

Proceedings of the
Fourteenth Annual UCLA
Indo-European Conference

Los Angeles
November 8-9, 2002

Edited by:

Karlene Jones-Bley
Martin E. Huld
Angela Della Volpe
Miriam Robbins Dexter

Journal of Indo-European Monograph Series, No. 47
Institute for the Study of Man
Washington, DC
2003

PIE “thorn” in Cuneiform Luvian?

Craig Melchert
University of North Carolina, Chapel Hill

Context suggests that the Cuneiform Luvian hapax legomenon *inzagān* is the nom.-acc.pl. of a neuter noun meaning ‘inhumation’, attested also once in the nom.-acc.sg. *inzagan-za*. This noun is hypostasized from a prepositional phrase **en dz^hg^hóm* ‘(in)to the earth’. CLuvian *-z(a)gān* preserves in the univerbation a preform **dz^hg^hóm* reflecting PIE “thorn.” The Luvian evidence for PIE “thorn” as an affricate **[ts/dz]* supports the suggestion of Merlingen (1957) that both “thorn” and so-called “s-penthesis” in PIE reflect a dissimilation rule applying in clusters of dental stop plus following dorsal or dental stop.

Cuneiform Luvian *inzagan=za* occurs in KBo 29.6 Ro 25-26: *inzagan=za=pa kuwatin šapiyimman awidu=(w)a=a[š=ta] waškulim-mati malšaššai[š EN-aš]* ‘As this i. (is) s__ed, (so) may he, the ritual client, come (away) from the delict/sin’. This paragraph is one of several acts of sympathetic magic designed to free the ritual client from evil and provide him with blessings. The particle *-sa* (*-za* after nasal) assures us that *inzagan* is a neuter noun in the nom.-acc.sg.¹

The obviously related *inzagān* is found in the Ritual of Puriyanni, KUB 35.54 ii 32. Here I cite the larger context (KUB 35.54 ii 27-41):

[^{GIS}]KÙ.BABBAR GUŠKIN NUN[MUN].^{GIS}ĤI.A]² *hūman /*
[^{GIS} *ḡaḡḡa/ran* ^{GIS} *muwilan* ^{GIS} *intaluzi / /*]x ^{GIS} *tiddutri katta*

¹For further discussion of the role of *-za* in this passage see Melchert *apud* Arbeitman (1992:14-15). The contrast of postposed *-za* with orthotonic *zaš* (nom.sg.anim.) and especially *zā* (nom.-acc.pl.neut.) in the parallel paragraphs confirms the consensus that the postposed particle *-sa/-za* marks neuter *singulars*, contra Starke (1990:46ff.).

²Starke (1985:67) reads *nu k/i-i/*, but this leaves the preceding nouns in a very awkward syntactic position. The parallel text KBo 29.2 ii 6 [...K]Û.BABBAR GUŠKIN NUMUN. ĤI.A *dapta[n...]* suggests the reading given here, which seems compatible with the traces

hikzi / n=ašta anda kiššan memai / zāwi ziyar NUMUN.HI.A-na'
 [p]ūnāta / inzagān wašha a=ata [BE]L SISKUR / ^{GIS}hattarāti
 hattaritta / ^{GIS}tūrāti=pa=ata tūr[a]tta / a=ata imrašša <n>
 SISKUR-u[ni]ji pari / tarāwitta § a=ata piyatta immaraššan
 SISKUR-ti / a=ata zappatta attu[wa]l=za utar=ša / [hall]iš=ša
 a=ata ā[pp]a DINGIR.MEŠ-anza ŠA EN SISKUR parran ni[š]
 § awiti

[], silver, gold, all the se[ed], a rake, a m., a shovel, a [], (and) a t. he offers downward and interjects as follows: 'Here lie/are laid down all the seeds, the i., (and?) the w. The ritual client has hoed them with the hoe, while he has speared them with the spear. He has handed them over to the Storm-god of the Open Country. He has given them to the Storm-god of the Open Country. He has z.'ed them—the evil word (and) the illness. Let them not come back before the gods of the ritual client'.

Since *inzagān(=za)* must be neuter nom.-acc.sg., there is little alternative but to interpret *inzagān* as the expected matching neuter nom.-acc.pl. of the same inflectional type as CLuv. *huitar/huidār* 'wild beasts', Hitt. *uttar/uddār* 'word', and so forth.³ Although it is hard to determine whether we have appositional or coordinated nouns (see further below), this analysis of *inzagān* is confirmed by the fact that the surrounding NUMUN.HI.A-na, *pūnāta* and *wašha* are all unambiguously neuter nom.-acc.pl. However, the very phonotactics of the word make it extremely unlikely that *inzagān* is a true primary neuter noun of the type cited: a putative paradigm **ēnsKū/*ensKón* is hardly analyzable in PIE terms. A solution to this formal problem must await a determination of the meaning of the word.

The context of *inzagān* does point the way. The purpose of the Ritual of Puriyanni is to free a ritual client of impurity with the help of the Storm-god of the Open Country: "Thus speaks Puriyanni: if a man has some impurity in (his) house, I sacrifice to the Storm-god of the

in the autograph. The parallel confirms in any case that seeds are included in the things "offered downward."

³ Contra Starke (1990:46⁷⁷) there is no basis for denying the presence of such lengthened-grade plurals in CLuvian, as shown by *huidār*, which is a Luvian loanword in Hittite, as he himself correctly insists (1990:560ff.), and by *ādduwāl* 'evil things', attested in parallel contexts to the innovative *ādduwala*.

