fourteen

(3) Item + quantity, using an ideographic numeral. This sequence is also limited to registering quantity in Ugaritic, but is more frequent than the utilization of word numerals for this type of record. Example: *KTU* 4: 93, entitled: *spr ytnm* "a record of cultic servitors," listing the names of those who received rations of wine, as the total indicates. Once again, the units of content are not given. Lines 2-.5 read:

2) *bn . ḫlbym* 2 Son of A 2
3) *bn . ady*. 2 Son of B 2
4) *bn . ʻttry* 2 Son of C 2
5) *bn . ḫrżn* 2 Son of D 2

To summarize the comparative evidence: We observe in certain biblical records signs of a system of quantity signification known in the Aegean and Eastern Mediterranean since early times, and which is most evident in Aramaic accounting during the Achemenid period and thereafter.

Summary

We have attempted to investigate aspects of the accounting system of biblical Israel in West-Semitic perspective by focusing on specific features: terminology, and the signification of quantity. It turns out that biblical terminology is thoroughly realistic, and that accounting terms as well as formulas used to signify quantity fit in well with what is known from West-Semitic and other non- Semitic, western languages, such as Mycenean Linear B. The accounting terminology connects most closely with records in Aramaic and Phoenician-Punic, as does the sequence "item + quantity." Most immediately, this sequence is evident in contemporary Hebrew epigraphy. With respect to sequencing, we observe a cultural divide. In cuneiform cultures, one apparently wanted to know quantity first, whereas in the western sphere, one wanted to identify the item first. It's a contrast between "What?" and "How many/much?" This is not a script-specific distinction. It is not determined by the direction of writing or the type of script employed, nor is it driven by the syntactic character of any particular language, or language family. All we can say is that it is a distinction expressive of a difference in mentality, perhaps of a different perspective on the organization and presentation of data.

Figures:

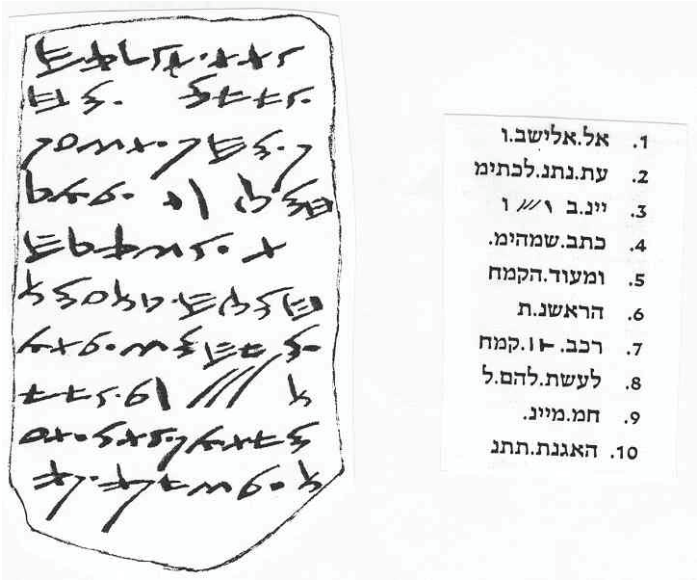

Fig. 1
Arad Ostracon no. 1
(From Aharoni 1975:12 Transcription and hand-copy)

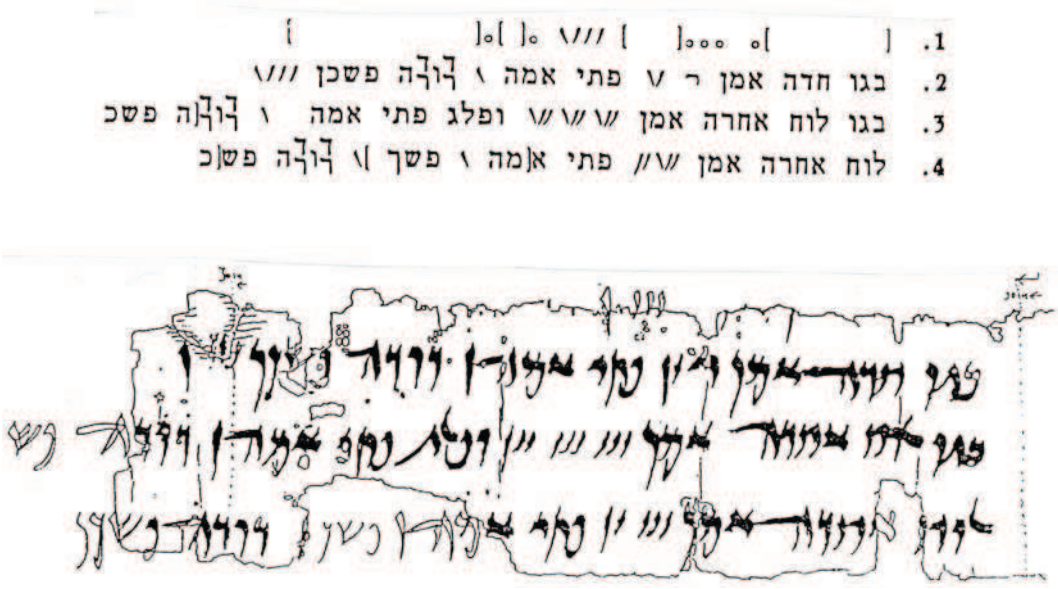

Fig. 2
Fragment of an Aramaic Papyrus from Elephantine, dated ca. 400 B.C.E.
(From *TAD* IV: 101. Transcription and hand-copy)

