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Initial **sp-* in Hittite and *šip(p)and-* ‘to libate’ *

The Proto-Indo-European source of Hittite *šip(p)and-* ‘to libate’ has been the subject of much discussion, due to its implications for the treatment of initial clusters of sibilant plus stop in Hittite and potential implications for the much larger question of the status of the verbal category of the “perfect” in Anatolian: was the perfect, which in the oldest non-Anatolian IE languages expresses an attained state, inherited also in Anatolian and lost there, or is it an “Indo-Hittite” feature, i.e., a common innovation of “Core Indo-European”? Derivation of *šip(p)and-* from a PIE reduplicated perfect **s(p)e-spónd-* has justifiably been rejected on formal and functional grounds, but improvements in our understanding of the outcome of PIE **sp-* in Hittite, as well as recent innovative proposals regarding the phonology of reduplication and its status in PIE verbal morphology call for a reconsideration of the issue.

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At the colloquium honoring Holger Pedersen in Copenhagen in 1992, Bernhard Forssman proposed that the Hittite stem *šipand-* ‘libate; consecrate; offer’ reflects a PIE reduplicated perfect stem **spe-spónd-*, while its rarer OH variant *išpand-* continues a root present (published as Forssman 1994). This account was not favorably received by the Anatolian specialists present upon its initial presentation, and it has subsequently with rare exceptions met mostly with rejection: e.g., Kassian and Yakubovich 2002: 34–5; Jasanoff 2003: 78, note 39; Tischler 2006: 1058 (with further literature); Kloekhorst 2008: 405; and Yakubovich 2009. Positive endorsements known to me are by Schulze-Thulin (2001: 384), LIV₂: 577, and Hoffner and Melchert (2008: 27), the last of which elicited a renewed rejection by Yakubovich (2010a: 151).

All of those who have rejected Forssman’s derivation of *šipand-* have explicitly or implicitly assumed that *šipand-* and *išpand-* represent alternate spellings of a preserved initial cluster /*sp-*/. This was also the interpretation I adopted in Melchert 1994: 31–2, although with considerable misgivings. We have learned a great deal more about the fate of initial **sp-* in Hittite in the last twenty years, and I have for some time believed that the gist of Forssman’s account of *šipand-* must be correct (hence the cautious reference in Hoffner and Melchert 2008: 27), but still outstanding formal and functional problems that I could not solve prevented me from asserting this in print. The time has now come for a complete review of the matter.

As has never been disputed, the development in Hittite of initial sequences of **st-* and **sk-* is consistently *išt-* and *išk-* respectively: *ištantā(i)-* ‘linger, be late’ < **steh*₂- ‘stand’, *ištu(wa)-* ‘be-

* I am much indebted to Jay Jasanoff for making available to me the text of his forthcoming paper on the PIE perfect in advance of its formal publication and to Ryan Sandell and Sam Zukoff for extensive advice regarding the history of reduplication patterns. The standard disclaimer applies here with particular force, and I am solely responsible for any errors in the application of these authors’ views to the case at hand.

come known' < **steu-*, *iškalla-* 'slit, tear' < **skelH-*, *iškar-* 'prick, stick' < **sker-*. This is also the most common result for **sp-*: *išpai-* 'be satiated' < **speh₁(i)-*, *išpant-* 'night' < *(*k^w*)*sp-ént-*, *išpar-* 'spread out, strew' < **sper-*, *išparre-* 'kick, trample' < **sperH-* (on separation of the last two see Kloekhorst 2008: 406–9), *išpart-* 'escape' < **sperdh-*.

However, we now have solid evidence for two additional though rare outcomes of **sp-*. The first is preservation as /*sp-*/, where the presence of a synchronic cluster is crucially indicated by *alternate* spellings with *ša-*, *še-*, *ši-*: *šale/ipe/ikkušta-* /*spe/ikusta-*/ 'pin, needle' (see now CHD Š: 397 for attestations). As seen by Poetto (1986: 52–3), Neumann (1987: 282), and Kimball (1999: 108–9), this word clearly reflects a virtual **sp(e)ik-us-to-* to the enlarged root **speig/k-* 'sharp, pointed' seen in English 'spike', Latin *spīca* 'ear (of grain)', etc. The second rare result is anaptyxis of a vowel *u*: *šuppištuwara-* 'adorned with appliqués, decorations', *šuppištuwari-* 'appliqué, decoration'. The meaning is now assured by the occurrence of the *i*-stem noun in the Hurro-Hittite Bilingual, KBo 32.14 ii 43 (see Neu 1996: 81 and 146). However, the popular etymology (already Neu 1970: 68) as a compound 'brightly shining', allegedly consisting of *šuppi-* 'ritually pure' and *ištu(wa)-* 'become known' makes no sense whatsoever either semantically or formally. Hittite *šuppi-* means 'ritually pure', and there is *no basis* of any kind for a sense 'shining'. Nor is the role of the purported second member 'become known' in a compound allegedly meaning 'brightly shining' explained (see the justified doubts of Kloekhorst 2008: 791).¹ This derivation also cannot account for the alternate form *išpišduwaraš* in KUB 42.64 Vo 2, which cannot be dismissed as a scribal error, since *iš-piš-du-wa-ra-* does not remotely resemble *šu-up-pí-iš-tu-wa-ra-* visually or aurally.

The decorations attached to a copper cup (thus in the bilingual) and the gold and silver adornments added to clothing may well have been shiny (for the latter see refs. in Tischler 2006: 1198), but they were also more fundamentally stuck or stitched onto their respective objects.² We are thus surely dealing with a derivative of a different form of the PIE root **spei-* 'pointed, sharp' seen already above in /*spe/ikusta-*/: the sense of /*supistwara-*/ was 'appliquéd', decorated with something 'stuck on' (for the semantics compare the history of English 'stick' and 'stitch' and German *stechen*). Note, however, that at least one Hittite speaker knew this word in a form with the regular treatment of **sp-* as *išp-*.

I had already recognized the existence of these two examples in Melchert 1994: 32, but found them as exceptional and inexplicable as *šipand-*. It is now clear, at least to me, that these forms do fit into a well-known Hittite pattern: they show the two regular results of prehistoric **sm-*: (1) preservation; (2) *u*-anaptyxis. The first treatment is shown by Hittite *šale-me-en-zi*, *šam-na-an-zi* 'withdraw; relinquish' where (*pace* Kassian and Yakubovich 2002: 12) the alternate spelling of the singular stem clearly shows synchronic /*smen-*/ (thus with Oettinger 1979: 104, Kimball 1999: 117, and CHD Š: 120), in an ablauting root present **smén-*, **smn-énti*, even if the root etymology remains uncertain (thus also Kloekhorst 2008: 714–15).

There are now three examples for the treatment with anaptyctic *-u-*, which is quite real (*contra* Kloekhorst 2008: 782–5):

- (1) *šummittant-* 'axe' < virtual **smit-ént-* '(the) cutting (one)' (already Knobloch 1956: 67, Kimball 1999: 199 et al.);

¹ As per Kloekhorst (2008: 790), despite its clear behavior as an inherited word — an ablauting adjective — Hittite *šuppi-* 'ritually pure' has no clear cognates or etymology. Unfortunately, the attractive comparison with Umbrian *sopa/supa* and interpretation as 'taboo' (Watkins 1975) is very doubtful: see the extended critique by Weiss (2010: 358–83).

² I know of no basis for the meaning 'animal representation or icon (usually of metal)' adopted by Yakubovich (2009: 548, note 5). In any case, the word definitely does not contain *šuppi-* 'ritually pure'.

- (2) *šum(m)um(m)ahḫ-* ‘unite, make one’ < *sm- ‘one’ + -uman- ‘belonging to’ + factitive -ahḫ- (Rieken 2000: 174, modified by Hoffner and Melchert 2008: 60);³
- (3) first plural enclitic possessive -šumma/i- < *s-mé- < aphaeresized *ḡs-mé- (Rieken 2002: 414–15).⁴

As emphasized by Rieken, the change of initial *sm- > šumm- with anaptyxis and gemination is a genuine Hittite sound law. She herself (2002: 408) left open the question of its precise conditioning versus that of the preservation as /sm-/. However, the contrast between *ša/emen-* < *smén- and enclitic possessive *šumma/i-* < *sme- suggests that the different outcomes are conditioned by the accent: namely, that initial *sm- was preserved immediately before the accent but developed to *summ- when the following syllable was unaccented. We cannot be as certain about the accent in *šummittant-* and *šum(m)um(m)ahḫ-*, but their morphological structure is more than compatible with supposing that the accent stood farther to the right than the original initial syllable.

Rieken (2002: 408) reasonably derives Hittite *išmeri-* ‘bridle, rein’ < *s(h₂)mér-, but if the root etymology (to *seh₂- ‘bind’) is correct, as it surely is, this example does not prove a development of *sm- > išm-, since it is more likely that it was the *sh₂- that led to išḫ- (as in *išḫanittar-* ‘relative by marriage, as per Rieken 1999: 283–4). The resulting unsyllabifiable *išḫme- was then reduced to *išme-*. Pace Kloekhorst (2008: 394) nothing requires that the verb *išḫamai-* ‘sing’ reflect a zero-grade *sh₂m-; it may easily continue full-grade *sh₂em-, as he himself assumes for the noun *išḫamāi-* ‘song’.