Open Country of impurity" (KUB 7.14 i 1-3).⁴ Luvo-Hittite rituals use a variety of techniques for disposing of evil, and the Ritual of Puriyanni is no exception (cf. KUB 35.54 iii 9-11 for use of a scape animal). The preceding Hittite in our passage states that silver, gold, seeds, and various agricultural implements are offered "downward." The following Luvian also makes clear the purpose: all of this has been handed over/given to the Storm-god of the Open Country, who is to assure that the evil does not return to the client's house. The presence of seeds, agricultural tools, and the expression "offers downward" strongly suggest that objects symbolizing the evil along with offerings and associated paraphernalia are all being buried. For disposing of evils by burial one may compare a number of passages from Luvo-Hittite ritual and myth.⁵

In the sentence *zāwi ziyar NUMUN.HI.A-na pūnāta inzagān wašha* the meaning of every word except *inzagān* is reasonably secure: *zāwi* 'here/voici', *ziyar* 'lies' (or 'is placed in a lying position'),⁶

⁴ For the text see Starke (1985:60). Contra Hawkins, Morpurgo Davies, and Neumann (1974:32), CLuv. *paratta*- clearly means 'impurity' (not 'word'!) and is related to the root of Hitt. *papratar* 'idem'. In the present context the Storm-god *parattašša/i-* is of course not the source of impurity, but a deity who *accepts* impurity that is disposed of and sees that it does not return.

⁵ See among others KBo 17.1 iii 8-13 (Old Hittite Ritual for the Royal Couple): "I bury the troops of clay and the vessels in the earth. I fasten them and say as follows: 'Sun-god (and) Storm-god! I have just buried the illness, blood-crime, evil, and fright of the king, queen and (their) children in Hattuša, and it shall not come back up again.'" For the text see Oiten-Souček (1969:30). See further in the Myth of Telipinu (KUB 17.10 iv 15-17): "Down in the Dark Earth stand bronze vats. Their lids are of lead. Their latches are of iron. That which goes into them doesn't come up again; it perishes therein" (translation with Hoffner 1998:17). See on burial as a standard means of disposing of evils Popko (1995:83, 105, 130).

Starke (1990:310) also assumes that our passage refers to burial, but he wrongly supposes that it involves ordinary planting of the seeds, which are then to 'flourish' before the Storm-god. For the correct meaning of *pari tarāwi(ya)-* (with single -r-) as 'hand over' see Melchert (1992:53-54). The following Luvian text totally excludes Starke's interpretation, since it is clear that the seeds are not to flourish, but are rather never to be seen again. One could also translate *hattarāti hattaritta* as 'chopped/minced with a pick(axe)'. The noun *tūrāti-* is surely the source of the Hittite word (^{GIS})*tūri-* 'lance, spear' (see the discussion and references in Tischler 1994:455ff.) and also refers to a pointed instrument used to pierce the seeds. The seeds are not being planted, but rather intentionally damaged so as *not* to be capable of growing.

⁶ Present middle third singular, as usual with a neuter/collective plural subject. For the meaning of Luv. *zi-* see independently Melchert (1987:195-196) and Morpurgo Davies and Hawkins (1988:177-178).

NUMUN.HI.A-na (= *warwalana*) 'seeds',⁷ *pūnāta* 'all',⁸ and *wašha* 'consecrated objects, *sacra*'.⁹ The Luwian phrase is thus the verbal declaration accompanying the ritual action, and one could reasonably translate: 'Hereby are laid (down) all the seeds, *i.*, (and?) *sacra*.' What is not certain is whether the three nouns are coordinated (asyndeton in such lists is common in CLuvian); thus, 'all the seeds, the *i.*, and the *sacra*' or are in apposition: 'all the seeds, the *i.*, the *sacra*'. Since objects besides the seeds are clearly being 'offered downward', the first possibility must be taken seriously. On the other hand, the following sentences 'he has *hoed* them with a *hoe*, he has *spear*ed them with a *spear*' and those following appear to refer to the seeds, the symbols of the evils that are to be banished. I therefore find it more likely that *inzagān* and *wašha* refer to the seeds as well. The use of *wašha* to refer to the evils is quite in order: these are to be transferred from the human to the divine sphere (where they are to remain) and thus are also *sacra*.¹⁰

By either interpretation the word *inzagān* refers to things being buried in the earth. I therefore suggest that this noun means 'inhumations, things inhumated' and represents a hypostasis of a univerbated prepositional phrase **en d^hg^hōm* 'into the earth'. For the secondary inflection of such a univerbation as a noun one may compare the Sanskrit adjective *pārijman-* 'omnipresent, rushing around', which inflects as an ablauting *n*-stem, based on the prepositional phrase *pāri-jman* '(all) around the earth' (e.g. *RV* II.28.4).¹¹ The vowels and final consonant of **en(-)d^hg^hōm* would develop to the attested *inzagān* by established Luwian sound changes: for pretomic short **ē* to *i* and accented **ō* to *ā* see Melchert (1994:262 and 264). Other forms of 'earth' in Luwian cited below make it likely that final *-*m* > -*n* is parallel and independent in Luwian and Hittite (cf. Melchert 1994:181 and 278). For

⁷ Examples in Hittite contexts show that the word is a neuter *n*-stem, and there is no basis for the *r/h*-stem †*warwatar/warwatn-* claimed by Starke (1990:479ff).

⁸ Meaning with Starke (1990:303¹⁰³⁴). I follow him in taking the adjective as modifying the preceding noun, based on the parallel text cited in fn. 2 above and on the general pattern for words meaning 'all' in Hittite and Luwian.

⁹ This noun is the base of the adjective *wašhaiya-* 'sacralized' and is cognate with HLuv. (*420)/*washa-*, whose contextual meaning is not yet clear (cf. Hawkins 2000:153 and 551).

¹⁰ For the double-edged meaning of Lat. *sacer* see Benveniste (1969:2.187ff.) and for that of Hitt. *šappi-* Watkins (1975).

