

**THE ORIGIN OF ANATOLIAN RELATIONS OF THE TYPE
KEŠŠAR : KIŠŠERAN AND BALTO-SLAVIC RELATIONS
OF THE TYPE AKMUO/KAMY : AKMENĪ/KAMENĪ**

1. In his 1980 article on the Indo-European origin of Hittite *n*-stems, Norbert Oettinger showed that the IE hysterokinetic accent paradigm (= AP) of the type OInd. *ukšā*, acc. *ukšanam*, gen. *ukšnás* 'bull' is preserved in the relation between Hitt. nom.sg.c. *iš-ḫi-ma-a-aš* < **sH₂i-mē(n)-s*¹ and acc.sg. *iš-ḫi-me-na-an* < **sH₂i-mén-ṃ* (: *išḫiman-/išḫimen-* (c.) 'cord, rope'), but the PIE stem with a zero-grade suffix from the oblique cases (i.e., **sH₂i-mn-*) has been analogically replaced with the stem *išḫiman-* (← **išḫimn-*) from other paradigmatic patterns. When he took into consideration the possibility that nom. *iš-ḫi-ma-a-aš* could be developed from **sH₂i-mōn-s*, he showed exactly the same relation as in the Lithuanian type *akmuō* : *ākmenĭ* 'stone'. However, in his opinion the Lithuanian situation should not be connected with the Hittite relation *iš-ḫi-ma-a-aš* : *iš-ḫi-me-na-an* because Hitt. nom. *iš-ḫi-ma-a-aš* (if it has an *o*-grade suffix) is secondary in relation to acc. *iš-ḫi-me-na-an*, whereas in Lithuanian it is accusatives of the type *ākmenĭ* that are secondary, of analogical origin because they spread from loc.sg. **H₂(o)k'-mén* of the holokinetic AP nom.sg. **H₂ék'-mōn*, acc. **H₂ék'-mon-ṃ*, gen. **H₂k'-mn-és* (Oettinger 1980: 47 and n. 11).² In Oettinger's opinion, the same results in Hittite and in Lithuanian (the Slavic type *kamy* : *kamenĭ* must be also added, as Szemerényi [1960: 161 ff.] already did) are not comparable because they originate from two different analogical patterns.

Vowel gradation of the type *iš-ḫi-ma-a-aš* : *iš-ḫi-me-na-an* is not the only one in Hittite. The same situation can be also identified in *keššar* : *kiššeran* and even in the Anatolian relation between Hitt. *tēkan* and CLuw. *tijamm(i)-*. Moreover, it is also questionable whether the situation in the Anatolian languages is really the result of totally different factors than in Balto-Slavic. Namely, is it possible that the comparable situation between the nominative and accusative singular in these languages³ reflects the same historical development, and could therefore be prehistorically connected? Trying to answer this morphological question is

* *Author's address*: Inštitut za slovenski jezik Frana Ramovša, Znanstvenoraziskovalni center Slovenske akademije znanosti in umetnosti, Novi trg 4, 1000 Ljubljana, Slovenia. Email: metka.furlan@zrc-sazu.si

¹ The same opinion is mentioned by Oettinger (1982: 174).

² The same opinion also mentioned by Oettinger (2003: 145 ff.).

³ The attested Lat. acc.sg. *hemōnem* (Leumann 1977: 364) indicates that the Latin paradigmatic type *homo* : acc. *hominem* must be of younger origin.

reasonable not only because of the numerous Anatolian-Balto/Slavic isoglosses recognized today, but also because of Beekes' theory about the primacy of the hysterodynamic⁴ AP nom.sg. **CéC-R*, acc. **CC-éR-ṃ*, gen. **CC-R-ós* (Beekes 1972, 1985), which originates from Szemerényi (1960: 162 ff.). Specifically, it is possible that accusatives of the type *iš-ḫi-me-na-an* / *ākmenj* / *камень* preserve the PIE archaic feature, although it is a PIE paradigmatic innovation.

2. ANATOLIAN MATERIAL

2.1. Hittite *iš-ḫi-ma-a-aš* : *iš-ḫi-me-na-an* 'cord, rope'

Although Hitt. nom.sg.c. *iš-i-ma-a-aš* is oxytone, it should not be derived from **sH₂i-mē(n)-s*, as Oettinger (1980: 47) proposed, because the development of the PIE phonemic cluster **-ēns* into Hitt. *-āš* is far from convincing. The assimilation **-éns* > Hitt. *-aš* is well attested in gen.sg. *-uaš* < **-uén-s* of verbal nouns in *-uar* < **-ur*, but the development of the long vowel **ē* before **-ns* or before preexisting Hitt. *-s* into *a* has not yet been proved.⁵ In OH recorded nom.pl.c. *išḫimāneš* has a sequence *-mān-* < **-mon-*, which clearly indicates that the noun could originate from the PIE holokinetic AP,⁶ as assumed by Melchert (1983: 10).⁷ Therefore the Hitt. oxytonesis of the nominative singular must be of secondary origin.

The root in *išḫiman-/išḫimen-* (c.) 'cord, rope' is the same as in the verb *išḫai-/išḫi-* 'to bind, to tie' and reflects the PIE verbal stem **sH₂ej-* 'to bind, to tie'; cf. OInd. *syāti* 'idem.', Lith. *siėti*, *siejù*. The Hittite noun is a PIE nomen actionis in **-men-* with grammatical development into a nomen rei acti: **sH₂ej-* 'to bind, to tie' → **sH₂ej-men-* *'binding' > 'cord, rope'. Therefore, the zero-grade stem *išḫi-* in *išḫiman-/išḫimen-* < **sH₂i-men-* is (as in Gr. λιμήν vs. λειμών or in OInd. *tmānas* vs. *ātmā*) not word-formationally but morphologically conditioned. The Hittite declension of *išḫiman-/išḫimen-* therefore only reflects the PIE original declension with the full-grade root. Such an opinion is based on the consistent single writing of intervocalic nasal *m*, which in addition to the zero-grade root indicates that the stem *išḫiman-/išḫimen-* must be the result of contamination between the PIE stem **sH₂éi-mn-* > Hitt. **išhemn-* and **sH₂i-mén-* > Hitt. **išḫimmen-*. The consistent single writing of the nasal fits the rule $\sqrt{RV} =$ Hitt. $-VRV-$ and not $\sqrt{RV} =$ Hitt. $-VRRV-$.⁸ This indicates that this stem characteristic originates from PIE forms with the accent on the root and not on the suffix.

