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On Some Elamite Signs and Sounds*

By JAN TAVERNIER, Leuven

1) Elamite HAR and its values

The generally assumed tendency towards simplification of the Elamite script¹ also led to the elimination of polyphony, with the result that only few Achaemenid Elamite signs still had more than one reading. TUM could be read as *tu*,² (cf. section 2) and *ip*,² BE could be read as *be* and *bad*.³ Also the values *har* and *mur* of the sign HAR remained in use, which has led to confusion as to the right readings of words and proper names containing HAR. This section aims at studying the sign HAR and some spellings containing it.

The oldest El. attestation of HAR⁴ is situated in an inscription of Untaš-Napiriša (ca. 1260–1235 BC). This text from Tchoga Zanbil (MDP 41 58:5), mentions *har.sag*, “stone head” (of a mace), with *har* meaning “stone”.

STEVE⁵ believed that *har*, “stone” was a logogram, as it was, at least in the Achaemenid period, always accompanied by the determinatives AŠ and MEŠ. The discovery of a trilingual inscription on a statue of Darius I (DSab), however, where *har-in-na*, “made of stone” is mentioned without its determinatives,⁶ has proven that *har* is a pseudologogram. Although VALLAT has

* Abbreviations are cited according to the system used in *Northern Akkad Project Reports* 8 (1993), pp. 49–77. It should be emphasized that the PFNN citations are drawn from copies of HALLOCK's working transliterations and not from the original documents.

¹ Cf. WEISSBACH 1911, p. xxxix; REINER 1969, pp. 68–69; GRILLOT-SUSINI/ROCHE 1987, p. 9.

² *Ip* almost exclusively occurs in the expression *taš-šu-ip(-o)*, “troops” (ElW 297–298; STEVE 1992, p. 150 no. 207), but also in the anthroponyms ^{HAL}Su-*ip-ra* (Ir. *Jufra-; TAVERNIER 2007, p. 222 [4.2.904]) and ^{HAL}Še-*ép-ri* (ElW 1149) and once, instead of *ip*, as the suffix following a number (3-*ip*; ElW 764).

³ *Be* is attested frequently in Achaemenid Elamite texts (e.g. *te-um-be-e* [DSz 22]) and in Elamite renderings of Iranian proper names and loanwords (e.g. ^{HAL}Har-be-ra for *Arbērā- < Arbairā-; TAVERNIER 2007, p. 53 [3.2.2]). *Bad/t* is not very frequent in Achaemenid Elamite itself, but occurs many times in Elamite renderings of Iranian proper names and loanwords (e.g. ^{HAL}kar-ma-bat-taš for Ir. **garmapada-*; TAVERNIER 2007, p. 85 [2.4.11.11]).

⁴ STEVE 1992, p. 401.

⁵ STEVE 1967, p. 102.

⁶ Another irregular writing of *har* is *har*^{MEŠ} (PF 533:6).

pointed this out,⁷ he makes a mistake when he wants to read *mur* instead of *har*. His reading is based on the low frequency of *har* in contrast to the high frequency of *mur*, e.g. as stem (*mur*, “world”, nearly always written ^{AS}mu-ru-un). Nevertheless *mur* is not that widespread as VALLAT assumes and therefore a reading *mur*, “stone” is not quite probable⁸. Accordingly the Elamite word for “stone” must be *har*.

The next attestations come from Tall-i Malyan. In texts excavated in this late Middle Elamite site (TTM 8:2, 10:2, 73:6', 10', 75:5, 86:5) the sign HAR denotes a ring (Akk. *šawiru*). This meaning of HAR is only attested in these texts, except for one attestation in a Neo-Elamite administrative text from Susa (MDP 9 94:1). HAR also occurs in Tall-i Malyan in the lexeme har-ši⁹, (1) “storehouse”, (2) “commissariat” (TTM 68:4,8, 69:1,4, 72:3,5, 80:2,3,5, 84: rev.6', 89:10, 90:3,4, 93 i 3', 94:1-4, 96:7,9, 98:1, 104:6,7), a word which is to be identified with Neo- and Achaemenid Elamite a-raš.¹⁰

The certainty on the status of *har* corroborates that in Middle Elamite the sign HAR had a phonetic value /(h)ar/. This value is also clear with regard to the Neo-Elamite and the Achaemenid period, as is shown by the following examples:

- 1) Neo-Elamite ba-har, “the good one” (in ^{AS}Ba-har.ak-ši-ri) is the same lexeme as Middle El. ba-ha-ar-ra, ba-ha-ri, ba-hi-ir, ba-hi-ri and pa-hi-ir.¹¹
- 2) Neo-Elamite ^{AS}Ha-har-ku indicates the same toponym as Neo- and Achaemenid Elamite ^{AS/BE}Har-ku-^o,¹² with HA being a phonetic complement.
- 3) Neo-Elamite har-gal-um is an Akkadian loanword (*hargallum*, “locking ring”¹³).
- 4) Neo-Elamite har-ka₄-ma-an-na / har-ka₄-man-na refers to Akk. *argamannu*, “purple”.¹⁴
- 5) Neo-Elamite sa-har-pi vs. sa-ar-pi and Ach. El. sa-ra-pi-iš.¹⁵
- 6) Neo-Elamite ^{GIS}Šá-al-har vs. Middle Elamite ^{GIS}Šá-al-ha-ar.¹⁶

⁷ VALLAT 1974, p. 164; ElW 629.

⁸ ElW 623.

⁹ The syllabic character of this spelling was pointed out by STOLPER (1984, p. 99) on the basis of har-ri-[] (TTM 108:3'), which could perhaps be restored har-ri-[ši].

¹⁰ STOLPER, apud ElW 638.

¹¹ ElW 120. The pronunciation of this lexeme is not clear, due to the spellings suggesting two pronunciations: /pahar/ and /pahir/. Possibly HAR may render /hir/ and thus have a value *hir*.

¹² ElW 589 and 631.

¹³ JUSIFOV 1963, p. 244.

¹⁴ SCHEIL 1907, p. 60; JUSIFOV 1963, p. 244; ElW 633.

¹⁵ ElW 1058; HENKELMAN 2003, p. 206.

¹⁶ ElW 1112-1113.

- 7) Achaemenid Elamite ^mHar-ba-ia is the transliteration of Old Persian A-r-b-a-y- (Arabāya-, “Arabia”).¹⁷
- 8) Achaemenid Elamite har-ra-na renders Akk. *ḥarrānu*, “way, road”.¹⁸
- 9) Achaemenid Elamite ^mHar-ri-ia-ra-um-na is the transliteration of Old Persian A-r-i-y-a-r-m-n- (Aryāramna-).¹⁹

During the Neo-Elamite period two more values came into use for the sign HAR: *kín* and *mur*. The first one is only attested in the Neo-Elamite Omen Text,²⁰ more precisely in the word *kín-ni-en*, “it will happen”. This reading is certain because of the variants *ki-ni-en* and *kin-ni-en*, occurring in the same text.

The value *mur* is not frequently attested either. The only relevant lexeme is *murt*-²¹, “to put; to dwell”.²² The various forms of this base are spelled *mur-°* or *mu-ur-°* clearly indicating a reading *mur* for HAR. In addition there seems to have taken place a graphic evolution: spellings beginning with *mu-ur-°* occur in Middle and Neo-Elamite texts (in particular the Omen text), while spellings with *mur-°* only occur in Neo-Elamite (EKI 75–76) and Achaemenid Elamite.

¹⁷ KENT 1953, pp. 169–170; HALLOCK 1969, p. 691.

¹⁸ ELW 634.

¹⁹ HALLOCK 1969, p. 692; ELW 518.

²⁰ Published by SCHEIL 1917, pp. 35–36. The text is dated to ca. 640 (Tavernier 2004, pp. 35–36 and 39).

²¹ The attested forms of this root are: (1) *murta(h)*, “I settled, I put”: spelled *mur-da* (DNA 4; DSe; XPh 28), *mu-ur-ta-h* (MDP 41 45:3, 50:2) and *mu-ur-táh* (EKI 10a:4, 10b:4, 10c:4; MDP 41 10:4, 13:3, 15:3, 17:3, 19:3, 27:4, 41:4, 45:3); (2) *murtak*, “living in, residing”: spelled *mur-da-ak* (DB ii 5, iii 2), *mur-tuk* (PF 1980:16, 2070:8; PFNN 2196:21), *mur-tuk-ka*, (PFNN 2196:23). According to KOCH 1981, p. 238n.19 the form means “deployed in, working in”; (3) *murtakni*, “he may dwell, settle”: spelled *mur-tak-ni* (EKI 76:18); (4) *mur-tampi*, “they are settling, dwelling”: spelled *mu-ur-da-am-pi* (RA 14 35:11); (5) *‘murtan*, “he may settle”: spelled *mu-ur-ta-an* (MDP 41 44:3); (6) *‘murtan*, “residence”: spelled *mur-tin* (EKI 76:16) and *mu-ur-ta-an* (EKI 15:5); (7) *murtana*, “having settled”: spelled *mur-da-na* (EKI 76:16); (8) *murtanra*, “one who settles”: spelled *mur-tin-ra* (EKI 76:16) and *mu-ur-ta-an-ra* (MDP 41 44:1); (9) *murtap*, “people dwelling at, residents”: spelled *mur-da-ap* (PF 1852:5) and *mur-da-ip* (PF 2070:28); (10) *murti*, “residence”: spelled *mu-ur-ti* (MDP 41 44:2).

