

## CHAPTER THREE

### MINIMALIA OF SUMERIAN PHONOLOGY AND SYLLABIC STRUCTURE

#### 3.1. PHONOLOGY

##### 3.1.1. Vowels

- [a]: al (Akk. *allu*) “hoe”  
gag (Akk. *kakku*) “peg, nail”, “club, weapon”  
gala (Akk. *kalû*) “singer (in cult), cantor”  
bárag (Akk. *parakku*) “dais”  
(hé-)ĝál (Akk. *he(n)gallu*) “let it be” = “abundance”
- [ā]: kār (Akk. *kāru*) “quay, mooring wall, harbour”  
nār (Akk. *nāru*, Ass. *nuāru*) “singer, musician”  
ān (Akk. *ānu*) “sky, heaven”, “God of Heaven”
- [e]: mušen, *mu-še-en-nu* [mušennu] “bird”, sign name for HU, MUŠEN
- [ē]: ēn (Akk. *ēnu*) “en priest”
- [i]: apin (Akk. *epinnu*) “plough”  
bukin (Akk. *bukinnu*) “trough”  
sikil, in šúm-sikil (Akk. *šumsikillu*) “garlic”
- [ī]: kīd (Akk. *kītu*) “reed mat”
- [u]: dub (Akk. *tuppu*) “tablet”  
huš, *hu-uš-šu* [huššu], sign name for HUŠ
- [ū]: nūn, <sup>d</sup>E<sub>4</sub>-nun-na (Akk. *\*E/Anūnakū*)

Note: Not <sup>d</sup>A.NUN.NA = *\*Anunnakū*; the Old Bab. contracted form E<sub>4</sub>nukkū can be explained only as the product of -n(a)k- > -kk-, and not of *\*-nn(a)k-* > -kk-.

būr (Akk. *pūru*) “(watertight) vessel”

The question of Akkadian (Old Akk. and Old Bab.) [o] and [ō] has been discussed by Westenholz (see above 2.1 note).

The existence of an (original) diphthong [ay] in Sumerian may be inferred from the Hebrew loan form of Akkadian *ēkalu* (< é-gal): *hēkal* < *\*haykal* (also Arabic *haykal* “temple, structure”). The Sumerian word for “father”, OS A (as in A-kur-gal “the father is the great mountain”), OB a-a or a-ya (cf. PSD A/1, 32 ff.), leads one to suppose the form

[ay], [aya] (only the first, however, being a diphthong strictly speaking). The minimal inventory of Sumerian vocalic phonemes would then read: a, ā; e, ē; i, ī; u, ū; (o, ō)

Two notes are, however, needed with regard to our reconstruction:

- (a) It is not always clear, from the spelling, whether [e] or [i] was intended. In the (non-standard) spelling of a curse formula (copy of a Šulgi inscription), en hé-a “whether he can be an en” is replaced by in he-a (TIM 9, 35:19). We are often at a loss whether we should transliterate NI = ni or né, BI = bi or bé.
- (b) Instead of a quantitative opposition short: long, there may have been an opposition of open and closed vowels (such as is the case in modern German).

Ideas of how Sumerian should be pronounced certainly changed diachronically among the learned community of scribes. So, e.g., KU = dab<sub>5</sub> (“to seize”) is glossed da-ab in Proto-Ea 19 (MSL 14, 30), but di-ib in Ea I 156 (MSL 14, 184), yielding our transliteration díb. Cf. correspondingly, PA = sàg (“to strike”), glossed sà-ag in Proto-Ea 490 (MSL 14, 51), but s[i]-ig in Ea I 298 (MSL 14, 191).

It is not clear to the author how this change of vowel came about.

### 3.1.2. Consonants

When trying to establish the (minimal) set of Sumerian consonantal phonemes, we will once more base ourselves on loanwords in Akkadian and on sign-names as the most reliable sources.

For stops (labial, dental, velar), there are three possible types of relation between a Sumerian word (as rendered in the transliteration we derive from Proto-Ea and later lexical sources) and the corresponding Akkadian loanword:

#### a) labial stops

- a1) P' : P      apin     : *epinnu* “seeder plough”  
                       pisan     : *pis/sannu* “box”
- a2) B : P      barag    : *parakku* “dais”  
                       bala     : *palû* “term of office”  
                       dub      : *tuppu* “tablet”

Note: For P' etc. see Gelb 1961<sup>2</sup>, 39 (below).