⁴ Following Hoffmann's terminology (Eichner 1973: 91 n. 33), this paradigm is holokinetic.

⁵ Otherwise, Melchert (1983: 9 n. 23).

⁶ Hitt. *ḫa-a-ra-aš* (nom.sg.c.) < **H₃érō* + *s* also originates from the same type of AP.

⁷ Accepted by Rasmussen (1989: 38) and Rieken (1999: 41).

⁸ For example, *gēnu-* (n.) 'knee' < **g'ēnu-*; cf. OInd. *jānu* (nom.-acc.sg.n.) 'idem.'; *dāru-* (n.) 'tree, wood' < **dōru* (nom.-acc.sg.n.) = OInd. *dāru* = Gr. δόρυ; *kinu-* 'to open (up), to break open' < **g'hiH₁-neu-*; cf. CS. *zinqŭi*, *zineši* 'to gape', Lat. *hiscō*, *-ere*; *gimanija-* 'to winter' < **g'héjmon-je/o*, but *gimmant-* (c.) 'winter' < **g'hejmén-t-*; cf. OInd. *hemantá-* (m.) 'idem.'; *kuinna-* 'wife' < **g^uenéh₂* = PSlav. **žená* 'woman, wife'; *lammar* (adv.) 'instantly, immediately' < loc.sg. **nomér*; cf. root-related OLat. *numero* (adv.) 'idem.'

In trying to derive the noun from the PIE holokinetic AP nom.sg. **sH₂éj-mō(n)*, acc. **sH₂éj-mon-ṃ*, gen. **sH₂i-mn-és*, loc. **sH₂i-mén*, in addition to systemic phonetic development also taking into consideration the Hittite analogical post-accentual position of the nasal and the introduction of the null-grade root makes it possible to recognize that the Hittite paradigm of *išhiman-/išhimen-* differs from Hitt. *ḫāraš*, acc. *ḫāranan*, gen. *ḫāranaš*, in which the barytone stem with a full-grade root and an *o*-grade suffix from the PIE holokinetic AP has been generalized. The Hittite declension of *išhiman-/išhimen-* shows the oxytone stem and, connected with this fact, a secondarily introduced null-grade root. It is also evident that the *e*-grade suffix in the accusative singular was secondarily introduced. Within Hittite, secondary oxytonesis has been also established in collectives with a comparable morphemic structure; cf. *ú-i-ta-a-r* < **uedōr* ← PIE **uédōr* or *ḫa-aš-ta-a-i* < **H₂est(H)ōj* ← **H₂ést(H)ōj*. Instead of the expected barytone nominative singular **išhemaš*, the oxytone form *iš-ḫi-ma-a-aš* probably results from generalization of the stem with the null-grade root and has no connection with the progressive accent shift in collectives. With the exception of the analogical single written nasal *-m-*, the instr. *išhimanda* therefore reflects the old endingless loc.sg. **sH₂i-mén*, which has been extended with the ablative ending **-d*: **sH₂i-mén-d* > Hitt. **išhimmanta* → *išhimanda*.⁹ Based on the pattern of the Hitt. relation *uidanta* < **ued-én-d* : *ūitenit* < **ued-én-i-d* we would therefore expect the standard instrumental to be **išhimenit* and not *išhimanit*, as is attested. This was probably modernized from *išhimanda* with the synchronic exchange of the instrumental ending (*išhiman-da* → *išhiman-it*) or, like abl. *iš-ḫi-ma-na-az*, also shows generalization of the suffix **-mon-* in the oblique cases; cf. nom.pl.c. *išhīmāneš* < **sH₂i-món-*.

To return to Oettinger's interpretation – that in the relation *iš-ḫi-ma-a-aš* : *iš-ḫi-me-na-an* the accusative with the *e*-grade suffix is original, but the nominative with the *ō*-grade suffix is secondary (and I presume that the noun originates from the PIE holokinetic AP) – just the opposite explanation is much more probable; namely, that the nominative is original. In Oettinger's view, such an interpretation is probable only for the Lithuanian situation. However, the comparable results in Hittite and Lithuanian could also originate from an identical linguistic tendency. Namely, it is very likely that the original situation is preserved in the nominative *iš-ḫi-ma-a-aš*, and that the accusative *iš-ḫi-me-na-an* is of analogical origin. Such an interpretation is much more probable also because of the Hittite relation *ki-eš-ša-ar* : *ki-iš-še-ra-an*.

2.2. Hittite *ki-eš-ša-ar* : *ki-iš-še-ra-an* 'hand'

In the declension of *keššar/kiššer-/kiššar-/kišr-* (c.) 'hand' (cf. nom.sg. *ki-eš-šar*, acc. *ki-iš-še-ra-an*, gen. *ki-iš-še-ra-aš*, dat.-loc. *ki-iš-ri-i*, dir. *ki-iš-ra-a*, instr. *ki-iš-šar-ta* alongside *ki-iš-ša-ri-it*, acc.pl. *ki-iš-še-ru-uš*¹⁰), the full-grade root with the vocalic alternation *kešš-* : *kišš-* indicates that the noun must originate from the PIE

⁹ On the prehistoric interpretation of Hitt. instrumentals, see Klingenschmitt (1994: 240–241).

