

CHAPTER I

PHONOLOGY

It is extremely difficult to reconstruct the phonological system of any dead language, especially if it is an isolated one and is expressed through a borrowed writing system, created for rendering an absolutely different language. This is the case with the Elamite language. For this reason, the system of phonemes presented below is very approximate.

1. VOWELS

1.1. The vowels reconstructed for Elamite are the following: *a*, *i*, *u*, *e* (or *ə?*) and, perhaps, *o* (?). The opposition by length was not known to Elamite.

1.2. The vowel *a* is revealed in the cuneiform signs containing this vowel. Its presence is also proved by the use of the same signs in the Akkadian and OP borrowings containing *a*: Akk. *Bābili* = El. *ba-bi-li*, OP *apadāna* = El. *ha-ba-da-na* etc.

1.3. *i* is revealed in the signs containing *i*. These signs sometimes alternated with the signs containing *e*: *-mīl/-me*, *hūpirri//hube*, *pili-//bela-*. From this fact Paper concluded the absence of *e* in Elamite¹⁵.

i (as well as *e*) was contracted before *-a*: *-ni-a >-na*, *-me-a >-ma* etc. In AE the ME *i* was also reflected by the *u*-signs and vice versa: ME *in-tikka* = AE *in-tukki-me*, ME *turu-* = AE *tiri-*, ME *ntka-* = AE *nuku-*, OE *ni* = ME *ni*, *nu* = AE *nu*. It is likely that this interchange could be explained by the articulatory peculiarities of the phonemes *u* and *i* in Elamite: *i* might have been labialized and *u* fronted.

1.4. *u* is revealed in the *u*-signs and *ú*. Although cases of their interchange are attested (*da-a-ja-u-iš//da-a-ja-ú-iš*), the use of two different signs in the Elamite writing system, with its simplifying tendency, raises the question of whether the sign *ú* reflected *u* or another phoneme.

1.5. *e*. As noted above, alongside the *i*-signs, signs containing *e* were used. Based on the fact of their interchange in the same stems and words, Paper postulated the absence of the phoneme *e* in Elamite. There are, however, cases proving the existence of a minimal contrast: *tetin* "adornment, carving" - *titen-ra* "liar"¹⁶.

¹⁵ H.H. Paper, *PMRAE*, 16.

¹⁶ Paper traces these words back to the root meaning "to fashion", which seems doubtful.

The final *i* and *e* were probably neutralized which may be concluded from the alternation -*me//mi*, the spelling *hube* alongside *hypibe*, *hypimer* etc.¹⁷

1.6. The presence of the phoneme *o* in Elamite is even more doubtful, although it cannot be completely ruled out. Maybe one of the two signs (*u*, *ü*) denoted this phoneme.

2. CONSONANTS

2.1. The opposition voiced : unvoiced was not peculiar to Elamite. It is evident from the fact that the signs denoting consonants of the same localization series irrespective of voice were used to express one and the same phoneme, as well as from the spelling of foreign words and proper names: *ip-še-man-ba* and *ti-ri-man-pi*, containing the plural marker *-p*, *hal-pi-iš* and *hal-be-in-da* (different forms of the verb "to kill"), Akk. *Bābili* = El. *ba-pi-li*, OP *Bagābigna* = El. *ba-ka-pi-ig-na*, OP *kapautaka* = El. *qa-ba-u-[da-ka]* "blue".

Some words were, however, written with signs containing only a voiced or a voiceless consonant: *pari-*, *kusī-*, but *duhi*, *bali* etc.

In the Elamite orthography double spelling of consonants was common. Based on the fact that single and geminated spelling of consonants often varied, Paper came to the conclusion that gemination had no phonetical significance¹⁸.

However the fact that alongside words in which single and double spelling varied, there were others with only geminated or single spelling and that in the OP and Akkadian borrowings the voiceless consonants were denoted by double spelling, whereas the voiced consonants were spelled without gemination, led Reiner to the conclusion that graphical gemination did not result from redundant spelling, especially as the Elamite script tended to simplification. According to Reiner, geminated spelling reflected, probably, tense, strong, phonetically voiceless consonants in contrast to their weak, lax correlates without voice opposition, which were denoted by single spelling¹⁹.

