Assibilation in Hittite and Related Problems[1]

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I. Introduction

The past three decades have witnessed revolutionary advances in Hittite studies, more than half a century after the decipherment of that fascinating language by Bedřich Hrozný. These advances have, first of all, taken place in Hittite cuneiform paleography, that is, the periodization of texts into Old, Middle and Neo-Hittite compositions, either written on original tablets, or preserved in later copies. No one doubts the importance of philological works in linguistic science, and, in fact, the recent notable development of Hittite historical grammar and its contributions to Indo-European comparative linguistics are predictable consequences of painstaking efforts to determine the relative chronology of manuscripts[2]. The dating of Hittite manuscripts offers a basis for two separate goals; first, to clarify the inner-Hittite history of grammatical categories, and second, to revise the grammar of reconstructed Proto-Indo-European in the light of the oldest attested stage of Hittite.

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[1] This study is an expanded version of my lecture delivered at the Ford Foundation Workshop on Indo-European Historical Linguistics and Poetics (Harvard University, March 1999). I am grateful to participants of that workshop for a number of useful comments and suggestions. Some of the ideas in this work were earlier presented at III. Internationaler Kongress für Hethitologie (Çorum, September 1996) and the Ninth Annual UCLA Indo-European Conference (UCLA, May 1997).

[2] On general problems in establishing the relative chronology of manuscripts, see Heinhold-Krahmer et al. (1979).

Hittite handbooks written over a generation ago paid little attention to the fact that Hittite has its own inner history extending over almost half a millennium. Without distinguishing between the successive synchronic stages of the language, any analysis of Hittite phonology, morphology and syntax would be misleading. A standard handbook by J. Friedrich (1960), for example, often gives more than one form for a specific position in verbal and nominal paradigms. The juxtaposition of several forms creates the impression that they are in free variation. Our knowledge of the relative chronology of Hittite texts is now far more advanced. The result is that what was earlier seen as unpredictable fluctuation in orthographic, morphological and syntactic usage is in fact largely attributable to the differing ages of the texts. We are now in a position to construct a real historical grammar of Hittite. It would be no exaggeration to say that the grammar of the language must be entirely rewritten in the future.

It is indispensable for comparative studies to determine the earliest attested grammatical features of each language, on which basis the proto-language is reconstructed, and to provide a historical explanation for the changes from the hypothetical proto-languages to the attested daughter languages without causing a serious conflict with the subsequent history of each language. The development of Hittite philology plays an important role in this respect as well, because without it the grammar of Old Hittite cannot be established at all. A number of systematic works of Indo-European implications have appeared in recent years which reflect recent advances in textual chronology[3]. Although their subjects vary among phonology, morphology and syntax, the methods followed in these works are basically the same: they distinguish Old, Middle and Neo-Hittite manuscripts and seek to provide an explanation for grammatical phenomena established for the earliest chronological stage of Hittite in an Indo-European context.

It has been known since the earliest days of Hittitology that Hittite was not the

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[3] Representative studies of this kind have been reviewed in Yoshida (1990: 4).

only Indo-European language of ancient Anatolia. Despite the long recognition of an Anatolian family, there has been little work on reconstructing the features of Proto-Anatolian, whether in phonology or morphology. Scholars have generally treated Proto-Anatolian as a sort of backward extension of Hittite, abstracting a number of Hittite innovations from the features of Old Hittite and calling what was left Proto-Anatolian. The main reason for this state is evident: our knowledge of the minor Anatolian languages was so limited for many years that these languages seemed of little use for historical reconstruction. However, a number of breakthroughs have drastically changed the situation, and we are now in a position to see a real comparative grammar of Anatolian. Languages that were little more than names a quarter-century ago now have more unearthed documents, and in some cases edited texts, grammars and dictionaries: Cuneiform Luvian, Hieroglyphic Luvian, Lycian, Palaic, Lydian, etc.

The present investigation takes full advantage of the above mentioned recent achievements in Hittite and Anatolian studies. Below we will be concerned with the phenomenon of so-called assibilation and an effort will also be made to elucidate a host of related phonological and morphological problems that have never been treated in a satisfactory manner.

II. Assibilation of **d* before **i*

There is no positive evidence that Hittite scribes employed the signs including voiced and voiceless stops in a contrastive manner to distinguish between voiced and voiceless values; e.g., *i-ú-ga-an* ~ *i-ú-kán* "yoke", *e-eš-du* ~ *e-eš-tu* "let him be". On the other hand, they probably made consistent use of orthographic single and double stops in intervocalic position to indicate lax and tense (or short and long) qualities, respectively. From a historical viewpoint single stops continue Proto-Anatolian voiced stops and double stops Proto-Anatolian voiceless stops; e.g., *ú-i-ta-a-ar* "water (plural)"

< *u̯éd-ōr vs. *lu-uk-KI-IZ-zi*[4] "he lights" < **lou̯k-éye-ti*, *ú-e-ku-un* /wḗkun/ (< PA *u̯ḗg- < PIE *u̯ék -) "I asked" vs. *ú-e-IK-kán-zi* /wékkantsi/ (< PIE *u̯ék-) "they ask"[5]. The contrast between single and double spellings is generally observed in the case of laryngeals, fricatives and sonorants as well[6]. An immediate question to be raised at this point is whether the same contrast is found between intervocalic single *-z-* and double *-zz-*[7]. In this section I will discuss this problem by analyzing the distribution of 3 sg. present active endings of *mi*-conjugation, *-Vzzi* and *-Vzi*.

To begin with, I would like to call general attention to a situation in the Neo-Hittite bronze tablet[8], where the following relevant forms are attested.

(1) *i-i̯a-zi* "makes" II 18, III 5, III 8, *u̯a-ak-ši-i̯a-zi* "is lacking" II 74

(2) *ti-IT-ta-nu-zi* "places" II 39, II 40, *u̯a-aḫ-nu-zi* "turns" III 59, III 75, IV 20, *te-IP-nu-zi* "belittles" III 72, IV 18

(3) *la-aḫ-ḫi-i̯a-IZ-zi* "makes a campaign" I 62, III 40, *ú-IZ-zi* "comes" II 3, *pa-IZ-zi* "goes" II 5, II 15, III 55, *ma-la-a-IZ-zi* "approves" II 90, *ma-la-IZ-zi* II 92, *ta-pár-RI-i̯a-IZ-zi* "determines" II 94, III 73, *ḫa-an-ti-i̯a-IZ-zi* "arranges" III 62

In (1) forms with the sequence *-azi* are listed, in (2) forms with the sequence *-uzi*, and in (3) forms with the sequence *-IZ-zi*. Note that the forms with *-azi* and *-uzi* are all

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[4] Ambiguous *Ce/i* and *e/iC* signs are transcribed in capitals to achieve a measure of objectivity.

[5] As for lenition rules which operated after accented long vowels and between unaccented vowels at a Proto-Anatolian stage, see Eichner (1973: 53ff.) and Morpurgo Davies (1982/83: 245ff.).

[6] See especially Melchert (1994: 21ff.).

[7] Melchert (1994: 23) states that "On the other hand, there is no contrast between intervocalic *-z-* and *-zz-*."

[8] Cf. Otten (1988).

characterized by single *-z-* in the ending, whereas the *-IZ-zi* forms with an ambiguous *IZ* sign in (3) have double *-zz-* without exception. The distribution of *-z-* and *-zz-* here will be most naturally explained by the so-called "simplified spellings". Since the cuneiform signs *az* and *uz* are relatively complicated, Hittite scribes must have spelled the ending without *az* or *uz* sign. In the case of *-IZ-zi*, however, they had no motivation for omitting *IZ* because *IZ* is a very simple three-stroke sign[9].

The situation is quite different in Old Hittite texts, where unomitted spellings *-az-zi* and *-uz-zi* with double *-zz-* are also used. In table (4) below are summarized frequencies of the final sequences of 3 sg. present active *mi*-verbs of vocalic stem which are attested in a representative sample of Old Hittite texts[10]; they are classified by dates[11].

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[9] The same observation was earlier made by Cowgill apud Melchert (1994: 23). Cowgill considered that the sequence *-IZ-zi* was regular in every case, which, however, is counter to facts, as we will see below.

[10] The texts examined are *CTH* (= Emmanuel Laroche's *Catalogue des textes hittites* (1971), Paris: Klincksieck, and its supplement in *Revue hittite et asianique* 30 (1972)) 1, 3, 8, 9, 15, 25, 272, 291, 292, 336, 416, 536, 538, 539, 540, 627, 631, 645, 649, 654, 662, 663, 665, 669, 670, 733, 744, 750, 752 and several uncatalogued texts. Appendix A includes a representative sample of Old Hittite verbs in *-Vzzi* and *-Vzi* listed under the *CTH* number and in appendix B these verbal forms are classified by stem.

[11] In assembling a corpus of Hittite documents, the distinction between "text" and "manuscript" is of crucial importance. By "texts" we mean unitary compositions and by "manuscripts" specific tablets on which texts are written. In the following discussion I will distinguish eight kinds of manuscripts different from each other in date and nature:

OH = Old Hittite texts in Old Hittite original manuscripts

OH+ = Old Hittite texts in Middle Hittite copies

OH++ = Old Hittite texts in Neo-Hittite copies

(4)	*-azzi*	*-azi*	*-uzzi*	*-uzi*	*-Izzi*	*-izi/-ezi*
OH	6	0	14	3	263	7
OH+	5	15	7	10	150	1
OH++	8	32	5	16	146	0
OH—	0	4	1	2	35	3

The above table shows that in Old Hittite original manuscripts fully spelled endings *-azzi* and *-uzzi* are much more common than simplified endings; there are 6 occurrences of *-azzi* in contrast to none of *-azi* (*ia-az-zi* "does" KUB XXXVI 108 Vs. 12, *PÍ-ia-na-az-zi* "rewards" KBo XXII 1 Vs. 28, *[t]a-a-ia-az-zi* "steals" KUB XXIX 28, 12, *[ta-i]a-az-zi* KUB XXIX 28, 5, *šu-ua-ia-az-zi* "pushes" KUB XXIX 28, 9, *hu-ul-la-az-zi* "destroys" KUB XXXVII 223 Vs. 4) and 14 occurrences of *-uzzi* in contrast to 3 occurrences of *-uzi* (*ar-nu-uz-zi* "brings" KBo VI 2 I 2, KBo VI 2 I 6, KBo VI 2 I 38, *pár-ku-nu-uz-zi* "purifies" KBo VI 2 II 34, KBo VI 2 III 33, KBo VI 2 III 35, KUB XXIX 16 III 7, KUB XXIX 16 III 9, KUB XXIX 16 III 12, *pít-ti-nu-uz-zi* "causes to run" KBo VI 2 II 10, *[-u]z-zi* KUB XXIX 25, 9[12], *[ua]-ah-nu-u[z-zi]* "turns" KBo XVII 3 II 3, *za-nu-uz-zi* "cooks" KBo XXV 106, 7, *za-nu-u[z-zi]* KBo XVII 29 I 3;

OH— = Old Hittite texts in manuscripts of indeterminate date

MH = Middle Hittite texts in Middle Hittite original manuscripts

MH+ = Middle Hittite texts in Neo-Hittite copies

MH— = Middle Hittite texts in manuscripts of indeterminate date

NH = Neo-Hittite texts.

Within the Neo-Hittite category, Neo-Hittite historical texts are the most reliable sources for establishing the features of Neo-Hittite grammar, because the mention of specific persons and events guarantees their recent date of composition.

[12] This broken form is written as *ti-IT-ta-nu-uz-zi* "places" in a later copy (KBo VI 14 I 12 OH++).

ar-nu-zi KBo VI 2 IV 5, *iš-pár-nu-zi*[13] "strews" KBo XX 10 I 12, KBo XX 10 II 9). The general tendency is that the simplified spellings *-azi* and *-uzi* are rare in Old Hittite originals, but outnumber the unomitted spellings in later copies. The preference for simplified spellings in later Hittite is borne out by the following cases in (5), where forms with double *-zz-* in Old Hittite original manuscripts have changed into forms with single *-z-* in their corresponding later duplicates.

(5) *ar-nu-uz-zi* KBo VI 2 I 2 (OH) → *ar-nu-zi* KBo VI 3 I 9 (OH+)
ar-nu-uz-zi KBo VI 2 I 38 (OH) → *ar-nu-zi* KBo VI 3 I 47 (OH+)
pár-ku-nu-uz-zi KBo VI 2 III 33 (OH) = *pár-ku-nu-uz-zi* KUB XXIX 16 III 7 (OH) → *pár-ku-nu-zi* KBo VI 3 III 37 (OH+) = *pár-ku-nu-zi* KUB XXIX 17, 4 (OH–)
pár-ku-nu-uz-zi KBo VI 2 III 35 (OH) = *pár-ku-nu-uz-zi* KUB XXIX 16 III 9 (OH) → *pár-ku-nu-zi* KBo VI 3 III 40 (OH+)
pár-ku-nu-uz-zi KUB XXIX 16 III 12 (OH) → *pár-ku-nu-zi* KBo VI 3 III 43 (OH+)

In (5) *arnuzzi* with double *-zz-* attested in an Old Hittite original has been transformed into *arnuzi* with single *-z-* in a later version, and *parkunuzzi* with double *-zz-* in Old Hittite originals into *parkunuzi* with single *-z-* in their later versions[14]. The forms with *-uzi* in later copies are clearly innovations. So far I have discussed the sequences of *-a(z)zi* and *-u(z)zi*, and argued that the alternation between single *-z-* and double *-zz-* is

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[13] As we will see later, *ar-nu-zi* and *iš-pár-nu-zi* can be interpreted differently, not as reflecting a simplified spelling.

[14] There is only one case where *-uzi* in an Old Hittite original has been changed into *-uzzi* in its later copy: *ar-nu-zi* KBo VI 2 IV 5 (OH) → *ar-nu-uz-zi* KBo VI 3 III 77 (OH+). It can, however, be taken as an exceptional case.

probably of no linguistic contrast, but due to simplified spellings.

Next, I will proceed to the sequence *-Izzi*. As I have already mentioned, *IZ* is a very simple sign composed of three strokes. Accordingly there seems to be no motivation for the simplified spelling in the case of the *-IZ-zi* sequence. However, there are 11 examples of *-izi* or *-ezi* with single *-z-* in the table (4); 7 are attested in Old Hittite originals, 1 in a Middle Hittite copy of an Old Hittite text, and 3 in an Old Hittite text in a manuscript of indeterminate date. These 11 examples are listed below in (6).

(6) *ú-e-mi-zi* "finds" KBo VI 2 IV 12 (OH) → *[ú]-e-mi-i̯a-zi* KBo VI 3 IV 6 (OH+)

i-e-zi "does" KBo VI 2 I 60 (OH)

PÍ-ḫu-te-zi "brings" KBo XX 10 I 4 (OH)

zi-in-ni-z[i] "finishes" KBo XX 10 I 5 (OH)

du-u̯a-ar-ni-zi "breaks" KBo VI 3 III 70 (OH+)

na-ak-KI-e-zi "is important" KBo XIII 13 Vs. 14 (OH–)

[n]a-ak-ku-uš-ši-e-zi "?" KBo XII 13 Vs. 6 (OH–)

na-ak-ku-uš-ši-e-zi "?" KBo XII 13 Vs. 13 (OH–)

ak-ku-uš-KI-zi "drinks repeatedly" KBo XVII 11 IV 7 (OH)

→ *[ak-ku-uš-]KI-IZ-zi* KBo XVI 74 IV 34 (OH+)

[ḫ]u-la-a-LI-e-z[i] "winds around" KBo XXV 100 Rs. 3 (OH)

PÍ-iš-KI-z[i] "gives repeatedly" KUB XLIII 30 III 20 (OH)

Among these 11 examples *ú-e-mi-zi* attested in an Old Hittite original manuscript is copied as *[ú]-e-mi-i̯a-zi* with a new thematic vowel *-a-* in its OH+ duplicate[15] and its usual Old Hittite form is *ú-e-mi-IZ-zi* KBo VI 2 III 58, etc. (OH)

[15] The chronological distribution between *-(i)i̯a-* and *-i(e)-* in **-i̯e/o-* verbs is well known. Old Hittite *-i(e)-* is gradually replaced by *-(i)i̯a-* at a later stage; cf. Carruba (1966: 79ff.), Watkins (1969:

with double *-zz-*. *i-e-zi* is also attested in an Old Hittite original manuscript. In Old Hittite originals it is usually spelled *i-IZ-zi* KBo VI 2 II 51, etc. (OH) or *i-e-IZ-zi* KUB XXIX 29 Vs. 10 (OH) with double *-zz-* and its later Hittite form is *i-ia-zi* or *i-ia-az-zi* with *-a-* before the ending. *Pí-hu-te-zi* with single *-z-* is again attested in an Old Hittite original, although its usual Old Hittite form is *Pí-(e)-hu-te-IZ-zi* KBo XX 10 I 10, etc. (OH) with double *-zz-*; *-zz-* is also regular in Neo-Hittite forms of this verb[16]. A similar case is presented by *zi-in-ni-z[i]* (OH), which is characterized by single *-z-* but the later forms of which show double *-zz-* (*zi-in-ni-IZ-zi* and *zi-en-ni-IZ-zi*). *du-ua-ar-ni-zi* (OH+) listed in (6) shows single *-z-*, though forms with *-zz-* are also attested in Old Hittite texts (*tu-ua-a[r-n]i-IZ-zi* KBoVI 3 I 29 OH+, *du-ua-ar-ni-IZ-zi* KBo VI 4 I 27, etc. OH++) as well as a modernized form with a thematic vowel *-a-* (*tu-ua-ar-na-zi* KBo VI 3 I 31 OH+); in Neo-Hittite texts forms with *-zz-* are regular[17].

There is also *na-ak-KI-e-zi* (OH–) with single *-z-*, which Riemschneider interprets as a simple scribal error for *na-ak-KI-e-eš-zi*[18], a denominative *mi*-verb characterized by the suffix *-eš-*; cf. *maršeš-* "become false". Watkins has, however, convincingly shown that *na-ak-KI-e-zi* is not a scribal error, but inherits an important Proto-Indo-European feature of denominative stative suffix **-ē-* (< **-eh₁-*)[19]. We must note at this point that this *na-ak-KI-e-zi* KBo XIII 13 Vs. 14 is written at the end of the line unlike the preceding 5 examples, none of which are recorded at the line final. It is therefore quite conceivable that in this case a scribe omitted the sign *IZ* due to the space limitation (*na-ak-KI-e-IZ-zi* → *na-ak-KI-e-zi*). The following 2 examples in (6),

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70f.) and Oettinger (1979: 25ff.), among others.

[16] Cf. Oettinger (1979: 37).

[17] Cf. Oettinger (1979: 308).

[18] Riemschneider (1970: 60). Beside *na-ak-KI-e-zi* the same manuscript has *na-ak-KI-eš-zi* KBo XIII 13 Rs. 11.

[19] Cf. Watkins (1973: 51ff.).

[n]a-ak-ku-uš-ši-e-zi and *na-ak-ku-uš-ši-e-zi* of the same verb *nakkuššiia-* "?", are attested in the same manuscript as *na-ak-KI-e-zi* and both are also written at the end of the line, even the margin being utilized[20]. The same situation is observed in *ak-ku-uš-KI-zi* recorded at the end of KBo XVII 11 IV 7 (OH), which is duplicated as *[ak-ku-uš-]KI-IZ-zi* KBo XVII 74 IV 34 (OH+) with double *-zz-* in a later copy (not at the line final!). Although the above 4 examples, *na-ak-KI-e-zi*, *[n]a-ak-ku-uš-ši-e-zi*, *na-ak-ku-uš-ši-e-zi* and *ak-ku-uš-KI-zi* are marked by *-zi* with single *-z-*, the motivation for *-z-* may be purely graphic due to space limitation rather than linguistic.

In the case of the last 2 examples in (6), *[ḫ]u-la-a-LI-e-z[i]* and *PÍ-iš-KI-z[i]* attested in fragments of Old Hittite original manuscripts, the final signs are transcribed as *z[i]* in both cases by Neu[21], but they cannot be absolutely guaranteed because large parts of the signs are broken. They might read *I[Z]* instead of *z[i]*; in this case we would have *I[Z-zi]* with double *-zz-*. In any event it would be safe to exclude these unassured examples from our following analysis.

The preceding discussions have shown that the historical distribution of verbs with the sequences *-izi/-ezi* is unique. They are overwhelmingly rare compared with forms with *-IZ-zi*; only a small number of Old Hittite forms are characterized by single *-z-*. Limiting our analysis to the first 5 examples in (6), *ú-e-mi-zi* (OH), *i-e-zi* (OH), *PÍ-ḫu-te-zi* (OH), *zi-in-ni-z[i]* (OH) and *du-ua-ar-ni-zi* (OH+), where motivation for single *-z-* cannot be other than linguistic, they are all recorded in old manuscripts (4 in OH and 1 in OH+). Even within Old Hittite original manuscripts, these examples coexist with their corresponding *-IZ-zi* forms (e.g., *ú-e-mi-IZ-zi*, *i-e-IZ-zi* and *PÍ-ḫu-te-IZ-zi* shown above). As for the situation in later Hittite, on the other hand, a comparison between OH originals and their later duplicates shows that forms in *-IZ-zi*

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[20] This manuscript has an additional example of *-zi* with single *-z-*, *[.....]-e-zi* KBo XII 13 Vs. 19. Although the stem part of this verb is broken, it is interesting that it is again written at the line end.

[21] Neu (1980), p. 176 and p. 78, respectively.

or modernized forms in *-a(z)zi* with *-a-* (e.g., *[ú]-e-mi-i̯a-zi* OH+, *tu-u̯a-ar-na-zi* OH+ shown above) are predominant. An obvious inference to be drawn from these facts is that these 5 verbs in *-izi/-ezi* preserve a remarkable archaic feature that was almost lost in Hittite.

So far our primary discussions have been purely based on inner-Hittite data. We will now analyze the above 5 verbs of remarkable antiquity in a context of historical and comparative grammar. First of all, *ú-e-mi-zi* goes back to **au-ém-i̯e-ti* with an unaccented suffix **-i̯e-*[22]. Accent on the root is assured because accented short **e* is written *e* (with lengthening) in this environment[23]. Accordingly, **t* of the ending **-ti* got lenited to **d* between unaccented vowels by the second lenition rule proposed by Eichner[24]. Next, *i-e-zi* and *PÍ-u̯u-te-zi* belong to the root class and their proto-forms are **i̯éh$_1$-ti* (cf. Greek ἵημι < **i̯i-i̯éh$_1$-mi* "I set in motion", Latin *iēcī* "he threw") and **(pé)-h$_2$(e)u-dhéh$_1$-ti*[25], respectively. In both cases **e* was lengthened by the loss of a laryngeal at a Proto-Anatolian stage, so that their proto-forms came to have an accented long vowel before the ending[26]. Consequently Eichner's first lenition rule[27] which also operated in Proto-Anatolian changed the ending **-ti* into **-di*. As for *zi-in-ni-z[i]*, Oettinger (1979: 152) has derived it from **tinéh$_1$-ti* or **sinéh$_1$-ti* (nasal-infix present). The double *-nn-* of *zi-in-ni-z[i]* is secondarily introduced from the plural *zinnanzi* (<

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[22] As for the reconstructed preverb **au-*, compare Hittite *ú-e-IZ-zi* "he comes" KBo XVII 1 III 13 (OH) with Cuneiform Luvian *a-ú-i-ti* (< **au-h$_1$ei-ti*). The root is equated with Latin *emō* "I take".

[23] Cf. Melchert (1994: 133ff.).

[24] Eichner (1973: 100[88]).

[25] For this proto-form and problems pertaining to its reconstruction, see Melchert (1994: 133ff.)

[26] Melchert (1994: 56) represents this long vowel as */æ:/ (< **eh$_1$*). Its outcome in a Luvian group of languages is /a(:)/ (e.g., Lycian *tadi* "puts" < **deh$_1$-ti*), whereas it appears as **ē* in Hittite.

[27] Eichner (1973: 79ff.).