¹⁰ The material is cited from Rieken (1999: 278 ff.) and Goetze (1937: 494 n. 1).

holokinetic AP nom.sg. *g'hésōr, acc. *g'hés-or-ṃ, gen. *g'hs-r-és, loc. *g'hs-ér (Schindler 1967b: 247; Rieken 1999: 280). Although nom.sg.c. *keššar* represents the expected development from PIE *g'hésōr and the oblique cases have an analogically introduced unaccented full-grade root alongside the original zero-grade suffix (cf. dat.-loc.sg. *kišrī* < *gh'es-r-éj, dir. *kišrā* < *g'hes-r-ó; Furlan 2001: 115) or an analogous full-grade accented suffix *-ér¹¹ from the PIE loc.sg. (cf. gen.sg. *kiššeraš* < *g'hes-ér-os, instr. *kiššarta* < *g'hes-ér-d), the acc.sg. *kiššeran* < *g'hes-ér-ṃ differs from the supposed PIE *g'hés-or-ṃ because of the accented e-grade suffix: *g'hés-or-ṃ → *g'hes-ér-ṃ > *kiššeran*. Presuming that the Hittite paradigm originates from the PIE holokinetic one, the PIE nominative is preserved in the original form, whereas the accusative is the result of an analogy that spread from loc.sg. *g'hs-ér.

Related CLuw. *iššar(i)*- (c.) 'hand' with nom.sg.c. (*i*-)*iš-ša-ri-iš*, acc. *iš-ša-ri-in*, instr. *i-iš-ša-ra-ti*, acc.pl. *iš-ša-ra-an-za*, and Lyc. *izredi* (abl./instr.) < *g'hés-r-o-ti are usually derived from the PIE stem *g'hésr- (Melchert 1994: 240, 254),¹² which is well attested in Gr. χείρ (f.), acc. χείρα < *g'hésr-ṃ.¹³ However, the CLuw. double writing of -šš- is, like in Hittite (cf. *kiššarta*, *kiššarit*), a signal of the Luwian intervocalic position of *s and consequently the CLuw. forms could reflect the stem *g'hés-or-. In early Proto-Anatolian, the reflex of PIE acc.sg. *g'hés-or-ṃ probably still coexisted alongside *g'hes-ér-ṃ > *kiššeran*, and we could therefore assume that the Hitt. acc. *kiššeran* represents an innovation within the holokinetic AP and is not a sign of the archaic accusative, as hypothesized by Beekes (1985: 54).

2.3. Hittite *te-e-kán* : Cuneiform Luwian *tijamm(i)*-

In Hittite the PIE animate gender noun *dheg'h-em- 'earth' is preserved as a neuter noun with the Hittite holokinetic AP from the same PIE AP;¹⁴ cf. nom.-acc.sg. *te-e-kán* < *dhég'hōm as well as gen. *ták-na-a-aš* < *dhg'hm-ós, dir. *ta-ak-na-a* < *dhg'h-m-ó, loc. *ta-ga-a-an* < *dhg'hém. The original gender noun is still preserved in CLuw. *tijamm(i)*- 'earth' (cf. nom.sg.c. *tijammi-š*, acc. *tijammi-n*); the cluster -amm- from *-ém- (according to Čop's Law) indicates that it originates from the stem with the full-grade suffix *-(R)éR-, like Hitt. acc.sg. *išhimenan* and *kiššeran*. Although the stem *tijamm(i)*- is usually explained as originating from PIE loc.sg. *dhg'h-ém (Melchert 1994: 236, 242), it is much more probable that it originates from the

¹¹ Toch. B *šar* 'hand' (Schindler 1967b: 248 ff.) also derives from the stem with the full grade of both morphemes (root + suffix) *g'hes-er-.

¹² The interpretation is made presuming that *s* before *r* was geminated in Hittite and in Cuneiform Luwian (Melchert 1994: 266). However, examples such as Hitt. *e-eš-ri*- 'image, statue', ^{stc}*kišri*- 'skein of carded wool (?)' and CLuw. *ašrul(i)*- (adj.) 'female' do not confirm such a rule. It is more probable that in both cuneiform languages alternating records with -ššar- (*kiššarta*, *eššari*) alongside -šr- (*kišrī*, *ēšri*) reflect the intervocalic position of *s, which could be the result of ablaut alternation in the word (*keššarta* : *kišrī*) or anaptyxis (*eššari* : *ēšri*).

¹³ Arm. *jejn* 'hand' has a secondary *n*-stem deriving from acc.sg. *g'hesr-ṃ (Olsen 1999: 174 ff.).

¹⁴ For the reconstruction of the PIE paradigm, see Schindler (1967a: 201; 1967b: 247).

accusative sg. of the type *išimenan* (i.e., from **dhg'h-ém-ṃ*), or from the accusative sg. of the type *kiššeran* (i.e., from **dheg'h-ém-ṃ*).¹⁵ Supposing that CLuw. *tijamm(i)*- originates from PANat. acc.sg. **deg'ém-an* and taking into consideration the development of the PIE voiced velar into PLuw. **j̄*, this yields the early PLuw. form **dejém-an*. In further development one would expect that the glide **j̄* (as in *išsar(i)*- < PLuw. **j̄ésar-* < **g'hés-or-*) would hinder the change of the early PLuw. vowel *e* into *a* to the right (rather than left) of the glide:

PLuw. **dejém-an* > CLuw. *tajim(i)* : PLuw. **dejém-an* → CLuw. *tijamm(i)*-**

It seems that in a sequence with two early PLuw. **e* vowels the glide **j̄* hindered the development of the vowel *e* into *a* to the left (and not right) of it because of its lack of accentuation. Based on the influence of the PLuw. glide **j̄* on the accented vowel **é* to its right (as can be seen in *išsar(i)*-), it is evident that the origin of *tijamm(i)*- from loc.sg. **dhg'h-ém* or from acc.sg. **dhg'h-ém-ṃ* must not be considered because in that case PLuw. **j̄* < PANat. **g'* would assimilate the vowel **é* to *i* even before the realization of the systemic phonetic development PANat. **e* > PLuw. **a*.¹⁶ CLuw. *tijamm(i)*- is therefore a probable sign of the existence of the acc.sg. **deg'ém-an* of the type Hitt. *kiššeran* in Proto-Anatolian.