In the initial position the tense phonemes were probably denoted by voiceless consonants, cf. the pair with the minimal contrast *k* : *g* : *kiri* "goddess" : *giri* "vow?".

2.2. OBSTRUENTS

2.2.1. The labial stops were denoted by signs containing *b* or *p*. The pronunciation of these phonemes being not quite clear, they are designated conventionally as *p* (lax) and *p'* (tense).

2.2.2. The dental stops *t* and *t'* were denoted by the *d*- and *t*-signs.

2.2.3. The velar stops *k* and *k'* were designated by the *g*-, *k*- and *q*-signs.

¹⁷ A similar phenomenon was peculiar to Hurrian and Urartian where the reduced final vowel was denoted by signs containing *i* and *e*.

¹⁸ H.H. Paper, *PMRAE*, 7.

¹⁹ E. Reiner, *EL*, 111. It should be noted, however, that the tendency to simplify the Sumero-Akkadian syllabary in Elamite, as well as other cuneiform languages, was mainly manifested in eliminating the polyphony of the signs. But the use of signs redundant from the phonological standpoint was not alien to Elamite, cf. the broad use of the *h*-signs in NE and AE. This by no means is counter to Reiner's conclusion, though.

In NE the locutive classifier *-k* was often spelled *h*: *u Attahamiti-Insusnak šak Hutrantepti-ha//qa*. It is not clear whether this spelling reflected the spirantisation of this stop in certain positions.

On the other hand, the OP *x* was rendered by the *k*-signs, cf. *harakka* = OP *Arxa*, *Hakkamariš* = OP *Haxamāniš* etc.

2.3. SPIRANTS

2.3.1. Elamite had a velar fricative phoneme *h* rendered by the signs denoting the Akkadian phoneme *h*. It differed from the Semitic velar fricative *x* and was probably a weak guttural consonant. By the end of the ME period this phoneme had disappeared. In NE and AE the *h*-signs alternated with the signs reflecting vowels, both in Elamite words and in borrowings: *hu-ud-da* // *ú-ud-da* "I did", 1 p. sg. personal pronoun *ú//hu*, *i-da-ka* // *hi-da-ka* "with", *ha-ba-da-na* (< OP *apadana*) "pillared hall".

2.3.2. The dental fricatives and affricates were denoted by the signs containing *š*, *s*, *š* and *z*.

- a) The *š*-signs²⁰ in Elamite rendered the OP *š*, *s*, *c* and more seldom *θ*, *č*, *z* (*ša-ak-ka* = OP *Saka*, *šu-šá-an* = OP *Čušā-*, *áš-šu-ra* = OP *Aθurā-*, *ma-ra-iš-mi-iš* = OP *Uvarazmī*, *ši-iš-šá-an-tak-ma* = OP *Čiçantaxma-*) and the Babylonian *š*, more seldom *s*, *š/z* (*šu-šá-an* = Bab. *š u-š á-an*, *mi-iš-da-ad-da* = Bab. *ú-mi-iz//š -da-a-tu ba-ir-ša* = Bab. *pa-ar-su*).
- b) The *s*-signs in Elamite often alternated with the *š*-signs (the former were mostly used in later texts): OE *sudet* = ME *šutme*; OE, ME *Simut* = ME, NE *Šimut*. Besides that, the alternation *t//š//š* is attested: *tel//še//si-im-ti*. This interchange proves that the phoneme rendered by the *s*-signs was an affricate.

The *s*-signs in Elamite corresponded mainly to the non-palatalized phonemes *θ* and less frequently *z* in OP (*si-ka-ap* = OP *θika*, *su-iš-sa* = OP *Zūza-*) and to *s*, *z*, in Babylonian (*sa-ad-da-ku-iš* = Bab. *sa-at-ta-gu-ú*, *su-iš-sa* = Bab. *zu-ú-zu*).

The *z/š*-signs were used to designate the OP *č*, *j* and *z*. There are cases of alternation *z//š* (*Anšan* // *Anzan*). From this alternation and the designation of the OP *č* and *j* by the *z/š*-signs it follows that they rendered a bifocal (palatalized) affricate (*č*).