¹¹ Nussbaum (1986:188⁶⁶), followed by Forssman (2000:50). I am indebted to B. Forssman for alerting me to the relevance of Nussbaum's analysis to my topic.

the accentual pattern of the underlying prepositional phrase with the preposition in proclisis cf. CLuv. *annān pātanza* 'under the feet' versus free adverb *ānnan* 'below'.¹²

The univerbation would thus have acquired the shape of an "amphi/holokinetic" neuter *n*-stem nom.-acc.pl. If, as seems likely, the noun as attested is a technical term usually referring to a collection of objects that were ritually buried, it seems to me plausible that the univerbation was reanalyzed as a collective plural, and the attested singular *inzagan=za* was backformed on the model of *ādduwāl/ādduwal=za* and other nouns of the class.¹³

The interpretation of the singular form *inzagan=za* in context is made difficult by the uncertainty of the meaning of the modifying participle *šapiyaimman*. In determining the sense of the latter, I do insist that we must in the first instance restrict ourselves to the evidence for the Luwian verbal stem *šapiya-* and leave aside the Hittite verbs *šapp-* and *šī/appa(i)*.¹⁴ The difference between single and geminate *pp-* must not be glossed over, and there is no compelling evidence for a connection of *šapiya-* with the other two. The instances of *šapiya-* in Hittite context in the Ritual of Tunmawi suggest a sense 'to cleanse'.¹⁵ That an evil that is to be buried has also been ritually cleansed is quite possible (cf. KUB 35.54 iii 37-38, where the 'evil word' is cleansed), but hardly self-

¹² Cf. for the phenomenon the Greek examples cited by Hackstein (1997:36).

¹³ I should say explicitly that I assume the long *i* of the singular is secondary, due to retraction of the accent on the model of *ādduwal=za* etc., versus final-syllable accent in the plural. On the problem of the (unexpected) accent of the latter, see Klingenschmitt *apud* Rix (1990:44) and compare the references to other solutions cited in Melchert (1994:147).

¹⁴ For Hitt. *šapp-* the only clear meaning is 'to churn' (milk): see Güterbock-Hoffner (1980-89:122) sub *makkuya-*. A more general sense 'to hit' is compatible with occurrences in rituals (HFAC 49:3, KUB 25.36 i 13, v 13 and 25, KBo 23.23:56 = KUB 27.29 i 9) and is supported by the derivative *šappu-*, a body part used by a billy goat to strike with (KUB 43.60 i 18-19), even if identification of the body part remains problematic (see for this meaning Güterbock 1967:141, who also suggests that *šapiya-* should be kept separate). Hitt. *šī/appa(i)-* (and probably CLuv. *ššappa-*) means 'to peel' (KUB 29.7 Vo 31-32 etc). I am grateful to the editors of the *Chicago Hittite Dictionary* for access to their files on these stems and on *šapiya-*, but I remain responsible for the views expressed here.

¹⁵ Each instance is accompanied by a cleansing agent: clay in KUB 12.58 i 8 and iv 6, the Fate-goddess's hand in iv 3, and the Sun-god's words in iv 27. The verb is almost certainly denominative from the CLuv. noun *šapiya-*, attested in KBo 29.6 Ro 19-20, only a few lines preceding the reference to *inzagan=za šapiyaimman*, where it appears to be a cleansing agent.

evident. The proposed interpretation of our noun stands or falls on the plural *inzagān*.

If my hypothesis regarding *inzagān* < **en d^hg^hōm* is correct, it obviously has serious consequences for our understanding of the development of the paradigm of 'earth' in Anatolian and beyond that for the long-standing problem of PIE "thorn." I follow Schindler (1977:31) in assuming an animate amphi/holokinetic paradigm for 'earth' in PIE (see also Nussbaum 1986:187ff.): nom.sg. **d^hég^hōm*, acc.sg. **d^hég^hōm-m* (*[d^hég^hōm]), gen.sg. **d^hg^hm-és* ([*d^hg^hmés]), loc.sg. **d^hg^hēm(i)* ([*g^hpēm(i)]). As per Schindler, the special development of tautosyllabic dental plus dorsal stop to a "thorn" cluster took place only in the locative singular. I take CLuv. *-z(a)gān* ([-tska:n] or [-(-d)zga:n]) as showing a reflex of the "thorn" cluster, preserved in the unverbated prepositional phrase which became formally isolated and disassociated from the paradigm of 'earth'. More on the phonetic implications momentarily.

I must first review the development of the paradigm for 'earth' in Anatolian. I assume with Schindler (1977:31) that the PIE acc.sg. */d^hég^hōm-m/ was realized as *[d^hég^hōm] (cf. with him Ved. *kṣām*), falling together with the nominative singular. Already in Proto-Anatolian the nom.-acc.sg. **d^hég^hōm* would have become **dégōm*, with shortening of the unaccented long vowel (see Eichner 1986:13¹²).¹⁶ Nom.-acc.sg. **dégōm* led regularly to Hitt. *iēkan*, which unsurprisingly was reanalyzed as a neuter *n*-stem. The Hittite weak stem *i/dāgn-* may be analyzed as showing a "morphological" zero-grade (Schindler 1967:202-203) or as reflecting a PIE anaptyctic vowel ("schwa secundum") **d^heg^h-* (Schindler 1977:31, followed by Mayrhofer 1986:152). For the generalization of the final *-n* from the nominative-accusative to the weak stem cf. Gk. *χθόν-*.

The Hittite "endingless locative" could reflect the old endingless locative **d^hg^hēm* (> PA **(d)zégēm*), renewed after **dégōm* as **(d)zōm*.¹⁷

¹⁶ Followed by Melchert (1994:76), but the long **ē* given there is erroneous! As shown by the contrast between Hitt. *péran* and CLuv. *parran* 'before' < **pér-em*, the lengthening of the **e* in this position must be specifically pre-Hittite.

¹⁷ The long *ā* of the endingless locative *i/dāgān* can hardly reflect directly PIE **d^hg^hēm* with *e*-grade: see in addition to Melchert (1994:135) now Yoshida (1997:192). Likewise phonologically impossible is an endingless locative with a lengthened *ē*-grade (contra Zeilfelder 2001:53), while a lengthened *ō*-grade would make no sense structurally. For an analogical **d^hg^hōm* elsewhere Schindler (1967:197) points to TAB *ikem/kam*, but this reflects rather a virtual accusative **d^hg^hōm* (see Pinault forthcoming with references).

