

Controversial Akkadian numbers: *erbe/erbē/erbê* “4” or “40”, *šalāšā/ū* “30”, *teše/tešē/tešê* “9” or “90”

Walter Sommerfeld*

Abstract

Numbers are almost always written by means of special number signs in the cuneiform tradition, so in many cases we are insufficiently informed about the exact form of the individual numbers. There are also some Akkadian numbers that are written phonographically, but these are analyzed inconsistently. However, a closer examination of the facts leads to findings and conclusions that resolve these ambiguities. Three examples from Old Babylonian texts are examined here: (1) The spelling *er-bé-e*, in which a duplicate that uses the number “40” in parallel indicates that “40” is meant rather than “4”; (2) the postulated status absolutus *šalāšū*, which is only attested once, is based on a scribal error and cannot be verified; (3) based on the context, the spelling *te-še-e* can only mean “90” and not “9”.

Key-words: Cuneiform orthography; Cardinal numbers; Hapax legomena; Status absolutus; Burial mounds

*University of Marburg, Alemania. E-mail: sommerfe@uni-marburg.de
Recibido: 28/05/2025, *Aceptado:* 31/08/2025



Números acadios controvertidos: *erbe/erbē/erbê* “4” o “40”, *šalāšā/ū* “30”, *teše/tešē/tešê* “9” o “90”

Resumen

Los números casi siempre se escriben mediante signos numéricos especiales en la tradición cuneiforme, por lo que en muchos casos no disponemos de información suficiente sobre la forma exacta de los números individuales. También hay algunos números acadianos que se escriben fonográficamente, pero estos se analizan de forma inconsistente. Sin embargo, un examen más detallado de los hechos conduce a hallazgos y conclusiones que resuelven estas ambigüedades. A continuación se examinan tres ejemplos de textos de la antigua Babilonia: (1) La grafía *er-bé-e*, en la que un duplicado que utiliza el número «40» en paralelo indica que se refiere a «40» y no a «4»; (2) El estatus postulado absolutus *šalāšū*, que solo se atestigua una vez, se basa en una lectura errónea y no puede verificarse; (3) Basándose en el contexto, la grafía *te-še-e* solo puede significar «90» y no «9».

Palabras clave: Ortografía cuneiforme; Números cardinales; Hapax legomena; Status absolutus; Túmulos funerarios

Introduction

Huehnergard (2011: 235) summarises the spelling conventions of the Akkadian cardinal numbers:

In English it is common to write numbers logographically, as in ‘23’ rather than ‘twenty-three’. This is almost invariably the case in Akkadian texts, to the extent that the pronunciation and construction of the Akkadian numbers are not fully understood.

Numbers are almost always written by means of special number signs in the cuneiform tradition. There are also some Akkadian numbers that are written phonographically, but these are analyzed inconsistently. However, a closer examination of the facts leads to findings and conclusions that resolve these ambiguities.

1 *erbe/erbē/erbê* “4” or “40”

The point of contention is an inscription of the early Old Babylonian king Ašduniarim from Kish, which exists in two versions of different lengths. On the history of research,

- (1) Thureau-Dangin 1911: 65-68 (= RA 8, 65) was the first to publish the shorter inscription of Ašduniarim with a copy, edition and commentary. Passage II 10-13 reads thus:

<i>40 û-mi</i>	en 40 jours
<i>ma-ta-am</i>	le pays
<i>na-ki-ir-ta-am</i>	ennemi
<i>lu ú-ka-ni-iš</i>	je soumis

The number 40 is clearly written with number signs (4x10).

- (2) Ten years later, Gadd 1921: no. 4 (= CT 36, 4) published a somewhat more detailed, largely parallel version. In the introduction (p. 6) he writes about the text:

Clay Cone of Ashduni-arim, King of Kish
It is, in the main, a duplicate of that published by
Thureau-Dangin in *Révue d'Assyriologie*, VIII, 65, but
presents a rather longer version ...

An edition or transliteration is not included. The corresponding passage II 2-5 reads here:

er-bé-e ¹*ú-mi*¹
ma-ta-am
na-ki-ir-ta-am
lu ú-ka-ni-iš

The decisive difference is that here the number 40 is not written with number signs, but phonographically as *er-bé-e*.

- (3) The first edition of these inscriptions was by Barton 1929: 336f., who edited both versions side by side.

(1) Clay cone A [= RA 8, 65 II 10-13]

<i>40 ū-mi</i>	40 days
<i>ma-ta-am</i>	a country
<i>na-ki-ir-ta-am</i>	hostile
<i>lu ú-ka-ni-iš</i>	I subdued

(2) Clay cone B [= CT 36, 4 II 2-5]

<i>ir-bi-e ū-mi</i>	Forty days
<i>ma-ta-am</i>	a country
<i>na-ki-ir-ta-am</i>	hostile
<i>lu-ú-ka-ni-iš</i>	I subdued

- (4) Von Soden (1952) (Grundriss der akkadischen Grammatik § 69 e) added a reference in his treatment of cardinal numbers under 40 *erbâ* in note 3): “aB s. CT 36, 4 II 2”. However, he neither cites the form *erbê* found here nor explains the difference to the standard form *erbâ*. He also used the same principle in von Soden 1958-1981 (Akkadisches Handwörterbuch, AHW, passim) with the explanation on p. IV: “[V]or Stellenangaben ohne Zitat besagt s., daß der Wortlaut der Stellen von dem vorangegangenen Zitat mehr oder minder stark abweicht bzw., daß die Stelle stark zerstört ist.” He thus establishes the context, but refrains from explaining the form. This note 3) has also remained unchanged in the Ergänzungsheft (von Soden 1969) and in the 3rd edition (von Soden 1995).

The later citations in the dictionaries (5) and (6) then represent a step backwards. They distinguish between *erbâ* “40” and *erbe* “4”, but classify CT 36, 4 II 2 with the latter lemma and ignore the parallel text.

- (5) The Chicago Assyrian Dictionary (CAD), which generally favors cuneiform texts in the quotations and ignores editions, has only noted evidence from the 1st millennium under *erbā* (*arbā*) “forty” in volume E (1958) 255. Under *erbe* (fem. *erbēt*) “four” the entry reads: *er-bi-e ú-ṽ-mi*¹ CT 36 4 ii 2 (OB hist.). There is neither a reference to the parallel text RA 8, 65 nor a translation.

- (6) Von Soden (1958-1981: (1960) (AHw) 232f.), separates *erbâ*, *arbâ* “40” – also only with evidence from the 1st millennium – and *erbe* “vier”. The entry here reads: “1) 4 Tage ... *er-bé-e ú-mi* CT 36, 4 II 2”. As in the CAD, the reference to the parallel RA 8, 65 is missing here. In contrast to the CAD, von Soden favors quotations from text editions, as they are considerably more useful for most users than cuneiform copies. He ignored Barton (1929), however, because the work was outdated and far too unreliable due to its high error rate (personal communication). The inconsistency between the analyses of Soden 1952: § 69 e and 1958-1981: 232f. is not explained at any point.
- (7) Sollberger and Kupper (1971: 252f) - a publication with translations only, without transliterations - correct appropriately:

[J]e tins le pays en respect pendant quarante jours.