We may now return to the matter of the Hittite treatment of initial *sp-. The observed vacillation is now explainable. Pre-Hittite language learners were faced with two models for how to treat *sp-: since it consisted of sibilant plus voiceless stop, they could follow the model of *st- and *sk- and add a prothetic i-; however, since *sp- also consisted of a sibilant plus labial stop, speakers could also follow the model of the other sequence of sibilant plus labial stop, namely *sm-, and according to the position of the accent, either preserve the sequence or insert an anaptyctic -u-. Although m generally behaves as a sonorant in older Indo-European languages (that is, as a continuant), one must not forget that in articulatory terms it is also a stop. It is thus not unreasonable that Hittite speakers did not show absolute consistency in their treatment of initial *sp-, where *p belonged both to the class of labial stops and to the class of voiceless stops.

The dominant practice for most lexemes was to follow the model of the other voiceless stops and add a prothetic vowel i-. Contra Melchert 1994: 32, Kimball 1999: 110–11, Kassian and Yakubovich 2002: 33–5, and Yakubovich 2009: 545–7, there is not the slightest justification to doubt the linguistic reality of the prothetic vowel in *išT-*, as assumed by Kronasser (1966: 48–9), Eichner (1975: 98), Oettinger (1979: 416–17), Kloekhorst (2008: 61), and others. First of all, the alternations in personal names from the Old Assyrian texts of the Colony period cited by Yakubovich (2009: 546) not only all involve *sp-, as he admits, but show exactly the same variation as we have seen in *šuppištuwarā- ~ išpištuwara-*: *Šu-pu-da-aḫ-šu* vs. *Iš-pu-da-aḫ-šu*, *Šu-pu-na-aḫ-šu* vs. *Iš-pu-na-aḫ-šu*, *Šu-pu-nu-ma-an* vs. *Iš-pu-nu-ma-an*. I emphasize that we find no spellings in these names of the type †*Ša-pu-* or †*Ši-pu-*, which is what we would expect were

³ Since the word is hapax, the objection of Kloekhorst (2008: 784) that the word does not show geminate spelling for either of the two -mm- is not compelling.

⁴ I am not persuaded by Rieken’s two proposed examples of the change *sm- > -summ- in morpheme-internal position. Hittite *šumanzan-* (sic!) means ‘(bul)rush’ and has basic single -m- (see Melchert 2004: 129–31); CLuvian *teliššumma/i-* ‘(unfired) clay cup’ contains the Luvian suffix -umma/i- also seen in *annarumma/i-* ‘powerful’.

we facing alternate spellings for /spu-/.⁵ These names actually further confirm that the variation in the Hittite appellative is genuine: /sup-/ vs. /isp-/. Note that the scriptio plena of the stem vowel in *šuppištuwarā-* ‘appliqué’ suggests that the accent was not on the vowel following the initial *sp-, and therefore the treatment *šupp-* beside *išp-* fits the pattern for *šumm-* < *sm-. Unfortunately, there is no independent evidence for the position of the accent in the personal names or in *šale/ippe/ikkušta-* ‘pin’, but nothing stands in the way of supposing that the names reflect original accent beyond the first syllable, while the appellative was /spékusta-/ like /smén-/.⁶

Kimball (1999: 110) cites as “very convincing” my own argument (Melchert 1984: 110) that the Hittite adjective *išhaškant-* ‘blood-shot, blood-stained’ must reflect a compound **išhan-škant-* with the participle of *iške/a-* ‘anoint, smear’, thus showing that the *i-* of *iške/a-* must be purely graphic. The argument is not at all compelling, however, since nothing precludes that the compound was formed in pre-Hittite before the addition of the prothetic *i-*. In any case, the overlooked new example *i-is-ke-ez-[zi]* in the fragment KBo 34.243:3 (Ritual of Zarpaya) now excludes both my etymology and that of Rieken (1999: 402), approved by Kloekhorst (2008: 402), which start from *(p)s-*ške/o-* and *sg^(h)-*yé/ó-* respectively.⁷ The plene spelling (which would be entirely unparalleled for the prothetic vowel) appears to require a return to the etymology of Oettinger (1979: 327), despite the semantic difficulties associated with the root *(h₁)*eish₁-*.

The first two arguments adduced by Kassian and Yakubovich (2002: 33) against the reality of the prothetic *i-* in *išT-* are also without foundation. Their statement that the prothetic vowel is always spelled *i-* is correct, but their claim that *iš-/eš-* alternations are frequent in cases with etymological **i-* is patently false: Hitt. *iškiš-* ‘back’, cognate with Grk. ἰχί(ov) ‘loins’ (a quite certain equation, *pace* Kloekhorst 2008: 402) is spelled exclusively with *iš-*, while *išhā-* ‘owner; master, lord’ < **h₁es-h₂-ó-* with regular raising of pretonic short **e* to **i* (see now on this word and its etymology Nussbaum 2014: 244–5) is also spelled exclusively with *iš-*, with the single exception of the totally aberrant form *eš-*h₂** in the NS copy KBo 3.34 i 25, a copyist’s error that has no probative value.⁸ Their second point, that the prothetic vowel is never spelled with plene as *i-iš-*, makes no sense, since we would expect the prothetic vowel to be unaccented and thus never lengthened.⁹ The further argument adduced by Yakubovich (2009: 546, note 3) is also less than compelling. He claims that the HLuvian form *sà-ma-ra/i-ka-wa/i-ni* (URBS) for the city appearing in Hittite cuneiform as ^{URU}*Iš-mi/e-ri-ka-* shows that the Luvians learned this city name through the Hittites with /sm-/, since Luvian had eliminated all cases of initial *sC- in their own language. There are two problems here: first, to my knowledge we know only that Luvian eliminated initial *s+stop by deletion of the sibilant (e.g., HLuvian (*261)*tapai* vs. Hittite

⁵ One could, of course, argue that the empty vowel used in the spelling for /sp-/ merely copied the following real /u/ vowel, but the evidence from Hittite appellatives for the reality of *u*-anaptyxis argues decisively against this.

⁶ The spelling of the “ethnic” suffix *-uma(n)-* with plene, as in ^{LÚ}*hi-iš-tu-u-ma-aš* (KBo 23.99 i 19), provides some indirect support for an accent */Spunóman-/ at least in the one personal name.

⁷ *Contra* Kloekhorst (2008: 402), the inflection *iškezzi*, *iškanzi* must be older than that of *iškiyazzi*, since the inflectional type in *-e/-a-* in base verbs is recessive in Hittite, while that in *-ye/-ya-* is notoriously productive. Thus Rieken’s etymology is excluded also on this basis.

⁸ *Contra* Kloekhorst (2008: 390) the form *e-eš-*h₂*a-aš-ši-iš* is very unlikely to belong to this word (see Otten 1961: 130–1) and is irrelevant. There is thus no basis for appealing to the sporadic New Hittite change of *iš-* to *eš-* (see further below.)

⁹ The claim of Kloekhorst (2008: 61) that the prothetic vowel cannot be identified with the Hittite phoneme /i/ because it fails to undergo the New Hittite lowering to *-e-* is also false, since Yakubovich (2010b: 309–15) has made compelling arguments that the very sporadic change of *e* > *i* in New Hittite is not a regular sound change.

ištāpi ‘blocks up’). I am not aware of any evidence that tells us the fate of initial *s+sonorant. Second, even if Luvian had no native words with initial *sR-, the argument is not probative. There is no way to exclude that the Hittites adapted the name **Sme/iriga-* in their fashion with prothetic *i-*, while the Luvians dealt with the initial **sm-* by anaptyxis of an *-a-*. The Luvian form may easily be read as /Samariga-/.

We are thus left with *šipand-* alternating with *išpand-* as the *only* basis for doubting the reality of the prothetic *i-* in *išT-*. But we have now seen that this orthographic alternation cannot possibly be interpreted to stand for /spand-/, despite the assertions of Kassian and Yakubovich (2002: 33–5) and Yakubovich (2009: 547–8). We now *know* how a preserved initial /sp-/ was written where it existed, and as we would predict, it is expressed by alternation between *šapV-*, *še-pV-* and *ši-pV-* in *šale/ipe/ikkušta-* ‘pin, needle’. Given that *šip(p)and-* is spelled several hundred times with absolute consistency as *ši-(ip)-pa-an-t/d°*, it is not credible that this spelling stands for /sp-/. The first syllable of the word must be read as /si-/.

Possible additional evidence for the reality of a stem /sipánd-/ comes from HLuvian and Lycian. Yakubovich (2009: 555) cites the suggestion of Hajnal (1995: 133–4) that HLuvian (CAELUM.*286.x)*sá-pa-tara/i-i-sa* (KARKAMIŠ A 2+3, §17a) might mean ‘libation priest’ and reflect an earlier */sVpentero/i-/ also continued by Lycian *hppñterus*, which is a professional title or institution.¹⁰ It is now clear that Lycian *hpp-* must be derived from a prehistoric **sVp-* (contra Melchert 1994: 304–5), and the HLuvian may be read /sapandaris/. For Yakubovich (2009: 556) these forms attest a hybrid Luvo-Hittite creation **səpantalli-* ‘pertaining to a libation’ that underwent rhoticism in Luvian and was then borrowed into Lycian. The last step is pure speculation, and the very different morphology of *hppñterus-* argues rather for a native Lycian word that is at best a root cognate with the Luvian. That the verbal stem is not attested in Luvian or Lycian (thus far!) is not a compelling argument against a Proto-Anatolian stem **sepónd-* that led by regular phonological developments to *šipand-*, */sapand-/, and **hppñt-*. I must emphasize, however, that I place no weight on this argument, since the meaning of the Luvian is not fully assured, and that of the Lycian is based entirely on the putative etymology.