The aberrant initial consonantism of pre-Hitt. **dzgōm* was trivially renewed by the *tag-* of the rest of the weak cases, hence *tagān*. However, as per Neu (1970:92), the meaning of Hitt. *i/dāgān* is always 'on/to the ground, (in)to the earth', overwhelmingly with verbs of motion.¹⁸ It is never used with a verb expressing location to mean 'on earth' (as opposed to 'in heaven') or 'in the earth'. Since "accusative of direction" is attested as an archaism in Hittite (see Zeilfelder 2001:25-39 with references), *i/dāgān* could also continue a zero-grade accusative **dzgōm* (= Skt. *kṣām*), again with trivial renewal of the initial consonantism after the synchronically productive weak stem. See further on this point below.

The Hieroglyphic Luvian hapax dat.-loc.sg. (TERRA) *ta-ka-mi-i* 'land, country' is formally ambiguous. It could match directly Hitt. *takni*, < **d^hg^hm-* but without secondary spread of *-n* from final **-m*. However, there are some indications that a voiced dorsal stop would have been lost directly before a nasal.¹⁹ I therefore find it more likely that the Hieroglyphic Luvian word has generalized the old strong stem and should be read as /tagami/, with /taggam-/ < **dégom*, as per Čop (1970:91).²⁰ As per Kimball (1983:427ff.²⁰ and 1994:78), CLuv. *i(i)yamm(i)-* 'earth' is a delocative formation from a loc.sg. **d^hg^hēmi* (= Skt. *kṣāmi*, except for the initial consonantism). Only this derivation can explain the

Neu (1980:8⁷) and Mayrhofer (1986:152) also assume that Hitt. *i/dāgān* reflects a virtual locative **d^hg^hōm*, but they do not explicitly justify the vocalism.

¹⁸ Typical verbs include *aruwā(i)-* 'to bow', *eš-* 'to sit down', *hatta-* 'to slaughter', *huitiya-* 'to pull', *išpar(r)-* 'to spread', *lahu(wa)-* 'to pour', *mau(š)-* 'to fall', *šallannai-* 'to drag', *šipand-* 'to libate', *šuhha-* 'to pour' (dry material), *dai-* 'to place', *duwarne-* 'to break'. The only clear case of a verb with stative meaning is *ēzi* 'is/sits' in KUB 33.67:14, and the sense here too is 'on the ground', not 'on earth' or 'in the earth'.

¹⁹ See Jasanoff *apud* Watkins (1995:359) on CLuv. *nāna/i-* 'brother' as matching Hitt. *negna-*. HLuv. *ti-na-ta-* 'tithe' (see Hawkins 1986:99) also is likely to reflect an ordinal 'tenth' and a sequence **dēgn-* standing for **dēkm-*.

²⁰ It is tempting to try to connect further the word *z(a)gani-*, attested in the anim.-acc.sg. *zaganin* in KUB 9.31 ii 27 preceded by DUMU.NAM.<LÚ> U₉.LU-*in* 'human'. A putative *z(a)gani-* 'terrestrial' would recall Goth. *guma* 'man' and cognates. However, the meaning is a mere guess (the following word *duwinin* is quite obscure), and CLuv. *tiyamma/i-* and HLuv. *ta-ka-mi-i* argue strongly against a delocative formation with **-m-* treated as *-n-* (*inzagan-* owes its *-n-* to its origin in a unverbated prepositional phrase). Since the context of *z(a)gani-* is that the gods are not to eat human flesh, I suggest that the word is more likely to be related to Hitt. *šag(a)n-* 'oil, fat, flesh' (see Hoffner 1994, especially 230).

geminate *-mm-*, with *-ammi-* < **-ēmi-* by "Çop's Law" (see again Çop 1970).²¹

The unavoidable derivation of CLuv. *t(i)yamm(i)-* from the old locative **d^hg^hēmi* leads me to prefer the second account of Hitt. *t/dāgān* given above. I would assume that both Hitt. *t/dāgān* and CLuv. *inzagān* reflect an old accusative singular with zero-grade of the root **dzgōm*, as seen in Skt. *kṣām*.²² The original "thorn" treatment of the initial cluster was preserved in Cuneiform Luvian in the unverbated prepositional phrase **en dzgōm* "(in)to the earth," while the simplex in Hittite had its initial consonantism renewed by the productive weak stem *tag-*.

The suggested derivation of CLuv. *inzagān* from a prepositional phrase **en dzgōm* obviously renews the question of the fate of PIE "thorn" in Anatolian and its precise phonetic nature.²³ Mayrhofer (1986:158) assumes that Anatolian never had "thorn," this development being an innovation of the non-Anatolian languages. In Melchert (1994:64) I had left the question open. CLuvian *inz(a)gān* < **en dzgōm* argues that Anatolian did inherit "thorn." I follow Schindler (1977) and Mayrhofer (1986:150ff.) in analyzing "thorn" as an allophone of the PIE dental stops. Schindler (1977:33) restricted the development to tautosyllabic clusters of dental plus dorsal stop (NB Hitt. *ḫar(ag)ga-'bear'* < **H₂rt.ko-*).²⁴ Based on the available evidence, however, he

²¹ The change of **g(h) > y* before a front vowel is also regular, as per Kimball (1994:77ff.). Kimball assumes a restored **d^hg^h-* as the source of *ty-*, but it is also possible that *t(i)y-* (the vowel may or may not be real) reflects the result of **d^hg^h-*, which Luvian must have inherited. The lack of parallels makes speculation about the phonetic details otiose. The gender of CLuv. *t(y)amma/i-* likely has nothing to do with the original gender of PIE 'earth' but merely reflects that any newly created *t-*stem in Luvian would be treated as animate, due to the phenomenon of "i-mutation," on which see Starke (1990:59ff.).

²² The assumption that Anatolian inherited an acc.sg. **dzgōm* appears to conflict with the idea cited above that PIE acc.sg. **d^hg^hōmm/* was realized as phonetic **[d^hg^hōm]* identical with the nom. sg. If one prefers not to allow competing acc.sg. forms for Anatolian, one may dispense with **[d^hg^hōm]*. The Proto-Anatolian shape **dēgom* of the nom. sg. alone would have been sufficient to trigger reanalysis of the word as a neuter and leveling of the accusative in the paradigm.