Note f.: *a* [= CT 36, 4 II 2] écrit *er-bé-e*, qui serait normalement ‘quatre’, mais *b* [= RA 8, 65] donne ‘40’ en chiffres.

- (8) Frayne (1990: 654-656 E4.8.1) treated both texts separately in his monumental edition of the Old Babylonian royal inscriptions.

E4.8.1.1, 34-37 [= CT 36, 4 II 2-5]

er-bi-e ¹*ú*-*m*[*i*]
ma-ta-am
na-ki-ir-ta-am
lu ú-ka-ni-iš

E4.8.1.2, 33-36 [= RA 8, 65 II 10-13]

40 *u*₄-*mi*
ma-ta-am
na-ki-ir-ta-am
lu ú-ka-ni-iš

(But) for forty days I made the enemy land bow down (to me).

- (9) Streck (1995: 44 note 104) adopts the erroneous interpretation without explicitly quoting the CAD or the AHW, and makes a laconic comment in the footnote:

te-še-e ... möchte ich doch zu 9, nicht zu 90 stellen ... d) Die Form */tešē/* ist ganz analog zu aB [altbabylonisch] *er-bé-e* */erbē/* “4” CT 36, 4 ii 2.

There are no references to the parallel text or the editions.

- (10) Wende (2022: 207), summarizes the facts appropriately:

“40”
er-bi-e *ʾu¹-m[i]* (RIME4.8.1.1: 34 ...), die Bedeutung wird bestätigt durch 40 *u₄-mi* in der kürzeren Version der Inschrift (4.8.1.2: 30). Die Form ist st. abs. des fem. Pl. (*erbē* < **erbē-ētīm*).

Another argument against analyzing the construction *er-bé-e* *ú-mi* as “four days” is that the gender congruence would be ungrammatical. Cf. e.g. Streck 2022: 445:

The gender of the numbers “3” - “19” ... is usually the opposite of that of the item counted: masc. number with fem. item counted and vice versa ...

Consequently, **erbēt* *ūmī* would be expected, while *erbē* “40” is grammatically correct (see below 3. under von Soden [5]). This seems to be contradicted by the phrase *er-bu* *u₄-mi* “4 days” in ARM 2, 72, 30, which was identified by von Soden (1953: 199). It was then adopted by CAD E (1958) 255 under *erbe* “four” as *er-bu-u₄-mi* without translation or commentary, and in AHW (1960) 232f. subsumed under *erbe* “vier” as “4 Tage” *er-bu-u₄-mi*. However, this is a misinterpretation, as the context reads completely differently: *ir-pu-ud* *mi-im-ma*, see the edition in ARCHIBAB (<https://archibab.fr/T7554> [accessed 19/08/2025]) with bibliography.

Von Soden 1952; 1969: § 139 g articulates the problem expressis verbis:

Einige aB Ausnahmen von dem polaren Genusgebrauch sind noch nicht sicher zu erklären (s. z. B. bei *ūmum* “Tag” neben Zahlen im Fem. auch *erb-ūmī* ARM II 72, 30¹ ... vielleicht (konnte) *ūmum* ... auch als Fem. gebraucht werden.

In the addendum (von Soden 1995) he then states laconically:

Streiche die Belege mit *ūmum* “Tag”.

However, von Soden gives no indication of the actual correct reading. The correction can only go back to the improved new edition by Charpin (1988: 171f. no. 368), which corrects the wrong transliteration from ARM 2 and which von Soden studied closely (personal communication).

Conclusion: There can therefore be no doubt that the spelling *er-bé-e* in the inscription of king Ašduniarim refers to the number “40”, while the interpretation as “4” is incorrect.

Of the authors listed above who cite the numerals *er-bé-e*, only Wende (2022: 207) offers an analysis of the form. The following studies, which have dealt with the morphology of decimal numbers, do not even mention this variant: von Soden (1961); Powell (1982); von Soden (1983); Streck (2022); Streck (2024).

Huehnergard (2011: 236) analyzes the form, but without reference:

The tens from ‘twenty’ to ‘fifty’ have the following forms: ...

40 ... *erbeā/erbâ* ...

‘Twenty’ to ‘fifty’ look like nom. dual forms without the final -n, ‘twenty’ of ‘ten’ and ‘thirty’, ‘forty’, and ‘fifty’ of ‘three’, ‘four’, and five’. These forms are normally indeclinable ...

This analysis as a dual, which used to be common, is now considered outdated, and that as the status absolutus of the fem. plural has become established, cf. most recently Streck (2024: 395f).

Several sound changes occur, which will only be briefly examined here, whereby the discussion in the expert literature is only referred to in excerpts. The sound transitions take place in the following steps, which can be characterized by the terms vowel colouring - compensatory lengthening - vowel harmony - vowel shortening - contraction. The forms are as follows:

[ʔarbaʕ] ≈ /ʔarba^c/ > /ʔarbe(^c)/ > /ʔarbē/ > /erbē/ > /erbe/
“4”

/erbē/ - /ē/ > /erbê/ “40”

erbe “4” is traced back to the protosemitic form [ʔarbaʕ]. The reduction of the pharyngeal fricative [ʕ] ≈ /^c/ leads to the sound change of the vowel /a/ > /e/. The phonetic process is examined and described in detail by Laufer and Condax (1981). The articulation of the pharyngeal and the vowel /a/ are closely related.

In the vowel /a/, the opening between the pharynx and the epiglottis is of the same general shape as for the pharyngeal consonants, but larger. (p. 39)

In the production of the low vowel /a/, it was observed that the epiglottis regularly and systematically moved clearly farther back than it does for any of the other vowels. (p. 45)

We consider the consonants /ħ/ and /ʕ/, the vowel /a/, ... all to involve pharyngeal articulations. By pharyngeal articulation we mean active involvement of the epiglottis to a greater or lesser degree as an articulator in producing the acoustic effects associated with these segments. We take the stop variant of /ʕ/ to be one end of the continuum and an ordinary /a/ to be the other. (p. 56)

As further support for the relation between pharyngeals and /a/, we note that in Hebrew there is a phonological rule that vowels adjacent to pharyngeals usually become /a/. ... This change can be explained as an assimilation in epiglottis position: The epiglottis close to the posterior pharyngeal wall forms the point of maximum constriction in the pharynx for both /a/ and pharyngeal consonants. ... If it is true that the principal feature of the production of [a] is the constriction by the epiglottis in the pharynx, then the exact shape in the oral cavity is of secondary importance. (p. 59f.)

Glottal stop, of course, has no effect on the articulation of an adjacent /a/. (p. 57)

Pharyngeals are characterised by considerable variation in articulation.

