THE REFLEXES OF IE INITIAL CLUSTERS IN HITTITE

This article examines the behaviour of etymological clusters "obstruent + resonant" and "s + obstruent" 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.\(^8\) 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\(^a\) in Hittite. Etymological analysis allows us to categorize at least 12 roots to this group.

II) Words with etymological *#S-C- that are graphically transmitted as is-iC\(^a\). Etymological analysis allows us to categorize at least 9 words to this group.

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

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

a) Roots with *#PR-,*#TR-,*#KR-,*#S-,*#HR- i.e. with the initial combination stop/fricative + resonant (e.g. *treje-/*tir- '3', *ghihr- 'to seize', *slyeš- 'to define', *Heleš- 'schleimig, glitschig etc.').

b) Roots with *#P-,*#S-,*#K- or *#S- i.e. with the initial combination s + stop/laryngeal (e.g. *spē(i)- '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 clusters with a resonant in second position are written in Hittite as CV-CV\(^a\), whereas the reflexes of IE initial clusters of sibilant + stop/laryngeal are written in Hitt. as is-i-CV\(^a\).

The etymologies related to groups I and II will be considered 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.

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 -e- in the first (graphic) syllable. The model case here is taknuš, gen. sg. of tēga- 'earth'. This word can be interpreted as *duhaŋna-/*duhaño- (< *duhaŋm-), gen. *duhaŋna()-mōs (with two a secundum), as well as *duhaŋmoš (see Kassian, 1999).

\(^a\) 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 reluctant 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.


New datings and joins are given in S. Košak's "Konkordanz der Keilschrifttexte" (StBoT 34; StBoT 39; StBoT 42; StBoT 43). Some months ago H. Oten, G. Wilhelm and their colleagues presented the new brilliant project: Hethitologische Portal Mainz (http://hethiter.net), where Košak's Konkordanz is published as on-line database including the most part of known Hittite fragments with joins and refined palaeographic datings.
to blow into a flame, πρήσεις (Ion.-Att.) 'blowing up, distension; inflammation', etc. (LS: 1405, 1463; Frisk, II: 538—539).

ο Hitt. παρά.²: (Grk. πιθύμη: : Σlav. *прэ-ти:, *прэ-โจ 'to sweat, perspire; to rot' (Russ. пе́етъ, пе́во, etc.). The meaning shift is not very apt.


As for the reduplication type, the standard pattern of full reduplication in Hittite is *ROOT + ROOT (-SUFF.), e.g. kaš-haš-š-ı to open from haš(š)- 'id., ti-ttija- 'to appont, to fix' from taį- 'to put, set or laḥ-lakhija- 'to be agied, to worry from laḥ-hija- 'to travel, to go on an expedition' (see van Brock, Redoublement; EHS: 570 ff.). Reduplicated stems pari-pa(p)arā and haši-haši- 'to genufect' (§2.11) fit this morphological model (their roots are resp. ḫpre- and ḫhla-).

Probably the variant paribera-arai- of the reduplicated pari(p)arā- stem is a secondary artificial formation, based on graphics. "Correct" stems are the rare paripra- and paripparai-.

2b. IE *#TR-

2.2. teri- '3', terija- 'third', terijanna 'the third time', ? terijalla- 'ein Getränke, aus drei Zutaten (7); written te-ri-²—see forms HEG, III: 320—328. All the reliable attestations of this root belong to NS (7).

|| IE *treja-/*tri- '3' (WP, I: 755—754; Pok.: 1090).

ο Cf. also tarrijanal(š)ı- 'related to three (3)' in TCG tarrijanali- and LCG tarrijanalli- (cf. HEG, III: 174—175; written tar-ı-) that can be explained as Luwoid forms.

The component ti-e-ra-², ti-e-ra in the Indoar. biprological term tēras wartama, tērarta, tērarta(na) 'Dreier-Runde' from Kikkuli-texts (HEG, III: 318 ff.) can be the result of a contamination between Hitt. and Mitannian forms (plena writing shows that the spelling te-re², ti-e-ra² is phonetic, not graphic).

2.3. teripp(i)ja-:mi 'to plough (with animals)?' (MS+), ḫreIPPi- 'ploughed field' (MS+); written te-ri-²—see forms in HEG, III: 329 ff.

|| Hier. Luw. təxar-ı-pu-na (tarrapuna) 'ploughing?'. For the semantics of this obscure term, see Morpurgo-Davies // FsRisch (1986): 129 ff.

§ 2. INDO-EUROPEAN #CR CLUSTERS IN HITTITE

2a. IE *#PR-

2.1. parai-: with to blow (a horn); to blow on, fan (a fire)' (OS+), (redupl.) paripvahvái- (MS+), rare pari(p)arai- (NS), once pari(p)rai- (NS) 'to blow (a horn); to be flatulent, bloated (med.), probably also parai- (NS); written par-a-ra-², par-a-i-—see forms in CHD, P: 133, 155, 130.

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

Gkr. νπρή- in πιθύμη (Ion.-Att.) 'to burn (fr.), burn up; to blow up, distend', πρήδιο, aor. ἐπρήσσα (H.++) 'to blow up, swell out by blowing; to spout;
Toch. A ṛēp- (V; inf. ṛēptis) 'to dig'; Toch. B rhetorical (*drēp- (VI; 3 sg. prs. rapanam) 'id', rapālē 'ploughing'. The comparison between the Anatolian and Tocharian forms suggests the Indo-European reconstruction *drēp- 'plough, dig' as per Adams, Dict.Toch.B: 529.9

Of other cognates are less certain. Gk. ἀπέλο (to pluck), ἀπελάνη 'sickle' (Hom.+) is compared by Frisk, I: 417 with Slav. *drepəti 'to scratch' (Bulg. ḍrpam, etc.). If these forms are related to the same IE *drēp-, we are dealing with the common semantic development *scrath > 'plough, till', cf. EWA I: 319 on Skt. ṇr. The root is not related to the following forms, frequently cited as belonging to IE *drep- 'wenden' (WP, I: 756—757, Pok.: 1094):

Gk. τράπεζ, Dor., Ion. τράπο 'to turn, direct'; τραπεῖο 'id. (iter.)' (Frisk, II: 923 ff. with different derivatives). Pace Rix, LIV: 591, this root should be compared with Myc. med. participle to-ro-γε-ονε-να 'arable (?)', modifying the fields (a-ro-u-ra), and then with Lat. torquere 'to twist', as per Lêjeune 1972: 169. Thus the root in question is IE *dhrēg- 'to turn, twist';

late Skt. trpat, -it (E. +) 'be ashamed, become perplexed', is probably to be connected with Lat. torpeō 'to be sluggish, inert > inactive'. Lat. turpis 'ugly, repulsive; shameful' is likely to be related to the same IE *drep- 'to be inactive'.

Another, expressive IE root *drep- 'to shake' can be seen in Russ. mper, nam 'to pull about' with Slavic cognates (Факспер, IV: 98), Pashto drābol 'shake, press down' and, possibly, Skt. typrē 'moving, unsteady' (Morgenstierne 1927).

Late Lat. (Paulus Diaconus) trepīt: vertit, unde trepido et trepidato, quia turbatone 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+), kalaktar (τ/ν) 'soothing substance, balm'; written ga-la-ε, ka-la-ε, kal-la-ε — 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. смыкать (< *styd-nq-ti) 'to get cold' ~ смыв 'shame' for semantics.

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

12 MS: e.g. part. pl. nom. c. ga-la-an-kān-te-ē (KBo 15.10+ I 32, II 44).

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

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

15 The vocalism here is unclear.

16 OS: SrbSto 25, No. 140 Rs. 19'nom. sg. ka-ra-i-ti, ibid. Rs. 18'dat.-loc. sg. ka-ra-it-ti.

17 This root is probably to be separated from IE *grōd- 'hail': OCS τάμα 'id.', Arm. (redup.) karkut < *gagrogdV- 'id.', also with unclear vocalism and nasalisation Lat. grando 'id.' etc. (Факспер, I: 450; WP, I: 658; Pok.: 406). Indo-Iranian forms going back to the virtual IE *gagrudu- 'hail', i.e. Skt. ḍhrudām-, Sogd. žhrān, Yidd. žhrān, South Bashkardi ḏrāvēm 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 EastIranian Dialect, most probably from Bactrian.