HLuw. *ta-ka-mi-i* (dat.-loc.sg.) still preserves the PIE voiced velar. Čop (1970: 91) derived it from PLuw. **takkam* < PIE **dhég'hōm-*,¹⁷ although this interpretation is not convincing because in Luwian languages the reflex of the PANat. voiced velar also develops into the glide **j̄* before the vowels *o* or *a*; cf. CLuw. *tuyatarr(i)*- (c.) 'daughter' or Lyc. *kbatra-* 'idem.' (< **dhugH₂-tér-* or **dhugH₂-tr-*). Therefore it seems probable that HLuw. *ta-ka-mi-i* like Hitt. *ták-ni-i* reflects the form **dhg'h-m-éj̄*¹⁸ and that the root-vowel has been secondarily introduced based on the pattern of the type *e-ě-zi* : *a-ša-an-zi* (Schindler 1967a: 202), which must originate from the relations in the PANat. paradigms of the type **érs-ti* : **ars-énti* (< PIE **H₁érs-ti* : **H₁rs-énti*) > Hitt. *ārš-zi* : *arš-anzi*:

PANat. **dég'ōn* : **dag-m-* ← PIE **dhég'hōm* : **dhg'h-m-*

¹⁵ The possibility that CLuw. *tijamm(i)*- reflects the stem **dheg'hem-* was already mentioned by Čop (1956: 44), but in a later article (1970: 90 n. 25), in spite of the sequence *-amm-* he still expresses doubts. Starke (1987: 264) derives CLuw. *tijamm(i)*- from PLuw. acc. **tī(j)amm-an*.

¹⁶ The development of PIE **e* into PLuw. **a* is a systematic phonetic change. Melchert's interpretation that the development of *tijamm-* from **djém-* was realized because of the raising of articulation of PLuw. **é* into *i* was blocked by the prior effect of Čop's Law (Melchert 1994: 254) is therefore not convincing. However, the effect of Čop's Law is a positionally conditioned change as part of the systematic development of PANat. **e* > PLuw. **a*.

¹⁷ Accepted by Melchert (1994: 253); similarly also Starke (1987: 263).

¹⁸ Similarly Oettinger (1976: 101), Starke (1990: 99).

2.4. Hitt. acc. *iš-ḫi-me-na-an*, *ki-iš-še-ra-an* and PLuw. acc. **dejém-an* → CLuw. *tijamm(i)-*

It is now very likely that within the Anatolian material one may recognize three singular accusatives with the suffix sequence **(R)éR-ḫ*, for which other paradigmatic forms show that nouns could be derived from the PIE holokinetic AP nom.sg. **CéC-(R)ō(R)*, acc. **CéC-(R)oR-ḫ*, gen. **CC-(R)R-és*, loc. **CC-(R)éR*. In this declension the change of acc. **CéC-(R)oR-ḫ* into **CeC-(R)éR-ḫ* was probably caused by loc.sg. **CC-(R)éR*¹⁹ because of the comparable locative function (*quo?*), which was intrinsic to both cases.²⁰ The analogical input of new accusative forms with an accented *e*-grade suffix was also possible because of the coexistence of the hysterokinetic AP with the comparable structure of the accusative; that is, **CC-(R)éR-ḫ*. In Proto-Anatolian, such an accusative certainly existed at least in the declension of PIE **dhugH₂-ter* ‘daughter’; cf. CLuw. *tuyatarr(i)-* < **dhugH₂tér-* and PIE **H₂s-ter-* ‘star’; cf. Hitt. acc. URU *ḫštiran* < **H₂s-ter-ḫ* alongside nom.sg.c. *ḫašter-za* ← **H₂s-tér* (+ *s*).

Although in *išḫimenan* it is evident that the analogical input of the characteristic locative **CC-(R)éR* into the accusative also partly spread into the nominative, where the exchange of the full-grade root with the null-grade root caused oxytonesis, this did not happen in *kiššeran* and PLuw. **dejém-an*. The nominative therefore remained barytone. Only in *kiššeran* did the analogy also spread into the oblique cases, which caused the introduction of the full-grade root into singular and also plural cases (cf. gen.sg. *kiššeraš*; acc.pl. *ki-iš-še-ru-uš*).

Although CLuw. *iššar(i)-* (c.) ‘hand’ indicates the existence of the PLuw. original accusative from PIE **g’hés-or-ḫ*, and therefore indicates the possibility that all three accusatives of the type *kiššeran* could represent internal Anatolian innovations, such an interpretation is not very likely because:

- a) Such examples are very rare and are not only of Hittite origin.
- b) The effects of the analogical innovation from the locative singular are different.
- c) The endingless locative is also rare in Anatolian languages. This case was probably already an archaism in early Proto-Anatolian and not an active morphological category that could have influenced the development of Anatolian nominal paradigms.

¹⁹ The interpretation of analogical activity within the holokinetic AP as an argument against Szemerényi’s theory of primacy of paradigms of the type nom. sg. **-ōn*, acc. **-en-ḫ* (Szemerényi 1960: 162) was first mentioned by Oettinger (1980: 47 n. 11), who also pointed out that the exchange of accent position between the nominative and accusative is far from convincing. Beekes (1982: 57 n. 1) observes that the explanation with the locative is weak because it is very questionable whether the locative as a point of departure for the analogy could have had such power. Earlier, Schindler (1967: 201) rejected the assumption of the primacy of the paradigm nom. sg. **-ōn*, acc. **-en-ḫ*, pointing out that the theory could not be sufficiently proven. I cannot address Oettinger’s opinion that the identical analogical extension from the loc.sg. as in Baltic could also be identified in Germanic because the circumstances in these languages are not the same. In Baltic the *e*-grade suffix is also evident in accusatives, which is not the case in Germanic. See Jasanoff (1977: 150 ff.).