... the voiced fricative phoneme /ʕ/. This consonant, while phonemically a voiced fricative, has a number of phonetic realizations ranging from stop to semi-vocalic glide. ... Overall, we find an articulatory gradation from closure to narrow opening to wider opening, and an acoustic gradation from voiceless stop to creak to voiced fricative and glide. (p. 51)

As a result of lax articulation, the low back vowel [ɑ] is then changed to mid central [ə] or similar. Cf. Ladefoged and Johnson (2011):

[W]hen producing [a], make sure the tongue is pulled so far down and back in the mouth that you are almost producing a voiced pharyngeal fricative [ʕ] ... (p. 219)

The symbol [ə] may be used to designate many vowels that have a central, reduced vowel quality. ... [T]he vowel in question might have an intermediate quality ... (p. 97)

With the complete reduction of the pharyngeal, the sound change continues in compensatory lengthening and the vowel is then integrated into the structure of the vowel system. Vowel harmony causes further harmonization throughout the word. Cf. Streck (2022):

Loss of Proto-Semitic /^c/ frequently causes e-coloring. (p. 52)
/ā/, /ē/, /ī/, and /ū/ are vowels long by structure, ..., or by loss of an aleph. (p. 33)

E-coloring affects most other /a/-vowels in a word. This assimilation is sometimes called Bab[ylonian] vowel harmony: ... (p. 54)

Fem. endings /at/ and /āt/ > /et/ and /ēt/ ... (p. 55)

Vowel quantity in word-final position is analyzed controversially. Cf. Huehnergard (2011: 593f.):

[O]riginal short final vowels were lost early in the history of Akkadian. Thus, ..., all final vowels that remain in dialects such as O[ld] B[abylonian] are originally long vowels. It is likely that all such vowels, except for contracted long vowels (*ḡ*), were pronounced short when word-final. The various Assyriological reference works do not represent these vowels consistently in their transcriptions. Final long vowels may be classified into several groups ...

(3) Vowels long from compensatory lengthening with the loss of a following consonant (guttural, *w*, *y*). When word-final they are transcribed without a length mark by most Assyriologists; when not final they are transcribed variously unmarked (in *CAD*) or with a macron ...

This also applies to /erbē/ versus /erbe/. For example, the (rather rarely used) vowel length can be found in Streck (1995: 44 note 104); Buccellati (1996: 164); Wende (2022: 207). On the other hand, short vowels are assumed by von Soden (1995: § 69); Kienast (2001: 182); Diakonoff and Kogan (2007: 27); Huehnergard (2011: 235); Kouwenberg (2017: 275) and others.

However, this is contradicted by the plene vowel spelling *er-bé-e* (clearly for “4”) in Sumer 7, 147, 15. Von Soden 1995: § 69 c note 7) addendum, laconically notes this variant: “*erbe* auch aB *er-bé-e*”. Streck (2022: 437, 445), quotes it with context, but otherwise it is mostly ignored.

It is quite unlikely that there was no difference in pronunciation between “4” and “40”. This may have consisted in the opposition between short and long vowels: /erbe/ versus /erbē/. But what could the articulatory or acoustic contrast be in this case if both numbers had long vowels? Streck 2022: 33 has summarized this situation:

/ā/, /ē/, /ī/, and /ū/ are vowels long by structure, ..., or by loss of an aleph. Contraction of two contiguous vowels also results in long vowels: /â/, /ê/, /î/, /û/. Whereas plene spellings do not regularly occur with structurally long vowels ..., plene vowel spellings usually appear with contracted vowels ... This has led several scholars to assume a difference in pronunciation, whether quantity or stress.

There are other possibilities as well. The phonological /e/ has several allophones, e.g. [e], [ɛ], [æ], [ə], [ɐ], [ɜ], and variation in the quality of the vowel to create contrast cannot be ruled out. Furthermore, plene vowel spellings are ambiguous. They can represent accent or length, but they may also indicate a hiatus and a different syllable structure.

These contradictory hypotheses should only be pointed out; a proper analysis of the complex conditions requires a great deal of effort, which is not possible here.

2 *šalāšā* and *šalāšū* status absolutus for “30”

On the history of research, Streck has repeatedly postulated the existence of a status absolutus pl. masc., most recently (with variants) in the following two studies.

(1) Streck (2022: 440).

The decimals (probably only from “20” to “50”) also have a masc. and a fem. form:

a) St. abs. masc:

Math. *ammāt aḥṣubšūma ša-la-šu pūtām [a]llik*
 Sumer 7, 39: 4 *šalāšū* “I cut it by one cubit and I
 measured (lit. went) thirty (cubits = fem. *ammatum*)
 along (its) front”.

(2) Streck (2024: 397).

The pre-Late Babylonian evidence for 20-50 shows that the forms with final *-ā*, when not used alone, always refer to masc. nouns ...

In a single case a syllabically written decimal refers to a fem. noun:
ammāt aḥṣubamma ša-la-šu pūtām [a]llik ... 30 pūtika puṭurma Sumer
 7, 39: 4.

‘I shortend it by one cubit and measured (lit. walked) on
 its front 30 (cubits = *ammātu*) ... Detach 30 from your
 front ...’

But in this case the decimal does not show the ending *-ā*. We may conclude that also in pre-Late Babylonian Akkadian two series of decimals are known: one series which has a mostly plene spelled and therefore undoubtedly long *-ā* with masc. nouns, and a second series ending in *-ū*. Therefore, von Soden’s analysis (1961) of *-ā* as ending of the status absolutus fem. pl. can be confirmed for Akkadian. *-ū* is apparently¹² the ending of the corresponding status absolutus masc. pl., which, however, coincides with the ending of the status rectus.

Fn. 12: I am not aware of further evidence for pl. forms of the status absolutus ...

šalāšū is a phantom, however, because this passage contains a scribal error. The exact form of the number “30” has been analyzed controversially, as the following selection of interpretations shows.

- (3) Baqir (1951: 39f.) (= Sumer 7, 39 No. 7, IM 53965) published this text with edition including copy and photos (unnumbered plates after p. 44). He understands the passage in question as follows:

am-ma-at aḥ-ṣú-úb-šu-ma ša-la-šu pu-ta-am [a]l-li-ik
 I diminished one cubit therefrom and have gone half the
 width (?) (thirty by width ?).

The value <úb> (for the ŠÈ sign) is not common in Old Babylonian and this sign is not possible according to the photo.

- (4) Von Soden (1952a: 52f.)

Auch bei diesem Text ist mir eine befriedigende Deutung der Rechnung noch nicht gelungen. Die Aufgabe lautet wohl ... 1 Elle brach ich bei ihm ab und ging 30 X (sha-la-shi!?) die Breite.

- (5) CAD Š/I (1989): 234.