**tinh$_1$-énti* or **sinh$_1$-énti* with assimilation of **nh$_1$*)[28]. Here again, we have an independent reason to posit **-di* including **d* lenited after an accented long vowel as an ending of its preform. The last example *du-u̯a-ar-ni-zi* is probably best explained as a denominative with an unaccented suffix **dhu̯erné-i̯e-ti* influenced by causatives in **-éi̯e-*[29], which would lead to a form in **-di* because **-ti* is preceded by an unaccented vowel.

It has now been shown that the verbs analyzed in the above paragraph all go back to Proto-Anatolian forms characterized by an ending with voiced **d*. The historical connection between these Old Hittite verbs in *-izi/-ezi* with single *-z-* and their pre-forms in **-di* is too striking to be accidental. It should be noted that there are no cases in Old Hittite where single *-z-* is used for the expected unlenited ending. It is not difficult to see the significance of this fact. From an earlier stage of Hittite studies it is well known that **t* became an affricate **ts* before **i̯* and **i* in its prehistory; e.g., Hittite *šarazzii̯a-* "upper" and Lycian *hrzze/i* "id." (< **-ti̯o-*), Hittite *zīg* "you" and Palaic *tī* (< **tī*) "id.". What I would like to propose here is that **-di* also underwent assibilation at a pre-Hittite stage. Originally, the ending *-izzi* with double *-zz-* reflects Proto-Anatolian **-ti* and *-izi/-ezi* with single *-z-* reflects Proto-Anatolian **-di*, just as geminated stops reflect Proto-Anatolian voiceless stops and single stops reflect Proto-Anatolian voiced stops. Although Hittite largely leveled out the different outcomes of this rule in favor of that with an unlenited quality, the five Old Hittite verbs cited above preserve an archaic state, resisting the generalization of *-Izzi* with double

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[28] Melchert (1994: 80).

[29] This suggestion is due to Craig Melchert (personal communication). Why the preform cannot be **dhu̯r̥-né-h$_1$-ti* nor **dhu̯orno-ti* is shown by Melchert (1984: 36f.). The preform **dhu̯érn-e-ti* is equally impossible because there is virtually no simple thematic verb in Anatolian; cf. Lehrman (1985). As for the *i*-vocalism of *du̯arni-*, see Melchert (1994: 117).

-zz-[30].

There are also a small number of verbs in *-izi/-ezi/-Izi* with single *-z-* in later Hittite texts according to my cursory survey. They are listed below in (7).

(7) *i-e-zi* KBo V 3 III 30 (NH)
me-mi-iš-KI-zi " speaks repeatedly" KUB XXI 14, 4 (NH)
ḫa-an-te-eš-KI-zi "fixes repeatedly" KUB XIV 1 Vs. 81 (MH)
ḫa-at-RI-eš-KI-zi "writes repeatedly" KUB XIV 1 Rs. 25 (MH)
ti-i-e-zi "steps" KUB I 13 I 46 (MH−), KBo III 2 Rs. 16 (MH+)
tu-u-RI-e-zi "harnesses" KBo III 5 IV 28 (MH−)
tu-u-RI-zi KUB I 11 I 1 (MH−)

Among these examples, *ti-i-e-zi*, *tu-u-RI-e-zi* and *tu-u-RI-zi* are written at the end of the

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[30] The 3 examples in *-uzi* recorded in Old Hittite original manuscripts (cf. the table in (4)), *ar-nu-zi* and *iš-pár-nu-zi* (2×), which we earlier took as reflecting a simplified spelling, can now be given a different treatment as mentioned in footnote 13. *-uzi* in these verbs can be directly derived from **-di*: *arnuzi* < **-di* < **-nū́-ti* < **h_1r̥-néu-ti* and *išparnuzi* < **-di* < **-nū́-ti* < **spr̥-néu-ti*. It should be noted that the original ablaut pattern is preserved in other Hittite verbs of nasal infix class (e.g., *ḫarnikzi*, *ḫarninkanzi* "destroy" < **h_2r̥nég-ti*, **h_2r̥ng-énti*, *ḫurnezzi*, *ḫurnanzi* "sprinkle" < **h_2u̯r̥néh$_1$-ti*, **h_2u̯r̥nh$_1$-énti*). Accordingly, the constant form *-nu-* is not due to leveling of the zero-grade affix of the plural, but inherits **-néu-* (> *-nū́-*); cf. *u̯a-aḫ-nu-ú-mi* KBo XVII 1 II 18 (Old Hittite original manuscript) with scriptio plena in the affix. If this interpretation is correct, it will lead to a strong claim that there are no examples of the simplified spelling observed in Old Hittite original manuscripts in the case of the 3 sg. pressent ending of *mi*-verbs. Similarly, *na-ak-KI-e-zi* (OH–), which we excluded from our analysis because the single *-z-* in it may be due to the space limitation, can be a linear descendant of **nok̂-éh$_1$-ti* (> **-di*). Needless to say, however, whether the sequence *-I'zi* in the final case shows linguistic significance or not cannot be determined.

line. Because earlier Hittite has forms in *-IZ-zi* of the same verbs (cf. *ti-IZ-zi* KBo VI 2 II 61 OH, *ti-i-e-IZ-[z]i* KUB XXIX 30 II 19, etc. OH, *tu-u-RI-IZ-zi* KBo VI 3 III 73 OH+), scribes probably omitted the *IZ* sign due to space limitations. The lack of *IZ* in these forms is, therefore, not taken as linguistically relevant. As for *i-e-zi*, the first example of (7), we have already shown that it goes back to **-di* (< **i̯éh$_1$-ti*). In the case of *me-mi-iš-KI-zi*, the accent must have been on the reduplicated syllable, judging from an Old Hittite 2 sg. imperative form *me-e-mi-iš-KI* KBo XVII 3 III 5, etc. which shows a plene *-e-* in the reduplicated syllable. Accordingly the Proto-Anatolian form of *me-mi-iš-KI-zi* must have ended in **-di*. *ḫa-an-te-eš-KI-zi* and *ḫa-at-RI-eš-KI-zi* are iterative verbs created from *ḫantāi-* and *ḫatrāi-*, respectively. Craig Melchert orally suggested to me that the reason for omission of *IZ* in these forms is that they are relatively long words. An alternative explanation is also possible. Beside *ḫa-an-te-eš-KI-zi*, *ḫa-an-da-a-iš-qa-mi* KBo XVII 32 Vs. 10 and *ḫa-an-ta-iš-kir* KUB XXIII 59 I 5 are, in fact, attested. Because the diphthong **ai* is maintained before coronal continuants[31] (e.g., *a-ra-iš* "he raised" KBo III 22 Vs. 12 OH), the reduction of *ai* to *ē* in *ḫa-an-te-eš-KI-zi* and *ḫa-at-RI-eš-KI-zi* is irregular and undoubtedly secondary: a change that by no means goes back to Proto-Anatolian. It is therefore possible to assume that the original accent was before the suffix when a lenition rule operated and then the reduction of *ai* occurred (**-ái-sk̂e-ti* > **-ái-sk̂e-di* > *-eš-KI-zi*)[32]. In any event the single *-z-* of *-Vzi* observed in the examples of (7) is motivated linguistically or non-linguistically. As far as I have surveyed, there are no cases in later Hittite texts nor in Old Hittite texts where single *-z-* is employed for the expected unlenited ending.

At this point, I would like to summarize the discussions by showing

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[31] Cf. Melchert (1994: 148).

[32] Notice that there is no plene *-e-* before the ending *-zi* while *ḫa-an-da-a-iš-qa-mi* with an unreduced diphthong has plene *-a-* in the root.

derivational history of the 3 sg. present active ending together with that of the 3 sg. present middle ending in (8).

(8) Prehistory of the Hittite Verbal Endings in Question

	3 sg. present active		3 sg. present middle	
Proto-Anatolian	*-*Cti*, *-*Ṕti*	*′-*Vti*, *-*V́ti*	*-*Cto*,*-*Ṕto*	*′-*Vto*, *-*V́to*
lenition rules	*-*ti*	*-*di*	*-*to*	*-*do*
assibilation	*-*tsi*	*-*dzi*	——	——
analogical leveling	——	*-*tsi* ~ *-*dzi*	——	*-*to*
shift to tense/lax	*-*ttsi*	*-*ttsi* ~ *-*tsi*	*-*tto*	*-*tto*
Hittite	/-*ttsi*/	/-*ttsi*/ ~ /-*tsi*/	/-*tta*/	/-*tta*/

In the case of the active ending *-*ti* preceded by a consonant or an accented short vowel, it did not undergo the lenition rules and **t* appeared as a voiceless affricate **ts* after an assibilation rule applied before **i*[33]. On the other hand, the Proto-Anatolian active ending *-*ti* between unaccented vowels or immediately preceded by an accented long vowel became lenited *-*di*[34], and then **d* became a voiced affricate **dz* as a result of assibilation. The ending *-*dzi* thus created, which has a voiced affricate, was, however, later replaced to a large extent by the corresponding ending *-*tsi* with a voiceless

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[33] Of course, it is difficult to determine when the voicelss/voiced contrast shifted to the tense/lax contrast. It did, however, take place at a pre-Hittite stage at latest. In table (8), I have placed the shift to tense/lax immediately before the Hittite historical period only for convenience' sake. Likewise, the date of merger of **o* and **a* is irrelevant to our present concern.

[34] Phonological outcomes of the lenition rules are evidently observed in the Luvian languages; e.g., Cuneiform Luvian *a-ti* "makes", Hieroglyphic Luvian *á-à+ra/i*, *á-ia-ti-i*, Lycian *adi*, *edi* (< **i̯éh*$_1$*-ti*), Cuneiform Luvian *du-ú-pi-ti* "strikes", Hieroglyphic Luvian *tu-pi-ri+i*, *tu-pi-ti*, Lycian *tubidi* (< *′-*i̯e-ti*).

affricate[35]. A similar analogical leveling is observed in the middle as well. At a Proto-Anatolian stage, unlenited *-*to* and lenited *-*do* coexisted after the lenition rules operated. Later, however, the unlenited *-*to* was generalized in Hittite[36]. Compare, for example, Hittite *kitta(ri)* "lies" having double -*tt*- with Palaic *KI-i-ta-ar* having single -*t*-; they both go back to Proto-Anatolian **kéi-do-r* with voiced **d* (cf. Sanskrit *śete*, Greek κεῖται, etc.). While the lenited middle ending *-*do* was ousted by the unlenited *-*to*, a small number of active forms such as *ú-e-mi-zi* with single -*z*- discussed above resisted the analogical leveling. It is inescapable to conclude that these active verbs preserve a notably archaic feature[37].

As a result of a series of philological and linguistic analyses of the verbal ending, we have come to propose that *-*di* as well as *-*ti* was subject to assibilation in the prehistory of Hittite. Additional evidence in support of this sound change is not

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[35] To be exact, the endings *-*tsi* and *-*dzi* must have undergone an apocope rule later which is evidenced by a vestigial form such as *[e-e]š-za* "is" KUB VI 2 IV 54 (OH). The restoration of final -*i* is no doubt analogical from -*mi*, -*ši*, -*ụeni*, -*teni*.

[36] A survey of the data in two exhaustive studies on Hittite middle verbs, Neu (1968) and Yoshida (1990) shows that there are a number of middle forms which have the sequence -*V'ta(ri)* or -*V'ta(ti)* with single -*t*-. A great majority of them are verbs of *a*-stem or *i/e*-stem. Because the signs *AT* and *IT* are relatively complicated, their absence in these forms can be attributed to the simplified spelling. However, there are 3 occurrences with the sequence -*utari* or -*utati*: *ụa-ar-nu-ta-ri* "burns" KUB XIII 25 I 3 (OH++), KUB XIII 25 I 9 (OH++) and *pár-ku-nu-ta-ti* "purified" KBo III 66 I 9 (OH++). It is not possible to take them as cases of the simplified spelling because *UT* is a very simple three-stroke sign. We should, however, note that these 3 forms are all written at the end of the line. Accordingly, the omission of the sign *UT* is in all probability due to space limitation. But a possibility that the single -*t*- in these examples reflects lenited **d* cannot be unconceivable: e.g., -*nu-ta* < *-*nṻ-do* < *-*néu-to*.

[37] More detailed discussion on the verbs in -*V'zi* is found in Yoshida (1998a).

abundant because regular outcomes of this phonological rule can easily be ousted from the paradigm by analogical leveling. For example, *kardi* (< **k̂ord-i*), dative-locative singular of *kard-* "heart" does not have *z*. But it can be considered to have recovered *d* under the influence of other case forms (e.g., ablative singular *kartaz*) in the same way that dative-locative singulars of *t*-stem nouns represented by *aniiatti* (< **enh$_x$i̯ot-i*) "performance (dat.-loc. sg.)" are analogical. Another piece of evidence for the assibilation of **di* is the sequence *ma-a-ni-za* KBo VI 2 III 7 (Old Hittite original manuscript) "when-they (enclitic)-(reflexive)", where the single *-z-* of the reflexive particle probably reflects **-di* (< **'-oi-ti*) with subsequent assibilation and apocope. Compare this with the Old Hittite spelling *nu-uz-za* "and-(reflexive)" with double *-zz-* (attested in KBo VI 2 I 6, KBo VI 2 I 47, KBo VI 2 II 7, KBo VI 2 II 32, KBo XXII 2 Vs. 12, 13, 17, KBo XX 8 I 11), which is derived directly from **nú-ti*[38].

Our conclusion has a further consequence if we are right in assuming that Proto-Anatolian voiced stops as well as voiceless stops got assibilated before **i*. Unlike **t* and **d*, Proto-Indo-European voiced aspirate **dh* never got assibilated in Hittite. The non-assibilation of **dh* before **i* is supported by the 2 sg. imperative *i-IT* "You go!", which is equated with Sanskrit *ihi* and Greek ἴθι and therefore goes back to Proto-Indo-European **h$_1$í-dhi*. Consequently, Proto-Indo-European **d* and **dh* show different outcomes before **i* in Hittite. This will be a piece of evidence for a view that Proto-Indo-European **d* and **dh* had not been merged at the stage of Proto-Anatolian. It would be hardly surprising that PIE aspirated stops are still preserved in Hittite whose documents were recorded even earlier than Sanskrit and Greek both with aspirated stops retained, though its syllabary borrowed from Mesopotamia includes no signs indicating aspirated stops.

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[38] The reflexive **-ti* is preceded by the accented short vowel because **nú* is equated with Sanskrit *nú*. This explains why **-ti* escaped the application of lenition rules. The significance of the spelling *nu-uz-za* will be discussed in detail in Yoshida (forthcoming c).

III. The Hittite Particle *-ti*: a potential piece of counter-evidence

In the previous section I have shown the evidence that speaks for assibilation of **d* before **i* in Hittite. If we are right in assuming that **di* as well as **ti* got assibilated in Hittite, we are confronted with one serious counterexample. It is the particle *-ti* attached to the preterite middle ending, which is read unassibilated [-di] with a lenited dental[39] because *t* included in it is always written single in an intervocalic position (e.g., *ḫu-IT-ti-i̯a-ti* "(s)he drew" KBo III 22 Rs. 54)[40]. Accordingly our cardinal problem is how the unassibilated middle *-ti* is reconciled with the sound change **di* > **dzi*.

Previous views on the origin of the particle *-ti* are divided into two positions. One is a view presented long time ago by Pedersen (1938: 108f.) and later by Watkins (1969: 78), which was recently ingeniously structured by Oettinger (1997: 413ff.). According to them, *-ti* is identified with the particle **-dhi* appearing in the imperative (cf. Sanskrit *ihi*, Greek ἴθι < **h₁i-dhi* "You go!"). The other view is that *-ti* originated from the Anatolian reflexive **-ti*. It was first suggested by Neu (1968b: 144ff.) and later reinforced by Melchert (1992a: 192). I basically agree with the latter view because the middle voice and the reflexive show a very natural connection from a semantic viewpoint.

The historical explanation offered by Melchert is that the Hittite middle *-ti* is

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[39] As was shown in section 2, the phonemic status of the intervocalic single consonants must have represented a lax (or short) quality in contrast to a tense (long) one that was typical of the intervocalic double consonants. Henceforth, however, I will employ a voiced/voiceless value at the phonetic level only for the convenience' sake.

[40] The Hittite 2 sg. present middle in *-tati* and moreover 1 pl. present middle in *-u̯aštati* contain the same element *-ti*. But these forms in *-ti*, which substituted for those in *-ri* within inner Hittite history, are all Neo-Hittite innovations (cf. Yoshida 1987).

originally a reflexive particle *-*ti*, which came to be added to medial endings and then got lenited between unaccented vowels at the stage of Common Anatolian[41]. Although his account is attractive, it is not the case that his scenario is impeccable in every respect, and in fact a different historical derivation is possible. It should be noted that the *ti*-element attached to the preterite middle is not observed in any Anatolian languages other than Hittite. The equation of Hittite 1 sg. preterite middle *-ḫḫaḫat(i)* with Lycian *-χagã* made by Melchert (1992a: 190ff.) is striking in that both show the unlenited first consonant and the lenited second consonant. However, the Lycian form is characterized by final nasalization, not by a dental element. It seems to me much simpler to assume that the pre-form of Lycian *aχagã* "I became" is **aχaga*, which secondarily acquired nasality either by a still poorly understood sound change or from the corresponding active *aχã*, *agã*[42], and that Hittite, on the other hand, came to have *-ti* in the preterite middle in its own internal history — an innovation not shared by the extra-Hittite languages[43].

The reflexive particles attested as such in Anatolian languages are Old Hittite *-za* (originally after consonants in Old Hittite), *-Vz* (after vowels)[44], Cuneiform Luvian *-ti* (always written single intervocalically), Hieroglyphic Luvian *-ti* alternating with rhotacized *-ra/i* or *-ri+i*, Lycian *-ti* and Palaic *-ti* (always written single intervocalically). They are derived from either Proto-Anatolian **-ti* or **-di* (< **-ti* by lenition). In order to explain the distribution of lenited consonants in Cuneiform Luvian and Hieroglyphic

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[41] The lack of the assibilation in *-ti* is not a problem to him because he, unlike our present position, restricts the scope of the assibilation to unvoiced **t*.

[42] Garrett (1991) attempted to show that the nasalized endings in Lycian are found only in transitive verbs.

[43] As will be pointed out below, this feature might be shared by Palaic.

[44] The spellings *(C)-za* and *(V)-Vz* do not supply any evidence for unlenited or lenited quality of the affricate. However, notice the sequences *ma-a-ni-za* and *nu-uz-za* discussed above.

Luvian and an unlenited consonant in Lycian, we have to assume that both *-*ti* and *-*di* coexisted in Common Luvian[45]. The same situation may also be posited for a pre-Hittite stage. Unlike the other languages, however, Hittite underwent the assibilation of **t* to **ts* before **i* later in its prehistory. We also have observed evidence for **di* > **dzi* in Hittite[46]. It is very important at this point to note that the assibilation of **t* was blocked after **s*; e.g., neuter nouns with *-ašti-* such as *palḫašti* "breadth" (< *palḫi-* "broad") and *pargašti* "height" (< *parku-* "high"), cf. Sturtevant (1951: 60f.), Kronasser (1966: 53), and especially Joseph (1984). There are, however, many sequences of *š* followed by the reflexive *-za* such as *nu-uš-za, na-aš-za, nu-naš-za, nu-šmaš-za*, etc., where *-za* must be a secondary replacement for the original **-ti*. Thus, the following three different phonological developments would be posited in the prehistory of the reflexive particle:

*-*ti* > *-*tsi* : illustrated by *nu-uz-za* (cf. 3 sg. pres. *epzi*[47] "takes")

*-*di* > *-*dzi*: illustrated by *ma-a-ni-za* (cf. 3 sg. pres. *iezi*)

-(s-)ti* > *-*ti*: The phonologically expected **nu-uš-ti* was replaced by *nu-uš-za* (cf. *palḫašti*).

Among these variants, *-*ti* is not attested anywhere in Hittite documents unlike *-*ts* and *-*dz* which are both recorded. An immediate question to be raised here is where the third outcome *-*ti* has gone. I will discuss this problem below in the wider context of Hittite historical grammar.

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[45] From this situation *-*di* was generalized in Cuneiform Luvian and Hieroglyphic Luvian, while *-*ti* was favored in Lycian.

[46] Final *-*tsi* and *-*dzi* got apocopated later.

[47] Needless to say, the 3 sg. present ending *-zi* is analogical to other present endings as was suggested in footnote 35.

Elsewhere I have shown that Proto-Anatolian present middle endings inherited final *-*r* (at least in the third person) — a situation basically preserved in Tocharian and to a lesser degree in Italic and Celtic[48]. The loss of final *-*r* then occurred after unaccented syllables and the *hic et nunc* particle *-*i* was added to the 3 sg. *-*ór* where *-*r* survived after an accented vowel. Although the new element *-*ri* had gradually spread from here, Old Hittite quite faithfully retained the stage when the *-*ri* was newly created. The paradigms of the present and preterite middle at this stage are shown as follows:

present	sg. 1	*-*ḫa*	pl. 1	*-*u̯ašta*
	2	*-*ta*	2	*-*tuma*
	3	*-*ári*, *'-*a*, *'-*ta*	3	*-*anta*
preterite	sg. 1	*-*ḫa*	pl. 1	*-*u̯ašta*
	2	*-*ta*	2	*-*tuma*
	3	*-*a*, -*ta*	3	*-*anta*

At first glance there are no marks that distinguish between the present and preterite endings except the present 3 sg. *-*ári*, where the innovative element -*ri* is found. The undercharacterized preterite endings needed to be systematically distinguished from their corresponding present endings. An obvious inference to be drawn at this point is that the reflexive *-*ti*, which must have survived after **s* as we discussed in the preceding paragraph, left its original locus and came to be attached to the preterite middle endings to save the above situation[49]. Why neither of the other two variants

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[48] Yoshida (1990: chapter 4).

[49] The functional restriction of the former reflexive *-*ti* to the middle seems to share a feature which is predicted by Kuryłowicz' fourth "law" of analogy: "Quand à la suite d'une transformation morphologique une forme subit la différenciation, la forme nouvelle correspond à sa fonction

*-*tsi* and *-*dzi* was chosen is quite clear for the following two reasons. First, their distribution is overwhelmingly wider than that of *-*ti*, which would be observed only after **s*. Secondly, *-*tsi* and *-*dzi* were homophonous to the elements characterizing the third person present active endings and therefore neither of them was favored as a unique marker of the preterite middle.

It is less easy to explain why the addition of the reflexive particle to the preterite middle endings is a phenomenon peculiar to Hittite. This idiosyncrasy in Hittite is probably related to the fact that there are no assured preterite middle forms in the Luvian languages except the above Lycian 1 sg. *aχagā*. In my view the lack of 3 sg. and 3 pl. preterite middles in those languages is best explained by assuming that the active endings *-*t* and *-*nt* were formally replaced by their corresponding middle endings *-*ta* and *-*anta*, which came to serve as general preterite markers[50]. Because these endings were functionally both active and middle in synchronic terms, there was

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primaire, la forme ancienne est réservée pour la fonction secondaire (Kuryłowicz 1966: 169)"

[50] I argued in Yoshida (1991) that the 3 pl. active preterite endings reconstructed for late Proto-Anatolian are *-*ér*, *-*r̥* (> *-*ar*) and *-*an* (< *-*ant*). The ending in *-*r*, which is originally characteristic of the *ḫi*-verb, had encroached on the thematic *mi*-verbs with *-*i̯e/o-* and *-*sḱe/o-*. Among these endings, *-*er* was generalized to both *mi*- and *ḫi*-conjugations in Hittite. In the Luvian group, however, the poorly characterized *-*an* was perceived as a variant of the middle *-*anta*, which, then, came to be reinterpreted as the only unmistakable marker of 3 pl. preterite and completely ousted *-*er* and *-*r̥*. Likewise, the corresponding 3 sg. preterite endings in the Luvian languages (Cuneiform Luvian *-ta*, *-tta*, Hieroglyphic Luvian *-ta*, *-ra*, Lycian *-te*, *-tẽ*, *-de*, *-dẽ*) continue a PIE middle ending in my view (Yoshida 1993). After the loss of final dentals in Common Luvian, the middle ending *-*to* or *-*do* was introduced to the endingless 3 sg. preterite forms. The quality of the dental, lenited or unlenited, was determined by that of the corresponding present active ending. In *ḫi*-verbs, on the other hand, the older 3 sg. preterite ending *-*s* was replaced by the unmarked middle ending *-*to*.

no motivation for the attachment of the reflexive particle to them unlike the case in Hittite[51]. What the Luvian languages instead did to disambiguate the present middle forms from their corresponding preterite forms was to characterize the present middle forms by the *r*-element (e.g., Cuneiform Luvian *ziia̯r(i)* "lies") or the *n*-element (e.g., Lycian *sixani* "I lie", *sijẽni* "lies", *sitẽni* "id."), which must have spread early in their individual history. This probably explains why the present middle forms in the Luvian languages are all marked by the *r*- or *n*-element.

