

The Indo-European *k*-aorist

Ten years ago I wrote (2007: 155f.): “It has been impossible to establish an original meaning for the alleged velar suffix in the root aorists *fēcī* and *iēcī* (cf. Untermann 1993). I therefore think that we have to look for a phonetic explanation. Since the *-k-* is limited to the singular in the Greek active aorist indicative, I am inclined to regard *fēc-* as the phonetic reflex of monosyllabic **dhēk* < **d^heH₁t*, where **-k-* may have been either an intrusive consonant after the laryngeal before the final **-t*, like *-p-* in Latin *emptus* ‘bought’ or **-s-* in Hittite *ezta* ‘he ate’ < **edto*, or a remnant of the Indo-Uralic velar consonant from which the laryngeal developed, as in Finnish *teke-* ‘make’ (cf. Kortlandt 2002: 220). The present stems of *faciō* and *iaciō* support the former possibility. This would also account for Tocharian A *tāk*, B *tāka* ‘became’, which reflect **steH₂t*. In a similar vein I reconstruct **hēp* < **g^heH₁b^ht* and **sēp* < **seH₁pt* for Oscan *hipid*, *hipust* ‘will hold’, *sipus* ‘knowing’. While Oscan *hafiest* ‘will hold’ is in accordance with the Latin, Celtic and Germanic evidence, Umbrian *hab-* suggests that **g^heH₁b^h-* yielded **g^heb-* with preglottalized **-b-* at an early stage and that this root-final consonant was generalized in Italic. It appears that Latin *capiō* ‘take’ < **kH₂p-* adopted the *-ē-* of *cēpī* from its synonym *apiō*, *ēpī*, and that *scabō*, *scābī* ‘scratch’ reflects original **skeb^h-* (cf. Schrijver 1991: 431).” As Untermann observes (1993: 463), the Latin stems *fac-* and *iac-* behave as roots of primary verbs, and the same holds for Sabellic and Venetic. Latin *fēcī* and *iēcī* are original root aorists like *lēgī*, *rēgī*, *sēdī*, *vēnī* (which go back to earlier present injunctives with a long root vowel from monosyllabic lengthening, cf. Kortlandt 2015), also *ēdī*, *ēgī*, *ēmī*, *ēpī*, *frēgī*, *cēpī*, **sēpī* (Oscan *sipus*), *fūdī*, *fūgī*, *rūpī*, *vīdī*, *vīcī*, *-liquī* (Vedic *āraik* ‘left’, cf. Kortlandt 2007: 155). Like the *je*-present *faciō*, the *s*-present (future) *faxō* ‘will do’ and optative (subjunctive) *faxim* ‘might do’ are derived from the extended root, cf. *capiō*, *capsō*, *capsim*, and similarly Oscan *fefacust* ‘will have done’ and Venetic *vhaḡsto* ‘made’.

In Greek, there are singular active forms of a transitive *k*-aorist and an intransitive *k*-perfect of simple roots with a final laryngeal (cf. Untermann 1993: 462), viz. *ἔθηκα* ‘put’, *ἤκα* ‘let go’, *ἔδωκα* ‘gave’ versus *ἔστηκα* ‘stand’, *βέβηκα* ‘have gone’ beside *ἔστην* ‘stood (up)’, *ἔβην* ‘went’. While the *k*-aorist is limited to the first three verbs, the *k*-perfect spread from intransitive to transitive verbs, e.g. *βέβληκα* ‘have thrown’, *τέτληκα* ‘have endured’. Since the aorist denotes a transition in time, which mostly affects the object of transitive and the subject of intransitive verbs, while the perfect denotes a situation that results from a transition, I think that the *k*-perfect developed from the resultative interpretation of the *k*-aorist, as in Rieu’s translation (1946) of Od. 7.89 *ἀργύρεοι σταθμοὶ δ’ ἐν χαλκῆῳ ἕστασαν οὐδᾶ* “posts of silver sprang from the bronze threshold”. These verbs then developed a causative *s*-aorist *ἕστησα*, *ἔβησα*. Thus, I think that we have to start from a paradigm 1st sg. **stām*, 2nd sg. **stās*, 3rd sg. **stāk*. This also explains the Tocharian preterit 3rd sg. A *tāk*, B *tāka* ‘was, became’ and subjunctive A 1st sg. *tām*, 2nd sg. *tāt*, 3rd sg. *tāš*, 3rd pl. *tākeñc*, *tāke*, *teñc*, *te* (cf. Malzahn 2010: 154, 157, 639, Peyrot 2013: 767, and Kortlandt 2014a on the endings), cf. Spanish *estar* ‘be’ < Latin *stāre* ‘stand’, Russian *stat* ‘stand (up), become’.