1. [מנד]תא זי הוה יתיר בשנת ר
2. ע[ל מ]נ̇דתא זי הוה בשנת ר\
3. זהב כרש \ ש /// /// /// ח ג̇ ר \
4. כסף כרשן \ [illegible] \ ש /// /// ///
5. חמר יון ספן \ [illegible] /// /// /// ופלג
6. חמר צידנין כ̇נ̇ד̇ן \ [illegible]

Fig. 3
From the "Ahiqar Palimpsest" dated ca. 475 B.C.E.
(From *TAD* III:186)

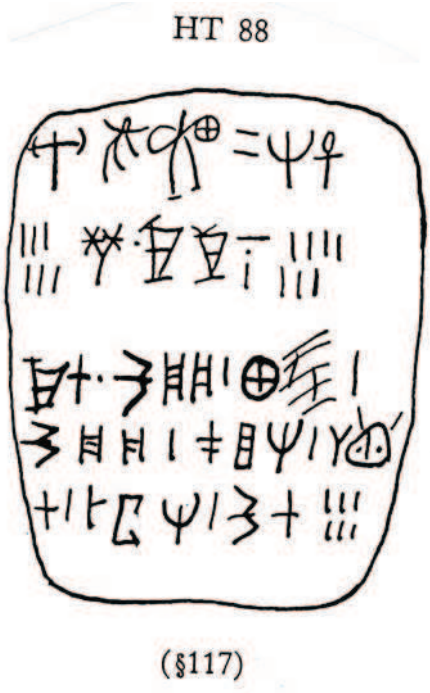

Fig. 4
A **Linear A** inscription
(From Gordon 1966, no. 88, Plate VIII)

Reference Bibliography

Ben-Yehudah, *Thesaurus* = Ben Yehuda, Elieser, *Thesaurus Totius Hebraitatis*, New York: Thomas Yoseloff, 1960, 8 vols.

CAD = The Assyrian Dictionary, *University of Chicago.*

CIS = Corpus Inscriptionum Semiticarum

DJBA = Sokoloff, M. A Dictionary of Jewish Babylonian Aramaic, Ramat Gan & Baltimore, Bar Ilan University Press & Johns Hopkins University Press, 2002.

DJD = Discoveries in the Judaean Desert, Oxford University Press

DJPA[2] = Sokoloff, M. *A Dictionary of Jewish Palestinian Aramaic*, 2nd edition, Ramat Gan & Baltimore and London, Bar Ilan University Press & Johns Hopkins University Press, 2002.

DNWSI = Hoftijzer, J., Jongeling, K, *Dictionary of the North-West Semitic Inscriptions, Leiden: E.J.Brill, 2 parts.*

DUL = del Olmo Lete, G., Sanmartin*, J. A Dictionary of the Ugaritic Language in the Alphabetic Tradition. Leiden: E.J.Brill, 2003, 2 vols.*

HALAT = Koehler, L., Baumgartner, W.*, Hebräisches und Aramäisches Lexikon zum Alten Testament*, *Leiden: E.J.Brill, 1967-1990.*

JBA = Jewish Babylonian Aramaic

JDS III = Yardeni, A., Levine, B.A., et al., The Documents from the Bar Kokhba Period in the Cave of Letters; Hebrew, Aramaic, and Nabatean-Aramaic Papyri, Jerusalem: Israel Exploration Society , 2002.

JPA = Jewish Palestinian Aramaic

KAI = Donner, H., Röllig, W., Kanaanäische und Aramäische Inschriften, Wiesbaden: Otto Harrassowitz, 1954, 2 vols.

Kaufman, AIA = Kaufman, S. The Akkadian Influences on *Aramaic*, Chicago: University of Chicago Press, 1974.

KTU [2 =] Dietrich, M., Loretz, O., Sanmartin, J. *The Cuneiform Alphabetic Texts*, 2nd edition, Munster: Ugarit Verlag, 1995.

Lane = Lane, E. W. *An Arabic-English Lexicon*, Beirut: Librairie du Liban, 1980, 8 vols.

LS [2] = Brockelmann, K., *Lexicon Syriacum*, 2nd edition, Hildesheim: Georg Olms, 1966

PAT = Hillers, D., Cussini, E., Palmyrene Aramaic Texts, Baltimore and London, The Hohns Hopkins University Press, 1996.