Even though we appear to be on the right track, there still remains an obvious problem, that is, why the Hittite middle *-ti* [di] has a lenited dental, not the unlenited dental that the above scenario predicts. Our next immediate task is to account for this phenomenon. It is generally accepted that the first lenition rule which operated after accented long vowels was no longer a synchronic rule when $*h_2$ was lost between vowel and stop. Note, for example, Lycian *prñnawate/ẽ* "built" (< **pr̥nou̯éh₂-to*) with

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[51] Palaic, on the other hand, did not undergo the same development as the Luvian languages. There are a number of 3 sg. preterite forms in *-t* in Palaic; e.g., *lu-ki-i-it* "(s)he divided". Because the loss of final dentals, which caused the 3 sg. middle ending **-to* to be incorporated into the active paradigm in the Luvian languages, did not occur in Palaic, these forms must reflect the inherited active ending **-t*. This means that the 3 sg. preterite active and middle were formally distinguished in Palaic. A possible candidate for the middle is *šarkutat* "?" KUB XXXV 165 Vs. 6. Although this form is too ambiguous to be properly understood, Carruba (1970: 69) suggested that it was a 3 sg. preterite middle or nom.-acc. neuter sg. of an adjective. Its final element *-tat* reminds us of the 3 sg. preterite middle ending found in later Hittite. If it is a middle form, Palaic shows the same pattern as Hittite: the formal distinction of the active and middle endings and the attachment of the reflexive particle to the preterite middle endings. We are then naturally led to assume that Hittite and Palaic underwent a parallel but independent development which was not shared by the Luvian languages.

unlenited *-t-* and Cuneiform Luvian *tātta* "stood" (< **(s)téh₂-to*) with double *-tt-*[52]. But there is evidence that the second lenition rule that operated between unaccented vowels lasted longer in at least Cuneiform Luvian and Lycian[53]. Cuneiform Luvian *aggat(i)-* "hunting net" (< **ékad-* < **ékat-* < **ékt-*; cf. Hitt. *ēkt*) shows prehistoric anaptyxis in medial stop clusters and subsequent lenition between unaccented vowels. Lycian *ap[p]di* or *ap[d]di* "seizes" (< **ĕpadi* < **ĕpati* < **ĕpti*; cf. Hitt. *ēpp-*) also shows the parallel development with later syncope. Because the second lenition rule was unmistakably retained in the prehistory of two of the daughter languages, it is quite possible to assume that it also remained in pre-Hittite as a living rule. Note that the dental of the Hittite particle *-ti* stands between unaccented vowels in a great majority of cases. The only conceivable exception to which the lenition rule did not apply is a small number of 3 sg. middle forms with accented ending **-ó*. But phonologically regular unlenited **t* was easily replaced by lenited **d* analogically[54]. The lenited dental of Hittite *-ti* is thus probably ascribed to the second lenition rule[55].

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[52] Cf. Melchert (1994: 69).

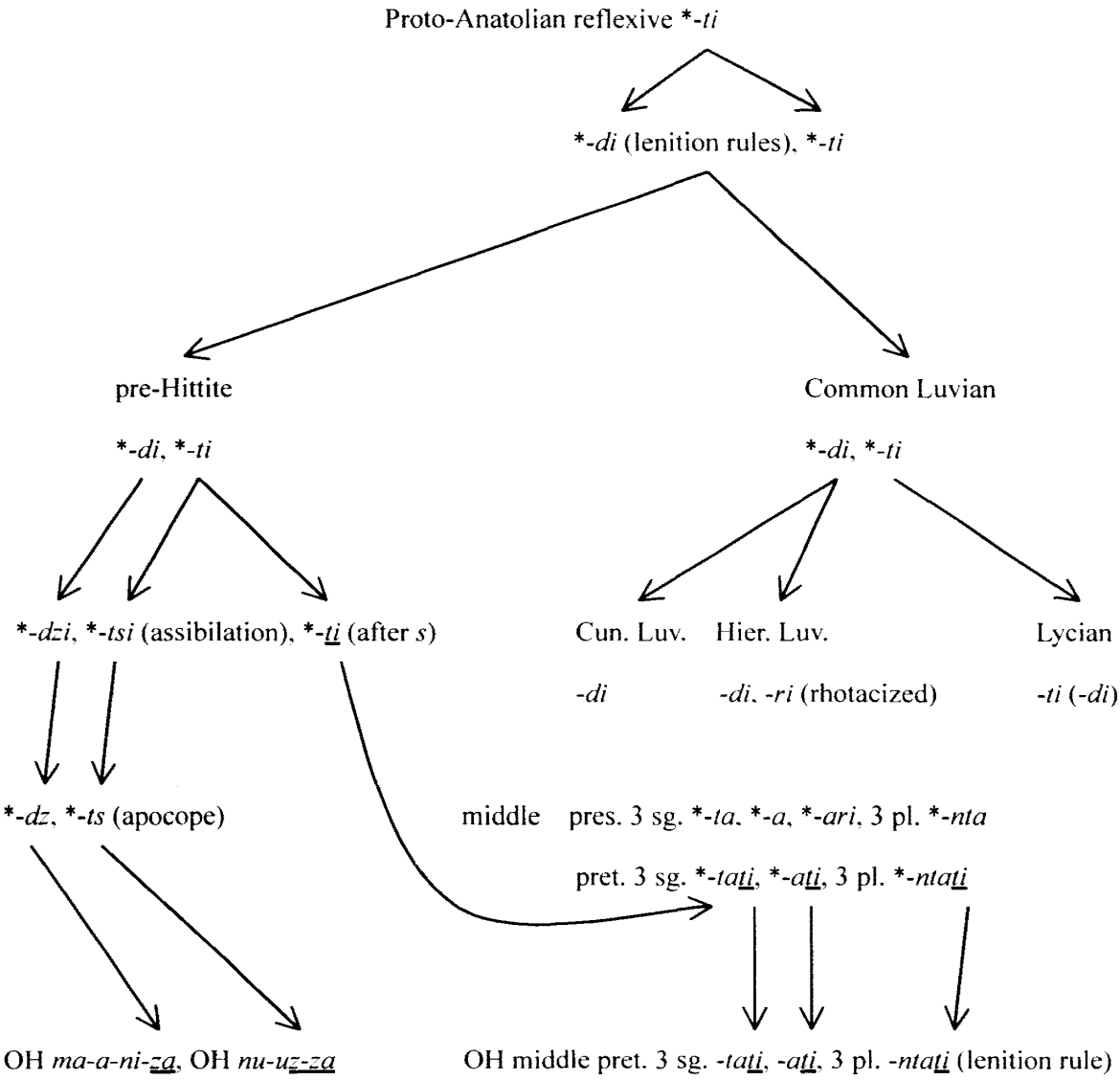
[53] For details, see Melchert (1994: 277, 313).

[54] In the case of the 3 pl. ending **-n̥tó(r)*, I showed independent evidence that pre-Hittite, like Vedic Sanskrit, retracted the accent from the **-o-* onto the **-n̥-*; cf. Yoshida (1990: 114).

[55] According to my survey, the Hittite iterated 1 sg. middle endings (present *-(ḫ)ḫaḫari*, preterite *-(ḫ)ḫaḫat(i)*, imperative *-(ḫ)ḫaḫaru*) are never attested in OH or MH original manuscripts (cf. data in Neu 1968a and Yoshida 1990). They are all recorded in NH copies of older texts (*[e-e]š-ḫa-ḫa-ti* "I sat" KUB XXVI 71 I 21 OH++, *e-eš-ḫa-ḫa-ti* KUB XXXVI 98b Rs. 8 OH++, *ú-e-IḪ-ḫa-ḫa-at* "I turned" KBo XII 8 IV 16 OH++, *ar-ḫa-ḫa-ru* "let me stand" VBoT 120 II 20 MH+), NH historical texts (*ar-ḫa-ḫa-ri* KBo IV 8 III 7, *ar-ḫa-ḫa-at* KUB XXVI 1 III 30, *ar-ḫa-ḫa-ru* KBo IV 14 III 6, *a-uš-ḫa-ḫa-at* "I saw" KUB XXXI 121a II 20, *e-eš-ḫa-ḫa-at* KBo XVI 1 I 30, KBo XVI 8 II 14, KBo V 8 II 40, *i-i̯a-aḫ-ḫa-ḫa-at* "I marched" KUB I 1 II 80, *kiš-ḫa-ḫa-ri* "I sit" KUB XXVI 12 II 9, *ki-iš-ḫa-ḫa-at* KUB I 1 I 24, III 12, IV 48, LUGAL-*IZ-zi-i̯a-aḫ-ḫa-ḫa-at* "I ruled as a king" KUB

The above discussions may be summarized by presenting the relative chronology of the relevant phonological and morphological rules:

XXIII 99 Vs. 3, *pa-aḫ-ḫa-aš-ḫa-ḫa-at* "I protected" KUB XXI 1 I 72) and manuscripts of indeterminate nature (but not OH or MH originals). This fact might invite us to speculate that the iterated 1 sg. middle endings which consistently show the lenited second consonant are Neo-Hittite creations and the second lenition rule was still alive when they were created. But a careful look at the above attestations suggests that this possibility is unlikely. The above *ēšḫaḫati* shows the final *-i* which is a feature characteristic of Old Hittite and lacking in Neo-Hittite. Therefore, the Neo-Hittite scribe must have simply imitated an Old Hittite form without any modifications. This means that Old Hittite had the doubly characterized 1 sg. middle endings. Furthermore, if we assume that the second lenition rule was still operating in Old Hittite to explain the lenited second *ḫ*, there would be more evidence for the effect of the rule. For example, 2 sg. and 2 pl. present forms of *ḫi*-verbs such as *mema-* "speak", which has accent on the reduplicated syllable, would show lenited *-t-* in their endings, but this verb is always spelled 2 sg. *mematti* and 2 pl. *mematteni*, not ***memati* and ***memateni*. Accordingly, the second lenition rule must have ceased to work before the Hittite historical period.



At a Proto-Anatolian stage there were two variants of reflexive particle, *-*ti* and *-*di*, the latter of which was created by lenition rules. They were both inherited to pre-Hittite and Common Luvian stages. Among the Luvian languages *-*di* was generalized in Cuneiform Luvian and Hieroglyphic Luvian whereas *-*ti* was favored in Lycian. In the prehistory of Hittite, on the other hand, *-*ti* and *-*di* were both assibilated to *-*tzi* and *-*dsi* respectively except after *s, where assibilation was not observed. Regular phonological outcomes of the assibilation (followed by later apocope) are reflected in Old Hittite *ma-a-ni-za* (with single -*z*-) and *nu-uz-za* (with

double *-zz-*). The reflexive **-ti* which escaped being assibilated after **s* was later transferred to the preterite middle endings to disambiguate them from the corresponding present middle endings. Finally, the second lenition rule which was still alive at a pre-Hittite stage changed **-ti* into **-di*[56].

IV. Assibilation of **d* before **i̯*

Substantial portions of the preceding two sections were devoted to demonstrating the validity of our new sound change, i.e., assibilation of **d* before **i* in Hittite. However, there is evidence suggesting that the assibilation of **d* is not restricted to the position before **i*, but that it is also observed before **i̯*. Playing an important role in this problem are two nouns, *šiu̯att-* "day" and *šiu̯-* "god".

This section mainly concerns phonological and morphological problems in the Hittite noun *šiu̯att-* which means "day" (usually written by the ideogram UD or UD^{KAM}) or "the Sun God" with determiner indicating a god. There are a number of uncertainties observed in this noun which have never been explained in a satisfactory manner. First of all, the development of initial *š-* from its widely accepted proto-form **diu̯-ot-* (cf. Cuneiform Luvian $^{(D)}$*tiu̯at-*) is in no way clear[57]. Secondly, this noun is attested four times in Old Hittite original manuscripts and among these four occurrences three are written by scriptio plena *-i-* in the root. The attested forms are shown below:

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[56] I am indebted to Jay Jasanoff and Craig Melchert for helping me clarify my view on many issues discussed in this section. More systematic treatment of the problems will appear elsewhere (Yoshida forthcoming b).

[57] This proto-form is given by, for example, Watkins (1974: 106) and Starke (1990: 150). Watkins considered the root **diu̯-* as the zero-grade of **di̯eu-* "god", which, in turn, appears as *šiu-* with assibilation in Hittite. The most recent descriptive analysis of Hittite *šiu-* is found in Neu (1998).

sg. nom. *ši-i-u̯a-az* KBo XVII 15 Rs. 19

gen. ^{D}*Ši-i-u̯a-at-ta-aš* KBo XVII 15 Vs. 10

loc. *ši-i-u̯a-at* KBo XXV 17 I 1

ši-u̯a-at KBo III 22, 60[58]

Melchert (1994: 119) read the stem of the first three forms as *šīu̯att-* which, he argues, goes back to **díwot-*. As he himself admitted (personal communication), however, an accented zero-grade of the root is, of course, problematic. Finally, its cognate forms in Cuneiform Luvian and Hieroglyphic Luvian show single *-t-* intervocalically and rhotacized *-r-*, respectively, which obviously represent lenited **d* in contrast to the unlenited **t* indicated by Hittite *šiu̯att-*; e.g., Cuneiform Luvian ^{D}UTU-*u̯a-ti* (dat. sg.) KUB XXXV 107 III 11, *ti-u̯a-ta* (voc. sg.?) KUB XXXV 19, 12; KUB XXXII 70, 6, *ti-u-u̯a-ta* (voc. sg.?) KBo VII 68 III 3 and Hieroglyphic Luvian DEUS.SOL-*ri+i*[59]. Melchert (1994: 237) assumed that these Luvian forms go back to a Proto-Anatolian **díu̯od-*, the outcome of a Proto-Anatolian lenition rule applied to earlier **díu̯ot-* with **t* between unaccented vowels. But here again the motivation for restoration of unlenited *-tt-* in Hittite is not at all clear[60]. At first sight, the three problems addressed above do not seem to be related with one another, but as we shall see below, these facts can be straightforwardly accounted for by establishing the original inflectional pattern which characterized Hittite *šiu̯att-* and Common Luvian **tiu̯ad-* and tracing their prehistory. The remainder of this section will be devoted to this task.

It is well known from an earlier stage of Hittite studies that

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[58] This Old Hittite form is copied as UD^{KAM}-*ti* KUB XXXVI 98b Vs. 7 in a Neo-Hittite duplicate.

[59] The Hieroglyphic Luvian form is from Hawkins (1975: 130).

[60] Starke (1990: 150f.) also claims that Hittite *-tt-* is secondary whereas Cuneiform Luvian *-t-* is inherited. But his reasoning is not well motivated, either.

Proto-Indo-European *d appears as *$š$ in Hittite *šiu-* and *šiu̯att-*[61]. Because *$š$* is observed word-initially in both cases, regular assibilation of *d before *$i̯$ (*$di̯eu$- > *šiu-*) and *i (*$diu̯ot$- > *šiu̯att-*) can be restricted to anlaut position; cf. Starke (1990: 143, 150) and Melchert (1994: 118f.). As we have seen in section 2, however, there are pieces of evidence which show that internal *-d- also becomes an affricate *dz* before *i just as *t becomes *ts* before *i. This fact suggests that the *š-* of *šiu-* and *šiu̯att-* was presumably not produced by a single rule, but underwent three ordered rules, i.e., first getting affricated, then deaffricated and finally devoiced. I, in fact, argued elsewhere that the initial *š-* of both cases is derived in the following manner, respectively: *$di̯eu$- > *$dzi̯ū$- > * $zi̯ū$- > *$si̯ū$- > *šiu-* /syū/, *$diu̯ot$- > *$dziu̯at$- > * $ziu̯at$- > *$siu̯at$- > *šiu̯att-* /siwat/[62]. The derivation of *šiu-* is probably tenable, but that of *šiu̯att-* does not now seem sufficiently well motivated because the initial consonant cluster simplification *dzi-* > *zi-* is not very likely. Instead there is an alternative way of deriving *šiu̯att-* by which a completely parallel phonological treatment is given to both *šiu-* and *šiu̯att-*[63].

As observed above, there are at least three Old Hittite forms that show scriptio plena *-i-* in the root as is exemplified by ^{D}*Ši-i-u̯a-at-ta-aš* (gen. sg.). It is *a priori* not unreasonable to interpret them as representing *šii̯u̯att-*, not *šīu̯att-*. This interpretation is, in fact, supported by comparative evidence: *šii̯u̯att-* is etymologically equated with Vedic *dyut-* "shine" with zero-grade in the root and the suffix, where an original *$di̯$- sequence is preserved intact. According to this reading the Hittite "day" word shares a common feature with the Hittite "god" word: they are both characterized by the initial consonant cluster *$di̯$-. An obvious merit of this analysis is that *ši-i-u̯a-at(-ta-aš)* receives the same line of historical explanation as given to *šiu-* above (*$di̯V$- > *$dzi̯V$- > *$zi̯V$- > *$si̯V$- > *šii̯u̯att-*). A remaining problem is the relationship between *šii̯u̯att-* and

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[61] See, for example, Kronasser (1956: 62).

[62] Cf. Yoshida (1998b: 207f.).

[63] I am indebted to Jay Jasanoff who first suggested this possibility to me.

šiu̯att- without scriptio plena. In my view *šiu̯att-* is a syncopated form of *šii̯u̯att-* with unaccented root[64]. Unaccented *i* was deleted and then yod was vocalized interconsonantally. Syncope of unaccented vowel is occasionally seen in Hittite; e.g., *laḫlaḫḫ(i)i̯a-* "gallop" vs. *laḫlaḫḫinú-* "cause to gallop", *šii̯attar* "seal" vs. *šittar(i)i̯á-* "send by a sealed document"[65].

Although neither Hittite *šii̯u̯att-* (*šiu̯att-*) nor Cuneiform Luvian *tiu̯at-* shows any ablaut alternation between the strong and weak cases from a synchronic viewpoint, their ancestral paradigm must have been characterized by apophonically different forms. Otherwise, no plausible explanation could be given to the consistent unlenited *-tt-* (< **-t-*) in Hittite and lenited *-t-* (< **-d-*) in Cuneiform Luvian. In other words, we have to assume that **-d-* was secondarily created from **-t-* by the so-called lenition rules which were conditioned by vowel length and the position of accent[66], so that both **-t-* and **-d-* came to coexist as regular phonological outcomes in a paradigm of this noun at a stage of Proto-Anatolian. This situation was not retained in Hittite or Cuneiform Luvian any more. The former generalized **-t-* throughout the paradigm in its own subsequent history, whereas the latter ousted **-t-* in favor of **-d-*. Exactly the same direction of analogical leveling is observed in the ablative ending and the reflexive particle, where the unlenited quality of consonants was favored in Hittite, but the lenited one in the Luvian group of languages; cf. the Hittite ablative ending followed by the enclitic particle *-i̯a*, *-Vzzi-i̯a*, Cuneiform Luvian *-a(-a)-ti*, Hieroglyphic Luvian *-a/i+ra/i*, *-a/i-ri+i*, *-a/i-ti*, Lycian *-adi/-edi* and the Hittite reflexive particle following the sentence connective *nu*, *nu-uz-za*, Cuneiform Luvian *-ti* (spelled with single *-t-* intervocalically),

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[64] The unaccented root is guaranteed. As we will see below, *i*-vocalism of the root of *šii̯u̯att-* reflects unaccented **e*.

[65] The examples are from Melchert (1984: 58), where more detailed discussions on syncope are found.

[66] See the reference in footnotes 24 and 27.

Hieroglyphic Luvian *-ra/i, -ri+i, -ti.*

If the above scenario is accepted, the next obvious step will be to identify an original ablaut pattern that most naturally accounts for the unlenited *-tt-* of Hittite *šiiuatt-* and the lenited *-t-* of Cuneiform Luvian *tiuat-* (< Common Luvian **tiuad-*)[67]. Palaic *Ti-ia-az* "the Sun God", a cognate corresponding to these Hittite and Cuneiform Luvian forms, does not attest any case forms in which the dental appears in an intervocalic position, and therefore is of no immediate relevance to our present purpose. The *a*-vocalism of the suffix in Hittite *šiiuatt-* and Cuneiform Luvian *tiuat-*, whose possible Proto-Indo-European source is **o* (< **-ot-*), suggests that they originally belonged to the amphikinetic inflection pattern characterized by accented *e*-grade root and *o*-grade suffix in strong cases and by accented ending in weak cases. But because Hittite *a* can also be obtained from Proto-Indo-European **e* by regular sound changes, the possibility of the proterokinetic type cannot be ruled out if an original paradigm was affected by leveling.

First, we will suppose that an original ablaut pattern was still preserved at a stage of Proto-Anatolian when the lenition rules operated. In this case the amphikinetic ablaut pattern is the only possible candidate[68]. Let us consider the

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[67] Following a principle of reconstruction that Schindler (1975: 2) emphasized, the apophonic shapes of the stems in compounds or in secondary derivatives cannot be used to establish the ablaut of the simplex. Accordingly, words such as Cuneiform Luvian *tiuari(ia)-* "of the Sun God", Hieroglyphic Luvian (LITUUS+)*Á-za-ti-i-ua/i-tà-sá* "(person name)" will be excluded from the following discussions.

[68] If the noun in question showed the proterokinetic ablaut (accented *e*-grade root in strong cases and accented *e*-grade suffix in weak cases), the following Proto-Anatolian forms are created after the application of lenition:

sg. acc. PIE **diéu-t-m̥* > PA **diŭd-*

gen. PIE **diu-ét-s* > PA **diuét-*

possibility of reconstructing this ablaut pattern for Hittite *šḭi̯u̯att-* and Cuneiform Luvian *ti̯u̯at-*:

Because the accusative singular satisfies the structural description of the lenition rules while the genitive singular does not, both **t* and **d* are obtained. There are, however, no available sources of the *a* in Hittite *šḭi̯u̯att-* and Cuneiform Luvian *ti̯u̯at-*.

The possibility of reconstructing a hysterokinetic ablaut pattern (accented *e*-grade suffix in strong cases and accented *e*-grade ending in weak cases) is also to be rejected as shown below:

sg. acc. PIE **di̯u̯-ét-m̥* > PA **di̯u̯ét-*

gen. PIE **di̯u̯-t-és* > PA **diut-´*

In this ablaut pattern the accent is always on one of the short vowels next to **t* regardless of the case form, so that **d* is not produced by lenition, and therefore the contrast of **t* and **d* cannot be obtained in the paradigm.

