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THE REFLEXES OF IE INITIAL CLUSTERS IN HITTITE [1]

This article examines the behaviour of etymological clusters "obstruent + resonant" and "/s/ + obsrtuent" in Hittite. Using philological arguments, we have tried to show that in the first case Hittite words undergo phonetic anaptyxis, whereas in the second case there are no reasons to posit any phonetic changes in Hittite. These results partially contradict the conclusions of Kavitskaya 1999.

1.1. Introduction. It is a well-known fact that the unambiguous representation of initial consonant clusters in the cuneiform writing is impossible. At the same time, there are lexemes in the Hittite language that apparently go back to Indo-European roots with initial groups *#CC-* [2] or where the initial consonant cluster can be established by internal reconstruction.

We will take a closer look at three groups of lexemes:

I) Words with etymological **#CC-* that are graphically transmitted as *CV-CV°* in Hittite. Etymological analysis allows us to categorize at least 12 roots to this group.

II) Words with etymological **#sC-* that are graphically transmitted as *iš-CV°*. Etymological analysis allows us to categorize at least 9 words to this group.

III) The words *tešha-/zašhai-* 'sleep, dream', *zik(k)-* 'to put, set, place' and *šakkar-/zakkar-* 'excrement' with *zaškar(a)išš-* 'anus?'. The initial consonant clusters in these words can be established through internal reconstruction from within Hittite.

[1] Some parts of the present article were published in Proceedings of the Twelfth Annual UCLA Indo-European Conference = Kassian—Yakubovich 2001.

[2] The following notation of phonetic and phonological symbols is used here and below: *C*—any consonant (obstruent or resonant); *V*—any vowel (as well as resonant in syllabic function); *R*—liquid (*r, l*) or nasal (*n, m*); *P*—*p, b, bh*; *T*—*t, d, dh*; *K*—*k, g, gh* (as well as their palatalized and labialized counterparts in IE reconstruction); *H*—any laryngeal.

For an analysis of I and II the following IE roots are important:

a) Roots with **#PR-*, **#TR-*, **#KR-*, **#sR-*, **#HR-*, i.e. with the initial combination stop/fricative + resonant (e.g. **treie̯-/*trī-* '3'; **ghrebh-* 'to seize'; **sleig̑-* 'to defile'; **Hlei̯-* 'schleimig, glitschig etc.');

b) Roots with **#sP-*, **#sT-* **#sK-* or **#sH-*, i.e. with the initial combination *s* + stop/laryngeal (e.g. **spē(i̯)-* 'sich ausdehnen, dick, fett werden').

As the etymological analysis shows, the Hittite lexemes from groups I and II go back to IE roots/lexemes from groups a) and b) respectively (see the etymologies below). In other words, the reflexes of IE initial cluters with a resonant in second position **are written in Hittite as *CV-CV°***, whereas the reflexes of IE initial clusters of sibilant + stop/laryngeal **are written in Hitt. as *iš-CV°***.

The etymologies related to groups I and II will be comsidered in § 2 and § 3 respectively. The Hittite group III, which is important for our phonetic conclusions, will be discussed in § 4.

§ 5 is devoted to those words that, in spite of their outer similarity to the lexemes from § 2 and § 3, cannot be treated as valid examples for various reasons.

§ 6 is dedicated to the history of the phonetic interpretation of the examples under discussion and our own conclusions. We will try to establish in which cases the Hittite treatment of IE consonant clusters represents a merely graphic phenomenon, and where we deal with a real anaptyctic vowel.

The typological implications of our conclusions will be discussed in § 7. [3]

1.2. Principles of selection. To say that a given Hittite word has a reasonably reliable etymological clusters *#CR-* means, in our opinion, to show that it does not belong to the following categories:

a) Words where "anaptyctic" *-a-* is demonstrably a zero grade of *-ē-* in the first (graphic) syllable. The model case here is *taknāš*, gen. sg. of *tēgan* 'earth'. This word can be interpreted as **dhéĝhm̥ / *dhéĝhōm* (< **dheĝhom-s*), gen. **dhᵘĝh(ᵘ)mós* (with two ə secundum), as well as **dhĝhmós* (see Kassian,

[3] Note on datings. Below we will try to accompany every citation of relevant Hittite forms by their datings, using standard abbreviations: OS (old script), MS (middle script) and NS (new script). Being reluctantant to increase *ad infinitum* the size of this article, we are not going to give exact references to the source of each dating. In general, our datings are based on the following works:

a) For the basic list of OH/OS texts see Starke, StBoT 23 and Neu, StBoT 25—26.

b) The basic list of MS texts one can compile using Neu // Hethitica 6 (1985): 139—159 and Klinger, Neu // Hethitica 10 (1990): 109—127.

New datings and joins are given in S. Košak's "Konkordanz der Keilschrifttafeln" (StBoT 34; StBoT 39; StBoT 42; StBoT 43). Some months ago H. Otten, G. Wilhelm and their colleagues presented the new brilliant project: Hethitologie Portal Mainz (http://hethiter.net), where Košak's Konkordanz is publshed as on-line database including the most part of known Hittite fragments with joins and refined palaeographic datings.

Zi: 98—99 for further details). For a similar reason *ga-nu-ut* 'knee' (instr.; cf. nom. *gi-e-nu*) cannot be securely transcribed, or even reconstructed as (*)/gnūt/, pace Kimball, HHP: 117. As a matter of fact, almost no unambiguous cases of the synchronic ablaut PHitt. **e/*Ø* are attested in Hittite[4]. For the alternation PHitt. **e/*a* cf. the well-known case of *ēšzi* 'he is' vs. *ašanzi* 'they are'.

b) Words with "disyllabic roots" or "roots with laryngeals" in IE (depending on the terminology). Thus, in view of Gk. δόλιχος 'long', there are no reasons to reconstruct PHitt. *#dl-* in Hitt *daluga-* 'id.' < IE **dl̥ǵho-* / **dl̥Hgho-* vel sim. The same, *mutatis mutandis*, is true for Hitt. *parā* 'forth', cf. Gk. preverbs προ and παρα. In view of Gk. δαμνήμι, part. δμητός 'to tame', the verb *damešš-*mi 'to oppress' can be reconstructed as **dm̥H-ēs-* or **dᵸm-ēs-*. The case of *kanēš-*mi 'to recognize' is more complicated, but the forms like Lith. *žinó-ti* (as if) < **ĝn̥H-ā-* / **ĝᵸn-ā-*, justify (although do not necessarily prove) the reconstruction **ĝn̥H-ēs-* / **ĝᵸn-ēs-* for Hitt. *kanēš-*mi. In all these cases it is impossible to show that the anaptyxis in the initial syllable is recent (cf. also Laroche // RHA 19/68 (1961): 29).

c) Words with phonetically and/or semantically vague etymologies. For example, Kimball, HHP: 117 follows Oettinger in reconstructing Hitt. *šamen-/šemen-/šamn-* 'disappear, withdraw' (OS: 3 sg. pres. *ša-me-en-zi*, *še-me-en-zi*, 3 pl. *ša-am-na-an-zi*) as IE **smen-* and connecting it with Gk. μόνος, μοῦνος 'alone' and Arm. *manr* 'small'. This is not impossible, but if one does not want multiple uncertanties, it is better to avoid using root comparisons of this kind as a basis for phonetic conclusions.

§ 2. Indo-European #CR clusters in Hittite

2a. IE **#PR-*

2.1. *parāi-*hi 'to blow (a horn); to blow on, fan (a fire)' (OS+)[5], (redupl.) *paribarāi-*hi (MS+[6]), rare *paripparāi-* (NS), once *pariprāi-* (NS) 'to blow (a horn); to be flatulent, bloated (*med.*)', probably also *parā-* c. 'air, breath (?)' (NS); written *pa-ra-°*, *pa-ri-°*—see forms in CHD, P: 133, 155, 130.

‖ IE **prē-* (cf. WP, II: 27 f.; Pok.: 809).

Grk. √πρη- in πίμπρημι (Ion.-Att.) 'to burn (*tr.*), burn up; to blow up, distend', πρήθω, aor. ἔπρησα (H.+) 'to blow up, swell out by blowing; to spout; to blow into a flame', πρῆσις (Ion.-Att.) 'blowing up, distension; inflammation', etc. (LS: 1405, 1463; Frisk, II: 538—539).

? Slav. **prě-ti*, **prě-jǫ* 'to sweat, perspire; to rot' (Russ. *премь*, *пре́ю*, etc.). The meaning shift is not very apt.

◊ Hitt. *parāi-*hi (: Grk. πίμπρημι : ? Slav. **prějǫ* < IE **prē-*) with 1 sg. *pa-ri-ih-hi* ~ 3 sg. *pa-ra-a-i* ~ 3 pl. *pa-ri-an-zi*[7] belongs to the same morphological pattern as *tāi-*hi 'to place' (: Grk. τίθημι : Slav. **dějǫ* < IE **dhē-*) with 1 sg. *te-eh-hi* ~ 3 sg. *da-a-i* ~ 3 pl. *ti-an-zi*.

As for the reduplication type, the standard pattern of full reduplication in Hittite is «ROOT + ROOT (- SUFF.)», e.g. *haš-haš(š)-* 'to open' from *haš(š)-* 'id.', *ti-ttija-* 'to appoint, to fix' from *tai-* 'to put, set' or *lah-lahhija-* 'to be agited, to worry' from *lahhija-* 'to travel, to go on an expedition' (see van Brock, Redoublement; EHS: 570 ff.)[8]. Reduplicated stems *pari-p(pa)rāi-* and *hali-hlai-* 'to genuflect' (§ 2.11) fit this morphological model (their roots are resp. √*prai-* and √*hlai-*).

Probably the variant *paribarai-* of the reduplicated *parip(pa)rāi-* stem is a secondary artificial formation, based on graphics. "Correct" stems are the rare *pariprai-* and *paripparai-*.

2b. IE **#TR-*

2.2. *teri-* '3', *terija-* 'third', *terijanna* 'the third time', ? *terijalla-* 'ein Getränk, aus drei Zutaten (?)'; written *te-ri-°*—see forms HEG, III: 320—328. All the reliable attestations of this root belong to NS (?).

‖ IE **treie-/*trī-* '3' (WP, I: 753—754; Pok.: 1090).

◊ Cf. also *tarrijanal(l)i-* 'related to three (?)' in TÚG*tarrijanali-* and LÚ*tarrijanalli-* (cf. HEG, III: 174—175; written *tar-°*) that can be explained as Luwoid forms.

The component *ti-e-ra-°*, *ti-e-r°* in the Indoar. hippological term *tēra-wartanna*, *tērurtanna*, *tēraurtan⟨na⟩* 'Dreier-Runde' from Kikkuli-texts (HEG, III: 318 ff.) can be the result of a contamination between Hitt. and Mitannian forms (*plene* writing shows that the spelling *te-r°*, *ti-e-r°* is phonetic, not graphic).

2.3. *teripp(ija)-*mi 'to plough (with animals?)' (MS+), A.ŠA*terippi-* 'ploughed field' (MS+); written *te-ri-°*—see forms in HEG, III: 329 ff.

‖ Hier. Luw. *ta×ra/i-pu-na* (/tarrapūna/?) 'ploughing?'. For the semantics of this obscure term, see Morpurgo-Davies // FsRisch (1986): 129 ff.

[4] The most likely case of the synchronic ablaut **e/*Ø* in Hittite is represented by Hitt. *tešha-* / *zaš/zhai-* c. (MS+) 'dream, sleep' (§ 4.1.). Yet, since the words in question lack a secure Indo-European etymology, this example can hardly be considered probative.

[5] OS: StBoT 25, No. 66 Rs. 6 prs. 1 pl. *pa-ri-i-wa-ni*. Cf. also Pal. prt. 3 sg. *pa-ra-i-it* StBoT 25, No. 139 I 15' (MS) = *pa-ra-a-i[(-it* KUB 35.168 I 3' (OS) ?

[6] MS: KBo 20.101 Rs.? 10 *[p]a-ri-pa-ri-eš-kat-ta-ri*; MS~NS: KBo 15.52 V 10 *pa-ri-pa-ra-a-i*.

[7] Cf. once *pa-ra-an-zi* in KBo 21.57 II 4 (MS).

[8] Probably the only exceptions representing the pattern «ROOT + *i* + ROOT (- SUFF.)» are late and rare *wari-war-ant-* 'brennend, lodernd' from part. *warant-* 'id.' and NH hapax *lahhi-lahhe-škinu-* 'to cause to run' side by side with regular *lah-lahhe-škinu-*.

Toch. A *räp-* (V; inf. *rpātsi*) 'to dig'; Toch. B *rāp-* (VI; 3 sg. prs. *rapanaṃ*) 'id', *rapālñe* 'ploughing'. The comparison between the Anatolian and Tocharian forms suggests the Indo-European reconstruction **√drep-* 'plough, dig' as per Adams, Dict.Toch.B: 529.[9]

◊ Other cognates are less certain. Gk. δρέπω 'to pluck', δρεπάνη 'sickle' (Hom.+) is compared by Frisk, I: 417 with Slav. **drъpati* 'to scratch' (Bulg. *дъ́рпам*, etc.). If these forms are related to the same IE **√drep*, we are dealing with the common semantic development *'scratch' > 'plough, till', cf. EWA I: 319 on Skt. *√karṣ-*.

Not related to this root are the following forms, frequently cited as belonging to IE **trep-* 'wenden' (WP, I: 756—757, Pok.: 1094):

Grk. τρέπω, Dor., Ion. τράπω 'to turn, direct'; τροπέω 'id. (iter.)' (Frisk, II: 923 ff. with different derivatives). Pace Rix, LIV: 591, this root should be compared with Myc. med. participle *to-ro-qe-jo-me-no* 'arable (?)', modifying the fields (*a-ro-u-ra*), and then with Lat. *torquēre* 'to twist', as per Lejeune 1972: 169. Thus the root in question is IE **√trek^{w}-* 'to turn, twist';

late Skt. *trapate, -ti* (E.+) 'be ashamed, become perplexed', is probably to be connected with Lat. *torpeō* 'to be sluggish, inert > inactive'[10]. Lat. *turpis* 'ugly, repulsive; shameful' is likely to be related to the same IE **√trep-* 'to be inactive'[11].

Another, expressive IE root **√trep-* 'to shake' can be seen in Russ. *mpe-namъ* 'to pull about' with Slavic cognates (Фасмер, IV: 98), Pashto *drabəl* 'shake, press down' and, possibly, Skt. *tṛ́prá-* 'moving, unsteady' (Morgenstierne 1927).

?? Late Lat. (Paulus Diaconus) *trepit: vertit, unde trepido et trepidatio, quia turbatione mens vertitur*. Cf. the commentary in EM: 701: "peut-être création de grammairien pour expliquer *trepidus*".

2c. IE **#KR-*

2.4. *kalanka-* 'to soothe, satisfy' (MS+)[12], *kalaktar*[13] (r/n) 'soothing substance, balm'; written *ga-la-°*, *ka-la-°*, *kal-la-°* — see the forms in HED, IV: 18 ff.

[9] The development **dr* > *r* is regular in Tocharian in any position, cf. Adams, THPhon.: 38.

[10] Pace EWA I: 674. Cf. Rus. *стынуть* (< **styd-nǫ-ti*) 'to get cold' ~ *стыд* 'shame' for semantics.

[11] Span. *torpe* 'clumsy, awkward; dumb, stupid' reveals the synchronic connection between *turpis* and *torpeō* in Popular Latin.

[12] MS: e.g. part. pl. nom. c. *ga-la-an-kán-te-eš* (KBo 15.10+ I 32, II 44).

[13] *kalaktar* < {galang} + {tar} with the regular loss of *-n-*, probably not from {galag} + {tar} without nasalisation (*pace* HED).

‖ IE **gleĝ-* (WP, I: 661; Pok.: 401), **glenĝ-*[14]

Slav. **glěziti*: Bulg. *глéзя* 'to caress; please smb.', aor. *глéзих*, dial. *глéз'ъ* 'to indulge, spoil smb.', dial. *глúзим*[15] 'to caress, indulge'; Maced. *глезu* 'to indulge' (ЭССЯ, 6: 118). These forms, in all probability, could also go back to Slav. **glęziti*. Slav. data point to accentual paradigm *a*, i.e. **glěziti* with the root vowel lengthening according to Winter's law.

Lith. *glèžti, glęžtù* (/ *glenžù*), *gležaũ* 'weich, schlaff, hinfällig werden', *glėžnas* (4) 'zart, weich, schlaff, etc.' (Fraenkel: 157; LKŽ, III: 418); Latv. *glęzns* 'widerstandslos, empfindlich, etc.; zart, nett, zierlich, etc.' (ME, I: 626).