19 Cf. the very low frequency of Hitt. common gender stems ending in -d (kaɾaɾ- c. 'interior' is the only well attested example), whereas the stems in -ait- are abundantly represented.
nuances see Hoffner // JAOS 120/1 (2000): 72a). In our opinion, however, the semantic derivation 'to snatch' → 'to devour' is natural. Cf. Lith. pa-grūbė (from the same IE root) '1. to grasp, catch ... 3. to eat, drink greedily' (DLZ, III: 640) and griebti, greibėi, griebiaus 25 (< IE *ghreb- 'to grip, grip' (WP, I: 647) '1. to grasp. ... 6. to grab quickly and eat, drink' (DLZ, III: 589)). 26. Cf also one of the meanings of Skt. prihit-grabh- '3. sich zu nehmen, zum Munde führen, genies- sen' (BR, II: 846), e.g., VS 2,11: anyēna pātēra paçaun ḍahantu anyēna práti ghrāṛatā.

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

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

Second, the suggested labial root enlargement is attested, beside Hittite, only in two forms recorded by Hesychius: βράπτειν 28. -έατιν, κρύπτειν, ἀπαντάειν, τῷ στόματι ἔκειν, ἢ στενάζειν καὶ βραχύναι, αὐλακάσαι, κρύφναι, ἢπερεχέα (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. *bracht- with Gk. μάρπτω 'to grasp'.

25 With a dialectal variant griebi, grebe, grebei (DLZ, 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 vidurias palaiu, tai meliumy tega griebi 'If he has diarrhoea, let him eat bilberry'.

27 Cf. Hitt. kurakhi- c. 'column, pillar' (MS²; + MŚ²: KBo 24.45 + Vs. 10). Written ku-ra-² (see forms in HED, IV: 260 ff.; MŚ²: KBo 24.45 Vs. 10). The very rare writing with -k- not -kk- (e.g. kū-ra-ki-i, KUB 21.15 IV 17, NS) is not a reason to posit the variation -kk-/-kk-.

28 IE *krok-k-i- 'vorspringender Balken oder Pflock u. dgl.' (WP, I: 482; Pok. 619 as *brrok-).

Grek. pl. κρόσσα πατέρα 'stepped copings of parapets (H); course, steps of the Pyramidal (Hdt.) (LS: 998). The development *kʰv > x probably represents a distant assimilation *kʰroyka > *krokdy.

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

Slav. *krojka, gen. *krojka 'roof-beam, pole (vel sim.)'—only in modern Slavic languages with different stem modifications: Russ. spoxe, Češ. krokot, etc. (see ĖCCC, 10).

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

29 < *bracht- or *bracht-.

20 Lith. gribės, 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 gʰe-er- 'to snatch' → 'to devour' (pace Puhvel).

20 Cf. the unusual explanation of this phenomenon in HED "karajis, karaitis" is explicable as showing hypercorrect ai on the basis of *ai > e (like Lat. Flaurus < Flôrus, after Claudius > Cladius).

21 And also ha-sk-la KBo 23.91+ IV 6 (MS), 3 pl. prs. ha-in-kān-ta ABoT 8+ I 18 (MS), ha-en-kān-ta 1003/7: 17.

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. *enk- -mek- (WP, I: 128; Pok. 316—318) 'to reach, attain, carry, bring'.

24 OS: prs. 3 sg. KBo 6.2+ (Code A) 1V 2 ka-ra-a-pi.
2.7. *karu* 'early; formerly; already' (OS\^30+); written *ka-ru-*ú, also *ka-a-ru-*ú (1x, KBo 31.108 IV 5, NS)—cf. HED, IV: 113 ff.

Cf. also transparent derivatives *karuili-, karweli-, karuli- 'former; onetime; early' and *karuljapt- 'former state' (see HED, IV: 113 ff.; written *ka-ru-*ú), as well as morphologically opaque *karuvarwaar, karuvarwar* 'at daybreak, early in the morning' (see. HED, IV: 86 ff.; written *ka-ru-*ú).

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

On *gryjandi* 'Morgenröte'; OSwed. *gry* 'von Tage) grauen, dümmern'; etc. (see ibid.).

Typologically cf. Russ. adv. *pano* 'early' vs. Ukr. subst. *pano* '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 *#$R^31*

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

Written ša-li-*a* and *ša-a-li-*a*. The following forms are attested in OS texts:

med. yrs. 3 sg. ša-li-i-qa StBoT 25, No 42 II 17, ša-li-qa StBoT 25, No 43 I 15', ša-li-[i]q; Güterbock, Laws IV 10' (Code q). The forms with first plene form (ša-li-*a*) are known from MS texts on (see Neu, StBoT 5: 147 ff.; CHD, Š: 100 ff): ša-a-li-i-qa KBo 38.39 Rs. 3 (MS), ša-a-li-qa KBo 17.42 + KUB 56.46 Rs. VI 7 (NS, dating after Klinger, StBoT 37; contra CHDI), ša-a-li-qa KUB 13.4 III 65, 80 (NS), ša-a-li-qa-ša M 57.82 8′ (NS), ša-a-li-ik-ša KBo 13.78 Vz. 10 (NS), ša-a-li-ik-i-zi KUB 54.9 III 2 (NS).

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

Otr. ad., *fo-sλīg* 'frotter, endure, sédüre' (Vendryes, S: 153).

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


Grk. adv. *λείδην* 'abroad, long, straifren' (see Frisk, II: 121).

NPers. *λες* 'slippery', *λέζιαν* 'to slide, glide' (see Ağaen, II: 26).


Written ša-a-rai-*h* (paradigm in Oettinger, Stamm: 54). Forms with *plene* in the first syllable are: 3 sg. ša-a-rai-ki KUB 34.97 lk.Kol. 15 (NS), 3 sg. ša-rai-*k*i-ti-i-zi ibid. 17. The root-final consonant is usually -b-, cf., however, two attestations of the double *pp- : verb. subst. gen. ša-ra-ap-uu-wa-aš VBoT 24 III 17 (NS) and ša-ri-ip-uu-wa-aa KUB 32.19+ 1 IV 47 (MS).

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

2.10. *-s(a/e)maj-i-<32> 'their' encl. poss. 3 pl. (OS+), *-s(a)maj- 'you; them' encl. dat., acc. 2 pl.; dat. 3 pl. (OS+).

With the apophonic grade *srebh-*:


Slav. present stem *srebjy, *sreb{h}ys (< *srebjy, *sreb{j}ys) 'schürfen'.

With the apophonic grade *srebh- (iterative):


With the apophonic grade *srebh-:

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


Slav. infinitive stem *srb{y}yjśi—cf. above, sub *srebh-

With the apophonic grade *srebh- (iteratives):

Lat. *sreb̕oj* 'schürfen'


The Indo-European forms of the root in question show the Schwebebung and it is difficult to decide, based on the Indo-European material alone, which variant, *srebh* or *srebh*, is older. It is Hitt. *særa, *særbh* (never *særph*) which determines the choice of the variant *srebh* as the basic one. Lat. and Alb. iteratives going back to *srebh* can be explained (in the same way as the dialectal Slav. *srebj*) 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. *-s(a/e)maj-i-<32> their' encl. poss. 3 pl. (OS+), *-s(a)maj- 'you; them' encl. dat., acc. 2 pl.; dat. 3 pl. (OS+).

31 With different accentuation of the dialectal nature.

32 Although Slav. *sreb* is the most frequently attested stem (e.g. OCS *srebvm*, cf. Фасмеп, III: 604; Machek: 479) some forms (mainly in West Slavic) seem to continue Slav. *sreb-: Sloven. *srebati (alongside *srebi*), Pol. dial. (Kaszub) *strebi* (in other dialects: *srebati, srebati < *srebati*), Czech. *srebiti* (O. Czech. *střebati*), Slovak *srebi*, H. Sorb. *srebi*, L. Sorb. *srebati, O. Russ. *srebi* (Серебровский, III: 335 gives two forms from one manuscript, apparently of a rather late origin: 1 pl. *srebici* (!) and 2 pl. *srebici*). These data allow us to reconstruct, following A. Vailant (cf. Vailant Manuel § 191), the proto-slavic paradigm *srebati—srebjy, sreb{j}ys (with its unusual (for Slavic) ablaut pattern was replaced with the paradigm *srebati—sreb{j}y modeled after *toru—torjy etc.