In the case of acrostatic ablaut, which is subdivided into two types (one type with the accented *o*-grade root in strong cases and the accented *e*-grade root in weak cases and the other type with the accented lengthened *e*-grade root in strong cases and the accented *e*-grade root in weak cases), the paradigm of each type must have developed as follows (In the following we follow Melchert's view that **o* was still distinct from **a* at a Proto-Anatolian stage (Melchert 1992b). But this choice is not crucial to our present concern.):

sg. acc. PIE **di̯óu̯-t-m̥* > PA **di̯óu̯d-*

gen. PIE **di̯éu̯-t-s* > PA **di̯ŭ̯t-*

sg. acc. PIE **di̯ēu̯-t-m̥* > PA **di̯ŭ̯d-*

gen. PIE **di̯éu̯-t-s* > PA ** di̯ŭ̯t-*

In both types **d* as well as **t* can be obtained, but like the preceding cases it is impossible to find any sources for the suffix *-at(t)-* in Hittite *šḭi̯u̯att-* and Cuneiform Luvian *ti̯u̯at-*.

sg. acc. PIE *$d_{\hat{i}}\acute{e}_{\hat{u}}$-ot-$m_{\mathring{o}}$ > PA *$d_{\hat{i}}\acute{e}_{\hat{u}}$od-

gen. PIE *$d_{\hat{i}}u$-t-és > PA *$d_{\hat{i}}$ut-'

As shown above, both *t and *d are exhibited in the above paradigm and the o-grade suffix can be a source of *a* in Hittite and Cuneiform Luvian. In fact, Cuneiform Luvian *ti$_{\hat{u}}$at-* is the phonologically predictable outcome of the above strong form; no morphological influence is needed. The initial *ti-* is regularly derived from Proto-Anatolian *$d_{\hat{i}}$é-*; cf. Melchert (1994: 262). As for the development of the sequence *-C$_{\hat{i}}$éti of -$_{\hat{i}}$é/ó- verbs into *-Citti* (e.g., *aritti* "raises"), see especially Morpurgo Davies (1982/83: 265ff.). As for Hittite *š$_{\hat{i}}$i$_{\hat{u}}$att-*, however, no straightforward historical explanation is available. Even though unlenited *-tt-* may have spread from the weak case, the *i*-vocalism of the root resists any reasonable analysis. It might seem possible to assume that at a post-Anatolian stage the accent shifted from the root to the suffix under the influence of the amphikinetic collective plurals such as *$_{\hat{u}}$idār* "water (collective)" and *uddār* "words", so that unaccented *e in this position became *i* (*$d_{\hat{i}}\acute{e}_{\hat{u}}$od- → *$d_{\hat{i}}e_{\hat{u}}$ód- → *$d_{\hat{i}}e_{\hat{u}}$ót- > š$_{\hat{i}}i_{\hat{u}}$att-*)[69]. But such an accentual shift is observed only in amphikinetic collective plurals, not in singulars[70]. Notice that Hittite nominative singular *tēkan* (< *dhéĝh-ōm*) and genitive *tagnāš* (< *dhĝh-m-és*) continue an original amphikinetic inflection. Accordingly, the above accentual shift should be taken as unmotivated.

Thus, when we stand on the assumption that an original ablaut pattern of Hittite *š$_{\hat{i}}$i$_{\hat{u}}$att-* and Cuneiform Luvian *ti$_{\hat{u}}$at-* was retained at an early stage of Proto-Anatolian, virtually no satisfactory historical explanation is available. Next, we will proceed to the assumption that the original paradigm was affected by leveling, i.e., generalization

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[69] This accentual shift occurred in Proto-Anatolian according to Melchert (1994: 264); cf. Cuneiform Luvian *āddu$_{\hat{u}}$āl* "evil", etc.

[70] I am indebted to Craig Melchert who reminded me of this fact.

of the vocalism of the strong case to the weak case and vice versa in our present case. It would, however, be safe to leave the acrostatic and hysterokinetic inflectional types out of consideration. Since the acrostatic type had the accent always on the root and the suffix in the zero grade, there are no sources within this ablaut paradigm from which the *a*-vocalism of the suffix *-at(t)-* was carried over. Likewise, hysterokinetic ablaut cannot be ascribed to this noun, either. After leveling occurred, the original paradigm apparently would have shown accusative singular **diu̯-ét-m̥* and genitive singular **diu̯-et-és*, from which neither lenited *d* nor the suffix *-at(t)-* can be obtained. Our focus of attention will be therefore put on the possibilities of the proterokinetic and amphikinetic ablaut types.

Supposing that the nouns in question showed the proterokinetic inflection and later underwent leveling, there are at least two potentially conceivable ways to account for the *a*-vocalism of the suffix *-at(t)-*. Jasanoff (1998: 302[6]) suggested a Proto-Indo-European sound change whereby post-tonic **e* becomes **o* in closed syllables[71]. If this rule follows the leveling, the suffix obtains **o* (> Hittite and Cuneiform Luvian *a*) in the nominative singular as follows:

sg. nom. PIE **di̯éu̯-t-s* → **di̯éu̯-et-s* > **di̯éu̯-ot-s*
gen. PIE **diu̯-ét-s* → **di̯eu̯-ét-s*

This interpretation is, however, rejected by Vedic *dyút-* (acc. sg. *dyútam*, instr. sg. *dyutā* in Rig Veda) which shows the zero grade suffix throughout the paradigm. Thus, if there is any possible way to derive Hittite *šiu̯att-* and Cuneiform Luvian *tiu̯at-* from an original proterokinetic paradigm, the leveling must have been of a

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[71] According to him, this rule probably explains the *o*-timbre of the thematic vowel. The vowel **o* in Greek γένος "race", Latin *genus* and Sanskrit *jánaḥ*, which are originally characterized by the proterokinetic inflection, may also be due to this rule (**ĝénh₁-s* → **ĝénh₁-es* > **ĝénh₁-os*).

post-Proto-Indo-European date. In fact, it is also possible to obtain the Hittite suffix *-att-* by a pre-Hittite sound law that changes post-tonic **e* to **a* in open syllables and the Cuneiform Luvian *-at-* by a similar Luvian rule[72]:

sg. acc. PIE **di̯éu̯-t-m̥* → PA **di̯éu̯-et-m̥* > PA **di̯éu̯ed-* > pre-Hittite **di̯éu̯ad-*, Cuneiform Luvian *tiu̯at-*

gen. PIE **diu̯-ét-s* → PA **di̯eu̯-ét-s* > PA **di̯eu̯ét-* > pre-Hittite **di̯iu̯ét-*[73], Cuneiform Luvian ***tiu̯att-*

In this case Cuneiform Luvian *tiu̯at-* may be taken as a regular phonological outcome of the strong form **di̯éu̯ed-*, which could be easily extended to the weak cases. But Hittite *šiu̯att-* needs a very bizarre blend of the strong and weak stems. To be specific, the *i*-vocalism of the root and unlenited *-tt-* are taken from weak cases whereas the *a*-vocalism of the suffix is taken from strong cases. Such a complicated development would be quite unlikely.

On the other hand, reconstructing the amphikinetic ablaut pattern for the Hittite and Cuneiform Luvian nouns accompanied with later leveling provides us with a surprisingly simple explanation. Under this analysis the following strong and weak forms are obtained at a later stage of Proto-Anatolian:

sg. acc. PIE **di̯éu̯-ot-m̥* > PA **di̯éu̯od-*

gen. PIE **diu̯-t-és* → PA **di̯eu̯-ot-és* > PA **di̯eu̯ot-'*

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[72] Cf. As for this Hittite rule, see Melchert (1994: 137f.) and Yoshida (1997). Concerning the Luvian rule, refer to Melchert (1994: 263). The Luvian rule does not need any additional restrictions on the syllable structure.

[73] As already pointed out above, posttonic **e* changes to **i* in Hittite; e.g., *u̯itār* "water (collective)" < *u̯edṓr* (cf. Melchert 1984: 107, 1994: 139)

The strong stem *$d_{\underline{i}}\acute{e}_{\underline{u}}od$- with lenited *$d$, whose phonologically regular outcome in Cuneiform Luvian is $ti_{\underline{u}}at$-, was leveled to the whole paradigm in its post-Anatolian prehistory. Hittite took the opposite direction of leveling: the weak stem *$d_{\underline{i}}e_{\underline{u}}ot$-′ with unaccented *$e$ and unlenited *t, from which the actually attested $\check{s}i_{\underline{i}}i_{\underline{u}}att$- is regularly derived by sound changes, was generalized throughout the paradigm[74]. The generalization of the vocalism of the strong stem to the weak stem shown above must have occurred after the Anatolian languages split from the other Indo-European branches. Otherwise, it would be very hard to give any convincing historical explanation to Vedic *dyút-*, which is best interpreted to continue the generalized weak stem *$d_{\underline{i}}u$-t-′ of the original amphikinetic paradigm.

Palaic *Ti-$i_{\underline{i}}a$-az* "the Sun God" presents us with an enigmatic $\underline{i}$ instead of $\underline{u}$. Melchert (1994: 198) tentatively assumes that $\underline{i}$ was inserted as a hiatus filler after the conditioned loss of $\underline{u}$[75]. It must be admitted that we do not have an accurate understanding of Palaic historical phonology. But as far as the vowels of $Ti_{\underline{i}}az$ are concerned, there do not seem to be any serious obstacles to deriving them from the Proto-Anatolian weak stem *$d_{\underline{i}}e_{\underline{u}}ot$-′ with vowels carried over from the strong stem just like the case of Hittite $\check{s}i_{\underline{i}}i_{\underline{u}}att$-. The *i* of $Ti_{\underline{i}}az$ is probably due to a syncope of *$i_{\underline{i}}e$ in unaccented position.

I hope to have shown that the three problems concerning Hittite $\check{s}i_{\underline{u}}att$- addressed at the outset of this section are explicable by assuming an original amphikinetic ablaut pattern for the proto-form of this noun and Cuneiform Luvian $ti_{\underline{u}}at$-

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[74] Typologically comparable analogical extension is quite unremarkable. For example, the root noun meaning "foot" originally showed apophonic alternation between acc. sg. *$pód$-$m̥$ and gen. sg. *$péd$-s, from which the strong stem was generalized in Greek πώς (Doric) while Latin *pēs* leveled the weak stem throughout the paradigm.

[75] On the other hand, Watkins (1974: 107) suggested that Palaic $Ti_{\underline{i}}az$ might continue *$d_{\underline{i}}eus$, but this possibility is rejected by Melchert (1994: 198).

with later leveling (Proto-Indo-European *$d\underset{\frown}{i}\acute{e}\underset{\frown}{u}$-ot-$\underset{\circ}{m}$/*$d\underset{\frown}{i}$u-t-és → Proto-Anatolian *$d\underset{\frown}{i}\acute{e}\underset{\frown}{u}$-ot-$\underset{\circ}{m}$/*$d\underset{\frown}{i}e\underset{\frown}{u}$-ot-és → *$d\underset{\frown}{i}\acute{e}\underset{\frown}{u}$od-/*$d\underset{\frown}{i}e\underset{\frown}{u}$ot-'). First, the initial *š* of *šiuatt-* is derived from *$d\underset{\frown}{i}$- by assibilation, initial consonant cluster simplification and initial devoicing. Secondly, the scriptio plena *-i-* in Old Hittite forms such as *ši-i-$\underset{\frown}{u}$a-az* is a reflex of unaccented **e*. Finally, the lenited *-t-* (< **-d-*) of Cuneiform Luvian *tiuat-* in contrast to the unlenited *-tt-* of Hittite *šiuatt-* is due to the Proto-Anatolian lenition rule. Hittite and Luvian languages generalized the weak stem with **-t-* and the strong stem with **-d-* respectively in their individual history[76].

V. Conclusions

The conclusions in this study of Hittite historical phonology and morphology can be summarized as follows.

Section 1 reviewed the current state of Hittite and Anatolian studies. We stressed the necessity of discussing Hittite linguistic problems in the light of the recent dramatic development of relative chronology of Hittite manuscripts. We also pointed out that comparative studies of Anatolian languages are now in a markedly improved situation due to the increase in new documents unearthed. In section 2, we proposed a new sound change, i.e., assibilation of **d* before **i* in Hittite, and supporting evidence. Section 3 discussed the Hittite particle *-ti* that at first seemed evidence against the above sound change. By elucidating its unique prehistory in a wider Anatolian context, we showed that the particle does not speak against the phonological rule. In section 4, we observed that the assibilation of **d* also took place before *$\underset{\frown}{i}$ in the prehistory of Hittite.

The road to the systematic description of the "real" Hittite historical grammar will be long. What we attempted to show in this study is an interpretation of an

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[76] I am grateful to Jeremy Rau for his helpful comments during the preparation of this section, which will appear elsewhere in a full-fledged form (cf. Yoshida forthcoming a).

up-to-date collection of data on a small corner of phonology and morphology. Further interesting problems await us in the manuscripts.

APPENDIX A

A Representative Sample of Old Hittite Verbs in *-Vzzi* and *-Vzi*

The following table includes a representative sample of the 3 sg. present active *mi*-verbs of the vocalic stem attested in Old Hittite texts. In assembling a corpus of Hittite documents, the distinction between 'text' and 'manuscript' is of crucial importance. By 'texts' we mean unitary compositions and by 'manuscripts' specific tablets on which texts are written. In the following table we will distinguish four kinds of Old Hittite manuscripts different from each other in nature: OH = Old Hittite texts in Old Hittite original manuscripts, OH+ = Old Hittite texts in Middle Hittite copies, OH++ = Old Hittite texts in Neo-Hittite copies and OH— = Old Hittite texts in manuscripts of indeterminate date. In the following table manuscripts are arranged according to *CTH* number; *CTH* = Emmanuel Laroche's *Catalogue des textes hittites* (1971), Paris: Klincksieck, and its supplement in *Revue hittite et asianique* 30 (1972).

CTH 1. Anitta

A. (OH)	*pa-IZ-zi*	KBo III 22 Rs. 78 (= *pa-I[Z-zi]* KUB XXVI 71 I 18 OH++ = *pa-IZ-zi* KUB XXXVI 98b Rs. 6 OH++)
	ḫu-ul-[	KBo III 22 Vs. 34
	ḫu-ul-LI-[	KBo III 22 Vs. 35 (= *[ḫu-u]l-LI-e-IZ-zi* KUB XXXVI 98a Vs. 5 OH++)
B. (OH++)	*pa-I[Z-zi]*	KUB XXVI 71 I 18
C. (OH++)	*pa-IZ-zi*	KUB XXXVI 98b Rs. 6
	[ḫu-u]l-LI-e-IZ-zi	KUB XXXVI 98a Vs. 5

CTH 3. Zalpa

1. A. (OH)	*tar-ši-KI-IZ-zi*	KBo XXII 2 Rs. 4 (= *tar-aš-K[I-IZ-z]i* KBo III 38 Rs. 20 OH++)
1. B. (OH++)	*pa-IZ-zi*	KBo III 38 Rs. 17
	šu-ú-ni-IZ-zi	KBo III 38 Vs. 29
	tar-aš-K[I-IZ-z]i	KBo III 38 Rs. 20

CTH 8. Palace Chronicle

D. (OH)	*ú-e-mi-IZ-z[i]*	KUB XXXVI 104 Vs. 10

CTH 9. Fragments of Palace Chronicles

5. (OH)	*ú-uš-KI-IZ-z[i]*	KBo VIII 42 Vs. 2
	pu-nu-uš-KI-IZ-zi	KBo VIII 42 Vs. 6

CTH 15. Zukraši of Aleppo

A. (OH)	*te-I[Z-z]i*	KUB XXXVI 100 Vs. 21
	ti-IZ-zi	KUB XXXVI 100 Vs. 24
	te-IZ-zi	KUB XXXVI 100 Rs. 10; Rs. 12

CTH 25. Treaty of Zidanza with Pilliya (OH)

	i̯a-az-zi	KUB XXXVI 108 Vs. 12

CTH 27. Treaty (?) with the *ḫabiru* (OH)

	i-IZ-zi	KBo IX 73 Vs. 6
	ú-e-mi-IZ-zi	KBo IX 73 Vs. 13
	ú-u̯a-te-IZ-zi	KBo IX 73 Vs. 14
	ú-IZ-zi	KUB XXXVI 106 Vs. 3

	PÍ-i-e-IZ-zi	KUB XXXVI 106 Vs. 5
	pa-IZ-zi	KUB XXXVI 106 Rs. 1

CTH 272. (OH)

	da-aš-KI-IZ-zi	KBo XXII 1 Vs. 12
	ḫa-at-RI-eš-KI-IZ-zi	KBo XXII 1 Vs. 22
	PÍ-i̯a-na-az-zi	KBo XXII 1 Vs. 28

CTH 291. Laws §§1-100

I. a. A. (OH)	*an-ni-iš-KI-IZ-zi*	KBo VI 2 I 18 (= *an-ni-eš-KI-IZ-zi* KBo VI 3 I 27 OH+)
	ap-pa-ta-RI-IZ-zi	KBo VI 2 IV 4 (= *ap-pa-at-RI-IZ-zi* KBo VI 3 III 76 OH+)
	ar-nu-uz-zi	KBo VI 2 I 2 (= *ar-nu-zi* KBo VI 3 I 9 OH+); I 6 (= *ar-nu-uz-zi* KBo VI 3 I 13 OH+); I 38 (= *ar-nu-zi* KBo VI 3 I 47 OH+)
	ar-nu-zi	KBo VI 2 IV 5 (= *ar-nu-uz-zi* KBo VI 3 III 77 OH+)
	-i]š-KI-IZ-zi	KBo VI 2 IV 59 (= *e-IT-RI-eš-KI-IZ-zi* KBo VI 3 IV 60 OH+ = *[e-I]T-RI-iš-KI-IZ-zi* KBo XIX 4 IV 8 OH++ = *-iš-KI-IZ-zi* KBo VI 21 IV 4 OH–)
	ḫa-ap-pa-ra-IZ-zi	KBo XIX 1 II 17 (= *ḫa-ap-pa-ra-IZ-zi* KBo VI 3 II 36 OH+)
	i-e-zi	KBo VI 2 I 60
	i-IZ-zi	KBo VI 2 II 50; II 51
	kar-PÍ-IZ-zi	KBo VI 2 II 42 (= *kar-PÍ-IZ[-zi]* KBo VI 3 II 63 OH+); II 46 (= *kar-ap-zi* KBo VI 3 II 67 OH+)
	[kar-P]Í-IZ-zi	KBo VI 2 II 45 (= *kar-PÍ-i-e-IZ-zi* KBo VI 3 II 66 OH+)
	kar-PÍ-i-IZ-zi	KBo VI 2 II 39 (= *kar-ap-zi* KBo VI 3 II 60 OH+); II

	40(= *i-e-IZ-zi* KBo VI 3 II 61 OH+); II 48; II 49 (= *[kar-]PÍ-i-IZ[-zi]* KBo VI 3 II 69 OH+)
kar!-aš-ši-i-IZ-zi	KBo VI 2 I 8 (= *kar-aš-ši-i-e-IZ-zi* KBo VI 3 I 15 OH+)
[ku-uk-kur-i]š-KI-IZ-zi	KBo VI 2 IV 45
ku-uš-ša-ni-IZ-zi	KBo VI 2 II 27 (= *ku-uš-ša-ni-i-e-IZ-zi* KBo VI 3 II 48 OH+ = *ku-uš-ša-ni-ia-zi* KBo VI 5 IV 7 OH++); IV 10 (= *ku-ša-ni-IZ-zi* KBo VI 3 IV 3 OH+)
lu-uk-KI-IZ-zi	KBo VI 2 IV 56 (= *lu-uk-KI-IZ-zi* KBo VI 3 IV 55 OH+ = *[lu-u]k-KI-IZ-zi* KBo XIX 4 IV 2 OH++)
lu-uk-KI-IZ-z[i]	KBo VI 2 IV 53 (= *lu-uk-KI-IZ-zi* KBo VI 3 IV 52 OH+); IV 59 (= *lu-uk-KI-IZ-zi* KBo VI 3 IV 59 OH+)
pa-IZ-zi	KBo VI 2 I 51; I 53 (= *pa-IZ-z[i]* KBo VI 3 I 61 OH+); IV 39 (= *pa-IZ-zi* KBo VI 3 IV 37 OH+); KBo XIX 1 Vs. II 27 (= *pa-I[Z-z]i*KBo VI 3 II 48 OH+ = *pa-IZ-zi* KBo VI 5 IV 7 OH++)
pa-ap-RI-IZ-zi	KBo VI 2 I 56; I 57; I 59
pár-ku-nu-uz-zi	KBo VI 2 II 34 (= *pár-ku-nu-uz-zi* KBo VI 3 II 55 OH+ = *pár-ku-nu-uz-zi* KBo VI 5 IV 18 OH++); III 33 (= *pár-ku-nu-uz-zi* KUB XXIX 16 III 7 OH = *pár-ku-nu-zi* KBo VI 3 III 37 OH+ = *pár-ku-nu-zi* KUB XXIX 17, 4 OH–); KBo VI 2 III 35 (= *pár-ku-nu-uz-zi* KUB XXIX 16 III 9 OH = *pár-ku-nu-zi* KBo VI 3 III 40 OH+)
pár-ku-nu-zi	KBo VI 2 III 38 + KBo XIX 1 III 38 (= *pár-ku-nu-uz-zi* KUB XXIX 16 III 12 OH = *pár-ku-nu-zi* KBo VI 3 III 43 OH+ = *[p]ár-ku-nu-zi* KBo XIX 3 I 16 OH++)
PÍ-ḫu-te-IZ-zi	KBo VI 2 I 40 (= *[PÍ]-e-ḫu-te-IZ-zi* KBo VI 3 I 48 OH+)

[PÍ-]e-ḫu-te-IZ-zi	KBo VI 2 I 37 (= *PÍ-e-ḫu-te-IZ-zi* KBo VI 3 I 46 OH+)
PÍ-eš-ši-IZ-zi	KBo VI 2 II 33 (= *PÍ-eš-ši-IZ-zi* KBo VI 3 II 54 OH+ = *PÍ-eš-ši-i̯a-IZ-zi* KBo VI 5 IV 16 OH++); II 35; IV 6 (= *PÍ-eš-ši-i̯a-zi* KBo VI 3 III 79 OH+); IV 7 (= *PÍ-eš-ši-i̯a-zi* KBo VI 3 III 80 OH+); IV 14 (= *PÍ-eš-ši-IZ-zi* KBo VI 3 IV 9 OH+)
pít-ti-nu-uz-zi	KBo VI 2 II 10 (= *pít-te-nu-uz-zi* KBo VI 3 II 29 OH+)
ša-a-ak-ta-a-IZ-zi	KBo VI 2 I 17 (= *ša[!]-a-ak-ta-a-IZ-zi* KBo VI 3 I 26 OH+)
ši-IT-ta-RI-IZ-zi	KBo XIX 1 II 19 (= *ši-i̯[a-at-t]a-RI-i̯a-zi* KBo VI 3 II 39 OH+)
ši-IT-ta-RI-IZ-z[i]	KBo XIX 1 II 24 (= *ši-i̯a-at-ta-RI-i-e-IZ-zi* KBo VI 3 II 45 OH+ = *ši-i̯a-at-tal-LI-i̯a-az-zi* KBo VI 5 IV 3 OH++)
šu-u̯a-i-IZ-zi	KBo XXII 6 II 3 (= *šu-u̯a-i-IZ-zi* KBo VI 3 I 7 OH+); KBo VI 2 I 2 (= *šu-u̯a-a-IZ-zi* KBo VI 3 I 9 OH+); I 3 (= *šu-u̯a-a-IZ-zi* KBo VI 3 I 11 OH+); I 10 (= *šu-u̯a-a-IZ-[z]i* KBo VI 3 I 18 OH+); I 12 (= *šu-u̯a-a-IZ-zi* KBo VI 3 I 20 OH+ = *šu-u̯a-a-IZ-z[i]* KBo XII 48, 4 OH–); I 41 (= *[šu-u̯a-i]-e-IZ- zi* KBo VI 3 I 49 OH+); I 44 (= *šu-u̯a[-i-IZ]-zi* KBo VI 3 I 52 OH+); I 59; III 26 (= *šu-u̯a-a-IZ-zi* KBo VI 3 III 29 OH+ = *šu-u̯a-a-IZ-zi* KBo VI 6 I 38 OH++); III 32 (= *šu-u̯a-i-IZ[-zi]* KUB XXIX 16 III 6 OH = *šu-u̯a-a-IZ-zi* KBo VI 3 III 36 = *šu-u̯a-a-IZ-zi* KUB XXIX 17, 3 OH–); III 37 (= *šu-u̯a-i-IZ-[zi]* KUB XXIX 16 III 11 OH = *šu-u̯a-a-IZ-zi* KBo VI 3 III 42 OH+); III 52 + KBo XIX 1 III 52 (= *šu-ú-u̯a-a-IZ-z[i]* KUB XIII 13 II 7 OH–); IV 9 (= *šu-u̯a-a-i-IZ-zi* KBo VI 3 IV 2 OH+); IV 17 (= *šu-u̯a-a-i-IZ-zi* KBo VI 3 IV 12