²² No decision is taken here with regard to Neo-El. *mu-taš* (FHE 244:15) and Ach. El. *har* (FHE 249:14). Concerning the first expression JONES and STOLPER (1986, p. 247) read *mu-taš*, although they do not exclude a reading *mu-ur*. Their motives for this reading are (1) the connection with ^{HAL}*muktu tibbe piti mutašni* (BA 4 183 no.5:33) and (2) the fact that the most likely form at the end of a letter-order is an imperative (cf. MDP 36 81 no.3:9). They consider *mutaš* as an imperative of a further unknown verbal base. HINZ/KOCH (ELW 963), however, prefer *mu-ur* and identify it with the second expression, which they (ELW 952) read *mur*. In their opinion *mur* is a substantive meaning “end”. JONES and STOLPER (1986, p. 252) mention a possible link of *har* (in the Achaemenid text) with *araš*, “granary(?)”, but emphasize the problems of such an identification.

Summarizingly the sign HAR had the following values: *har* during the Middle Elamite, Neo-Elamite and Achaemenid period, *kín*²³ in the Neo-El. Omen text and *mur* during the Neo-Elamite and Achaemenid Elamite period. There does not seem to have been a value *hur* for HAR in Elamite cuneiform²⁴. The Akkadian scribes in Susa, however, used this value, e.g. in the month name *huršubum* (spelled *hur-šu-bi-um*, *hur-šu-bu-um*, *hur-te-bu-um* and *hu-ur-šu-bu-um*).

The difficulties resulting from this polyphony are nicely illustrated by a personal name, cited for the first time by GERSHEVITCH²⁵: "Hartikka: **arθika-*, -*ka*-extension of a patron. of a retrenched name **arθa-*, to Av. *arəθa-*, 'business, duty'." MAYRHOFFER²⁶ prefers a retrenchment of a name containing **Arti-*, "share" (Av. *aši-*). HINZ²⁷, claiming that HALLOCK transmitted a spelling ^{HAL}Har-ti-ik-ka₄ to GERSHEVITCH, read this spelling ^{HAL}Mur-ti-ik-ka₄ and considered this to be the Elamite transcription of an Iranian name **Vr̥tika-*, an -*ika*-hypocoristic of **Vr̥ta-*, "hero" (cf. NP *gord*). HINZ/KOCH²⁸ have accepted his analysis and only mention the spelling ^{HAL}Har-ti-ik-ka₄ as a reference point to the — in their eyes — correct reading ^{HAL}Mur-ti-ik-ka₄.

The real spelling of this name, however, is not that what HINZ assumed it was. The text GERSHEVITCH refers to is PFNN 290 and the name under discussion is mentioned in line 14. Its spelling is not ^{HAL}Har-ti-ik-ka₄ or ^{HAL}Mur-ti-ik-ka₄, but ^{HAL}Har-tuk-ka₄ or ^{HAL}Mur-tuk-ka₄. This does not, however, automatically weaken the aforementioned onomastic hypotheses. As both *har* and *mur* occur as values of HAR in Achaemenid Elamite the history of this sign does not help in determining a more plausible reading. That means that the name might still be Iranian **Arθika-* (GERSHEVITCH), **R̥tika-* (MAYRHOFFER) or **Vr̥tika-* (HINZ). Even a fourth Iranian possibility should not be ignored: **Hart-ika-*, "well-nourished", to Av. *harəta-*.

The correct spelling, however, ^{HAL}HAR-tuk-ka₄, opens up a new possibility. The name could very well be Elamite: Murtuk, "the settled one", as past participle of the root *murt-*. The total of possible readings for this proper name is now five: four Iranian ones and one Elamite one. Unfortunately it is impossible to determine which one of these five explanations should be preferred. A weak indication for a reading ^{HAL}Har-tuk-ka₄ could be the occurrence of an anthroponym ^{HAL}Ha-ir-ti-ik-ka₄ (PFNN 577:23), which

²³ CAMERON (1948, p. 159) postulated an Achaemenid Elamite value *kín* in the toponym ^{AS}Kín-da-ri-iz-za-an. Later (1965, p. 175) he changed it into ^{AS}[H]AR-da-ri-iz-za-an. HINZ/KOCH's (ElW 952) reading ^{AS}Mur-da-ri-iz-za-an, however, is the most plausible one.

²⁴ STEVE 1992, p. 158.

²⁵ GERSHEVITCH 1969, p. 184.

²⁶ MAYRHOFFER 1973, 8.884.

²⁷ HINZ 1975, p. 272.

²⁸ ElW 639.

HINZ/KOCH²⁹ consider an Old Persian name, without further explanation. It is, however, plausible to connect this name with the aforementioned *Hart-ika-, “well-nourished”. As there is no evidence pointing to a prosopographical identity of ^{HAL}Ha-ir-ti-ik-ka₄ (PFNN 577:23) and ^{HAL}Har-tuk-ka₄ (PFNN 290: 14), this element unfortunately does not help the scholar in his search for the correct reading and analysis of ^{HAL}HAR-tuk-ka₄.

HINZ/KOCH³⁰ believe to have spotted the lexeme *murt*, “residence” in some anthroponyms, attested in Old Babylonian texts from Haft Tepe, near Susa. These names are Dak-nu-ra-^dMe-en-ra-mur-ta (MDP 22 150:9), Me-ra-mur-ti, “residence for powerful people” (MDP 22 163:24), Mur-ti, “residence” (MDP 14 48:2) and Uk-ku-lu-me(-en)-ra-mur-ti, “the prince (in the) residence is powerful” (MDP 22 162:32, 163:1,19).

Although Old Elamite had no value *mur* for HAR, HINZ/KOCH’s analysis of these names is not necessarily wrong. The texts were written by Akkadian speaking scribes and in Mesopotamia *har* and *mur* were generally used values in Mesopotamia from the Old Akkadian period onwards³¹. On the other hand HINZ/KOCH’s analysis should not be taken for granted either. A name meaning “residence for powerful people” is not very plausible, so a reading har-ti for the element of these names cannot be excluded.

Finally two more forms containing HAR may be discussed here. The first example is unclear: ^dHar-te-[] or ^dMur-te-[], a deity mentioned in the Neo-Elamite administrative texts from Susa (MDP 9 172:rev.7). HINZ/KOCH³² do not express their preferred reading. Concerning the second example they are probably right, when they plead for ^{HAL}Mur-ka₄-pi (PF 1461:2; PFNN 525:8). In their view ^{HAL}Mur-ka₄-pi is an Old Persian name, but more information is nor given. Such a spelling, however, most likely renders Old Ir. *Vṛka-p-i-, an -i-patronymic of a two-stem hypocoristic *Vṛka-p-a- of e.g. *Vṛkapāta-, “protected by the wolf” (Ir *vṛka-, “wolf”).

2) The cuneiform sign TU₄

This sign too had more than one phonological realisation in Elamite. In Middle Elamite its value was *tu*, as is shown by various examples: an-tu₄-uk-ni (also spelled an-du-uk-ni); e-re-en-tu₄, e-re-en-tu₄-um and e-re-tu₄-um

²⁹ ElW 591.

³⁰ ElW 272, 915, 953 and 1212.

³¹ RÖLLIG/VON SODEN 1991, pp. 46–47.

³² ElW 639.

(also spelled e-re-em-ti,³³ e-re-en-tum₄ and e-re-tum₄); é-šir₈-tu₄ (for Akk. *ešertu*, “sanctuary”); ha-áš-tu₄-uk, “honoured” (also spelled áš-tuk, ha-aš-du-uk, ha-aš-ti-ik and ha-áš-tu-uk); hu-tu₄-un-ra, “shatterer” (other forms of this root are hu-tu-uk-na and hu-tu-un); ki-iš-tu₄-um, “grove” (rendering of Akk. *qištu*); ki-tu₄-um-ma, “outer” (also spelled ki-du-um-ma, ku-du-ma, ku-du-um and ku-du-um-ma); ku-tu₄-un, “he will cherish” (also spelled ku-tu-un); pi-tu₄-ma and pi-tu₄-um(-ma), “interior, inside” (also spelled pi-du-um-ma); šu-tu₄-ur, “justice” (also spelled šu-du-ur and [š]u-tu-ur); tu₄-pa-an-ra, tu₄-um-ba-an-ra and tu₄-um-pa-an-ra (also spelled tu-um-ba-an-ra); tu₄-uk, “accepted, received” (also spelled du-ik-ka₄, du-ka₄, du-uk and du-ú-ka₄); tu₄-ni-h and tu₄-ni₄-h, “I gave” (also spelled du-ni-h, du-ni-ha, du-nu, du-nu-h, du-nu-ha and du-ù-ni-h); tu₄-ur, “because of” (also spelled du-ur, tu-ur, tu-ur-ma and tu-ur-na).

This value was retained during the subsequent Neo- and Achaemenid Elamite periods, albeit much less frequently: Ach. El. ha-tu₄-ma, “in” (also spelled ha-at-ma, ha-dam-ma, ha-du-ma, ha-tam₅-ma, ha-ti-ma, ha-tu-ma and ha-tu-na);³⁴ Neo- and Ach. El. pi-tu₄ and pu-tu₄, “kid” (also spelled pi-tú and pu-tú); Neo-El. šu-tu₄-ur, “justice” (also spelled šu-du-ur and [š]u-tu-ur); Neo-El. tu₄-ka₄, “accepted, received” (also spelled du-ik-ka₄, du-ka₄, du-uk and du-ú-ka₄). One El. denotation of an Old Iranian anthroponym also belongs to this category: ^{HAL}Bat-tu₄-iš (also spelled ^{HAL}Bad-du-iš; for *Paθuš).³⁵

During the Neo-Elamite period two new values came into existence: *te* and *ti*. Although the first one is not really attested in Neo-Elamite, one may safely assume that together with a value *ti* a value *te* started to appear. The following forms prove the existence of a value *ti* for TU₄: Neo-El. be-ep-tu₄-ka₄, “defected” (also spelled be-ep-ti-ka₄ and be-ep-tuk-ka₄; ca. 590–555 BC) and pe-ep-tu₄-šá, mentioned in an inscription of Hanne (ca. 625–600 BC);³⁶ Neo-El. pu-uk-tu₄, “assistance” (also spelled pu-uk-ti; ca. 625–600 BC).