Kassian and Yakubovich (2002: 33) and Yakubovich (2009: 547) argue that one cannot interpret the first vowel of the Old Hittite/Old Script spelling *ši-pa-an-t/d°* as real, because this could only imply a reading /siband-/, and voicing of the stop in this environment cannot be motivated by any known Hittite sound change. This argument reflects a fundamental methodological fallacy and a profound misunderstanding of how orthographies devised by and for native speakers work. Such orthographies cannot be compared to the International Phonetic Alphabet. Native speakers *know* how the words of their language are pronounced and also the grammar that predicts where they will occur, and writing systems (especially those used by a small elite) need only give just enough clues for another native speaker reader to successfully identify the word intended. Examples like the Anatolian hieroglyphs for Luvian and Linear B for Mycenaean Greek show just how much information can be omitted! Many factors determine spelling practices in a given tradition: aesthetics (important in the Anatolian hieroglyphs used for public inscriptions), convention, convenience, and above all simply imitation of one’s teachers.

The Hittites knew that /sipand-/ contained a voiceless labial stop; there was no *compulsion* to indicate this in a word that occurred hundreds of times in Old Hittite ritual texts. Since the first vowel of *ši-pa-an-t/d°* has to have been linguistically real, Yakubovich’s attempt (2009: 550–55) to motivate a Luvian-influenced anaptyxis into the non-existent /spand-/ is beside the point, but he does raise the legitimate question of why, beginning in Middle Hittite, the spell-

¹⁰ For a similar independent interpretation of the HLuvian word and comparison with the Hittite hapax *šapa-an-ta-al-la* (KBo 31.8+ i 7) see Giusfredi 2010: 123–4.

ing *ši-ip-pa-an-t/d^o* was introduced and in fact became the dominant orthography. Here the increasing role of Luvian native speakers among the Hittite scribes may well be the responsible factor. The Luvian-speaking scribes surely learned fairly quickly the general Hittite scribal practice of distinguishing intervocalic voiceless from voiced stops by -VC-CV- versus -V-CV spellings. It would be entirely natural if they chose to apply this to what seemed the unmotivated exception of *ši-pa-an-t/d^o*. I stress, however, that this scenario is by no means necessary. Since, I must insist, the word was pronounced /sipánd-/ from the beginning of attested Hittite, a senior scribe could have decided at any time that the exception should be eliminated and a new standard spelling be adopted. A number of changes were made in Hittite spelling practices from Old to New Hittite, and this is merely one of them.

I may cite as a parallel for the non-writing of a geminate stop in Old Hittite versus its expression in later manuscripts the example of /tarsikke-/, the older iterative of *tar-* ‘say’. In Old Script we find only *tar-ši-kán-zi* and *tar-ši-ke-ez-zi* in KBo 22.2 Ro 8 and Vo 4, but in Middle Script *tar-ši-ik-ke-mi* (HKM 46:27) and *tar-ši-ik-ke-ši* (KUB 14.1 Ro 34), and in New Script copies of Old Hittite texts *tar-ši-ik-kán-zi* (KBo 3.1 ii 33 and 3.16 iii 14).

Whatever the motivation may have been for the introduction of the spelling *ši-ip-pa-an-t/d^o*, the absolutely fixed spelling with initial *ši-* excludes the reading /spand-/ for Old Hittite, and since there is indeed no way to motivate a voicing of the labial stop, *ši-(ip)-pa-an-t/d^o* must be interpreted as /sipánd-/, while the rarer variant *iš-pa-an-t/d^o* stands for regular /ispánd-/. The problem then becomes: how do we account for the existence of these two stems and explain their attested shape and use?

The source of the stem *išpant-* is straightforward: it may continue a PIE root present of the *h₂*-conjugation **spónd-ei*, **spénd-nti* ‘libate’, yielding regularly attested *išpānti*, *išpantanzi* (Jasanoff 2003: 86) — but see below for an alternative account. An ablauting root present **spénd-*, **spnd-* (Forssman 1994: 102) would also lead to *išpant-* phonologically, but such a reconstruction is morphologically incompatible with a Hittite *hi*-verb root present. That the *hi*-inflection of *išpand-* is secondary after *šipand-* (LIV₂: 577) is unlikely. Other Hittite root *mi*-presents standing beside reduplicated *hi*-presents show no such influence: *wēkzi* beside *wewakki* ‘demands’.

Forssman (1994: 103) proposed to derive *šipand-* from a reduplicated stem **spe-spond-*, **spe-spnd-*, assuming a full reduplication of the initial **sp-* of the root and differing simplifications leading to Hittite *šipand-* and Old Latin *spepondī*. The need to assume a complicated double dissimilation for Hittite whereby the first **p* but the second **s* was lost has undoubtedly been one of the reasons for the widespread rejection of Forssman’s account.

However, there is now a growing consensus that the history of reduplication in Indo-European should be understood very differently, namely as an inherited synchronic process whose operation is subject to renewal (whatever theoretical approach one takes to its description): see the extensive argumentation of Keydana 2006, followed by Byrd 2015: 118–21 and others. Furthermore, one should in reconstructing the PIE state of affairs follow the standard procedure of giving most weight to isolated archaisms that cannot easily be motivated as innovations. On this basis, following already Brugmann 1897: 40–41(!), Keydana (2006: 107), Byrd (2015: 120) and others argue on the basis of non-productive forms like Latin present *sistō* ‘(cause to) stand; stop’, Grk. ἵστημι ‘stand’ plus Avestan *hi-štaiti* ‘stands’ and Old Irish *se-scaind* ‘jumped’ that the PIE reduplication pattern with roots in initial **sT-* was **sV-sT-*.¹¹

¹¹ Hittite *šišh(a)-* ‘order, decide’ may also be a relic reflecting **s₁-sh₂-* to the root **seh₂-* ‘bind’ (thus Kloekhorst 2008: 758–9; cf. tentatively already Melchert 1984: 153, note 125). For the original stem as *šišh(a)-* see the MH/MS attestations cited by Kloekhorst and the CHD Š: 450–51.

This means that we may suppose that the PIE reduplicated stem behind Hittite *šipand-* was **se-spónd-*, **se-spnd-* (also considered as an alternative by Schulze-Thulin 2001: 384). These preforms will in terms of vocalism lead regularly to attested *šipānti*, *šipant/danzi*, with regular raising of pretonic short **e* to *i* (see Melchert 1994: 101) and lengthening of the accented short **ó* to Hittite *ā* in the strong stem (spelled plene a few times, as in KBo 17.11 iv 4&14, OH/OS).

What remains to be accounted for is the deletion of the second **s* of the preform **sespVnd-*. Once we regard changes in productive reduplication patterns as reflecting renewal of a synchronic process, there are (at least) two ways to account for the loss of **s* in this context. The first may be formulated in terms of pre-Hittite constraints on the syllabification of consonants. Synchronically, an [s] in contact with another consonant at a syllable boundary appears to be treated as ambisyllabic in attested Hittite: note spellings such as *ti-iš-ša-kán-zi* ‘they (usually) step’ (IBoT 1.36 iv 30) beside usual *ti-iš-kán-zi* for [tis.skán.t̪i] or *wa-aš-ša-pa-an* ‘garment’ beside *wa-aš-pa-an* for [was.span] (see Bernabé Pajares 1973: 446–7 and *passim*; Melchert 1994: 150–52). However, we have compelling reasons to think that at an earlier prestage of Hittite there was a constraint against [s]+stop as a syllable onset.

For word-initial position, of course, the evidence is the development of the prothetic *i-* before **sT-*. As argued above, this was undeniably the regular treatment of such initial clusters. The (thus far) unique exception of /spekusta-/ ‘pin’ was “licensed” only by the pressure of preserved /sm-/ with [s] plus labial nasal stop. Addition of the prothetic vowel naturally enabled a prehistoric syllabification **[is.TV-]*. Evidence for the same prehistoric constraint on [sT] in medial onsets is furnished by the pattern of anaptyxis in marked imperfectives with the suffix **-ške/o-*, where a vowel was inserted between a preceding consonant and the **s* or in the case of coronals between the **s* and the **k*: *appiške-* ‘take’, *akkiške-* ‘die’, but *taršikke-* ‘say’ (see Melchert 2012: 179–80). Once again, the anaptyxis solved the prehistoric synchronic syllabification problem, permitting **[ap.pis.kV-]*, **[ak.kis.kV-]* and **[tar.si.kV-]*.¹² I emphasize that the forms with anaptyxis became underlying representations by the time of attested Hittite, leading by then surely to phonetic realizations [ap.pis.skV-] etc.