Germ. adj. **klinkua-*: ON *kløkkr* 'weich, biegsam, nachgiebig', Norw. *klæk, kløkk* 'weich, schwach'; also Dutch *klinker* 'weich, zart, schwach', etc. (FT, I: 541; WP, I: 661).

2.5. *karaitt-* (OS)[16], *karitt-* (later), *kirett-* c. 'deluge, flood, inundation'; written *ga-ri-°*, *ka-ri/a-°* (see the attestations in HED, IV: 85 ff.; Rieken, StBoT 44: 134 f.) and a *hapax* nom. sg. *gi-ri-e-iz-za* KUB 34.10 10' (NS)

‖ IE **ĝhro/ed-* 'lake; pool (?)' is attested in Skt. *hradá-ḥ* (V+) 'Teich, See', *hrádya-* (TS) 'im Teich befindlich', *hradapyà-* (Schol. TS, Gramm.) 'id.', *hradavya-* (Gramm.) 'id.', *hradin-* (E.) 'wasserreich (Fluss)', *hrādin-* (1×; E.) 'id.', *hradinī* (C.) 'Fluss', *hrādinī* (1×; Gramm.) 'id.' (BR, VII: 1671—1672, 1674), also *hrā-dīya-* (Kauṭalya) 'von einem See stammend' (KEWA, III: 614—615; not recorded in BR and Bö.)[17]. NPers. *žāla* '1. dew; 2. hail' (Asadi-Tusi: 442)[18] would suggest that the original meaning of the Indo-Iranian lexeme could be broader than 'lake', if the Persian word is not related to the words discussed in the fn. 17.

◊ The last root consonant in Hitt. (*-tt-* instead of the expected *-d-*), is probably levelled after the nom., where phonetic devoicing /gret-s/ < **ĝhred-s* may have taken place (thus HED)[19]. It is more difficult to explain the OH vocalism

[14] Cf. also IE **glak-t-* 'milk' (WP, I: 659) *pace* HED, IV: 20 (typologically cf. Lat. *mulgēre*).

[15] The vocalism here is unclear.

[16] OS: StBoT 25, No. 140 Rs. 19' nom. sg. *ka-ra-i-iz*, ibid. Rs. 18' dat.-loc. sg. *ka-ra-it-ti*.

[17] This root is probably to be separated from IE **grōd-* 'hail': OCS *градъ* 'id.', Arm. (redupl.) *karkut* < **gagrōdV-* 'id.', also with unclear vocalism and nasalisation Lat. *grandō* 'id.' etc. (Фасмер, I: 450; WP, I: 658; Pok.: 406). Indo-Iranian forms going back to the virtual IE **ĝhrōduni-* 'hail', i.e. Skt. *hrāduni-*, Sogd. *žyδn*, Yidgha *zīlo*, South Bashkardi *dərāyen* etc. (EWA II, 823) represent, probably, a contamination of IE **grōd-* 'hail' and the forms discussed in the main entry.

[18] The Persian word is borrowed from an East Iranian Dialect, most probably from Bactrian.

[19] Cf. the very low frequency of Hitt. common gender stems ending in *-d* (*karad-* c. 'interior' is the only well attested example), whereas the stems in *-att-* are abundantly represented.

karajiz, karaitti[20]. Cf, however, numerous OH forms of *henk-* 'to bow' like *hi-inga* and *hé-ik-ta* (see StBoT 26: 65), but 2× with the vocalization *-ai-*: KBo 7.14 + KUB 36.100 (Zukraši) II 19 *ha-i*[*(k-ta-ri*, ibid. II 20 *ha-ik*[*-ta-r(i)*]][21]; Hitt. *henk-* 'to bow' < IE **Henk-*: Skt. √*añc-* with the oldest meaning 'biegen'[22] (BR, I: 59 sub v. AC; Bö., I: 13 sub v. AC; Grassman: 15 sub v. AC), prs. 1 *añcati* AV+, *-te* B., prs. 6 *ácati* V+, *-te* AV+ (Whitney, Roots: 1); Gk. √αγκ- 'biegen' (αγκών 'elbow', ἄγκυρα 'anchor', αγκάλη 'bent arm', etc.— Frisk I: 10 ff.)[23].

2.6. ***ka/ārab-***^{hi}, *karib-*, *kirib-* 'to devour, consume, destroy' (OS+)[24].

Written *ka(-a)-ra/i-°*, *ga(-a)-ra-°* (see forms in HED, IV: 72 ff.) and prs. 3 pl. *gi-ri-pa-an-zi* (1×, KUB 43.75 17, NS). The first syllable is written plene in 3 sg. *ka-a-ra-pí* (KUB 8.6 Vs. 10; KUB 29.11+ II 10—both NS[2]) and 3 pl. *ga-a-ri-pí-iš*[*-kán-z*]*i* (KUB 4.47 Vs. 6, NS[2]). The root final consonant is demonstrably *-b-*; two Neo Hittite examples, prs. 3 pl. *ka-ri-ip-pa-an-zi* (ABoT 44+ I 55) and imp. 3 pl. *ka-ri-ip-pa-an-du* (ibid. I 54) are not a compelling reason to reconstruct **-p-* or dublet forms with **-b-* and **-p-* (*pace* HED).

‖ IE **ghrebh-*/**ghrobh-*/**ghr̥bh-* 'to seize' (WP, I: 652—653, Pok.: 455).

Skt. √*gra(b)h-*/*gr̥(b)h-* (V+) 'id'.

MHG *grabben* 'schnell fassen, raffen', etc.— see ibid.

Slav. **grabiti, grabjǫ* (with the iterative vowel lengthening) 'to snatch, rob' (ЭССЯ, 7: 97). The relation of Slav. **grebti, grebǫ* etc. 'to dig, row' (ЭССЯ, 7: 109 f.) to this IE root is not likely; most probably it is related to a homonymous IE **ghrebh-* 'kratzen, scharren, graben' (WP, I: 653—654, Pok.: 455—456).

Lith. *grabùs* (4) 'adroit, deft', *grabinėti* 'to grope'. The vocalism in Lith. *gróbti, gróbiu, gróbiau* 'to snatch, seize' is less clear. Lith. *grėbti* 'to rake' is related to IE **ghrebh-* 'kratzen, scharren, graben' (see above). The two IE roots merge in Latv. *grebti, -bju, -bu* '1. to scrape (with a special knife, scraper); 2. to grasp' (ME, I: 645).

◊ This etymology, accepted already by Sturtevant, is rejected by Puhvel: "The comparison of *karap-* with Skr. *grabh-* is semantically improbable" (HED IV, 73). According to the just observation of HED, Hitt. *karab-* means 'to devour', normally referring to animals or demons vs. *ed-*/*ad-* for gods and men (for

[20] Cf. the unlikely explanation of this phenomenon in HED "*karajiz* is explicable as showing hypercorrect *ai* on the basis of **ai* > *e* (like Lat. *Flaurus* < *Flōrus*, after *Claudius* > *Clōdius*)".

[21] And also *ha-ik-ta* KBo 23.91+ IV 6 (MS), 3 pl. prs. *ha-in-kán-ta* ABoT 8+ I 18 (MS), *ha-en-kán-t*[*a* 1003/u 7.

[22] With prefixes 'to bow (intr.), to bend knees'.

[23] *Pace* HED, III: 292 ff., where *henk-* 'bow', together with *henk-* 'to make a gift of, give a present', is related to IE **enḱ-*/*neḱ-* (WP, I: 128; Pok. 316—318) 'to reach, attain; carry, bring'.

[24] OS: prs. 3 sg. KBo 6.2+ (Code A) IV 2 *ka-ra-a-pí*.

nuances see Hoffner // JAOS 120/1 (2000): 72a). In our opinion, however, the semantic derivation 'to snatch' → 'to devour' is natural. Cf. Lith. *pa-gróbti* (from the same IE root) '1. to grasp, catch ... 3. to eat, drink greedily' (DLŽ, III: 640) and *griẽbti, griebiù, griebiaũ*[25] (< IE **ghreib-* '(er)greifen' WP, I: 647) '1. to grasp. ⟨...⟩ 6. to grab quickly and eat, drink' (DLŽ, III: 589)[26]. Cf also one of the meanings of Skt. *prati-grabh-* '3. zu sich nehmen, zum Munde führen, genießen' (BR, II: 846), e.g., VS 2,11: *anyéna pátreṇa paçún duhánty anyéna práti gr̥hṇánti*.

The commonly accepted etymology, which is also shared by HED, draws back Hitt. *karab-* to IE **g^{w}erə-* 'verschlingen, Schlund' (WP: I, 682 ff.; Pok.: 474 ff.). This hypothesis, however, faces several difficulties.

First of all, the delabialisation of the initial **g^{w}-* in Hittite is utterly unclear. The explanation of this phenomenon by the simplification of the initial cluster **g^{w}r-* > *gr* (see HED with typological parallels from other IE languages) remains a mere guess with an equally small number of examples and counter-examples[27].

Second, the suggested labial root enlargement is attested, beside Hittite, only in two forms recorded by Hesychius: βράπτειν[28] · ἐσθίειν, κρύπτειν, ἀφανίζειν, τῷ στόματι ἕλκειν, ἢ στενάζειν and βράψαι · συλλαβεῖν, ἀναλῶσαι, κρύψαι, θηρεῦσαι (Frisk, II: 178 sub v. μάρπτω; LS Suppl.: 72). These forms cannot be regarded as reliable cognates due to their isolated character and unclear semantics. Frisk, II: 178 tentatively connects Hsch. *βραπ-/φ- with Gk. μάρπτω 'to grasp'[29].

[25] With a dialectal variant *grẽibti, greibiù, greibiaũ* (DLŽ, III: 557).

[26] It is noteworthy that the component 'quickly' of the lexical definition 'to grab' cannot be inferred from the dictionary (dialectal) example: *Jei viduriai palaidi, tai mėlynių tegu griebia* 'If he has diarrhea, let him eat bilberry'.

[27] Cf. Hitt. ***kurakki-*** c. 'column, pillar' (MS[2]+; MS[2]: KBo 24.45+ Vs. 10'). Written *ku-ra-°* (see forms in HED, IV: 260 ff.; MS[2]: KBo 24.45 Vs. 10). The very rare writing with *-k-*, not *-kk-* (e.g. *ku-ra-ki-iš*, KUB 21.15 IV 17, NS) is not a reason to posit the variation /-k-/ ~ /-g-/.

‖ IE **k^{w}rok-i-* 'vorspringender Balken oder Pflock u. dlg.' (WP, I: 482; Pok. 619 as **krok-*).

Grk. pl. κρόσσαι 'stepped copings of parapets (H.); course, steps of the Pyramids (Hdt.)' (LS: 998). The development **k^{w}* > κ probably represents a distant assimilation **k^{w}rokjā* > **krokjā*.

Lith. *krãkė* (2) 'Stock, Stab' (Fraenkel: 287).

Slav. **kroky*, gen. **-ъve* 'roof-beam, pole (vel sim.)'—only in modern Slavic languages with different stem modifications: Russ. *крóква*, Czech *krokev*, etc. (see ЭССЯ, 10).

For further improbable cognates in Germanic and Celtic which do not support the reconstruction of an initial labiovelar see Pok. 619.

[28] < βραφ-$_{1}$- or βραπ-$_{1}$-.

[29] Lith. *gróbas*, discussed in HED, means 'rib(s), bones, skeleton, very thin man or animal, bowels, etc.' (LKŽ, III: 636). It does not have anything to do with IE *g^{w}erə-* 'to devour' (*pace* Puhvel).

2.7. ***karū*** 'early; formerly; already' (OS[30]+); written *ka-ru-ú*, also *ka-a-ru-ú* (1×, KBo 31.108 IV 5', NS)—cf. HED, IV: 113 ff.

Cf. also transparent derivatives *karuili-*, *karuweli-*, *karuli-* 'former; onetime; early' and *karuilijatt-* 'former state' (see HED, IV: 113 ff.; written *ka-ru-°*), as well as morphologically opaque *kariwariwar*, *karuwariwar* 'at daybreak, early in the morning' (see. HED, IV: 86 ff.; written *ka-ru-°*).

‖ IE **ghrū-* 'to dawn' (WP, I: 603, Pok.: 442).

ON *grȳjandi* 'Morgenröte'; OSwed. *gry* '(von Tage) grauen, dämmern'; etc. (see ibid.).

Typologically cf. Russ. adv. *рано* 'early' vs. Ukr. subst. *рано* 'morning'. A more distant typological parallel is represented by Engl. *to-morrow*. The words for 'dawn, morning' can acquire meanings for deictically bound words of time.

2d. IE *#*sR*-

2.8. ***šalīga-*** (OS+), ***šāliga-*** (MS+) 'to touch (defiling something); to sin'.

Written *ša-li-°* and *ša-a-li-°*. The following forms are attested in OS texts: med. prs. 3 sg. *ša-li-i-ga* StBoT 25, No 42 II 17, *ša-li-ga* StBoT 25, No 43 I 15', *ša-li*[*(-ga)*] Güterbock, Laws IV 10' (Code q). The forms with first *plene* (*ša-a-li-°*) are known from MS texts on (see Neu, StBoT 5: 147 ff.; CHD, Š: 100 ff.): *ša-a-li-ga-ri* KBo 38.39 Rs. 3' (MS), *ša-a-li-ga* KBo 17.42 + KUB 56.46 Rs. VI 7' (NS, dating after Klinger, StBoT 37; contra CHD!), *ša-a-li-qa* KUB 13.4 III 65, 80 (NS[2]), *ša-a-li-g*[*a*‹-› KUB 57.82 8' (NS[2]), *ša-a-li-ik-ti* KBo 13.78 Vs. 10 (NS), *ša-a-li-kán-zi* KUB 54.9 III 2 (NS[2]).

‖ IE **sleiĝ-*/**sliĝ-* 'to defile' (cf. WP, II: 390—391; Pok.: 663—664).

OIr. *ad-, fo-slig-* 'frotter, enduire, séduire' (Vendryes, S: 133).

MHG *slich* 'Schlick, Schlamm', etc. (see WP, II: 391).

Slav. **slizъ* 'slime', **slizъkъ*/**slьzъkъ* 'slippery': Russ. *слизь, слизкий*, Czech *sliz, slizký, slzký* (O. Czech *osliz* 'limus'), OCS слѣзъкъ 'sticky, slimy, γλίσχρος', etc. (cf. Фасмер, III: 671; Machek: 454; Dybo // GsKorolëv (2002): 505, No. 4).

Grk. adv. λίγ-δην 'oberflächlich berührend, streifen' (see Frisk, II: 121).

NPers. *lēz* 'slippery', *lēzīdan* 'to slide, glide' (see Абаев, II: 26).

2.9. ***ša/ārab-***[hi], *šarib-* 'sip' (MS+).

Written *ša(-a)-ra/i-°* (paradigm in Oettinger, Stamm.: 54). Forms with *plene* in the first syllable are: 3 sg. *ša-a-ra-pí* KUB 34.97 lk.Kol. 15 (NS), 3 sg. *ša-a-ra-pí-eš-ki-iz-zi* ibid. 17. The root-final consonant is usually *-b-*; cf., however, two attestations of the double *-pp-*: verb. subst. gen. *ša-ra-ap-pu-wa-aš* VBoT 24 III 17 (NS[2]) and *ša-ri-ip-pu-w*[*a-aš*? KUB 32.19+ IV 47 (MS).

‖ IE **srebh-*/**srobh-*sr̥bh-*/**sorbh-* 'schlürfen' (WP, II: 704; Pok.: 1001).

[30] Neu, StBoT 26: 94.

With the apophonic grade **srebh-*:

Lith. *srẽbti, srebiù, srėbiaũ* '(flüssige Speise, Suppe) mit dem Löffel essen, löffeln' with derivatives (see Fraenkel: 889). Latv. *strèbt*[31], *strebju, strèbu* 'schlürfen, löffeln, mit Löffeln essen' (ME, III: 1087).

Slav. present stem **serbjǫ, *serbjetъ* (< ***srebjǫ*, ***srebjetъ*) 'schlürfen'[32].

With the apophonic grade **srobh-* (iterative):

Grk. ῥοφέω, Ion. ῥυφέω 'schlürfen, die geschlürft wird' with derivatives displaying the same vocalism (cf. Frisk, II: 663).

With the apophonic grade **sr̥bh-*:

O. Arm. *arbi* (aorist) 'I drank', East Arm. *harbel* 'to become drunk'.

Lith. *surbti, surbiù, surbiaũ* 'saugen' (Fraenkel: 945). Latv. *surbt, surbju, surbu* 'schlürfen' (ME, III: 1125).

Slav. infinitive stem **sъrbati*—cf. above, sub **srebh-*.

With the apophonic grade **sorbh-* (iteratives):

Lat. *sorbeō* 'schlürfen'

Alb. *gjerb* 'ich schlürfe' (Huld 2001: 35; differently Orel 1998: 132).