²³ I deeply regret that I have had no direct access to the fundamental work of Lipp (1994), only to the references to it in Rix et al. (2001). So far as I am able to determine, my conclusions here are compatible with Lipp's findings, but I cannot at present affirm this with certainty.

²⁴ This formulation also allows the preserved sequence *-ik-* in Hitt. *ḫaik-* 'shut, close' < **H₂ed^hg^h-* to be explained as generalized from prevocalic position. For this derivation and comparison with Gk. ἄχθος 'burden' see Puhvel (1991:268) following Risch.

assumed that "thorn" arose only as part of the metathesis of tautosyllabic **TK* → **Kp*. Luvian *-zg-* contradicts this: the special allophone of the dental stop developed in the tautosyllabic cluster *before* the metathesis seen in Gk. χθόων and elsewhere.

This makes problematic Schindler's claim that original tautosyllabic **KT-* also led to **Kp*. However, his principal argument for this, the word for 'yesterday' (to be analyzed as **/g^h-dyes/* with deictic particle plus a form of 'day'), had a unique word-initial cluster **/g^hdy-/*. In the absence of any evidence for treatment of the second stop as a sibilant, I see no proof that this sequence ever contained "thorn." All attested reflexes may be taken simply as language-specific simplifications of the unique cluster (similarly Merlingen 1957:53).²⁵ Poetto (1992:163) argues that Skt. *ákṣu-* 'net' and Hitt. *ēkt-* ~ CLuv. *akkat(i)-* 'hunting net' reflect a root with **-kp-*. However, as per Rieken (1999:143ff.) CLuv. *akkušša-* 'pit-trap' shows that the *-t-* of the Anatolian words is a suffix, and Skt. *ákṣu-* may likewise reflect **(H₁)ek-s-u-* (cf. with Rieken 1999:220 Skt. *rāmsu-* 'pleasant' beside Goth. *rimis* 'rest').²⁶

CLuvian *-z-* may represent either an affricate [ts] or a voiced fricative [z].²⁷ CLuv. *ānza* 'we, us' suggests that Luvian shared with Hittite the development of *secondary *-ns-* to *-nz-*. Whether this change reflects voicing assimilation to [-nz-] or epenthesis to [-nts-] is impossible to determine, since both would be trivial. The point of this for our purposes is that it is possible that CLuv. *inz(a)gān* reflects a preform **enzgōm* or devoiced **enskōm*, with "thorn" appearing as a sibilant as apparently in Indo-Iranian.

²⁵ This includes TA *ksār-* 'in the morning', if derived with Anreiter (1987:110-111) and Hilmarsson (1991:129) from a derivative of **g^h-d(y)es-*: the *-s-* of the Tocharian word reflects the **-s-* of the preform, not the dental stop! Skt. *tákṣan-* and Gk. *tékrov* may reflect **teik-*; see Mayrhofer (1986:155-156) following Winter and likewise Rix et al. (2001:638 with references). As per Mayrhofer (1982:243) and as conceded by Schindler (1977:33), Skt. *ákṣi-* and Gk. ὀφθαλμός may contain different suffixes. The same applies to the other examples cited by Poetto (1992:168ff.).

²⁶ Given the match in meaning between the Sanskrit and Anatolian words, I would not with Rieken reject out of hand a root connection between them. The alternate comparison of the Anatolian words with the family of OHG *jagōn* is less than compelling.

²⁷ A voiced fricative [z] seems the more plausible interpretation for the *z* of Lyc. *izr(i)-* 'hand', Hitt. *z(a)mankur-* 'beard' and further examples. See the references to various scholars in Melchert (1994:172, 274, and 314). My resistance to this idea was ill founded.

A more interesting possibility, however, is that CLuv. -zg- stands for [-tsk-] (or [-dʒg-]) and that PIE "thorn" was realized as a dental affricate. The idea that PIE tautosyllabic */TK/ is realized as *[TSK] (with application of the usual PIE voicing assimilation rules) is not a new idea. Merlingen (1957:51) not only suggested this development, but also correctly compared it with the other famous and peculiar PIE rule whereby a sequence of two dental stops is realized as *[TST] (again with appropriate voicing assimilation): */éd-ti/ → *[ésti] > Hitt. *ézzazzi* [éts-tsi] 'eats' (for this as a PIE synchronic rule see Mayrhofer 1986:110ff.).²⁸ This rule has traditionally been characterized as "s-epenthesis," but insertion of an *s* between two dental stops is very peculiar when viewed as epenthesis. An epenthetic consonant is regularly a transition sound, produced by the failure to switch feature values from one consonant to another simultaneously. It seems rather more natural to view both */TT/ → *[TST] and */TK/ → *[TSK] as a dissimilation rule: a dental stop becomes an affricate before another stop.²⁹

It has been suggested that Tocharian also provides direct evidence for "thorn" as *[ts]. First, there is the long-standing derivation of TB

²⁸ Merlingen viewed the development of an affricate as a post-PIE rule of only a subset of languages. If one accepts the evidence from Luvian, the change is surely already PIE (on putative *ts* from "thorn" in Tocharian see below). Merlingen himself assumes that Greek once had the rule (1957:54) and eliminated it. I see no reason to exclude this elsewhere.

²⁹ I am indebted to Megan Crowhurst for first pointing out this possible analysis to me for */TT/ → *[TST], which I extended to "thorn," but we were both anticipated by Merlingen. Merlingen refers to an "Erleichterungsspirant" (1957:52), but his detailed description of the phenomenon (1957:51) makes quite clear that he views the sibilant not as inserted (epenthesis), but as a result of releasing the first of the two stops. I do not insist on the characterizations "affricate" and "dissimilation" (cf. the lengthy discussions by Görtzen 1998:6-21 and 42-70). The crucial claim is that of Merlingen: the special treatments of *TK and *TT are instances of the same basic process, triggered by the problem of articulating a dental stop before another stop. Görtzen (1998) also correctly unites the two phenomena, but I cannot follow him in assuming a first stage *[TθK]/*[TθT] (1998:66-70). A full response to his monographic treatment is not possible here, and I confine myself to the following remarks. If accepted, the Luvian and dialectal Greek evidence for *[TSK] falsifies his claim that the development of a *sibilant* took place in the sequence */TK/ only post-PIE after metathesis (*[TθK] > *[KTθ] > [K(T)S]), whereas he too assumes that *[TθT] had become *[TST] already in PIE. On the contrary the two changes were entirely parallel. In the absence of any direct evidence for a realization as *[θ], I see no benefit in supposing that there ever was a prestige *[TθK]/*[TθT], much less the more general development of fricatives in *all* PIE stop clusters (*[KxK], *[PφP], etc.) as posited by Görtzen.