We may therefore assume that likewise there was a stage at which pre-Hittite (arguably Common Anatolian) **sespVnd(V)-* could no longer be syllabified as **[se.spVn.d(V)-]*, just as the word-initial **[spó/én.d(V)-]* of the nominal stem ^(DUG)*išpanduzzi-* ‘libation’ and its derivatives could not be syllabified (likewise in the *h_{2e}*-present if it existed at this point). In this case, solving the problem in the former by anaptyxis, producing **[se.sV.pVn.d(V)-]* beside the new [is.pó/én.d(V)-] with prothesis, would have seriously disrupted the formal relationship of words that were in semantic terms transparently related. A simpler alternative solution was to resyllabify **[se.spVn.d(V)-]* as **[ses.pVn.d(V)-]*.

However, there is now reason to believe that the syllabification **[ses.pVn.d(V)-]* might itself have been problematic. Zukoff (2014: 272–5) has argued for a context-sensitive version of the well-known Obligatory Contour Principle that prohibits identical adjacent segments. Zukoff proposes that there was also operative in early Indo-European an OCP-SYLLABLE (OCP-σ) constraint: “Assign one violation mark *** for every syllable that contains identical segments.”¹³ If we assume that this constraint also applied at some stage of pre-Hittite (or Common Anatolian), then it would have prohibited the syllabification **[ses.pVn.d(V)-]*, which

¹² For the assumption that intervocalic voiceless stops spelled double were geminates that closed the preceding syllable see Melchert 1994: 18 with references and also Kloekhorst 2014: 545–6 (with a different phonological analysis).

¹³ For an extensive discussion of OCP effects in PIE and its descendants (including but not confined to OCP-σ) see Sandell 2016, who also duly notes (2016: 146) the notorious exceptionality of PIE **ses-* ‘sleep’ and its reflexes.

would have been solved by deletion of the *s* in the syllable coda.¹⁴ If loss of the coda consonant led as expected to compensatory lengthening, producing a virtual *[se:.p^hn.d(V)-], the pretonic long vowel could have been shortened in time to undergo the specific pre-Hittite change of pretonic short **e* to *i*. Compare Hittite *hippara-* ‘serf’ (or sim.) < **h₂ēpor-ó-* (Eichner 1973: 72).¹⁵

Hittite *šipand-* may thus be derived by regular phonological developments from a reduplicated stem **se-spónd-*, **se-spnd-*, and I stress again that its absolutely fixed *i*-vocalism cannot be plausibly explained by any other means. There remains, however, the question of whether such a reduplicated stem is a viable source for the Hittite verb in its attested use. One of the few supporters of Forssman’s original proposal, expresses doubts: “Ist ein altes Zustandspferkt semantisch sinnvoll?” (Kümmel in LIV₂: 577, note 5). Yakubovich (2009: 547) also reasonably protests that there is no discernible functional difference between attested *šipand-* and *išpand-* (cf. also Kloekhorst 2008: 406). I myself previously looked in vain for any such contrast in usage.

I now believe that such a venture failed because we based our search on false premises. A perfect with the standardly assumed value of an “attained state” hardly fits the usage of the Hittite verb, which is clearly eventive: ‘libate’, secondarily ‘consecrate’ (by pouring a libation over), then by metonymy ‘offer X (to a deity)’ and by syntactic change ‘worship (a deity) with X’: see CHD Š: 384–95. I had supposed that the reduplicated stem belonged to what I regarded as the small class of iterative-durative perfects, such as **we-w(o)rt-* ‘roll, revolve’ (on such a meaning for at least some instances of Vedic *vavart-* see Kümmel 2000: 462ff.). But I could find no clear traces of an iterative-durative or even processual value for *šipand-*.

Jasanoff (forthcoming) has now argued that the “attained state” value of the perfect in Core Indo-European is an innovation and that the classical “perfect” originates in a reduplicated *h_{2e}*-aorist of the shape **Ce-CóC-*, **Ce-CC-*, whereas the few “perfects” that show iterative semantics reflect rather reduplicated *h_{2e}*-presents of the form **Cé-CoC-*, **Cé-CC-*.¹⁶ Hittite *wewakk-* ‘request’ (repeatedly) and *mēma/i-* ‘speak’ are direct reflexes of the latter category. By this scenario, **se-spónd-*, **se-spnd-* would have been a reduplicated *h_{2e}*-aorist and should have referred to the act of libating not as an activity (which would have been expressed by the *h_{2e}*-present), but as a single telic act.¹⁷

If one examines all thirty-plus instances of *šipand-* in Old Hittite/Old Script, one finds that it is consistently used in such a fashion. It is used to refer to the act of libating once at a particular “station”, such as in front of the window (KBo 17.11+ iv 23) or to the hearth (KBo 17.19

¹⁴ One may compare typologically for a similar “repair” the Sanskrit weak perfect stem *sed-* ‘sit’ < **sé-sd-* and more broadly other Sanskrit weak perfect stems of the shape *CeC-* as well as long-vowel preterite formations in Germanic and Celtic: see Schumacher 2005: 601–5, Zukoff 2014: 274, and Sandell: 2016: esp. 142–3 and 156–7.

¹⁵ Zukoff (2015) has now refined his account of Indo-European reduplication patterns in terms of what he labels the POORLY-CUED REPETITION PRINCIPLE: “A CVC sequence containing identical consonants ($C_{\alpha}VC_{\alpha}$) is dispreferred, due to repetition blindness; it is especially dispreferred if one or both of the consonants lack phonetic cues which are important for the perception of its presence (in contrast to zero) in the speech signal.” For reasons he sets forth, this principle applies especially to the second fricative [s] in a sequence #sVsT-. Since this newer formulation will also handle the case of *šipand-* < **se-spónd-*, I forego extensive discussion here and refer interested readers to Zukoff’s own presentation, available online.

¹⁶ While verbs of the latter class have mostly been assimilated to the true “attained state” perfects in the attested languages, Jasanoff stresses that in the oldest Greek their separate origin is still betrayed by a different perfect inflection.

¹⁷ I do follow LIV₂: 577 and others, against Jasanoff forthcoming, in supposing that the concrete meaning ‘libate’ of Greek and Hittite is original, from which already in PIE developed the secondary sense ‘pledge, dedicate’ (in the middle ‘pledge, dedicate oneself’).

ii 11). It alone (never *išpand-*) is used with specification of how many discrete times one performs the act of libating: ‘once’ (KBo 17.11+ iv 33, KUB 43.30 ii 11&15 and often), ‘twice’ (KBo 20.10 i 9), ‘three times’ (KUB 43.30 ii 14), ‘seven times’ (KBo 25.127 ii 25). It alone is attested in the telic sense ‘consecrate’ a sacrificial animal or other object (KBo 17.36+ iii 9 and 17.33+ i 14). Finally, it may be used of worshipping a deity (in the accusative) by libating into a bowl (KBo 25.61 Vo 9).

Trying to determine whether the stem *išpand-* has a synchronically distinct sense and whether its absence in the contexts just cited for *šipand-* is systematic or merely due to chance is made extremely difficult by the very small number of examples, especially of examples with full context. Aside from the “Ritual for the Royal Couple”, which uses *only* *išpand-* in its attested portions (see Otten and Souček 1969: 97), there are a mere handful of other attestations, either in Old Script or later copies. However, the examples in KBo 20 ii 5&6 (OH/OS), where *išpanti* ‘performs a libation’ occurs in the immediately context of *hinga* ‘bows’ is strongly reminiscent of that of KBo 25.104 ii 12–13 (OH/OS?), where we read LUGAL-uš ^d*Kuwaššaš UŠKE[N...]* *šipanti*. Similarly, the phraseology [...]× 2 *ekuzi* [...*hu*]ppari *išpant[i]* ‘drinks two [...] libates into a bowl’ (KBo 25.51 i 18–19; OH/OS) hardly differs from that of *hūppari šipanti* (KBo 25.61 Vo 9; OH/OS) cited above.

It therefore seems extremely unlikely that the stem *išpant-* has any different sense synchronically from that of *šipant-*. Both refer to libating conceived as a single telic act and to the other telic meanings derived from that. By the oldest attested Hittite *išpant-* survives only as a marginal variant of *šipant-*. In fact, one may reasonably ask: does the very rare verbal stem *išpant-* continue a genuine prehistoric present stem at all, or is it merely an analogical creation based on the nominal forms ^(DUG)*išpanduzzi-* ‘libation’, ^{DUG}*išpanduzzi(y)aššar-* ‘libation vessel’, and ^(DUG)*išpantuwa-* ‘libation vessel’? Of course, if one opts for the latter interpretation, then one must ask in turn what the basis was for the nominal stems, which appear to be deverbative.