šalāšā (*šelāšā*) thirty; *ša-la-šu* Sumer 7 39 No. 7:4.

ammat aḥṣubšuma ša-la-šu pūtam [a]llik
 I cut off one cubit (length) from it (a reed of unknown length that had first been used to measure the length of a rectangle), and I measured thirty along the width.
 Sumer 7 39 No. 7:4 (OB math.), see von Soden, Sumer 8 53.

However, the cited reference to von Soden's commentary does not address his divergent reading.

- (6) Friberg (2007: 250).

am-ma-at aḥ-ṣú-úb-šu-ma ša-la-aš pu-ta-am [a]l-li-ik
 [A] cubit I broke off it, then thirty, the front, I walked.

The sign <aš> does not match the documentation at all, perhaps there is a printing error for <ša>.

- (7) Gonçalves (2015: 77). This edition offers neither collations nor renewed copies or photos.

The tablet was published initially by Baqir (1951). von Soden (1952) offered a new reading for lines 3 to 5.

However, neither Baqir nor von Soden presented a satisfactory mathematical interpretation. ...

In what follows, I used Baqir's original reading together with the improvements made by von Soden (only lines 3-5)

...

am-ma-at aḫ-ṣu₂-ub₂-šū-ma ša-la-ši! pu-ta-am [a]l-li-ik

Baqir's original reading differed from the one presented here in the following lines: ...

am-ma-at aḫ-ṣu₂-ub₂-šū-ma ša-la-šu pu-ta-am [a]l-li-ik ...

I broke off a cubit from it, and I went thirty times the width.

- (8) DCCMT (Digital Corpus of Cuneiform Mathematical Texts) (<https://oracc.museum.upenn.edu/dccmt/P254610>) [accessed 19/08/2025] offers the following interpretation. The form *ša-la-šu* is neither doubted nor commented on.

am-ma-at aḫ-ṣú-ub-šū-ma ša-la-šu pu-ta-am ʾal-li-ik¹

I broke off a cubit and then I went thirty (along) the width.

There are thus three different readings for the decimal number “30” side by side. However, it is not possible to make a decision based on the copy and photo provided by Baqir (3) in 1951. His copy is often not accurate in the details, and the photo has only a low resolution and is not very sharp. A new photo of IM 53965 (Figure 1), kindly provided by Laith Hussein and reproduced here, now shows that no reading other than *ša-la-šu* is possible.

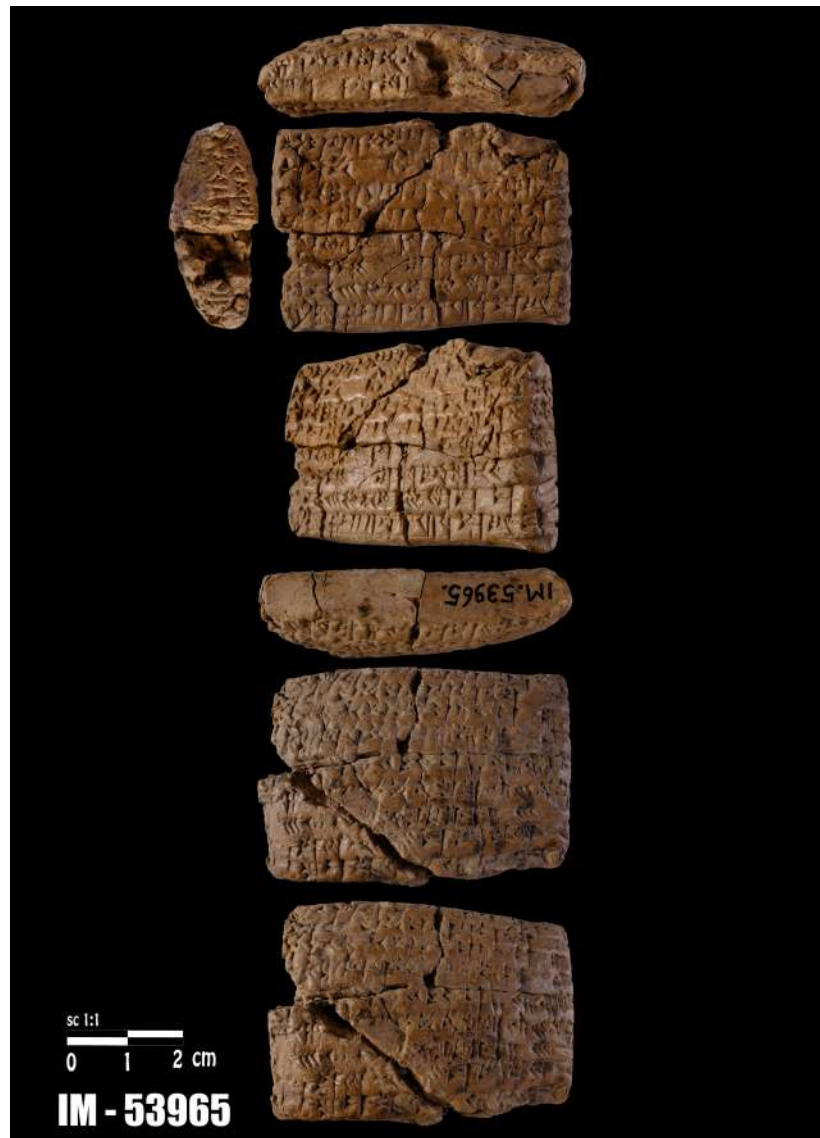


Figure 1: Copyright: Iraq Museum.

However, for interpretation, a parallel must be considered that was not taken into account in any of the works cited above. The mathematical text Str 368 that Frank (1928) published in a copy on Plate IX no. 11 contains largely the same problem but with some differences in spelling:

IM 53965, 4f.
Str 368, 4

ša-la-šu pu-ta-am 'al-li-ik'
30-šu SAG al-li-ik

There is a photo of Str 368 on CDLI P414664 (<https://cdli.earth/artifacts/414664>) [accessed 19/08/2025], and the following translations are available for line 4:

(9) Neugebauer (1935: 311).

Sein 30 (als) Länge habe ich durchschritten.

(10) Thureau-Dangin (1938: 92).

[J]e suis allé 30 fois par le front.

(11) DCCMT (Digital Corpus of Cuneiform Mathematical Texts)
(<https://oracc.museum.upenn.edu/dccmt/P414664>) [accessed 19/08/2025]

I went a width of its 30.

This spelling 30-*šu* appears very rarely in Old Babylonian texts. In a letter from Mari, the context clearly indicates that the multiplicative number “30 times” is meant:

(12) ARM 26/2: 434 (<https://archibab.fr/T6739>) [accessed 19/08/2025]
line 40-41 reads as follows:

30-*šu* L[Ú.TUR *ša-a-tu*] *a-lam ú-sà-hi-ru-šu-ma*
On a fait faire trente fois à cet homme le tour de la ville.

The difference between the two spellings 30-*šu* and *ša-la-šu* can only be bridged by assuming that there is a scribal error, namely the haplography *ša-la-<ša>-šu*. The context of IM 53965, 4f. is therefore as follows:

am-ma-at aḥ-ṣú-ub-šu-ma ša-la-<ša>-šu pu-ta-am
[*al-li-ik*]¹
I broke off a cubit and then I went along the front side 30 times.