	OH+); IV 18 (= *šu-u̯a-a-i-IZ[-z]i* KBo VI 3 IV 14 OH+); IV 20 (= *[šu-u̯a-a-i-I]Z-zi* KBo VI 3 IV 16 OH+); IV 43 (= *]-IZ-zi* KBo VI 3 IV 41 OH+ = *[šu]-ú-u̯a-a-IZ-[zi]* KBo XIX 3 IV 11 OH++); IV 50; KBo XIX 1 III 42 (= *šu-u̯a-a-IZ-zi* KBo VI 3 III 47 OH+)
šu-u̯a-i-IZ-[zi]	KBo VI 2 I 21 (= *šu-u̯a-a-i-IZ-zi* KBo VI 3 I 30 OH+)
šu-u̯a-i-I[Z-zi]	KBo VI 2 III 57 (= *šu-u̯a-a-i-IZ-zi* KBo VI 3 III 62 OH+)
šu-u̯a-i-[IZ-zi]	KBo VI 2 I 23 (= *šu-u̯a-a-i-IZ-zi* KBo VI 3 I 32 OH+); III 30 (= *[šu-]u̯a-a-IZ-zi* KBo XIX 3 I 8 OH++ = *šu-u̯a-a-i-IZ-zi* KBo VI 3 III 34 OH+ = *šu-u̯a-a-IZ[-zi]* KBo VI 6 I 46 OH++); III 52 (= *š[u-u̯a-a-I]Z-zi* KBo VI 3 III 56 OH+ = *šu-ú-u̯a-a-IZ-z[i]* KUB XIII 13 II 7 OH–)
[šu-]u̯a-a-IZ-zi	KBo XIX 3 I 8
šu-ú-IZ-zi	KBo VI 2 IV 48 (= *šu-u̯a-a-IZ-zi* KUB XXIX 19, 7 OH++)
ta-a-i-IZ-zi	KBo VI 2 I 39 (= *da-a-i-IZ-zi* KBo VI 3 I 48 OH+); I 42 (= *da-a-i-IZ-zi* KBo VI 3 I 50 OH+); I 45 (= *[ta-a-i-I]Z-zi* KBo VI 3 I 53 OH+); II 53; III 40 (= *da-a-i-IZ-zi* KBo VI 3 III 46 OH+ = *da-a-IZ-zi* KBo XIX 3 I 19 OH++); III 45 (= *da-a-i-IZ-zi* KBo VI 3 III 50 OH+); III 51 (= *ta-a-i-IZ-[zi]* KBo VI 3 III 55 OH+ = *da-a-i-e-IZ-z[i]* KUB XIII 13 II 4 OH–); III 53 (= *ta-a-i-IZ-zi* KBo VI 3 III 57 = *-i)a-zi* KUB XIII 13 II 9 OH–); III 56 (= *ta-a-i-IZ-zi* KBo VI 3 III 60 OH+); IV 16 (= *ta-a-i-IZ-zi* KBo VI 3 IV 11 OH+); KBo XIX 1 III 43 (= *ta-a-i-IZ-zi* KBo VI 3 III 48 OH+ = *ta-a-i-i̯a-zi* KBo VI 8, 2 OH++)
da-a-i-IZ-zi	KBo VI 2 III 23 (= *ta-i̯a-az-zi* KBo VI 3 III 26 OH+ =

	da-a-i-i̯a-zi KBo VI 6 I 33 OH++)
[da-a]-i[-IZ-z]i	KBo VI 2 III 27 (= *da-i-e-IZ-zi* KBo VI 3 III 30 OH+ = *da-a-i-i̯a-zi* KBo VI 6 I 39 OH++)
t[a-i-]IZ-zi	KBo VI 2 IV 40 (= *ta-a-i-IZ-zi* KBo VI 3 IV 38 OH+ = *ta-a-IZ-zi* KBo XIX 3 IV 6 OH++)
ta-i-IZ[-zi]	KBo VI 2 IV 44 (= *ta-a-i-IZ-zi* KBo VI 3 IV 42 OH+)
ta-i-I[Z-zi]	KBo VI 2 IV 42 (= *ta-a-i-IZ-zi* KBo VI 3 IV 41 OH+)
ta-i-[IZ-zi]	KBo VI 2 IV 46 (= *ta-a-i-e-I[Z-zi]* KUB XXIX 19, 3 OH++)
[ta-a-]i-IZ-zi	KBo VI 2 I 37 (= *ta-a-i-IZ-zi* KBo VI 3 I 46 OH+)
ta-i-IZ-zi	KBo VI 2 III 54 (= *ta-a-i-IZ-zi* KBo VI 3 III 58 OH+); IV 18 (= *ta-a-i-IZ-zi* KBo VI 3 IV 13 OH+); VI 19 (= *ta-a-i-IZ-zi* KBo VI 3 IV 15 OH+); IV 47 (= *ta-a-i-IZ-z[i]* KBo VI 3 IV 45 OH+); IV 51 (= *ta-a-IZ-zi* KBo VI 3 IV 50 OH+)
te-IZ-zi	KBo XIX 1 II 18 (= *te-IZ-zi* KBo VI 3 II 37 OH+); KBo XIX 1 II 23 (= *te-IZ-zi* KBo VI 3 II 43 OH+ = *te-IZ-zi* KBo VI 5 IV 2 OH++ = *te-IZ-zi* KBo XII 49 III 11 OH++); KBo VI 2 IV 47 (= *te-IZ-zi* KBo VI 3 IV 46 OH+)
[te-I]Z-zi	KBo VI 2 IV 3 (= *te-IZ-zi* KBo VI 3 III 75 OH+ = *te-IZ-zi* KUB XIII 13 Rs. 4 OH–)
ti-IZ-zi	KBo VI 2 II 61
tu-u-RI-IZ-zi	KBo VI 2 III 60 (= *tu-u-RI-iš-KI-IZ-zi* KBo VI 3 III 65 OH+); IV 1 (= *tu-u-RI-IZ-zi* KBo VI 3 III 73 OH+); IV 12 (= *tu-u-RI-i̯a-zi* KBo VI 3 IV 7 OH+)
ú-e-mi-zi	KBo VI 2 IV 12 (= *[ú]-e-mi-i̯a-zi* KBo VI 3 IV 6 OH+)

	ú-e-mi-IZ-zi	KBo VI 2 III 38 (= *ú-e-mi-i̯a-az-zi* KBo VI 3 III 43 OH+ = *ú-e-mi-i̯a-z[i]* KBo XIX 3 I 16 OH++); III 58 (= *ú-e-mi-i̯a-zi* KBo VI 3 III 63 OH+); IV 11 (= *ú-e-mi-i̯a-z[i]* KBo VI 3 IV 4 OH+); IV 49; KBo XIX 1 III 49 (= *[ú-e-]mi-i̯a-az-zi* KBo VI 3 III 53 OH+ = *ú-e-mi-i̯a-zi* KBo VI 8, 9 OH++)
	ú-e-mi-IZ-z[i]	KBo VI 2 III 59 (= *ú-e-mi-i̯a-zi* KBo VI 3 III 64 OH+)
	[ú-e-]mi-IZ-zi	KBo VI 2 III 35 (= *ú-e-mi-i̯a-az-zi* KBo VI 3 III 40 OH+)
	[ú-e-m]i-IZ-zi	KBo VI 2 II 36 (= *ú-e-mi-i̯a-az-zi* KBo VI 3 II 57 OH+ = KAR-*zi* KBo VI 5 IV 21 OH++)
	[ú-e]-te-IZ-zi	KBo VI 2 IV 53 (= *ú-e-te-IZ-zi* KBo VI 3 IV 52 OH+ = *[ú-e]-te-IZ-zi* KUB XXIX 20, 4 OH++)
	ú-u̯a-te-IZ-zi	KBo VI 2 I 43 (= *ú-u̯a-te-IZ-zi* KBo VI 3 I 51 OH+); I 46 (= *ú-u̯a-te-IZ-zi* KBo VI 3 I 54 OH+); I 48 (= *ú-u̯a-te-IZ-zi* KBo VI 3 I 56 OH+); I 53
	zi-i-nu-uš-KI-IZ-zi	KBo VI 2 II 30 (= *zi-nu-uš-KI-IZ-zi* KBo VI 3 II 52 OH+ = *zi-e-nu-uš-KI-IZ-zi* KBo VI 5 IV 12 OH++)
I. a. B. (OH)	*pár-ku-nu-uz-zi*	KUB XXIX 16 III 7; III 9; III 12
	šu-u̯a-i-IZ[-zi]	KUB XXIX 16 III 6; III 11
	ta-a-i-I[Z-z]i	KBo XIX 2 + KUB XXIX 16 III 5 (= *ta-a-i-IZ-zi* KBo VI 3 III 35 OH+)
	ú-e-mi-IZ-[z]i	KBo XIX 2 + KUB XXIX 16 III 7 (= *ú-e-mi-e-IZ-zi* KBo VI 3 III 37 OH+)
I. b. A. (OH+)	*an-ni-eš-KI-IZ-zi*	KBo VI 3 I 27
	ap-pa-at-RI-IZ-zi	KBo VI 3 III 76
	ar-nu-uz-zi	KBo VI 3 I 13; III 77
	ar-nu-zi	KBo VI 3 I 4; I 7; I 9; I 47; IV 61 (= *ar-nu-zi* KBo XIX 4

IV 9 OH++)

[ar-nu-z]i	KBo VI 3 I 2
e-IT-RI-eš-KI-IZ-zi	KBo VI 3 IV 60
ḫa-ap-pa-ra-IZ-zi	KBo VI 3 II 36
i-e-IZ-zi	KBo VI 3 II 61; III 20
kar-PÍ-IZ[-zi]	KBo VI 3 II 63
[kar-]PÍ-IZ[-zi]	KBo VI 3 II 69
kar-PÍ-i-e-IZ-zi	KBo VI 3 II 66
kar-aš-ši-i-e-IZ-zi	KBo VI 3 I 15
ku-ša-ni-IZ-zi	KBo VI 3 IV 3
ku-uš-ša-ni-i-e-IZ-zi	KBo VI 3 II 48
lu-uk-KI-IZ-zi	KBo VI 3 IV 52; IV 55; IV 59
pa-IZ-zi	KBo VI 3 II 29; II 31; IV 36; IV 37 (= *pa-IZ-zi* KBo XIX 3 IV 5 OH++)
pa-IZ-z[i]	KBo VI 3 I 61
pa-I[Z-z]i	KBo VI 3 II 48
pa-I[Z-zi]	KBo VI 3 IV 19
pár-ku-nu-uz-zi	KBo VI 3 II 55
pár-ku-nu-zi	KBo VI 3 III 37; III 40; III 43
PÍ-e-ḫu-te-IZ-zi	KBo VI 3 I 46
[PÍ]-e-ḫu-te-IZ-zi	KBo VI 3 I 48
PÍ-i̯a-na-I[Z-z]i	KBo VI 3 II 58 (= *PÍ-i̯a-na-IZ-zi* KBo VI 5 IV 22 OH++)
PÍ-eš-ši-IZ-zi	KBo VI 3 II 54; IV 9
PÍ-eš-ši-i̯a-zi	KBo VI 3 II 35; III 79; III 80
PÍ-e[š-ši-i̯]a-zi	KBo VI 3 I 43 (= *PÍ-eš-ši-i̯a-zi* KBo VI 5 I 23 OH++)
P[Í-e]š-[ši-i̯a]-zi	KBo VI 3 I 40 (= *PÍ-eš-ši-i̯a-az-zi* KBo VI 5 I 21 OH++)

pí̯d-da-IZ-zi	KBo VI 3 II 11
pí̯d-d[a-IZ-]zi	KBo VI 3 II 27
pí̯d-da-a-IZ-zi	KBo VI 3 II 23; II 26
pít-te-nu-uz-zi	KBo VI 3 II 6; II 29
pít-te-nu[-u]z-z[i]	KBo VI 3 II 5 (= *pít-te-nu-zi* KBo VI 5 II 11 OH++)
pí[t-t]e-[nu-z]i	KBo VI 3 II 25
ša!-a-ak-ta-a-IZ-zi	KBo VI 3 I 26
ši-i̯[a-at-t]a-RI-i̯a-zi	KBo VI 3 II 39
ši-i̯a-at-ta-RI-i-e-IZ-zi	KBo VI 3 II 45
šu-ú-u̯a-IZ-zi	KBo VI 3 II 52 (= *šu-u̯[a-a-]IZ-zi* KBo VI 5 IV 13 OH++)
šu-u̯a-a-IZ-zi	KBo VI 3 I 3; I 5; I 7; I 9; I 11; I 20; III 36; III 39 (= *šu-u̯a-a-IZ-[zi]* KBo XIX 3 I 11 OH++ = *šu-u̯a-a-IZ-zi* KUB XL 32, 3 OH–); KBo VI 3 III 42; III 45; III 47; III 59; III 68; IV 30
šu-u̯a-a-IZ-[z]i	KBo VI 3 I 18
[šu-u̯]a-a-IZ-zi	KBo VI 3 IV 51
š[u-u̯a-a-I]Z-zi	KBo VI 3 III 56
šu-u̯a-a-i-IZ-zi	KBo VI 3 I 30; I 32; I 36 (= *šu-u̯a-IZ-zi* KBo VI 5 I 15 OH++); I 38 (= *šu-u̯a-IZ-zi* KBo VI 5 I 17 OH++); III 29; III 34; III 62; IV 2; IV 12; IV 14; IV 23 ; IV 25
[šu-u̯a-a-i-I]Z-zi	KBo VI 3 IV 16
šu-u̯a-a-i[-IZ-z]i	KBo VI 3 I 42 (= *šu-u̯a-a-IZ-zi* KBo VI 5 I 22 OH++)
šu-u̯a-a-i-e-IZ-zi	KBo VI 3 I 34 (= *šu-u̯a-IZ-zi* KBo VI 5 I 3 OH++)
[šu-u̯a-i]-e-IZ-zi	KBo VI 3 I 49
šu-u̯a[-i-IZ]-zi	KBo VI 3 I 52
]IZ-zi	KBo VI 3 IV 41
šu-ú-IZ-zi	KBo VI 3 IV 58 (= *šu-ú-e-IZ-[zi]* KBo XIX 4 IV 6

	OH++)
ta-a-i-IZ-zi	KBo VI 3 I 46; III 35; III 48; III 57; III 58; III 60; IV 11; IV 13; IV 15; IV 18; IV 31; IV 38; IV 41; IV 42; IV 48; IV 50
ta-a-i-IZ-z[i]	KBo VI 3 IV 45
ta-a-i-IZ-[zi]	KBo VI 3 III 55
[ta-a-i-I]Z-zi	KBo VI 3 I 53
ta-a-i-IZ'-zi	KBo VI 3 IV 29
da-a-i-IZ-zi	KBo VI 3 I 48; I 50; III 46; III 50
ta-a-i-e-IZ-zi	KBo VI 3 IV 40 (= *ta-a-IZ-zi* KBo XIX 3 IV 9 OH++ = *da-a-i-i̯a-zi* KBo IX 70, 5 OH–)
ta-i̯a-az-zi	KBo VI 3 III 26
da-i-e-IZ-zi	KBo VI 3 III 30
te-IZ-zi	KBo VI 3 II 37; II 43; III 71; III 75; IV 46
tu-u-RI-IZ-zi	KBo VI 3 III 73
tu-u-RI-i̯a-zi	KBo VI 3 IV 7
tu-u-RI-iš-KI-IZ-zi	KBo VI 3 III 65
du-u̯a-ar-ni-zi	KBo VI 3 III 70
tu-u̯a-ar-na-zi	KBo VI 3 I 31
tu-u̯a-a[r-n]i-IZ-zi	KBo VI 3 I 29
ú-u̯a-te-IZ-zi	KBo VI 3 I 51; I 54; I 56; I 60
ú-e-mi-e-IZ-zi	KBo VI 3 III 37
ú-e-mi-i̯a-az-zi	KBo VI 3 II 57; III 40; III 43
[ú-e-]mi-i̯a-az-zi	KBo VI 3 III 53
ú-e-mi-i̯a-zi	KBo VI 3 I 64; III 63; III 64; III 65
ú-e-mi-i̯a-z[i]	KBo VI 3 IV 4
[ú]-e-mi-i̯a-zi	KBo VI 3 IV 6
ú-i-mi-i̯a<-zi>[2]	KBo VI 3 IV 27

	[KAR]-*IZ-zi*	KBo VI 3 IV 28 (= *da-a-i* KBo VI 7, 13 OH++)
	ú-e-te-IZ-zi	KBo VI 3 IV 52; IV 62 (= *[ú]-e-te-IZ-zi* KBo XIV 65 IV 5 OH–)
	zi-nu-uš-KI-IZ-zi	KBo VI 3 II 52
I. b. B. (OH+)	*ḫa-ap-ra-IZ-zi*	KUB XXVI 56 II 5
II. a) (OH++)	*šu-ua-a-IZ-zi*	KUB XXIX 19, 7
	ta-a-i-e-I[Z-zi]	KUB XXIX 19, 3
	te-IZ-zi	KBo XII 49 III 11
II. b) (OH++)	*ku-uš-ša-ni-ia-zi*	KBo VI 5 IV 7
	pa-IZ-zi	KBo VI 5 IV 7
	pár-ku-nu-uz-zi	KBo VI 5 IV 18
	PÍ-e-ḫu-te-IZ-zi	KBo VI 5 II 5
	PÍ-ia-na-IZ-zi	KBo VI 5 IV 22
	PÍ-eš-ši-ia-IZ-zi	KBo VI 5 IV 16
	PÍ-eš-ši-ia-az-zi	KBo VI 5 I 21
	PÍ-eš-ši-ia-zi	KBo VI 5 I 23
	pít-te-nu-zi	KBo VI 5 II 11
	pít-te[-nu-uz-z]i	KBo VI 5 III 4
	ši-ia-at-tal-LI-ia-az-zi	KBo VI 5 IV 3
	šu-ua-IZ-zi	KBo VI 5 I 3; I 15; I 17
	šu-ua-a-IZ-zi	KBo VI 5 I 22
	šu-u[a-a-]IZ-zi	KBo VI 5 IV 13
	te-IZ-zi	KBo VI 5 IV 2
	KAR-*zi*	KBo VI 5 IV 21
	zi-e-nu-uš-KI-IZ-zi	KBo VI 5 IV 12
II. c) A. (OH++)	*šu-ua-a-IZ-zi*	KBo VI 6 I 38
	šu-ua-a-IZ[-zi]	KBo VI 6 I 46
	da-a-i-ia-zi	KBo VI 6 I 33; I 39

II. c) B. (OH++)	*pa-IZ-zi*	KBo XIX 3 IV 5
	[p]ár-ku-nu-zi	KBo XIX 3 I 16
	šu-u̯a-a-IZ-[zi]	KBo XIX 3 I 11
	[šu]-u̯a-a-IZ-zi	KBo XIX 3 I 8
	[šu]-ú-u̯a-a-IZ-[zi]	KBo XIX 3 IV 11
	ta-a-i-i̯a-zi	KBo VI 8, 2
	ta-a-IZ-zi	KBo XIX 3 IV 6; IV 9
	da-a-IZ-zi	KBo XIX 3 I 19
	ú-e-mi-i̯a-zi	KBo VI 8, 9
	ú-e-mi-i̯a-z[i]	KBo XIX 3 I 16
II. c) C. (OH++)	*kar-PÍ-i-IZ-zi*	KBo VI 9 I 5
II. c) E. (OH–)	*šu-ú-u̯a-a-IZ-z[i]*	KUB XIII 13 II 7
	da-a-i-e-IZ-z[i]	KUB XIII 13 II 4
	-i̯]a-zi	KUB XIII 13 II 9
	te-IZ-zi	KUB XIII 13 Rs. 4
II. c) F. (OH–)	*pár-ku-nu-zi*	KUB XXIX 17, 4
	šu-u̯a-a-IZ-zi	KUB XXIX 17, 3
	[ú]-e-te-IZ-zi	KBo XIV 65 IV 5
II. c) G. (OH–)	*-i]š-KI-IZ-zi*	KBo VI 21, 4
II. d) (OH–)	*šu-u̯a-a-IZ-zi*	KUB XL 32, 3
	šu-u̯a-a-IZ-z[i]	KBo XII 48, 4
	da-a-i-i̯a-zi	KBo IX 70, 5
(OH++)	*ar-nu-zi*	KBo XIX 4 IV 9
	[e-I]T-RI-iš-KI-IZ-zi	KBo XIX 4 IV 8
	[lu-u]k-KI-IZ-zi	KBo XIX 4 IV 2
	šu-ú-e-IZ-[zi]	KBo XIX 4 IV 6
	[ú-e]-te-IZ-zi	KUB XXIX 20, 4
III. (OH++)	*an-ni-iš-KI-IZ-zi*	KBo VI 4 I 24

	ḫa-pal-la-ša-IZ-zi	KBo VI 4 I 22
	ḫa-ap-PÍ-ra-IZ-zi	KBo VI 4 IV 40
	i-i̯a-az-zi	KBo VI 4 IV 14
	i-i̯a-zi	KBo VI 4 IV 29; IV 35; IV 37
	[i-i̯]a-zi	KBo VI 4 IV 39
	kar-PÍ-i-e-IZ-zi	KBo VI 4 IV 27; IV 34
	kar-PÍ-IZ-zi	KBo VI 4 IV 36
	ku-ut-ru-u̯a-a-IZ-zi	KBo VI 4 IV 10
	ku-u-ut-ru-u̯a-a-IZ-zi	KBo VI 4 IV 7
	pár-ku-nu-zi	KBo VI 4 IV 1; IV 2
	PÍ-e-ḫu-te-IZ-zi	KBo VI 4 IV 6
	PÍ-eš-še-i̯a-az-zi	KBo VI 4 I 41; I 43
	ša-ak-ta-IZ-zi	KBo VI 4 I 23
	šu-u̯a-a-i-e-IZ-zi	KBo VI 4 I 34
	da-a-i-i̯a-zi	KBo VI 4 IV 41
	te-IZ-zi	KBo VI 4 IV 32
	du-u̯a-ar-ni-IZ-zi	KBo VI 4 I 27; I 30
	ú-e-mi-i̯a-zi	KBo VI 4 IV 5; IV 7; IV 8; IV 10

CTH 292. §§101-200

I. a. A. I (OH)	*a-ni-e-IZ-zi*	KUB XXIX 30 II 21 (= *a-ni-i̯a-zi* KBo VI 26 I 13 OH++ = *a-ni-i̯a-an-zi* KUB XXIX 31, 4 OH–); II 22 (= *a-ni-i̯a-zi* KBo VI 26 I 15 OH++ = *[a-ni-i̯]a-an-zi* KUB XXIX 31, 6 OH–); II 23 (= *a-ni-i̯a-zi* KBo VI 26 I 16 OH++ = *a-ni-i̯a-an-zi* KUB XXIX 31, 8 OH– = *a-ni-i̯a-zi* KBo VI 15, 4 OH++)
	i-e-IZ-zi	KUB XXIX 29 Vs. 10 (= *[i-i̯]a-zi* KBo VI 10 III 20 OH++)

ku-uš-ša-ni-IZ-zi	KUB XXIX 30 II 9; II 10 (= *ku-uš-ne-IZ-zi* KBo VI 10 III 36 OH++); II 11
lu-uk-KI-IZ-zi	KUB XXIX 38 I 1 (= *lu-uk-KI-IZ- zi* KBo VI 12 I 23 OH++)
šu-u̯a-i̯a-az-zi	KUB XXIX 28, 9 (= *šu-u̯a-a-IZ-zi* KBo VI 10 II 19 OH++)
[šu-u̯]a-i-IZ-zi	KUB XXIX 25, 5
[t]a-a-i-IZ-zi	KUB XXIX 28, 3 (= *ta-i-e-IZ-zi* KBo VI 10 II 10 OH++ = *-]e-IZ-zi* KBo VI 19 II 7 OH–)
[ta-a-]i-IZ-zi	KUB XXIX 25, 12 (= *ta-a-i-e-I[Z-zi]* KBo VI 14 I 15 OH++)
da-a-i-IZ-zi	KUB XXIX 25, 6 (= *ta-a-i-e-IZ-zi* KBo VI 14 I 10 OH++)
[t]a-a-i̯a-az-zi	KUB XXIX 28, 12 (= *ta-i-e-IZ-zi* KBo VI 10 II 25 OH++)
-i̯]a-az-zi	KUB XXIX 28, 5 (= *ta-i-e-IZ-zi* KBo VI 10 II 13 OH++)
ti-i-e-IZ-zi	KUB XXIX 30 II 7 (= *ti-i̯a-zi* KBo VI 10 III 32 OH++); II 8 (= *ti-i̯a-zi* KBo VI 10 III 33 OH++ = *ti-i-e-IZ-z[i]* KBo XIV 66 II 4 OH++)
ti-i-e-IZ-[z]i	KUB XXIX 30 II 19 (= *ti-i̯a-zi* KBo VI 26 I 10 OH++)
[ti-i-]e-IZ-[z]i	KUB XXIX 30 II 16 (= *ti-i̯a-zi* KBo VI 26 I 6 OH++ = *ti-i̯a-zi* KUB XIII 15 Rs. 4 OH–)
-u]z-zi	KUB XXIX 25, 9 (= *ti-IT-ta-nu-uz-zi* KBo VI 14 I 12 OH++)
tu-u-RI-IZ-zi	KUB XXIX 30 II 20 (= *tu-RI-i̯a-zi* KBo VI 26 I 11 OH++)
ur-KI-i̯a-IZ-zi	KUB XXIX 30 II 5 (= *ur-KI-i̯a-IZ-zi* KBo VI 10 III 30