33 Forms with anaptyctic *u* (like *sumui* etc.), which are typical of Late Hittite, appear to be a result of contamination with the stems *summa-* 'ye' (for the IE reconstruction cf. Sht. *summa-* cf. KEWA, III: 24) and *tatumui-our* poss. 1 pl. (OH+).
After words that end in a vowel or -i, these enclitics are usually written -V's-mā2, whereas in the case of words that end in another consonant, they are usually written -a-mā or -e-mā. In the latter case, the anaptyctic vowel correlates with that of the following syllable: the original /a/ induces /a/-anaptyxis (i.e., -a-ma-2); while the original /e/ is compatible both with /a/ and /e/ (i.e., -a-ma-o or -e-ma-o). 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 (-i(a/e)mali- and -i(a/m)al) in the Old Hittite corpus:

After a consonantal final. Written -a-ma-2:
ma-aa-an-sa-ma-as (mān 'when' + sman 'to you') KBo 22.1 Rs. 21.
ma-an-sa-ma-as (mān 'when' + sman 'to them') KBo 16.45 Rs. 6.

After a consonantal final. Written -a-m-e-0:
e-e-har-sa-me-it StBoT 25, No 4 III 11;
e-e-h[(ar-i)]sa-me-it StBoT 25, No 3 III 11;
ki-it-ka-sa-me-it StBoT 25, No 3 II 26', No 4 IV 17;
[k(i)]-ka-sa-me-it StBoT 25, No 3 II 21;
a-ap-r[a-ar-sa-me-it StBoT 25, No 4 II 16;
še-e-r[a-ar-sa-me-it StBoT 25, No 3 II 16', No 4 III 34, No 6 II 16'.

After a consonantal final. Written -e-m-e-0:
\[\text{tugen} \text{hi-al-sa-m}e-it \text{[ti-ta] (} \text{+ ja 'k'}] \text{ KUB 36.104 Vs. 18;}
še-e-ir-sa-me-it StBoT 25, No 6 II 14;
še-e-ir-sa-me-ta ( + a 'but') StBoT 25, No 3 I 31.'

After a vocalic final. Written -e-m-e-0:
a-aš-šu-uš-sa-me-it KBo 6.2+ (Code A) II 8';
a-aš-šu-uš-sa-me-it (i-ta) KBo 6.2+ (Code A) II 4'.

After a vocalic final. Written -a-ma-2:
na-at-a-sa-ma-as (natta 'not' + sman 'to you') KBo 22.1 Rs. 23';
nam-ma-ma-as-sa-ma-as (namma + ma + sman 'but (to) you in addition') 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-li- < IE *smel-—cf. e.g. Skr. 2 pl. oblique yusma- 'you' < *yus-me- (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

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-smi- (cf. Skt. a-smāi 'to this one'), whereas 2 pl. enclitics continue *us-(s)mimV- (< *us-sm- according to J. Katz) and are thus coradical with Hitt. smes 'you'.

2.11. ha(lija)-m/h[ihi 'to kneel, genuflect, to throw oneself, fall' (OS+) with reduplication hal-lab-lia- [MS]+, written ha-li- [ha-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 *lija- (for morphology of reduplicated hal-lija- see above, § 2.1.)

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

2.12. halin(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. yakubovici 2000) the Hitt. word has direct lexical cognates in IE: Slav. *glina 'clay' (ΕΚΚΑ, 6: 125—126) and the late Gk. γλύνη (Suid.), γλύνα (Hsc.), γλύνη (Hdn.Gr.) 'any glutinous substance, gum', more archaic γλυνόδης (Arist., etc.), γλυνόδης (Geoponica) 'glutinous' (LS: 351; the postclassical writing with ι indicates the historical length of ι).

Without resorting to spontaneous fricativisation (IE *g > Hitt. h) one can connect Hitt. halin(a)- with IE *Hlei- 'schleimig, glitsch, etc.' (WP, II: 389 ff.; Pok.: 662 ff.). Cf. Grk. ἀλκενότ (for ἀλικενότ) - ἀλεινότ (Hsch.) 'to smear', ἀλκενότ ἀπαλεινότ (Hsc.) 'id.', ἀλκεν-σις (EpId.) 'application of stucco or whitewash' (LS: 66, LS Suppl.: 19), where IE *H- > Grk. -σε- See further HED. In this case, however, the anaptyaxis could have happened very early (cf. 5.1.1).
§ 3. IE *#SC- CLUSTERS IN HITTITE (CeR)

3.1. išhámija- hi 'to sing' (OS+); išhamadalla- c. 'singer' (MS); išhamai- c. 'song, melody' (scarcely attested; NS only; probably late derivative from the verb); written iš-ha-2 (see forms in HED, II: 394—395).

IE *Hó(h)j(m)- 'song'.

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

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

◊ It is very probable that the stem *Hó(h)j(m)- represents an IE formation from the root *Hó(h)-/*Hé(h)- 'to bind' (see the next entry).

3.2. išhija- hi 'to bind' (OS+41 with its derivatives (see HED, II: 398 ff.), e.g. TČgiššinj n. 'bandage' (OS+)42, KUSgiššman- c. 'cord' (OS+)43, etc.; written iš-hi-2 (see forms in HED, II: 398 ff.).

IE *Hó(h)j(h)-/*Hé(h)- 'binden' (WP, II: 463 f.; Pok.: 891 f. as *séj-, *sáj-, *síj-).

Skt. (V.) prs. 6 sādi, prs. 9 sādā, aor. 1 asāt, part. sātā (Whitney, Roots: 185; KEWA, III: 549—550). Av. prs. conj. hiṣtan (j.), perf. ind. á-hiṣṭāt (g.), part. hista (j.), inf. (loc.) á-hiṣṭāt (g.) (Kellens: 72; Bartholomae, AIW: 180 f.).

Lith. siži, siejį (siži, siži), sievejį (sižių, sižių) (Fraenkel: 783); Latv. siet, sienu, sēju (ME, III: 860).

◊ Melchert (AHP: §6.1.6.1.6[1] with lit.) interprets Hitt. išhija- 'to bind' as a reduplicated formation *HišΩhΩa, where H- was later lost by dissimilation. Thus, according to him, Hitt. išhija- represents a lexical correspondence to Luw. hišhiya- 'id.'45. In our view this interpretation of Hitt. išhija- is superfluous and we fully subscribe to its criticism by Oettinger in KZ 99/1 (1986): 48. We prefer to postulate the root-stem *Hó(h)- in Hittite and the reduplicated stem in Luwian.

3.3. išunuau- c/n. (MS+46) (išunawar, 1x NS), gen. išhu:nunawal (only?) NS 'sinew, bowstring'; išunauvant- 'sinew' (only?) NS; written iš-hu-2 (see forms in HED, II: 403—404, with corrigenda in HED, IV: 321; Beckman Or 59/1 (1990): 50; Neu Or 82/1 (1992): 149 ff.; idem, StBoT 32: 152—153).

◊ Cf. the IE lexeme *Φωνέγγ, gen. *Φωνέγγ-ος 'sinew, band' (WP, II: 696; Pok.: 977).


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

Gk. veópá (H+) 'Bogensehne, Sehne', νεόπο (H+) 'Sehne, Bogensehne, Schnur, etc.' (Frisk, II: 308—309).

Lat. nervus 'sinew, nerve, etc.' (with metathesis ru < *y-rr> as in Indic).

Arm. na'ard 'Sehne, Faser, Fiber' (< *snéy-t-).

Toch. B še'₄ara 'Scheiden, Nerven'.

◊ The basic IE protoform is *snéy-, *snéyn-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 *snéy(y)-o- already in IE.

Thus the reconstruction Hitt. *išunuau, gen. *išunuau-w would best match IE parallels. Yet internal reconstruction suggests nom. išnuau-i, gen. išunuau-as. Hapax acc.? išunuau attest in (ÖH/NS) KBo 10.37 II 31—33 nu=s=išu ḫaštali(y)ar peštin nu=s=išunuau šjavar peštin nu=s=išumnuši genu peštin 'give him bravery, give him bowshot (lit. bowstring-shooting), give him a firm knee'47 can be analyzed as išunuau(war), where -(w)ar represents an anticipation of the following verbal subj. šjavar.48 Alternatively, R. Stefanini (pers. comm.) suggests that išunuau might be an infinitive of an otherwise unattested denominative verb išunu- 'draw (the bow)'.