The value *te* for TU₄ is only attested in Achaemenid Elamite texts: ^dáš-šá-tu₄-ik-pi, ^dáš-šá-tu₄-ip, ^dáš-še-tu₄-ik-pi, ^dáš-še-tu₄-pi-ik and ^dáš-še-tu₄-pi-ik, the name of the twelfth Elamite month (also spelled ^dáš-šá-te-pi, ^dáš-še-te-ek-pi, ^dáš-še-te-pi, ^{BE}Áš-še-te-pi-ik [an anthroponym] and ^dha-iš-šá-te-ik-

³³ Occurring twice in the Old Babylonian texts from Susa. The ending *-i* is an Akkadian genitive ending (EIW 400).

³⁴ The spelling ha-ti-ma is probably the result of the well-known shift /u/ > /i/ (cf. section 5). It occurs only six times, while the spellings reflecting /atuma/ are attested very frequently. Ha-at-ma is attested twice, ha-dam-ma and ha-tam₅-ma can render both /hatima/ and /hatuma/ (more likely).

³⁵ EIW 173; TAVERNIER 2007, p. 273 [4.2.1291].

³⁶ That this root, a reduplicated equivalent of *pet-*, “enemy (as substantive)”, was pronounced /pepti/ is shown by the Middle El. spellings be-ti-ib-ba/be, be-ti-ir and pi-ti-ir.

ba); ^{AS}A-tu₄-ek, pronounced /Aitek/ (ElW 101) and also spelled ^{AS}A-a-hi-te-ik (spoken /Aihitek/; ElW 13) and ^{AS}A-te-ek; ba-tu₄-ra, “shepherd” (also ba-at-er and ba-te-ra). The existence of this value in Achaemenid Elamite is further confirmed by Elamite renderings of Iranian proper names and loanwords. Examples are: ^{HAL}Bu-ik-tu₄-iz-za (for *Buxtēča-³⁷), ^{HAL}Ir-tu₄-ez-za (for *Rtēča-³⁸), ^{HAL}Iš-(šá)-an-tu₄ (for *Isantē-³⁹), ^{HAL}Maš-tu₄-ez-za (for *Mazdēča-⁴⁰), ^{AS}Ma-tu₄-iz-za (for *Uvādēča-⁴¹), ^{AS}Ma-tu₄-iz-zí(-iš) (for *Uvādēčīš⁴²) and ^{HAL}Pír-tu₄-na (for *Prtēna-⁴³). It is remarkable that Ir. /tu/ is never rendered by TU₄ and that only three times (in one anthroponym, *Paθuš) /θu/ was denoted by TU₄.

A discussion on TU₄ cannot be complete without a study of the root *turu/tiri*, “to speak, to say”, which is written very frequently with this sign. The root occurs from the Middle Elamite period on. The inscriptions of Untaš-Napiriša (ca. 1260–1235 BC), Šutruk-Nahhunte I (ca. 1185–1155 BC) and Šilhak-Inšušinak I (ca. 1145–1120 BC) always have tu₄-ru- (pronounced /turu/), but during the reign of Huteluduš-Inšušinak (ca. 1120–1110 BC) a form ti-ri (/tiri/) appears. Accordingly the root underwent the shift from *u* to *i*, which will be discussed later in this article (section 5).

This does not automatically mean that from that point on the only spelling was /tiri/. The inscriptions of Šutruk-Nahhunte II (717–699 BC) and the Omen text (ca. 640 BC) have only tu₄-ru and one has to wait until the administrative texts from Susa (ca. 590–555 BC) or the Neo-Elamite letters (ca. 590–555 BC) to see another appearance of the spelling ti-ri. In my view there are two possible ways to explain this. The first one is the assumption that for a long period the root “to speak” was both pronounced /turu/ and /tiri/. The second one, however, looks more plausible. As this verbal root was often used in Elamite it should not be surprising that the spelling tu₄-ru became a kind of standard spelling for this root. This would explain the absence of spellings like *tu₄-ru and *tú₄-ru. The pronunciation shifted from /turu/ to /tiri/ in the reign of Huteluduš-Inšušinak, but the fixed spelling remained in use until the Achaemenid period, when the spelling ti-ri became fully generalized. One may not deduce from this that the value /ti/ for TU₄ is already attested in the inscriptions of Šutruk-Nahhunte II, because the standard spelling does not cover the real pronunciation.

³⁷ TAVERNIER 2007, p. 152 (4.2.376). Also spelled ^{HAL}Bu-uk-te-ez-za.

³⁸ TAVERNIER 2007, p. 296 (4.2.1471). Also spelled ^{HAL}Ir-te-ez-za.

³⁹ TAVERNIER 2007, p. 219 (4.2.884). Also spelled ^{HAL}Iš-(šá)-an-te.

⁴⁰ TAVERNIER 2007, p. 245 (4.2.1083). Also spelled ^{HAL}Maš-te-(ez-)za.

⁴¹ TAVERNIER 2007, pp. 76–77 (2.3.48). Also spelled ^{HAL}Ma-te-ez-za.

⁴² TAVERNIER 2007, p. 77 (2.3.49). Also spelled ^{HAL}Ma-te-ez-zí-iš.

⁴³ TAVERNIER 2007, p. 277 (4.2.1319). Also spelled ^{HAL}Pír-te-na.

3) The cuneiform signs NE and NI

The sign NE is attested various times in Elamite texts, but remarkably never seems to have the value *ne*.⁴⁴ Its syllabic values are *bí*, *bil*, *dè* (Old Elamite) and *kúm* (Neo- and Achaemenid Elamite). Only twice⁴⁵ NE could have a value *ne*, but in both cases this is far from sure.

- 1) In TTM 100:2' NE is attested but the rest of the line is lost, so the value of NE cannot be determined.
- 2) In a Neo-Elamite contract (RA 25, 40 no.3:obv.6) a women named 'Nu-me-NE-ru-uš is mentioned among other people. A reading 'Nu-me-ne-ru-uš seems generally accepted,⁴⁶ but is far from certain, since the meaning of *neruš* is not known. As the value *kúm* is attested in Neo-Elamite (Ururu Bronze Tablet obv. 36) a reading 'Nu-me-kúm-ru-uš is equally possible. Nume is an Elamite deity (cf. YOS 11 89:9: 'Nu-me), while *neruš* / *kumruš* is most likely a verbal form (3rd person of a root *neru-* or *kumru-*).⁴⁷

It is relatively certain that Elamite simply did not have a value *ne* for NE. Yet Elamite had a vowel /e/⁴⁸ and consequently a sequence /ne/. The sign the Elamite scribes used to denote this sequence is not NE, but NI, as already noted by some scholars.⁴⁹ This is proven not only by some Elamite writings, but also by Akkadian spellings from Old Babylonian Susa and Haft Tepe, where Akkadian speaking scribes drafted many contracts and used the rules of the Sumero-Akkadian script.

Examples making this clear are

- 1) *Hane-*, "to love", always written ha-ni-° in Elamite texts but ha-ne in an Akkadian royal inscription from Susa (Te-em-ti-hi-ša-ha-ne-eš, MDP 6 23:3).
- 2) *Kune-*, "to flatter": written ku-ni-° in Elamite and ku-ne-° in Akkadian texts.
- 3) The divine name Pinenkir, written Bi-ni-k[ir], Pi-ni-gir, Pi-ni-gir and Pi-ni-kir in Elamite and Bi-ne-en-gi-ir, Pi-ne-gi-ir and 'Pi-ne-gir in Akkadian.

⁴⁴ It is never used in Elamite renderings of non-Elamite words (Akkadian, Iranian, etc.).

⁴⁵ STEVE 1992, p. 150.

⁴⁶ Cf. SCHEIL 1928, p. 40 and ELW 1010.

⁴⁷ As Elamite sometimes inserts a nasal which does not belong to the stem, *kumruš* could denote *kuruš*, "he bestowed care" (cf. ZADOK 1995, p. 246).

⁴⁸ BORK 1925, p. 74; FOY 1898, p. 122; HÜSING 1898, p. 15; LABAT 1951, p. 28; GRILLOT-SUSINI/ROCHE 1987, p. 10; STEVE 1992, p. 14; KHAČIKYAN 1998, p. 5; STOLPER 2004, p. 72.

⁴⁹ OPPERT 1879, p. 32; FOY 1898, p. 127–128; HÜSING 1903, p. 58; WEISSBACH 1911, p. xli.

Other indications of a sequence /ne/ are writings such as -ni-e (Achaemenid El. in-ni-e,⁵⁰ Middle El. la-ni-e, Ach. El. zí-la-ni-e, etc.). The precative / op-
 ative suffix, always written with NI, was actually pronounced /ne/⁵¹: Middle
 El. du-ni-h-ši-ni-e, te-la-ak-ni-e, tu₄-ru-uš-ni-e, Neo-El. ti-ri-iš-ni, etc.

The phonemic realisation /ne/ for NI already existed in the Old Elamite
 period, as can be deduced from the writings ha-ni-eš, “he loved”,⁵² ku-ni-
 h-ni, ku-ni-er-ri⁵³ and Bi-ni-k[ir]⁵⁴. This value lasted during all historical
 stages of the Elamite language.