This is the only attested phonographic notation of this number, albeit incorrect.

The multiplicative number “30 times” is not mentioned in the grammars of von Soden (1952); Buccellati (1996); Huehnergard (2011); Streck (2022). It is also missing as a lemma in the standard dictionaries von Soden (1958-1981) (AHw) and CAD Š/I (1989). However, the latter book mentions an entry from an Old Babylonian lexical list that clearly illustrates the word formation pattern.

(13) CAD Š/I 234.

šalāšā thirty

[20].bal.a.ni.im = *ešrāšu* his twenty, [30].bal.a.n[i.im] = [ša-la-ša-a-šu] his thirty Nigga Bil. B 318.

This entry (with the spelling *eš-ra-a-šu*) is published in Civil 1971: 123 line 317-318 and repeated in DCCLT (Digital Corpus of Cuneiform Lexical Texts) (<https://oracc.museum.upenn.edu/dcclt/P464216>) [accessed 19/08/2025] e317, f318.

eš-ra-a-šu and *ša-la-ša-a-šu* are to be analyzed as the cardinal number *ešrā* “twenty” and *šalāšā* “thirty” with the suffix *-šu*.

This matches the Old Assyrian formation with the difference that instead of the prepositions *adi* or *ana* in Old Babylonian the suffix *-šu* is used.

(14) Kouwenberg (2017: 286).

Most multiplicative numbers have a suffix *-ēšu* or *-išu* after the stem of the cardinal number. ...

Multiplicatives without *-ēšu* include ... *ešrā* ‘twenty times’ ... for higher numbers the cardinal numeral preceded by *adi* or *ana* could serve as a multiplicative, as in *adi ešrā* ‘twenty times’ ...

Conclusion: The status absolutus masc. *šalāšū* postulated by Streck has not yet been proven.

3 *teše/tešē/tešê* “9” or “90”

The phonographic notation *te-še-e* is controversially interpreted as either “9” or “90”. On the history of research,

- (1) Grayson and Sollberger (1976: 103-128) offer the following entry in their *editio princeps* of an Old Babylonian literary text (pp. 117/121, 23’):

te-še-e gu-ru-un ša-al-ma-ti-ši-n[a iš-ku-un]
 [Il entassa] leurs cadavres en une masse confuse de tertres
 funéraires.

- (2) Von Soden (1977: 235f.), comments on this entry:

Z. 23’ beginnt mit *te-še-e*. *tēšē* ist als St. cstr. von *tēšû(m)* “Verwirrung” gut bekannt. Die Übersetzung auf S. 121 “en une masse confuse” läßt sich aber weder lexikalisch noch grammatisch rechtfertigen und gibt auch keinen befriedigenden Sinn. Der Kommentar erläutert die Zeile nicht. *tēšû(m)* kann hier nicht vorliegen. Das auf *te-še-e* folgende *gu(qû)-ru-un ša-al-ma-ti-ši-n[a]* läßt eine Zahl erwarten. *ti/eše* “neun” kann nicht gemeint sein, weil diese Zahl vor dem Maskulinum *q/gurūnum* im Femininum stehen müßte. Auch wären “neun Leichenhaufen” in diesem mit jeder Wirklichkeit fremden sehr hohen Zahlen operierenden Text wenig eindrucksvoll. Wir haben hier also den ersten syllabisch geschriebenen Beleg für die Zahl 90 vor uns: “90 Leichenhaufen” passen gut zu 90000 bzw. 360000 Soldaten in Z. 28 und 30. Die Form *tešē* statt des altbab. zu erwartenden **ti/ešiā* zeigt die in Māri und Ešnunna übliche Kontraktion von *ia* zu *ê* ... Andere eindeutige Hinweise auf eine Herkunft der Tafel BM 79987 aus den Bereichen von Māri oder Ešnunna kann ich nicht finden; es spricht aber wohl auch nichts dagegen. Für die Sing.-Form des St.cstr. *q/gurūn* im Plural vgl. GAG § 64 l.

- (3) Von Soden (1958-1981: (1977) 1352): **tešiā*, Māri *tešē* “90”.

- (4) Streck (1995: 44 fn. 104).

Das von von Soden (1977, 235f.) behandelte und in AHW 1352b zitierte aB *te-še-e* RA 70, 117:23 möchte ich doch zu 9, nicht zu 90 stellen: a) *gurunnu* bildet mit CAD G 142a auch einen fem. Pl. b) Der Text zeigt sonst keine

“Kontraktion” von $\bar{ia}/\bar{ea}$ zu $\hat{e}$: *an-ni-a-am* RA 70, 115 ii 6’, $\text{‘it}^1\text{-b}\acute{e}\text{-a-am-ma}$ ebd. 117 ii 21’. c) 90 wird 5 Zeilen weiter (ebd. 28’) mit der Ziffer geschrieben. d) Die Form $/te\acute{s}\bar{e}/$ ist ganz analog zu aB *er-b\acute{e}-e /erb\bar{e}/* “4” CT 36, 4 ii 2.

For these arguments, see the discussion below.

- (5) Von Soden (1995: § 69 e Addendum).

Die Zahlen 20-50 sind ... St.-abs.-Formen des Pl. f. ... und werden demgemäss nicht dekliniert ... Neu ist $*te\acute{s}\bar{ia} > te\acute{s}\hat{e}$ “90” (AHw. 1352b).

- (6) Goodnick Westenholz (1997: 246-258), has presented a new edition of this text. The relevant passage p. 254f. 23’ reads:

te-še-e gu-ru-un ša-al-ma-ti-ši-n[a iš-ku-un]

[He made] a confusing mass of their corpses.

Fn: Von Soden (ZA 67 [1977] 236) suggests that *te-še-e* is a writing of the numeral 90 in which $te\acute{s}\hat{e} < ti/e\acute{s}\bar{ia}$ exhibits the $e < ia$ contraction known at Mari and Ešnunna. However, I have shown that the origin of this tablet is probably Sippar, so there should not be any examples of such contractions on this tablet.

- (7) Black et al. (2000: (A Concise Dictionary of Akkadian) 405): $*te\acute{s}\bar{ia}$, Mari *te\acute{s}\hat{e}* “ninety”.

- (8) CAD T (2006): 373: *te\acute{s}\hat{e}* “ninety”.

te-še-e gurun šalmātišin[a iškun]

[He heaped up] ninety piles of their (the enemies’) corpses.

- (9) Reiner (2007:55).

te\acute{s}\hat{e}

Add discussion: For the meaning “nine” (rather than “ninety”) see Streck Zahl und Zeit 44 n. 104.

- (10) Haul (2009: 174).

tešê gurun šalmātišīna
 “Ein wirrer Haufen ihrer Leichen”.