As to ^{DUG}*išpanduzzi-* (from which ^{DUG}*išpanduzzi(y)aššar-* obviously is further derived), if one looks at the class of Hittite nouns in *-uzzi-*, some are indeed undeniably deverbative, formed to synchronically existing verbal stems: e.g., ^{KUŠ}*annanuzzi-* ‘(part of a) harness’ < *annanu-* ‘train’, *kuruzzi-* ‘cutting tool’ < *ku(e)r-* ‘cut’. Others, however, appear to be rather deradical, being derived from forms of the respective roots whose existence in pre-Hittite as verbal stems is dubious: e.g., *išhuzzi-* ‘belt, chain’ < **s(e)h₂-* ‘bind’ (but all verbal forms are based on *išhi-* < **sh₂ei-*), *tuzzi-* ‘camp; army’ < **dh(e)h₁-* ‘place’ (whereas the present stem of the verb is *dai-* with an **-i-* suffix).¹⁸ The nominal stems ^{DUG}*išpanduzzi-* and ^{DUG}*išpanduzzi(y)aššar-* are thus not probative evidence for a genuine pre-Hittite verbal stem *išpand-*. The stem *išpanduzzi-* may be a primary derivative from the root **spend-*. It is true that ^(DUG)*išpanduwa-* is hypostasized from the verbal noun (thus with Carruba 1966: 23, note 35), but precisely in this case there are also a number of spellings as ^(DUG)*šipanduwa-* (see CHD Š: 396). In this noun, then, the variant *išpanduwa-* may be analogical, just as in the other verbal forms.

I therefore must conclude that evidence for a pre-Hittite present stem of any kind is less than compelling. A *h₂e-*conjugation present **spónd-ei*, **spénd-ṽti* may well have existed, but its existence must be based on other evidence (see Jasanoff 2003: 78 on Greek σπένδω ‘pour, libate’ and Latin *spondeō* ‘vow’). The fundamentally telic senses of the Hittite verb *šipand-* are in any case fully compatible with the proposal that it continues a reduplicated *h₂e-*aorist. With due revisions, then, the much maligned derivation suggested by Forssman more than twenty

¹⁸ The primary meaning of *tuzzi-* is ‘camp’, as shown by the derived verb *tuzziya-* ‘encamp’. One must with Kloekhorst (2008: 908) insist on this etymology of Carruba (1966: 23, note 35). There is *no* connection with western Indo-European **teutā-*.

years ago may be upheld. However, one must not overlook that the functional side of the scenario presented here, following Jasanoff, has implications for Indo-European dialectology that are diametrically opposed to those of Forssman's original formulation: by the present account Hittite *šip(p)and-* reflects a PIE reduplicated aorist whose development into an "attained-state" perfect is a common innovation of "Core Indo-European".

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Response to C. Melchert *

It is appropriate to begin this response by thanking H. Craig Melchert for submitting the paper under discussion to the *Journal of Language Relationship*. Given the fact that the main claim of this paper radically contradicts the views expressed earlier by two editors of the journal, Alexei Kassian and Ilya Yakubovich, the publication of this piece in our journal is obviously conducive to resuming the discussion on this controversial topic. I hope that our readers will benefit from comparing different approaches to interpreting Hittite cuneiform spellings.

In the first part of the response I will dwell on Melchert's specific claims pertaining to the Hittite verbal stem *špand-* 'to libate'. It is my intention to demonstrate that its analysis offered immediately above is fraught with so many complications and arbitrary assumptions that it cannot be acceptable as a viable hypothesis regardless of the broader considerations that have motivated it. The second part of the response turns to a more general issue of how the Anatolian cuneiform reflects the evolution of consonant clusters in the Hittite language. I have to acknowledge here that Melchert's new approach is internally consistent and has some advantages over his older views. This prompts me to present an alternative account of how *špand-* may have evolved within the history of Hittite, which largely accommodates Melchert's contemporary interpretation of Hittite orthography but strives to avoid the pitfalls of his etymological analysis.

1. The readers must first be reminded about the nature of the controversy. The Old Hittite texts display a number of forms that contain the reflexes of the Indo-European root **spe/ond-* 'to libate' (LIV₂: 577–578). These forms can be divided into two groups displaying the cuneiform spelling beginning with *iš-pa-* and *ši-pa-* respectively. Their distribution in Old Hittite / Old Script texts is illustrated in the Table 1 below, which is taken wholesale from Kassian & Yakubovich 2002: 34. It is easy to see that the the third-person forms of the base verb display the variants beginning with both *iš-pa-* and *ši-pa-*, with a preference for the first variant, while the rest of the attested forms show exclusively the spelling *iš-pa-*. It is worth mentioning that the spelling *ši-pa-* was generalized for all the finite forms by the Middle Hittite period, but the nominal derivatives *išpantuzzi* and *išpantuzzijaššar* retained the spelling *iš-pa-* throughout the history of Hittite (Yakubovich 2009: 549).

The controversy concerns the question whether the forms listed in the Table 1 are ultimately derived from one verbal stem or from two. According to the view of Kassian & Yakubovich 2002, which is also maintained in Yakubovich 2009, the variants *iš-pa-* and *ši-pa-* reflect different graphic renderings of the same word-initial cluster /sp-/, which cannot be unambiguously represented in cuneiform script. In this we followed a tentative suggestion expressed in Melchert 1994: 31. For Melchert (ibid.), the issue was not fully settled, because he could not think of a plausible reason why the two different graphic conventions were adopted in the instance of the root *špand-* 'libate', but not for rendering the other roots with etymological **sC-* clusters, which all consistently adopt the spelling *iš-CV-*. Kassian and Yakubovich (2002: 34) were bolder in defending the same interpretation, because we thought that we had a solution to this problem. According to the

* This reply is subject to the usual disclaimers. I am grateful to Alexei Kassian and H. Craig Melchert, whose comments to its first drafts led to the overall improvement of my argumentation, and to Stephen Durnford, who has kindly agreed to improve my style. My work on this piece was conducted within the framework of the project "Digitales philologisch-etymologisches Wörterbuch der altanatolischen Kleinkorpussprachen (RI 1730/7-1)" funded by the *Deutsche Forschungsgemeinschaft*.

Table 1: *špand-* ‘to libate’ and its derivatives in Old Hittite

<i>špand-</i> ‘to libate’	
prs. 1 sg. <i>išpantahhi/e</i> : 6×	* <i>šipantahhi/e</i> : not attested
prs. 3 sg. <i>išpā/anti</i> : 8×	<i>šipā/anti</i> : 27×
prs. 3 pl. <i>išpantanzi</i> : 1×	<i>šipantanzi</i> : 7×
prs. 3 sg. <i>išpanzaškizzi</i> : 1×	* <i>šipanzaškizzi</i> : not attested
<i>išpantuzzi</i> ‘libation vessel’	
nom.-acc. sg. <i>išpantuzzi</i> : 7×	* <i>šipantuzzi</i> : not attested
dat.-loc. pl. <i>išpantuzziāš</i> : 2×	* <i>šipantuzziāš</i> : not attested
<i>išpantuzzijaššar</i> ‘libation vessel’	
nom.-acc. sg. <i>išpantuzzijaššar</i> : 11×	* <i>šipantuzzijaššar</i> : not attested
acc. sg. <i>išpantuzzijaššaran</i> : 1×	* <i>šipantuzzijaššaran</i> : not attested
acc. pl. <i>išpantuzzijaššaruš</i> : 1×	* <i>šipantuzzijaššaruš</i> : not attested

hypothesis proposed in Kassian 2000 and elaborated in Yakubovich 2009: 549–549 (with fn. 6), the innovative spelling *ši-pa-(a)-an-ti* ‘libates’ arose as an instance of graphic disambiguation with *iš-pa-an-ti* ‘in the night’ and later spread to the other forms belonging to the paradigm of the same verb. The gradual generalization of a spelling pattern from the most frequent form of the paradigm to the rest of it appears straightforward. This solution is cited with approval in Giusfredi 2014: 186–187, who also points out that the disambiguation never spread to the nominal derivatives of *špand-* ‘to libate’, because they are always accompanied by the determinative DUG ‘vessel’ and thus could not be taken for the derivatives of *išpant-* ‘night’. At the same time one has to acknowledge that a hypothesis of graphic disambiguation between lexemes in a dead language is normally not amenable to independent verification in view of its irreducible character. It can only be falsified, for example, by demonstrating that the phenomenon is not merely graphic, and / or replaced with a superior account.

Quite a different view is entertained in the paper to which I am now responding. It is argued there that only the Old Hittite spellings with *iš-pa-* reflect the etymological stem **špand-*, whereas their counterparts beginning with *ši-pa-* continue the pre-Hittite reduplicated stem **sispand-* < **sipand-*. Melchert acknowledges his inability to trace the synchronic difference between the two stems within the paradigm of the finite verb. This prompts him to advance a tentative hypothesis that the variant *iš-pa-* had originally been restricted to the non-finite forms and only secondarily spread to the finite paradigm in Old Hittite. The reason why the reconstructed stem distribution became skewed in

Old Hittite only to be restored in Middle Hittite remains unclear under such an analysis, even though one must acknowledge that one cannot always predict the direction of analogical change.