Yet this does not automatically mean that NI had lost its original value /ni/.
 Various spellings indicate a pronunciation /ni/ for NI:

- 1) a-bu-ul gi-nu-ni and a-bu-ul ki-nu-ni: Middle Elamite rendering of
 Akk. *abul kinūni*, “gate of the oven”.
- 2) a-ni-i: Middle Elamite plene writing of a-ni and Neo- and Achaemenid
 Elamite a-nu, “not”. A-ni is also attested in Neo- and Achaemenid Ela-
 mite, albeit only three times.
- 3) ^{AS}Ba-ir-ni-iš (Achaemenid Elamite): rendering of Ir. *Parniš, “old place”,
 a contraction of *Parniya-.⁵⁵
- 4) ^{AS}Bì-it ^d30-iš-ma-an-ni: Middle Elamite rendering of Akk. Bīt-Šîn-
 išmanni, “house of ‘Sin listened to me’”.
- 5) du-ni-en, du-ni-ib-ba and du-ni-ma-ak (Achaemenid El.): forms of the
 root /tuni/, “to give”.
- 6) du-ni-iš-ni: probably pronounced /tunišni/, because Middle Elamite
 had not yet broken writings.
- 7) hu-ni-in, “light”: spoken /hunin/. Cf. no. 6.
- 8) ^{DİŠ}I-in-ni-in-ki and ^{DİŠ}In-ni-ik-ku: Old Elamite toponym, pronounced
 /Innink/. Old Elamite, just like Middle Elamite, had no broken writings.
- 9) la-ni-i-ni, “of silver”: Middle Elamite spelling, with I serving as pho-
 netical marker.

⁵⁰ HINZ/KOCH (ElW 758) argue that the pronunciation of in-ni only became /inne/ from the Neo-Elamite period onwards. Yet they do not give any indications for this. The Middle Elamite pronunciation may as well have been /inne/, but on the other hand the only attestation of in-ni-e is Achaemenid, so the pronunciatonal shift (if there was one) may only have occurred in the Achaemenid period. In the author’s view the pronunciation always was /inne/.

⁵¹ Cf. ElW 316.

⁵² In an Old Elamite incantation from Tello, dated to the first dynasty of Isin (CROS 1910, p. 212 [AO 4325:4,6,21]), i.e. ca. 2017–1793 BC

⁵³ Both *kunihni* and *kunirri* occur in a stela (resp. EKI 70 C:rev. 9 and 12), found in Susa and dating from the time of the Old Babylonian king Hammurapi (first half of the 18th century BC).

⁵⁴ In the so-called Naram-Sin Treaty (EKI 2 i 2), the oldest Elamite text (second half of the 23rd century BC).

⁵⁵ TAVERNIER 2007, p. 391 (4.3.152).

As a result of all this the author proposes to introduce a value *né* for NI,⁵⁶ a value which STEVE⁵⁷ did not include in his syllabary, but which is attested for the Sumero-Akkadian cuneiform writing system.⁵⁸ Inserting such a value will make some confusing transliterations (e.g. ni-en) more logical.

4) The Elamite root *kine-*, “to happen; to arrive”

According to HINZ⁵⁹, who cites examples such as ku-ni-en-na/ni, ki-ni-na, ki-ni-ik-me and kin-ni-en, the El. root *kin-* means “to happen; to arrive”. Thereby he explicitly assigns spellings beginning with *ki-* as well as spellings beginning with *ku-* to this root, explaining this as a result of the well-known shift from /u/ to /i/, which he situates in the Achaemenid period (cf. section 5). ZADOK⁶⁰ accepts this.

HALLOCK⁶¹, however, does not agree with it. He considers the Ach. El. writings ki-nu-ip, kin-né-en, kin-nu-ge, kin-nu-ik, kin-nu-ik-ni and kin-nu-ka₄ as forms of the root *kane-*, “to love, befriend; to approach, come hither”. He has to admit, however, that in that case, there are no good translations for the attestations in PF 1048 and 1681. In addition the spelling ki-nu-ip can hardly be assigned to the root *kane-*.

The various forms belonging to this root, at least as is accepted nowadays,⁶² are arranged chronologically in the following table.

Date	Name	Translation	Attestations
(1) Old Elamite (ca. 2600–1500) ⁶³			
Ca. 1950–1700	Gi-nu-nu		MDP 18 174:rev.5, 183:10
Ca. 1950–1700	Ki-nu-Ri-ri	Riri has arrived	MDP 18 136:2
Ca. 1930–1910	Ki-i-nu-nu ⁶⁴		MDP 10 6:rev.1
(2) Middle Elamite (ca. 1500–1000)			
Ca. 1260–1235	ki-ni-in	Happening, fate, destiny	MDP 41 16:3
Ca. 1145–1120	ku-né-en-na	May it happen	EKI 54 i 103

⁵⁶ Cf. ElW 376.

⁵⁷ STEVE 1992, p. 86.

⁵⁸ RÖLLIG/VON SODEN 1991, p. 27.

⁵⁹ HINZ 1952, pp. 247–249.

⁶⁰ ZADOK 1995, pp. 245–246.

⁶¹ HALLOCK 1969, p. 713.

⁶² ElW s.v.

⁶³ All spellings are anthroponyms and are attested in Akkadian economic texts from Susa.

⁶⁴ Hypocoristic of Kin (ZADOK 1983, p. 102; ElW 479).

Date	Name	Translation	Attestations
Ca. 1145–1120	ku-né-en-ni	May it happen	EKI 54 i 90, i 100, iv 20
Ca. 1000	ki-né-ma-ha	I have realized, made happen	TTM M-1157:12 (cf. ELW 478)
(3) Neo-Elamite (ca. 1000–550)			
717–699	ku-un-nu-uk	They arrived	EKI 74
Ca. 640	ki-né-en	It will happen	RA 14 36:28
Ca. 640	kin-[né-en]	It will happen	RA 14 36:11
Ca. 640	kín-né-en	It will happen	RA 14 36:29
Ca. 640	ku-né-en	It will happen	RA 14 35:7
Ca. 625–600	ki-né-ek-me	Presence	EKI 76:11
Ca. 625–600	ki-né-ma-ha	I have realized	EKI 75:11
Ca. 625–600	ki-né-na	Having arrived	EKI 75:13
Ca. 590–555	ki-nu-šá	He arrived	BA 4 181 no.5:18
(4) Achaemenid Elamite (ca. 550–330)			
521–486	kin-né-en	It will happen	DPf 23
509–494	kin-nu-ik-ni	May it arrive	PF 1856:17
507–497	kin-nu-ka ₄	He / they arrived	PF 860:4, 1048:12–13, 1824:5; PFa 29:42 ⁶⁵ ; PFNN 1122:10, 1507:6, 2264:11, 2269:7, 2271:6, 2393:7, 2409:5:6, 2563:5, 2544:10
501–500	kin-nu-ik	It arrived	PFNN 762:14, 1651:3–4
500–499	ki-nu-ip	They arrived	PFa 22:7–8
500–499	kin-nu-ge	Its course	PF 1681:6

The following spellings of the stem are thus attested: Old Elamite *kin(u)-*, Middle Elamite *kine-* and *kune-*, Neo-Elamite *kine-*, *kinne-*, *kune-* and *kunnu-*, Achaemenid Elamite *kinne-*, *kinnu-* and *kinu-*. They reflect the following pronunciations: Old Elamite /kin/, Middle Elamite /kine/ and /kune/, Neo-Elamite /kine/ and /kune/, Achaemenid Elamite /kine/ and possibly /kune/, as KIN could be pronounced both /kin/ and /kun/.

Immediately one sees that HINZ's attribution of this root to the vocal shift /u/ > /i/ is not tenable. It is inconceivable to have Old El. /kin/ evolve

⁶⁵ Plausible restoration by HALLOCK (1978, p. 128 n.s), based on the occurrence in PFNN 1122.

to /kuni/ and then back to /kini/. Other solutions must be sought for the co-existence of /kin/ and /kun/. First of all the phoneme involved could be an allophone of both /i/ and /u/. Unfortunately this is improvable.

Another possibility is the assumption of vocal harmony. The first vocal of /kin/ might have become /u/ under influence of the preceding vowel. A study of all forms with first /u/ indeed reveals that all but one forms follow a word which has /u/ as its last vowel: ku-ni-en-na follows pi-ni-ik-ku (EKI 54 i 103), while ku-ni-en-ni follows gi-lu (EKI 54 i 90), ik-ku (EKI 54 iv 20) and uk-ku (EKI 54 i 100). Ku-ni-en is the exception, as it follows te-ep (RA 14 35:7), but perhaps the sign KU could in that time be pronounced as /ki/ (cf. section 5). Consequently one may accept that vocal harmony was the cause of the appearance of the forms pronounced /kun/. *Kunnuk* will be dealt with below.

There are two forms with /kin/ which do not correspond with this. *Kinimaha* (M-1157:12) follows *nu*, “for you”, while *kinina* (EKI 75:13) is preceded by *ú*, “I”. The first of these two irregular forms can be explained by assuming that NU could be pronounced /ni/ in the time the Malyan texts were written (cf. infra). As this is, however, still uncertain, the hypothesis that the vocal harmony was not general cannot be excluded.

An at first sight exceptional form is ku-un-nu-uk, certainly pronounced /kunnuk/ and thus contradicting the evolution of /u/ to /i/ and the hypothesis of vocal harmony. Unfortunately its context is not clear and a closer look might help in finding out more on this form. *Kunnuk* is attested in an inscription of Šutruk-Nahhunte II (717–699), more precisely EKI 74:rev.29–30. In the following the various readings of the context (EKI 74:rev.26–30) will be presented and discussed.

1) SCHEIL⁶⁶, without translation and precise distinction of sentences:

15 murun ^mTeppirmi tala kirru šuhipalki za’ru iharak putta šerum itumpaka
tala putta šerum itumpaka ak kalum aha šutruk ak izazza kal ak putta kallaka
kunnuk ba[5 signs] rappak murun ^{as}Za[] ak zalmu aha kupakni.