k(t)saisse 'old' from the Indo-European root of Gk. φθίνω 'pass away', etc. (see for a recent defense of this etymology Anreiter 1987:107ff.). However, Pinault (1990:179-181 and forthcoming) has presented compelling semantic and formal arguments against this account. Tocharian A *ktseis*, surely the direct cognate of *k(t)saisse*, means 'perfect, excellent', whose positive sense cannot be explained starting from a root meaning 'pass away, wither'. The form of the derived abstract in TB *ktsaisänne* also shows that the underlying form of the base adjective was trisyllabic /kätsäitse/, probably indirectly attested in Prakrit *ktsaisa*. Whatever its true source, /kätsäitse/ 'venerable' (or the like) has nothing to do with an original "thorn" cluster.

A Tocharian B word *taktsāntsa* 'expert, capable (person)'? from an unpublished text has been cited by Mayrhofer (1990:614) and Schindler *apud* Ringe (1996:4) on the authority of K. T. Schmidt, who tentatively compares Skt. *tákṣan-* and Gk. τέκτων. The correctness of the assigned meaning is impossible to evaluate without the context, and the proposed derivation would require extensive analogical reshaping to account for the overall form of the word (see the skepticism of Ringe and the detailed counter-arguments of Pinault, forthcoming). At present, this example does not remotely suffice to establish *kts* as the reflex of **tk* in Tocharian.

Direct evidence for "thorn" as an affricate [ts] in PIE thus remains limited to CLuv. *inzagān* (just as Hittite and Luvian alone retain [tsʰ] for /tʰ/). As intimated above, the necessary implication that the affrication of the dental stop before another stop took place prior to any metathesis does require a significant recasting of our view of the "thorn" phenomenon as a whole. Indo-Iranian presents no insurmountable problem for the analysis presented here; as already suggested more than once (e.g. Burrow 1959a and 1959b and Lipp *apud* Rix et al. 2001:151, 644ff., and *passim*), the Indo-Iranian reflexes of dental plus dorsal clusters may be derived without metathesis.³⁰ Pinault (forthcoming)

³⁰ Schindler (1967:199) and Mayrhofer (1982:246) find this account plausible for cases of dental plus palatal, but express serious doubts that it may be extended to the other dorsal stops. For new arguments by Lipp for such a generalization see the passages cited. For very different solutions to the specific problem of Gk. φθείρω = Skt. *kṣar-* = Av. *ṣkar-* see Burrow (1959b:262) and Lipp *apud* Rix et al. (2001:213-214). I see no way to determine whether Indo-Iranian reflexes continue directly **TSK* or restored **TK*. Any trace of the affricate would become invisible, given the developments assumed by Lipp for the dorsal stops.

argues forcefully that **tsk* developed to *tk* phonologically in Proto-Tocharian. In any case, we have seen above that there is no positive evidence for Tocharian *kis* from "thorn" and thus none for any metathesis. Greek regularly eliminates the affricate (for which compare the elimination of **[ts]* < **/tt/* in Sanskrit), and the metathesis of the restored stop cluster may be assigned to the "τκτω-rule." Significantly, however, there may be traces of inherited **[TSK]* in dialect forms such as φιλοσκετ[]-φιλοκτητήτης(cf. Merlingen 1957:54 and Lipp *apud* Rix et al. 2001:645⁶).

Celtic shows no trace of an affricate, but the Gaulish form TEUOXTONI[O]N 'of gods and humans' with a stem *-gdonjo-* (cf. OIr. *duine* 'man' and Gk. χθόνιος 'terrestrial') does prove that Celtic metathesized **TK* to *KT* (also applicable to OIr. *art* 'bear' < **H₂artko-*): see McCone (1996:48).³¹ I assume once again suppression of the affricate and metathesis as in Greek. If one chooses not to attribute these changes independently to Greek and Celtic, one could suppose that metathesis *instead* of affrication was already an alternate "solution" to tautosyllabic **TK* clusters in PIE.

We are left with the Latin reflexes for "thorn" in *ursus* 'bear' and *sitis* 'thirst'. The former certainly reflects **-tk-*, and the most plausible source for the latter is the root **d^hg^{wh}ei-* 'pass away' cited above.³² Both of these are usually taken to show metathesis, but I know of no evidence that requires such an assumption, and the Latin treatment of the parallel **tst* argues against it. As per Leumann (1963:152), except before *r* the sequence **tst* results in Latin *ss*, and this must have happened via an intermediate stage **ts* with deletion of the stop and then deaffrication of **ts* to *ss* (so also Görtzen 1998:391). If the latter had happened first, the resulting **st* would surely have remained. We may thus assume the same development for **tsk* in 'bear': **urtsko-* > **urtsō-* > **urssō-* > *ursus*.³³ As Peter Schrijver kindly reminds me, *medial* examples of

³¹ For the details of the Gaulish word in the Vercelli inscription see Lejeune (1988:36-37). I thank Stefan Schumacher for this reference.

³² It is immaterial whether one adds further examples for **tk* such as Lat. *sinō* and Faliscan *sette* (tentatively Rix et al. 2001:643-644 with refs.) or for **d^hg^{wh}-* such as Lat. *situs* 'rust, mould' (Walde-Hofmann 2.549 with reference to alternatives). I should make explicit that I derive Lat. *texō* 'weave' and similar forms from PIE **teks-* (with Rix et al. 2001:620 and 638; see already Mayrhofer 1986:155).