Thus, the *s*- and *z/š*-signs were used for expressing both sibilant and bifocal affricates. However, there is not enough evidence to establish whether Elamite had non-palatalized sibilant affricates or if for lack of such phonemes in Elamite the OP and Babylonian sibilants were rendered as *č* in Elamite. However, were it so, the OP interdental fricatives and the sibilant *z* would have been denoted rather by the *š*-signs, used both for a sibilant and a bifocal fricative, than by the signs reflecting a bifocal affricate. Although not very conclusive, this fact speaks for the existence of a sibilant affricate *c*, alongside *č* in Elamite. The difference between the phonemes denoted by the *s*- and *z/š*-signs is not clear. According to D.W. McAlpin²¹, they went back to the PED *c*. Anyway, the contrast between them was not strong, if we take into consideration the frequent alternation of the *s*- and *z/š*-signs. From the fact that in AE the *s*-signs rendered the OP *θ* and *z*, whereas the *z/š*-signs

²⁰ According to I.M. Diakonoff (*Afrasian Languages*, Moscow, 1988, 37), these signs in the Akkadian cuneiform were used for all the historical non-affricates, whereas the *s*, *š*- and *z*-signs designated affricates.

²¹ D.W. McAlpin, *PEDEI*, 91.

reflected the OP *c̄* and *j* (alongside less frequent *δ* and *z*, though), we may assume that at least in AE the *s*-signs were mainly used to render the phoneme *c(?)*, while the *z/s*-signs designated *c̄*.

Thus, in Elamite the dental spirants *s*, *š* and the affricates *c(?)* and *c̄* may be reconstructed.

2.3.3. The lack of special cuneiform signs for labial fricatives and sonants makes it difficult to ascertain the presence of these phonemes in Elamite.

The presence of at least one of them is proved, however, by the interchange *m/w* (PI) in *Sim//wepalarhuhpak* and *ligam//we* and by the alternation *m/p* in the word *tem//pti*. The OP *v* was designated by the *m*-signs and *f* by *pir* and *pár*.

This evidence is not, however, sufficient to define whether there were two phonemes (a fricative and a sonant) or only one. R.T. Hallock interpreted the initial *u* as *w*²². But it should be noted that *u* was usually followed by *uC*. And as the words with the initial vowel were often spelled V-VC in the Elamite script (cf. *a-ak*, *a-ap*), the spelling *u-uC* must have meant *uC*, not **wuC*.

2.4. SONANTS

In Elamite the sonants *m*, *n*, *r*, *l*, rendered in script by the corresponding signs, may be reconstructed with certainty.

2.4.1. Nasal sonants.

a) *m*. In some words only double spelling of this phoneme is attested: *amma*, *summu*, *šamme*; others are only written with single *m*: *huma-*, the verbal suffix *-ma-*. In a number of words both double and single spelling are attested. In some cases the double spelling of *m* results from the assimilation of *n* to the following *m*, cf. the negative particle *imme* < **in-me*.

It is likely that by double spelling a strong, tense phoneme was rendered, as was the case with the stops, cf. I.2.1.

b) *n*. It is difficult to establish whether the contrast tense : lax was known to this phoneme. Unlike *m*, as well as *r* and *l* (see below), not a single word with regularly doubled *n* is attested. There are, however, words with single spelling only (*zana*, *lani*, *hani*, the plural suffix *-nu-*), the cases of alternating spelling were still more frequent.

Before the plural marker *-p n* was labialized (*n > m*), it was assimilated to the following *l* and *m*: *ullina* < **un-lina*, *imma //e* < **in-ma //e*.

2.4.2. Liquids.

a) Elamite orthography distinguished clearly between the words spelled with double *r* and those written with single *r*: *sarra-* "to collect, to assemble", *sara-* "to divide, to apportion". This must have meant the existence of two distinct phonemes rendered by the *r*-signs. One of them (spelled with single *r*), according to D.W. McAlpin, went back to the alveolar stop **ʂ*, the other (spelled with double *r*) to **r*²³.

²² R.T. Hallock, *PFT*, 774.

²³ D.W. McAlpin, *PEDEI*, 93.

In spite of McAlpin's opinion, the contrast *r* : *rr* is observed not only in AE, but in ME as well, which is evident from his own etymologies.

The existence of a non-trilled *r* in Elamite is proved by the fact that the name of the Akkadian deity *Lagamal* was spelled *Lagamar* in Elamite, whereas the Elamite deity *Ruhuratir* appears in the form *Lahuratil* in Neo-Assyrian. Further proof of the non-trilled character of this phoneme is the interchange of the forms *šari-* and *šanu/i-* of the verb of being²⁴.