²⁰ The common function of the accusative and locative was discussed by Meillet (1922), cf. especially p. 51.

It would therefore be better to take into account all of the facts mentioned when identifying the time of activity of the analogical pattern that was spread by the endless locative within the holokinetic AP and caused the new Anatolian accusatives *iš-ḫi-me-na-an*, *ki-iš-še-ra-an*, and PLuw. **deǰém-an*. These facts lead to the conclusion that this analogical pattern was already productive in Proto-Indo-European. In Anatolian, the variability of acc.sg. **g'hés-or-ḡ* : **g'hes-ér-ḡ*, identified in CLuw. *išsar(i)-* and Hitt. acc. *kiššeran*, must be therefore a relic of the PIE analogical process.

3. BALTO-SLAVIC MATERIAL

In Lithuanian and the Slavic languages, nouns of the type *akmuō* : *ākmenj* or *kamy* : *kamēnʹ* are frequent, although examples with IE parallels are very rare. Only *akmuō* and *kamy* have related forms in OInd. *ásman-* (m.) 'stone' (gen. *ásnas* (< **ásmn-as*), instr. *ásnā*) and Gr. ἄκμων 'stone' (acc. -ονα, gen. -ονοϗ). Lith. *piemuō* 'herder' has a related form in Gr. ποιμήν, acc. -ένα, gen. -ένοϗ 'idem.'

Whereas relations of the type *akmuō* : *ākmenj* are common in Lithuanian for all *n*-stems with a polysyllabic nominative,²¹ Proto-Slavic relations of the type *kamy* : *kamēnʹ* did not survive in the modern Slavic languages. The original situation is still preserved in some OCS nouns,²² but in the modern Slavic languages accusatives of the type *kamēnʹ* have been recategorized into nominatives; cf. Sln. *kámen* (m.), gen. *kámna*,²³ Croat. *kāmēn* (m.), gen. *kāmena*. Traces of these old nominatives still survive in forms such as Croat. Čak. *kāmik* (m.) < **kāmy-kō*. In such nominatives, the old ones have been restructured with the suffix **-kō*. The internal paradigmatic relations of the type *kamy* : *kamēnʹ* were probably considered uneconomical, outmoded, and antiquated, and therefore the nominatives were modernized into a productive morphological category.²⁴ However, this pattern was not active for a long time because examples of the type **kamy-kō*, gen. **-a* ← **kamy* (nom.sg.m.) are not numerous in the Slavic languages.

A trace of PIE nominatives **CeC-(C)ō(R)* from the PIE holokinetic AP is still preserved in the word-final Lith. *-uō* and PSlav. *-y*, but only Lith. *-uō*²⁵ clearly shows the original PIE **-ō*. Namely, PSlav. *-y* could be derived from **-ōn-s*,²⁶ which points to an analogical nominative with a secondary introduced nasal *n* from accusatives of the type **CeC-(C)on-ḡ*, when new forms of the type **CeC-(C)eR-ḡ* had not replaced them yet. **Like CLuw. *išsar(i)-* with the stem **g'hés-or-* from acc.sg. **g'hés-or-ḡ* alongside Hitt. *kiššeran* < **g'hes-ér-ḡ*, Slavic word-final *-y* (nom.sg.m.) < **-ōn-s***

²¹ However, *šuō* (m.) 'dog', acc. *šūnj*, gen. *šuñs*.

²² Sporadically also in other Slavic languages; i.e., in Kashubian, Serbian, and Croatian (Vaillant 1958: 207).

²³ The form is reduced from Sln. **kāmēna*.

²⁴ The same situation is known in OInd. *udakā-* (n.) 'water' < **udḡ-kó-* ← *udān-* (n.) 'idem.', *kātu-* 'sharp' ← *kātu-ka-* 'idem.'

²⁵ The accent position is of course secondary; cf. *akmuō* vs. *ásman-/ἄκμων*.

²⁶ This possibility was mentioned by Vaillant (1950: 216 ff.).

therefore also indirectly indicates that accusatives of the type *kamēn* are innovations within the PIE holokinetic AP.

Regarding the introduction of the full-grade suffix **(C)ér-* into the cases of the original holokinetic AP, it is possible to observe that different stages of analogical activity took place in Anatolian (cf. nom.pl.c. *išhīmāneš*), but in Lithuanian and Slavic (with the exception of the nominative singular) the analogical process has been realized in all other cases, including the nom.pl.; cf. Lith. *ākmens* (nom.pl.m.), OCS. *kamene* (nom.pl.m.).

The same situation between the nominative and accusative as in *n*-stems may also be observed in Lith. *sesuō* ‘sister’, acc. *sēserj*, gen. *seseřs*, nom.pl. *sēsers*, which originates from the PIE holokinetic AP; cf. OInd. *svásā*, acc. *svásāram*, instr. *svásrā*, Gr. ἑορ, Lat. *soror* alongside PSlav. **sestrā*, acc. **sěstrŭ* (< **sųésr-*).

3.1. *akmuō/kamy*, *piemuō*, and *sesuō*

In Balto-Slavic only *akmuō/kamy*, *sesuō*, and *piemuō* certainly originate from the PIE holokinetic AP and the same conclusion was made for three Anatolian nouns: the accusatives *iš-ḫi-me-na-an*, *ki-iš-še-ra-an*, and PLuw. **dejém-an*. This indicates that the comparable analogical facts in Anatolian and Balto-Slavic languages may result from an identical linguistic tendency, which probably took place already at the common IE stage; that is, in Proto-Indo-European.