- (11) Mayer (2009: 433).

tešê: Die Schreibweise des aB Textes spricht nach M. Streck, CM 5, 44 Anm. 104 eher für die Zahl “neun”.

- (12) Mayer (2015: 194).

§ 69 e N[achtrag]: *te-še-e* ist eher als “neun” zu verstehen (Streck, *Zahl und Zeit* 44 Anm. 104).

- (13) N[adezda] R[udik] in Streck (2019: 96).

tišē, tešē “nine”
 With Streck 1995, 44 n. 104, the form *te-še-e* in RA 70, 117 cit. CAD T 373 belongs here (“nine” rather than “ninety”, Reiner 2007, 55; Mayer 2009, 433).

- (14) Streck (2022).

(In some cases) the st. cstr. before a noun in the gen. loses the pl. ending: ... *tešē gu-ru-un šalmātišīn[a] ... gurun* “nine heaps of their corpses”. (p. 425)
 “9”. St. abs. masc. *tešē*: Lit. *te-še-e gurun šalmātišīn[a]* ... “nine heaps of their corpses”.¹⁵
 Fn. 15: For *tešē* “9” see Streck 1995, 44 n. 104. Von Soden 1977 (followed by both AHW. and CAD) suggested “90”. J.G. Westenholz 1977, 255 translates “confusing mass of their corpses” and derives “confusing” from *tēšû*; however, *tēšû* is never used in this sense. For the st. cstr. sg. *gurun* instead of the (fem.) pl. see [p. 425] (p. 439)

How can these inconsistencies be resolved? Most of the arguments can be checked for their justification and evaluations with clear results can be provided. Since the spellings are certain or no clear variant is available in a duplicate for clarification, the criteria must be developed analytically.

The interpretation of *te-še-e* as a status constructus of *tešû* “confusion” is grammatically possible, but is ruled out for semantic reasons, because

a “confusing mass of their corpses” does not fit with the semantic field of *tešûm* and is nowhere attested.

Von Soden (1977: 236) assumes a contraction in the form *te-še-e*: “Die Form *tešê* statt des altbab. zu erwartenden **ti/ešîā* zeigt die in Mâri und Ešnunna übliche Kontraktion von *ia* zu *ê*”. Streck (1995: 44 fn. 104) and Goodnick Westenholz (1997: 255) have contradicted, because the text does not originate from there, but probably from Sippar and otherwise shows no corresponding contractions.

Streck (1995: 44 fn. 104) wants to place *te-še-e* ‘to 9, not to 90’ and points out the following in this regard: “Die Form */tešê/* ist ganz analog zu aB *er-bé-e /erbē/* “4” CT 36, 4 ii 2.” However, this is a counter-argument, because, as shown above, in this text the spelling *er-bé-e* clearly stands for “40”.

te-še-e can be derived with analogous transitions as in the case of *er-bé-e* in the steps vowel colouring - compensatory lengthening - vowel harmony - vowel shortening - contraction and analyzed as status absolutus fem. plural.

The forms are:

$$\begin{aligned} *[\text{ti}^{\text{c}}\text{fa}^{\text{c}}] &\approx / \text{ti}^{\text{c}}\text{ša}^{\text{c}} / > / \text{ti}^{\text{c}}\text{še}^{\text{c}} / > / \text{ti}^{\text{c}}\text{šê} / > / \text{te}^{\text{c}}\text{šê} / > / \text{te}^{\text{c}}\text{še} / \text{ “9”} \\ &/ \text{te}^{\text{c}}\text{šê} / - / \text{ê} / > / \text{te}^{\text{c}}\text{šê} / \text{ “90”} \end{aligned}$$

The vowel assimilation of */i/* to */e/* is common and irrelevant for the determination of the number.

Analogous to the spelling *er-bé-e* for *erbē* “4” and *erbê* “40”, *te-še-e* could stand for “9” and “90”. In both cases, there are problems with the grammatical construction. In the case of “9”, the feminine form of the numeral (*tešîṭ*) and the plural of the counted noun would be expected instead of *tešê gurun*. Streck (1995: 44 fn. 104) states: “*gurunnu* bildet mit CAD G 142a auch einen fem. Pl.” He explains the singular form (Streck 2022: 425): “(In some cases) the st. cstr. before a noun in the gen. loses the pl. ending”. The extent to which a feminine plural formation to a masculine noun in the singular changes the grammatical construction of the numbers needs to be better substantiated.

When interpreted as “90”, the form corresponds to the expectation, because the status absolutus fem. is not inflected, see von Soden (1995: § 69 e). With regard to the singular, he argues similarly (von Soden 1977: 236): “Für die Sing.-Form des St.cstr. *q/gurūn* im Plural vgl. GAG § 64 l.” There it says: “Im Plural auf *-ū* ... lautet der St. c. genau so wie der St. rectus und wird daher manchmal lieber vermieden, indem ... bei eindeutigen Zusammenhang dafür der St. c. des Sing. eintritt ...”

However, a simple explanation is also possible, namely that *gurun* was understood here as a unit of measurement and that the indeclinable status absolutus is present, as is usual in the construction number + unit of measurement + item measured; cf. on this e.g. summarily von Soden (1995: § 62 d); in detail Kouwenberg (2017: 202, 279, 299f.) with a list of numerous “measure nouns attested in Old Assyrian”.

As a further argument, Streck (1995: 44 fn. 104) cites the different representation of the numbers: “90 wird 5 Zeilen weiter (ebd. 28’) mit der Ziffer geschrieben.” However, this is a weak argument. Variation is a universal principle that historical sociolinguistics has identified in a large number of written languages and that applies equally to cuneiform literature; for a summary, see Rutkowska and Rössler (2012). Cf. e.g. the statement o.c. 217f.:

We can distinguish (a) diachronic, (b) diatopic, (c) diaphasic, (d) diastratic, (e) diasituative, and (f) aesthetic variants ...
[S]pelling variability corresponded to an aesthetic principle (similar to modern advice to use lexical alternatives):
“[v]ariatio delectat meant more than just giving pleasure to the eye. It meant demonstrating one’s writing skills through the calculated use of alternation” ...

With the principles developed by historical sociolinguistics, the orthography of the cuneiform languages can also be analyzed more extensively than has previously been the case in the Assyriological literature. For summaries under the keyword “Orthographie”, cf. Edzard (2003-2005: 132-137) (Sumerian); Streck (2003-2005: 137-140) (Akkadian); Oettinger (2003-2005: 140-143) (Hittite); no corresponding linguistic literature is mentioned here. Worthington (2012: 32) gets to the heart of the matter:

[T]he understanding of textual change and its mechanisms is not as advanced in Assyriology as in other fields, nor is its importance as clearly recognized.

By analyzing *te-še-e* as “9”, the variation between the representation of numbers with phonograms or number signs would only be shifted, because in this text Goodnick Westenholz (1997) the numbers “6” (254 rev. II 25’ 30’) and “50” (252 rev. I 19’) are also written with number signs.