2) KÖNIG⁶⁷

<i>Zalmu aha kupakni.</i>	My statue will be erected here.
15 murun ^m Teppirmi tala kirru šuhi palkizahru iharak.	(in?) 15 estate(s), (to?) Teppirmi was ... imposed.
<i>Putta šerum itumpaka.</i>	chariot horses, <i>šerum</i> were granted to him.

⁶⁶ SCHEIL 1904, p. 71.

⁶⁷ KÖNIG 1965, p. 154.

<i>Tala putta šerum itumpaka.</i>	(now) riding horses, chariot horses, <i>šerum</i> were granted to him.
<i>Ak kalum aha šutruk ak izazzakal.</i>	untranslatable.
<i>Ak putta kallaka kunnuk.</i>	
<i>Ba[] rappak murun ⁴⁵Za[].</i>	
<i>Ak zalmu aha kupakni.</i>	and my statue will be erected here.

3) HINZ/KOCH⁶⁸

<i>Zalmu aha kupakni.</i>	My statue should be erected here.
<i>15 murun ^mTeppirmi tala kirru šuhi palki zahru i harak.</i>	Tribute, being <i>kirru</i> , <i>šuhi</i> , <i>palki</i> and <i>zahru</i> was imposed to 15 estates of Teppirmi.
<i>Putta šerum i tumpaka.</i>	Again <i>šerum</i> was being granted.
<i>Tala putta šerum i tumpaka.</i>	Again tribute, <i>šerum</i> was being granted.
<i>Ak palum⁶⁹ aha šutruk.</i>	And the warehouse here was checked.
<i>Ak izazza kal ak putta kal laka kunnuk.</i>	And lots of food and again food arrived in consignments.
<i>Ba[tpup] rappak.</i>	At my feet they were fettered.
<i>Mu-ru-un ⁴⁵Za-[].</i>	Estates.
<i>Ak zalmu aha kupakni.</i>	And my statue should be erected here.

Apart from the first part (*ak ... šutruk*) the only certain word in the relevant phrase is *laka*, “it was sent, they were sent”. The translation given by HINZ/KOCH should therefore not be taken for granted. It is plausible that *laka* is the last word of a sentence, indicating that something was sent. As the word after *kunnuk* is broken, it is impossible to determine what kind of word *kunnuk* is, although the restoration by HINZ/KOCH could be right.

It is conspicuous that all phrases of this section end with a passive participle: *kupakni*, *harak*, *tumpaka*, *šutruk*, *laka* or *kunnuk*, *rappak* and *kupakni*. This indicates a certain parallelism, whereby it would be strange for a sentence to end with two participles (*laka* and *kunnuk*). This aspect induces one to consider the word after *murun* a participle. Accordingly a restoration *za-[a]-ak*, the participle of a root *za-*, “to be(come) valuable” (cf. *zak*, “value”), is proposed here.

⁶⁸ ElW 238, 273, 469, 495, 564, 798, 816, 1018.

⁶⁹ The reading and meaning of *palum* are certain, since HALLOCK (1969, p. 674) recognized it as a synonym of Old Ir. **hambāra-*, “warehouse”.

With all this in mind it would not be surprising to see that *kunnuk* does not belong to the root *kin-*, “to happen”. It might as well be a substantive.

The reading of the section then goes as follows:

<i>Zalmu aba kupakni.</i>	My statue should be erected here.
<i>15 murun^m Teppirmi tala kirru šuhi palki zahru i barak.</i>	Tribute, being <i>kirru</i> , <i>šuhi</i> , <i>palki</i> and <i>zahru</i> was imposed to 15 estates of Teppirmi.
<i>Putta šerum i tumpaka.</i>	Again <i>šerum</i> was being granted.
<i>Tala putta šerum i tumpaka.</i>	Again tribute, <i>šerum</i> was being granted.
<i>Ak palum aba šutruk.</i>	And the warehouse here was checked.
<i>Ak izazza kal ak putta kal laka.</i>	Many rations and more rations were sent.
<i>Kunnuk ba[tpup] rappak.</i>	A <i>kunnuk</i> was fettered at my feet (?).
<i>Murun zak⁷⁰</i> (spelled za-a-ak ⁷¹).	The estate(s) became valuable.
<i>Zalmu aba kupakni</i>	And my statue should be erected here.

To conclude this section I would like to present a note on the pronunciation of the second syllable of the forms belonging to this root. Spellings such as Middle El. *ki-ni-in* and *ku-né-en-na/ni* seem to contradict each other, because the former was certainly pronounced /*kinin*/, while the latter was pronounced /*kunen(a/i)*/. Yet *ki-ni-in* occurs only once and the Neo-El. attestations all have °*né-en*, which points to a pronunciation /*kinen*/. Accordingly a pronunciation with /*e*/ must be preferred for all forms (except *ki-ni-in*, which shows that /*e*/ and /*i*/ could sometimes be confused by the Elamite scribes). This further indicates that *NU* could not only be realized as /*ni*/ in the Neo- and Achaemenid periods (cf. section 5), but also as /*ne*/.

5) The vocal shift from /u/ to /i/

As is generally accepted⁷² Elamite /u/ sometimes shifted to /i/, which is, however, not studied all too well and for which various explanations have been proposed. According to Foy⁷³ the shift was limited to /u/ after /n/. With regard to /u/ preceded by /t/ Foy believes that /u/ after /t/ became /ü/,

⁷⁰ The sign before ZA could be the determinative indicating toponyms, but that is far from certain. If it is, then the name of the estate began with Za.

⁷¹ Assuming a plene writing, which is admittedly not very frequent in Elamite. The final phrase on the statue is then a perfect parallel to the first one (also without *ak*).

⁷² HÜSING 1903, p. 58; LABAT 1951, p. 29; GRILLOT-SUSINI/ROCHE 1987, p. 10.

⁷³ Foy 1898, pp. 127–128.

rendered by *i* in the writing system. LABAT⁷⁴, however, is very sceptical and rightfully argues that some aspects of the writing system must be clarified first, before postulating all these phonemes.

GRILLOT-SUSINI/ROCHE⁷⁵ believe that the shift only applied to the final vowel in two-syllabic words, more precisely the passage from *i* to *u* in words with a *u* in the first syllable, which they ascribe to vocal harmony. On the other hand final *u* in some dissyllabic words becomes *i*. They further argue that the latter phenomenon becomes much more frequent in the Achaemenid period and may extend into the first syllable (e.g. *turu/i* > *tiri*, *uzzu/i* > *izzu/i*).

According to DE BLOIS⁷⁶ the signs with vowel-component *u* actually render two Elamite phonemes: (1) /u₁/, an original /o/ which shifted to /u/; (2) /u₂/, which became /ü/ and later /i/ in later Elamite.

KHAČIKYAN⁷⁷ simply generalized this rule: in the Achaemenid period *i* was also reflected by the *u*-signs and vice versa. KHAČIKYAN believes that this interchange should be explained by the “articulatory peculiarities of the phonemes *u* and *i* in Elamite”, as *i* might have been labialized and *u* fronted.

Finally STOLPER⁷⁸ believes in a “common reduced allophone shared by *i* and *u*”, rather than in a vocal shift.⁷⁹ If that were true, however, one would expect forms with original *i* turning into *u*.

It is wise to have a closer look at the examples used by the authors and to discuss other examples to learn more about the precise aspects of this shift and to find out in what way the scholars have been right or wrong.

Scholars have mentioned various examples in support of their theory. It will, however, turn out that some of them are completely irrelevant or that some of them should be used with much caution.

- 1) ME (*h*)*alpu*-, Neo- and Ach. El. *halpa*- and *halpi*-, “to strike, kill”⁸⁰: Middle El. *halpu*- changed into *halpi*- during the Neo-El. period, which points to a vocal shift /u/ > /i/ in Elamite. The spelling *hal-pu-h* will be dealt with later.

⁷⁴ LABAT 1951, p. 29.

⁷⁵ GRILLOT-SUSINI/ROCHE 1987, p. 10.

⁷⁶ DE BLOIS 1994, p.16n.8.

⁷⁷ KHAČIKYAN 1998, p. 5.

⁷⁸ STOLPER 2004, p. 72.

⁷⁹ An allophone or a pronunciation /kə/ could be the cause of the appearance of *ki-du-um-ma* and *ki-tu₁-um-ma* vs. *ku-du-ma* and *ku-du-um-ma* in the inscriptions of Untāš-napiriša (ca. 1260–1235 BC).

⁸⁰ GRILLOT-SUSINI/ROCHE 1987, p. 10.

- 2) (Middle El. *hupšan*, Ach. El. *ipše/i*-⁸¹, “to fear”: a shift /u/ > /i/ can be accepted with regard to this lexeme. According to HINZ/KOCH⁸² *hupše*- is also attested in the toponym Hupšen (Middle and Neo-Elamite). Although the same scholars connect Old El. Hupsana⁸¹ and Neo-Assyrian Hupšal/n with Hupšen, this should not be taken for granted, since a town Hupšal is also attested in texts from Mari.⁸³
- 3) ME *in-tikka* and Ach. El. *in-tukki-me*⁸⁴: KHAČIKYAN used this example to prove that Middle El. /i/ could turn into Ach. El. /u/. Unfortunately her example is irrelevant, since this lexeme (and the other forms of *tik*-, “to want”, not treated by KHAČIKYAN, but mentioned by GRILLOT-SUSINI/ROCHE⁸⁵) never underwent a pronounciational change: it was always pronounced /intikka/. The forms, which are supposed to contain /u/ are all written with the sign TUK.⁸⁶ The latter could certainly be pronounced /tik/, as is indicated by the Elamite renderings of Iranian words: *Dādātika- (El. ^{HAL}Da-da-tuk-ka₄⁸⁷), *Hiθika- (El. ^{HAL}Hi-ut-tuk-ka₄⁸⁸), *Mazantika- (El. ^{HAL}Ma-za-an-tuk-ka₄⁸⁹), *Patikuka- (El. ^{HAL}Bat-tuk-ku-ka₄⁹⁰), *Rātikā- (El. ^{HAL}Ra-tuk-ka₄⁹¹), *Rvantika- (El. ^{HAL}Ru-un-tuk-ka₄⁹²).
- 4) Old, Middle and Neo-El. *muhtu*, Middle El. *muhti*, “sacrifice”⁹³: the Old and Middle Elamite form is *muhtu*, spelled mu-h-du, but in inscriptions of Šilhak-Inšušinak (ca. 1145–1120 BC) the writing mu-h-ti is prevalent. Yet the Neo-Elamite rock inscriptions of Hanne have mu-h-tú and mu-h-hu-du, probably pronounced /muhtu/. Unfortunately there are no Achaemenid Elamite spellings of this expression, which makes it more difficult to study the evolution of it. Alternatively it is also possible that the various spellings reflect a pronunciation /muht/.
- 5) Middle, Neo- and Ach. El. *muši*-, “to count” and Neo- and Achaemenid Elamite *mišin(a)*, “saldo”⁹⁴: STOLPER suggests that this example

⁸¹ HINZ 1952, p. 249.