		OH++)
	ú-e-te-IZ-zi	KUB XXIX 29 Vs. 6
I. a. A. III (OH)	*[a-ra-]a-u-IZ-zi*	KUB XXIX 32, 6 (= *a-ra<-u>-IZ-zi* KBo VI 26 II 14 OH++)
	ḫu-ul-LI-IZ-zi	KUB XXIX 32, 4 (= *ḫu-u-ul-la-az-zi* KBo VI 26 II 11 OH++)
	ḫu-ul-LI-I[Z-zi]	KUB XXIX 32, 5 (= *ḫu-u-ul-LI-i̯a-az-zi* KBo VI 26 II 13 OH++)
	pa-I[Z-zi]	KUB XXIX 32, 6 (= *pa-IZ-zi* KBo VI 26 II 15 OH++)
I. a. A. IV (OH)	*pa-IZ-z[i]*	KUB XXIX 36 Vs. 3
	[pa]-IZ-zi	KUB XXIX 36 Vs. 6 (= *pa-IZ-zi* KBo VI 14 I 5 OH++)
I. a. E. (OH++)	*ti-i-e-IZ-z[i]*	KBo XIV 66 II 4
I. b. B. (OH++)	*ar-ša-IZ-zi*	KUB XXIX 21, 15 (= *ar-ša-a-IZ-zi* KBo VI 12 I 20 OH++)
	[a]r-še-IZ-zi	KUB XXIX 21, 7 (= *ar-še-IZ-zi* KBo VI 12 I 12 OH++)
	lu-uk-KI-I[Z-zi]	KUB XXIX 23, 2 (= *lu-uk-KI-IZ-zi* KBo VI 11 I 3 OH++)
	šu-u̯a-a-IZ-zi	KUB XXIX 22 I 2 (= *šu-u̯a-a-IZ-zi* KBo VI 12 I 16 OH++)
	[š]u-u̯a-a-IZ-zi	KUB XXIX 22 I 6 (= *šu-u̯a-a-IZ-z[i]* KBo VI 11 I 3 OH++)
	ta-a-i-IZ-zi	KUB XXIX 21, 6 (= *ta-i-i̯a-zi* KBo VI 12 I 11 OH++)
	i]-e-IZ-zi	KUB XXIX 23, 14 (= *[da-]a-i-i̯a-az-zi* KBo VI 11 I 19 OH++ = *da-a-i-e-IZ[-zi]* KBo VI 16, 4 OH–)
	]i̯a-IZ-zi	KUB XXIX 22 I 15 (= *ta-a-i-i̯a-zi* KBo VI 11 I 13 OH++)
	[d]a-a-i-e-IZ-zi	KUB XXIX 23, 11

I. b. C. (OH++)	*[š]u-u̯a-a-IZ-zi*	KUB XXIX 26, 2
II. a) A. (OH++)	*i-i̯a-zi*	KBo VI 13 I 18 (= *i-e-IZ-zi* KBo VI 26 II 8 OH++)
	[k]ar-aš-še-IZ-zi	KBo VI 13 I 3 (= *kar-aš-zi* KBo VI 26 I 47 OH++)
	lu-uk-KI-IZ-zi	KBo VI 11 I 5
	]-KI-IZ-zi	KUB XIII 30, 2 (= *še-eš-KI-IZ-zi* KBo VI 26 III 49 OH++)
	šu-u̯a-a-IZ-zi	KBo VI 11 I 10; I 14; KBo VI 13 I 14 (= *šu-ú-i-IZ-zi* KBo VI 26 II 4 OH++)
	šu-u̯a-a-IZ-z[i]	KBo VI 11 I 3
	[da-]a-i-i̯a-az-zi	KBo VI 11 I 19
	ta-a-i-i̯a-zi	KBo VI 11 I 13
	da-a-i-i̯a-zi	KBo VI 11 I 18 (= *ta-i-e-IZ-zi* KBo VI 10 I 21 OH++)
	te-IZ-zi	KBo VI 13 I 9; KBo VI 13 I 11 (= *te-IZ-zi* KBo VI 26 II 2 OH++)
	ú-IZ-zi	KBo VI 13 I 15 (= *ú-IZ-zi* KBo VI 26 II 4 OH++)
II. a) B. (OH++)	*a-ni-i̯a-zi*	KBo VI 26 I 13; I 15; I 16
	a-ra<-u>-IZ-zi	KBo VI 26 II 14
	ḫu-u-iš-nu-zi	KBo VI 26 IV 15
	ḫu-iš-nu-zi	KBo VI 26 II 10; IV 11; IV 18
	ḫu-iš-n[u]-zi	KBo VI 26 III 22; IV 12
	ḫu-u-ul-la-az-zi	KBo VI 26 II 11
	ḫu-u-ul-LI-i̯a-az-zi	KBo VI 26 II 13
	i-i̯a-z[i]	KUB XXIX 24, 1 (= *[i-i̯]a-zi* KBo VI 10 I 25 OH++)
	i-e-IZ-zi	KBo VI 26 II 8
	i-e-IZ-z[i]	KBo VI 26 I 29
	k[i-n]u-zi	KBo VI 26 I 30
	pa-IZ-zi	KBo VI 26 II 15
	[p]a-IZ-zi	KBo VI 26 I 28

	pár-ku-nu-zi	KBo VI 26 I 23 (= *pár-ku-nu-uz-zi* KBo VI 18, 2 OH++)
	ša-me-nu-uz-zi	KBo VI 26 II 21
	še-eš-KI-IZ-zi	KBo VI 26 III 49; IV 26 (= *še-eš-KI-IZ-z[i]* KBo XXII 66 VI 13 OH++)
	šu-ú-i-IZ-zi	KBo VI 26 II 4
	šu-ú-ni-IZ-zi	KBo VI 26 I 34
	te-IZ-zi	KBo VI 26 I 25 (= *te-IZ-zi* KBo VI 15, 15 OH++); II 2; IV 10
	[t]e-IZ-zi	KBo VI 26 I 51; IV 13
	ti-i̯a-IZ-zi	KBo VI 26 III 22
	ti-i̯a-zi	KBo VI 26 I 6; I 10
	ti-i-IZ-zi	KBo VI 26 III 25; IV 19
	ti-IZ-zi	KBo VI 26 IV 24
	ti-IZ-z[i]	KBo VI 26 I 35
	tu-RI-i̯a-zi	KBo VI 26 I 11
	ú-IZ-zi	KBo VI 26 II 4
	ú-u̯a-te-IZ-zi	KBo VI 26 IV 10; IV 17
	u̯a-aš-ši-e-IZ-zi	KBo VI 26 IV 13
	u̯a-at-ku-zi	KBo VI 26 IV 19
	u̯a-at-ku-z[i]	KBo VI 26 IV 22
	ú-e-mi-i̯a-zi	KBo VI 26 IV 8
II. a) C. (OH++)	*še-eš-KI-IZ-z[i]*	KBo XXII 66 VI 13
II. b) A. (OH++)	*ḫa-ap-pa-ra-IZ-zi*	KBo VI 10 III 28
	[i-i̯]a-zi	KBo VI 10 I 25; III 20
	ku-uš-ne-IZ-zi	KBo VI 10 III 36
	pa-IZ-zi	KBo VI 10 III 18
	šu-u̯a-a-IZ-zi	KBo VI 10 II 19; KBo VI 20 II 8

	šu-u̯a-a-I[Z-zi]	KBo VI 10 III 31
	ta-a-i-e-IZ-zi	KBo VI 10 II 6; II 16
	ta-a-i-e-I[Z-zi]	KBo VI 10 II 28
	ta-i-e-IZ-zi	KBo VI 10 I 21; II 10; II 11; II 13; II 14; II 17; II 20; II 21; II 25
	ta-i-e-IZ-z[i]	KBo VI 10 II 31
	ta-i-e-I[Z-zi]	KBo VI 10 II 8 (= *ta-i-e-IZ-z[i]* KBo VI 19 II 5 OH–)
	te-IZ-zi	KBo VI 10 III 29
	ti-i̯a-zi	KBo VI 10 III 32; II 33
	ur-KI-i̯a-IZ-zi	KBo VI 10 III 30
II. b) B. (OH++)	*ar-ša-a-IZ-zi*	KBo VI 12 I 20
	ar-še-IZ-zi	KBo VI 12 I 12
	lu-uk-KI-IZ-zi	KBo VI 12 I 17; I 23
	šu-u̯a-a-IZ-zi	KBo VI 12 I 16
	ta-a-i-e-IZ-zi	KBo VI 12 I 2; I 8
	ta-i-i̯a-zi	KBo VI 12 I 11
	u̯a-ar-še-e-IZ-zi	KBo VI 12 I 25
II. b) C. (OH++)	*pa-IZ-zi*	KBo VI 14 I 5
	pár-ku-nu-uz-zi	KBo VI 18, 2
	šu-u̯a-a-IZ-zi	KBo VI 14 I 14
	ta-a-i-e-IZ-zi	KBo VI 14 I 10
	ta-a-i-e-I[Z-zi]	KBo VI 14 I 15
	-]e-IZ-zi	KBo VI 19 II 7
	ta-i-e-IZ-z[i]	KBo VI 19 II 5
	ti-IT-ta-nu-uz-zi	KBo VI 14 I 12
II. b) D. (OH++)	*a-ni-i̯a-zi*	KBo VI 15, 4
	ḫa-an-da-a-IZ-zi	KBo VI 15, 10
	te-IZ-zi	KBo VI 15, 15

II. b) E. (OH–)	*ta-a-i-e-IZ-zi*	KUB XIII 15, 3
	ti-i̯a-zi	KUB XIII 15 Rs. 5
II. d) (OH–)	*[š]u-u̯a-a-IZ[-zi]*	KBo XIX 9, 8
	da-a-i-e-IZ[-zi]	KBo VI 16, 4

CTH 336. Myth of Inara

5. C. (OH)	*te-IZ-zi*	KUB XLIII 25, 5; 6
	[te]-IZ-zi	KUB XLIII 25, 7
	te-IZ-z[i]	KUB XLIII 25, 9

CTH 416. Rutual for the King and Queen

1. A. (OH)	*a-ša-aš-KI-IZ-zi*	KBo XVII 1 I 6
	[t]e-IZ-zi	KBo XVII 1 III 17
	ú-IZ-zi	KBo XVII 1 I 40
	ú-e-IZ-zi	KBo XVII 1 III 13
	u̯a-a[ḫ-nu]-uz-zi	KBo XVII 1 II 32 (= *[u̯a-]aḫ-nu-u[z-zi]* KBo XVII 3 II 3 OH)
1. B. (OH)	*pa-IZ-zi*	KBo XVII 4 II 9
	te-IZ-zi	KBo XVII 4 II 13
	[u̯a-]aḫ-nu-u[z-zi]	KBo XVII 3 II 3

CTH 536. Physical portents

4. (OH–)	*[ḫu-]iš-nu-zi*	KBo XIII 13 Rs. 16
	na-ak-KI-e-zi	KBo XIII 13 Vs. 14
	[n]a-ak-ku-uš-ši-e-zi	KBo XII 13 Vs. 6
	na-ak-ku-uš-ši-e-zi	KBo XII 13 Vs. 13
	[ta]-an-na-at-te-IZ-zi	KBo XIII 13 Vs. 11
	[ta-an-na-at]-te-IZ-zi	KBo XIII 13 Rs. 2

CTH 538. Šumma izbu

3. (OH++)	*i-i̯a-zi*	KUB XXXIV 19 IV 3
	mu-um-mi-e-I[Z-zi]	KUB XXXIV 19 I 9

CTH 539. 'If a sign...'

2. (OH+)	*ú-e-mi-IZ-zi*	KBo XIII 31 II 2
	(-)u̯a-al-ga-nu-uz-zi	KBo XIII 31 I 11

CTH 540. 'If a woman gives birth...'

II. 5. (OH++)	*ta-na-an-te-IZ-z[i]*	KBo XIII 34 III 18

CTH 547. Liver Models

II. (OH)	*ḫu-ul-la-az-zi*	KUB XXXVII 223 Vs. 4
	ḫu-la-a-LI-IZ-zi	KUB XXXVII 223 Rs. 5
	pa-IZ-zi	KUB XXXVII 223 obv. B 2

CTH 627. Festival of the KI.LAM

17. (OH)	*[ú-I]Z-zi*	KBo XX 3 Rs. 1
19. (OH)	*ú-IZ-zi*	KBo XX 21 Rs. 2

CTH 631. Ritual/Festival of the Storm

1. A. (OH+)	*[ak-ku-uš-]KI-IZ-zi*	KBo XVII 74 IV 34
	ar-ḫa-a-IZ[-z]i	KBo XVII 74 II 22
	a-ru-u̯a-IZ-zi	KBo XVII 74 III 7
	a-ru-u̯a-a-IZ-zi	KBo XVII 74 I 13; II 24; II 32
	[a-]ru-u̯a-a-IZ-zi	KBo XVII 74 I 14
	a[-r]u-u̯a-a-IZ-zi	KBo XVII 74 I 26
	[a-ru-u̯a-a-I]Z-zi	KBo XVII 74 I 28

	pa-IZ-zi	ABoT 9 I 7; KBo XVII 74 I 34; II 3; II 9; II 26; II 28; II 33; IV 18; IV 21; IV 31
	[p]a-IZ-zi	KBo XVII 74 IV 19
	PÍ-eš-ši-IZ-zi	KUB XXXIV 123 I 10
	ti-i-e-IZ-zi	KBo XVII 74 IV 19
	[ti-i-]e-IZ-zi	KBo XVII 74 II 13
	ti-e-IZ-zi	ABoT 9 I 8
	[ti-e-I]Z-zi	ABoT 9 I 3
	ú-IZ-zi	KBo XVII 74 I 27; I 29; I 34; IV 28; IV 32
1. B. (OH)	*ak-ku-uš-KI-z[i]*	KBo XVII 11 IV 7 (= *[ak-ku-uš-]KI-IZ-zi* KBo XVII 74 IV 34 OH+)
	pa-IZ-zi	KBo XVII 11 I 16; I 19 (= *pa-IZ-zi* KBo XVII 74 I 34 OH+); KBo XX 12 I 2 (= *pa-IZ-zi* ABoT 9 I 7 OH+) ; KBo XX 12 I 7; KUB XLIII 26 IV 11 (= *pa-IZ-zi* KBo XVII 74 IV 18 OH+); IV 14 (= *pa-IZ-zi* KBo XVII 74 IV 21 OH+)
	[pa-I]Z-zi	KUB XLIII 26 IV 12 (= *[p]a-IZ-zi* KBo XVII 74 IV 19 OH+)
	ti-e-IZ-zi	KBo XX 12 I 8; KUB XLIII 26 IV 12 (= *ti-i-e-IZ-zi* KBo XVII 74 IV 19 OH+)
	[t]i-e-IZ-zi	KBo XVII 11 I 20
	ti-e-IZ-[zi]	KBo XX 12 I 3 (= *ti-e-IZ-zi* ABoT 9 I 8 OH+)
	ú-IZ-zi	KBo XVII 11 IV 2 (= *ú-IZ-zi* KBo XVII 74 IV 28 OH+); IV 6 (= *ú-IZ-zi* KBo XVII 74 IV 32 OH+)
	[ú]-IZ-zi	KBo XVII 11 I 14 (= *ú-IZ-zi* KBo XVII 74 I 29 OH+)
6. (OH++)	*a-ru-u̯a-a-IZ-zi*	KBo XVII 75 I 37
	ḫu-i-nu-zi	KBo XVII 75 IV 35
	pa-IZ-zi	KBo XVII 75 I 1; II 34

	pal-u̯a-IZ-zi	KBo XVII 75 IV 7
	ti-i-e-IZ-zi	KBo XVII 75 I 2; I 4; I 8; I 26; I 28; I 32
	ti-[i-]e-IZ-zi	KBo XVII 75 I 5

CTH 645. Fragments of Festivals for Chthonic Deities

6. B. (OH)	*ú-IZ-zi*	KBo XVII 15 Vs.? 18; Vs.? 19
7. (OH)	*PÍ-iš-KI-z[i?*	KUB XLIII 30 III 20
	ti-e-IZ-zi	KUB XLIII 30 II 16

CTH 649. Fragments of Festivals naming the NIN.DINGIR

5. A. (OH)	*pa-IZ-z[i]*	KBo XX 5 Vs. 2
	ú-IZ-zi	KBo XX 5 Rs. 4

CTH 654. Fragments naming the People of Kurustama

4. (OH+)	*pa-IZ-zi*	KBo XIII 175 Vs. 5

CTH 662. Offerings for Local Cults

6. (OH–)	*[t]i-i-e-IZ-zi*	KBo XVII 31, 9

CTH 663. Offerings: names of gods at the beginning of the line

5. (OH–)	*a-ru-u̯a-IZ-zi*	KBo XVII 19 I 10; II 9
	pa-IZ-zi	KBo XVII 19 I 7
	ti-e-IZ-zi	KBo XXV 52 II 9

CTH 665. Fragments naming the $^{LÚ\ MEŠ}$*ašušala-*

1. A. (OH)	*ti-i-e-IZ-zi*	KBo XVII 36 II 9
1. B. (OH)	*te-e-I[Z-zi]*	KBo XXV 56 IV 20

CTH 669. Large Fragments of Festivals

24. A. (OH)	*pa-IZ-z[i]*	KBo XVII 9 IV 10
	ṭi-i-IZ-zi	KBo XXV 12 I 5; I 14
	ú-IZ-zi	KBo XVII 9 IV 10; KBo XXV 12 I 13
30. (OH)	*a-ni-IZ-zi*	KBo XX 10 I 5; II 1
	iš-pár-nu-zi	KBo XX 10 I 12; II 9
	pa-IZ-zi	KBo XX 10 I 2; I 6; II 2
	PÍ-ḫu-te-zi	KBo XX 10 I 4
	PÍ-ḫu-te-IZ-zi	KBo XX 20 I 10; II 7
	zi-in-ni-z[i]	KBo XX 10 I 5
31. (OH+)	*ḫa-an-ta-a-IZ-zi*	KBo XX 33 Vs. 9
	ú-IZ-zi	KBo XX 33 Rs. 8

CTH 670 . Fragments of Festivals

(OH)	*[ap-]PÍ-iš-KI-IZ-zi*	KUB XVII 16, 4
	a-ru-u̯a-a-IZ-zi	KUB XLIII 28 II 4; II 7
	iš-pa-an-za-aš-KI-I[Z-zi]	KBo XX 37 Vs. 3
	pa-IZ-zi	KBo XVII 28, 11; KUB XLIII 28 II 6
	ti-e-IZ-zi	KBo XVII 29 I 5
	ú-IZ-zi	KBo XVII 30 II 5; KBo XX 33 Rs. 8; KBo XX 50, 2
	u̯a-aš-še-IZ[-zi]	KBo XX 18 Rs. 3
	za-nu-u[z-zi]	KBo XVII 29 I 3

CTH 733. Invocations of Hattic Deities

II. 2. (OH)	*te-IZ-zi*	KUB XXXI 143 II 18
	te-IZ-zi	KUB XXXI 143 II 28
	te[-IZ-]zi	KUB XXXI 143 III 10
II. 3. (OH)	*[t]e-IZ-zi*	KUB XXXI 143a III 9

II. 4. (OH)	*pa-IZ-zi*	KBo XXV 112 II 16

CTH 744. Fragments containing Hattic

18. A. (OH)	*i-e-IZ-zi*	KBo XVII 43 I 15
	pa-IZ-zi	KBo XVII 43 I 8; I 12; I 13; I 17; IV 6
	pa-ap-pár-aš-KI-IZ-zi	KBo XVII 43 I 10
	PÍ-eš-ši-i-e-IZ-zi	KBo XVII 43 I 16
	zi-IK-KI-IZ-zi	KBo XVII 43 IV 3
	ú-IZ-zi	KBo XVII 43 IV 5
18. C. (OH)	*pa-IZ-zi*	KBo XVII 18 II 9; II 13
	pa-ap-pár-aš-KI-IZ-zi	KBo XVII 18 II 11

CTH 750. Festival of Zaparwa

8. (OH)	*pa-IZ-z[i]*	KBo XVII 35 III 1
11. (OH+)	*a-ru-u̯a-IZ-zi*	KBo XX 39 lk. Kol. 11

CTH 752. Ritual and Myth (Palaic and Hittite)

1. A. (OH+)	*za-aš-KI-I[Z-zi]*	KUB XXXII 117 Vs. 10
1. B. (OH)	*iš-ta-an-ta-a-i-IZ-zi*	KUB XXXV 164 II 5

Uncatalogued

OH	*a-ru-u̯a-i-IZ-z[i]*	KBo XXV 127 II 4
	a-ru-u̯a-IZ-zi	KBo XXV 65 I 8; 95 I 7; StBot 26, Nr. 152 Vs. r.Kol. 5
	[a-]ru-u̯a-IZ-zi	StBot 26, Nr. 152 Vs. r.Kol. 2
	[a-ru-u̯]a-IZ-zi	StBot 26, Nr. 152 Vs. r.Kol. 7
	a-ru-u̯a-IZ-z[i]	KBo XXV 127 II 9
	ḫa-at-RI-eš-KI-IZ-zi	KBo XXII 1 Vs. 22
	[ḫ]u-la-a-LI-e-z[i]?	KBo XXV 100 Rs. 3

	i-e-IZ-[zi]	KBo XXV 96, 5
	IR-ḫa-IZ-[zi]	KBo XXV 45, 7
	IR-ḫa-i-iš-KI-IZ-zi	KBo XXV 84 I 5
	pa-i-IZ-zi	KBo XXV 127 II 7; XXV 147 Rs. 7
	pa-IZ-zi	KBo XXV 23 Vs. 3; XXV 36 III 4; XXV 44, 1; XXV 44, 5; XXV 88, 5; XXV 88, 10; XXV 96, 4;
	pa-IZ-z[i]	KBo XXV 36 II 4; KBo XXV 93, 3
	pa-IZ-[zi]	KBo XXV 86 Rs. 4
	pa-I[Z-zi]	KBo XXV 85, 2; XXV 88, 21
	[pa-I]Z-zi	KBo XXV 86 Rs. 3
	[p]al-u̯a-a-IZ-zi	KBo XXV 82 Rs. 12
	te-IZ-z[i]	KBo XXV 119, 3
	ti-i-e-IZ-z[i]	KBo XXV 31 II 7
	ti-i-IZ-zi	KBo XXV 127 II 8
	ú-IZ-zi	KBo XXV 84 I 4; XXV 87, 3
	za-nu-uz-zi	KBo XXV 106, 7
OH–	*[a-r]u-u̯a-IZ-zi*	KBo XXV 51 I 14
	a-ru-u̯[a-I]Z-z[i]	KBo XXV 73 lk. Kol. 8
	pa-a-I[Z-z]i	KBo XXV 123, 1
	pa-IZ-zi	KBo XXV 51 I 17; Bo 1291 II 6 (in StBoT 25, Nr. 47); Bo 1291 II 12; Bo 3752 II 2 (in StBoT 25, Nr. 104)
	[p]a-IZ-zi	KBo XXV 142 Vs. 7
	pa-IZ-z[i]	KBo XXV 73 r. Kol. 5
	[pal]-ú-u̯a-IZ-zi	Bo 5478 I 2 (in StBoT 25, Nr. 46)
	šu-un-ni-eš-KI-IZ-zi	Bo 3752 II 5
	ti-i-IZ-zi	Bo 1291 III 8
	ti-e-IZ-zi	KBo XXV 51 I 10
	ti-IZ-zi	KBo XXV 68 Rs. 15