Thus, if neither of the two interpretations of *te-še-e* as “9” or “90” can be ruled out according to phonological and orthographic criteria, the argument that von Soden (1997: 236) considered clarifying remains to be examined:

Auch wären “neun Leichenhaufen” in diesem mit jeder Wirklichkeit fremden sehr hohen Zahlen operierenden Text wenig eindrucksvoll. ... “90 Leichenhaufen” passen gut zu 90000 bzw. 360000 Soldaten in Z. 28 und 30.

The mention of burial mounds is a common motif in (pseudo-)historical sources and has been the subject of extensive research; see especially Richardson (2007); Selz (2015). The state of research was most recently summarized by Ghobadizadeh and Sallaberger (2023: 17-19):

Such burial mounds are known from royal inscriptions ranging from Ur-Nanše of Lagaš (ca. 2450 BCE) to Samsuiluna of Babylon (1749-1712 BCE) and referring to rulers of Ebla, Girsu, Akkade, Ur, Mari, and Babylon. These include passages from the two most famous victory monuments from early Mesopotamia, the Stele of the Vultures (RIME 1, E1.9.3.1) and Naram-Suen’s victory stele (RIME 2, E2.1.4.31). ...

This text [Enmetena, RIME 1, E1.9.5.1 iii 11-27] includes another important piece of information, namely that multiple mounds were set up, in this case, five. Eanatum heaped up (bi₂-dub) even as many as 20 mounds, according to a description in the Stele of the Vultures (RIME 1, E1.9.3.1 o. xi 14.15), and Enmetena, in another instance, spoke of erecting mounds as a pluralic action.

Although it is not possible to establish a direct statistical relationship between the size of the armies, the number of casualties and the burial mounds, there is some quantifiable data from the periods in question that at least allow extrapolations of the orders of magnitude.

For a summary of the size of the armies and the number of casualties in the 3rd millennium, see Sommerfeld (2022: 11-40). Rimuš gives the total number of enemy casualties from seven cities as 84,556 men, including 40,713 fallen. Naram-Sin puts the total number of enemies from 17 cities defeated in nine battles at 95,340 fighters, although he does not provide a detailed breakdown of casualties and prisoners. Neither provides any information on the size of his armies. The extrapolation for the state of Ebla based on administrative documents shows that the army there could muster at least 44,000 men. Sommerfeld (2022: 28): “Da die Könige von Akkade ein viel größeres Gebiet kontrollierten als der Staat von Ebla, konnten sie wohl auch

eine entsprechend starke Armee aufstellen, die in der Lage war, fast 100.000 Gegner zu bezwingen.”

There is no data on the number of burial mounds from the Sargonic period. The army strength for Girsu at that time can be estimated at around 5,000 men (Sommerfeld 2022: 27). Assuming that the demography at the end of the Early Dynastic period was comparable, it can be extrapolated that the number of five or 20 tumuli documented here was on a rather small scale compared to the extraordinarily costly battles of the much larger Akkadian armies.

Stol (2004: 778) mentions 60,000 soldiers as the maximum number attested in the Old Babylonian period.

Wie groß war eine Armee auf einem Feldzug? ... (Normal sind) Armeen von einigen tausend Soldaten, doch sind gelegentlich auch größere Truppenkontingente überliefert. ... Die Briefe aus Shemshara nennen 20.000 und 60.000 Mann (Letzteres ist wohl bewusst übertrieben). ... Normalerweise sind es jedoch weniger als 10.000 Mann ...

Consequently, if the Early Dynastic royal factual accounts explicitly mention 5 and 20 burial mounds in the face of much smaller armies and inevitably fewer casualties, the comparatively low figure of “9” in the Naram-Sin legend for the burial of 90,000 fallen warriors (Goodnick Westenholz 1997: 254 rev. II’ 28’) would seem an understatement with sharp dissonance given an army strength of 360,000 warriors (l.c. 254 rev. II’ 30’).

Conclusion: The analysis of *te-še-e* as “90” is linguistically and orthographically consistent, and is also the only appropriate interpretation in this text with its bombastic exaggerations. The corresponding entries in the dictionaries (→ [3], [7], [8]) are justified and do not require redefinition. This means that this statement must be qualified (Streck 2024: 397): “There is some evidence that, at least in Old Babylonian, the words for 70 - 90 do not derive from the numbers 7 - 9 but rather are combinations of 60 and 10 - 30”.

Bibliography

BAQIR, Taha (1951) "Some More Mathematical Texts from Tell Harmal", *Sumer* 7: 28-45.

BARTON, George Aa. (1929) *The Royal Inscriptions of Sumer and Akkad*. New Haven: Yale University Press.

BLACK, Jeremy; GEORGE, Andrew and POSTGATE, Nicholas (eds.), (2000) *A Concise Dictionary of Akkadian*. Wiesbaden: Harrassowitz Verlag.

BUCCELLATI, Giorgio (1996) *A Structural Grammar of Babylonian*. Wiesbaden: Harrassowitz Verlag.

CHARPIN, Dominique (1988) *Archives épistolaires de Mari I/2, Archives Royales de Mari 26, Première partie*. Paris: Editions Recherche sur le Civilisations.

CHICAGO ASSYRIAN DICTIONARY: The Assyrian Dictionary of the Oriental Institute of the University of Chicago.

OPPENHEIM, A. Leo (ed.) (1958) Volume 4, E; (1956) Volume 5, G;

REINER, Erica (ed.) (1989) Volume 17, Š part I. Chicago, Illinois: The Oriental Institute, Glückstadt: J.J. Augustin Verlagsbuchhandlung.

REINER, Erica (ed.) (2006) Volume 18, T. Chicago, Illinois: The Oriental Institute.

CIVIL, Miguel (1971) (ed.), *Materials for the Sumerian Lexicon 13*. Roma: Pontificium Institutum Biblicum.

DIAKONOFF, Igor M. and KOGAN, Leonid E. (2007) "Akkadian Morphology", in: Kaye, A. S. (ed.), *Morphologies of Asia and Africa, volume 1*. Winona Lake, Indiana: Eisenbrauns.

EDZARD, Dietz O. (2003-2005) "Orthographie. A. Sumerisch und Akkadisch bis einschl. Ur III-Zeit", *Reallexikon der Assyriologie und Vorderasiatischen Archäologie* 10: 132-137.

FRANK, Carl (1928) *Straßburger Keilschrifttexte in sumerischer und babylonischer Sprache*. Berlin-Leipzig: De Gruyter.

FRAYNE, Douglas R. (1990) *The Royal Inscriptions of Mesopotamia. Early periods volume 4, Old Babylonian Period (2003 - 1595 BC)*. Toronto-Buffalo-London: University of Toronto Press.

FRIBERG, Jöran (2007) *A Remarkable Collection of Babylonian Mathematical Texts. Manuscripts in the Schøyen Collection Cuneiform Texts I*. New York: Springer.