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

41 OS: prs. 3 pl. iš-i-k-season-wi (KBo 34 5 Vs. 4), iš-ha-am-wi (KBo 25, No 25+95 22); iš-i-ha-am-in-wi (KBo 25, No 13 IV 4).
42 All forms quoted in HED are MS.
43 OS: prs. 3 sg. iš-ha-o-i (Güterbock, Laws II 31), 3 pl. iš-h-an-zi (KBo 62+ IV 42, 43), part. nom. acc. sg. n. iš-hi-on (SToB 25, No 27 Rs. 17), nom. acc. pl. n. iš-hi-on-an-da (SToB 25, No 3 IV 19, 20; No 4 IV 15, 16), prs. 3 pl. iš-i-hān-zi (SToB 25, No 54 III 5).
44 OS: nom. acc. sg. TČgišših-i-al-le-me(t) (-+ poss. 3 pl. sēmek + -ja `&c') (KUB 36.104 Vs. 18).
45 OS: nom. sg. KUSgiššman- (SToB 25, No 27 Rs. 11), nom. pl. KUSgiššma-an-ž (ibid. Rs. 10), acc. pl. KUSgiššma-a-nu-us (ibid. Rs. 7).
46 Baltic accented could indicate the short diphthong *séj-, but the reconstruction of the long diphthong *séj- is the best solution for the Indo-Iranian data.
47 See HED II: 403; III: 321; IV: 146.
48 Note also that išunuau can be formally analyzed as an infinitive of išhu-nu- 'stain; stigmatize, denounce'.

3.4. ıškalla-hi ‘to slit, slash, split, crack, etc.’ (OS+) 49, ıškallessar ‘slitting’; written iš-kal‘a/iš-gal‘a/iš-gal-al‘a (see forms in HED, II: 413–415).
|| IE *s(k)el-(s) ‘schneiden’ (WP, II: 590 ff.; Pok.: 923 ff. as (s)kel-).
◊ The Baltic accent (Lith. skelti and Latv. skelti ‘spalten’) indicates IE *(s)kels-.

3.5. ıška(ār)ijahi ‘to sting, prick, stab; tick, (af)fix’ (OS+) 50, written iš-ka-‘iš-ga‘iš-ga-‘iš-gar-‘ (see forms in HED, II: 416 ff.).
|| IE *(s)ker(σ) ‘schneiden’ (WP, II: 573 ff.; Pok.: 938): ON skera ‘cut, prick’, Arm. korem ‘ich kratze’ and other simple IE forms with the generic meaning ‘to cut’. As usual, the connection with ‘enlarged’ forms is questionable.

3.6. ıšpai-hi ‘to get full, be filled, be satiated, etc.’ (MS+) 51, ıšpān n. ‘satiation’ (OS+) 52; written iš-pa-‘iš-pl- (see forms in HED, II: 429 ff.).
|| IE *(s)pe(i)-/*(s)pī- ‘sich ausdehnen, dick, fett werden’ (WP, II: 656 ff. Pok.: 983 ff.).

3.7. ıšpant- c. ‘night’ (OS+) 53.
 Written iš-pa-‘ (see forms in HED, II: 431 ff.).
|| IE *ksep-/*ksp- ‘Dunkel’ (WP, I: 524–525; Pok.: 649).
◊ Hittite forms are likely to represent an old -ant formation from the zero grade of the root (i.e. *ksep-ants- > /spant-). A possible tertium comparationis is attested in Greek: Gk. ψήφος (Pl., Hsch.) ‘gloom, darkness’, ψήφος (Hsch.) ‘darkness’, ψηφογός (Pl.) ‘dark, obscure’ (LS: 2021). 55 Yet, if we reconstruct with Pokorny IE *ksep-, then Gk. ψ instead of

3.8. ıspant-(ıp)pant- ‘to libate, sacrifice’ (OS+) 56 with derivatives, e.g. ıspantuzzi n. ‘vessel for libation; libation’ (OS+) 57, ıspantuz(ız)ısażar n.‘c. ‘vessel for libation’ (OS+) 58 and others—HED, II: 436 ff.
 For graphic doubles iš-pa‘/ši-pa‘ and rare ši-ip-pa‘ see below 6.3.3.
|| IE *spand-/*spand- ‘geloben; ein Trankopfer darbringen’ (WP, II: 665; Pok.: 989).

3.9. ıspar(rija)hi ‘to spread, strewn, scatter, etc.’ (OS+) 59; isparnu-‘mi ‘spread, spray’ (OS+) 60, Gk ıspar(ız)uzzi n. ‘rafter’ (MS+) 61; written iš-pa‘-‘, iš-pár-‘ (see forms in HED, II: 441 ff.).
|| Gk. ṣparo ‘to sow, scatter, etc.’ with cognates (cf. WP, II: 670 ff.; Pok: 993; ṣp(h)er- ‘streuen, säen; sprengen, spritzen’). For the survey of views about the separation or non-separation of two IE *șper- ‘to spread, strewn’ and *to shatter’ see HED, II: 445 ff.

§ 4. OTHER TYPES OF INITIAL CONSONANT CLUSTERS IN HITTITE

4.1. tešha- c. (MS+), parallel stem zaščaih- c. (MS+) ‘dream, sleep’. Graphically te-ėš-h (MS+) and za-az-h (MS+) / za-az-h (NS) (see forms in HEG, III: 355 ff.).
◊ The forms contained in HEG allow us to collect the following MH paradigm:

In NH two independent paradigms are attested:
tesha- c. (nom. tešha, acc. tešhan, abl. tešhaz, instr. tešhaz, acc. pl. tešhaz);
zaščaih- c. (nom. not attested, acc. zaščain, dat.-loc. zaščaih, zaščaih, zašči, abl. zaščaihaz, instr. zaščaihaz, acc. pl. zaščaimas).

50 See OS forms in Kassian, below p. 102.
51 See OS forms in Kassian, below p. 102.
52 See OS forms in Kassian, below p. 102.
53 See OS forms in Kassian, below p. 102.
54 See OS forms in Kassian, below p. 102.
55 See OS forms in Kassian, below p. 102.
56 See OS forms in Kassian, below p. 102.
57 See OS forms in Kassian, below p. 102.
58 See OS forms in Kassian, below p. 102.
59 See OS forms in Kassian, below p. 102.
60 See OS forms in Kassian, below p. 102.
61 See OS forms in Kassian, below p. 102.
62 See OS forms in Kassian, below p. 102.
63 See OS forms in Kassian, below p. 102.
It is very probable that these two lexemes go back to the old paradigm nom. *tēsh-/*, obl. *tēsh-/ with an archaic ablaut variation.

The attempts to treat this root as a borrowing 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. *dēiis- or *dādiis- 'slow, dumb, etc.' (WP, I: 829; Pok: 239; FT, I: 132 sub v. Daase H; 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. zikh(m), mi 'put (repeatedly) (OS+)' . Written zi-ik-ki and zi-ki. Of great interest is the OS variant za-si-ki-i-z-i, the meaning of which 'she sets' can be unambiguously inferred from the following context:

StBoT 25, No 137 Rs. III
13. nu=za ₅iąk ⱳh:\hupalli dāl[hh]ʃ
14. nu ₅ḫup\penn ₅m\nu\nša=niš\=a=š-course ₅šan ₅i\ntāma\n
16. [.MAR:\G[J]D\D.A\D.IM-ni ZAG-aš dāša hariškarši 11-ŠU hattaran
17. [III-ŠU hattaran iš[an]p\n\n\nša=niš\=a=k\=a=k
18. dāši ₅BA\NS\=U=rja=šan dāša

"I [ak]e the h.-instruments and pull (play) (it). But my female assistant sets [zak]tizizi them back upon altars (loc. pl.). She [set] the heavy [carriage] to the right side of the Stormgod (effigy). She sets the twice-engraved h.-vessel (and the thrice-engraved h.-vessel) hither and you upon altars (loc. pl.). And she sets the table".

Hitt. zikh(k)-/zakh- is to be interpreted as /t什k-. Even if one disregards the variant za-si-ki-i-z-i, the interpretation of the verbal stem zikh(k)- as containing the /i/-anaphaxis faces unsurmountable philological difficulties. In this case zi-ki-iz-i, occurring alongside zi-ik-ki-i-z-i, would have been interpreted as /tশkιtι/ which has no phonetic foundation whatsoever (for more details about šk-verbs see below, 7.1.2.).