The Indo-European forms of the root in question show the Schwebeablaut and it is difficult to decide, based on the Indo-European material alone, which variant, **srobh* or **sorbh*, is older. It is Hitt. *sā/arab-* / *sarib-* (never ***sarp-*) which determines the choice of the variant **srebh-* as the basic one. Lat. and Alb. iteratives going back to **sorbh-* can be explained (in the same way as the dialectal Slav. **serbjǫ*) by analogy with a more usual ablaut pattern. Cf. Rix, LIV: 534 with a different analysis of individual forms but the same conclusions about the original shape of the root.

2.10. ***-š(a/e)ma/i-***[33] 'their' encl. poss. 3 pl. (OS+), ***-š(a)maš*** 'you; them' encl. dat., acc. 2 pl.; dat. 3 pl. (OS+).

[31] With different accentual variants of the dialectal nature.

[32] Although Slav. **sъrb-* is the most frequently attested stem (e.g. OCS сръбанию, cf. Фасмер, III: 604; Machek: 479) some forms (mainly in West Slavic), seem to continue Slav. **serb-*: Sloven. *srébati* (alongside *sŕbati*), Pol. dial. (Kaszub.) *strzebać* (in other dialects: *serbać, sarbać, sorbać* < **sъrbati*), Czech. *střebati* (O. Czech. *střěbati*), Slovak *s(t)rebat'*, H. Sorb. *srěbać*, L. Sorb. *śrebaś*, O. Russ. **serebl'u* (Срезневский, III: 335 gives two forms from one manuscript, apparently of a rather late origin: 1 pl. сребрелъ (!) and 2 pl. среблете). These data allow us to reconstruct, following A. Vaillant (cf. Vaillant Manuel § 191), the protoslavic paradigm **sъrbati—serbjǫ, serbjetъ* 'sip, schlürfen'. The present stem **serbj-* represents, in all probability, an inner-Slavic innovation. The hypothetical Proto-Slav. paradigm **sъrbati—**srebjǫ* (< IE **sr̥bh-—srebh-*) with its unusual (for Slavic) ablaut pattern was replaced with the paradigm **sъrbati—serbjǫ* modelled after **tъrzati—terzjǫ* etc.

[33] Forms with anaptyctic *u* (like *-šummit* etc.), which are typical of Late Hittite, appear to be a result of contamination with the stems *šuma-* 'ye' (for the IE reconstruction cf. Skt. *yuṣmá-*, cf. KEWA, III: 24) and *-šumma/i-* 'our' poss. 1 pl. (OH+).

After words that end in a vowel or *-š*, these enclitics are usually written *-Vš-m°*[34], whereas in the case of words that end in another consonant, they are usually written *-ša-m°* or *-še-m°*. In the latter case, the anaptyctic vowel correlates with that of the following syllable: the original /a/ induces /a/-anaptyxis (i.e. *-ša-ma-°*); while the original /e/ is compatible both with /a/ and /e/ (i.e. *-ša-me-°* or *-še-me-°*). Moreover, in some cases the anaptyctic vowel with the similar distribution appears also after those words that end in a vowel. We were able to locate the following examples of enclitic forms with anaptyxis (*-š(a/e)ma/i-* and *-š(a)maš*) in the Old Hittite corpus:

After a consonantal final. Written *-ša-ma-°*:
ma-a-an-ša-ma-aš (*mān* 'when' + *šmaš* 'to you') KBo 22.1 Rs. 21'.
ma-a-an-ša-ma-a[*š* (*mān* 'when' + *šmaš* 'to them') KBo 16.45 Rs. 6'.

After a consonantal final. Written *-ša-me-°*:
e-eš-har-ša-me-it StBoT 25, No 4 III 11;
e-eš-h[(*ar-š*)]*a-me-it* StBoT 25, No 3 III 11;
ki-it-kar-ša-me-it StBoT 25, No 3 II 28', No 4 IV 17;
[(*ki-i*)]*t-kar-ša-me-it* StBoT 25, No 3 IV 21;
pa-ap-ra-a-tar-ša-me-it StBoT 25, No 4 II 6';
še-e-ir-ša-me-it StBoT 25, No 3 II 16', No 4 III 34, No 6 II 10'.

After a consonantal final. Written *-še-me-°*:
^{TÚG}*iš-hi-al-še-me*[(*-it-ta* (+ *-ja* '&') KUB 36.104 Vs. 18';
še-e-ir-še-me-it StBoT 25, No 6 II 14';
še-e-ir-še-me-ta (+ *-a* 'but') StBoT 25, No 3 I 31'.

After a vocalic final. Written *-še-me-°*:
a-aš-šu-uš-še-me-it KBo 6.2+ (Code A) II 8';
a-aš-šu-uš-še-me[(*-it* KBo 6.2+ (Code A) II 4'.

After a vocalic final. Written *-ša-ma-°*:
na-at-ta-ša-ma-aš (*natta* 'not' + *šmaš* 'to you') KBo 22.1 Rs. 23';
nam-ma-ma-aš-ša-ma-aš (*namma* + *ma* + *šmaš* 'but (to) you in additon') KBo 7.14 + KUB 36.100 (Zukraši) II 23.

For the interpretation of those forms, which have been rarely treated in the secondary literature, see § 6.2 below.

‖ It is not clear whether one has to reconstruct *šma/i-* < IE **sme-*—cf. e.g. Skr. 2 pl. oblique *yuṣmá-* 'you' < **i̯us-sme-* (KEWA, III: 24; WP, II: 209) as a common source for 2 and 3 pl. enclitic pronouns. For a balanced discussion of the original relationship between the second and third person forms in IE see

[34] E.g., OS: StBoT 25, No 3 I 24' *ša-a-ku-wa-aš-me-it* 'their eyes', StBoT 25, No 27 Vs.! 5' acc. pl. c. ^{UZU}*mu-uh-ra-a-uš-mu-uš* 'their limbs', KBo 22.1 Vs. 6' *nu-uš-ma-aš* 'And to you'.

Katz, Diss.: 234—338. For our purposes it is enough to say that that the situation when the merger of different personal forms is limited to enclitic pronouns, it is more likely to be a secondary development that an archaic survival. Possibly 3 pl. enclitics go back to IE **a-smV-* (cf. Skt. *a-smāi* 'to this one'), whereas 2 pl. enclitics continue **us-(s)mV-* (< **us-u̯e-* according to J. Katz) and are thus coradical with Hitt. *šumeš* 'you'.

2d. IE **#HR-*

2.11. ***ha/ālija-***$^{mi/hi}$ 'to kneel, genuflect, to throw oneself, fall' (OS+)[35], with reduplication *halihlai-/ija-*^{hi} 'to genuflect' (MS+)[36]; written *ha-li-°/ha-a-li-°* (see forms in HED, III: 28—29, 31—32). All attestations with *plene* writing (*ha-a-li-°*) are NS (?).

◊ The application of internal reconstruction allows us to posit the Proto-Hittite **hlija-* (for morphology of reduplicated *halihlai-/ija-* see above, § 2.1.

The most plausible IE etymon is **klei̯-* 'neigen, lehnen' (WP, I: 490—491, Pok.: 600—602)[37]. For the sporadic change of IE velars into laryngeals cf. Yakubovich 2000.

2.12. ***halīn(a)-*** 'clay' (only? OS); written *ha-li-i-n°* (cf. forms in HED, III: 32; StBoT 26: 44).

◊ If one is willing to admit the fricativisation of the IE velar (cf. Yakubovich 2000) the Hitt. word has direct lexical cognates in IE: Slav. **glina* 'clay' (ЭССЯ, 6: 125—126)[38] and the late Gk. γλίνη (Suid.), γλίνα (Hsch.), γλήνη (Hdn.Gr.) 'any glutinous substance, gum', more archaic γλινώδης (Arist., etc.), γληνώδης (Geoponica) 'glutinous' (LS: 351; the postclassical writing with η indicates the historical length of ī).

Without resorting to spontaneous fricativisation (IE **g* > Hitt. *h*) one can connect Hitt. *halīn(a)-* with IE **Hlei̯-* 'schleimig, glitsich, etc.' (WP, II: 389 ff.; Pok.: 662 ff.). Cf. Grk. ἀλινεῖν (for ἀλίνειν) · ἀλείφειν (Hsch.) 'to smear', ἀλῖναι · ἐπαλεῖψαι (Hsch.) 'id.', ἄλιν-σις (Epid.) 'application of stucco or whitewash' (LS: 66, LS Suppl.: 19), where IE **H-* > Grk. ἀ-. See further HED. In this case, however, the anaptyxis could have happened very early (cf. 5.1.1).

[35] OS: KBo 40.200 r.Kol. 3' LUGAL-*uš ha-li*[-*ja* ...] / *ha-li*[-*iz-zi* ...]

[36] MS: e.g. KUB 14.1+ Rs. 10 3 sg. *ha-li-ih-la-i*.

[37] The old comparison with Lith. *kẽlis* and *kẽlias* 'knee', Slav. **kolěno* 'id.' etc. (see Pok.) is faulty, among other reasons, since Proto-Hittite *Anlaut* is */hli-/, and not **/hali-/.

[38] The Slavic accentuation of **glīna* (i.e. the old acute accent on the first syllable) is parallelled by *plene* in OH and Greek barytonic accent.

§ 3. IE *#sC- clusters in Hittite (C≠R)

3.1. ***išhamija-***^{hi} 'to sing' (OS+)[39]; *išhamadalla-* c. 'singer' (MS)[40]; *išhamai-* c. 'song, melody' (scarcely attested; NS only?; probably late derivative from the verb); written. *iš-ha-*° (see forms in HED, II: 394—395),

‖ IE *$sHō(i̯)$-*m-* 'song'.

Gk. οἴμη (H+) 'song, lay' (LS: 1206), cf. LS Suppl.: 224 'song, poem, etc.', Frisk, II: 363 'Gesang, Sage, Erzählung'; οἶμος (Pi., etc.) '≈ id.' (LS: 1206; Frisk, II: 363). Most likely, this word was secondarily attached to Gk. οἶμος 'way', which explains the loss of initial aspiration (cf the discussion in Frisk, II: 363).

Skt. *sáman-* n. (V+) 'gesungenes Lied, Gesang' (BR, VII: 929—930).

◊ It is very probable that the stem *$sHō(i̯)$-*m-* represents an IE formation from the root *$sHē(i̯)$-/*$sHei̯$- 'to bind' (see the next entry).

3.2. ***išhija-***^{hi} 'to bind' (OS+)[41] with its derivatives (see HED, II: 398 ff.), e.g. ^{TÚG}*išhijal* n. 'bandage' (OS+)[42], ^{KUŠ}*išhiman-* c. 'cord' (OS+)[43], etc; written. *iš-hi-*° (see forms in HED, II: 398 ff.).

‖ IE *$sHē(i̯)$-/*$sHei̯$- 'binden'[44] (WP, II: 463 f.; Pok.: 891 f. as *$sēi̯$-, *$sai̯$-, *$sī$-).

Skt. (V.) prs. 6 *syáti*, prs. 9 *sināti*, aor. 1 *asāt*, part. *sitá-* (Whitney, Roots: 185; KEWA, III: 549—550). Av. prs. conj. *hiiąn* (j.), perf. ind. *ā-hišāiiā* (g.), part. *hita-* (j.), inf. (loc.) *ā-hōiθōi* (g.) (Kellens: 72; Bartholomae, AIW: 1800 f.).

Lith. *siẽti*, *siejù* (*sejù*, *sienù*), *siejaũ* (*sejaũ*, *siniaũ*) (Fraenkel: 783); Latv. *siet*, *sìenu*, *sèju* (ME, III: 860).

◊ Melchert (AHP: § 6.1.6.1.6[1] with lit.) interprets Hitt. *išhija-* 'to bind' as a reduplicated formation *Hi-*sHiia-*, where *H-* was later lost by dissimilation. Thus, acccording to him, Hitt. *išhija-* represents a lexical correspondence to Luw. *hišhija-* 'id.'[45]. In our view this interpretation of Hitt. *išhija-* is superfluous

[39] OS: prs. 3 pl. *iš-h]a-mi-an-zi* (KBo 34.5 Vs. 4'), *iš-ha-m)i-an-zi* (StBoT 25, No 25+95 I 22'); *iš-ha-mi-iš-kán-zi* (StBoT 25, No 13 IV 4).

[40] All forms quoted in HED are MS.

[41] OS: prs. 3 sg. *iš-ha-a-i* (Güterbock, Laws II 31'), 3 pl. *iš-hi-an-zi* (KBo 6.2+ IV 42, 43), part. nom.-acc. sg. n. *iš-hi-ja-an* (StBoT 25, No 27 Rs. 17'), nom.-acc. pl. n. *iš-hi-ja-an-da* (StBoT 25, No 3 IV 19, 20; No 4 IV 15, 16), prs. 3 pl. *iš-hi-iš-kán*[*-zi* (StBoT 25, No 54 III 5').

[42] OS: nom.-acc. sg. ^{TÚG}*iš-hi-al-še-me*[(*-it-ta* (+ poss. 3 pl. *šemet* + *-ja* '&') (KUB 36.104 Vs. 18').

[43] OS: nom. sg. ^{KUŠ}*iš-hi-ma-a-aš* (StBoT 25, No 27 Rs. 11'), nom. pl. ^{KUŠ}*iš-hi-ma-a-ne-eš* (ibid. Rs. 10'), acc. pl. ^{KUŠ}*iš-*]*hi-ma-a-nu-uš* (ibid. Rs. 7').

[44] Baltic accetuation could indicate the short diphthong *$sēi̯$-, but the reconstruction of the long diphthong*$sē(i̯)$- is the best solution for the Indo-Iranian data.

[45] *hapax* prs. 3 pl. *hi-iš-hi-ja-an-ti* KUB 9.31 II 24 (NS) 'they bind' (Melchert CLL: 70).

and we fully subscribe to its criticism by Oettinger in KZ 99/1 (1986): 48. We prefer to postulate the root-stem *$sHāi̯$- in Hittite and the reduplicated stem in Luwian.

3.3. ***išhunau-*** c./n. (MS+)[46] (*išhunawar*, 1× NS), gen. *išhu/ūnawaš* (only? NS) 'sinew, bowstring'; *išhunawant-* 'sinew' (only? NS); written *iš-hu-*° (see forms in HED, II: 403—404, with corrigenda in HED, IV: 321; Beckman // Or 59/1 (1990): 50; Neu // ZA 82/1 (1992): 149 ff.; idem, StBoT 32: 152—153).

‖ Cf. the IE lexeme *$sHʷnēu̯r$, gen. *$sHʷnēu̯n$-os* 'sinew, band' (WP, II: 696; Pok.: 977).

Skt. *snā́van-* n. (AV+) 'Band, Sehne' (BR, VII: 1349), adj. *a-snāvirá-* (< *-$u̯ᵊr$-) (VS) 'ohne Sehne' (BR, I: 564). Mṛth. *sāvar* 'muscle, sinew' (Turner, CDIAL: 797). Many Indo-Aryan forms continue Ind. *snāru* (with metathesis *ru* < *$u̯ᵊr/ur$ as in Lat.): Pkt. *ṇhāru*, Pali *nhāru*, etc., cf. Turner, CDIAL: 796.

Av. *snāvarə* (j.) 'Sehne, Schnur' (Bartholomae, AIW: 1629). For the pertinent forms in other Iranian languages see e.g. Абаев, II: 193—194 (sub v. *nwar*).

Grk. νευρά (H+) 'Bogensehne, Sehne', νεῦρον (H+) 'Sehne, Bogensehne, Schnur, etc.' (Frisk, II: 308—309).

Lat. *nervus* 'sinew, nerve, etc.' (with metathesis *rv* < *$u̯ᵊr/ur$* as in Indic).

Arm. *neard* 'Sehne, Faser, Fiber' (< *$snēu̯r$-t*).

Toch. B *ṣcaura* 'Sehnen, Nerven'.

◊ The basic IE protoform is *$snēu̯r$, *$snēu̯n$-os*, yet the metathesis observed in Indic and Latin, in combination with numerous thematic forms in various languages, makes it formally possible to reconstruct the thematic derivative *$snēu̯(ᵊ)r$-o-* already in IE.

Thus the reconstruction Hitt. nom. **išhunawar*, gen. **išhunaunaš* would best match IE parallels. Yet internal reconstruction suggests nom. *išhunau-š*, gen. *išhunaw-aš*. Hapax acc.? *išhunauwar* attested in (OH/NS) KBo 10.37 II 31—33 *nu=šš*[*i h*]*aštali*[*j*]*a*[*tar*] *peštin nu=šši išhunauwar šijauwar peštin nu=šši šuhmilin genu peštin* 'give him bravery, give him bowshot [*lit.* bowstring-shooting], give him a firm knee'[47] can be analyzed as *išhunau*⟨⟨*war*⟩⟩, where *-⟨⟨*war*⟩⟩* represents an anticipation of the following verb. subst. *šijauwar*.[48] Alternatively, R. Stefanini (pers. comm) suggests that *išhunauwar* might be an infinitive of an otherwise unattested denominative verb *išhunāi-* 'draw (the bow)?'.