- a3) B : B      not attested

## b) dental stops

- b1) T' : T    not attested  
 b2) D : T    du                    : *tuppu* "tablet"  
                  kid                   : *kītu* "reed mat"  
                  ù-ne(-e)-dug<sub>4</sub> : *unetukku* "letter"  
 b3) D : D    é-duru<sub>5</sub>(A) : *edurū* "village"  
                  saĝ-dili       : SAG-*dī-lu-û* "(single head =) bachelor"

## c) velar stops

- c1) K' : K    kar                   : *kāru* "quay"  
                  kiri<sub>6</sub>               : *kirū* "palm grove"  
                  kid                   : *kītu* "reed mat"  
 c2) G : K    gala                  : *kalū* "cantor"  
                  engar               : *ikkaru* "tenant farmer"  
                  é-gal               : *ēkallu* "palace"  
                  barag              : *parakku* "dais"  
                  ù-ne(-e)-dug<sub>4</sub> : *unetukku* "letter"  
 c3) G : G    ga-na               : *gana* "hey, now then"  
                  aga                  : *agū* "tiara"

Gelb 1961<sup>2</sup>, 39 dealt with the relation of Sumerian stops and Akkadian spelling before, in, and after the Old Bab. period. He started from a binary system, b/p : p', d/t : t', g/k : k', assuming an original opposition of indiscriminate voiced/unvoiced versus unvoiced post-glottalized stops. Gelb supposed a "sound shift" to have taken place in Old Bab., and he visualized his theory in a chart:

Before Old Bab.			Old Bab.	Old Bab. and Later	
Written	Phoneme	Sound	Sound Shift	Phoneme	Sound
BA	b/p	p	p > b	b	b
PA	p'	p'	p' > p	p	p
DA	d/t	t	t > d	d	d
TA	t'	t'	t' > t	t	t
GA	g/k	k	k > g	g	g
KA	k'	k'	k' > k	k	k

Gelb's chart does not take into account the more complicated, triple, relations revealed by Sumerian words and their loans in Akkadian. While we will not be able definitely to prove our theory, we may at least point to the fact that a triple (or even more ample) set of stops is well attested in world languages, e.g., unvoiced : voiced : unvoiced post-glottalized/unvoiced velarized; or unvoiced unaspirated : voiced unaspirated : unvoiced aspirated. We will only give two examples:

- 1) Akkadian: p/b/-; t/d/ṭ; k/g/ḳ (Q).

Here, ṭ and Q cannot be defined more closely, because we are unable to say whether ṭ and ḳ/Q were post-glottalized stops (as in modern Ethiopic languages) or velarized stops (as in Arabic).

- 2) Georgian: p/b/p'; t/d/t'; k/g/k'.

p', t', k' are here post-glottalized stops.

For a more than quadruple set, cf. Sanskrit p/ph/b/bh; t/th/d/dh; k/kh/g/gh; with additional cerebral stops ṭ/ṭh/ḍ/ḍh.

Despite this demonstration of possibilities, we have to admit that most aspects of the phonetics and phonology of Sumerian stops remain subject to doubt.

Apart from stops, we depend to a very high degree on Akkadian evidence for the other phonemes. What is offered below may only be part of a more developed system.

There are three nasals: labial [m], dental [n], and palatal(?) [ḡ]:

m:	zà-mi	: <i>sammû</i> ("praise") "harp"
	lu-lim	: <i>lulîmu</i> "stag" (Kulturwort?)
n:	na-û-a	: <i>narû</i> "erected stone" (with inscription), "stele"
	ù-ne(-e)-dug <sub>4</sub>	: <i>unetukku</i> "letter"
	eren	: <i>erēnu</i> "cedar" (Kulturwort)

Note: As for final [M] and [N], the loanword evidence is sometimes in contradiction with Sumerian spelling and/or lexical glosses. In spite of ezeN : *isimnu* "festival", the Ur III genitive of ezeN is indicated by -(m)a; cf. niḡ-ezeN-ma "festival accessories". AN is used both for the name of the "sky (god)", An, genitive an-na, and for the copula, -am<sub>6</sub>, spelled A.AN = àm from Sargonic times onward (A.AN being contracted from contextual -a'am = nominalizer -a + copula [m]).