64 The hypothesis that treats za-si-ki-i-z-i as /tšak-/* with /a/-anaptyxis (i.e. PHitt. /T-sh-/* > /Gh-/* > Hitt. /tšak-/*) is too complicated and not supported by data. Cf. the following etymology.
65 E.g. the comparison with Adygh ėga 'sleep' (< W.-Cauc. *ɬ-ga, according to NCED: 619–620).
66 Cf. modern German Schlaf vs. Schlaff for the semantic development.
67 OS: prs. 3 sg. zi-ik-ki-i-z-i (StBoT 25, No 43 IV 3), prt. 3 sg. zi-ki-i-z-i (KBo 22.2 Vs. 3).
68 Cf. a more cautious statement in StBoT 26: 218, Anm. 640, also ibid.: 85, Anm. 928.
69 For line 16 the following emendation is possible: [MAR:\G[J]D\D.A\D.)\D.IM-aš ZAG-aš dāša] "She [set]s the heavy [carriage] of clay to the right".

70 Hitt. škakar 'excrement' and šaknuwant- 'defiled' are to be separated from word šagan (or šagana-n) n., gen. šagan 'oil', šaknuwant- 'oily'—see Hoffner, op. cit. In particular, all the alleged OS attestations of škakar 'excrement' in OS texts are best regarded as belonging to šagan 'oil'.
71 Both KBo 1.45 and KUB 13.4+ are NS.
72 šagan=, aššiš is tatturūša, not karmadhāraya (pace Tischler // IK 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. /tšakar/ (< *škhr, according to Puhvel). The same zero grade is represented in Grk. oxýp (see below).
74 For graphemics cf. zikh(k)- /tšk-/* 'to put' (above, 4.2).
seems to be more regular in Palaic (AHP: 194). In Hittite a phonetically similar development */nus*/ */nts/ is attested also in secondary contact (AHP: 121). We assume that /ts/ in zaƙkar-ai is phonetically motivated, but we cannot say whether this process is regular or sporadic. In any case, CHD’s analysis of zaƙkar- as “partially reduplicated form of zaƙkar” seems to be less convincing (CHD, Š: 41a).

The Hittite šiƙkar is closely paralleled by Grk. σκόρ, gen. σκατός ‘excrement’, which, however, cannot be considered as an evidence for the zero grade in Hittite zaƙkar: cf. Hitt. wóddar, wódenai — Grk. ὕδωρ, ὑδατος ‘water’ (see Frisk, I: 746; Schindler // BSL 70 (1975): 1–10).

◊ A less sure cognate is Av. sairia- ‘excrement’ that can be alternatively connected with Slav. *svrati, sery ‘cicare’ (Fasmer, III: 740).

ON skarn, OE scearn ‘id.’ etc. probably represent an archaic derivative of Germ. *skaro- ‘to cut, etc.’ (see FT, II: 986). Cf. a stem without -mobile, which was specialized with a different meaning: OHG kar(a)n; ‘urine’, NHG Harn ‘id.’ (Klug EWDS21: 290). The semantic shift, however, remains unclear.

The late Skr. (only apud grammarians and lexicographers) aca-skara-h, apa-skara-h ‘die Excrements, etc.’ (BR, I: 493, 296) is most likely connected with kirati ‘pours out, spreads, throws’ (see KEWA, I: 38).


Not related here are Skr. cák₁-t-, cák-dh (V.) ‘excrement’, Grk. κόπρος (E.) ‘id.’: IE *kákro- (C/N).

§ 5. DISPUTED CASES OF INITIAL CONSONANT CLUSTERS IN HITTITE

5.1. IE disyllabic stems or unusual consonant clusters. Except for a number of ambiguous 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.² ha-aš-te-ir-xa (see Otten — von Soden, StBoT 7: 40; HED, III: 238–239; Rieken, StBoT 44: 281 ff.). In the opinion of many scholars, the final -za represents the nom. masc. ending; details, however, remain unclear. For toponymic material see HED.


Grk. δύστροφος, gen. δύστρας, gen. pl. δύστρας (Hom.; later δύστρας), etc.; Arm. ast ‘star’.

Skt. instr. pl. sthrhis (RV);

Goth. starmiód ‘id.’, etc.

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

5.2. Borrowed or dialectal words

5.2.1. šabašija- ‘spáhlen’, šabasali- ‘Spáher’ (only MS)²⁸; written ša-pa-².

◊ The direct relation of this form to IE *spék- ‘spáhen’ (WP, II: 659–660, Pok.: 984–985) faces several difficulties:

1) The unusual voicing IE *p > Hit. -b-;

2) The abnormal palatalisation IE *k > Hit. -j-;

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

5.2.2. (URUDU)šišt/a/abikkusta- ‘pin, etc. (?)’ (MS+²⁸); written še-pi-², ši-pi-², ša-pi-², ša-a-pi-²—see forms and discussion in Beckman, StBoT 29: 63 ff., with lit.

◊ The comparison with Lat. spíca ‘ear of corn’ (thus Poetto // Spr. 32/1 (1986): 52–53) or with any other IE root of this shape is frustrating morphologically.

²⁸ Nom.-acc. is virtually always written plene: ka-ra-a-wa-ar.

²⁷ For OS attestations see StBoT 26: 92.

²⁹ Certain doubts about this etymology are expressed by Clackson 1994: 220, with lit.

²⁸ For the comprehensive textual information about these lexemes see Alp // F.Otten (1988): 1 ff., also HBM: 399, 400. See now CHD, Š: 204 f. with the reading ša-pa-sha-ar (coll.) instead of Alp’s ša-ša-sha-ar.

²⁰ MS: gen. sg. URUDUše-pi-šu-šu-ša-šu (KUB 24.4 + 1 13).

²¹ ša-a-pi-šu-šu-ša-šu KUB 58.100 II 1 (text: TA-a-pi-...).
since the suffix -(Ṿ)sta- suffix remains unexplained. 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-pi̯², še-pi̯², ši̯-pi̯² does not necessarily imply the usage of signs ŠA, ŠE, ŠI as spelling variants for /sCi/. This might as well reflect a real vocalic alternation (cf. esp. plane-writing ša'-a-pi̯-šu-ur-ša-). Synchronic free variation is frequent in recently borrowed words.

5.2.3. zamankur/zamagur n. 'beard', šamankurwanto- 'bearded' (rare words); written la-na-² and ša-ma-².

◊ This word undoubtedly continues IE *smöləkr̥- 'chin, beard' (WP, II: 689; Pok.: 968): Skr. smāātṛu n. (V+; with assimilation from *smāāru), Arm. māwru-k', mawru-k', Lith. smokras (4), Latv. smakrs, smakris (for the cases of IE ʰk > Balt. k see Stang, Vergl.Gr.: 91 ff.), Alb. mjrke (< *smekr̥-a, Orel, AED: 269). Yet the direct connection between /zama(n)wur- and IE *smokr̥(u) stumble upon several difficulties:

1) The double reflex of IE *s- > Hitt. ẑ- /-š-.
2) The presenatalisation of the velar -k̥- in Hittite (the forms without presenatalisation display the irregular change IE ʰk > Hitt. -g-).

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 Anlaufschriften sind wir in der Hauptsache auf Vermutungen angewiesen", goes on suggesting the pronunciation /трияла/- 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 /šsC̣-/ of words beginning with šš-CV-

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88 Oettinger // ZDMG 131 (1981): 387 suggests *-Vš-to, as in Lat. rob-ar-tus, kon-er-tus, etc. Note, however, that there is no productive suffix -šš- in Hittite. In addition, šabš-ur-ta- would have been formed from an -šš stem, a type not known outside Indo-Iranian.