³³ While this derivation seems viable for *ursus*, accounting for all of the reflexes of 'bear' remains problematic. See the comments of Mayrhofer (1986:153) with reference to

voiced **(d)zd^h* show different treatments: **kred(z)d^h-* > *crēdō* 'believe', while **wasd^ho-* > *uastus* 'vast' and **kud(h)zd^hH₁o-* > *custo-* in *custōs* 'guard' (see Leumann 1963:136f.). However one is to account for the difference between *crēd-* and *custo-* (cf. Görtzen 1998:388-389), it is clear that in both instances the final stop in the cluster remained. However, PIE voiced aspirates were devoiced early in Proto-Italic at least in initial position. The **dzg^{wh}hi-* of *sitis* 'thirst' would thus have been **tsk^{wh}i-*, and we may suppose the same deletion of the voiceless stop after affricate as in **tst* and **tsk*, whence **tsi-* > **ssi-* > *si-*.

The very limited direct evidence for "thorn" as an affricate bids caution, but such an interpretation is attractive, in that it permits two seemingly isolated and unmotivated PIE synchronic rules to be brought together as instances of the same phenomenon: dissimilation of a dental stop to an affricate before another stop.³⁴

References

- Anreiter, Peter
1987 Beiträge zur tocharischen Etymologie. *Indogermanische Forschungen* 92:95-111.
Arbeitman, Yoël
1992 Luwian *za-* and *-sa* (*l-za*): How I have changed my mind. *Linguistique Balkanique* 35:3-58.
Benveniste, Émile
1969 *Le vocabulaire des institutions indo-européennes*. Paris: Éditions de Minuit.
Burrow, Thomas
1959a On the phonological history of Sanskrit *kṣām-* 'earth', *ṛkṣa-* 'bear' and *ikṣā-* 'nit'. *Journal of the American Oriental Society* 79:85-90.
1959b Sanskrit *kṣi-*: Greek *φθίvo*. *Journal of the American Oriental Society* 79:255-262.

Schindler and of Rocca (2001), who adds to the problem Lith. *irštvà* 'bear's den', following Karaliūnas (1993).

³⁴ They cannot be collapsed into a single rule, since "thorn" appears to be restricted to tautosyllabic clusters, while "s-epenthesis" is not. Combination of the two rules into one becomes even more difficult if one accepts the restriction of Schindler (*apud* Mayrhofer 1986:111) that **/TT/* → **[TsT]* → **[TSP]*. I know of no evidence for this in the only common labial stop (**/TP/* → **[TSP]*). I know of no evidence for this in the only common environment where such clusters appear, nominal stems ending in a dental stop plus case endings beginning with **-bh-* (the speculations of Merlingen [1957:54-58] on initial *TT-* in Greek < **tp-* are best left aside). I thus prefer to speak only in terms of related changes.

- Čop, Bojan
1970 Eine luwische orthographische-phonetische Regel. *Indogermanische Forschungen* 75:85-96.
- Eichner, Heiner
1986 Die Akzentuation des Lydischen. *Die Sprache* 32:7-21.
- Forsman, Bernhard
2000 Altindoarisch prädiñ 'sichtbar, erkennbar'. In: *Anusantatayai. Festschrift für Johanna Narten zum 70. Geburtstag*. Almut Hintze and Eva Tichy (eds.). Dettelbach: Röhl, 39-54.
- Görtzen, Jens
1998 *Die Entwicklung der indogermanischen Verbindungen von dentalen Okklusiven mit besonderer Berücksichtigung des Germanischen*. Innsbruck: Institut für Sprachwissenschaft der Universität Innsbruck.
- Güterbock, Hans
1967 Lexicographical Notes III. *Revue hittite et asianique* 25:141-150.
- Güterbock, Hans G. and Harry A. Hoffner
1980-89 *The Hittite Dictionary of the Oriental Institute of the University of Chicago. Volume L-N*. Chicago: The Oriental Institute.
- Hackstein, Olav
1997 Präverb, Post- und Präposition im Tocharischen. *Tocharian and Indo-European Studies* 7:35-60.
- Hawkins, J. David
1986 Royal Statements of Ideal Prices: Assyrian, Babylonian, and Hittite. In: *Ancient Anatolia. Aspects of Change and Cultural Development. Essays in Honor of Machteld J. Mellink*, Jeanny Canby et al. (eds.). Madison: University of Wisconsin Press, 93-102.
- 2000 *Corpus of Hieroglyphic Luvian Inscriptions. Volume 1. Inscriptions of the Iron Age* (Studies in Indo-European Language and Culture 81). Berlin/New York: de Gruyter.
- Hawkins, J. David, Anna Morpurgo Davies, and Günter Neumann
1974 *Hittite Hieroglyphs and Luvian: New evidence for the connection* (*Nachrichten der Akademie der Wissenschaften der Universität Göttingen, philol.-hist. Klasse*, 1973/6). Göttingen.
- Hilmarsson, Jörundur
1991 East Tocharian *ksär* 'in the morning' from Indo-European **ghdhiestro-*. In: *Studia etymologica Indoeuropea. Memoriae A. J. van Windekens dicata*, Lambert Isebaert (ed.). Leuven: Peeters, 121-130.
- Hoffner, Harry A.
1994 The Hittite word for "Oil" and its Derivatives. *Historische Sprachforschung* 107:222-230.
- 1998 *Hittite Myths* (Second Edition). Atlanta: Scholars Press.
- Karalutinas, Simas
1993 Reflexes of IE **h₂r̥ko-* "bear" in Baltic. *Journal of Indo-European Studies* 21:367-372.
- Kimball, Sara
1983 *Hittite Plene Writing*. University of Pennsylvania Ph.D. dissertation. Philadelphia.