A more serious flaw of the proposed alternative is that it neither simplifies the account for the spelling *ši-pa-(a)-an-ti* ‘libates’ nor increases its value for the theory of writing. Melchert acknowledges that according to Sturtevant’s rule the expected reading of /sipánti/ would be *ši-ip-pa-(a)-an-ti*, the form that is regular in New Hittite, but rare in Middle Hittite and completely unattested in Old Hittite / Old Script texts. He also concedes that **/sibánti/*, the expected reading of OH. *ši-pa-(a)-an-ti*, cannot be derived from /sipánti/ by known sound laws. Thus Melchert essentially concurs with the observation of Kassian and Yakubovich 2002 that the form *ši-pa-(a)-an-ti* is graphically irregular. His account for the observed irregularity is, however, different and considerably more generic:

Kassian and Yakubovich (2002: 33) and Yakubovich (2009: 547) argue that one cannot interpret the first vowel of the Old Hittite/Old Script spelling *ši-pa-an-t/d-°* as real, because this could only imply a reading /siband-/ , and voicing of the stop in this environment cannot be motivated by any known Hittite sound change. This argument reflects a fundamental methodological fallacy and a profound misunderstanding of how orthographies devised by and for native speakers work. Native speakers *know* how the words of their language are pronounced and also the grammar that predicts where they will occur, and writing systems (especially those used by a

small elite) need only give just enough clues for another native speaker reader to successfully identify the word intended. (p. 191)

In its application to the Hittite cuneiform, this statement logically implies that Sturtevant's rule can be randomly violated in each and every case where this does not lead to the confusion of lexemes. Given the far-reaching character of this implication, it is not fully clear to me whether the citation above should be taken literally or perceived as a rhetorical device. At any rate, I stand by the description of Sturtevant's rule in Hoffner & Melchert 2008: 35, where it is regarded as a consistent pattern. To be sure, it can be violated by occasional simplified spellings, but I am aware of no instances where such violations would be generalized for any frequent form or lexeme. Therefore the exceptional orthography *ši-pa-(a)-an-ti* remains fully *ad hoc* under Melchert's analysis.

The final vulnerability of the new hypothesis concerns the way /sipánti/ is derived from the alleged reduplicated formation. Here Melchert begins with the stem **sespo/ēnd-* and postulates its subsequent development to **sēpo/ēnd-*, which supposedly reflects a universal constraint on the identical segments belonging to the same syllable. No Hittite parallels are, however, cited for such a development, while the forms of the Hittite root *še/aš-* 'to sleep' represent patent counterexamples. The last difficulty is implicitly acknowledged by Melchert (p. 193, fn. 13), but the change **sespo/ēnd- > *sēpo/ēnd-* is nevertheless called regular! This is arguably the first occasion in the history of Anatolian studies where optimality-theoretical constraints are invoked not as a metalanguage for the empirically proven sound laws, but rather in order to overrule the available empirical evidence.

To illustrate the potential dangers of such a practice it is enough to mention that one of the prominent markedness constraints within the framework of Optimality Theory is the constraint on closed syllables. This constraint came to be top-ranked, for example, in Old Church Slavic, where a number of processes conspired in order to trigger the law of open syllable. Does this suffice to claim that any coda simplification on the morpheme boundary, whether regular or not, can be now licensed for ancient Indo-European languages with reference to the sudden prominence of such a constraint at the point when the respective morphological derivation has taken place? For example, one could use such an assumption in order to argue that Hitt. *tēzzi* 'says' goes back to an earlier **tērzi*, a putative singular counterpart of *taranzi* 'they say', while e.g. *kuerzi* 'cuts' reflects a later analogical devel-

opment. I doubt, however, that Melchert or any other mainstream Indo-Europeanist would subscribe to such a radical break with the traditional comparative method. While it is true that reduplications have a particular propensity to periodical renewals due to their iconic character, this has little to do with the assumed change **sespo/ēnd- > *sēpo/ēnd-*, which is applied to the preexisting reduplication template according to Melchert's own analysis. Naturally, if one assumes that the attested Old Hittite forms of *špand-* 'to libate' reflect just one stem, the need for such an irregular development simply disappears.

Summing up, I claim that the proposed phonetic interpretation of the alternation between *iš-pa-* and *ši-pa-* in the paradigm of *špand-* 'to libate' is inferior to its graphic interpretation on three independent counts. First, it cannot account for the dynamics of distribution between the two stems. Second, it operates with an *ad hoc* violation of Sturtevant's rule. Third, it implies a phonetic scenario that contradicts the known sound laws. The first problem can be regarded as merely complicating the proposed analysis, but problems two and three plainly render it untenable, particularly when taken together. It remains to be seen what the considerations that prompted Melchert to give up his original analysis of the stem 'to libate' are.

2. Melchert's new interpretation of the spelling variation in *špand-* 'to libate' represents a consequence of his second thoughts on the development of initial sC-clusters in the history of Hittite. Melchert's old view on this topic are tentatively put forward in Melchert 1994: 31–32, while his change of opinion is already clearly expressed in Hoffner & Melchert 2008: 27. Nevertheless, since Melchert proposes a very detailed explication of his new stance, I will generally follow his most recent line of presentation in my further discussion.

The development of initial clusters in Hittite was a matter of much controversy in the twentieth century (see references in Melchert 1994: 31, and above p. 187 ff. with ref.). But an important contribution to the debate on the wake of the new millennium consisted of two articles that focus on this precise issue, namely Kavitskaya 2001 and Kassian & Yakubovich 2002. The first paper invokes the theory of syllable structure in order to advocate the view that the spelling *iš-CV-* for rendering such clusters always reflects phonological reality, thus implicitly taking issue with the stance of Melchert 1994 and anticipating certain assumptions of the present paper by Melchert. Curiously enough, this theoretically informed piece of work is not cited by Melchert above, possibly because Melchert's own analy-

sis focuses on the structure of Anatolian cuneiform rather than on cross-linguistic generalizations about syllable structure. The second paper dwells on orthographic issues and argues, following the observations of Melchert 1994, that the spelling *iš-CV-* for etymological *sC-* clusters represents a graphic convention. Melchert rejects several claims advanced in Kassian & Yakubovich 2002, naturally grouping some of them together with his own dated views.

The logical starting point of Melchert can be formulated as follows. The main graphic indicator for a synchronic consonant cluster is the presence of irregular spelling alternations, such as those characterizing the initial signs of *šale-me-en-zi* ‘withdraws’ or *šale/ippel/ikkušta* ‘pin’. In Kassian & Yakubovich 2002, such alternations were taken as instances of schwa insertion followed by schwa-harmony (e.g. [sə^ame:ntsi] ~ [sə^ame:ntsi]). This interpretation, however, is not compelling, as pointed in de Vaan 2003: 285 with reference to a similar “harmony” in Mycenaean Greek orthography, which clearly has a graphic explanation.¹ Furthermore, the data collected in Kassian & Yakubovich 2002 indicate no statistically significant correlation between the alternations of the *šale-me-en-zi* type and the plene spellings of the type *ša-(a)-li-ga* ‘touches, defiles’, which are surely indicative of vocalic epenthesis (cf. Kavitskaya 2001: 275, fn. 11). On the methodological level, Kassian & Yakubovich 2002 did use irregular spelling alternations in order to recover consonant clusters in some other instances (e.g. *za-aš-ki- / zi-ki-* for /tske-/, on which see below). Therefore it appears fair to invoke the same principle in the case under discussion. So far the critique of Melchert can be regarded as internally consistent.

If *šale/ippel/ikkušta*- and similar alternations reflect scribal uncertainty in dealing with word-initial consonant clusters, then cases like *išpant-* ‘night’ must reflect something else. Hence the next claim by Melchert: prothesis in *iš-CV-* clusters is phonetically real. An independent argument in favor of this hypothesis, which is not directly mentioned by Melchert, is the broad agreement between the relevant conventions of

the Old Assyrian and Hittite cuneiform. Deckschen 2007 reviews evidence for the spelling *iš-CV-* in Anatolian appellatives borrowed into Old Assyrian. Thus Old Ass. *išpuruzzinnum* (3×) ‘roof batten’ cannot be separated from Hitt. *išparuzzi-* ‘rafter’, itself possibly a derivative of Hitt. *išpar-* ‘to spread, strew’. Old Ass. *išhiulum* (1×, perhaps a commodity) may refer to a physical object used for binding rather than a written treaty, but this is hardly a compelling reason to doubt its connection with Hitt. *išhāi- /išhija-* ‘to bind’, the base of Hitt. *išhiul-* ‘treaty’. Finally, given that nasals before stops are not reflected in writing in Old Assyrian orthography, Old Ass. *išpadalum* (3×, a commodity) can be either a derivative of *išpant-* ‘night’, or perhaps that of the root *špand-* ‘to libate’, which is treated in this paper.² Kassian & Yakubovich 2002 and Kloekhorst 2008 concur in reconstructing consonant clusters in the roots under discussion.

The root etymologies offered in this paragraph are admittedly speculative, especially given the fact that in two of the three cases we cannot determine the semantics of the nouns involved. But if scholars are right in seeing here Hittite loanwords of Indo-European origin, structural considerations would strongly plead for reconstructing **sC-* in *išpuruzzinnum*, *išhiulum*, and *išpadalum*. The morphemes *išpur-*, *išhi-*, and *išpad-*, all segmentable with a reasonable degree of confidence, are unlikely to reflect Indo-European disyllabic roots beginning with *i*, which vindicates its status as the prothetic vowel. One may argue that two largely independent cuneiform orthographies were unlikely to adopt the same default device of *i*-prothesis for rendering word-initial etymological *sC-* clusters unless there was some phonetic substance behind it.