ḡ: The transliteration of this phoneme was first proposed by J. Krecher, HSAO 1 (1967) 87 fn.\*, and further by him in Fs. L. Matouš II (1978) 7-73: "Das sumerische Phonem ḡ". Its spelling characteristics

are mainly use of the syllabograms GÁ (*ĝá*, *ĝe*<sub>26</sub>), ÁG (*áĝ*), MI (*ĝi*<sub>6</sub>). Sumerian loanwords in Akkadian often reflect [*ĝ*] by spelling -n- or -ng- (see below). Moreover, there is a [*ĝ*]: [*M*] correspondence in Emesal words, e.g., *ĝá-ra* “to me” : *Ma-ra*; *ĝál* “exist” : *Ma-al*.

[*ĝ*] occurs in all three positions of the words: initial, medial, final, thus behaving in complete accordance with other consonantal phonemes.

*ĝuruš* “adult male” : Ebla sign name *nu-rí-šúm* (MEE 3 [1981] 198: 46)

*daĝal* “wide”, glossed *da-ĝál*

*balaĝ* “lyre(?)” : *balangu*, *balaggu*

*hur-saĝ* “mountain range” : *huršānu*

Besides [*ĝ*], there also is the combination [*ĝ+g*], and there may have been a difference between [*ĝ*] and [*ĝg*] or [*ĝĝ*] comparable to that between English *singer* and *finger*.

Cf. *engar* “tenant farmer”, glossed *en-ga-ar*, Akkad. *ikkaru*; *nan* = *gar* “carpenter”, glossed *na(-an)-ga-ar*, Akkad. *nangāru*, *naggāru*, where the gloss each time has *GA* = *ga*.

The identification of [*ĝ*] as a palatal nasal would logically complete a nasal series *m*, *n*, *x* (= *ĝ*).

A different description was offered by Th. Jacobsen, ZA 52 (1957) 92 f.: “a nasalized velar pronounced with rounded lips (nasalized labio-velar), approximately *č<sub>w</sub>*”.

There are two liquids: [*l*] and [*r*]; they are, once more, seen through Akkadian “glasses”. Both occur in all three positions.

1: *lú-u<sub>18</sub>-lu* : *lullû* “man”

*la-ha-an* : *laḥannu* “bottle”

*bala* : *palû* “term of office”

*kisal* : *kisallu* “court (primarily of a temple)”

*hé-ĝál* : *he(n)gallu* “abundance”

As for final [*l*], classical Sumerian spelling distinguishes between continuation with -*la* or—more rarely—-*lá*, e.g.:

*ĝál-la* *gibil-lá* (also -*la*); see Krecher 1966, 113 with fnn. 328 f.

*lugal-la*

*lul-la* *líl-lá*

*si-il-la* (*šu*)-*pe-el-lá* (also -*la*); see Attinger 1993, 710–14.

sikil-la  
 šul-la  
 til-la

If in view of this distribution one might be tempted to posit two kinds of [l] : [l<sub>1</sub>] and [l<sub>2</sub>], it must be admitted, on the other hand, that there is no counterpart in the [e] sector: when sikil or lil are continued by [e], spelling is in both cases [LI] = -le, e.g., <sup>d</sup>En-lil-le “Enlil” (ergative).

An as yet unsolved problem of Sumerian phonetics is found in the variation of initial [NU] with [Lu] or [La]. The Ebla spelling of lugal “(big person =) king” is nu-gal ARET 5, 24 ii a; iii 1–5; iv 1–3 paralleled by lugal in 24 i a, ii 1–4, iii 1–4; 26 i a. The negative prefix nu- has a variant la- before prefix ba- (and, secondarily, li- before bi-). The Akkadian loan of nu-banda “foreman” is *laputtû* (*laputtû*) with oldest attestation in Old Bab. (CAD L 98 c 2’)

r: rab : *rappu* “clamp”  
 barag : *parakku* “dais”  
 kar : *kāru* “quay”

Note: Apart from *rappu*, Sumerian loanwords beginning with r- are probably absent in Akkadian (cf. Edzard, ZA 90 [2000] 292 with fn. 2).