The exact origin of the initial cluster in Hitt. *išhūnawar* (phonologically probably /shunawar/) represents a big problem. The authors are inclined to reconstruct here the IE labialized laryngeal *$Hʷ$, yet the issues in the Laryngeal

[46] MS nom. sg. c. *iš-hu-na-ú-uš* (KBo 32.14 II 49), *iš-hu-na-a-uš* (ibid. Rs. 44, lk.R. 1). NS nom. sg. n. *iš-hu-na-a-uš-mi-it* (KUB 7.58 I 11; + poss. *-šmit*).

[47] See HED II: 403; III: 321; IV: 146.

[48] Note also that *išhunauwar* can be formally analyzed as an infinitive of *ish/kuna-* 'stain; stigmatize, denounce'.

theory need not be discussed here. Cf. Lehrman, IHRedux: 258 ff. and Yakubovich 2000.

3.4. ***iškalla-***^{hi} 'to slit, slash, split, crack, etc.' (MS+)[49], *iškalleššar* 'slitting'; written *iš-kal-°/iš-gal-°/iš-ga-al-°* (see forms in HED, II: 413—415).

‖ IE **(s)kel(ə)-* 'schneiden' (WP, II: 590 ff.; Pok.: 923 ff. as *(s)kel-*).

◊ The Baltic accent (Lith. *skélti* and Latv. *šķelt* 'spalten') indicates IE **(s)kelə-*.

3.5. ***iškā/ar(ija)-***^{hi} 'to sting, prick, stab; stick, (af)fix' (OS+)[50]; written *iš-ka-°/iš-ga-°/iš-qa-°/iš-kar-°* (see forms in HED, II: 416 ff.).

‖ IE **(s)ker(ə)-* 'schneiden' (WP, II: 573 ff.; Pok.: 938): ON *skera* 'cut, prick', Arm. *k'orem* 'ich kratze' and other simple IE forms with the generic meaning 'to cut'. As usual, the connection with "enlarged" forms is questionable.

3.6. ***išpai-***^{hi} 'to get full, be filled, be sat(iat)ed, etc.' (MS+)[51], *išpān* n. 'satiation' (OS+)[52]; written *iš-pa-°/iš-pí-°* (see forms in HED, II: 429 ff.).

‖ IE **spē(i̯)-/*spī-* 'sich ausdehnen, dick, fett werden' (WP, II: 656 ff. Pok.: 983 ff.).

3.7. ***išpant-*** c. 'night' (OS+)[53].
Written *iš-pa-°* (see forms in HED, II: 431 ff.).

‖ IE **ksep-/*ksp-* 'Dunkel' (WP, I: 524—525; Pok.: 649).
Skt. *kṣáp* f. (RV) 'Nacht', *kṣapā́* f. (RV+) 'id.' (BR, II: 530, 531). Av. *xšap* f. (j.) 'Nacht', *xšapan/xšafn-* f., n. (j.) 'id.', *xšapar* n. (j.) 'id.' (Bartholomae, AIW: 548—549)[54].

◊ Hittite forms are likely to represent an old *-ant* formation from the zero grade of the root (i.e. **ksp-ant-* > /spant-/).
A possible *tertium comparationis* is attested in Greek: Gk. ψέφας (Pi., Hsch.) 'gloom, darkness', ψέφος (Hsch.) 'darkness', ψεφηνός (Pi.) 'dark, obscure' (LS: 2021)[55]. Yet, if we reconstruct with Pokorny IE **k^{w}sep-*, then Gk. φ instead of

[49] MS, e.g., 3 sg. *iš-kal-li* HBM 24 Rs. 51.

[50] Forms in OS: *iškārhi, iškāri, išgaranzi, išg/karand/t-*, see StBoT 26: 79.

[51] MS: e.g. prt. 3 pl. *iš-pí-i-e-ir* (KUB 17.10 I 19).

[52] OS: nom.-acc. sg. *iš-pa-a-an-wa* (+ *-wa*) (KBo 8.42 Vs. 6').

[53] OS: dat.-loc. sg. *iš-pa-an-ti* (see StBoT 26: 80), *iš-pa-an-di* (see StBoT 18: 10—12, 139).

[54] The Av. forms do not necessarily imply an original heteroclitic formation. If at a certain stage of the history of IE the simple *-r/-n-* stems were connected with the semantic fields of body parts and units of time (thus Friedman // UCLA IE Studies 1 (1999)), then the lexeme in question could acquire its suffix by analogy.

[55] For other late derivatives in Grk. see Frisk, II: 1133

the expected π remains without clear explanation. Contamination with similar words for 'darkness': δνόφος, γνόφος, ζόφος, etc. remains possible.

3.8. ***išpānt-/šip(p)ānt-*** 'to libate, sacrifice' (OS+)[56] with derivatives, e.g. *išpantuzzi* n. 'vessel for libation; libation' (OS+)[57], *išpantuz(z)ijaššar* n./c. 'vessel for libation' (OS+)[58] and others—HED, II: 436 ff.
For graphic doublets *iš-pa-°* / *ši-pa-°* and rare *ši-ip-pa-°* see below 6.3.(3).

‖ IE **spend-/*spond-* 'geloben; ein Trankopfer darbringen' (WP, II: 665; Pok.: 989).

3.9. ***išpar(rija)-***^{hi} 'to spread, strew, scatter, etc.' (OS+)[59], *išparnu-*^{mi} 'spread, spray' (OS+)[60], ^{GIŠ}*išpar(r)uzzi* n. 'rafter' (MS+)[61]; written *iš-pa-°*, *iš-pár-°* (see forms in HED, II: 441 ff.).

‖ Gk. σπείρω 'to sow, scatter, etc.' with cognates (cf. WP, II: 670 ff.; Pok: 993; **sp(h)er-* 'streuen, säen; sprengen, spritzen'). For the survey of views about the separation or non-separation of two IE **sper-* 'to spread, strew' and 'to shatter' see HED, II: 445 ff.

§ 4. OTHER TYPES OF INITIAL CONSONANT CLUSTERS IN HITTITE

4.1. ***tesha-*** c. (MS+), parallel stem ***zaš/zhai-*** c. (MS+) 'dream, sleep'. Graphically *te-eš-h°* (MS+) and *za-aš-h°* (MS+) / *za-az-h°* (NS) (see forms in HEG, III: 335 ff.).

◊ The forms contained in HEG allow us to collect the following MH paradigm:

Nom. sg. *te-eš-ha-aš*, dat.-loc. sg. *za-aš-hé-ja*, *za-aš-hi-ja*[62], abl. sg. *za-aš-hé-az*, instr. sg. *za-aš-hé-it*[63].

In NH two independent paradigms are attested:

tešha- c. (nom. *tešhaš*, acc. *tešhan*, abl. *tešhaz*, instr. *tešhit*, acc. pl. *tešhuš*);
zaš/zhai- c. (nom. not attested, acc. *zašhain*, dat.-loc. *zašhija, zazhija, zazhī*, abl. *zašhijaz*, instr. *zašhit*, acc. pl. *zašhimuš*).

[56] See OS forms in Kassian, below p. 101—102.

[57] See OS forms in Kassian, below p. 102.

[58] See OS forms in Kassian, below p. 102.

[59] OS: 3 pl. *iš-pa-ra-an-zi* (StBoT 25, No 31 III 10'), *iš-pa-ra-a[n-zi* (StBoT 25, No 48 Rs. 3').

[60] OS: 3 sg. *iš-pár-nu-zi* (StBoT 25, No 59 I 12, II 9).

[61] MS: ^{GIŠ}*iš-pár-ru-uz-zi* (KUB 40.55+ 16).

[62] KBo 32.176 Vs. 2.

[63] KuT 50 Vs. 7 (Wilhelm // MDOG 130 (1998): 175 ff.).

It is very probable that these two lexemes go back to the old paradigm nom. /tesh-/, obl. /tsh-/[64] with an archaic ablaut variation.

The attempts to treat this root as a borrowing[65] lack plausibility, since it appears to be very archaic morphologically. The least unacceptable IE etymology, among those suggested in HEG, is a binary comparison with Germ. **dē/əs-* or **dā/ās-* 'slow, dumb, etc'[66], (WP, I: 829; Pok: 239; FT, I: 132 sub v. *Daase II*; cf. Engl. *to daze, dazzle*). Yet the semantic difficulties and the rarity of the root in IE do not allow the consideration of this connection as anything more than a mere guess.

4.2. *zik(k)*-^{mi} 'put (repeatedly)' (OS+)[67]. Written *zi-ik-k°* and *zi-k°*. Of great interest is the OS variant *za-aš-ki-iz-zi*, the meaning of which 'she sets' can be unambiguously inferred from the following context[68]:

StBoT 25, No 137 Rs. III

13'. *nu=za úuk* ^{GIŠ}*huhupalli dā[hh]é*
14'. *nu huppíemi* ^{MUNUS}*araš=miš=a=ššan ištananaš*
15'. *āppa kē* ***zaškizzi***

16'. [MAR?.G]ÍD.DA ^{D}IM-*ni* ZAG-*a*[z *dā*]*i haršiharši* II-*ŠU hattaran*
17'. III-*ŠU hattaran išt*[*an*]*anaš kitt=a kētt=a*
18'. *dāi* ^{GIŠ}BANŠUR=*ja=ššan dāi*

"I ta[k]e the *h.*-instruments and pull (play) ⟨it⟩. But my female assistant **sets** (*zaškizzi*) them back upon altars (*loc. pl.*). She [set]s the heavy [carriage?] to the right side of the Stormgod ⟨effigy⟩[69]. She sets the twice-engraved *h.*-vessel ⟨and⟩ the thrice-engraved ⟨*h.*-vessel⟩ hither and yon upon altars (*loc. pl.*). And she sets the table".

Hitt. *zik(k)-/zašk-* is to be interpreted as /tsk-/. Even if one disregards the variant *za-aš-ki-iz-zi*, the interpretation of the verbal stem *zik(k)-* as containing the /i/-anaptyxis faces unsurmountable philological difficuties. In this case *zi-ki-iz-zi*, occurring alongside *zi-ik-ki-iz-zi*, would have been interpreted as /tsigitsi/, which has no phonetic foundation whatsoever (for more details about *šk*-verbs see below, 7.1.2.).

[64] The hypothesis that treats *za-aš-h°* as /tsəsh-/ with /ə/ anaptyxis (i.e. PHitt. /T-sh-/ > /t͡sh-/ > Hitt. /t͡səsh-/) is too complicated and not supported by data. Cf. the following etymology.

[65] E.g. the comparison with Adygh *čaja* 'sleep' (< W.-Cauc. **ƛ:ᵘA*, according to NCED: 619—620).

[66] Cf. modern German *Schlaf* vs. *Schlaff* for the semantic development.

[67] OS: prs. 3 sg. *zi-ik-ki-iz-zi* (StBoT 25, No 43 IV 3'), prt. 3 sg. *zi-ki-e-it* (KBo 22.2 Vs. 3).

[68] Cf. a more cautious statement in StBoT 26: 218, Anm. 640, also ibid.: 85, Anm. 328.

[69] For line 16' the following emendation is possible: [MAR.G]ÍD.DA ⟨⟨^{D}⟩⟩IM-*aš*$^{?}$ ZAG-*a*[z *dā*]*i* "She [set]s the heavy [carriage] of clay to the right".

‖ Hitt. *zik(k)-/zašk-* is formed by the zero grade of *tai-* 'to put, place' enlarged by the iterative suffix *-šk-*. Hitt. *tai-* undoubtedly goes back to IE **dhē-* 'to place, etc.': Grk. τίθημι, Slav. **dě̂jǫ*, Skr. √*dhā-*, etc., see in HEG, III: 21 ff.

4.3. *š/zakkar* 'excrement' (NS), ***zaškar(a)išš*** 'anus?' (MS).

The word *šakkar* represents the old heteroclis: gen. sg. *šaknaš*. The stem *šakn-* is found also in derivatives (see Puhvel // FsLaroche (1979): 297 ff.; Beckman, StBoT 29: 208; Hoffner // KZ 107/2 (1994): 228 f.; Rieken, StBoT 44: 293 ff.; CHD, Š: 41): verb. *šaknija-* 'cacare', subst. *šaknumar* 'befoulment, faeces' (from caus. **šaknu-*?), adj. *šaknuwant-* 'defiled' (*šakn-* + *-want-* or **šaknu-* + *-ant-*), verb. *šaknešš-* 'to be(come) soiled'[70]. Spelling with initial z- (nom.-acc. *zakkar*) is attested, to our best knowledge, only twice: in vocabulary KBo 1.45 I 9 (matching Akkad. *zû*) and in instruction KUB 13.4+ III 67 (*za-ak-kar* ≒*du-ú-úr* 'excrement (and) urine')[71].

The word *zaškar(a)išš* is attested only in MS ritual text KBo 17.61 Rs. 14' *za-aš-ga-ra-iš-kán za-aš-ga-ri-iš-ši* KI.8 'the anus? on the anus? ditto #8', see Berman // JAOS 92/3 (1972): 466; Beckman, StBoT 29: 44—45. Interpretation of *zaškar(a)iš* as a composite stem *zaškar* (= *š/zakkar*) + *aišš/išš-* 'mouth' with the meaning *zaškar(a)iš* 'anus', which fits the context, was proposed by H. G. Güterbock (*apud* Berman, op. cit.: 468)[72].

If we accept the conection of *zaškar(a)iš* with *š/zakkar*, the only way to phonetically interpret the spelling *za-aš-ga-r°* is /tskar-/. On the other hand, the reconstruction of the initial cluster in the words beginning with *šakn-* (i.e. *šaknaš, šaknuwant-*, etc. read as /sknas/, /sknuant-/, etc.) is quite implausible.

Thus, we can follow Puhvel (FsLaroche (1979): 297 ff.) in positing the ablaut /sakkar/ vs. /skar/ (> /tskar/) in this lexeme[73]. The variant /tskar/ is reliably attested in a compound *zaškar-aiš*. As for *zakkar* (2×; nom.-acc. sg./pl.), one can interpret it either as /tskar/[74] or /tsakar/; in the latter case phonetic (or graphic!) contamination between /sakkar/ and /tskar/ is to be considered.[75]

The change */sk/ > /tsk/ in secondary contact is without direct parallels in Hittite (cf. Melchert AHP: 121—122). On the other hand, this development

[70] Hitt. *šakkar* 'excrement' and *šaknuwant-* 'defiled' are to be separated from word *šagan* (or *šagna-n*) n., gen. *šagnaš* 'oil', *šaknuwant-* 'oily'—see Hoffner, op. cit. In particular, all the alleged OS attestations of *šakkar* 'excrement' in OS texts are best regarded as belonging to *šagan* 'oil'.

[71] Both KBo 1.45 and KUB 13.4+ are NS.

[72] *zaškar=(a)iš* is tatpuruṣa, not karmadhāraya (*pace* Tischler // IBK 50 (1982): 225).

[73] Unfortunately, we know very little about the apophonic models of primary heteroclitic stems. Puhvel (op. cit.), following the Erlangen school, uses the term "collective" for Hitt. /tskar/ (< **skṓr*, according to Puhvel). The same zero grade is represented in Grk. σκῶρ (see below).

[74] For graphemics cf. *zik(k)i-* /tski-/ 'to put' (above, 4.2).

[75] On *š/zakkar* cf. also Oettinger // In honorem Pedersen (1994): 326—327.

seems to be more regular in Palaic (AHP: 194). In Hittite a phonetically similar development */ns/>/nts/ is attested also in secondary contact (AHP: 121). We assume that /ts/ in *zaškar-aiš* is phonetically motivated, but we cannot say whether this process is regular or sporadic. In any case, CHD's analysis of *zaškar-*° as "partially reduplicated form of *zakkar*" seems to be less convincing (CHD, Š: 41a)

‖ The Hittite *š/zakkar* is closely paralleled by Grk. σκῶρ, gen. σκατός 'excrement', which, however, cannot be considered as an evidence for the zero grade in Hittite *šakkar*: cf. Hitt. *wādar*, *widenaš*—Grk. ὕδωρ, ὕδατος 'water' (see Frisk, II: 746; Schindler // BSL 70 (1975): 1—10).

◊ A less sure cognate is Av. *sairiia-* 'excrement' that can be alternatively connected with Slav. **sъrati*, *serǫ* 'cacare' (Фасмер, III: 740).