- GADD, Cyril J. (1921) *Cuneiform Texts from Babylonian Tablets, &C., in the British Museum. Part XXXVI*. London: British Museum.
- GHOBADIZADEH, Hamzeh and SALLABERGER, Walther (2023) “Šulgi in the Kuhdasht Plain”, *Zeitschrift für Assyriologie* 113: 3-33.
- GONÇALVES, Carlos (2015) *Mathematical Tablets from Tell Harmal*. Cham: Springer.
- GOODNICK WESTENHOLZ, Joan (1997) *Legends of the Kings of Akkade*. Winona Lake: Eisenbrauns.
- GRAYSON, Albert K. and SOLLBERGER, Edmond (1976) “L’insurrection générale contre Narām-Suen”, *Revue d’Assyriologie* 70: 103-128.
- HAUL, Michael (2009) *Stele und Legende. Untersuchungen zu den keilschriftlichen Erzählwerken über die Könige von Akkade*. Göttingen: Universitätsverlag Göttingen.
- HUEHNERGARD, John (³2011) *A Grammar of Akkadian*. Winona Lake: Eisenbrauns.
- KIENAST, Burkhard (2001) *Historische Semitische Sprachwissenschaft*. Wiesbaden: Harrassowitz Verlag.
- KOUWENBERG, Norbertus (Bert) J.C. (2017) *A Grammar of Old Assyrian. Handbook of Oriental Studies, volume 118*. Leiden-Boston: Brill.
- LADEFOGED, Peter and JOHNSON, Keith (⁶2011) *A Course in Phonetics*. Boston: Wadsworth Cengage Learning.
- LAUFER, Asher and CONDAX, Iovanna D. (1981) “The Function of the Epiglottis in Speech”, *Language and Speech* 24: 39-62.
- MAYER, Werner R. (2009) “Akkadische Lexikographie: CAD T und T̄”, *Orientalia* 78: 423-439.
- MAYER, Werner R. (2015) “Nachlese II: zu Wolfram von Soden, Grundriß der akkadischen Grammatik (³1995)”, *Orientalia* 84: 177-216.
- NEUGEBAUER, Otto E. (1935) *Mathematische Keilschrift-Texte. Erster Teil: Texte. Quellen und Studien zur Geschichte der Mathematik, Astronomie und Physik, Abteilung A: Quellen 3*. Berlin: Julius Springer.
- OETTINGER, Norbert (2003-2005) “Orthographie. C. Hethitisch”, *Reallexikon der Assyriologie und Vorderasiatischen Archäologie* 10: 140-143.
- POWELL, Marvin A. (1982) “The Adverbial Suffix -ā and the Morphology of the Multiples of Ten in Akkadian”, *Zeitschrift für Assyriologie* 72: 89-105.
- REINER, Erica (2007) “Supplement to *Chicago Assyrian Dictionary* T (Volume 18)”, *Journal of Near Eastern Studies* 66: 47-61.

RICHARDSON, Seth (2007) “Death and Dismemberment in Mesopotamia: Discorporation between the Body and Body Politic”, *Oriental Institute Seminars* 3: 189-208.

RUTKOWSKA, Hanna and RÖSSLER, Paul (2012) “Orthographic Variables”, in: Hernández-Campoy, J. M. and Conde-Silvestre, J. C. (eds.), *The Handbook of Historical Sociolinguistics*. New York: Wiley, pp. 213-236.

SELZ, Gebhard J. (2015) “The Burials after the Battle. Combining Textual and Visual Evidence”, *Alttertumskunde des Vorderen Orients* 15: 387-404.

SOLLBERGER, Edmond and KUPPER, Jean-Robert (1971) *Inscriptions royales sumériennes et akkadiennes*. Paris: Les Éditions du Cerf.

SOMMERFELD, Walter (2022) “Sumerischer Widerstand gegen semitische Herrschaft. Migration, Machtkämpfe und Demographie im 3. Jahrtausend v. Chr.”, *Studia Antiqua et Archaeologica* 28 (1): 11-40.

STOL, Marten (2004) “Wirtschaft und Gesellschaft in altbabylonischer Zeit”, *Orbis Biblicus et Orientalis* 160 (4): 643-975.

STRECK, Michael P. (1995) *Zahl und Zeit. Grammatik der Numeralia und des Verbalsystems im Spätbabylonischen*. Groningen: Styx Publications.

STRECK, Michael P. (2003-2005) “Orthographie. B. Akkadisch im II. und I. Jt.”, *Reallexikon der Assyriologie und Vorderasiatischen Archäologie* 10: 137-140.

STRECK, Michael P. (2019) *Supplement to the Akkadian Dictionaries, Vol. 2: D, T, Ṭ*. Wiesbaden: Harrassowitz Verlag.

STRECK, Michael P. (2022) *Old Babylonian Grammar*. Leiden-Boston: Brill.

STRECK, Michael P. (2024) “The Decimals in Akkadian and Semitic and Another Isogloss of Akkadian and Eblaic”, in: Heeßel, N. P.; Tsukanova, V. and Waltisberg, M. (eds.), *Der Perlentaucher. Festschrift für Stefan Weninger zu seinem 65. Geburtstag am 6. August 2024*. Wiesbaden: Harrassowitz, pp. 395-400.

THUREAU-DANGIN, François (1911) “Ašduni-erim roi de Kiš”, *Revue d'Assyriologie* 8: 65-68.

THUREAU-DANGIN, François (1938) *Textes mathématiques babyloniens*. Leiden: Brill.

VON SODEN, Wolfram (¹1952a; ²1969; ³1995) *Grundriss der akkadischen Grammatik*. Roma: Editrice Pontificio Istituto Biblico.

VON SODEN, Wolfram (1952b) “Zu den mathematischen Aufgabentexten vom Tel Harmal”, *Sumer* 8: 49-56.

VON SODEN, Wolfram (1953) “Neue Bände der Archives Royales de Mâri”, *Orientalia* 22: 193-209.

VON SODEN, Wolfram (1958-1981) *Akkadisches Handwörterbuch, Band I-III*. Wiesbaden: Harrassowitz.

VON SODEN, Wolfram (1961) “Die Zahlen 20-90 im Semitischen und der Status absolutus”, *Wiener Zeitschrift für die Kunde des Morgenlandes* 57: 24-28.

VON SODEN, Wolfram (1977) “Zu einigen akkadischen Wörtern. 1. Die Zahl neunzig”, *Zeitschrift für Assyriologie* 67: 235-241.

VON SODEN, Wolfram (1983) “Zu den semitischen und akkadischen Kardinalzahlen und ihrer Konstruktion”, *Zeitschrift für Assyriologie* 73: 82-91.

WENDE, Janine (2022) *Frühaltbabylonische Grammatik*. Wiesbaden: Harrassowitz Verlag.

WORTHINGTON, Martin (2012) *Principles of Akkadian Textual Criticism*. Boston-Berlin: De Gruyter.