A Sumerian phoneme to be distinguished from [r] has been supposed to exist first by Th. Jacobsen, ZA 52 (1957) 93 fn. 1 (d), and then by J. Bauer, “Zum/dr/-Phonem im Sumerischen”, WO 8 (1975) 1–9; the ensuing discussion has been summarized by J. Black, RA 84 (1990) 108 f., 111, and note, with more literature, Attinger 1993, 143. The argument is the presence of spelling (or glossation) variants with either D or R-syllabograms, e.g., na-RÚ-a “implanted stone” = “stele”, with Akkadian loanword *narû*, but na-DI-a TIM 9, 35:2, 12 (cf. CAD N/I, 364 lex.).

The symbol [ř] has been introduced (in order not to confuse it with Czech ř), but—in contrast to [ĝ], no general agreement has so far been found: is it a single phoneme or rather a consonantal cluster (DR)? We tentatively adopt [ř]:

ř: řû “to implant, build” (formerly separated as dù and řû).  
 kuř<sub>5</sub>(TAR) “to separate”

The (original) existence of a phoneme (or of two phonemes?) [H] in Sumerian may, again, be inferred for various reasons. [H] is here used as a symbol rather than an exactly defined sound, but [h] has a good chance.

- a) *é-gal*, *ēkallu*, “palace” is reflected by *hkl* in Ugaritic and by *hēkal* in Hebrew (see also above 3.1.1). This leads us to suppose an original \**hē* or \**hay* for Sumerian “house”. In Mesopotamian Old Akkadian *Ē* = ’à is found for Semitic [h] (I. J. Gelb, *MAD* 2<sup>2</sup> [1961] 88 f.), in Ebla both for [h] and [ḥ] (M. Krebernik, *ZA* 72 [1982] 220 f.).
- b) The Hebrew name of the Tigris, quite evidently a Mesopotamian loan, is *Ḥiddeqel* with initial [ḥ], whereas we only know an Akkadian form *Idiglat*. The town <sup>d</sup>*ĪD*<sup>ki</sup>, *I-da*<sup>ki</sup> (Old Bab.), *URU I-di* (Middle Bab.) (RGTC 2 104 f.; 3, 135 f.), classical *Is*, still exists as modern *Hīt* on the Euphrates. Apparently, initial [h] survived in the modern name. Whatever the etymology of the name, there is some chance that Sumerian “river” originally sounded [hid].
- c) The Akkadian syllabogram *ú* is used, in Ugaritic, for [hu] as in *Ú-PI* = *hu-wa* “he” in a Sumero-Akkadian-Hurrian-Ugaritic quadrilingual lexical text: J. Nougayrol, *Ugaritica* 5 (1968) 245: no. 137 ii 28’. This usage of *Ú* for [hu] probably goes back to the spelling of Amorite PNs (cf. M. P. Streck 2000, 241), and it may reflect Sumerian [Hu] for *ú* “grass”.
- d) Sumerian nominal and verbal bases ending (at least in our transliteration) in a vowel absorb a following -e (of the ergative), -e(-ne) (personal pl.), or -e-dè (verbal suffix), sometimes noting a plene vowel instead of [e]: *ama-a* “mother” (ergative) instead of \**ama-e*; *lú-ù* “person” (erg.), *ama-ne* “mothers”, *ugula-ne* “overseers”. There are, however, cases where this rule does not hold: *gala-e-ne* “cantors”, *ì-lá-e(-ne)* “he (they) will pay” (note the unconventional spelling *i-la-i* in Mari, ARM 8, 48:9).

When Irikagina of Lagaš contrasts the “women of the past” (*munus-u<sub>4</sub>-bi-ta-ke<sub>4</sub>-ne*) with the “present/nowadays women” (*munus-u<sub>4</sub>-da-e-ne*) (Ukg. 6 iii 20’ and 23’), we have a regular genitive compound in the first case: [munus-ubita-(a)k-ene], but an adjectival compound in the second case: [munus-uda-ene], lit. “women-(in the day =)today-pl.”.