	ú-IZ-zi	Bo 6594 I 9 (in StBoT 25, Nr. 41); KBo XXV 51 I 16
	ú-e-mi-i̯a-zi	Bo 5333 I 2 (in StBoT 9)
	[zi-]in-ni-IZ[-zi]	Bo 1291 III 20

APPENDIX B

List of the Forms Classified by Stem

akkušk- "drink repeatedly"

OH	*ak-ku-uš-KI-z[i]*	KBo XVII 11 IV 7
OH+	*[ak-ku-uš-]KI-IZ-zi*	KBo XVII 74 IV 34

ani̯a- "perform"

OH	*a-ni-e-IZ-zi*	KUB XXIX 30 II 21; II 22; II 23
	a-ni-IZ-zi	KBo XX 10 I 5; II 1
OH++	*a-ni-i̯a-zi*	KBo VI 15, 4; KBo VI 26 I 13; I 15; I 16

annešk- "perform repeatedly"

OH	*an-ni-iš-KI-IZ-zi*	KBo VI 2 I 18
OH+	*an-ni-eš-KI-IZ-zi*	KBo VI 3 I 27
OH++	*an-ni-iš-KI-IZ-zi*	KBo VI 4 I 24

appatari̯a- "to commandeer, seize"

OH	*ap-pa-ta-RI-IZ-zi*	KBo VI 2 IV 4
OH+	*ap-pa-at-RI-IZ-zi*	KBo VI 3 III 76

appišk- "take repeatedly"

OH	*[ap-]PÍ-iš-KI-IZ-zi*	KUB XVII 16, 4

araue- "be free, exempt"

OH	*[a-ra-]a-u-IZ-zi*	KUB XXIX 32, 6
OH++	*a-ra<-u>-IZ-zi*	KBo VI 26 II 14

arḫāi- "make the rounds"

OH+	*ar-ḫa-a-IZ[-z]i*	KBo XVII 74 II 22

arnu- "bring"

OH	*ar-nu-uz-zi*	KBo VI 2 I 2 ; I 6; I 38
	ar-nu-zi	KBo VI 2 IV 5
OH+	*ar-nu-uz-zi*	KBo VI 3 I 13; III 77
	ar-nu-zi	KBo VI 3 I 4; I 7; I 9; I 47; IV 61
	[ar-nu-z]i	KBo VI 3 I 2
OH++	*ar-nu-zi*	KBo XIX 4 IV 9

aršāi-/aršiia- "plant"

OH++	*ar-ša-a-IZ-zi*	KBo VI 12 I 20
	ar-ša-IZ-zi	KUB XXIX 21, 15
	ar-še-IZ-zi	KBo VI 12 I 12
	[a]r-še-IZ-zi	KUB XXIX 21, 7

aruuāi- "bow down"

OH	*a-ru-ua-i-IZ-z[i]*	KBo XXV 127 II 4
	a-ru-ua-IZ-zi	KBo XXV 65 I 8; 95 I 7; StBot 26, Nr. 152 Vs. r.Kol. 5
	[a-]ru-ua-IZ-zi	StBot 26, Nr. 152 Vs. r.Kol. 2
	[a-ru-u]a-IZ-zi	StBot 26, Nr. 152 Vs. r.Kol. 7
	a-ru-ua-IZ-z[i]	KBo XXV 127 II 9

OH–	*[a-r]u-u̯a-IZ-zi*	KBo XXV 51 I 14
	a-ru-u̯[a-I]Z-z[i]	KBo XXV 73 lk. Kol. 8
OH+	*a-ru-u̯a-IZ-zi*	KBo XVII 74 III 7; KBo XX 39 lk. Kol. 11
	a-ru-u̯a-a-IZ-zi	KBo XVII 74 I 13; II 24; II 32; KUB XLIII 28 II 4; II 7
	[a-]ru-u̯a-a-IZ-zi	KBo XVII 74 I 14
	a[-r]u-u̯a-a-IZ-zi	KBo XVII 74 I 26
	[a-ru-u̯a-a-I]Z-zi	KBo XVII 74 I 28
OH–	*a-ru-u̯a-IZ-zi*	KBo XVII 19 I 10; II 9
OH++	*a-ru-u̯a-a-IZ-zi*	KBo XVII 75 I 37

ašašk- "settle repeatedly"

OH	*a-ša-aš-KI-IZ-zi*	KBo XVII 1 I 6

etrešk- "feed repeatedly"

OH	*-i]š-KI-IZ-zi*	KBo VI 2 IV 59
OH+	*e-IT-RI-eš-KI-IZ-zi*	KBo VI 3 IV 60
OH–	*-i]š-KI-IZ-zi*	KBo VI 21, 4
OH++	*[e-I]T-RI-iš-KI-IZ-zi*	KBo XIX 4 IV 8

ḫandāi- "set in order, arrange"

OH+	*ḫa-an-ta-a-IZ-zi*	KBo XX 33 Vs. 9
OH++	*ḫa-an-da-a-IZ-zi*	KBo VI 15, 10

ḫapallašāi- "injure"

OH++	*ḫa-pal-la-ša-IZ-zi*	KBo VI 4 I 22

ḫapparāi- "give out, sell"

OH	*ḫa-ap-pa-ra-IZ-zi*	KBo XIX 1 II 17
OH+	*ḫa-ap-pa-ra-IZ-zi*	KBo VI 3 II 36

	ḫa-ap-ra-IZ-zi	KUB XXVI 56 II 5
OH++	*ḫa-ap-pa-ra-IZ-zi*	KBo VI 10 III 28
	ḫa-ap-PÍ-ra-IZ-zi	KBo VI 4 IV 40

ḫatrešk- "write repeatedly"

OH	*ḫa-at-RI-eš-KI-IZ-zi*	KBo XXII 1 Vs. 22

ḫuišnu- "keep alive"

OH–	*[ḫu-]iš-nu-zi*	KBo XIII 13 Rs. 16
OH++	*ḫu-u-iš-nu-zi*	KBo VI 26 IV 15
	ḫu-iš-nu-zi	KBo VI 26 II 10; IV 11; IV 18; KBo XVII 75 IV 35
	ḫu-iš-n[u]-zi	KBo VI 26 III 22; IV 12

ḫūllāi- "destroy"

OH	*ḫu-ul-LI-IZ-zi*	KUB XXIX 32, 4
	ḫu-ul-LI-I[Z-zi]	KUB XXIX 32, 5
	ḫu-ul-la-az-zi	KUB XXXVII 223 Vs. 4
	ḫu-la-a-LI-IZ-zi	KUB XXXVII 223 Rs. 5
	[ḫ]u-la-a-LI-e-z[i]?	KBo XXV 100 Rs. 3
	ḫu-ul-[	KBo III 22 Vs. 34
	ḫu-ul-LI-[	KBo III 22 Vs. 35
OH++	*ḫu-u-ul-la-az-zi*	KBo VI 26 II 11
	ḫu-u-ul-LI-i̯a-az-zi	KBo VI 26 II 13
	[ḫu-u]l-LI-e-IZ-zi	KUB XXXVI 98a Vs. 5

i̯ia- "make, do"

OH	*i-e-zi*	KBo VI 2 I 60
	i-e-IZ-zi	KBo XVII 43 I 15; KUB XXIX 29 Vs. 10

	i-e-IZ-[zi]	KBo XXV 96, 5
	i-IZ-zi	KBo VI 2 II 50; II 51; KBo IX 73 Vs. 6
	i̯a-az-zi	KUB XXXVI 108 Vs. 12
OH+	*i-e-IZ-zi*	KBo VI 3 II 61; III 20
OH++	*i-e-IZ-zi*	KBo VI 26 II 8
	i-e-IZ-z[i]	KBo VI 26 I 29
	i-i̯a-az-zi	KBo VI 4 IV 14
	i-i̯a-zi	KBo VI 4 IV 29; IV 35; IV 37; KBo VI 13 I 18; KUB XXXIV 19 IV 3
	i-i̯a-z[i]	KUB XXIX 24, 1
	[i-i̯]a-zi	KBo VI 4 IV 39; KBo VI 10 I 25; III 20

irḫāi- "finish"

OH	*IR-ḫa-IZ-[zi]*	KBo XXV 45, 7

irḫišk- "finish repeatedly"

OH	*IR-ḫa-i-iš-KI-IZ-zi*	KBo XXV 84 I 5

išpanzašk- "libate repeatedly"

OH	*iš-pa-an-za-aš-KI-I[Z-zi]*	KBo XX 37 Vs. 3

išparnu- "cause to spread, destroy"

OH	*iš-pár-nu-zi*	KBo XX 10 I 12; II 9

ištantāi- "delay"

OH	*iš-ta-an-ta-a-i-IZ-zi*	KUB XXXV 164 II 5

karpii̯a- "raise"

OH	*kar-PÍ-IZ-zi*	KBo VI 2 II 42; II 46
	[kar-P]Í-IZ-zi	KBo VI 2 II 45
	kar-PÍ-i-IZ-zi	KBo VI 2 II 39; II 40; II 48; II 49
OH+	*kar-PÍ-IZ[-zi]*	KBo VI 3 II 63
	[kar-]PÍ-IZ[-zi]	KBo VI 3 II 69
	kar-PÍ-i-e-IZ-zi	KBo VI 3 II 66
OH++	*kar-PÍ-i-IZ-zi*	KBo VI 9 I 5
	kar-PÍ-i-e-IZ-zi	KBo VI 4 IV 27; IV 34
	kar-PÍ-IZ-zi	KBo VI 4 IV 36

karšiia- "cut off"

OH	*kar$^{!}$-aš-ši-i-IZ-zi*	KBo VI 2 I 8
OH+	*kar-aš-ši-i-e-IZ-zi*	KBo VI 3 I 15
OH++	*[k]ar-aš-še-IZ-zi*	KBo VI 13 I 3

kinu- "open, break open"

OH++	*k[i-n]u-zi*	KBo VI 26 I 30

kukkuršk- "cut off"

OH	*[ku-uk-kur-i]š-KI-IZ-zi*	KBo VI 2 IV 45

kuššaniia- "hire"

OH	*ku-uš-ša-ni-IZ-zi*	KBo VI 2 II 27; IV 10; KUB XXIX 30 II 9; II 10; II 11
OH+	*ku-ša-ni-IZ-zi*	KBo VI 3 IV 3
	ku-uš-ša-ni-i-e-IZ-zi	KBo VI 3 II 48
OH++	*ku-uš-ša-ni-ia-zi*	KBo VI 5 IV 7
	ku-uš-ne-IZ-zi	KBo VI 10 III 36

kutruu̯āi- "secure witnesses"

OH++	*ku-ut-ru-u̯a-a-IZ-zi*	KBo VI 4 IV 10
	ku-u-ut-ru-u̯a-a-IZ-zi	KBo VI 4 IV 7

lukkāi- "set fire, light"

OH	*lu-uk-KI-IZ-zi*	KBo VI 2 IV 56; KUB XXIX 38 I 1
	lu-uk-KI-IZ-z[i]	KBo VI 2 IV 53; IV 59
OH+	*lu-uk-KI-IZ-zi*	KBo VI 3 IV 52; IV 55; IV 59
OH++	*lu-uk-KI-IZ-zi*	KBo VI 11 I 5; KBo VI 12 I 17; I 23
	lu-uk-KI-I[Z-zi]	KUB XXIX 23, 2
	[lu-u]k-KI-IZ-zi	KBo XIX 4 IV 2

mummiu̯a- "scatter"

OH++	*mu-um-mi-e-I[Z-zi]*	KUB XXXIV 19 I 9

nakkē- "be heavy"

OH–	*na-ak-KI-e-zi*	KBo XIII 13 Vs. 14

nakkuššiu̯a- "?"

OH–	*[n]a-ak-ku-uš-ši-e-zi*	KBo XII 13 Vs. 6
	na-ak-ku-uš-ši-e-zi	KBo XII 13 Vs. 13

pāi- "go"

OH	*pa-i-IZ-zi*	KBo XXV 127 II 7; XXV 147 Rs. 7
	pa-IZ-zi	KBo III 22 Rs. 78; KBo VI 2 I 51; I 53; IV 39; KBo XVII 4 II 9; KBo XVII 11 I 16; I 19; KBo XVII 18 II 9; II 13; KBo XVII 28. 11; KBo XVII 43 I 8; I 12; I 13; I 17; IV 6; KBo XIX 1 Vs. II; KBo XX 10 I 2; I 6 ; II 2; KBo XX 12 I 2 ;

		KBo XX 12 I 7; KBo XXV 23 Vs. 3; XXV 36 III 4; XXV 44, 1; XXV 44, 5; XXV 88, 5; XXV 88, 10; XXV 96, 4; KBo XXV 112 II 16; KUB XXXVI 106 Rs. 1; KUB XXXVII 223 obv. B 2; KUB XLIII 26 IV 11; IV 14; KUB XLIII 28 II 6
	pa-IZ-[zi]	KBo XXV 86 Rs. 4
	pa-I[Z-zi]	KBo XXV 85, 2; XXV 88, 21; KUB XXIX 32, 6
	pa-IZ-z[i]	KBo XVII 9 IV 10; KBo XVII 35 III 1; KBo XX 5 Vs. 2; KBo XXV 36 II 4; KBo XXV 93, 3; KUB XXIX 36 Vs. 3
	[pa]-IZ-zi	KBo XXV 86 Rs. 3; KUB XXIX 36 Vs. 6
	[pa-I]Z-zi	KUB XLIII 26 IV 12
OH–	*pa-a-I[Z-z]i*	KBo XXV 123, 1
	pa-IZ-zi	KBo XXV 51 I 17; Bo 1291 II 6 (in StBoT 25, Nr. 47); Bo 1291 II 12; Bo 3752 II 2 (in StBoT 25, Nr. 104)
	[p]a-IZ-zi	KBo XXV 142 Vs. 7
	pa-IZ-z[i]	KBo XXV 73 r. Kol. 5
OH+	*pa-IZ-zi*	KBo VI 3 II 29; II 31; IV 36; IV 37; KBo XIII 175 Vs. 5; KBo XVII 74 I 34; II 3; II 9; II 26; II 28; II 33; IV 18; IV 21; IV 31; ABoT 9 I 7
	pa-IZ-z[i]	KBo VI 3 I 61
	pa-I[Z-z]i	KBo VI 3 II 48
	pa-I[Z-zi]	KBo VI 3 IV 19
	[p]a-IZ-zi	KBo XVII 74 IV 19
OH–	*pa-IZ-zi*	KBo XVII 19 I 7
OH++	*pa-IZ-zi*	KBo III 38 Rs. 17; KBo VI 5 IV 7; KBo VI 10 III 18; KBo VI 14 I 5; KBo VI 26 II 15; KBo XVII 75 I 1; II 34; KBo XIX 3 IV 5; KUB XXXVI 98b Rs. 6
	pa-I[Z-zi]	KUB XXVI 71 I 18

	[p]a-IZ-zi	KBo VI 26 I 28

palu̯āi- "?"

OH	*[p]al-u̯a-a-IZ-zi*	KBo XXV 82 Rs. 12
OH–	*[pal]-ú-u̯a-IZ-zi*	Bo 5478 I 2 (in StBoT 25, Nr. 46)
OH++	*pal-u̯a-IZ-zi*	KBo XVII 75 IV 7

pappar(a)šk- "sprash repeatedly"

OH	*pa-ap-pár-aš-KI-IZ-zi*	KBo XVII 18 II 11; KBo XVII 43 I 10

paprāi- "get polluted, get impure"

OH	*pa-ap-RI-IZ-zi*	KBo VI 2 I 56; I 57; I 59

parkunu- "clean, purify"

OH	*pár-ku-nu-uz-zi*	KBo VI 2 II 34; III 33; KBo VI 2 III 35; KUB XXIX 16 III 7; III 9; III 12
	pár-ku-nu-zi	KBo VI 2 III 38 + KBo XIX 1 III 38
OH+	*pár-ku-nu-uz-zi*	KBo VI 3 II 55
	pár-ku-nu-zi	KBo VI 3 III 37; III 40; III 43
OH–	*pár-ku-nu-zi*	KUB XXIX 17. 4
OH++	*pár-ku-nu-uz-zi*	KBo VI 5 IV 18; KBo VI 18. 2
	pár-ku-nu-zi	KBo VI 4 IV 1; IV 2; KBo VI 26 I 23
	[p]ár-ku-nu-zi	KBo XIX 3 I 16

peḫute- "lead away"

OH	*PÍ-ḫu-te-IZ-zi*	KBo VI 2 I 40; KBo XX 20 I 10; II 7
	[PÍ-]e-ḫu-te-IZ-zi	KBo VI 2 I 37
	PÍ-ḫu-te-zi	KBo XX 10 I 4

OH+	*PÍ-e-ḫu-te-IZ-zi*	KBo VI 3 I 46
	[PÍ]-e-ḫu-te-IZ-zi	KBo VI 3 I 48
OH++	*PÍ-e-ḫu-te-IZ-zi*	KBo VI 5 II 5
	PÍ-e-ḫu-te-IZ-zi	KBo VI 4 IV 6

peššiia- "give (up)"

OH	*PÍ-eš-ši-i-e-IZ-zi*	KBo XVII 43 I 16
	PÍ-eš-ši-IZ-zi	KBo VI 2 II 33; II 35; IV 6; IV 7; IV 14
OH+	*PÍ-eš-ši-IZ-zi*	KBo VI 3 II 54; IV 9; KUB XXXIV 123 I 10
	PÍ-eš-ši-ia-zi	KBo VI 3 II 35; III 79; III 80
	PÍ-e[š-ši-i]a-zi	KBo VI 3 I 43
	P[Í-e]š-[ši-ia]-zi	KBo VI 3 I 40
OH++	*PÍ-eš-ši-ia-IZ-zi*	KBo VI 5 IV 16
	PÍ-eš-ši-ia-az-zi	KBo VI 5 I 21
	PÍ-eš-ši-ia-zi	KBo VI 5 I 23
	PÍ-eš-še-ia-az-zi	KBo VI 4 I 41; I 43

piia- "send"

OH	*PÍ-i-e-IZ-zi*	KUB XXXVI 106 Vs. 5

piianāi- "reward"

OH	*PÍ-ia-na-az-zi*	KBo XXII 1 Vs. 28
OH+	*PÍ-ia-na-I[Z-z]i*	KBo VI 3 II 58
OH++	*PÍ-ia-na-IZ-zi*	KBo VI 5 IV 22

pišk- "go repeatedly"

OH	*PÍ-iš-KI-z[i?*	KUB XLIII 30 III 20

piddāi- "pay as required"

OH+	*pi̯d-da-IZ-zi*	KBo VI 3 II 11
	pi̯d-d[a-IZ-]zi	KBo VI 3 II 27
	pi̯d-da-a-IZ-zi	KBo VI 3 II 23; II 26

pittenu- "run off"

OH	*pi̯t-ti-nu-uz-zi*	KBo VI 2 II 10
OH+	*pi̯t-te-nu-uz-zi*	KBo VI 3 II 6; II 29
	pi̯t-te-nu[-u]z-z[i]	KBo VI 3 II 5
	pi̯[t-t]e-[nu-z]i	KBo VI 3 II 25
OH++	*pi̯t-te-nu-zi*	KBo VI 5 II 11
	pi̯t-te[-nu-uz-z]i	KBo VI 5 III 4

punušk- "ask repeatedly"

OH	*pu-nu-uš-KI-IZ-zi*	KBo VIII 42 Vs. 6

šāktāi- "take care of, nurse"

OH	*ša-a-ak-ta-a-IZ-zi*	KBo VI 2 I
OH+	*ša!-a-ak-ta-a-IZ-zi*	KBo VI 3 I 26
OH++	*ša-ak-ta-IZ-zi*	KBo VI 4 I 23

šamenu- "do without, dispense with"

OH++	*ša-me-nu-uz-zi*	KBo VI 26 II 21

šeškii̯a- "sleep"

OH++	*še-eš-KI-IZ-zi*	KBo VI 26 III 49; IV 26
	še-eš-KI-IZ-z[i]	KBo XXII 66 VI 13
	]-KI-IZ-zi	KUB XIII 30, 2

šiia̯ttaria̯- "secure a sealed deed"

OH	*ši-IT-ta-RI-IZ-zi*	KBo XIX 1 II 19
	ši-IT-ta-RI-IZ-z[i]	KBo XIX 1 II 24
OH+	*ši-i̯[a-at-t]a-RI-i̯a-zi*	KBo VI 3 II 39
	ši-i̯a-at-ta-RI-i-e-IZ-zi	KBo VI 3 II 45
OH++	*ši-i̯a-at-tal-LI-i̯a-az-zi*	KBo VI 5 IV 3

šūnia̯- "drop, sow"

OH++	*šu-ú-ni-IZ-zi*	KBo III 38 Vs. 29; KBo VI 26 I 34

šunnišk- "fill repeatedly"

OH–	*šu-un-ni-eš-KI-IZ-zi*	Bo 3752 II 5

šua̯āi- "push, press out, look to"

OH	*šu-u̯a-i-IZ-zi*	KBo VI 2 I 2; I 3; I 10; I 12; I 41; I 44; I 59; III 26; III 32; III 37; III 52 + KBo XIX 1 III 52; IV 9; IV 17; IV 18; IV 20; IV 43; IV 50; KBo XIX 1 III 42; KBo XXII 6 II 3
	šu-u̯a-i-IZ-[zi]	KBo VI 2 I 21
	šu-u̯a-i-IZ[-zi]	KUB XXIX 16 III 6; III 11
	šu-u̯a-i-I[Z-zi]	KBo VI 2 III 57
	šu-u̯a-i-[IZ-zi]	KBo VI 2 I 23; III 30; III 52
	[šu-u̯]a-i-IZ-zi	KUB XXIX 25, 5
	šu-u̯a-a-IZ-zi	KUB XXIX 22 I 2
	šu-u̯a-i̯a-az-zi	KUB XXIX 28, 9
	šu-ú-IZ-zi	KBo VI 2 IV 48
OH+	*šu-ú-u̯a-IZ-zi*	KBo VI 3 II 52
	šu-u̯a-a-IZ-zi	KBo VI 3 I 3; I 5; I 7; I 9; I 11; I 20; III 36; III 39; III 42; III 45; III 47; III 59; III 68; IV 30

