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## THE DEVELOPMENT OF THE SIGMATIC AORIST IN ARMENIAN

If sigmatic stems were productive in Proto-Armenian and they spread to the inherited root aorists, why so many root aorists remained intact? Here I will try to answer this question, which Petr Kocharov put before me. The essential point is that there were two periods of expansion of the sigmatic aorist, viz. before and after the loss of intervocalic  $*h < *s$ .

At an early stage, nasal infixation in present stems was productive in Armenian, as is especially clear from *əmpem* ‘drink’ <  $*pimbe-$ , where the nasal was infixated in the reduplication syllable, cf. Vedic *pība-*, Latin *bibō*. Nasal infixation explains the preservation of  $*-s-$  in *lsem* ‘hear’ <  $*klunse-$ , which points to a sigmatic aorist *luay* <  $*kleus-$  replacing the original root aorist reflected in Greek *ἔκλυον* and Vedic *ásravam* (cf. [Kortlandt 2003: 80]). Another example of nasal infixation before  $*-s-$  is found in *busanim* ‘grow’, aorist *busay*, which shows a conflation of the sigmatic aorist stem  $*b^hous-$  <  $*b^heH_3us-$  and the derived present stem  $*b^huns-$ , Greek *φύομαι* (cf. [Kortlandt 2003: 130]). It follows that the sigmatic aorist was productive before the rise of nasal infixation in these present stems.

It is difficult to establish the early distribution of the sigmatic aorist because intervocalic  $*-h-$  from  $*-s-$  was lost before the rise of new  $*h < *p$  at stage 12 of my chronology (*ibid.*, p. 29) and final syllables were lost as a result of the apocope at stage 16 (*ibid.*, p. 31). The latter development affected stem-final vowels before nonsyllabic endings, in particular 2 sg.  $*-s$  and 3 sg.  $*-t$ , but also 1 sg.  $*-m$  and 3 pl.  $*-nt$  because these had not yet been syllabified when  $*h < *s$  was lost (cf. stage 14 of *ibid.*, pp. 30, 35). The problem did not arise in the middle paradigm, where all endings were syllabic. The thematic 1 sg. endings  $*-ō$  and  $*-om$  had merged into  $*-u$  before the loss of intervocalic  $*h < *s$  (*ibid.*, p. 29) and I assume that this ending spread to the athematic aorist before the apocope (*ibid.*, p. 36) while the 2 sg.

form adopted the middle ending *\*-ro* (*ibid.*, p. 37). This leads us to the following reconstruction of the aorists *eki* ‘came’ and *edi* ‘put’:

- 1 sg. *eki* < *\*ekiu* < *\*eg<sup>w</sup>em-om*  
 2 sg. *ekir* < *\*ekiro* < *\*eg<sup>w</sup>em-ro*  
 3 sg. *ekn* < *\*ekin* < *\*eg<sup>w</sup>em-t*  
 1 pl. *ekak’* < *\*ekamuh* < *\*eg<sup>w</sup>m-mom-s*  
 2 pl. *ekik’* < *\*ekiyeh* < *\*eg<sup>w</sup>em-te-s*  
 3 pl. *ekin* < *\*ekiin* < *\*eg<sup>w</sup>em-ent*
- 1 sg. *edi* < *\*ediu* < *\*ed<sup>h</sup>ē-om*  
 2 sg. *edir* < *\*ediro* < *\*ed<sup>h</sup>ē-ro*  
 3 sg. *ed* < *\*edi* < *\*ed<sup>h</sup>ē-t*  
 1 pl. *edak’* < *\*edamuh* < *\*ed<sup>h</sup>h<sub>1</sub>-mom-s*  
 2 pl. *edik’* < *\*ediyeh* < *\*ed<sup>h</sup>ē-te-s*  
 3 pl. *edin* < *\*ediin* < *\*ed<sup>h</sup>ē-ent*

Note that *\*m* was lost before *\*u* in the 1 pl. ending *\*-mu* < *\*-mom* replacing *\*-mo* (cf. *ibid.*, pp. 35, 49]). The preservation of the zero grade in the 1 pl. form prevented the merger with the 2 pl. ending *-ik’* after the apocope, while its replacement by the full grade root vowel in both 1 pl. *\*etak’* and 2 pl. *\*etayk’* yielded *tuak’* and *etuk’* ‘gave’.

Armenian presents in *-em* and *-am* continue Indo-European thematic stems in *\*-e/o-*, *\*-eie/o-* and *\*-āie/o-*, e.g. *acem* ‘bring’, *berem* ‘carry’, *lizem* ‘lick’, Greek *ἄγω, φέρω, λείγω, gorcem* ‘work’ < *\*uorǵeie-*, *orogem* ‘irrigate’ < *\*sroueie-*, *orsam* ‘hunt’ < *\*porkāie-*, *eram* ‘boil’ < *\*ersāie-*, Latin *errāre* (cf. [Godel 1975: 123]), also *goč’em* ‘call’ < *\*uok<sup>w</sup>ie-*, *ǰǰem* ‘wipe’ < *\*g<sup>wh</sup>enie-*, Greek *θείνω*. Armenian presents in *-im* reflect Indo-European athematic *i*-presents such as Latin *capiō* ‘take’, *orior* ‘arise’, *morior* ‘die’, *reminīscor* ‘remember’, Old Irish *gaibim* ‘take’, *do-moiniur* ‘think’, Greek *μαίνομαι* ‘rage’, aor. *ἐμάνην*, Vedic *mányate* ‘thinks’, *mriyāte* ‘dies’ (cf. [Meillet 1936: 107f.; Kortlandt 2007: 134–137]). The *ē*-aorist of these verbs supplied the Armenian paradigm in *-eay* < *\*-ēs-*, e.g. *yareay* ‘rose’, *caneay* ‘knew’, pointing to an early expansion of the sigmatic aorist. Other instances of an early sigmatic aorist are *erduay* ‘swore’ < *\*d<sup>h</sup>reus-* (cf. [Pedersen 1906: 355]) like *luay* ‘heard’ < *\*kleus-* and *etē* ‘became’ < *\*ekleis-*, Vedic *ásret* < *\*ekleit* (cf. [Kortlandt 2003: 80]).