Such an opinion could also be formed on the basis of the relationship between Lith. *piemuō* and Gr. ποιμήν because both nouns originate from the PIE holokinetic AP **péH₂i-mō(n)*,²⁷ acc. **péH₂i-mon-ŋ*, gen. **pH₂i-mn-és*, loc. **pH₂i-mén*, in which the PIE stem **peH₂i-men-* with both full-grade morphemes (root + suffix) has been generalized (with the exception of the nominative singular) in both languages. The accusatives *piemenj* and ποιμένα may originate from primary **peH₂i-mén-ŋ*, and the genitives *piemeñs* and ποιμένος from **peH₂i-mén-e/os*. This may indicate that the accent position in the Lith. accusative is secondary if one takes into account that the same accent position as in Gr. acc. ποιμένα has also been identified in Anatolian (cf. Hitt. *išḫimen-an*, *kiššer-an*, PLuw. **dejém-an*). However, in spite of accent retraction of the type *dükterj* (: Gr. θυγατέρα), it is also possible that the Lith. acc. *piemenj* preserves the original accent position from the PIE holokinetic AP:²⁸ **péH₂i-men-ŋ* ← **péH₂i-mon-ŋ* (cf. *ākmenj* and *sēserj* below). The same statement on the original accent position of the genitive from the holokinetic AP (i.e., **(C)R-és*) could also be made on the basis of the Lith. gen. *piemeñs* < *-enès* (cf. *dukteřs*). The accent position in Gr. gen. ποιμένος and Hitt. gen. *kiššeraš* is therefore secondary.

²⁷ Such a nominative was already hypothesized by Rix (1976: 145). The Greek *o*-colored diphthong (cf. also Myc. *po-me*) instead of the expected *a*-colored diphthong must be of analogical origin due to other members of this word family; cf. πῶν ‘flock of sheep’.

²⁸ The Lith. acute is due to laryngeal metathesis: **péH₂i-men-ŋ* → **péjH₂men-ŋ* (Rasmussen 1989: 33).

According to the original PIE holokinetic AP, the accent position in both nominatives *piemuō* and ποιμήν is also secondary; cf. Hitt. *tēkan*, *keššar*, Gr. ἄκμων. Because the introduction of analogical forms in the PIE holokinetic AP was through accusative extension into other cases (cf. Hitt. gen. *kiššeraš* ← **kišraš* < **g'h(e)s-r-ós*) and finally also into the nominative, in Lith. *piemuō* only the accent position is secondary, but in Gr. ποιμήν the *e*-colored suffix length is also secondary, introduced from nominatives of the hysterokinetic type πατήρ.

Although it would also be possible for the influence of hysterokinetic type to have caused the oxytone genitive *piemeñs* (cf. Lith. *dukterš* < **dhugH₂-ter-és* ← **dhugH₂-tr-ós* = θυγατρός) such an assumption is not necessary because these oxytone genitives can preserve the feature of the original holokinetic AP: gen.sg. **-mn-és* → **-men-és* → Lith. *-meñs*.

The relation between *piemuō* and ποιμήν alongside other Anatolian and Balto-Slavic material therefore confirms that the analogy in the supposed holokinetic AP already took place in PIE and that **relations of the type *akmuō* : *ākmenj* in the Anatolian and Balto-Slavic languages reflect the state of development of an analogical process whose final result was nouns of the hysterokinetic type with a full-grade root (cf. Gr. ποιμήν) or also with a zero-grade root**, as can be seen in the relation between the nouns λιμήν, gen. -ένοϛ and λειμών, gen. -ῶνοϛ, which originate from the same holokinetic AP: nom.sg. **léj-mō(n)*, acc. **léj-mon-ŋ*, gen. **li-mn-és*, loc. **li-mén*.

3.2. Lithuanian *sesuō*

Although it is usually assumed that (with the exception of the nominative singular) the development of the Lithuanian paradigm *sesuō*, acc. *sēserj* was wholly caused by Lithuanian relationship nouns of the hysterokinetic type *duktē*, acc. *dūkterj*, gen. *duktērš*, pl. *dūkters* ‘daughter’ (including the type *mótē*),²⁹ it is much more likely that the analogical input of the new accusative *sēserj* was only additionally supported by these and that they were not the crucial analogical factor. The hysterokinetic type *duktē* was certainly responsible for the new nom.sg. *sesē* and also *sēsē*³⁰ from *sesuō* and therefore the total loss of information about the primacy of consonant declension. Namely, the variable accent position in the new nominatives *sesē* : *sēsē* indicates that *sēsē* must originate from the Lith. barytone nom.sg. **sēsuo*, which alongside acc. *sēserj* probably preserved the accent position of the primary nominative and accusative of the PIE holokinetic AP. Moreover, the variability in gen.sg. *seseš* : *sēseres*³¹ could also indicate that the Lithuanian mobile AP is secondary and that the columnal barytonesis is the result of generalization of the stem from the nom.sg. **súésō(r)*³² = Lith. **sēsuo*, acc. **súésor-ŋ* → **súésor-ŋ* = Lith. *sēserj*, gen. **súésor-es* = Lith. *sēseres*.

²⁹ Thus Trautmann (1923: 258). See also Kuryłowicz (1958: 172 ff.).

³⁰ Both forms were already cited by Trautmann (1923: 258).

³¹ The barytone gen. sg. is known from eastern Lithuanian dialects (Illič-Svityč 1963: 64).

³² Illič-Svityč (1963: 64).