- 1994 Loss and Retention of Voiced Velars in Luvian: Another Look. *Indogermanische Forschungen* 99:75-85.
- Lejeune, Michel
1988 *Recueil des inscriptions gauloises. Volume II, fascicle 1*. Paris: CNRS.
- Leumann, Mann
1963 *Lateinische Laut- und Formenlehre*. Fünfte Auflage. Munich: Beck.
- Lipp, Reiner
1994 *Die indogermanischen Palatale im Indoiranischen und das Thorn-Problem*. Dissertation Universität Freiburg.
- Mayrhofer, Manfred
1982 Ergebnisse einer Überprüfung des indogermanischen Ansatzes 'Thorn'. *Abhandlungen der Österreichischen Akademie der Wissenschaften* 119:240-255.
- 1986 *Indogermanische Grammatik, Band 1, 2. Halbband: Lautlehre*. Heidelberg: Winter.
- 1990 *Etymologisches Wörterbuch des Altindoarischen*. Band I. Lieferung 8. Heidelberg: Winter.
- McCone, Kim
1996 *Towards a Relative Chronology of Ancient and Medieval Celtic Sound Change*. Maynooth: Department of Old Irish, St. Patrick's College.
- Melchert, Craig
1987 PIE Velars in Luvian. In: *Studies in Memory of Warren Cowgill*, Calvert Watkins (ed.). Berlin/New York: de Gruyter, 182-204.
- 1992 The Third Person Present in Lydian. *Indogermanische Forschungen* 97:31-54.
- 1994 *Anatolian Historical Phonology*. Amsterdam/Atlanta: Rodopi.
- Merlingen, Weriand
1957 Idg. "p" und Verwandtes. In: *MNHMHZ XAPIN. Gedenkschrift Paul Kretschmer*, Heinz Kronasser (ed.). Vienna: Wiener Sprachgesellschaft, 2:49-61.
- Morpurgo Davies, Anna and J. David Hawkins
1988 A Luvian Heart. In: *Studi di storia e di filologia anatolica dedicati a Giovanni Pugliese Carratelli*, Fiorella Imparati (ed.). Firenze: Elite, 166-182.
- Neu, Erich
1970 *Ein althethitisches Gewitterritual* (Studien zu den Bogazköy-Texten 12). Wiesbaden: Harrassowitz.
- 1980 *Studien zum endungslosen "Lokativ" des hehthitischen*. Innsbruck: Institut für Sprachwissenschaft der Universität Innsbruck.
- Nussbaum, Alan
1986 *Head and Horn in Indo-European*. Berlin/New York: de Gruyter.
- Otten, Heinrich, and Vladimir Souček
1969 *Ein althethitisches Ritual für das Königspaar* (Studien zu den Bogazköy-Texten 8). Wiesbaden: Harrassowitz.
- Pinault, Georges-Jean
1990 Notes sur les manuscrits de Maitreyasamiti. *Tocharian and Indo-European Studies* 4:119-202.

- forth-coming
1992 Poetto, Massimo
1995 Popko, Maciej
1996 Puhvel, Jaan
1999 Rieken, Elisabeth
2001 Ringe, Don
1990 Rix, Helmut
2001 Rix, Helmut et al.
Rocca, Giovanna
2001 Schindler, Jochem
1967 Starke, Frank
1985
1990 Tischler, Johann
1994
1975 Walde, Alois and Johann Hofmann
1954
Watkins, Calvert
- Sur l'évolution phonétique *isk > tk* en tokharien commun. *Münchener Studien zur Sprachwissenschaft*.
'net' in Anatolian, Vedic, and Greek. *Münchener Studien zur Sprachwissenschaft* 53:159-174.
Religions of Asia Minor. Warsaw: Academic Publications Dialog.
Hittite Etymological Dictionary. Vol. 3 Words beginning with H. Berlin/New York: Mouton de Gruyter.
Untersuchungen zur nominalen Stammbildung des Hethitischen (Studien zu den Boğazköy-Texten 44). Wiesbaden: Harrassowitz.
On the Chronology of Sound Changes in Tocharian. Volume 1. From Proto-Indo-European to Proto-Tocharian. New Haven: American Oriental Society.
Review of Studies in Memory of Warren Cowgill, Calvert Watkins (ed.) *Kratylos* 35:41-48.
Lexikon der Indogermanischen Verben. Zweite Auflage. Wiesbaden: Reichert.
Vittore Pisani, i suoi Thorn e gli orsi indoeuropei. In: *Cinquant'anni di ricerche linguistiche: problemi, risultati e prospettive per il terzo millennio* (Atti del IX Convegno Internazionale di Linguisti, Milano, 8-9-10 ottobre 1998), R. B. Finazzi and P. Tomaghi (eds.). Alessandria: Edizioni dell'Orso, 527-533.
Das idg. Wort für 'Erde' und die dentalen Spiranten. *Die Sprache* 13:191-205.
A Thorny Problem. *Die Sprache* 23:25-35.
Die keilschrift-luwischen Texte in Umschrift (Studien zu den Boğazköy-Texten 30). Wiesbaden: Harrassowitz.
Untersuchung zur Stammbildung des keilschrift-luwischen Nomens (Studien zu den Boğazköy-Texten 31). Wiesbaden: Harrassowitz.
Heititsches Etymologisches Glossar. Teil III. Lfg. 10. Innsbruck: Institut für Sprachwissenschaft der Universität Innsbruck.
Lateinisches Etymologisches Wörterbuch. Dritte Auflage. Heidelberg: Winter.
La désignation indo-européenne du 'tabou'. In: *Langues, discours, société. Pour Émile Benveniste*, J. C. Millner et al. (eds.). Paris: Éditions du Seuil, 208-214.
- 1995 Some Anatolian Words and Forms. In: *Verba et Structurae. Festschrift für Klaus Strunk zum 65. Geburtstag*, Heinrich Hettrich et al. (eds.). Innsbruck: Institut für Sprachwissenschaft der Universität Innsbruck, 357-361.
Yoshida, Kazuhiko
1997 A Further Remark on the Hittite Verbal Endings 1 pl. -wani and 2 pl. -tani. In: *Festschrift for Eric Hamp. Volume II* (Journal of Indo-European Studies Monograph Series 25), Douglas Q. Adams (ed.). Washington DC: Institute for the Study of Man, 187-194.
Zeifelder, Susanne
2001 *Archaismus und Ausgliederung. Studien zur sprachlichen Stellung des Hethitischen*. Heidelberg: Winter.
Craig Melchert
melchert@email.unc.edu