PhPD = Krahmalkov, Ch. R., Phoenician-Punic Dictionary, Leuven: Peeters, 2000.

RSF = Rivista di Studi Fenici

TAD = Porten, B., Yardeni, A. Textbook of Aramaic Documents from Ancient Egypt, Jerusalem: The Hebrew University, 1986-1999, vols I-IV.

WDSP = Gropp, D. M., Wadi Daliyeh II: The Samaria Papyri from Wadi Daliyeh, in DJD XXVIII, Oxford. Clarendon Press, 2001, 3-116.

Aharoni, Y., 1975, Arad Inscriptions (Hebrew), Jerusalem: Bialik Institute-Israel Exploration Society.

Corral, M. A. 2002, *Ezekiel's Oracles Against Tyre: Historical Reality and Motivations*, (Biblica et Orientalia 46), Rome: Editrice Pontificio Isituto Biblico.

Cooke, G.A. 1903, *A Textbook of North-Semitic Inscriptions,* Oxford: Clarendon Press.

Diakonoff, I. M. 1992, "The Naval Power and Trade of Tyre," *Israel Exploration Journal* 42: 168-193.

The Economist, "Special Report; The future of accounts," vol. 367, no. 8321, London, dated April 26th 2003 , 61-63.

Fales, F.M. 1986, *Aramaic Epigraphs on Clay Tablets,* Roma: Universita degli Studi "La Sapienza."

Friberg, J. 1992, "Numbers and Counting," in *Anchor Bible Dictionary,* New York: Doubleday and Co*.,* 4: 1139-1146.

Gardiner, A. 1957, *Egyptia Grammar*, 3rd edition, London: Oxford University Press.

Goelet, O. 2003, "Ancient Egyptian Scripts- Literary, Sacred, and Profane," in *Semitic Papyrology in Context*, ed. Schiffman, L.H., Leiden: E.J.Brill, 1- 21.

Gordon, C.H. 1966, *Evidence for the Minoan Language,* Ventor, N.J: Ventor Publishers.

Greenfield, J.C. 2001, "The Meaning of *TKWNH,"* in *'Al Kanfei Yonah: Collected Studies of Jonas C. Greenfield on Semitic Philology*, ed. Paul, Sh.M, *et al.*, Leiden: E.J.Brill, 2 vols., 258- 262.

Lamberg-Karlovsky, C.C. 1999, "Households, Land Tenure, and Communications Systems in the 6th – 4th Millennia of Mesopotamia," in *Urbanization and Land Ownership in the Ancient Near East*, ed. Hudson, M., Levine, B.A., Cambridge MA: Peabody Museum-Harvard University, 167- 201.

Levine, B.A. 1965, "The Tabernacle Texts of the Pentateuch," *Journal of the American Oriental Society* 85, 307-318.

Levine, B.A. 1989, *Leviticus, JPS Torah Commentary*, Philadelphia: Jewish Publication Society.

Levine, B.A. 1996, "Farewell to the Ancient Near East: Evaluating Biblical References to Ownership of Land in Comparative Perspective," '*Privatization' in the Ancient Near East and Classical World*, ed. Hudson, M., Levine, B.A., Cambridge MA; Peabody Museum- Harvard University, 223-242.

Levine, B.A. 1999, "The Biblical 'Town' as Reality and Typology: Evaluating Biblical References to Towns and their Functions," in *Urbanization and Land Ownership in the Ancient Near East,* ed. Hudson, M., Levine, B.A., Cambridge, MA: Peabody Museum-Harvard University.

Milik, J.T. 1961, "*Textes Hebreux et Arameens*, " in *DJD* II: *Les Grottes de Murabba'at*, Oxford: Clarendon Press, 67- 205.

Naveh, J. 1975, "Aramaic Inscriptions," in Aharoni, Y., *Arad Inscriptions* (Hebrew), Jerusalem: Bialik Institute-The Israel Exploration Society, 165- 203..

Naveh, J. 1992, "The Numbers of *Bat* in the Arad Ostraca," *Israel Exploration Journal* 42: 52-54.

Powell, M.A. 1992, "Weights and Measures," in *Anchor Bible Dictionary*, New York: Doubleday and Co., 6: 897-908.

Speiser, E.A. 1960, "Leviticus and the Critics," in *Yehezkel Kaufmann Jubilee Volume*, ed. Haran, M., Jerusalem: Magnes Press-the Hebrew University, 29-45.

Ventris, M., and Chadwick, J. 1956, *Documents in Mycenaean Greek*, Cambridge: at the University Press.

Yardeni, A. 2000, *Textbook of Aramaic, Hebrew, and Nabataean Documentary Texts from the Judaean Desert*, Jerusalem; Ben-Zion Dinur Center for Research in Jewish History, 2 vols. (Hebrew, with English appendix).