3.3. Lithuanian *ākmenj* : Slavic **kamèñb* < PIE **H₂ék'-men-ŋ*

In Lithuanian the old (e.g., *akmuō* : PSlav. **kamy*, acc. **kamenb*, OInd. *ásman-* (m.), Gr. ἄκμων) and the new *n*-stems (e.g., *ruduō*) belong to the 3rd mobile AP; cf. *akmuō*, acc. *ākmenj*, gen. *akmeñs*, nom.pl. *ākmens*. However, in the writings of Mikalojus Daukša (1599) and in eastern Aukštaitian dialects the noun *akmuō* belongs to the 1st AP: *ákmuo*, *ákmenes*, *ákmenj* (Illič-Svityč 1963: 63; Stang 1966: 296). The same accent position is also seen in Gr. ἄκμων, acc. -ονα, gen. -οβοç and OInd. *ásman-* with *ásnas* (< **ásmn-as*), instr. *ásnā*. Columnal barytonesis must be supposed in PSlav. **kāmy*, acc. **kāmèñb*, gen. **kāmene*, although here the identification of the primary accentual conditions is hindered by the fact that root metathesis took place: **H₂ék' → *k'eH₂* (→ **keH₂* > PSlav. **kǎ*), which probably caused the stable acute length. However, the remnant of PSlav. oxytone forms as in Lith. gen. *akmeñs* < **-men-ès* can be recognized, for example, in Cz. *kámen* < **kamèñb* and in the collective **kamèñbje* (= Croat. *kàmēnje* = Čak. *kamēnje*).³³ In the relation **kāmèñb* : **kamèñb* the form **kamèñb* (like **nesèšb* from the PIE type **bhéresi*) still reflects the primary PIE barytone acc.sg. **H₂ék'-men-ŋ*. It is therefore possible that the PSlav. oxytone **kamèñb* represents a relic from the time when metathesis had not yet taken place: **aktèñb* → **kamèñb*.

3.4. Although it is evident that Lith. acc. *sēserj*, *ākmenj* and Slavic acc. **aktèñb* do not originate from PIE accusatives with the same accent position as the Anatolian ones (cf. Hitt. *išhimenan*, *kiššeran*, PLuw. **dejém-an*), Greek examples such as ποιμήν and λιμήν/λειμών point to the conclusion that the innovative process in the holokinetic AP had already taken place in PIE. The Anatolian-Balto-Slavic relations between nom.sg. **(C)ō(R)* and acc. **(C)eR-ŋ* are therefore not only the results of an identical PIE evolutionary tendency within the holokinetic AP; the comparable results (i.e., transformation of acc.sg. **(C)oR-ŋ* into **(C)eR-ŋ*) may also confirm the old interpretation by Meillet that the common Balto-Slavic features are also relics from the common PIE stage.

4. THE PIE HOLOKINETIC AP AND THE THEORY OF PRIMACY OF THE PARADIGM nom.sg. **CÉC-R*, acc. **CC-ÉR-ŋ*, gen. **CC-R-ós*

The reconstruction of the holokinetic AP as a kind of PIE declension is based on material from various IE languages. This material demands the reconstruction of a disyllabic nominative and trisyllabic accusative with a full-grade root and suffix: nom.sg. **CéC-(R)ō(R)*, acc. **CéC-(R)oR-ŋ*. The existence of these paradigms must therefore be projected no earlier than when the quantitative ablaut of reduction was already dead and Hirt's Rule was already operating. On this basis, the vowel color of morphemes has been determined according to the accentual conditions in the forms. At that time, collectives of the type **uédōr*, sigmatic nouns of the type **nébhes-*, and so on already existed in PIE. When quantitative ablaut of reduction

³³ Accent position identification following Dybo (1981: 153)

was productive and caused relations of the type $*H_1\acute{e}s-ti : *H_1s-énti$, the PIE holokinetic AP certainly did not exist yet. Only in this regard is Beekes (1985) correct in searching for the origin of this kind of paradigm in more remote linguistic stages. However, his projection of the paradigmatic pattern $*CéC-R$, acc. $*CC-éR-ṃ$, gen. $*CC-R-ós$ ³⁴ is questionable because of the different ablaut and accent relation between the nominative and accusative. It is true that on the presumption of such a type of PIE paradigm the ablaut situations in nouns such as PIE for ‘salt’ could be solved; cf. $*séH_2-l-s$ (\rightarrow Lat. *sāl*), acc. $*sH_2-él-ṃ$ (\rightarrow Gr. ἄλας, PSlav. **solb*). However, only the formal point of view is not enough in linguistic interpretation. It is also known that, above all, other IE words also indicate that Proto-Indo-European was more than a single-colored vowel language and that the existence of PIE words such **sal-* ‘salt’ is therefore plausible.

It is also true that material from Anatolian cuneiform languages confirms the existence of accusatives of the type $*CC-(R)éR-ṃ$ (cf. Hitt. *iš-ḫi-me-na-an*) or $*CeC-(R)éR-ṃ$ (cf. Hitt. *ki-iš-še-ra-an*). Nonetheless, do they really allow us to reconstruct a PIE paradigm of the type $*CéC-R$, acc. $*CC-éR-ṃ$, gen. $*CC-R-ós$? Are they really enough for assuming such a paradigm if it is known that the Anatolian languages also confirm the existence of a PIE word such as **nébhes-*, which clearly shows that the Anatolian branch separated from PIE when the PIE pattern of quantitative ablaut was already dead?

4.1. The PIE holokinetic AP must therefore be recognized as a real linguistic fact. It is also understandable that its complicated pattern had begun to simplify. The Hitt. nom.sg.c. *ḫa-a-ra-aš* ‘eagle’ $< *H_3érō + s$, acc. *ḫa-a-ra-na-an* $< *H_3ér-on-ṃ$, gen. *ḫa-a-ra-na-aš* $< *H_3ér-on-os$ $\leftarrow *H_3r-n-ós$ shows that its simplification could be realized by generalization of the stem from strong cases. Another pattern is recognizable in **k’uon-* ‘dog’, which in spite of its relatively stable paradigm nom.sg. $*k’(u)uō(n)$, acc. $*k’(u)uón-ṃ$ ($\rightarrow *k’ún-ṃ$), gen. $*k’unós$ must originate from the PIE holokinetic AP $*k’euō(n)$, acc. $*k’éuon-ṃ$, gen. $*k’unós$; cf. OInd. *śvā* = Gr. κύων = Lith. *šuo* = Hitt.