⁸² EIW 722.

⁸³ STEVE 1987, p. 28.

⁸⁴ KHAČIKYAN 1998, p. 5.

⁸⁵ GRILLOT-SUSINI/ROCHE 1987, p. 10.

⁸⁶ An exception could be *tu₄-uk-ku* (Achaemenid El.), but it is far from sure that this word belongs to the root *tik*- (EIW 381).

⁸⁷ TAVERNIER 2007, p. 162 (4.2.466).

⁸⁸ TAVERNIER 2007, pp. 202–203 (4.2.763).

⁸⁹ TAVERNIER 2007, p. 243 (4.2.1073).

⁹⁰ TAVERNIER 2007, p. 270 (4.2.1265).

⁹¹ TAVERNIER 2007, p. 283 (4.2.1374).

⁹² TAVERNIER 2007, p. 288 (4.2.1410).

⁹³ GRILLOT-SUSINI/ROCHE 1987, p. 10.

⁹⁴ STOLPER 2004, p. 72.

(together with *туру-* / *tiri-*) points to “a common reduced allophone shared by /i/ and /u/”. It is, however, by no means certain that *muši-* and *mišin* are identical⁹⁵, as HALLOCK and STOLPER believe.⁹⁶ If they were, one would expect more spellings beginning with *mi-* in Achaemenid Elamite.

- 6) Middle El. *ni* and *nu*, Ach. El. *nu*, “you”⁹⁷: this is an illustrative example for the shift /u/ > /i/. *Nu* occurs in Middle and Achaemenid Elamite, while *ni* is only attested twice in an inscription of Šilhak-Inšušinak (ca. 1145–1120 BC). Apparently the shift occurred during the reign of this king, since *nu* is also attested in his inscriptions.
- 7) Old and Middle El. *nika*, Neo-El. *nuku* and Ach. El. *nuka*, “we, us”⁹⁸: irrelevant example, since this form was pronounced /nik(a)/ throughout the history of Elamite. Yet it proves that *NU* could be pronounced /ni/ during the reign of Šutruk-Nahhunte II.
- 8) Neo-Elamite *pukti*, Ach. El. *pikta/i*, “assistance”⁹⁹: good example of the shift from *u* to *i*.
- 9) Middle El. *purku*, Ach. El. *pirka*, “end; past”¹⁰⁰: in an inscription of Huban-umena (ca. 1275–1260 BC) *pu-ur-ki-me* is attested, while *pur-ku* occurs in the time of Šilhak-Inšušinak. The Achaemenid texts contain many attestations of both *pi-ir-ka*₄ and *pír-ka*₄.
- 10) ME *šini*^o, Neo- and Ach. El. *šini*^o and *šinu*^o, “to come”¹⁰¹: irrelevant example, that cannot be used to prove a vocal shift. As *NU* could be pronounced /ni/, the verb *šini-* was pronounced /šini/ in all periods of Elamite linguistic history.
- 11) Old(?) and Neo-El. *šuri*, Middle El. *šuru*, Neo- and Ach. El. *širi*, “happiness, prosperity”¹⁰²: it is not certain whether Old El. *šuri* belongs to this root.¹⁰³ The other forms clearly show an evolution *šuru* > *šuri* > *širi*, with the first half of the sixth century BC being the transitional period (in Neo-Elamite letters both *šuri* and *širi* are attested).
- 12) ME and Neo-El. *tallu-* and *talli-*, Ach. El. *talli-*, “to write”¹⁰⁴: this lexeme perfectly fits into the phonological pattern mentioned above. Most Middle El. attestations of this root are written *da-al-lu*^o or *(ta)-ta-al-lu*^o.

⁹⁵ ElW 938.

⁹⁶ HALLOCK 1969, p. 735; STOLPER 2004, p. 72.

⁹⁷ KHAČIKYAN 1998, p. 5.

⁹⁸ KHAČIKYAN 1998, p. 5.

⁹⁹ GRILLOT-SUSINI/ROCHE 1987, p. 10.

¹⁰⁰ GRILLOT-SUSINI/ROCHE 1987, p. 10.

¹⁰¹ GRILLOT-SUSINI/ROCHE 1987, p. 10.

¹⁰² GRILLOT-SUSINI/ROCHE 1987, p. 10.

¹⁰³ ElW 1181.

¹⁰⁴ GRILLOT-SUSINI/ROCHE 1987, p. 10.

Only two times *talli-* occurs: a text of Šilhak-Inšušinak has tal-l[i-ra]-ar-ra. The second attestation ta-li-in (in an inscription of Untaš-napiriša [ca. 1260–1235 BC]) would be the oldest example of the vocal shift /u/ > /i/, if its connection with *talli-* would be certain. It might, however, also be linked with Neo-El. da-li-ib-be, a word which is not clear yet (ElW 273). An argument enhancing this idea is the fact that all forms of *tall-*, “to write” are written with a double *l*.¹⁰⁵ As may be expected all but one Neo- and Achaemenid Elamite forms are *talli*°. The exception is tal-lu-un-ri in the Omen Text, which will be discussed later.

- 13) DE BLOIS¹⁰⁶ mentions ME *tuppi-* and Achaemenid El. *tipi-*, “inscription, tablet” as an example of the shift discussed here, but, given the complexity of the problems surrounding this lexeme, the etymology of it will be discussed in another paper, which is being prepared. In this paper it is not considered a valid example for the shift from *u* to *i*.
- 14) Middle El. and Neo-El. *turu-* and *tiri-*, Neo-El. *turi*, Ach. El. *tiri*-¹⁰⁷: cf. above (section 2) for a discussion on this verbal root. In all likelihood /turu/ became /tiri/ during the reign of Huteluduš-Inšušinak (ca. 1120–1110 BC).
- 15) Middle, Neo- and Ach. El. *ulhi*, Middle El. *ulhu* “dwelling place; room”¹⁰⁸: the usual spelling is ul-hi (attested various times in the Old Babylonian texts from Susa and in Middle, Neo- and Achaemenid Elamite), only once a writing ul-hu appears (in an inscription of Šilhak-Inšušinak). The reason for this aberrant spelling may be lexical, as the possibility exists that *ulhi* and *ulhu* are two derivations from one root *ulh-*. *Ulhi* means “house”, whereas *ulhu* means “room”.
- 16) Middle El. *uzzu-*, Neo- and Ach. El. *uzzi-* and *izzi-*, “to go”¹⁰⁹: this is a very good example to see how the shift worked: from Middle El. *uzzu-* (uz-zu-un, uz-zu-un-ra, uz-zu-un-ta) over Neo- and Ach. El. *uzzi-* (uz-zí-en and uz-zí-h) to Neo- and Ach. El. *izzi-* (iz-zí-iš, iz-zí-iš-da, iz-zí-ma-áš, iz-zí-man-ra, iz-zí-šá). Note the peculiar spelling iz-zu-un in a text of Hanne.
- 17) Middle El. *salmum*, Middle, Neo- and Ach. El. *zalmu*, Neo-El. *zalmi*, Ach. El. *zalman*, “statue”¹¹⁰: this loanword (Akk. *šalmu*) cannot be used in the discussion on the vocal shift /u/ > /i/. *Salmum* and *zalmu* are

¹⁰⁵ There are only two exceptions, both being Achaemenid Elamite: (1) tal-iš, “he wrote” (PT 22:28) and (2) tal-iš-da, “he wrote” (PF 317:11–12).

¹⁰⁶ DE BLOIS 1994, p. 16.

¹⁰⁷ GRILLOT-SUSINI/ROCHE 1987, p. 10; KHAČIKYAN 1998, p. 5; STOLPER 2004, p. 72.

¹⁰⁸ GRILLOT-SUSINI/ROCHE 1987, p. 10.

¹⁰⁹ GRILLOT-SUSINI/ROCHE 1987, p. 10.

¹¹⁰ GRILLOT-SUSINI/ROCHE 1987, p. 10.

probably the reflection of an Akk. nominative, while *zalman* can be pronounced /zalmin/ or /zalmun/.