89 Cf. the balanced discussion of this phenomenon in Melchert AHP: 172.

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The data analyzed in § 2 allow us to postulate with a sufficient degree of probability that the words of type šaliğ- (i.e. all Hittite words beginning with *ššCR-) contain a synchronical anaptyctic vowel between *ššC- and -R- in Hittite. We will tentatively transcribe this vowel as /šš/, thus ša-li-ğa is phonetically /ššaliga/ and not /ššiga/. The following facts support our hypothesis:

1) A number of words with the initial non-ablativus *ššCR are occasionally written with scriptio plena of a vowel after the first consonant in Late Hittite (CV₁-V₂-RV₂). This words are: kára-ib- 'to devour' (§ 2.6; more frequently karáib-), kárru 1x (§ 2.7; very frequently karru), šaliğ- 'to touch, defile' (§ 2.8; more frequently šaliğ-, ša-reb- 'to sip' (§ 2.9; more frequently ša-reb-), haliya- 'to kneel' (§ 2.11; more frequently haliya-). 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', *ex*teripp- 'ploughed field' (§ 2.5). Pron. poss. 3 pl. -zemal- is spelled as -zemet (side by side with -zemet; § 2.10). Cf. also once kirelt- 'deluge' (side by side with usual karitt-; § 2.5), and once kirib- 'devour' (side by side with usual karitib-; § 2.6). Here the anaptyctic /e/ is, with all probability, influenced by the following front vowel and becomes phonetically /œ/. This solution is preferable to the postulation of the early anaptyctic /ie/, 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 *zemal- 'theirs' (poss. 3 pl.) and *zemal- 'you' (dat., acc. 2 pl.). Examples from OS: a-as-su-u-ša-me-ši (aššu + *šmet); na-aš-ta-ša-šaš (natta + *šmaš); nam-ma-ma-aš-ša-šaš (nammma + 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 salig- 'to touch, defile' (§ 2.8) and halaja- (§ 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/). Yet positing the initial cluster without anaptyxis in this case (cf. Kavikşaya 1999, and discussion below, § 7) would entail even more problems: then one would have to explain why the word is written salig- and not **istalig-. The explanation is easily available, if one shares the view of Kavikşaya 1999.

64 Forms like NH. li-im-ik-ta 'he swore' can be regarded as a compromise between the OH spelling li-im-ta and the NH pronunciation /link(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.

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

66 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 *#C- (C ≠ R)

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

1) Words with initial *#C- are never written eC-C' instead of iC-C'. On the contrary, the graphic variation iS ~ ES is frequent, where the vowel is etymological. Nine words with initial *#C- represent a uniquely stable case in Hittite graphemics, where the rare to frequent variation of signs IS ~ ES is otherwise observed.

2) Among the numerous occurrences of the lexemes with initial *#C-, considered in § 3, there is not a single case of the scriptio plena **iC-C'. Cf. sporadic plene in the first written vowels of the words with *#C- treated above or doublets like immiya- vs immiya- 'to mix' or ippiya- vs ippiya- 'vine', where the etymological vowel in the first syllable is sporadically written plene.

3) The verb *spond-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 is-pa-(a)-an- and is-pa-(a)-an- (with the rare variant si-ip-pa-(a)-an-). The statistics of different variants in OH/OS texts is given below.

66 Cf. ısha- (usually) vs ısha- (rarely, late) 'lord' (< *esHo-: Lat. res 'id.', OLat. fem. esa), some other examples and discussions about the sign ES in Hitt. orthography see Kassian, Zb 100 ff.

67 Cf. however, the unique case of KUB 6.46 I 39 (NS inv. 3 pl. i-il-ta-ma-maš-la-an-du 'let them hear', normally istamass- 'hear'. Most probably, this is an error of a negligent scribe (cf. the omission of the sign AN). The word istamass- 'hear' is usually compared with Luw. tumma-ass- 'ear', tummatyria- 'to hear' (phonetics and morphology are not clear), but does not have a convincing etymology beyond Anatolian.

68 The virtual absence of Hittite words beginning with *eC-C' and dubious cases) makes it impossible to trace occasional plene spellings iC-C' as C.C'.

69 Note that the writing is-pa-an- is not phonetic a priori, since in such a case we would have to transcribe this form as *išan(a), which is impossible.

The variant si-ip-pa-(a)-an- is attested from MS on. We know the following MS attestations (the last part of them was kindly provided by A. V. Sided'tsev ): KBO 21.85+ 1V 12', 14', 19', 26', 27' 5i-ip-pa-an-ti (note, however, that usual for this text is the spelling si-ip-pa-(a)-an-; passim); KBO 54.199 (40) 30.325 2', 6' 5i-ip-pa-an-ti (cf. ibid. 8' si-pa-an-ti); see Grodek // AoF 27/2 (2000): 360–361(360–361); KUB 54.128 Vs. 12' 5i-ip-pa-an-ti.

70 See Kassian, below, p. 101 – 102 for the list of OH attestations of the root *spond-...
As one can see, in the case of two forms the writing ǧi-pa² is prevalent, but in all other cases the only attested writing is ǧi-pa². This fact can be explained (see KASSIAN 2000) if we take into consideration the quasi-homonymous lexeme ǧipant- 'night', which is also attested since Old Hittite. The writing ǧi-pa² of the verb ǧipant- is used only in those forms that can be graphically confused with some forms of the noun ǧipant-. Thus 3 sg. prs. ǧišipant- 'he/she libates' is homonymous with dat. sg. ǧipant- 'in the night'⁹¹ and 3 pl. prs. ǧišipantzani 'they libate' is very similar to abl. sg/pl. ǧipantaz, ǧipantaza, ǧipantanza²⁹ 'from the night(s)' ⁹³.

⁹¹ A case where the form ǧipant- '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 märün ĽČ-NARINA Ė Pınar ǧipant- NINDA haršaš partija ta iiššu mātli hattili.

⁹² It is frequently maintained that abl. in -anza is late, but cf. OS KBo 8.42 Vs. 2 lu-ušta-an-za u-ai-ki-iz-zi 'he looks through the window'.

⁹³ Another similar example may be available from KUB 30.42 + KBo 31.8 I 7 ña-pa-an-ta-al-la-ma DUB 1 KAM ḫurru anda Ėl haddu, which is translated by Laroche (CTh: 162) 'mais les premières tablettes šapantalla (= de libation ?) ne sont pas en ordre (3) analogiquement laroche // FsHrozény, II (1949): 16. If the translation is correct then the hapax adjective šapantalla /pertaining to libation/ may have been written with graphic anaptyxis to avoid confusion with Hitt. subst. **šapantali /night quarters (vel sim.)/ that lurks in iš-pā-ta-tu '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

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". The sonority hierarchy is roughly assumed to be as follows: vowels > resonants > fricatives > stops. The roughly peak is usually a vowel, less frequently a syllabic resonant.

It is easy to see that the syllabic onset /stɑ-/ violates SSG, whereas the syllabic onset /tra-/ does not. Languages vary with respect to their tolerance 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 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 tak_~ > takš- '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. 9, 5 pl. pr. tāk-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 huk-~? subst. verb. gen. hulšanu vs. imp. 3 pl. hu-te-ik-iš-kān-du, hu-u-te-ik-iš-kān-du KUB 31.100 Vs. 9, 11' (NS, but with archaic traits—Košak // EsCop (1993): 107 ff.).

Since Kavitskaya herself apparently does not consider this root as a strong example, we can safely proceed to the other two examples.

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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.


96 In our opinion, the interpretation of hatk- as a variant stem of hakt- '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: -sk- after a stem which ends in a sonorant, -isk- 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 /sk/ formations derived from athematic stems that are attested in OS texts, as well as a number of MS attestations. 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'—azazhe-azzahe::imp. az-za-ki-tin HBM 17 Rs. 43 (MS); azzihe-::prss. az-zi-ik-kān-zi KUB 29.45 Vs I 10' (MS)
dai-hi 'to put, place' (cf. above, §4.2)—saihe-::prss. za-aš-ki-i zi StBoT 25, No 137 III 15' (OS); zige-::prss. zi-ki-i zi KBo 15.10+ II 25 (MS), prss. zi-ki-e-š KBo 22.2 Vs. 3 (OS or MS); zikke-::prss. zi-ik-ki-i zi StBoT 25, No 45 IV 3' (OS), zi-ik-[i]-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 n-:

išpi-mi 'to libate'—ispianzhe-::prss. iš-pa-an-za-aš-ki-i-[i]-zi StBoT 25, No 66 I 3' (OS); ispianzhe-::prss. [iš-pa-a]n-za-kān-zi StBoT 25, No 104 II 18' (OS or MS), imp. ši-pa-an-za-kān-du KUB 40.56 + KUB 31.88+ Rs III 7, 12' (MS).