³⁴ As an argument in favor of assuming the existence of such a PIE paradigm, Beekes (1985: 42) mentions Rozwadowsky (1914–1915: 14 ff.), who pointed out that in the OCS texts alongside the acc.sg. of the type *svekrъ* $< *uṃ-ṃ$ $< *uH-ṃ$ one can also find an acc.sg. of the type *svekrъ* with the full-grade suffix $*-eu-ṃ$ (cf. acc.sg. *ljubovъ* in Codex Zographensis, Evangelium Asemanii, Euchologium Sinaiticum, Glagolita Clozianus). Loma (2002) writes about traces of such accusatives in Serbian onomastics and elsewhere in Slavic areas (cf. OSerb. *Žrъnovъ*, Slk. *Žarnov* = Hung. *Zarnó*) and derives them from an adj. in *-ovъ*. However, Slavic accusatives of the type *svekrъ* probably do not represent archaisms because it is possible that they are Slavic innovations, caused by homonymy in the nominative final *-y* of $*-y/ъv$ -stems and *n*-stems; cf. nom.sg. **svekry* : **kamy*. Following the pattern of accusatives of the type *kamenъ*, this homonymy could give rise to a new full-grade suffix in accusatives of the type *svekrъ*:

nom.sg. $*-y$: acc.sg. $*(m)enъ$ = nom.sg. $*-y$: acc.sg. $*-ъv$ $\rightarrow *-ovъ$
 $*kamy$: $*kamenъ$ = $*l’uby$: $*l’ubъv$ $\rightarrow *l’ubovъ$

The new accusatives of the type *svekrъ* probably caused new adjectives of the type *bukovъ* and, based on the pattern of relations such as $*synovъ$: $*synъ$, new nominatives of the type $*bukъ$.

ku-ya-aš; OInd. *śvánam* = *ku-ya-na an*, but Gr. κύνα = Lith. *šùni*; OInd. *súnas* = Hitt. *ku-ú-na-aš* = Gr. κυνός = Lith. *šũns*.³⁵

In addition to these patterns of simplification caused by the universal phenomenon of linguistic economy, another one took place in the PIE holokinetic AP, caused by the fact that its locative singular was the only form with the *e*-grade suffix on the one hand and its function (*quo?*) was comparable to one of the functions of the accusative on the other. When the endless locative was still an active morphological category and its function was comparable to the function of the accusative, the locative form began to influence the accusative. The situation in Anatolian, in which oblique cases with a null-grade suffix exist alongside accusatives of the type **CeC-éR-ṡ* in the declension of *keššar* and *tekan*, points to the assumption that the analogical input of a new stem into the accusative originated from the locative. It is clear that this kind of internal paradigmatic exchange was not hindered by a less complicated hysterokinetic type in which the comparable situation already existed; cf. acc.sg. **CC-(C)éR-ṡ* : loc. **CC-(C)éR*.

The first step of this analogical process therefore created the following situation:

nom.sg. **CéC-(C)ō(R)* = *keššar*, **sēsuo*
 acc. **CéC-(C)ōR-ṡ*
 → **CéC-(C)eR-ṡ* → **CeC-(C)éR-ṡ* = **sēseri*, *ākmenj* : *kiššeran*,
 PLuw. **dejém-an*
 gen. **CC-(C)R-és*
 loc. **CC-(C)éR*

In its further development, the accusative stem also began to appear in the oblique cases. Such a situation is recognizable in the paradigm of Hitt. *keššar*:

nom.sg. **CéC-(C)ō(R)* = *keššar*
 acc. **CéC-(C)ōR-ṡ*
 → **CeC-(C)éR-ṡ* = *kiššeran*
 gen. **CC-(C)R-és*
 → **CeC-(C)éR-os* = *kiššeraš*
 loc. **CC-(C)éR*
 → **CeC-(C)éR* = **kiššar* in instr. *kiššarta*

At this stage, the basis for further analogical input of the new stem into other cases was established and the old holokinetic AP slowly began to acquire the characteristics of the hysterokinetic AP in the nominative singular as well, as is evident from Gr. ποιμήν and λιμήν. The stage before results of the type ποιμήν, i.e.,

³⁵ The OInd. genitive form *súnas* has the exactly the same accent position as Hitt. gen. *ku-ú-na-aš*, but the Gr. accent position in gen. κυνός fits with the accent position in Lith. *šũns*. The primary accent position is therefore Greek-Lithuanian.

when only the nominative singular still preserved the characteristic of the primary holokinetic AP, is still reflected only in Baltic and Slavic relations of the type *akmuo/kamy* : *akmenj/kamenъ*.

5. CONCLUSION

Only Anatolian relations of the type *keššar* : *kiššeran* and Balto-Slavic relations of the type *akmuo/kamy* : *akmenj/kamenъ* still preserve the PIE paradigmatic innovation within the PIE holokinetic AP, caused by the comparable function (*quo?*) of the locative and accusative.

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Povzetek

O NASTANKU ANATOLSKIH RAZMERJIH TIPA KEŠŠAR : KIŠŠERAN IN BALTO-SLOVANSKIH TIPA AKMUO/KAMY : AKMENĪ/KAMENĪ

V anatolskih razmerjih het. *išḫimāš* (im. ed. spl.) : *išḫimenan* (tož. ed.) ‘vrv’, *keššar* : *kiššeran* ‘roka’, *iēkan* ‘zemlja’ (< **dhég’h-ōm*) : kluv. *tiḫamm(i)*- ‘zemlja’ (← tož. ed. **dheg’h-ém-ḡ*) in balto-slovanskih razmerjih tipa *akmuo/kamy* : *akmeni/kamenĭ* se ohranja podatek o prajezični paradigmatiski inovaciji, ki je v prajezičnih holokinetičnih akcentskih paradigmah tožilnik ednine s strukturo **CéC-(C)oR-ḡ* preoblikovala v *CéC-(C)eR-ḡ* / *C(e)C-(C)éR-ḡ*. Preoblikovanje prvotnih tožilnikov ednine je sprožil brezkončniški mestnik ednine s strukturo **CC-(C)éR*, saj sta oba sklona izražala primerljivo funkcijo *kam*?