In addition to the aforementioned examples, there are some more ones, neglected by the scholars:

- 1) ME *apun*, Neo-El. *apun* and *apin*, Ach. El. *apan*, *apin* and *apir*, “them”: the Middle Elamite pronunciation /apun/ evolved to /apin/ in the Neo-Elamite period, although the Neo-Elamite letters contain one spelling ap-un. The spelling ap-pa-an, only attested once, is a scribal error.
- 2) Ur-III Dabubu, Old Babylonian from Susa Tabubu, Neo-Babylonian Dabibi, anthroponym: occurs exclusively in Mesopotamian sources, which reflect a shift from *u* to *i*. The oldest attestation of Dabibi¹¹¹ dates from 611 BC. The name is attested well into the reign of Darius I.¹¹²
- 3) ME *hubun*, Neo-El. *hubin*, “wall”: here too the shift is clearly illustrated.
- 4) Ach. El. *mitun-* and *mutun-*, “horseman”: mostly written *mutun-*, but twice it occurs as *mitun-*. This may illustrate that with regard to some lexemes the shift became active only in a later period.
- 5) Old El. *mul*, Neo- and Ach. El. *mil*, “juice”: here the shift is again well-attested.
- 6) Neo-El. *pitukka*, Ach. El. *pitikka*, “lost”: here the shift is clearly attested.
- 7) Neo-El. *putu*, Ach. El. *pitu* and *putu*, “kid”: *pitu* only appears ten times in the Achaemenid period. Possibly a late start of the shift may be assumed here (cf. *infra*).
- 8) Old, Middle and Neo-El. *rutu*, Middle and Neo-El. *riti*, Neo-El. *ritu*, “wife”: the oldest attestation of this expression is attested in the so-called “Treaty of Naram-Sîn” (ca. 2254–2218; ru₁₄-tu-ni-ri, “your wife”). By the time of Šilhak-Inšušinak a pronunciation /rit/ came into existence, as is indicated by a spelling ri-ti in his inscriptions, next to various attestation of *rutu*. An exception to this seems to be Neo-El. *rutu* in an inscription of Hanne (cf. *infra*). There are no Ach. El. attestations of this lexeme.
- 9) Old Babylonian from Susa *šati-*, Middle El. *šate-* and *šatu-*, Neo-El. *šati-*, Ach. El. *šata-* and *šati-*, “priest; to be priest”: at first sight these

¹¹¹ In an Old Akkadian text (MAD 5 20:3) a spelling Da-ne-ne occurs. GELB (1970, p. 22) reads Da-bí-bí, in which case the name could be connected with Dabibi. Consequently Da-bí-bí would be the oldest attestation of this name and would illustrate that even in the Old Akkadian period Dabubu could be pronounced Dabibi. Nevertheless a reading Da-ne-ne, a hypocoristic of El. *tan*, “obedient”, is preferable, cf. the names Da-ni-ni (Old Babylonian from Susa) and Tan-nu-nu (Neo-El. cf. ZADOK 1983, p. 105).

¹¹² TALLQVIST 1905, pp. 51–52.

forms do not seem to be fine examples of a shift /u/ < /i/. Yet most of the spellings of this root are written with a CVC-sign, of which the vocalic quality is not certain¹¹³. Old Babylonian šà-tin may very well be pronounced /šatun/, Ach. El. šá-tam₆, šá-tan and šá-tin were /šaten/. The only two spellings revealing something on the pronunciation are šá-tu₄-h-ni and šá-te-hu-na. The first is mentioned in an inscription from Untaš-Napiriša (ca. 1260–1235 BC), while the second one appears in an inscription of Šilhak-Inšušinak (ca. 1145–1120 BC). This indicates a transition from /šatu/ to /šate/ during the reign of the latter.

- 10) Neo-El. Šitanu and Šutanu, Neo-Ass. Šutanu, a theonym: as is the case with *mutun*- the shift became active later than the Middle El. period, as is proven by the coexistence of Šitanu and Šutanu in the Neo-El. period.
- 11) Old, Middle and Neo-El. *šup*, Ach. El. *šip*, “divine service”: although initiated only at the beginning of the Achaemenid period, the shift is well attested with regard to this lexeme. The latest attestation of *šup* dates from ca. 585–539 BC (Ururu Bronze Tablet).
- 12) Old Babylonian from Susa Šupupu, Neo-El. Šupipi, an anthroponym: this name is only attested two times, but nevertheless the shift from *u* to *i* is clear.
- 13) Middle El. *tumpa*-, Neo-El. *tumpa*- and *timpa*-, Ach. El. *tu(m)pa*-, “to open”: this lexeme is a bit problematic. The Middle El. forms consequently start with *tum*-, *tu-um*- or *tu₄-(um)*-. So do the forms mentioned in the inscriptions of Šutruk-Nahhunte II. The later Neo-Elamite period saw the introduction of forms with *ti-im* and *ti-um*, the oldest of which is found in the Omen Text (ca. 640 BC), but also retained the forms with *tu*-°. The Achaemenid attestations are all spelled *tu-ba-ka₄*. As a result of this there is no smooth chronological transition from /*tumpa*/ to /*timpa*/. Several explanations can be put forward for this problem: (1) the late spellings reflecting /*tumpa*/ are archaic spellings; (2) the spellings denote an allophone shared by *i* and *u*; (3) the sign *ru* could denote /*ti*/ in the late Neo-Elamite and Achaemenid periods (cf. *infra*).
- 14) Middle El. *uhimma* and *uhinni*, Neo-El. *uhinna*, *uhna* and *uhumma*, Ach. El. *uhima*, “of limestone”: a writing *uhumma* is only attested once, in an inscription of Hanne. It may be a scribal error or an example of *UM* = /*im*/ (cf. *infra*).

¹¹³ GELB 1955, p. 98; ZADOK 1976, p. 213.

It is clear that a shift from *u* to *i* is attested in Elamite.¹¹⁴ It is not connected with a category of consonants (e.g. the stops), but occurs in contact with all consonants. Both initial and second syllable can be affected by it.

The opinions on when this shift started are divergent. According to GRILLOT-SUSINI/ROCHE¹¹⁵ it started in the Middle El. period, while HÜSING¹¹⁶ situates the shift in the Neo-Elamite period. HINZ¹¹⁷ finally believes the shift to have occurred during the Achaemenid period.

The data brought together in the above study allow us to see that the oldest examples of the shift date from the reign of Šilhak-Inšušinak (ca. 1145–1120 BC), cf. *ni*, *ritu*, *šate* and *talli*. It should be noted that these examples are not very frequent and that forms with *u* are still preponderant in the inscriptions of Šilhak-Inšušinak and his successor Huteluduš-Inšušinak (ca. 1120–1110 BC). Only in the second half of the Neo-Elamite period the number of forms with *i* increases.

Some lexemes were only affected by the shift after the Middle Elamite period: *putu* / *pitu*, *šup* / *šip*, *šuru* / *širi*. In other cases it looks as if the scribes deliberately started the shift: Elamite *kut-*, “to cherish, foster”, for instance, always appears as such, but twice, both times in Achaemenid texts, this verbal root is written *kit*. Another example is *kupši*, “goat”, attested very often in the Achaemenid Persepolis Fortification Archive. Yet three times a spelling *kipsi* appears, which indicates that with regard to this lexeme the shift only started to be active during the Achaemenid period. The low number of writings with *i* suggests that the shift was deliberately started.

The shift was not originally limited to the second syllable, as GRILLOT-SUSINI/ROCHE argue.¹¹⁸ The expression *ritu*, “wife” (< *rutu*) is already attested in an inscription of Šilhak-Inšušinak I.

As can be expected, some spellings seem to defy the shift. Although the Omen text (ca. 640) has *halpi*, an inscription of Tepti-Huban-Inšušinak (ca. 550–530) mentions *halpuh*. The same king also used *uzzin* in his texts, while the administrative texts from Susa (ca. 590–555) already have *izz-*. The stela of Atta-hamiti-Inšušinak, a king of Susa in the beginning of the Achaemenid period, has *uzzih*. As it is likely that this stela has an archaic pattern,¹¹⁹ the spelling may be considered an aspect of this pattern. *Halpuh* and

¹¹⁴ In fact Elamite is not the only language showing such a shift. Greek too has it: the original /u/ is now pronounced /i/ (JANNARIS 1897, p. 47; MIRABEL 1969, p. xv).

¹¹⁵ GRILLOT-SUSINI/ROCHE 1987, p. 10.

¹¹⁶ HÜSING 1903, p. 58.

¹¹⁷ HINZ 1952, p. 249.

¹¹⁸ GRILLOT-SUSINI/ROCHE 1987, p. 10.

¹¹⁹ TAVERNIER 2004, p. 25.

uzzin too may be archaic (royal inscriptions sometimes have an archaizing tendency).

Not all such spellings need to be archaic, however. The inscriptions of Hanne (ca. 625–600) contain various forms with *u*, where *i* could be expected: *izzun* (EKI 75:24), *pitukka* (EKI 75:23), *pukti* (EKI 75:12, 76:10, 76F:3–4), *puktu* (EKI 75:6, 17) and *rutu(ri)* (EKI 76:3, 7, 76I). A plausible, but still uncertain explanation for this is that the shift only reached the region of Mālamīr (where Hanne's inscriptions come from) later than the region of Susa. One may consider this as an aspect of "Mālamīrian", an Elamite dialect. Alternatively these spellings could corroborate the hypothesis that in some cases *u*-signs could represent spoken /i/ (cf. infra).

The shift discussed above had its consequences for the Elamite graphic and phonological system. It is well-known that the sign NU had two phonetic realizations in the later periods of the Elamite linguistic history, /nu/ and /ni/.¹²⁰ This is proven by Elamite renderings of non-Elamite words as well as by Elamite writings. Examples of NU = /ni/ are

- 1) du-nu-h, "I gave" (Neo-El.; ca. 620–585): formerly (Middle Elamite and early Neo-Elamite) written du-ni-h.
- 2) ^{BE}Hu-ban-nu-kaš (Neo-El.; 7th Century BC): spelled ^mHu-ba-ni-ga-áš, ^mHum-ba-ni-ga-áš, ^mHu-um-ba-ni-ga-áš, ^mUm-man-i-ga-áš, ^mUm-man-i-gaš, ^mUm-man-ni-ga-áš and ^mUm-man-ni-gaš in Neo-Assyrian texts.
- 3) ^{BE}Ma-nu-nu (Neo-El.; ca. 590–555): in Old Akkadian and Neo-Assyrian texts this name is written (^m)Ma-ni-ni.
- 4) Nu-ik-kás-su-um-me (Achaemenid El.): renders Akk. *nikassu*, "reckoning".
- 5) ^dNu-šá-an^{MEŠ} (Achaemenid El.): rendering of the Akkadian month name *nisanu*.
- 6) Tan-nu-nu (Neo-El.; ca. 590–555): the same name appears in Old Akkadian as Da-ni-ni.