Phrygian *αδδακετ* “corresponds to the aor. *παρεθέμην* of the Greek text, which makes the preterite interpretation of this form very likely” (Lubotsky 1997: 127),

resulting in a meaning ‘has put’. This looks like a perfect derived from a *k*-aorist $*d^h\bar{e}k$, like Latin *fēcit*. This interpretation is supported by the 3rd pl. perfect form *δακαρεν*, corresponding to Latin *fēcērunt* (cf. Ligorio & Lubockij 2013: 192). The 3rd pl. form $*stār$ (Vedic *ásthur*) may be found in Phrygian *εσταρνᾶ*, which Lubotsky interprets as a 3rd pl. middle form in $*-r-ntai$ that “suits well the stative (or passive) meaning of *εσταρνᾶ*” (1997: 124). The addition of *-νᾶ* to the form $*stār$ remains difficult (cf. Lubotsky l.c., fn. 14). Since *αδδακετορ* and *αββερετορ* appear in the same contexts as *αδδακετ* and *αββερετ*, where we also find *αββερετοι*, Ligorio & Lubockij assume that all these forms belong to the middle paradigm (2013: 191). I find this highly unlikely. As Lubotsky points out himself (1997: 127, fn. 26), the most common forms are *αδδακετ* and *αββερετορ* while *αδδακετορ* and *αββερετ* occur only in a few inscriptions. It is therefore probable that the original formulae used either active *αδδακετ* or middle *αββερετορ* and later the forms became mixed up. This suggests that *αδδακετ* was a perfect form ‘has put’ whereas *αββερετορ* and *αββερετοι* were middle forms of the imperfect ‘brought’ and the present ‘brings’, respectively. While the present ending *-τοι* is the same as in Greek, the imperfect form must be compared with the Armenian imperfect *berēr* < $*-etor$, *beriwr* < $*-etro$ (cf. Meillet 1936: 127 and Kortlandt 2003b: 37), like Latin *-tur* < $*-toro$ beside Oscan *-ter* < $*-tro$ (Kortlandt 2007: 156). It appears that the original transitive middle endings in $*(n)tr(o)$ were lost in Greek and Indo-Iranian (where the intransitive endings $*-o$ and $*-ro$ were preserved in Vedic *śáye*, *śére* ‘lie(s)’).