	šu-u̯a-a-IZ-[z]i	KBo VI 3 I 18
	[šu-u̯]a-a-IZ-zi	KBo VI 3 IV 51
	š[u-u̯a-a-I]Z-zi	KBo VI 3 III 56
	šu-u̯a-a-i-IZ-zi	KBo VI 3 I 30; I 32; I 36; I 38; III 29; III 34; III 62; IV 2; IV 12; IV 14; IV 23 ; IV 25
	[šu-u̯a-a-i-I]Z-zi	KBo VI 3 IV 16
	šu-u̯a-a-i[-IZ-z]i	KBo VI 3 I 42
	šu-u̯a-a-i-e-IZ-zi	KBo VI 3 I 34
	[šu-u̯a-i]-e-IZ-zi	KBo VI 3 I 49
	šu-u̯a[-i-IZ]-zi	KBo VI 3 I 52
	]IZ-zi	KBo VI 3 IV 41
	šu-ú-IZ-zi	KBo VI 3 IV 58
OH–	*šu-ú-u̯a-a-IZ-z[i]*	KUB XIII 13 II 7
	šu-u̯a-a-IZ-zi	KUB XL 32, 3; KUB XXIX 17, 3
	šu-u̯a-a-IZ-z[i]	KBo XII 48, 4
	[š]u-u̯a-a-IZ[-zi]	KBo XIX 9, 8
OH++	*šu-u̯a-a-IZ-zi*	KBo VI 5 I 22; KBo VI 6 I 38; KBo VI 10 II 19; KBo VI 10 III 31; KBo VI 11 I 10; I 14; KBo VI 12 I 16; KBo VI 13 I 14; KBo VI 14 I 14; KUB XXIX 19, 7; KUB XXIX 22 I 2
	šu-u̯a-a-IZ-z[i]	KBo VI 11 I 3
	šu-u̯a-a-IZ-[zi]	KBo XIX 3 I 11
	šu-u̯a-a-IZ[-zi]	KBo VI 6 I 46
	šu-u̯[a-a-]IZ-zi	KBo VI 5 IV 13
	šu-u̯a-a-i-e-IZ-zi	KBo VI 4 I 34
	šu-u̯a-IZ-zi	KBo VI 5 I 3; I 15; I 17
	[š]u-u̯a-a-IZ-zi	KUB XXIX 22 I 6; KUB XXIX 26, 2
	[šu]-u̯a-a-IZ-zi	KBo XIX 3 I 8
	[šu]-ú-u̯a-a-IZ-[zi]	KBo XIX 3 IV 11

	šu-ú-e-IZ-[zi]	KBo XIX 4 IV 6
	šu-ú-i-IZ-zi	KBo VI 26 II 4
	šu-u̯a-a-IZ-zi	KBo VI 20 II 8

tāi̯a- "steal"

OH	*ta-a-i-IZ-zi*	KBo VI 2 I 39; I 42; I 45; II 53; III 40; III 45; III 51; III 53; III 56; IV 16; KBo XIX 1 III 43
	[ta-a-]i-IZ-zi	KBo VI 2 I 37
	ta-a-i-I[Z-z]i	KBo XIX 2 + KUB XXIX 16 III 5
	[t]a-a-i-IZ-zi	KUB XXIX 28, 3
	[ta-a-]i-IZ-zi	KUB XXIX 25, 12
	da-a-i-IZ-zi	KBo VI 2 III 23; KUB XXIX 25, 6
	[da-a]-i[-IZ-z]i	KBo VI 2 III 27
	t[a-i-]IZ-zi	KBo VI 2 IV 40
	ta-i-IZ[-zi]	KBo VI 2 IV 44
	ta-i-I[Z-zi]	KBo VI 2 IV 42
	ta-i-[IZ-zi]	KBo VI 2 IV 46
	ta-i-IZ-zi	KBo VI 2 III 54; IV 18; VI 19; IV 47; IV 51
	[t]a-a-i̯a-az-zi	KUB XXIX 28, 12
	-i̯]a-az-zi	KUB XXIX 28, 5
OH+	*ta-a-i-IZ-zi*	KBo VI 3 I 46; III 35; III 48; III 57; III 58; III 60; IV 11; IV 13; IV 15; IV 18; IV 31; IV 38; IV 41; IV 42; IV 48; IV 50
	ta-a-i-IZ-z[i]	KBo VI 3 IV 45
	ta-a-i-IZ-[zi]	KBo VI 3 III 55
	[ta-a-i-I]Z-zi	KBo VI 3 I 53
	ta-a-i-IZ!-zi	KBo VI 3 IV 29
	da-a-i-IZ-zi	KBo VI 3 I 48; I 50; III 46; III 50
	ta-a-i-e-IZ-zi	KBo VI 3 IV 40

	ta-i̯a-az-zi	KBo VI 3 III 26
	da-i-e-IZ-zi	KBo VI 3 III 30
OH–	*da-a-i-e-IZ-z[i]*	KUB XIII 13 II 4
	da-a-i-e-IZ[-zi]	KBo VI 16, 4
	ta-a-i-e-IZ-zi	KUB XIII 15, 3
	da-a-i-i̯a-zi	KBo IX 70, 5
OH–	*-i̯]a-zi*	KUB XIII 13 II 9
OH++	*ta-a-i-e-IZ-zi*	KBo VI 10 II 6; II 16; KBo VI 12 I 2; I 8; KBo VI 14 I 10
	ta-a-i-e-I[Z-zi]	KBo VI 14 I 15; KUB XXIX 19, 3
	[da-]a-i-i̯a-az-zi	KBo VI 11 I 19
	da-a-i-i̯a-zi	KBo VI 4 IV 41; KBo VI 6 I 33; I 39; KBo VI 11 I 18
	ta-a-i-i̯a-zi	KBo VI 8, 2; KBo VI 11 I 13
	ta-a-IZ-zi	KBo XIX 3 IV 6; IV 9
	da-a-IZ-zi	KBo XIX 3 I 19
	ta-a-i-IZ-zi	KUB XXIX 21, 6
	[d]a-a-i-e-IZ-zi	KUB XXIX 23, 11
	i]-e-IZ-zi	KUB XXIX 23, 14
	]i̯a-IZ-zi	KUB XXIX 22 I 15
	ta-a-i-e-I[Z-zi]	KBo VI 10 II 28
	ta-i-e-IZ-zi	KBo VI 10 I 21; II 10; II 11; II 13; II 14; II 17; II 20; II 21; II 25
	ta-i-e-IZ-z[i]	KBo VI 10 II 31; KBo VI 19 II 5
	ta-i-e-I[Z-zi]	KBo VI 10 II 8
	-]e-IZ-zi	KBo VI 19 II 7
	ta-i-i̯a-zi	KBo VI 12 I 11

tannattē- "become empty"

OH–	*[ta]-an-na-at-te-IZ-zi*	KBo XIII 13 Vs. 11

	[ta-an-na-at]-te-IZ-zi	KBo XIII 13 Rs. 2
OH++	*ta-na-an-te-IZ-z[i]*	KBo XIII 34 III 18

taršik(k)- "say repeatedly"

OH	*tar-ši-KI-IZ-zi*	KBo XXII 2 Rs.
OH++	*tar-aš-K[I-IZ-z]i*	KBo III 38 Rs. 20

dašk- "take repeatedly"

OH	*da-aš-KI-IZ-zi*	KBo XXII 1 Vs. 12

te- "say"

OH	*te-IZ-zi*	KBo VI 2 IV 47; KBo XVII 4 II 13; KBo XIX 1 II 18; KBo XIX 1 II 23; KUB XXXI 143 II 18; II 28; KUB XXXVI 100 Rs. 10; Rs. 12; KUB XLIII 25, 5; 6
	[t]e-IZ-zi	KBo XVII 1 III 17; KUB XXXI 143a III 9
	[te]-IZ-zi	KUB XLIII 25, 7
	te[-IZ-]zi	KUB XXXI 143 III 10
	te-IZ-z[i]	KBo XXV 119, 3;KUB XLIII 25, 9
	te-I[Z-z]i	KUB XXXVI 100 Vs. 21
	te-e-I[Z-zi]	KBo XXV 56 IV 20
	[te-I]Z-zi	KBo VI 2 IV 3
OH+	*te-IZ-zi*	KBo VI 3 II 37; II 43; III 71; III 75; IV 46
OH–	*te-IZ-zi*	KUB XIII 13 Rs. 4
OH++	*te-IZ-zi*	KBo VI 4 IV 32; KBo VI 5 IV 2; *te-IZ-zi*; KBo VI 10 III 29; KBo VI 15, 15; KBo VI 26 I 25; II 2; IV 10; KBo XII 49 III 11; KBo VI 13 I 9; KBo VI 13 I 11
	[t]e-IZ-zi	KBo VI 26 I 51; IV 13

tii̯a- "step"

OH	*ti-i-e-IZ-zi*	KBo XVII 29 I 5; KBo XVII 36 II 9; KUB XXIX 30 II 7; II 8
	ti-i-e-IZ-z[i]	KBo XXV 31 II 7
	ti-i-e-IZ-[z]i	KUB XXIX 30 II 19
	[ti-i-]e-IZ-[z]i	KUB XXIX 30 II 16
	ti-e-IZ-zi	KBo XX 12 I 8; KUB XLIII 26 IV 12; KUB XLIII 30 II 16
	[t]i-e-IZ-zi	KBo XVII 11 I 20
	ti-e-IZ-[zi]	KBo XX 12 I 3
	ti-i-IZ-zi	KBo XXV 12 I 5; I 14; KBo XXV 127 II 8; Bo 1291 III 8
	ti-IZ-zi	KBo VI 2 II 61; KUB XXXVI 100 Vs. 24
OH–	*ti-i-IZ-zi*	Bo 1291 III 8
	ti-e-IZ-zi	KBo XXV 51 I 10
	ti-IZ-zi	KBo XXV 68 Rs. 15
OH+	*ti-i-e-IZ-zi*	KBo XVII 74 IV 19
	[ti-i-]e-IZ-zi	KBo XVII 74 II 13
	ti-e-IZ-zi	ABoT 9 I 8
	[ti-e-I]Z-zi	ABoT 9 I 3
OH–	*ti-e-IZ-zi*	KBo XXV 52 II 9
	[t]i-i-e-IZ-zi	KBo XVII 31, 9
	ti-i̯a-zi	KUB XIII 15 Rs. 5
OH++	*ti-i-e-IZ-zi*	KBo XVII 75 I 2; I 4; I 8; I 26; I 28; I 32
	ti-i-e-IZ-z[i]	KBo XIV 66 II 4
	ti-[i-]e-IZ-zi	KBo XVII 75 I 5
	ti-i-IZ-zi	KBo VI 26 III 25; IV 19
	ti-IZ-zi	KBo VI 26 IV 24
	ti-IZ-z[i]	KBo VI 26 I 35
	ti-i̯a-IZ-zi	KBo VI 26 III 22

	ti-i̯a-zi	KBo VI 10 III 32; II 33; KBo VI 26 I 6; I 10

tittanu- "place, appoint"

OH	*-u]z-zi*	KUB XXIX 25, 9
OH++	*ti-IT-ta-nu-uz-zi*	KBo VI 14 I 12

tūri̯i̯a- "harness"

OH	*tu-u-RI-IZ-zi*	KBo VI 2 III 60; IV 1; IV 12; KUB XXIX 30 II 20
OH+	*tu-u-RI-IZ-zi*	KBo VI 3 III 73
	tu-u-RI-i̯a-zi	KBo VI 3 IV 7
OH++	*tu-RI-i̯a-zi*	KBo VI 26 I 11

tūrišk- "harness repeatedly"

OH+	*tu-u-RI-iš-KI-IZ-zi*	KBo VI 3 III 65

du̯u̯arnāi- "break, smash"

OH+	*du-u̯a-ar-ni-zi*	KBo VI 3 III 70
	tu-u̯a-ar-na-zi	KBo VI 3 I 31
	tu-u̯a-a[r-n]i-IZ-zi	KBo VI 3 I 29
OH++	*du-u̯a-ar-ni-IZ-zi*	KBo VI 4 I 27; I 30

urki̯i̯a- "find, trace"

OH	*ur-KI-i̯a-IZ-zi*	KUB XXIX 30 II 5
OH++	*ur-KI-i̯a-IZ-zi*	KBo VI 10 III 30

ušk- "see repeatedly"

OH	*ú-uš-KI-IZ-z[i]*	KBo VIII 42 Vs. 2

u̯u̯a- "come"

OH	*ú-IZ-zi*	KBo XVII 1 I 40; KBo XVII 9 IV 10; KBo XVII 11 IV 2; IV 6; KBo XVII 15 Vs.? 18; Vs.? 19; KBo XVII 30 II 5; KBo XVII 43 IV 5; KBo XX 5 Rs. 4; KBo XX 21 Rs. 2; KBo XX 33 Rs. 8; KBo XX 50, 2; KBo XXV 12 I 13; KBo XXV 84 I 4; XXV 87, 3; KUB XXXVI 106 Vs. 3
	ú-e-IZ-zi	KBo XVII 1 III 13
	[ú]-IZ-zi	KBo XVII 11 I 14
	[ú-I]Z-zi	KBo XX 3 Rs. 1
OH–	*ú-IZ-zi*	Bo 6594 I 92 (in StBoT 25, Nr. 41); KBo XXV 51 I 16
OH+	*ú-IZ-zi*	KBo XVII 74 I 27; I 29; I 34; IV 28; IV 32; KBo XX 33 Rs. 8
OH++	*ú-IZ-zi*	KBo VI 13 I 15; KBo VI 26 II 4

uuate- "lead, conduct"

OH	*ú-ua-te-IZ-zi*	KBo VI 2 I 43; I 46; I 48; I 53; KBo IX 73 Vs. 14
OH+	*ú-ua-te-IZ-zi*	KBo VI 3 I 51; I 54; I 56; I 60
OH++	*ú-ua-te-IZ-zi*	KBo VI 26 IV 10; IV 17

uahnu- "cause to turn"

OH	*ua-a[h-nu]-uz-zi*	KBo XVII 1 II 32
	[ua-]ah-nu-u[z-zi]	KBo XVII 3 II 3

uaršiia- "sweep up, clean"

OH	*ua-aš-še-IZ[-zi]*	KBo XX 18 Rs. 3
OH++	*ua-ar-še-e-IZ-zi*	KBo VI 12 I 25

uaššišia- "put on, clothe"

OH++	*ua-aš-ši-e-IZ-zi*	KBo VI 26 IV 13

u̯atku- "jump, leap"

OH++	*u̯a-at-ku-zi*	KBo VI 26 IV 19
	u̯a-at-ku-z[i]	KBo VI 26 IV 22

u̯emiia- "find"

OH	*ú-e-mi-zi*	KBo VI 2 IV 12
	ú-e-mi-IZ-z[i]	KBo VI 2 III 59; KUB XXXVI 104 Vs. 10
	ú-e-mi-IZ-[z]i	KBo XIX 2 + KUB XXIX 16 III
	ú-e-mi-IZ-zi	KBo VI 2 III 38; III 58; IV 11; IV 49; KBo IX 73 Vs. 13; KBo XIX 1 III 49
	[ú-e-]mi-IZ-zi	KBo VI 2 III 35
	[ú-e-m]i-IZ-zi	KBo VI 2 II 36
OH–	*ú-e-mi-ia-zi*	Bo 5333 I 2 (in StBoT 9)
OH+	*ú-e-mi-IZ-zi*	KBo XIII 31 II 2
	ú-e-mi-e-IZ-zi	KBo VI 3 III 37
	ú-e-mi-ia-az-zi	KBo VI 3 II 57; III 40; III 43
	[ú-e-]mi-ia-az-zi	KBo VI 3 III 53
	ú-e-mi-ia-zi	KBo VI 3 I 64; III 63; III 64; III 65
	ú-e-mi-ia-z[i]	KBo VI 3 IV 4
	[ú]-e-mi-ia-zi	KBo VI 3 IV 6
	ú-i-mi-ia<-zi>[?]	KBo VI 3 IV 27
	[KAR]-*IZ-zi*	KBo VI 3 IV 28
OH++	KAR-*zi*	KBo VI 5 IV 21
	ú-e-mi-ia-zi	KBo VI 4 IV 5; IV 7; IV 8; IV 10; KBo VI 8, 9; KBo VI 26 IV 8
	ú-e-mi-ia-z[i]	KBo XIX 3 I 16

u̯eda- "build"

OH	*ú-e-te-IZ-zi*	KUB XXIX 29 Vs. 6
	[ú-e]-te-IZ-zi	KBo VI 2 IV 53
OH+	*ú-e-te-IZ-zi*	KBo VI 3 IV 52; IV 62
OH–	*[ú]-e-te-IZ-zi*	KBo XIV 65 IV 5
OH++	*[ú-e]-te-IZ-zi*	KUB XXIX 20, 4

zanu- "cook"

OH	*za-nu-uz-zi*	KBo XXV 106, 7
	za-nu-u[z-zi]	KBo XVII 29 I 3

zašk- "lay"

OH+	*za-aš-KI-I[Z-zi]*	KUB XXXII 117 Vs. 10

zikk- "put repeatedly"

OH	*zi-IK-KI-IZ-zi*	KBo XVII 43 IV 3

zinna- "finish"

OH	*zi-in-ni-z[i]*	KBo XX 10 I 5
OH–	*[zi-]in-ni-IZ[-zi]*	Bo 1291 III 20

zinušk- "cause to cross repeatedly"

OH	*zi-i-nu-uš-KI-IZ-zi*	KBo VI 2 II 30
OH+	*zi-nu-uš-KI-IZ-zi*	KBo VI 3 II 52
OH++	*zi-e-nu-uš-KI-IZ-zi*	KBo VI 5 IV 12

REFERENCES

Carruba, Onofrio. 1966. "Die Verbalendungen auf *-wani* und *-tani* und das relative Alter der heth. Texte." *die Sprache* 12. 79-89.

————. 1970. *Das Palaische Texte, Grammatik, Lexikon.* Wiesbaden: Otto Harrassowitz.

Eichner, Heiner. 1973. "Die Etymologie von heth. *mēḫur*." *Münchener Studien zur Sprachwissenschaft* 31. 53-107.

Friedrich, Johannes. 1960. *Hethitisches Elementarbuch* I. Heidelberg: Carl Winter.

Garrett, Andrew. 1991. "The Lycian Nasalized Preterite." *Münchener Studien zur Sprachwissenschaft* 52. 15-26.

Hawkins, J. D. 1975. "The Negatives in Hieroglyphic Luvian." *Anatolian Studies* 25. 119-156.

Heinhold-Krahmer, S., I. Hoffmann, A. Kammenhuber and G. Mauer. 1979. *Probleme der Textdatierung in der Hethitologie.* Heidelberg: Carl Winter.

Jasanoff, Jay H. 1998. "The Thematic Conjugation Revisited." *Mír Curad: Studies in Honor of Calvert Watkins*, eds. by Jay Jasanoff, et al. 301-316. Innsbruck: Institut für Sprachwissenschaft der Universität Innsbruck.

Joseph, Brian. 1984. "A Note on Assibilation in Hittite." *Die Sprache* 30. 1-15.

Kronasser, Heinz. 1956. *Vergleichende Laut- und Formenlehre des Hethitischen.* Heidelberg: Carl Winter.

————. 1966. *Etymologie der hethitischen Sprache* (Band 1). Heidelberg: Carl Winter.

Kuryłowicz, Jerzy. 1966. "La nature des procès dits "analogiques"." *Readings in Linguistics* II. eds. by Eric P. Hamp, et al. 158-174. Chicago: University of Chicago Press.

Laroche, Emmanuel. 1971. *Catalogue des textes hittites.* Paris: Klincksieck

————. 1972. "Catalogue des textes hittites: Premier supplément." *Revue hittite et asianique* 30. 94-133.

Lehrman, Alexander. *Simple Thematic Imperfectives in Anatolian and Indo-European.* Ph. D. dissertation, Yale University.

Melchert, H. Craig. 1984. *Studies in Hittite Historical Phonology.* Göttingen: Vandenhoeck &

Ruprecht.

————. 1992a. "The Middle Voice in Lycian." *Historische Sprachforschung* 105. 189-199.

————. 1992b. "Relative Chronology and Anatolian: The Vowel System." *Rekonstruktion und Relative Chronologie (Akten der VIII. Fachtagung der Indogermanischen Gesellsschaft, Leiden, 31. August – 4. September 1987)*, eds. by Robert Beekes, et al. 41-53. Innsbruck: Institut für Sprachwissenschaft der Universität Innsbruck.

————. 1994. *Anatolian Historical Phonology*. Amsterdam: Rodopi.

Morpurgo Davies, Anna. 1982/83. "Dentals, Rhotacism and Verbal Endings in the Luwian Languages." *Zeitschrift für vergleichende Sprachforschung* 96. 245-270.

Neu, Erich. 1968a. *Interpretation der hethitischen mediopassiven Verbalformen*. Wiesbaden: Otto Harrassowitz.

————. 1968b. *Das hethitische Mediopassiv und seine indogermanischen Grundlagen*. Wiesbaden: Otto Harrassowitz.

————. 1980. *Althethitische Ritualtexte in Umschrift*. Wiesbaden: Otto Harrassowitz.

————. 1998. "Hethitisch *ši-mu-uš*." *Historische Sprachforschung* 111. 55-60.

Oettinger, Norbert. 1979. *Die Stammbildung des hethitischen Verbums*. Nürnberg: Verlag Hans Carl.

————. 1996. "Die Partikel *-z* des Hethitischen (mit einem Exkurs zu den Medialformen auf *-t, -ti*)." *Berthold Delbrück y la sintaxis indoeuropea hoy (Actas del Coloquio de la Indogermanische Gesellschaft, Madrid, 21-24 de septiembre de 1994)*, eds. by Emilio Grespo, et al. 407-420. Wiesbaden: Dr. Ludwig Reichert Verlag.

Otten, Heinrich. 1988. *Die Bronzetafel aus Boğazköy: Ein Staatsvertrag Tuthalijas IV.* Wiesbaden: Otto Harrassowitz.

Pedersen, Holger. 1938. *Hittitisch und die anderen indoeuropäischen Sprachen*. København: Levin & Munksgaard.

Riemschneider, Kaspar Klaus. 1970. *Babylonische Geburtsomina in hethitischer Übersetzung*.

Wiesbaden: Otto Harrassowitz

Schindler, Jochem. 1975. "L'apophonie des thèmes indo-européens en *-r/n-*." *Bulletin de la Société de Linguistique de Paris* 70. 1-10.

Starke, Frank. 1990. *Untersuchung zur Stammbildung des keilschrift-luwischen Nomens.* Wiesbaden: Otto Harrassowitz.

Sturtevant, Edgar H. 1951. *A Comparative Grammar of the Hittite Language* (revised edition). New Haven: Yale University Press.

Watkins, Calvert. 1969. *Indogermanische Grammatik* III/1. *Geschichte der Indogermanischen Verbalflexion.* Heidelberg: Carl Winter.

————. 1974. "God." *Antiquitates Indogermanicae: Gedenkschrift für Hermann Güntert*, eds. by Manfred Mayrhofer et al. 101-110. Innsbruck: Institut für Sprachwissenschaft der Universität Innsbruck.

Yoshida, Kazuhiko. 1987. "The Present Mediopassive Endings *-tati* and *-u̯aštati* in Hittite." *Die Sprache* 33. 29-33.

————. 1990. *The Hittite Mediopassive Endings in* -ri. Berlin: Walter de Gruyter.

————. 1991. "Reconstruction of Anatolian Verbal Endings: the Third Person Plural Preterites." *The Journal of Indo-European Studies* 19. 359-374.

————. 1993. "Notes on the Prehistory of Preterite Verbal Endings in Anatolian." *Historische Sprachforschung* 106. 26-35.

————. 1997. "A Further Remark on the Hittite Verbal Endings 1 pl. *-u̯ani* and 2 pl. *-tani*." *Festschrift for Eric P. Hamp (Volume II)*, ed. by Douglas Q. Adams. 187-194. Washington, D.C.: Institute for the Study of Man.

————. 1998a. "Hittite Verbs in *-Vzi*." *Proceedings of the III. International Congress of Hittitology (16-20 September 1996, Çorum, Turkey)*, eds. by Sedat Alp et al. 605-614. Ankara: Grafik, Teknik Hazırlık Uyum Ajans.

————. 1998b. "Assibilation in Hittite." *Proceedings of the Ninth Annual UCLA Indo-European Conference (May 23-24, 1997)*, eds. by Karlene Jones-Bley et al. 204-235. Washington, D.C.: Institute for the Study of Man.

————. forthcoming (a). "The Original Ablaut of Hittite *šiuatt-*." To appear in *Münchener Studien zur Sprachwissenschaft.*

————. forthcoming (b). "On the Prehistory of the Hittite Particle *-ti*." To appear in *Indogermanische Forschungen.*

————. forthcoming (c). "Hittite *nu-za* and Related Spellings." To appear in *Acten des IV. Internationalen Kongresses für Hethitologie (Würzburg, October 4-8, 1999).*