ON *skarn*, OE *scearn* 'id.' etc. probably represent an archaic derivative of Germ. **skeran* 'to cut, etc.' (see FT, II: 986). Cf. a stem without *s*-mobile, which was specialized with a different meaning: OHG *har(a)n*; 'urine', NHG *Harn* 'id.' (Kluge EWDS[21]: 290). The semantic shift, however, remains unclear.

The late Skr. (only *apud* grammarians and lexicographers) *ava-skara-ḥ*, *apa-skara-ḥ* 'die Excremente, etc.' (BR, I: 493, 296) is most likely connected with *kiráti* 'pours out, spreads, throws' (see KEWA, I: 38).

Etymology of Slav. **skarędъ* 'nasty, repulsive, etc.' remains vague, but cf. Фасмер, III: 633—634; Львов // Этимология 1966 (1968): 149 ff.

Not related here are Skr. *çákṛ-t*, *çakn-áḥ* (V.) 'excrement', Grk. κόπρος (f.) 'id.': IE **ḱokʷr̥* (*r/n*).

§ 5. Disputed cases of initial consonant clusters in Hittite

5.1. IE disyllabic stems or unusual consonant clusters. Except for a number of ambigous forms listed in § 1.2, the following cases deserve special consideration:

5.1.1. *hašter* 'star' (NS).

A single attestation as a common noun: KBo 26.34 IV 9 nom.? *ha-aš-te-ir-za* (see Otten—von Soden, StBoT 7: 40; HED, III: 238—239; Rieken, StBoT 44: 281 ff.). In the opinion of many scolars, the final *-za* represents the nom. masc. ending; details, however, remain unclear. For toponomastic material see HED.

‖ See WP, II: 635—636 (as **ster-*, nom. **astḗr*, gen. *strós*); Pok.: 1027—1028.
Grk. ἀστήρ, gen. ἀστέρος, gen. pl. ἀστράσι (Hom.; later ἄστρασι), etc.;
Arm. *astł* 'star'.
Skt. instr. pl. *str̥̀bhis* (RV);
Goth. *staírnō* 'id.', etc.

◊ Grk, Arm. and Hitt. forms show the anaptyxis **Hstēr* > **Hᵊstēr* (which could have taken place very early; it is hardly an independent Anatolian development—cf. Lehrman, IHRedux: 259).

5.1.2. *karawar* (r/n) n. 'horn(s), antler(s)'[76] (OS+)[77]; written *ga-ra-*°, *ka-ra-*°—see forms in HED, IV: 77 ff.

‖ There are two etymological options (for a more detailed discussion see ibid. with lit.)

(1) IE **ghrōu̯r̥*:
Arm. *elǰewr* 'horn' < **ergiwr* < **rgiwr* < PArm. **griwar* < IE **ghrēu̯r̥*.[78]
Toch. A *kror* 'crescent, horn of the moon' < IE **ghrēu̯r̥*.

(2) IE **ḱer(ə)-*, **ḱrā-* 'head, horn' (WP, I: 403 ff.; Pok: 574—575) with different extensions and apophonic alternations (e.g. **ḱe/oru̯-*: Grk. κεραός 'horned', Lat. *cervus* 'stag', Lith. *kárvė* 'cow', Slav. **kŏrva* 'id.'). See Nussbaum 1986: 1—18 for further details. The strength of this etymology lies in the fact that it allows the comparison of the Hittite word with CLuw. *zarwani(ya)-* 'of a horn'. If one accepts it, however, one has to consider *karawar* with other words formed by disyllabic roots.

5.2. Borrowed or dialectal words

5.2.1. *šabašija-* 'spähen', *šabašalli-* 'Späher' (only MS)[79]; written *ša-pa-*°.

◊ The direct relation of this form to IE **spek-* 'spähen' (WP, II: 659—660, Pok.: 984—985) faces several difficulties:

1) The unusual voicing IE **p* > Hit. *-b-*;
2) The abnormal palatalisation IE **ḱ* > Hit. *-š-*;

Thus *šabašija-* is not an IE word, inherited by Hittite. It is conceivable that it was borrowed from Mitannian via Hurrian, but this hypothesis does not impose itself.

5.2.2. (URUDU)***še/i/a/ābikkušta-*** 'pin, etc. (?)' (MS+[80]); written *še-pí-*°, *ši-pí-*°, *ša-pí-*°, *ša*[!]*-a-pí-*°[81]—see forms and discussion in Beckman, StBoT 29: 63 ff., with lit.

◊ The comparison with Lat. *spīcā* 'ear of corn' (thus Poetto // Spr. 32/1 (1986): 52—53) or with any other IE root of this shape is frustrating morphologically,

[76] Nom.-acc. is virtually always written plene: *ka-ra-a-wa-ar*.

[77] For OS attestations see StBoT 26: 92.

[78] Certain doubts about this etymology are expressed by Clackson 1994: 220, with lit.

[79] For the comprehensive textual information about these lexemes see Alp // FsOtten[2] (1988): 1 ff., also HBM: 399, 400. See now CHD, Š: 204 f. with the reading *ša-pa-ši-ja-ar* (coll.) instead of Alp's *ša-ú-ši-ja-ar*!

[80] MS: gen. sg. URUDU*še-pí-ik-ku-uš-ta-aš* (KUB 24.4+ I 13').

[81] *ša*[!]*-a-pí-ku-uš-ta-aš* KUB 58.100 II 1 (text: TA-*a-pí-*...).

since the suffix -(*V*)*šta*- suffix remains unexplained[82]. This suffix was analysed in EHS § 111.3; it appears to be connected either with Hurrian, or with the pre-Hittite "Asiatic" languages. The rest remains uncertain.

Graphic alternation *ša-pí-°*, *še-pí-°*, *ši-pí-°* does not necessarily imply the the usage of signs ŠA, ŠE, ŠI as spelling variants for /sC/. This might as well reflect a real vocalic alternation (cf. esp. with plene-writing *ša*$^{!}$*-a-pí-ku-uš-ta-aš*). Synchronic free variation is frequent in recently borrowed words.

5.2.3. ***zamankur/zamagur*** n. 'beard', ***šamankurwant-*** 'bearded' (rare words); written *za-ma-°* and *ša-ma-°*.

◊ This word undoubtly continues IE **smo/ekr-* 'chin, beard' (WP, II: 689; Pok.: 968): Skr. *çmáçru* n. (V+; with assimilation from **smaçru*), Arm. *mauru-k'*, *moru-k'*, Lith. *smãkras* (4), Latv. *smakrs*, *smakris* (for the cases of IE *k̑* > Balt. *k* see Stang, Vergl.Gr.: 91 ff.), Alb. *mjerkɛ* (< **smekr-ā*, Orel, AED: 269). Yet the direct connection between *z/šama(n)gur-* and IE **smok̑r(u)* stumbles upon several difficulties:

1) The double reflex of IE **s-* > Hitt. *z-/š-*[83].
2) The prenasalisation of the velar *-K-* in Hittite (the forms without prenasalisation display the irregular change IE **k̑* > Hitt. *-g-*).
3) The stem-final metathesis IE **-ru* > Hitt. *-ur*.

All this makes us treat this word with caution. The hypothesis that we are dealing with a borrowing from a different dialect is not excluded. Note, however, that if this is a genuine Hittite word, it does not represent any difficulty for our phonetic conclusions below.

§ 6. Phonetic and phonological interpretation

6.1. Survey of previous opinions

During the first 50 years of Hittite studies serious scholars were reluctant to approach the problems of Hittite synchronic phonology in detail: too little was known about the language. First attempts of phonological analysis were done on the basis of etymologies; thus, Friedrich (HEb.^{2}, I: § 26), recognizing that "In der Auffassung der Anlautschreibungen sind wir in der Hauptsache auf Vermutungen angewiesen", goes on suggesting the pronunciation /triyalla-/ of *te-ri-ya-al-la-* 'a type of liquid' in view of its connection with the word for '3' (cf. § 2.1). He also admits the pronunciation /#sC-/ of words beginning with *iš-CV-*

[82] Oettinger // ZDMG 131 (1981): 387 suggests **-Vs-to*, as in Lat. *rob-us-tus*, *hon-es-tus*, etc. Note, however, that there is no productive suffix *-ta-* in Hittite. In addition, *šabikk-uš-ta-* would have been formed from an *-uš* stem, a type not known outside Indo-Iranian.

[83] Cf. the balanced discussion of this phenomenon in Melchert AHP: 172.

(cf. § 3), but makes the following reservation: "doch wäre es auch denkbar, dass sich vor der Konsonanten gruppe tatsächlich ein Sprossvokal wie in vulgatlät. *ispiritus* oder arab. *Iflātūn* 'Platon' entwickelt hätte" (pp. 30—31).

Kronasser (EHS § 34) is more categorical. He rejects the evidence of *ti-e-ra-wa-ar-ta-an-na-* as that of a borrowed word and maintains that there are hardly any convincing examples of anaptyxis in Hittite. On the contrary, the prothesis before */#sC/-* in *išpāi-* etc. is, according to him, phonetic. To account for the alternation *išpant-/šipant-* he puts up a theory about the dialectal shift /s/>/š/ in Hittite (EHS § 35). Later, according to him, /šp/ > /išp/ whereas /sp/ remains /sp/ and is written *šip°-* vel sim. This classical case of the violation of Occam's razor did not find further support among scholars.

Melchert (AHP) serves as a good summary of more recent views. His own reasoning is based on the careful investigation of Hittite cuneiform orthography. According to his opinion, *išpant-/šipant-*, *išpāi-* etc. most likely contain synchronic consonant clusters, and the prothesis is merely graphic. Yet he "does not consider the issue settled" (pp. 31—32). Regarding the cases of /#CR-/, he takes a compromise position. He maintains that in *parā-* etc. the anaptyxis is also graphic, whereas the words displaying synchronic alternations like *ga-a-ra-pí* 'he devours' vs. *gi-ri-pa-an-zi* 'they devour' are to be regarded as containing an anaptyctic vowel (p. 30). In some cases this anaptyxis is Anatolian (p. 84), while in some other cases its scope is limited to Hittite (p. 108).

A very different view is promulgated by D. Kavitskaya (1999). She tries to show that prothesis and anaptyxis in Hittite is governed by the rules of syllabicity. Since the syllabic onset /spa-/ in **spāi-* violates certain syllabic constraints, it was "amended" through /i/-prothesis. On the contrary, **slīga-* 'to defile' has canonical syllable structure, so the anaptyxis here does not reflect anything but the peculiarities of the cuneiform orthography. The arguments of Kavitskaya, related to the issues of syllable structure, will be discussed in more detail in § 7.

6.2. Words beginning with **#CR*

The data analyzed in § 2 allow us to postulate with a sufficient degree of probability that that the words of type *šalig-* (i.e. all Hittite words beginning with **#CR-*) contain a synchronic anaptyctic vowel between **#C-* and *-R-* in Hittite. We will tentatively transcribe this vowel as /ə/, thus *ša-li-ga* is phonetically /səliga/ and not /sliga/. The following facts support our hypothesis:

1) A number of words with the initial non-ablauting **#CR* are occasionally written with *scriptio plena* of a vowel after the first consonant in Late Hittite (CV_1-V_1-RV_2-). This words are: *kāra/ib-* 'to devour' (§ 2.6; more frequently *kara/ib-*), *kārū* 1× (§ 2.7; very frequently *karū*), *šālig-* 'to touch, defile' (§ 2.8; more frequently *šali/īg-*), *šārab-* 'to sip' (§ 2.9; more frequently *šara/ib-*), *hālija-* 'to kneel' (§ 2.11; more frequently *halija-*). This fact does not mean, of course, that the anaptyctic vowel was lengthened/accented in Late Hittite; we would

rather think that any real vowel could be sporadically written *plene* at that period.

2) There is some correlation between the quality of the anaptyctic vowel and the quality of the vowel in the following syllable. The most transparent cases are *teri-* '3' with derivatives (§ 2.2) and *teripp-* 'plough', $^{A.ŠA}$*terippi-* 'ploughed field' (§ 2.3). Pron. poss. 3 pl. *-šma/i-* is spelled as *-šemet* (side by side with *-šamet*; § 2.10). Cf. also once *kirett-* 'deluge' (side by side with usual *karitt-*; § 2.5), and once *kirib-* 'devour' (side by side with usual *kara/ib-*; § 2.6).[84] Here the anaptyctic /ə/ is, with all probability, influenced by the following front vowel and becomes phonetically /ə^{e}/. This solution is preferable to the postulation of the early anaptyctic /e/, as per Melchert (AHP: 93), since "inherited short *[e] is virtually eliminated on the phonetic level" (ibid.: 133).

3) There is no graphic explanation for several attestations of the anaptyctic vowel in the enclitic pronouns *-šma/i-* 'their' (poss. 3 pl.) and *-šmaš* 'you' (dat., acc. 2 pl.). Examples from OS: *a-aš-šu-uš-še-me-it* (*aššu* + *-šmet*); *na-at-ta-ša-ma-aš* (*natta* + *šmaš*); *nam-ma-ma-aš-ša-ma-aš* (*namma* + *ma* + *šmaš*). For more attestations see § 2.10. The phonetic explanation of this phenomenon would imply that the anaptyctic vowel was, at least in some cases, phonological in Old Hittite. The boundary between an accented word and an enclitic has its own sandhi rules. If the accented word ends in a consonant, then the following enclitics always behave independently, i.e. the anaptyxis takes place (of course, in this case the anaptyxis can be interpreted as graphic). If the accented word ends in a vowel or *-s* the anaptyxis is usually absent; there is, however, a subset of cases where enclitics behave as independent words also after a vocalic outcome.

Unfortunately, there is no evidence for "schwa-coloring" in the case of the common words *šalig-* 'to touch, defile' (§ 2.8) and *halija-* (§ 2.11) and a more rare word *halina-* (§ 2.12). We cannot give any explanation for this phenomenon (it is noteworthy, however, that in all the three words the second consonant is /l/)[85]. Yet positing the initial cluster without anaptyxis in this case (cf. Kavitskaya 1999, and discussion below, § 7) would entail even more problems: then one would have to explain why the word is written *salig* and not ***islig-*. The explanation is easily available, if one shares the view of Kavitskaya 1999

[84] Forms like NH. *li-in-ik-ta* 'he swore' can be regarded as a compromise between the OH spelling *li-ik-ta* and the NH pronunciation /linkt(a)/ (the authors hold divergent opinions about the pronunciation of this form in Old Hittite). There is no reason to consider them together with the forms discussed above.

[85] One of the authors of this article believes that the absence of variant spellings in the case of *halija-* and *halina* can be explained by the lowering effect of /h/ in Hittite. Yet we deliberately abstain from discussing any issues related to the Laryngeal theory in this article.

that prothetic *i-* is always phonetic in Hittite, but we hope to show in the following section that this theory is false.

6.3. Words beginning with *#*sC-* (*C* ≠ R)

We believe that the initial cluster *#*sC-* (*C* is not resonant) was phonetically preserved in Hittite and that the writing *iš-CV-* is just a graphic device. The following facts support our hypothesis:

1) Words with initial *#*sCV* are never written *eš-CV°* instead of *iš-CV°*. On the contrary, the graphic variation IŠ ~ EŠ is frequent, where the vowel is etymological[86]. Nine words with initial *#*sCV-* represent a uniquely stable case in Hittite graphemics, where the rare to frequent variation of signs IŠ ~ EŠ is otherwise observed.

2) Among the numerous occurences of the lexemes with initial *#*sCV-*, considered in § 3, there is not a single case of the *scriptio plena* ***i-iš-CV°*[87]. Cf. sporadic *plene* in the first written vowel of the words with *#*CR-* treated above or doublets like *immiya-* vs *īmmiya-* 'to mix' or *ippiya-* vs. *īppiya-* '(grape)vine', where the etymological vowel in the first syllable is sporadically written *plene*.[88]

3) The verb **špand-*^{hi} 'libate', assuredly going back to the IE root **spond-*, is frequent in Hittite since the earliest period of its attestation. As it was noted above (§ 3.8) this word can be written both *iš-pa(-a)-an-°* and *ši-pa(-a)-an-°* (with the rare variant *ši-ip-pa(-a)-an-°*)[89]. The statistics of different variants in OH/OS texts is given below[90]:

[86] Cf. *išha-* (usually) vs. *ešha-* (rarely, late) 'lord' (< **esHo-*: Lat. *erus* 'id.', OLat. fem. *esa*), some other examples and discussions about the sign EŠ in Hitt. orthography see Kassian, Zi: 100 ff.