Here, *u<sub>4</sub>-da* (locative) is used like an adjective. After the locative [uda], the [e] of [ene] is not absorbed or elided. This can only mean that there was some kind of hiatus between the locative designation [a] and the pers. pl. ending [ene]: [munus-uda'ene].

This admittedly slender evidence may lead to the conclusion that after a vowel the [e] of certain morphemes was not absorbed or elided, if there was a “barrier”, audible, but not visible in our transliterations. We propose to note that supposed barrier by [H]: *galaH-ene*, *i-láH-e*, *munus-udaH-ene*.

Akkadian preserved the common Semitic unvoiced velar fricative [ħ], as in *a-ħu-um* [aħum] “brother”. We transliterate [ħ] in Sumerian whenever words are glossed by syllabograms *ħa*, *ħé*, *ħi*, *ħu*, *aħ/iħ*, *úħ*, disregarding the crescent below the [ħ]. Still, we may be sure that the [ħ] of the Akkadian loanword in Sumerian, *puħrum* (*pu-úħ-ru-um*) “assembly” was pronounced like, or very close to, Akkadian [ħ]. We may, furthermore, rely, as usual, on Sumerian loanwords in Akkadian, where Sumerian [ħ] is rendered by Akkadian [ħ]:

*hur-saĝ* : *ħuršānu* “mountain range”

*he-ĝál* : *ħe(n)gallu* “abundance”

*bahar* : *paħāru*, *paħħāru* “potter” (the *-ħħ-* of Akkadian is due to the assimilation of the word to the Akkadian pattern *parrās-* (cf. Arabic *faħħār*)

*ki-mah* : *kimāħu*, *kimahħu* “(greatest place =) grave”

These correspondences do not imply, however, that in all Sumerian occurrences our transliterated [ħ] was identical in sound (or close to it) with Akkadian [ħ]. There may have been voiced and unvoiced variants which escape us.

We will be brief on Sumerian sibilants, because this group of sounds is already difficult for us to define in Akkadian, where we have no exact idea about the identity (and possible diachronic change) of [z, s, š, š, š]. It is all the more difficult even to approximate the Sumerian values.

Z: *zà-mi* : *sammû* “lyre”

*ezen* : *isinnu* “festival”

*a-zu* : *asû* “physician”

S: *kisal* : *kisallu* “courtyard”



- ús : *ûsu* “guideline, behaviour”  
 hur-saĝ : *huršānu* “mountain range”  
 saĝĝa : *šangû* “main temple administrator”  
 énsi(-k) : *iššakku* “city ruler, governor” (the Akkadian *-akku* ending is most probably due to the restitution of the Sumerian genitive particle [ak]; see also below nu-ěš : *něšakku*)  
 dub-sar : *tupšarru* “scribe”  
 šà-tam : *šatammu* “temple administrator”  
 nu-ěš : *něšakku* (a high-ranked priest) (for the Akkadian ending *-akku* see above, énsi(-k))

The rather complicated correspondences between Sumerian forms and their rendering in Akkadian loanwords reminds us of the stops:

z : z		d : d
z : s	and	d : t
s : s		t : t

The evidence becomes even more difficult to judge because of word-initial or word-medial correspondence s : š as in hur-saĝ : *huršānu*. From this, A. Falkenstein, ZA 42 (1934) 152–54, had concluded there had been (diachronically) different “Lehnwortschichten”, and he also noted, p. 153, fn. 2, cases where word-initial sibilants of identical words were registered with [s] or [š] by scribes. Later, in 1959, he proposed the existence of Sumerian [š] in order to explain “irregular” sibilant correspondences (1959, 24).

If accepted this would yield this tentative chart of Sumerian consonantal phonemes:

p'	p	b	m				
t'	t	d	n	l	(l <sub>2</sub> )	r	ř
k'	k	g	ĝ				
š	(š?)						
	s	z					
*H	h						

Our transliteration in this grammar will, however, follow traditional values and will not note p', t', or k'.