The data above need to be reconciled with the synchronic alternation between word-initial *iš-pu-* and *šu-pu-* in the Old Assyrian transliteration of Hittite personal names, which were adduced in Yakubovich 2009: 546. Melchert (p. 189) treats the cases of *Šu-pu-da-aḫ-šu* vs. *Iš-pu-da-aḫ-šu*, *Šu-pu-na-aḫ-šu* vs. *Iš-pu-na-aḫ-šu*, and *Šu-pu-nu-ma-an* vs. *Iš-pu-nu-ma-an* as recurrent instances of genuine phonetic variation. Although this claim derives a degree of support from the over-

¹ To be sure, there is a significant difference between the Hittite and Mycenaean conventions. In Hittite, it is the *a*-vowel that is usually inserted in writing for rendering the etymological clusters “obstruent+resonant”, except for the cluster **tr-*, where *e*-vowel is inserted (Kassian & Yakubovich 2002: 12–21). At least in some of these cases, the epenthesis is also phonetic, as indicated by occasional plene spellings. In Mycenaean, on the contrary, the “dummy” epenthetic vowel normally replicates the vowel that is pronounced in the relevant syllable, e.g. *du-ru-* for /dru-/, *do-ro-* for /dro-/ etc. (Melena 2014: 111–112). Deviations from this practice represent exceptions (Melena 2014: 113).

² The first interpretation is maintained in CAD (I/J): 257a, where the meaning ‘lodging’ is assigned to the noun under discussion, since it is mentioned together with the donkey food. The editors of the CAD were, however, familiar only with one occurrence of *išpadalum*, whereas its two additional occurrences apparently tip the scales in favour of its interpretation as an object (Derckschen 2007: 36). Can it be some sort of libation vessel, or alternatively a chamber pot (*vase de nuit*)? Cf. Luv. (CAELUM.*286.x)*sā-pa-tara/i-i-sa* ‘libation-priest’ and its discussion in Yakubovich 2009: 555–556 vs. Melchert, p. 191 above.

whelming lexical distribution of the two variants in later Hittite (see below), the data above demonstrate that in the Colony period we are still dealing with free variation, which in turn strongly suggests that this variation was subphonemic. What it means in practice is that the Hittite speakers of the Colony period targeted the phonemic representation /sp-/, and were possibly even able to render it accurately in thorough pronunciation, but optionally implemented either prothesis or epenthesis in spoken forms, perhaps depending on personal idiolects. The only logical alternative to the proposed solution would be to assume that the Assyrian scribes encountered two different Hittite dialects, which were characterized by phonological prothesis and phonological epenthesis respectively, whereas the later dialect of Hattusa represents a sort of koine that drew upon both of them. In the absence of independent evidence for such dialectal divisions, the hypothesis of free subphonemic variation must be preferred as more economical. In a sense, this is the same kind of logic that prompts Melchert to accept free graphic variation in *šale/ippe/ikkušta-* ‘pin’ and similar cases, as opposed to postulating unattested Hittite dialects.

Melchert plausibly hypothesises that the Hittite *sp-clusters represented an arena where two different strategies of breaking *sC- clusters were in competition with each other. One was the *i*-prothesis, typical of the “s+stop” clusters, the other one was the *u*-epenthesis, which characterized clusters “s+labial” (or perhaps only those of them that had /u/ in the first syllable). But if one assumes that both strategies were allophonic in a particular environment in the Colony period, the simplest solution is to assume that they were always allophonic at the same historical period. In other words, the source of Old Assyrian *išhiulum* was phonetically [sx̥iu:l], or something similar, but phonologically /sxiúl/. Naturally, the Hittite loanwords into Old Assyrian reflect the Akkadian phonotactics and therefore the prothetic vowel must have acquired there the phonological status. They also appear to have generalized *i*-prothesis before *sp- at the expense of *u*-epenthesis, if the available occurrences of *išpuruzzinnum* and *išpadallum* have enough probative force.

So much for the situation in the Colony period (20–18th centuries BC). Moving to the Old Hittite / Old Script corpus (15th century BC), one can observe the ongoing lexicalization of different processes affecting the etymological *sp- clusters. If one follows Melchert’s new phonetic interpretation, one encounters here numerous instances of stable *i*-epenthesis, e.g. *išpant-* ‘night’, stable preservation of the original clus-

ter in *šale/ipe/ikkušta-* ‘pin, needle’, and overwhelming *u*-epenthesis in *šuppištuwara-* ‘decorated (vel sim.)’. In phonological terms, this situation can be, in principle, interpreted in two different ways. On the one hand, it is possible to argue that we observe here an emerging orthographic convention, which manifests itself through the selection of one phonetic variant per lexeme merely for purposes of writing. According to such an approach, the treatment of clusters in Old Hittite orthography would not be indicative of the actual evolution of language. On the other hand, the standardization of lexical representations may reflect the development of spoken Hittite, in which case one has to conclude that prothesis and epenthesis were well on the way to acquiring phonological status by the 15th century BC. Since there is no independent evidence for the subphonemic character of these processes in later Hittite, in this reply I will pursue the second solution, which also appears closer to Melchert’s own views.

One must, however, stress that the phonological prothesis and epenthesis discussed here do not represent mechanical consequences of universal constraints on syllable structure, contrary to what is asserted in Kavitskaya 2001. On the one hand, the diverse reflexes of the etymological *sp*-clusters strongly suggest that both phonological processes spread by way of lexical diffusion. On the other hand, as shown in Kassian & Yakubovich 2002, there is evidence for even more complicated initial clusters, which are nonetheless synchronically reflected in Old Hittite orthography. The best example is the verbal stem *za-aš-ki-* alternating with *zi-ik-ki-* and *zi-ki-* in the meaning ‘to put (around)’ (Kassian 2002: 136, cf. Yates 2016: 169 fn. 16), the imperfective derived from *dāi-/tiya-* ‘to put, place’ which can only represent /tske-/. Furthermore, there is enough morphological evidence to argue that *zaškaraiš* ‘anus’ and *zašhai-* ‘dream’ synchronically contain the clusters /tsk-/ and /tsx-/ respectively (cf. Kloekhorst 2008: 700, 875, Hoffner & Melchert 2008: 47). One needs a vivid imagination in order to build up a hierarchy of universal syllabic constraints that proscribes, for example, word-initial /sk-/ but accommodates word-initial /tsk-/.³

³ This is not to deny the hypothesis that the universal constraints were quietly at work behind the scene as the evolution of Hittite clusters took its particular course. But one is unlikely to acquire a reputation like that of Sherlock Holmes if one begins with invoking the fallen nature of human beings (or the inherent injustice of capitalism) as a motivation for a particular crime. On a more positive note, it is worth pointing out that the Proto-Anatolian word-initial initial *sC- clusters appear to have received differential treatment not only in Hittite but also in Lu-

It is under the prism of this observation that one has to approach the development of the verb *špand-* ‘to libate’ in the history of Hittite. If different strategies of cluster simplification spreading by way of diffusion were competing for the etymological *sp*-clusters in Old Hittite, it is perfectly possible that none of them had yet been generalized in pronunciation for certain lexical items. This is, in fact, more or less what is argued by Melchert in the instance of *šuppištuwara-*, which is once attested in the shape *iš-piš-du-wa-ra-* (KUB 42.64 Rev. 2). The only reason that appears to preclude Melchert from extending the same type of explanation to the variation between *iš-pa-* and *ši-pa-* in *špand-* is that the strategy of *i*-epenthesis appears to be otherwise unattested with the etymological *sp*-clusters.

Nevertheless, *i*-epenthesis has been claimed for other Hittite clusters involving a combination “s+stop”. Thus Kloekhorst (2008: 808) plausibly argues that /tské/á-/ ‘to put around’ began to develop epenthesis already in Old Hittite, as the spelling variant *zi-ik-ki-*, to become standard in the later period, would appear to suggest. One also encounters 1sg.prs *tar-ši-ik-ki-mi*, whose stem reflects the imperfective of *tarn(a)-* ‘to let (off)’, in the Old Hittite / Old Script corpus (Kassian & Yakubovich 2002: 34). In the later period epenthesis of the same type becomes common in other imperfective forms formed from roots ending in coronal stops, e.g. *az-zi-ik-ki-* /atsiki-/ from *ad-* ‘to eat’, *ar-ši-ik-ki-* /arsiki-/ from *arr-* ‘to wash’.⁴ But the stems ending in labial and velar stops implemented a different strategy of attach-

vian. As Melchert (p. 190–191) justly points out, we have sufficient evidence for Luv. */st/ > /t/, but not for the analogous development in clusters containing velar stops. In fact, Rieken (2010: 657) has plausibly argued that Luv. *sk evolved into [jk] in the verb *sà-ka-ta-li-sà-* [kantalif:a-] ‘to provide with decorations, make shine’. Rieken’s interpretation of the Anatolian hieroglyph <sà> as a designated syllabogram for rendering the sound [j] is also conducive to taking Luv. (CAELUM.*286.x)*sà-pa-tara/i-i-sa* ‘libation-priest’ as [jpantaris], or something similar. Note, however, that a different development can be observed in Luv. *parri(ya)-* ‘to spread’ vs. *išpar-* ‘to spread, strew’ (Melchert 2014: 504) and Luv. *part(a/i)-* ‘leg (of animal)’ vs. Hitt. *išpart-* ‘to jump, escape’ (Oettinger 2015: 271–272). Therefore I continue to believe that Luv. (CAELUM.*286.x)*sà-pa-tara/i-i-sa* represents a loanword from Hittite.