- b) The *l*-signs in Elamite must have also expressed two different phonemes. This is revealed from the consistent distinction of geminated and single spelling, cf. the minimal pair *hali-* "to ornate(?)": *halli-* "land"²⁵. McAlpin traces these phonemes back to PED. One of them (spelled with geminated *l*) originated from the retroflex *l*, whereas the other went back to the alveolar *l*. The existence of the retroflex *l* in Elamite is proved by the alternation *š//l* in *nuš//lki*, if we deal here with one and the same word, of course.

ll sometimes resulted from the assimilation of *n* with the following *l*. Moreover, it was used to designate the Akkadian *ll*. In these cases *ll* was probably pronounced with tension or length.

2.5. SEMI-VOWELS

2.5.1. In spite of a considerable number of words with *j*, the existence of the semi-vowel *y* is doubtful. To denote *j* the cuneiform signs *ja*, as well as the spellings *i-ja*, *a-a* were used. In AE which had lost the phoneme *h*, *j* was also denoted by *hV*: *ja-u-na* = OP *Yauna*, *ku-ši-ja* = OP *Kūšiya*, *ú-i-ja-ma* = OP *Uyamā-*, *da-a-ja-u-//da-a-ú-//da-a-hu-* = OP *dahyu/ā-*, *ja-mi-iz-za //i-ú-mi-za //hi-u-mi-za //ú-mi-iz-za*.

j is mostly attested in foreign words and proper names. In Elamite words it is attested before the particle *-a* after *i* and, evidently, functions as a glide. In the initial position it is attested only in two words: *ja-re-en-tu*, alongside more usual *erentum* and *ja-ak*, alongside *a-ak*²⁶. These spellings are, perhaps, scribal mistakes.

It may be assumed from the aforesaid that *j* in Elamite was the non-syllabic allophone of *i*, rather than a separate phoneme.

2.5.2. There is no evidence proving the existence of the sonant *w*, either, cf. I.2.3.3.

It is more likely, that the Elamite *u* was the non-syllabic allophone of *u*.

3. DIPHTHONGS

For lack of semi-vowels Elamite could not have had diphthongs, either.

Only two of them, *ja* and *ay*, are attested in Elamite words. *j* in *ja*, as noted above, was a glide between *i* and *a*. As to *ay*, its pronunciation is not clear. It is attested in the word

²⁴ The idea of the alveolar character of the Elamite *r* was expressed by E. Hamp (*Word* XIII, 1957, 502), who based his assumption on Paper's notice about the articulatory closeness of the elements *tr* and *in*, used confusedly in AE.

²⁵ Evidently, it is not correct to trace *halat* "brick" to *hal* "country".

²⁶ The pronunciation [ak] is ascertained by such forms as *zu-lu-ka-ak*, *hu-ma-ka-ak*, where the conjunction *ak* joins the preceding verb.

mayri- "to seize", often alternating with *marri-*. The only word with the consistent spelling *a-y* is *zaymin*. The consistency of *ay* in this word may be explained by its position before a labial vowel denoted by *m*. The OP diphthong *ai* was rendered in Elamite by a simple vowel: OP *daiva* = El. *da-a-ma*, OP *axšaina* = El. *ak-še-[na]*, OP *mai⁹* = El. *-me*, OP *haraiva* = El. *har-ri-ma*.

4. PROSODIC TYPE

The prosodic type of Elamite is not clear. The fact that the final *i* was neutralized (reduced), cf. *hupell/hupibe*, proves that the final syllable was not stressed. From the fact that the vowel of the second syllable in disyllabic words, expanded by suffixation, was usually lost it may be assumed that the first syllable was stressed²⁷.

5. SYLLABLE

The main type of the Elamite syllables was (C₁)V(C₂): *mu-run*, *nuš-giš*, *ti-ri-ma-nun*, *e-re-en-tum4*.

Syllables of the (C₁)VC₂C₃ type, which are the result of certain phonetical processes were also common, cf. [tirimanp] (graph. *ti-ri-man-pi*).

²⁷ Cf. F. Grillot-Susini, JA 282/1, 1994, 15.