[87] Cf., however, the unique case of KUB 6.46 I 39 (NS) imv. 3 pl. *i-iš-ta-ma-aš-ša⟨-an⟩-du* 'let them hear', normally *ištamašš-* 'hear'. Most probably, this is an error of a negligent scribe (cf. the omission of the sign AN). The word *ištamašš-* 'hear' is usually compared with Luw. *tummant-* 'ear', *tūmmantiya-* 'to hear' (phonetics and morphology are not clear), but does not have a convincing etymology beyond Anatolian.

[88] The virtual absence of Hittite words beginning with *iC$_1$C$_2$-, C$_1$≠C$_2$ (as opposite to those beginning with *eC$_1$C$_2$- and dubious cases) makes it impossible to trace occasional *plene* spellings *i-iC$_1$-C$_2$V-*, C$_1$≠C$_2$.

[89] Note that the writing *ši-pa-an-°* cannot be phonetic *a priori*, since in such a case we would have to transcribe this form as /siban°/, which is impossible.

The variant *ši-ip-pa(-a)-an-°* is attested from MS on. We know the following MS attestations (the most part of them was kindly provided by A. V. Sidel'tsev): KBo 21.85+ IV 12', 14', 19', 26', 27' *ši-ip-pa-an-ti* (note, however, that usual for this text is the spelling *ši-pa(-a)-an-°*, passim); KBo 34.199 (+) 40.325 2', 6' *ši-ip-pa-an-ti* (cf. ibid. 8' *ši-pa[-an-ti]*; see Groddek // AoF 27/2 (2000): 360—361); KUB 34.128 Vs.? 12' *ši-ip-pa-an-ti*.

[90] See Kassian, below, p. 101—102 for the list of OH attestations of the root *špand-*.

prs. 1 sg. *išpantahhi/e*: 6×	*šipantahhi/e*: not attested
prs. 3 sg. *išpā/anti*: 9×	*šipā/anti*: 26×
prs. 3 pl. *išpantanzi*: 1×	*šipantanzi*: 7×
prs. 3 sg. *išpanzaškizzi*: 1×	*šipanzaškizzi*: not attested

išpantuzzi 'libation vessel'

nom.-acc. sg. *išpantuzzi*: 7×	*šipantuzzi*: not attested
dat.-loc. pl. *išpantuzziaš*: 1×	*šipantuzzias*: not attested

išpantuzzijaššar 'libation vessel'

nom.-acc. sg. *išpantuzzijaššar*: 12×	*šipantuzzijaššar*: not attested
acc. sg. *išpantuzijaššaran*: 1×	*šipantuzijaššaran*: not attested
acc. pl. *išpantuzzijaššaruš*: 1×	*šipantuzzijaššaruš*: not attested

As one can see, in the case of two forms the writing *ši-pa-*° is prevalent, but in all other cases the only attested writing is *iš-pa-*°. This fact can be explained (see Касьян 2000) if we take into consideration the quasi-homonymous lexeme *išpant-* c. 'night', which is also attested since Old Hittite. The writing *ši-pa-*° of the verb *išpant-* is used only in those forms that can be graphically confused with some forms of the noun *išpant-*. Thus 3 sg. prs. *ši/išpanti* 'he/she libates' is homonymous with dat. sg. *išpanti* 'in the night' [91] and 3 pl. prs. *ši/išpantanzi* 'they libate' is very similar to abl. sg/pl. *išpantaz, išpantaza, išpantanza* [92] 'from the night(s)'. [93]

Note. Several years ago B. Forssman (In honorem Pedersen (1994): 93—106) suggested the direct comparison between Hitt. stem *šipant-* and archaic Lat. perfectum *spependī*, i.e. IE **spe-spond-* > **se-spond-* > Hitt. *šipant-* or IE **spe-spond-* > **spe-pond-* > Hitt. *šipant-*. This hypothsis, however, faces several difficulties:

a) In Hittite texts (from OS to NS) we cannot find any (!) morphological, semantic or syntactic difference between Forssman's reduplicated stem *šipant-* (according to Forssman < IE **spe-spond-*) and nonreduplicated stem *išpant-* (according to Forssman < IE **spond*). The lack of semantic differentiation between two stems is not typical of Hittite, where the reduplicated stems posses rather special meanings, not coinciding with the meanings of basic non-reduplicated stems. The assumption that one of these forms represents an ancient perfect is strictly *ad hoc* semantically

b) According to Forssman in Hitt. *šipant-* we have the result of two stages of dissimilation **sp—sp* > **s—sp* > **s—p* (or **sp—sp* > **sp—p* > **s—p*). Is this model attested elsewhere in the IE languages? Cf. the usual perfectum models in Lat. **sC—sC* > **sC—C* (*spe-pondī*, *ste-tī*, etc.); in Grk. and Av. **sC—sC* > **s—sC* (ἔ-στηκα, etc.; °*hi-šta*, etc.); in Skr. **sC—sC* > **C—sC* (*ca-skánda*, etc.).

c) The voicing IE **p* > Hit. *-b-* can hardly be explained.

Thus, in view of these facts, we cannot accept the Forssman's explanation of Hitt. *šipant-*.

4) The existence of such forms as OH. *za-aš-ki-iz-zi* 'he puts' (4.2) or probably *za-aš-ga-ra-iš* 'anus' (4.3), where the reconstruction of the cluster /#tsk-/ is the only available solution, automatically discards all typological arguments for the phonetic prothesis before */#sC-/. We are not aware of any phonological theory that would consider the initial cluster "affricate + stop" to be more natural than the initial cluster "fricative + stop".

All the above points make us believe that the writing *iš-CV-* for the initial /#sCV-/ clusters was nothing more than an orthographic convention. It was introduced when the Hittites borrowed the Assyro-Babylonian cuneiform writing and consistently applied to all the monuments of the Hittite language. An exception was made only in those cases when the application of this convention would result in homography, as it is in the case of *išpand-/šipand-* 'to libate'. Thus the ambiguous 3 sg. pres. was frequently written *šipanti*, whereas nominal derivatives were consistently written *iš-pa-*, according to the general rule. By contrast, no stable orthographic convention existed to render the few Hittite words with inital /#tsCV-/, discussed in § 4. This situation is parallel to the inconsistent rendering of internal clusters of three consonants in Hittite orthography (for which see e.g. EHS § 13 ff.).

§ 7. Universal constraints or substrate influence?

Our analysis of the Hittite cuneiform script has shown that initial combinations "stop+resonant" undergo phonetic anaptyxis in Hittite, whereas initial combinations "fricative+stop" or "affricate+stop" are tolerated by the Hittite language. This section is devoted to the linguistic explanation of this phenomenon. We want to stress the fact that our previous conclusions were obtained by strictly philological methods and therefore our present analysis is not circular.

[91] A case where the form *išpanti* 'in the night' could be potentially misinterpreted as a verbal form is available e.g. in KBo 31.8 + KUB 30.42 IV 14—16 *mān* ^{LÚ}NAR *INA* É ^{D}*Inar išpanti* NINDA *haršauš paršija ta kiššan mālti hattili*.

[92] It is frequently maintained that abl. in *-anza* is late, but cf. OS KBo 8.42 Vs. 2' *lu-uta-an-za ú-uš-ki-iz-zi* 'he looks through the window'.

[93] Another similar example may be available from KUB 30.42 + KBo 31.8 I 7 *ša-pa-an-ta-al-la=ma* DUB 1 KAM$^{HI.A}$ *anda ŪL handa*, which is translated by Laroche (CTH: 162) 'mais les premières tablettes *šapantalla* (= de libation ?) ne sont pas en ordre (?)' (analogically Laroche // FsHrozný, II (1949): 16). If the translation is correct then the *hapax* adjective /spantalla-/ 'pertaining to libation' may have been written with graphic anaptyxis to avoid confusion with Hitt. subst. **/spantalli-/ 'night quarters (vel sim.)' that lurks in *iš-pá-tá-lu* 'Nachtlager' (AHW: 397a) of the Old Assyrian Cappadocian tablets (with lack of *-n-*)—see van Brock, Dérivés en *L*: 128—129; HED, II: 435. It is risky, however, to base any firm assumptions on a *hapax*.

7.1. Hittite and syllable structure[94]

7.1.1. Theoretical prerequisites. Most phonological theories of these days use the notion of the syllable that dominates, either directly or indirectly, the phonemic segments, imposing certain constraints on the structure of words. It is frequently, although not universally, assumed that every segmental phoneme of a natural human language must be attached to a syllable. The structure of a prototypical syllable can be described by the rule known as Sonority Sequencing Generalization (SSG), which states: "Between any member of a syllable and the syllable peak, a sonority rise or plateau must occur".[95] The sonority hierarchy is roughly assumed to be as follows: vowels > resonants > fricatives > stops. The syllable peak is usually a vowel, less frequently a syllabic resonant.

It is easy to see that the syllabic onset /sta-/ violates SSG, whereas the syllabic onset /tra-/ does not. Languages vary with respect to their toleration of non-canonical syllables; Kavitskaya 1999, however, claims that Hittite phonology is rather strictly governed by SSG. Does our re-analysis of initial consonant groups imply that universal syllabic constraints are easily violated in Hittite?

The analysis of D. Kavitskaya is not limited to initial consonant groups, but extends to several independent sets of data taken from Hittite, which she claims to be examples of complementary distribution. Below we will try to examine her arguments and to show that they are not sufficient to consider the initial group /#sCV-/ in Hittite as the violation of syllable structure.

Kavitskaya operates with three groups of examples, in addition to those considered above. The case of morpheme-internal anaptyxis, discussed in § 5.2.2 of her paper, hardly merits our close attention. The only suggested example of this phenomenon is *takš-* > *takkeš-* 'to undertake, make'. If the anaptyxis in this root is syllable-driven, it is not synchronic, but historical, since it is extended by analogy to those cases where it is not motivated phonetically, e.g. NS KBo 18.178 Vs. 3', 3 pl. prt. *ták-ki-e-eš-šir*, etc.—see Neu, StBoT 18: 88, 91; Oettinger, Stamm.: 217—219; HEG, III: 40 ff. Cf. the same phenomenon in the stem *hutk-* '?': subst. verb. gen. *hutkišnaš* vs. imp. 3 pl. *hu-te-ik-ki-iš-kán-du*, *hu-u-te-ik-ki-iš-kán-du* KUB 31.100 Vs. 9', 11' (NS, but with archaic traits—Košak // FsČop (1993): 107 ff.)[96]. Since Kavitskaya herself apparently does not consider this root as a strong example, we can safely proceed to the other two cases.

[94] Unless otherwise stated, all OH examples in this paragraph are taken from the glossary of OH verbal forms and derivatives prepared by A. Kassian and published in this volume.

[95] Blevins 1996: 210 after Selkirk 1994: 16.

[96] In our opinion, the interpretation of *hutk-* as a variant stem of *hatk-* 'to shut, close' still remains questionable (*pace* HED, III: 417).

7.1.2. Distributive/iterative /-sk-/ suffix. Kavitskaya 1999 recognizes that this suffix has two allomorphs /-sk-/ and /-isk-/. In her own words, "the distribution for the allomorphy will be straightforward: *-šk-* after a stem which ends in a sonorant, *-išk-* elsewhere" (p. 61). She further argues that this allomorphy "should have arisen in Hittite, necessarily starting from *i*-epenthesis". This anaptyxis, in her opinion, is driven by SSG. Unfortunately, Kavitskaya uses very scarce data to back up her statement.

The list below contains all the *-šk* formations derived from athematic stems that are attested in OS texts, as well as a number of MS attestations[97]. In our opinion this selection is representative enough to make conclusions about the distribution of suffixal allomorphs.

Stems in *t-*, *d-*:

ed-^{mi} 'to eat'—***azzage-***[98]: imp. *az-za-ki-tin* HBM 17 Rs. 43 (MS); ***azzikke-***: prs. *az-zi-ik-kán-zi* KUB 29.45 Vs I 10' (MS)

dai-^{hi} 'to put, place' (cf. above, § 4.2)—***zaške-***: prs. *za-aš-ki-iz-zi* StBoT 25, No 137 III 15' (OS); ***zige-***: prs. *zi-ki-iz-zi* KBo 15.10+ II 25 (MS), prt. *zi-ki-e-it* KBo 22.2 Vs. 3 (OS or MS); ***zikke-***: prs. *zi-ik-ki-iz-zi* StBoT 25, No 43 IV 3' (OS), *zi-ik-k*[*i-iz-zi* StBoT 25, No 104 II 10' (OS or MS), *zi-ig-ga-an-zi* HBM 19 Vs. 10 (MS) (cf. also Otten, StBoT 17 (1973): 18—19).

Stems in *nt-*:

išpant-^{mi} 'to libate'—***išpanzaške-***: prs. *iš-pa-an-za-aš-ki-i*[*z-zi* StBoT 25, No 66 I 3' (OS); ***šipanzage-***: prs. [*(ši-pa-a)*]*n-za-kán-zi* StBoT 25, No 104 II 18' (OS or MS), imp. *ši-pa-an-za-kán-du* KUB 40.56 + KUB 31.88+ Rs III 7', 12' (MS).

Stems in *rt-*:

hurt-^{mi} 'to curse'—***hurzage-***: prs. *hu-ur-za-ki-zi* KBo 32.14 II 13 (MS), *hu-u-ur-za-ki-zi* ibid. II 54, Rs. 45 (MS), sup. *hu-ur-za-ki-u-an* ibid. II 5, 46 (MS), *hu-u-ur-za-ki-u-an* ibid. Rs. 43 (MS).

Stems in *n-*, *rn-*:

ešhan- 'to cover with blood'—***ē/išhaške-***: part. *e-eš-ha-aš-g°*, *iš-ha-aš-k°* (OS)—see Kassian, below, p. 91.

kuen-^{mi} 'to kill'—***kuwaške-***: prs. *ku-wa-aš-ki-iz-zi* KBo 23.4 + KUB 33.66+ III 2 (MS); prt. *ku-wa-a*[*š-ki-ir* KUB 40.56 + KUB 31.88 + III 17' (MS).

tarn(a)-$^{mi/hi}$ 'to let (off)'—***taršige-***: prs. *tar-ši-ki-it*[*-te-ni* KUB 23.72+ Rs. 41 (MS); ***taršikke-***: prs. *tar-ši-ik-ki-mi* HBM 46 o.Rd. 27 (MS).

[97] The information about some MS forms was kindly given to us by A. V. Sidel'tsev or taken from his unpublished PhD dissertation devoted to the semantics of *-šk-* verbs in Middle Hittite (Moscow, 1999). We are grateful to him for this help. For other archaic *-šk-*forms with discussion see Otten // FsMeriggi[2] (1979): 439 ff.

[98] Here and elsewhere we are using the following convention: every stop **written** between vowels in a bound transliteration is **written** as voiced. We would like to stress the fact that this convention does not impose any phonetic conclusions.

Stems in *r-*:

tar- 'to speak'—***taršige-***: prs. *tar-ši-ki-iz-zi* KBo 22.2 Rs. 4' (OS or MS), *tar-ši-kán-zi* ibid. Vs. 8 (OS or MS), KBo 22.62 + KBo 6.2+ III 17 (OS); ***taraške-***: imp. *tar-aš-ki* KBo 7.28+ Vs 19' (MS)

ar-^{hi} 'to come (to)'—***araške-***: imp. *a-ar-aš-kán-du* KUB 40.56 + KUB 31.88+ Rs III 8', 9' (MS)

Stems in *š-*:

ašaš-^{hi} 'to make sit, etc.'—***ašaške-***: prs. *a-ša-aš-ki-iz-zi* StBoT 25, No 3 I 6' (OS)

eš-^{mi} 'to sit'—***ēške-***: med. prs.]*ę-eš-ka-ah-ha-ri* KBo 7.14 + KUB 36.100 II 17 (OS), prt. *e-eš-kán-ta-ti* ibid. II 2 (OS)

punušš-^{mi} 'to ask'—***punuške-***: prs. *pu-nu-uš-ki-iz-zi* KBo 8.42 Vs. 6' (OS), *pu-nu-uš-k*[*i-iz-zi* ibid. Vs. 3' (OS)

šeš-^{mi} 'to sleep'—***šeške-***: prs. *še-eš-kán-zi* Güterbock, Laws IV 6', 7' (OS)

tameššš-^{mi} 'to oppress'—***tameške-***: prs. *ta-me-eš-kat-te-ni* KBo 22.1 Vs. 3' (OS), *da-me-eš-kat-te-ni* ibid. Rs. 19' (OS), sup. *da-me-eš-ki-wa-an* ibid. Vs. 4' (OS)

Stems in *rš-*:

karš-^{mi} 'to cut off'—***karaške-***: prs. *kar-aš-ki-ši* HBM 54 o.Rd. 28 (MS)[99]

papparš-$^{mi/hi}$ 'to sprinkle'—***papparaške-***: prs. *pa-ap-pár-aš-ki-iz-zi* StBoT 25, No 42 II 11 (OS), No 43 I 10' (OS)

warš-^{mi} 'to cut off, etc.'—***waraške-***: prs. *wa-ar-aš-ki-iz-zi* HBM 25 Vs. 10 (MS), *wa-ar-aš-kán-z*[*i*] HBM 66 Rs. 38 (MS)

Stems in *k-*, *g-*:

hueg-^{mi} 'to charm, say an invocation'—***hukkiške-***: prs. *hu-uk-ki-iš-ki-iz-zi* IBoT 1.36 II 46 (MS)

Stems in *nk-*, *ng-*:

henk-^{mi} 'to make a gift of, etc.'—***hinkaške-***: prs. *hi-in-ga-aš-kán-zi* StBoT 25, No 54 I 13 (OS); ***hinkiške-***: prs. *hi-in-ki-iš-ki-iz-zi* KUB 35.54 II 18 (MS)

link-^{mi} 'to swear'—***linkiške-***: prt. *li-in-ki-iš-ki-it* KUB 14.1+ Rs. 51 (MS)

Stems in *šk-*:

tušk-$^{mi/hi}$ 'sich freuen'—***tuškiške-***: prs. *du-uš-ki-iš-ki-mi* HBM 37 Rs. 2' (MS)

Stems in *h-*, *hh-*:

manijahh-^{hi} 'to hand over; to administer'—***manijahhiške-***: prs. med. *„ma-ni-ah-hi-iš-kat-ta„* KBo 8.42 Rs. 12 (OS)

wadarnahh-^{hi} 'befehlen'—***wadarnahhiške-***: prt. *wa-tar-na-ah-hi-iš-ki-nu-un* HBM 36 Rs. 43, 84 l.Rd.a 2 (MS)

zahh-^{mi} 'to slay'—***zahhiške-***: prs. *za-ah-hi-iš-kán-ta* StBoT 25, No 54 II 16' (OS)

[99] 3 sg. prs. *kar-ši-eš-ki-iz-zi* KUB XLIV 60 III 8, 12, 13 (NS^2), quoted in Kavitskaya 1999: 60, is probably formed from a parallel stem *karšija-* (this stem is attested already in OS).