Examples of NU = /nu/ are

- 1) (1) ba-nu-iš: Elamite rendering of Ir. **bānuš*, "splendour" in names such as **Ātrbānuš*, **Bānuš*, **Čiçabānuš*, **Čiθrabānuš*, **Hadābānuš*, etc.
- 2) du-nu-uš¹²¹: attested in an inscription of Šutruk-Nahhunte II, i.e. in the period before the emergence of broken writings. Accordingly uš points to a pronunciation /uš/ and not /š/.

¹²⁰ OPPERT 1879, p. 32; FOY 1898, p. 127; HÜSING 1903, p. 58; WEISSBACH 1911, p. xli.

¹²¹ This is a peculiar spelling, because the usual pronunciation of this verbal stem was /tuni/, as is indicated by various other spellings.

- 3) ^{HAL}kur-nu-(ik)-kaš-be and ^{HAL}kur-nu-ka₄: renderings of **kṛnūka*- < OP *kārnūvaka*-, “stonemason”.
- 4) man-nu-iš and ma-nu-iš: El. renderings of Ir. **vānuš*, “loving” in names such as **Drdavanuš* and **Tāgavanuš*.
- 5) ^{AS}Rāš-nu-ma-ut-ti-iš: rendering of Ir. **Rašnuvatīš*¹²².
- 6) te-nu-um: Elamite rendering of Akk. *dēnum*, “(legal) decision”. Attested once in an inscription of Šutruk-Nahhunte II and four times in the Elamite versions of the Achaemenid Royal Inscriptions.

As is the case with some other graphic or phonological changes within the Elamite languages the Neo-Elamite period is the transitional period. During the Middle El. period NU was always pronounced /nu/ and NI /ni/ or /ne/. The oldest attestation of NU = /ni/ seems to be *nu-ku*, “we, us”, in an inscription of Šutruk-Nahhunte II (717–699 BC), although it is not impossible that the inhabitants of Anšan used the new pronunciation already around 1000 BC. In a text from Anšan (TTM M-1157:12) *kinimaha*, “I realized” follows *nu*, which could be pronounced /ni/, due to vocal harmony (cf. section 4).

The other Neo-Elamite texts contain many attestations of this aspect, which has become general during the Achaemenid period. The sign NI continued to serve as an indication for /ni/, but only few examples from the Achaemenid period are known (cf. section 3).

Now that the phonological aspects of NU have been clearly established, one could wonder whether NU is the only *u*-sign to express a sound with /i/. It would be logical if other *u*-signs too could render /Ci/, an aspect which has been pointed out with regard to already one other sign: TU₄ (cf. section 2). At this stage the Elamite renderings of Iranian proper names and loanwords come into play. Various spellings ending in Cu-iš most likely render Iranian names and words ending in /Ciš/ and /Cīš/.

- 1) The Elamite spelling ^dha-ši-ia-du-iš (PFNN 820:13–14) renders the Iranian month name **āçiyādīš*, as is clear from the related spellings ha-(iš)-ši-ia-ti(-iš) and ha-ši-ia-taš.¹²³ **Āçiyādīš* is a contraction of **āçiyādīya*- (inscriptional Old Persian a-ç-i-y-a-di-i-y-). This spelling is certainly not an error for ha-ši-ia-ti-iš, as SCHMITT¹²⁴ argues.
- 2) ^{AS}Ha-u-ti-ia-ru-iš (DB ii 45) stands for **Autiyārīš*,¹²⁵ the contracted equivalent of **Autiyāriya*-, the name of a district in Armenia. The name is attested in inscriptional Old Persian as A-u-t-i-y-a-r-.

¹²² TAVERNIER 2007, p. 394 (4.3.183).

¹²³ Cf. TAVERNIER 2007, pp. 81–82 (2.4.11.1).

¹²⁴ SCHMITT 2003, p. 22 n. 44.

¹²⁵ TAVERNIER 2007, p. 93 (3.2.5). HINZ/KOCH (ElW 652) believe that ^{AS}Ha-u-ti-ia-ru-iš indicates Autiyāra-.

- 3) ^{HAL}Ir-taš-du-iš (PFNN 732:3–4) is a denotation of the anthroponym *Rdastiš, “prune”.¹²⁶ *Rdasti- is also attested as a loanword in the spellings ^{GIŠ}ir-taš-ti(-iš).¹²⁷
- 4) ^{HAL}Ka₄-mu-ia for *Kāmiya-, an -iya-extension of a retrenchment of a name containing *kāma-, “desire, wish”.¹²⁸
- 5) ^{AŠ}Ku-ra-an-du-iš (PF 2077:17) for *Kurāntiš < *Kura-vant-ia-, “family”.¹²⁹
- 6) ^{HAL}Ma-za-en-du-iš (PFNN 2452:2–3) renders the same name as ^{HAL}Ma-za-an-ti-iš and ^{HAL}Ma-za-en-ti-iš,¹³⁰ i.e. *Mazantiš, an *i*-patronymic of *Mazanta-, “great”.¹³¹
- 7) ^{HAL}Šā-ri-su-iš (PF 1695:2) as well as ^{HAL}Šā-ri-iz-zí-iš are renderings of *Sāričiš (< *Sāričiya-, a hypocoristic of *Sāra-, “head”¹³²).
- 8) ^{HAL}Šu-iš-šā-ma (PF 1515:8–9) denotes Ir. *Čiçava-, a two-stem hypocoristic of *Čiça-vahu-, “of good lineage”.¹³³

Two explanations may be presented:

- 1) The function of Cu (or the other signs involved) is only to render /C/ (e.g. DU for /d/), in which case one is dealing here with a very faint trace of alphabetization of the Elamite cuneiform writing.
- 2) Parallel to the tendency to pronounce NU as /ni/ or /ne/ and TU₄ as /ti/ or /te/, other signs of the type Cu could be pronounced /Ci/.

In my view the second explanation is the most plausible one and should be accepted. Moreover some Elamite spellings too seem to corroborate this, although complete certainty is impossible to obtain. For instance, Neo-El. ki-iz-za-ka₄ and ku-iz-za-ka₄, “blessing” both appear in the inscriptions of Hanne (EKI 75–76). Their occurrence may be an indication for a pronunciation /ki/ of the sign KU, but it might as well be that one sees here the transition from /kuzzaka/ to /kizzaka/. Achaemenid Elamite lak-ki-ik-ra and lak-ku-ik-ra, “he who passes through” may reflect the same phenomenon, as well as Ach. El. mi-ut-li vs. mu-ut-li, “bruised grain” and Ach. El. zí-ku-ka₄ vs. su-ku-ka₄. The fact that spellings with *u* appear less frequently than the others may be an argument in favour of this theory.

This study partly supports KHAČIKYAN’s assumption that *u*-signs could represent *i*-sounds in later Elamite. Yet there is no need to accept such a

¹²⁶ Cf. TAVERNIER 2007, p. 288 (4.2.1414).

¹²⁷ HINZ 1973, pp. 84–85 and 1975, p. 205; TAVERNIER 2007, p. 460 (4.4.20.14).

¹²⁸ TAVERNIER 2007, p. 224 (4.2.923).

¹²⁹ HINZ 1975, p. 154, reconstructing *Kurvanta-; TAVERNIER 2007, p. 387 (4.3.133).

¹³⁰ ELW 906.

¹³¹ Cf. TAVERNIER 2007, pp. 243–244 (4.2.1074).

¹³² Cf. TAVERNIER 2007, p. 309 (4.2.1569).

¹³³ Cf. TAVERNIER 2007, p. 155 (4.2.404).

general point of view. It is merely acceptable that apart from NU the following signs were possibly involved in such an evolution: DU, KU, MU, RU, SU, TU and TU₄.

Finally other *i/u*-alternations, not discussed by the authors, may be explained without appealing to the vocal shift discussed in this section:

- 1) Old El., Old Babylonian from Susa, Middle El. and Neo-El. *haštuk*, Old Babylonian from Susa *haštik*, “honoured”: as *haštik* is only attested one time and all other forms of the root *haštu-*, “to honour” are written (*h*)*ašdu-* or *haštu-*, one may assume a scribal error resulting in *ha-aš-ti-ik*.
- 2) Old Babylonian (from Susa) *hubpum*, Middle El. *hubpin*, “tub”: the spellings *hu-h-pu-um* and *hu-úh-pu-um* are most likely Akkadianized forms.
- 3) Old El., Old Babylonian from Susa and Middle El. *hurti*, Old and Middle El. *hurtu*, “subject people”: the pronunciation of this expression was probably /hurt/.
- 4) Middle and Neo-El. *imme*, Middle El. *umme*, “not”: at first sight this lexeme is a perfect example of the vocal shift /u/ > /i/. The other forms of this base, however, are all spelled with /i/ and occur from the Old Elamite period onwards. According to HINZ/KOCH¹³⁴ *um-me* was the result of vocalic harmony with the preceding *ú-ri-[pu]-up*.
- 5) Middle El. *masi* and *mašum*, “terrain, site”: *mašum* is most likely an Akkadianized form.

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¹³⁴ ElW 1232.

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