Stems in rt-:

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

Stems in n-, rm-:

cēšan- 'to cover with blood'—ēšišhehe-::part. e-eš-ha-aš-ĝ , iš-ha-as-š (OS)—see Kassian, below, p. 91.

kurom-mi 'to kill'—kurušhe-::prss. ku-wa-aš-ki-zi KBo 23.4 + KUB 33.66+ III 2 (MS); prss. ku-wa-aš-ki-ir KUB 40.56 + KUB 31.88+ III 17 (MS).

tarma(m)-mi ('to let off')—taršišhe-::prss. tar-ši-ki-i-li-te-ni KUB 23.72+ Rs. 41 (MS); taršike-::prss. 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. Sidelev or taken from his unpublished PhD dissertation devoted to the semantics of /sk/- verbs in Middle Hittite (Moscow, 1999). We are grateful to him for this help. For other archaic /sk/-forms with discussion see Otten // FsMeriggi (1979): 493 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 n-:

\( sanh^-\text{mi} \) 'to seek'—\( sanhiške^-\text{e} \): prs. \( sa-an-hi-š-ki-u-e-ni \) KBO 22.2 Vs. 14 (OS or MS), \( sa-an-hi-š-ka-te-\text{mi} \) KBO 22.1 Rs. 25' (OS)

Stems in r-:

\( parh^-\text{mi} \) 'to chase, expel'—\( parhiške^-\text{e} \): imp. \( pār-hi-š-ki-\text{en} \) KUB 40.56 + KUB 31.88 + Rs II 8', 9' (MS)

Stems in š-:

\( ašaš^-\text{hi} \) 'to sit down for a time'—\( ašaške^-\text{e} \): prs. \( a-ša-š-ki-\text{en} \) StBoT 25, No 3 1-I 6' (OS)

Stems in rš-:

\( karš^-\text{mi} \) 'to cut off'—\( karaške^-\text{e} \): prs. \( ka-ras-š-ki-\text{en} \) HBM 54 0.Rd. 28 (MS)99

Stems in k-, g-:

\( huer^-\text{mi} \) 'to charm, say an incantation'—\( huksiške^-\text{e} \): prs. \( hu-uk-ki-š-ki-\text{en} \) 1BoT 1.36 II 46 (MS)

Stems in nk-, ng-

\( henk^-\text{mi} \) 'to make a gift of, etc.'—\( hinkške^-\text{e} \): prs. \( hi-in-ga-š-ka-\text{en} \) StBoT 25, No 54 1 13 (OS); \( hinkške^-\text{e} \): prs. \( hi-in-ki-š-ki-\text{en} \) KUB 35.54 II 18 (MS)

Stems in šk-

\( tuššk^-\text{mi} \) 'to swear'—\( tuššike^-\text{e} \): prs. \( du-šš-k-š-ki-\text{en} \) HBM 37 Rs. 2' (MS)

Stems in hš-:

\( manijahš^-\text{hi} \) 'to hand over; to administer'—\( manijahišške^-\text{e} \): prs. med. \( ma-ni-ah-hi-š-ka-ta-\text{en} \) KBO 8.42 Rs. 12 (OS)

Stems in šk-

\( wadarnašš^-\text{hi} \) 'to befehlen'—\( wadarnašške^-\text{e} \): prt. \( wa-tar-na-ah-hi-š-ki-nun \) HBM 36 Rs. 43, 8 1.Rd. 2 (MS)

\( zahš^-\text{mi} \) 'to slay'—\( zahšške^-\text{e} \): prs. \( za-ah-hi-š-ka-ta \) StBoT 25, No 54 II 16' (OS)

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

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

1) Parallel spellings for /-Csk/- or /šsk/, like azagge- ~ azikke-, zaške- ~ zikke-, španasške- ~ španagge- ~ štarške- ~ štarške-


3) The writing of -šk- without the doubling of k in nazagge-, huragge-, španagge- and štarške- (from tarm(a)- and tar-), zige-. These forms frequently appear to be in free variation with those with double spelling kk: zige- ~ zikke-, štarške- ~ štarške-. The interpretation zige- and zikke- as /zige/- and /zikke/- respectively with the free variation /g/ ~ /kk/ would be quite odd.

Stems in (C)s-, (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: appšške- from appš-, manijahšške- from manijahš- etc.

3) The consistent writing of -šk/- as -šk-, not as -šk-.101

Note. The OS spelling hinkške- (1x), as opposed to the regular MS spelling hinkiške- is unexplainable. hi-in-ga-š-ka-ta, to our knowledge, is the only form in the MS and CMS corpus of texts where the iter.-distr. suffix appears as -šk-, not šk- or ššk-102.

99 5 sg. prs. \( karš^-\text{e} \) KUB XLV 60 III 8, 12, 13 (NS?), quoted in Kavitskaya 1999: 60, is probably formed from a parallel stem karšš-ja-. (this stem is attested already in OS).

100 /karšškš/, not **/karšškš/ for which the spelling **ka-ra-aš-š-ki-š would be expected. The same, mutatis mutandke, is valid for pa-ap-pa-ar-š-ki-š-ki.

101 Cf. NS distributives tar-Vh-hi-š-š-k*, tar-Vh-hi-š-š-k* and tar-Vh-hi-š-š-k* from the root tar(a)- '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-š-ka-ta was apparently /hinKaskantsš/, not /hinKaskantsš/. **/hinKaskantsš/ without the loss of -n- is scarcely probable.
Thus our conclusions about the morphology of the iter.-distr. suffix -ik-, are almost the same as to those of Oettinger (Stamm. § 190 ff.).

7.1.3. Preterit -s. D. Kavitayskaya writes: "The formation of the preterite third (or second) singular for verbs belonging to the -ši conjugation further exemplifies the process of -i- ephenthesis" (Kavitayskaya 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' — akkiš KBo 6.2+ IV 3 (OS), akkiš KBo 3.46 Vs. II 48' (NS), aggaš VBoT 1 24' (MS); ar-, hi 'to come' — a-araš KBo 22.2 Rs. 7 (OS or MS), a-araš (MS+); ar-araš in latter texts (see HED, I: 109);

edmi 'to eat' — ezasaš 1BoT 1.33 18 (NS+);

harnikşi, mihi 'to tie' — harnikski Bo 3453 II 10; harnikša KUB 19.90 I 1' (NS);

išyah, hi(mi) 'to make disappear, etc.' — harnikša KUB 19.90 I 1' (NS);

išyah, hi(mi) 'to denote; to trace down' — išihaš KUB 36.104 Vs. 11' (OS), KBo 3.41 13' (NS);

iškunahš, hi 'to mark, stain' — iškunahši KUB 1.16 III 42 (NS);

išpand, hi 'to libate' — išpandaš KBo 15.10+ III 59', 64' et passim (MS);

išparš, mihi 'to escape' — išparšš KUB 23.93 III 15 (NS);

ištapahš, hi(mi) 'to shut, block' — ištapahš KUB 1.8 IV 2, KUB 33.106 III 38, KBo 3.6 III 57 (all NS);

karaž, hi 'to devour' — karaž KUB 5.7 Vs. 34 (NS+), karaž KUB 9.114 13 (MS);

mamminkuwaš, hi 'to draw near' — mamminkuwaš KBo 32.14 Rs. 42 (MS);

ninikša, mi 'to move, etc.' — ninikša KUB 53.15 IV 30, 33 (NS+);

parš, mi(mi) 'to chase, expel' — paršš KBO 16.36 III 13 (NS);

šaligš, mihi 'to touch, defile' — šaligš KUB 33.120+ 1 23 (NS);

šelakš, hi 'to know' — šelakš KBO 3.60 I 3 (NS);

wadarnahš, hi 'befehlen' — wadarnahši KBO 3.38 Vs. 23' (NS);

wagš, hi 'to bite' — wagš KUB 33.120+ 1 25 (NS), wagš KUB 18.11 II 9 (NS+).

Note that most of these forms are taken from NS texts. Archaic forms are:

OS: akšiš, arša (or MS) and išahšiš; MS: aggaš, karipaš, mamminkuwaš, šaligš and šepandaš.

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

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 harkinkši ‘to make disappear’. The form harkinkša could be interpreted as /harkinsa/ 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 harkinta, and the signs ŠA and TA are very similar.