Stems in *nh-*:

šanh-^{mi} 'to seek'—***šanhiške-***: prs. *ša-an-hi-iš-ki-u-e-ni* KBo 22.2 Vs. 14 (OS or MS), *ša-an-hi-iš-kat-te-ni* KBo 22.1 Rs. 25' (OS)

Stems in *rh-*:

parh-^{mi} 'to chase, expel'—***parhiške-***: imp. *pár-hi-i*[*š-kán-du* KUB 40.56 + KUB 31.88+ Rs III 19' (MS)

Stems in *p-*, *b-*:

epp-^{mi} 'to seize'—***appiške-***: prs. *ap-pí-i*[*š-ki-iz-zi* StBoT 25, No 104 II 4 (OS or MS), *ap-pí-iš-kán-zi* ibid. 104 II 17' (OS or MS)

Using this material, we are able to make the following phonetic conclusions:

Stems in *t-*, *d-*, *nt-*, *n-*, *rn-*, *r-*, *rš-*, *š-* attach the suffix *-šk-* without anaptyxis but with the following sandhi rules /t-s/ > /ts/, /n-sk/ > /sk/, /s-s/ > /s/. The following facts can support this statement:

1) Parallel spellings for -/Csk/- or /tsk/, like *azzage-* ~ *azzikke-*, *zaške-* ~ *zikke-*, *išpanzaške-* ~ *šipanzage-*, *taršige-* ~ *taraške-*.
2) "Broken" spelling for -CCC-, like *tar-aš-ki*, *a-ar-aš-kán-du*, *kar-aš-ki-ši*[100], *wa-ar-aš-ki-iz-zi*.
3) The writing of *-šk-* without the doubling of *k* in *azzage-*, *hurzage-*, *šipanzage-*, *taršige-* (from *tarn*(*a*)- and *tar-*), *zige-*. These forms frequently appear to be in free variation with those with double spelling *kk*: *zige-* ~ *zikke-*, *taršige-* ~ *taršikke-*. The interpretation *zige-* and *zikke-* as /zige-/ and /zikke-/ respectively with the free variation /g/ ~ /kk/ would be quite odd.

Stems in *(C)k-*, *(C)g-*, *(C)h-*, *p-*, *b-* attach the suffix *-šk-* with *i*-anaptyxis. The following facts can support this statement:

1) The absence of broken spelling in those forms.
2) The consistent double spelling of stem final consonants to render their voiceless character: *appiške-* from *epp-*, *manijahhiške-* from *manijahh-*, etc. The observation of Sturtevant's rule is unusual in consonant clusters.
3) The consistent writing of -/šk/- as *-šk-*, not as *-šVk-*.[101]

Note. The OS spelling *hinkaške-* (1×), as opposed to the regular MS spelling *hinkiške-* is unexplainable. *hi-in-ga-aš-kán-zi*, to our knowledge, is the only form in the OS and MS corpus of texts where the iter.-distr. suffix appears as *-ašk-*, not *-šk-* or *-išk-*[102].

[100] /karskisi/, not **/karaskisi/ for which the spelling ***ka-ra-aš-ki-ši* would be expected. The same, *mutatis mutandis* is valid for *pa-ap-pár-aš-ki-iz-zi*.

[101] Cf. NS distributives *tar-Vh-hi-iš-k°*, *tar-Vh-hi-eš-k°* and *tar-Vh-hu-i-iš-k°* from the root *tarh*(*u*)- 'to overcome' (Oettinger, Stamm.: 221). Such alternations, occurring also in other *-šk-* verbs, indicate that we are dealing with a real vowel, rather than a graphic convention.

[102] *hi-in-ga-aš-kán-zi* was apparently /hinKaskantsi/, not /hinkskantsi/. **/hinkskantsi/ without the loss of *-n-* is scarcely probable.

Thus our conclusions about the morphology of the iter.-distr. suffix *-šk-*, are almost the same as to those of Oettinger (Stamm. § 190 ff.).

7.1.3. Preterit *-š*. D. Kavitskaya writes: "The formation of the preterite third (or second) singular for verbs belonging to the *-hi* conjugation further exemplifies the process of *-i-* epenthesis" (Kavitskaya 1999: 62). Operating with 5 lexemes, she maintains that the distribution of the allomorphs /-s/ and /-is/ in this position is governed by SSG.

The list of prt. 3 sg. forms with the ending *-š* that are derived from athematic stems is given below. It is not the full list of their attestations, but a fairly representative selection:

ak(k)-hi 'to die'—*ākkiš* KBo 6.2+ IV 3 (OS), *akkiš* KBo 3.46 Vs. II 48' (NS), *aggaš* VBoT 1 24' (MS);
ar-hi 'to come'—*a-ar-ša* KBo 22.2 Rs. 7' (OS or MS), *a-ar-aš* (MS+)[103], *ar-aš* in latter texts (see HED, I: 109);
ed-mi 'to eat'—*ēzzaš* IBoT 1.33 18 (NS²);
hamenk-mi/hi 'to tie'—*hammingaš* Bo 3463 II 10[104];
harnink-mi 'to make disappear, etc.'—*harnikša* KUB 19.30 I 11' (NS);
išijahh-hi/(mi) 'to denounce; to trace down'—*išiahhiš* KUB 36.104 Vs. 11' (OS), KBo 3.34 I 13' (NS);
iškunahh-hi 'to mark, stain'—*iškunahhiš* KUB 1.16 III 42 (NS);
išpand-hi 'to libate'—*šipand/taš* KBo 15.10+ III 59', 64' et passim (MS);
išpart/z-mi/hi 'to escape'—*išparzaš* KUB 23.93 III 15 (NS);
ištap(p)-hi/(mi) 'to shut, block'—*ištappaš* KUB 1.8 IV 2, KUB 33.106 III 38, KBo 3.6 III 57 (all NS);
kara/ib-hi 'to devour'—*karipaš* KUB 5.7 Vs. 34 (NS²), *karirapaš* (!) KBo 9.114 13 (MS);
manninkuwahh-hi 'to draw near'—*manninkuwahhaš* KBo 32.14 Rs. 42 (MS);
ninink-mi 'to move, etc.'—*niningaš* KUB 53.15 IV¹ 30, 33 (NS²);
parh-mi/(hi) 'to chase, expel'—*parhaš* KBo 16.36 III 13 (NS);
šalig-mi/hi 'to touch, defile'—*šalikaš* ABoT 60 Vs. 7' (MS), *šaligaš* KUB 33.120+ I 23 (NS²);
še/akk-hi 'to know'—*šakkiš* KBo 3.60 I 3 (NS);
wadarnahh-hi 'befehlen'—*watarnahhiš* KBo 3.38 Vs. 23' (NS);
wag-hi 'to bite'—*wakkiš* KUB 33.120+ I 25 (NS), *waqaš* KUB 18.11 II 9 (NS²).

Note that most of these forms are taken from NS texts. Archaic forms are: OS: *ākkiš*, *ārša* (or MS) and *išiahhiš*; MS: *aggaš*, *karirapaš*, *manninkuwahhaš*, *šalikaš* and *šipandaš*.

The only resonant stem in this list is *ar*-hi 'to come'. The forms *a-ar-ša*, *a-ar-aš*, *ar-aš* can be interpreted only as /ars/.

[103] MS, e.g., KBo 32.14 II 19, 30, 38, III 51.
[104] *Apud* HED, III: 65.

All other stems end in stops or sibilants. The only example among these where the prt. 3 sg. ending is expressed by the sign ŠA is *harnink*-mi 'to make disappear'. The form *harnikša* could be interpreted as /harniks(a)/ with the regular loss of *-n-*, but most likely we are dealing with a scribal error: the regular prt. 3 sg. of this verb is *harnikta*, and the signs ŠA and TA are very similar.

All the other 16 verbs show 3 sg. prt. in *-Ca-aš* (slightly more frequently) or in *-Ci-iš*. We have to decide whether we are dealing with the graphic representation of a final consonant cluster (i.e. /Cs/#) or with phonetic/morphological anaptyxis /Cas/#, /Cis/#.

To start with, let us notice some important differences between the forms ending in *-Ca-aš* and *-Ci-iš*. The forms in *-Ca-aš* usually do not show the expected sandhi: cf. *hammingaš* and *niningaš* without the loss of *-n-* in **/nks/, *šipandaš* (MS) without /t-s/ > /ts-s/, also *karipaš* / *karirapaš* (MS), *šalikaš* (MS), *waqaš* without the devoicing of stem-final consonants. The form *išparzaš* is likely to be based on the secondary stem *išparz-*, which is more frequent than its primary counterpart *išpart-* (see citations in HED, II: 447); The form *ēzzaš* can be formally explained by the same way, even though the suppletion of the secondary stem *ēz-* vs. *ed-* is less productive. Alternatively, *ēzzaš* can be interpreted as /ēzs/ with /t-s/ > /ts-s/.

On the contrary, forms in *-Ci-iš* show the expected sandhi: *wakkiš* with the devoicing /g/ > /kk/ (the pair *wakkiš* vs. *waqaš* is especially instructive).

Prt. 3 sg. forms in *-aš*. We are convinced that *-Ca-aš* in these forms must be interpreted as -/Cas/, i.e. the spelling *-Ca-aš* is phonetic, not graphic. We base our conviction on the following arguments:

1) The absence of sandhi in those forms (see above);
2) The absence of "broken" spelling (as opposed to *a-ar-aš* from *ar*-hi 'to come').
3) The consistent spelling -VC (i.e. *-aš*), as opposed to the alternation VC ~ CV. Cf. ŠA in *a-ar-ša* (1×, OS) from *ar*-hi 'to come' (cf. also *harnikša* (1×, NS) from *harnink*-mi 'to make disappear' above).

Prt. 3 sg. forms in *-iš*. It would seem that, in contrast to the writing *-Ca-aš* for /-Cas/, the writing *-Ci-iš* is to be interpreted as /-Cs/. Beside consonant sandhi in forms in *-Ci-iš*, the usage of the sign IŠ to render word-initial *#sC-*clusters (§ 6.3) would support this interpretation. Yet other arguments make us opt for the reading /-Cis/, not /-Cs/. They are as follows:

1) Not a single case of "broken" spelling is attested among these examples.
2) The double spelling of stem-final consonants to render their voiceless character is regular e.g. *išiahhiš* from *išijahh-*, *iškunahhiš* from *iškunahh-*, *šakkiš* from *še/akk-*, *watarnahhiš* from *wadarnahh-*; also *wakkiš* from *wag-* with devoicing.[105] In consonant clusters, however, Sturtevant's rule was never thoroughly observed.

[105] Stems *ak(k)-* (*ākkiš*) and *ištap(p)-* (*ištappaš*) show the alternation *-k-* ~ *-kk-*, *-p-* ~ *-pp-* also in other forms of the paradigm.

Diachronic interpretation. We would like to stress the fact that most forms in question belong to the Neo-Hittite period. Therefore some of our conclusions may have provisional character and are subject to reconsideration once more Old and Middle Hittite forms are discovered.

a) Athematic stems ending in resonants attached prt. 3 sg. ending /s/ without anaptyxis. The only attested form illustrating this rule is prt. 3 sg. /ars/, OS+) from *ar-*^{hi} 'to come'.

b) Athematic stems in stops and fricatives originally also attached prt. 3 sg. ending /s/ without anaptyxis. This can be proven by the fact that they participated in sandhi typical for consonant clusters e.g. **sahs* < **sanh-s*, **waks* < **wag-s*. Still in the prehistoric period, however, final clusters were eliminated by phonetic *i-* (or *e-*?) anaptyxis. For reasons that we are unable to explain, forms with the original anaptyctic vowel preserved include only verbal stems ending in velars and "laryngeal(s)" e.g. OS *ākkiš* /akkis/ < **aks* < **ak/g-s*, *išiahhiš* /isjahhis/ < **isjahs* < **isjaH-s*.

c) Prt. 3 sg. forms in *-aš* derived from athematic stems represent an entirely different case. As it was noted above, none of them show phonetic sandhi typical for consonant clusters (cf. the ambiguous cases of *išparzaš* and *ēzzaš*). The most ancient forms in *-Ca-aš* belong to MS texts (*aggaš*, *karirapaš*, *manninkuwahhaš*, *šipandaš*, *šalikaš*). It appears that the source of these forms is analogical. One can hypothesize that the endings of prt. 3 sg forms of quasi-thematic *-hi* verbs were transplanted to the athematic conjugation, thus *šipand/taš* from *išpand-*^{hi} 'to libate' like *waštaš* from *wašta-*^{hi} 'to sin'. The fact that, unlike the *-iš* ending, *-aš* can also be attached to the verbs of the *-mi* conjugation (see the list above), indicates the secondary character of this suffix of athematic verbs. In the case of Hittite stems in labial and dental stops, the old terminations have been completely replaced by the analogical prt. 3 sg. ending *-aš*, while in the case of stems in velars the change is still in progress (cf. *waqaš* vs. more archaic *wakkiš*).

7.1.4. The syllabocentric approach and its limitations. It is easy to see certain parallels between the distribution of allomorphs in iter./distr. *-šk-/-išk* (§ 7.1.2) and prt. 3 sg. *-š/-iš* (§ 7.1.3). Stems in resonants attach *-šk* and *-š-*, stems in *k, g, h* attach *-išk* and *-iš-*[106]. The attachment of both suffixes triggers the devoicing of stem-final stops e.g. /g/ > /kk/ in *hu-uk-ki-iš-ki-iz-zi* and *wa-ak-ki-iš*. There is also one important difference. NS *ša-a-hi-iš* shows the regular loss of *-n-* in the beginning of a heavy consonant cluster, whereas stems enlarged by the suffix **-šk-* consistently preserve it (cf. *hinkiške-*, *linkiške-*, *šanhiške-* above). Whatever the origin of this discrepancy might be, it can hardly influence our further conclusions.

The syllabocentric interpretation of the rules of anaptyxis in question, promulgated in Kavitskaya 1999, requires some fine-tuning. First of all, the examples like *papparškizzi* can be contrasted with *ša-an-hi-iš-ki-u-e-ni*. One has to

[106] Note that the stems in *p, b, t, d* attach a secondary siffix *-aš* in 3 sg. prt.

explain why /sanh-/+/-sk-/ requires anaptyxis, whereas /papars-/ + /-sk-/ does not. The most natural solution is to admit that the rule of geminate simplification (s + s → s / _ [+stop]) is ordered before the rule of anaptyxis. In the same way, one must order the rule of affrication (T + s → t͡s / _ [+stop]) before the rule of anaptyxis to account for the cases like *išpanzaškizzi* above.