⁴ Note, however, that even for the Middle Hittite period one can still confidently reconstruct the (optional) lack of epenthesis between the Hittite verbal roots ending in coronal consonants and the imperfective *sk*-suffix. Cf. such forms as *az-za-ki-tin* HBM 17 Rs. 43 (MS), *ši-pa-an-za-kán-du* KUB 40.56 + KUB 31.88 + Rs III 7, 12 (MS). See Kassian & Yakubovich 2002: 37–38 for additional synchronic evidence from Old Hittite. The claim that “there are examples to show that prehistorically there was epenthesis in all sequences of VC-ské/ó- except those in Vs-ské/ó-” (Melchert 2012: 179) is not illustrated with empirical data and therefore can be disregarded for the time being.

ing the imperfective suffix /-ské/á-/, e.g. *ša-an-ḫi-iš-ki-* from *šanḫ-* ‘to seek’, 3pl.prs *ap-pi-iš-kán-zi* from *epp-* ‘to seize’ (see Kassian & Yakubovich 2002: 33–37 for more examples). It is remarkable that Darya Kavitskaya, who otherwise frequently argues for direct application of phonological constraints, essentially accepts here a spread by diffusion. She claims that “[a]fter the *zikke-* form was created, one can hypothesize that the analogical extension of this form to other dental stems took place” (Kavitskaya 2001: 283).⁵

If the epenthesis in /tské/á-/ could influence the epenthesis in /arské/á-/, there are no reasons to *a priori* exclude the hypothesis that the same process affected the stem /spánd-/. To be sure, this is a non-trivial claim, because it extends the diffusion of *i*-epenthesis beyond the morphological domain for which it has been demonstrated, but its additional target is an isolated lexeme. One can, however, point out that the *u*-epenthesis in the etymological *sp*-clusters likewise appears to be restricted to *šuppištuwara-* ‘decorated (vel sim.)’ and *šuppištuwara-* ‘decoration (vel sim.)’. A possible explanation for the rarity of the two strategies is that the productive process of *i*-prothesis encroached upon both of them within the domain of word-initial clusters “s+stop”. In the instance of *u*-epenthesis, the onomastics of the Colony period is conducive to reconstructing its productive character within a limited domain of *sp(u)*-clusters. It is therefore perfectly possible, although not provable, that certain additional clusters “s+stop” also exhibited optional *i*-epenthesis before the cuneiform was adapted for writing Hittite.⁶

⁵ The most recent brief discussion of *i*-epenthesis in Hittite imperfectives known to me, namely Yates 2016: 169–170, strives to account for it within the framework of the Optimality Theory. This discussion, however, does not go quite to the heart of the matter, because it fails to refer to the faithfulness constraint(s) that interact with the Sonority Sequencing Principle. In my opinion, of utmost relevance here is the No Breaking constraint, which prohibits splitting the phonological units of the input representation. As already pointed out in Kassian & Yakubovich 2002: 43, albeit in different terms, the difference between the derivations /apskV-/ → [ap:iskV-] and /atskV-/ → [ats:ik:V-] lies in the fact that /ts/ is a Hittite phoneme, whereas /ps/ is not. The derivation /atsk-/ → [ats:ik:-] satisfies both the Sonority Sequencing Principle and No Breaking constraint at the cost of violating a lower-ranking principle “align epenthesis with morpheme boundaries”. Such an explanation may not, however, be applied to the case of /arskV-/ → [arsik:V-] (as opposed to [ar:iskV-]) and similar cases, which must, therefore, be explained as an imitation of /atskV-/ → [ats:ik:V-] and similar cases. Since the process under discussion involves a proportion between the underlying ad phonetic representations, it is more appropriate to define it as diffusion of epenthesis rather than analogy.

⁶ The change in the phonetic treatment of *sC-clusters finds a typological parallel in the history of Persian. Thus it is usually

Naturally, we would have to assume that at the point when *i*-prothesis, *i*-epenthesis, and *u*-epenthesis had been in competition with each another, all the three processes had been subphonemic.

Now it is possible to compare the predictions of my new hypothesis with those of Melchert. I see the variation between the spellings *iš-pa-* and *ši-pa-* in the forms of *špand-* ‘to libate’ as a vestige of free allophonic alternation, of a kind that I also reconstruct behind spelling variations *Iš-pu-da-aḫ-šu* and *Šu-pu-da-aḫ-šu* in Old Assyrian. For Melchert, the forms *išpand-* and *šipand-* reflect two different stems, so the opposition between them must be phonological. I submit that *ši-pa-(a)-an-ti* and similar spellings provide a straightforward argument for preferring my analysis. The seeming violation of Sturtevant’s rule in this form, dismissed by Melchert as a random phenomenon, indicates that the phonological representation of the root was still /spand-/ in Old Hittite. It probably became /sipand-/ in the Middle Hittite period, after the phonetic variant [s'pa:nd-] came out of use in finite forms, although the conservative scribal tradition retained the spelling *ši-pa-(a)-an-ti* for a while. Eventually, however, it was replaced with the predictable *ši-ip-pa-(a)-an-ti*, which again fully conformed to Sturtevant’s rule. The likely sociolinguistic reasons for this orthographic reform were discussed in Yakubovich 2009, and I hope that the assumption of a real phonetic epenthesis can only make this account more credible. Two additional advantages of the proposed account over the reduplication hypothesis of Melchert consist in avoiding synchronic suppletion and irregu-

assumed that the default strategy in processing the Iranian lexemes was epenthesis, as in Pers. *setāre* ‘star’, but the recent loanwords undergo prothesis, as in Pers. *estudyō* ‘studio’ (cf. Windfuhr & Perry 2009: 428). Note, however, that even today some Persian native speakers implement a combination of phonetic prothesis and epenthesis while learning the pronunciation of English clusters “s + stop” (Jabbari 2011: 242, Table 2).

lar dissimilation **sespo/end-* > **sēpo/end-* (compare the previous section).

At the same time, the hypothesis of *i*-epenthesis comes at a considerable price when compared with the graphic disambiguation hypothesis, which was advocated in Kassian & Yakubovich 2002. Beside the necessity of assuming the arbitrary spread of *i*-epenthesis from [ts'ke:/a:-] to [s'pa:nd-], one has to reckon with the loss of direct motivation for the distribution of graphic variants in the Old Hittite paradigm of *špand-* ‘to libate’. To be sure, a broad explanatory account still remains possible. If the phonetic process of *i*-epenthesis were spreading by way of lexical diffusion before the *i*-prothesis was generalized across the board, one might argue that it initially affected the 3sg form [s'pa:ndi] in conformity with the general tendency of diffusional sound changes to target first the most frequent forms [Labov 1994: 483]. The subsequent spread from 3sg to 3pl, but not to 1sg, stays within the pool of trivial analogical patterns. But the assumption of graphic disambiguation between *ši-pa-an-ti* ‘to libate’ and *iš-pa-an-ti* ‘at night’ would have an advantage of immediately restricting its scope to the specific form where it happens to be most frequently observed. On the other hand, the scenario of Kassian & Yakubovich 2002 complicates the account for the New Hittite spelling *ši-ip-pa-(a)-an-ti* and is rendered more problematic by new suggestive evidence for the phonetic character of *i*-prothesis, as argued earlier in this section.

Summing up, the accounts in terms of graphic disambiguation and phonetic epenthesis remain viable alternatives, the selection between which will ultimately depend on the broader question of what happened to etymological sC-clusters in Hittite. I am now leaning toward the phonetic explanation, but I do not consider the issue fully settled. But whichever of these two solutions one prefers, there is no need to assume that the variants *išpā/ant-* and *šipā/ant-* historically reflect two different stems.

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Крейг Мелчерт. Начальный кластер **sp-* в хеттском языке и глагол *šip(p)and-* ‘жертвовать’.

Статья посвящена механизму развития из праиндоевропейского источника хеттской формы *ši(p)panđ-* ‘совершать возлияние’. Эта тема остается достаточно противоречивой ввиду того, что от решения данного вопроса существенно зависит не только реконструкция развития начальных сочетаний вида «свистящий + смычный» в хеттском языке, но и определение статуса глагольной категории «перфекта» в анатолийских языках — были ли формы перфекта (которые в древнейших неанатолийских и.-е. языках выражали значение достижения того или иного состояния) унаследованы и затем утрачены в анатолийских языках, или же их следует считать, в рамках «индо-хеттской» гипотезы, общей инновацией на уровне индоевропейского «ядра»? Попытка вывести форму *ši(p)panđ-* из редуцированного и.-е. перфекта **s(p)e-spónd-* в свое время была справедливо отвергнута по целому ряду формальных и функциональных причин; однако, учитывая достигнутый прогресс в изучении рефлексов и.-е. **sp-* в хеттском, а также ряд новейших гипотез относительно фонологической природы редупликации и ее роли в и.-е. глагольной морфологии, мы находим веские основания вновь вернуться к этому вопросу.

Ключевые слова: hi-спряжение, индохеттская гипотеза, праиндоевропейский перфект, редупликация.