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

To start with, let us notice some important differences between the forms ending in -Ca-al and -Ci-š. The forms in -Ca-al usually do not show the expected sandhi: cf. hamingaš and niningaš without the loss of -n- in *ninkši, šipandaš (MS) without /t-s/ > /ts-/, also karipaš / karipašš (MS), šalikaš (MS), waqš without the devoicing of stem-final consonants. The form išparšš is likely to be based on the secondary stem išparš-, which is more frequent than its primary counterpart išpar- (see citations in HED, II: 447); The form eššaš can be formally explained by the same way, even though the suppletion of the secondary stem ē- vs. ed- is less productive. Alternatively, eššaš can be interpreted as /ešš/ with /t-s/ > /ts-/. On the contrary, forms in -Ci-š show the expected sandhi: wašši with the devoicing /g/ > /k/ (the pair wašši vs. waqš is especially instructive).

Prt. 3 sg. forms in -aš. We are convinced that -Ca-al in these forms must be interpreted as /Cas/, i.e. the spelling -Ca-al 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-araš from ar, hi 'to come');
3) The consistent spelling -VC (i.e. -aš), as opposed to the alteration VC ~ CV. Cf. ŠA in a-araš (1x, OS) from ar, hi 'to come' (cf. also harkiska (1x, NS) from harkinkši 'to make disappear' above).

Prt. 3 sg. forms in -iš. It would seem that, in contrast to the writing -Ca-al for /Cas/, the writing -Ci-š is to be interpreted as /Ci-š/. Beside consonant sandhi forms in -Ci-š, the usage of the sign ĠS to render word-initial #S-clusters (§ 6.3) would support this interpretation. Yet other arguments make us opt for the reading /Ci-š/ 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. šasškiš from šasškiš, šasškiš from šewakšiš, waššiš from waššiš; also wašši from wawg- with devoicing. In consonant clusters, however, Sturtevant’s rule was never thoroughly observed.

Stems ak(-k) (akkiš) and ištapahš (ištapahšiš) 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) Athetic 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) Athetic stems in stops and fricatives originally also attached prt. 3 sg. ending /s/ without anaptyxis. This can been proven by the fact that they participated in sandhi typical for consonant clusters e.g. *sahs < *sanh-s, *wahs < *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 vocal reserve included only verbal stems ending in velars and "laryngeals" e.g. OS dikkiš /akkis/ < *aks < *ak/g-s, ši̇ahhiš /işahhiš/ < *isahs < *işa/iš-s.

c) Prt. 3 sg. forms in -aš derived from athetic 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 ᵐi²parazak and ᵐi²zaš). The most ancient forms in -Ca-š belong to MS texts (aqaš, karqapaš, mannikwašaš, šipandas, 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 transposed to the athetic conjugation, thus šipandas šašišaš from šipandišiš to šipandišišiš to libate’ like waslas from waslas to sin. The fact that, unlike the ši 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 athetic verbs. In the case of Hittite stems in labial and dental stops, the original 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 ter./dist. -šk/-išk (§ 7.1.2) and prt. 3 sg. -šl/-iš (§ 7.1.3). Stems in resonants attach -šk and -s, stems in k, g, h attach -išk and -is. The attachment of both suffixes triggers the devoicing of stem-final stops e.g. /g/> /kk/ in hu-uk-šiš-k-iš-iš-si and wa-ak-šiš. There is also one important difference. SA ša-a-hišiš 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, šankaške 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 papparskipiži can be contrasted with ša-an-hiš-ki-u-e-ni. One has to explain why /sanš/-/+/-sk/- requires anaptyxis, whereas /paparš/- + /-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 → /-s / + [+stop]) before the rule of anaptyxis to account for the cases like šipanzakzišižiš 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, šipanzakzišižiši contains a legitimate sequence /-anšš-k/107, whereas in the case of sanshiškiši the prohibited sequence */-anššk/-, containing a plateau */hs/, is broken by anaptyxis: /-anššk/- → /-anššk/ek/-s. 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 /arhaškalzanzi/ ‘they split in two’ can be syllabified just as well as /daskanz/ ‘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 prosthesis in Anatolian Greek (see Dressler / Balkansko ezikoznanje, 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-initial position. It is also important to remember that very few Hittite words end in /-P#/, /-K#/ or /-I#/ (Melcher 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 suvarabakši (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.108

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 /aG/ 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 initial 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 Dagestan, 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 CVCCV, that of verbal roots is either CV or CVC.111 The usual maximal syllable in modern languages is CVRC (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 ων(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.

The Reflexes of IE Initial Clusters in Hittite

<table>
<thead>
<tr>
<th>Proto-Nakh</th>
<th>Batsbi</th>
<th>Chechen</th>
<th>Ingush</th>
</tr>
</thead>
<tbody>
<tr>
<td>*ps-</td>
<td>ps-</td>
<td>s-</td>
<td>s-</td>
</tr>
<tr>
<td>*ps-</td>
<td>ps-</td>
<td>s-</td>
<td>s-</td>
</tr>
<tr>
<td>*p'x-</td>
<td>p'x-</td>
<td>p'x-</td>
<td>p'x-</td>
</tr>
<tr>
<td>*st-</td>
<td>st-</td>
<td>st-</td>
<td>s-</td>
</tr>
<tr>
<td>*st-</td>
<td>st-</td>
<td>st-</td>
<td>s-</td>
</tr>
<tr>
<td>*s'p'x-</td>
<td>s'p'x-</td>
<td>s'p'x-</td>
<td>s'p'x-</td>
</tr>
<tr>
<td>*pst-</td>
<td>pst-</td>
<td>st-</td>
<td>s-</td>
</tr>
</tbody>
</table>

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 initial 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 /t/, we will try compare the behavior of the consonant clusters /Cr/ and /sCr/ 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-/*#/k/", S. Nikolaev and I reconstruct only initial combinations with laryngeals */#/HC-/*#/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. sternap < Russ. стерная 'crossbeam' with the preservation of initial /#/st-/ vs. Chech. purstap < Russ. пристапа '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. əbəṙ 'brother'; Skt. bhratār- 'id.' etc.
2) Arm. əlzvar 'sprig; fountain'; Gk. φρέαρ 'id.'
3) (? Arm. ələzvar 'horn'; Hitt. k(a)ravar 'id.'
4) Arm. ərtaur 'tear'; OGH trahan 'id.' (dialectic IE *drakou- < *dakru-).
5) Arm. kariki 'hail' < *ga-rośdV-: OCS ḥ毛主席, Russ. ēpol 'id.' 119
6) Arm. sərb 'pure, saint'; Skt. gubhṛā- 'pure, brilliant' 120.
7) Arm. mər 'near'; Gk. καζτ '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/ was 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. sstër 'sterile'; Gk. στερπα 'id.'
2) Arm. stın 'female breast'; Av. štāna- 'id.'
3) Arm. stəwar 'thick'; Ved. sthūtā- '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/->/C/ 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 Caucasus 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 o 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. ārəd < Ir. *brətar- 'brother';
2) Oss. ārəy < Ir. *brəka- 'brow';
3) Oss. ārtə < Ir. *brəya- 'three';
4) Oss. āryə < Ir. *gri,- graya- 'clay';
5) Oss. calx < Ir. *caxra- 'wheel';
6) Oss wyrd < Ir. *uorda- '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 influenced by substrate influences in many cases. The examples that illustrate its preservation in East Ossetic are:

1) ʃk资源优势 'to drive' < Ir. *škar- 'id.' (NPers. škardin 'to hunt' etc.);
2) stər 'bull' < Ir. *səraw 'pack animal (?)', cf. Engl. steer;
3) stän 'male dog' < Ir. *șeana- 'help' (cf. Pol. szczenie, Czech štěně 'id.'). 124

7.2.4. Conclusions. The example of two very different Indo-European languages 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 A6aena.
123 Several examples 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/ in all positions. For initial position cf. the situation in Nakh, § 7.2.1.
125 For other isoglosses between Armenian and Ossetic see A6aena 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 */#C-/R/. At the same time the initial group */#S-/* 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 millennium BC) on Hittite and other Anatolian languages manifests itself on all levels of language organization. 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 initial cluster */#C-/R/ in Hittite, on the one hand, and in Armenian and Ossetic, on the other hand, are connected with the different treatment 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 */#C-/R/*> */#RC/> */#CVR/*, Hittite eliminates this cluster through the natural anaptyxis */#C/> */#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.

138 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.

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. Currub’s “Plenenschreibung und Betonung im Hethitischen” (KZ 95/2 (1981): 232—248). 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 Stamm- bildung 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

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—


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