These emendations having been made, one can claim indeed that the distribution of anaptyxis before the morphemes /-sk-/ and /-s/ in Hittite is phonological. For example, *ispanzaškizzi* contains a legitimate sequence /-anț͡s-k-/[107], whereas in the case of *sanhiškiweni* the prohibited sequence */-anhsk-/, containing a plateau */hs/, is broken by anaptyxis: /-anhsk-/ → /-anh(i/e)sk-/. The rule of anaptyxis can be stated in the following way: /s/ and /-sk-/ are attached to the root without anaptyxis if sonority consistently rises between the root vowel and the syllable boundary; if it ever drops or plateau occurs, anaptyxis must take place.[108]

Thus one can indeed suppose that some processes of Hittite phonology are driven by SSG, even though not in the formulation referred to in § 7.1.1, since plateaus are not allowed. It is clear that neither anaptyxis in word- initial **#CR* clusters nor its absence would violate this rule. The following depends on one's treatment of word boundaries. If one presumes that they are not transparent for syllabification, then one justly expects a constraint on initial /#sC-/ groups, as violating SSG. On the contrary, if one chooses a model where phonemes belonging to different words can be linked to one syllable, then /arha͡skallanzi/ 'they split in two' can be syllabified just as well as /daskanzi/ 'they take' i.e word-initial /s/ becomes attached to the final syllable of the previous word. The second approach is by no means uncommon; it is implied, for example, in W. Dressler's analysis of prothesis in Anatolian Greek (see Dressler // Balkansko ezikoznanije, IX (1965): 95—96).

It is necessary to note that Hittite clauses usually start from the chain of sentential particles, and therefore words beginning with /#sC-/ have relatively few chances to occur in clause-inital position. It is also important to remember that very few Hittite words end in /-P#/, /-K#/ or /-H#/ (Melchert AHP: 111). Therefore, if the rules of sandhi at the word boundary were the same as those of internal sandhi before /-sk-/, there was generally no need for the *svarabhakti* vowel before /#sC-/. However, verbal endings could not be affected by *liaisons* with other words since verbal forms usually occur in clause-final position in Hittite; thus forms like */aks/ 'he died' could not be affected by re-syllabification and had to undergo the process of anaptyxis.[109]

[107] Note that /ts/ is one phoneme, not two!

[108] This definition presumes that every phoneme has a fixed sonority and no syllable boundary can cut across a phoneme; it also implies that the following syllable must have a canonical structure.

[109] One can also consider the general situation with the group /sC/ in Classical Greek as a possible typological parallel. This cluster frequently occurs in initial position, but

7.1.5. Local conclusions. We have seen that the universal requirements of syllable structure, as they are introduced here (§§ 7.1.1, 7.1.4) and in Kavitskaya 1999, § 3, do not impose any changes in inital consonant clusters in Hittite. Thus the version of syllabic theory presented in Kavitskaya 1999 is too weak to either be a help or an obstacle to our philological conclusions, expounded in § 6. On the contrary, word-internal anaptyxis in Hittite may well be caused by syllabic constraints.

7.2. Hittite and areal influences

The arguments of D. Kavitskaya can be reformulated in typological terms. One can argue that, whatever the explanation of it might be, the constraint on */#sC-/ is more prominent cross-linguistically than the constraint on */#CR-/. Spanish, Koriak and Burushaski are good examples of genetically and areally unrelated languages, where no initial clusters "s+stop" are allowed, but different clusters "obstruent+resonant" occur in initial position. If the situation in Hittite is indeed quite opposite, this discrepancy obviously requires an explanation. The following is an attempt to show that the fragment of Hittite constraint hierarchy under consideration has highly suggestive parallels in the area of Greater Caucasus.

7.2.1. East Caucasian Languages.

East Caucasian languages are spoken now in the Russian autonomous republics of Ingushetia, Chechnya and Daghestan, as well as in Northern Azerbaijan. The original area of settlement of the speakers of those languages was probably much larger: I. Diakonoff and S. Starostin have shown that the extinct Hurrian and Urartian languages, which were once spoken in the eastern part of the Anatolian peninsula, form a branch of the same group. This opinion has already won the approval of most European and American scholars.[110]

Both the syllabic and the morphemic structure of East Caucasian languages is very restricted. The usual shape of nominal roots is CVC or CVCVC, that of verbal roots is either CV or CVC[111]. The usual maximal syllable in modern languages is CVRC[112] (some languages have additional coda restrictions). CR clusters were prohibited in Proto-East Caucasian in both initial and medial

never immediately after a stop in the same word. On the other hand, Classical Greek words, with the exception of the negation οὐ(κ), never end in stops.

[110] See Diakonoff—Starostin // MSS, Beih. 12 N.F. (1986). The scholars that do not agree with their conclusions can reconsider our following arguments in terms of areal interaction.

[111] Климов—Хайдаков 1990.

[112] See e.g. Кибрик et al. 1977: 269—276.

position.[113] There are reasons to believe that the situation with initial clusters in Hurrian and Urartian was no different in most respects from the other languages of the family.[114]

The Nakh subgroup of the East Caucasian languages, which includes Chechen, Ingush and Batsbi, represents an interesting exception to the above rules. New consonant combinations have become permissible in this group, both in initial position and otherwise. Examples of specific Proto-Nakh initial clusters with their reflexes are given below.[115]

Proto-Nakh	Batsbi	Chechen	Ingush
*ps-	ps-	s-	s-
*pš-	pš-	š-	š-
*pχ-	pχ-	pχ-	pχ-
*st-	st-	st-	s-
*ṣt-	ṣt-	st-	s-
*pst-	pst-	st-	s-

At the same time, initial clusters "stop+resonant" were prohibited both in proto-Nakh and its daughter languages. "Clusters... 'obstruent + resonant' ⟨...⟩ in PN can appear only on the border of two morphemes (they are not present in roots) or as a result of early vowel reduction. Preserved in Batsbi, they are subject to metathesis in Chechen-Ingush".[116]

Thus the situation of Proto-Nakh is, in a sense, similar to what we postulate for Hittite: in both cases an initial cluster *st-* is possible, but initial clusters *pr-* or *sl-* are not.[117] One can speculate that the constraint on clusters "obstruent + resonant" is ranked much higher than "traditional" syllabic constraints in East Caucasian languages, at least in initial position. To confirm this hypothesis, one can examine inital clusters in other languages that were likely to be influenced by East Caucasian. Since the most usual resonant to occur as a second element of a consonant cluster in Proto-Hittite is /r/, we will try compare the behavior of the consonant clusters /Cr/ and /sC/ in two other Indo-European languages of Caucasus, namely Armenian and Ossetic.

[113] NCED: 63.

[114] S. Starostin kindly sends me the following valuable note: "Initial consonant clusters were impossible in Hurrian, as well as in the majority of East Caucasian languages. For Proto-East Caucasian, beside cases like */#kw-/ ~ */kʷ/, S. Nikolaev and I reconstruct only initial combinations with laryngeals */#HC-/ and */#CH-/, but even those combinations were simplified in Hurrian".

[115] NCED: 94. A dot under *t* indicates a glottalized sound

[116] NCED: 96.

[117] The XIX century Russian borrowings into Chechen are likely to be relevant to this problem. Cf. Chech. *storpal* < Russ. *стропило* 'cross-beam' with the preservation of initial /#st-/ vs. Chech. *purstop* < Russ. *пристав* 'bailiff, police officer' with anaptyxis.

7.2.2. East Caucasian substrate in Armenian.[118]

According to the opinion of a majority of scholars, proto-Armenian tribes came to the Anatolian peninsula from the West in the late 2nd millennium BC and settled on the Armenian plateau by the middle of the first millennium BC. Before that time, this territory was occupied by the kingdom of Urartu, whose ruling elite spoke a language that was most likely East Caucasian. The linguistic interaction between Armenian and Urartian is manifest in the local toponyms, which are still distinctly Urartian in their character, as well as in numerous cultural borrowings into Armenian.

One of the most striking features of Proto-Armenian phonology is the regular metathesis of */Cr/ clusters. This process is not limited to a particular position within a word, but in initial position it is accompanied by a regular vocalic prothesis. Some Old Armenian examples are:

1) Arm. *elbayr* 'brother': Skt. *bhrātar-* 'id.' etc.
2) Arm. *albewr* 'sprig, fountain': Gk. φρέαρ 'id.'
3) (?) Arm. *eljewr* 'horn': Hitt. *k(a)rawar* 'id.'
4) Arm. *artawsr* 'tear': OHG *trahan* 'id.' (dial. IE **draku-* < **dakru-*).
5) Arm. *karkut* 'hail' < **ga-grōdV-*: OCS градъ, Russ. *град* 'id.'[119]
6) Arm *surb* 'pure, saint': Skt. *çubhrá-* 'pure, brilliant'[120].
7) Arm *merj* 'near': Gk. μέχρι 'up to, as far as'.

The metathesis in non-initial clusters (5—7) can be motivated in terms of syllabicity, if we admit that Proto-Armenian, at some stage of its development did not tolerate syllables ending with stops. No traditional syllabic theory can, however, explain why this change spread to initial position (1—4). It is very tempting to suppose that this happened under the influence of Urartian, where the initial combination /#CR-/ would be impossible.[121] This being the case, the strategy of metathesis employed for non-initial clusters suggested an analogous strategy for dealing with this constraint which did not result in simplification; the initial combination /#RC-/ that resulted from this kind of metathesis also formed an unacceptable anlaut. Therefore the metathesis in initial position was followed by vocalic prothesis.

The initial combination /#sC-/ was also unacceptable in Urartian. Yet the comparison shows that at least the IE initial /#st-/ was kept intact in Old Armenian. This can be illustrated by the following examples:

1) Arm. *sterj* 'sterile': Gk. στεῖρα 'id.'
2) Arm. *stin* 'female breast': Av. *fštāna-* 'id.'
3) Arm. *stowar* 'thick': Ved. *sthūrá-* 'id.'

[118] Unless otherwise stated, all examples in this section are taken from Clackson 1994.

[119] Фасмер, I: 450 with ref.

[120] EWA, II: 647 with ref.

[121] Alternatively, one can suggest that the Armenian metathesis /Cr/>/rC/ is caused by Urartian substrate in all positions. The combination /Cr/ is rare in Urartian and, to our best knowledge, occurs only in proper names, which might be of foreign/dialectal origin.

7.2.3. East Caucasian substrate in Ossetic.[122]

Ossetic is an East Iranian language that is genetically close to extinct dialects of the Scythians, Sarmatians and Alans. Archeological data tell us that the Iranian inhabitants of the steppes of South-Eastern Russia were in close contact with Caucasian peoples since prehistoric times. The Mongolian invasion of the XII century AD drove the ancestors of the Ossetes to the Caucasusus mountains, where they continue to live up to the present time. Their eastern neighbors are the Ingush and the Chechen.

The development of /CR/ clusters in Ossetic is the same as in Armenian. It undergoes regular metathesis in both initial and non-initial positions, but in initial position a prothetic vowel *ə* appears before the metathesized group. The metathesis of final clusters is common in Iranian languages, but the development of initial clusters is peculiar to the ancestor dialects of Ossetic.[123] Some examples from East Ossetic (Iron) are:

1) Oss. *ärvad* < Ir. **brātar-* 'brother';
2) Oss. *ärfyg* < Ir. **brū-ka-* 'brow';
3) Oss. *ärtä* < Ir. **t/θraya-* 'three';
4) Oss. *ärɣä* < Ir. **gri-, graya-* 'clay';
5) Oss. *calx* < Ir. **čaxra-* 'wheel';
6) Oss *wyrd* < Ir. **udra-* 'otter'.

One can hypothesize that the scenario of phonetic changes in Sarmatian and/or other ancestor dialects of Ossetic was parallel to what was suggested for Armenian. The consonant metathesis spread to initial position under the influence of constraints existing in the East Caucasian substrate/adstrate.

Surprisingly enough, the initial group /#sC-/ was not touched by substrate influences in many cases. The examples that illustrate its preservation in East Ossetic are:

1) *sk'äryn* 'to drive' < Ir. **√skar-* 'id.' (NPers. *šikardan* 'to hunt' etc.);
2) *stur* 'bull' < Ir. **staura* 'pack animal (?)', cf. Engl. *steer*;
3) *stän* 'male dog' < Ir. **sčana-* 'whelp' (cf. Pol. *szczenię*, Czech *štěně* 'id.')[124].

7.2.4. Conclusions. The example of two very different Indo-European languages that that have undergone the same type of non-trivial phonetic changes in the same area can be regarded as an argument for the existence of a Caucasian Linguistic Area (Sprachbund).[125] The inherited structure of East

[122] All examples discussed in this section are taken from Абаев.

[123] Several examlpes of word-initial metathesis that occur in Sogdian and Khwarezmian (Gershevitch 1954, #439, 441; Schwartz 1970, 385—387) are best explained as Sarmatian borrowings.

[124] The Proto-Ossetic consonant cluster */sp/ undergoes a regular metathesis to */ps/ > /fs/ in all positions. For initial position cf. the situation in Nakh, § 7.2.1.

[125] For other isoglosses between Armenian and Ossetic see Абаев 1970.

Caucasian imposes many constraints on the form of a syllable; it is likely that the phonology of some other members of Caucasian Sprachbund were adapted to their model. A particular example of this adaptation is the elimination of the initial group */#CR-/. At the same time the initial group */#sC-/ was touched much less by the interaction within this Sprachbund; the areal constraint on it was not very highly ranked. The last fact can be independently confirmed by the peculiar "native" development of Nakh languages (§ 7.2.1).

The influence of Hurrian (the language spoken on the Armenian plateau and in the adjacent areas in the second millenium BC) on Hittite and other Anatolian languages manifests itself on all levels of language organization.[126] It would be nothing strange to suppose that during a certain period of time Hittite-Hurrian bilingualism was widespread in the eastern part of the Hittite kingdom. Under those conditions Hittite could have become a member of Caucasian Sprachbund and acquire constraints that were imposed on the syllabic and/or morphemic structure of Hurrian.

The different destinies of the inital cluster */#CR-/ in Hittite, on the one hand, and in Armenian and Ossetic, on the other hand, are connected with the different tratment of internal clusters by those languages. Armenian and Ossetic choose the bizarre strategy of copying the syllable-driven (?) *inlaut* metathesis */-VCR(V)/ > /-VRC(V)-/, adding to the result a prothetic vowel, thus */#CR-/ > */#RC/> /#VRC-/. Hittite eliminates this cluster through the natural anaptyxis */#CR/ > */#CVR-/, which has typological parallels e.g. in Persian, Yakut, and Indonesian. Nobody doubts the reality of these sound changes in Armenian and Ossetic, so typologically there is less reason to doubt the much more normal kind of change that we propose for Hittite.

[126] We are not aware of any standard reference work dedicated to the issues of linguistic interaction between Hurrian and Hittite. Many useful references can be found in Ivanov // UCLA IE Studies 1 (1999): 147—264.

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INDO-EUROPEAN ACCENTOLOGY AND HITTITE DATA. NOMINA

This paper is dedicated to the analysis of plene-writing in the Hittite cuneiform texts. The most recent works, known to me, concerning this problem of Hittite graphics and phonetics are G. R. Hart's "Some Observation on Plene-Writing in Hittite" (BSOAS 43/1 (1980): 1—17) and O. Carruba's "Pleneschreibung und Betonung im Hethitischen" (KZ 95/2 (1981): 232—248)[1]. The general information about plene in Hittite, references to the previous literature and very useful discussions could be found there and I need not repeat these theses. Both scholars agree that the basic function of plene in Hittite seems be the marking of accented (or etymologically accented) vowel and I am inclined to choose this opinion too. Two recent monographs (S. E. Kimball's "Hittite Historical Phonology" and E. Rieken's "Untersuchungen zur nominalen Stammbildung des Hethitischen" [StBoT 44]) also touch upon the plene question.

Below (§ 1) I list fourteen Hittite nominal lexemes, which:

a) are attested with plene in old script (OS) and/or middle script (MS) texts[2]. Forms from new script (NS) texts (including OH/NS and MH/NS ones!) are out of play;
b) have reliable cognates in other IE languages, relevant for accentological reconstruction (of course only direct stem correspondences are meant).

The next section (§ 2) is dedicated to the analysis of more problematic cases — six lexemes without direct IE parallels or with dubious etymology —

[1] Cf. also V'ač. Vs. Ivanov's "Новый источник для установления индоевропейских акцентуационных парадигм: Клинописные написания с гласными" (БСИ 1981 (1982): 192—205) and idem, "Заметки по индоевропейской акцентологии" (Историческая акцентология (1989): 110—115). Regrettably S. Kimball's Ph. D. dissertation "Hittite Plene Writing" (University of Pennsylvania, 1983) as well as C. Watkins' paper "Florilegium morphologicum Anatolicum of Hittite and Indo-European Studies" (1982) remain inaccessible to me.

[2] For datings of Hitt. texts see above, p. 11, fn. 3.