The paradigm of *elē* can be reconstructed as follows:

- 1 sg. *elē* < \**lei-u* < \**leis-om*
- 2 sg. *eler* < \**lei-ro* < \**leis-ro*
- 3 sg. *elew* < \**lei-w* < \**leis-to*
- 1 pl. *eleak'* < \**le(i)amuh* < \**leis-mom-s*
- 2 pl. *elēk'* < \**le(i)yeh* < \**leis-te-s*
- 3 pl. *elen* < \**le(i)an* < \**leis-nt*

The velar *-l-* developed from word-final *\*-l* after the apocope. It follows that the middle ending *-w* < \**-to* (cf. *ibid.*, p. 37) had not yet been added at that stage. When intervocalic *\*-i-* was lost after the loss of *\*s* and the syllabification (my stage 14) and merger of the original zero grade endings *\*-m* and *\*-nt* into *\*-an*, it was evidently restored in the 1 sg. form before the addition of the new ending *\*-u* < *\*-om*, which took place before the apocope (my stage 16, cf. *ibid.*, p. 31). The paradigm cannot directly continue the original root aorist attested in Vedic because this would not explain the *e*-vocalism: we would rather expect *i*-vocalism, as in the other root aorists and in the imperfect. Moreover, the addition of *-w* < *\*-to* in the 3 sg. form points to a sigmatic aorist because it appears that all verbs with a vocalic stem adopted the middle endings in the sigmatic aorist. This development was motivated by the apocope of the final syllable in the singular, as in *\*el* < \**ekleist*, the syllabification and merger of the 1 sg. and 3 pl. endings *\*-m* and *\*-nt* into *\*-an*, and the vocalization of the laryngeals as *-a-* in *seṭ*-roots. I therefore withdraw my earlier view (*ibid.*, pp. 79–82, 114f.) that there were sigmatic forms in the paradigms of *edi* ‘put’, *etu* ‘gave’, *aṛi* ‘took’ and *ḷeṛay* ‘got warm’. The stem-final consonant of the latter two verbs can easily have been taken from the nasal presents.

After consonantal stems, the *\*-s-* of the sigmatic aorist was preserved and merged with the preceding consonant, mostly into a dental affricate (cf. [Pedersen 1905: 206, 1906: 423–427; Kortlandt 2003: 80, 115], e.g. *anicanem* ‘curse’ (Gr. *ὄνειδος*), *xacanem* ‘bite’ (Ved. *khāda-*), *hecanim* ‘mount’ (Gr. *ἔζομαι*), *mucanem* ‘introduce’ (cf. *mtanem* ‘enter’), *eluzanem* ‘extract’ (Gr. *ἐλέβσομαι*), *suzanem* ‘plunge’ (Gr. *κεῖθω*), *heljanem* ‘suffocate’ (cf. *xeld*), *anc’anem* ‘pass’ (Gr. *ἄντομαι*), *luc’anem* ‘light’ (cf. *loys*), *lucanem* ‘untie’ (Goth. *-lūkan*), *ənkluzanem* ‘submerge’ (cf. *ənklnum*), *korusanem* ‘lose’ (cf.

*kornč'im*), also *meřanim* 'die', aor. *meřay* < \*-rs-, *stelcanem* 'create', 3 sg. *estelc* < \*-ls- (Gr. *στέλλω*), with loss of \*-l- in *ənkenum* 'throw', *ənkec'i*, *ənkeč'* (Gr. *βάλλω*, cf. *ibid.*, p. 81, n. 1). The new sigmatic aorist marker -c'- subsequently spread to vocalic stems, e.g. *lc'i* 'filled', *kec'i* 'lived', *atec'i* 'hated', *luac'i* 'washed', perfects *gitac'i* 'knew', *asac'i* 'said', and eventually to thematic verbs, e.g. *lizec'i* 'licked', *gorcec'i* 'worked', *mnac'i* 'remained', *yusac'ay* 'hoped'. The same development took place in Greek, e.g. *ἔσχισα* 'split' < \*-ds-, also *ἔσχισσα*, Doric *καθίζας* 'seated', 3 sg. *ἔπαιζε* 'played' with -ξ- for -σ- (cf. [Chantraine 1967: 180]).

Original root aorists were preserved in *eki* 'came', *edi* 'put', *etu* 'gave', *keray* 'ate', *arbi* 'drank', *č'ogay* 'went', *kalay* 'got' (cf. [Pedersen 1905: 203]), which have suppletive presents, and in *aři* 'took', *barji* 'lifted', *darjay* 'turned', *ankay* 'fell', probably thematized in *lk'i* 'left', *gti* 'found', with reduplication in *arari* 'made', like Gr. *ἔλιπον*, *εἶδον*, *ἤραρον*. Thematic aorists from original imperfects are represented in *harc'i* 'asked' < \*prk-ske-, *aci* 'brought', *beri* 'carried', *nstay* 'sat down', *lizi* 'licked' beside more recent *lizec'i*. In the case of *harkanem* 'strike', aor. *hari*, I assume that the sigmatic aorist marker -c'- was suppressed in order to avoid homonymy with the verb *harc'anem* 'ask', aor. *harc'i* [Kortlandt 2003: 116].

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