Like Greek, Phrygian developed a transitive *s*-aorist, which is attested in 3rd sg. *εδαεσ* ‘put’ < $*d^h\bar{e}s-es$ and *εσταεσ* ‘erected’ < $*stās-es$ (cf. Lubotsky 1988: 17f.). I do not think that the ending *-es* can be derived from another sigmatic aorist (thus Ligorio & Lubockij 2013: 191, similarly Gorbachov 2005). More probably, it represents an enclitic subject pronoun $*es$, like Tocharian A *-s*, B *-m*, Old Irish *olsé* ‘said he’ (cf. Kortlandt 2007: 114). The enclitic pronoun was also added to the root aorists *ενεπαρκεσ* ‘engraved’ < $*pēr-k-es$ and *εκανεσ* ‘dug’ < $*kēn-es$, with a long root vowel from monosyllabic lengthening (cf. Kortlandt 2015). Since *edatoy* < $*d^h\bar{e}toi$ and *estatoi* < $*stātoi$ are evidently the middle counterparts of *edaes* and *εσταεσ* (Ligorio & Lubockij 2013: 191), they are original root aorists with a long root vowel and a generalized primary ending. This is reminiscent of Tocharian, where the intransitive middle endings spread to the transitive middle aorist (cf. Kortlandt 2014a: 84). As a result, Phrygian has 3rd sg. *-toi* in the aorist versus *-tor* in the imperfect while the secondary ending $*-to$ was evidently lost. This is again reminiscent of Armenian, which has 3rd sg. *-r* in the imperfect but not in the aorist. The form *daΨet* /*dakset*/ is strongly reminiscent of the Latin future *faxō* ‘will do’ while the subjunctives *egeseti* and *εγεσιτ* ‘will hold’ beside *με-βερετ* and *με-τοτοσσειτι* ‘will take away’ and *ιστεικετ* ‘will appear’ suggest that there was no semantic difference between primary and secondary endings here (as in the Indo-Iranian subjunctive, cf. Beekes 1981). The zero grade of the root in *τοτοσσειτι* and the suffix $*-es-$ in *εγεσιτ* show that these forms must be compared with Oscan *didest* ‘will give’ and Umbrian *ferest* ‘will carry’ and represent original *s*-presents (cf. Pedersen 1921: 23), similarly Old Irish *fo-lil* ‘will support’ < $*lilugst$, subj. *-bé* ‘may be’ < $*bwest$, Lithuanian *būs* ‘will be’, Tocharian *tās-* ‘put’ (cf. Kortlandt 2007: 65-74, Malzahn 2010: 641f.). Since the Phrygian form *aey* ‘be’ is found in the same syntactic position as *egeseti*, *daΨet* and *αδδακετ* (Lubotsky 1988: 18), I wonder if it may represent $*\bar{e}set$, perhaps to be compared with Latin *erit*, with <y> mistakenly

replacing <t> at the end of a line where the scribe was running out of space. The long vowel of **ēset* may have been taken from *daΨet* and *αδδακετ*, which reflect **d^hēk*.

The Slavic root aorist of verbs with mobile accentuation (c) has a special 2nd and 3rd sg. ending *-tǝ* (cf. Leskien 1962: 145, 154, 168, van Wijk 1926: 284-287, Kortlandt 1998: 146). The ending is *-stǝ* in the case of *bystǝ* ‘was’, *dastǝ* ‘gave’ and *jastǝ* ‘ate’. These cannot be sigmatic aorist forms because *by-* and *da-* are root aorists and *jad-* is an original imperfect with mobile stress whereas sigmatic aorists had fixed stress on the root and therefore belong to accent classes (a) or (b). The form *jastǝ* can be derived from **ēd-tu* (cf. Meillet 1909: 32), but *bystǝ* and *dastǝ* require a different explanation. I would propose that *dastǝ* can be identified with Greek *ἔδωκε* ‘gave’ as a *ḱ*-aorist **dōḱ* with dialectal Indo-European palatalization of the velar stop yielding **dōs* and that *bystǝ* is an analogical *ḱ*-aorist, like the Greek perfect *πέφυκε* ‘grows’ < ‘has sprung (up)’ (cf. Meillet 1894 and Kortlandt 1978, 2013 for the differentiation between palatovelars and plain velars in the *satəm* languages). The form **dōs* survived because it was supported by the present tense *damǝ* < **dōdmi*, where the reduplicating syllable received a long vowel as a result of Winter’s law. The verbs *dēti* ‘put’ and *stati* ‘stand (up)’ adopted derived presents *dežde-* < **dedje-* and *stane-* and sigmatic aorists with fixed stress. In Gatha Avestan, there are 35 verbs with a root aorist, including **daH-* ‘give, put’, 3rd sg. *dāt*, but four roots in **aH* have a sigmatic aorist, viz. **raH-* ‘grant’, **saH-* ‘cut down’, **staH-* ‘stand’ and **θraH-* ‘protect’ (cf. Beekes 1988: 175-185). This distribution suggests that the *s*-aorist is actually a *ḱ*-aorist, like Slavic *dastǝ*. The model for the introduction of the analogical *s*-aorist was provided by roots in dentals, e.g. *vqs* ‘defeated’ (49.4c), *sqs* ‘seemed’ (43.11d, 46.19e). In Sanskrit, the *ḱ*-aorist was evidently eliminated by restoration of the 3rd sg. ending *-t* to replace *-ṭ* in *dāt*, *dhāt*, *sthāt* (cf. Meillet 1906: 418, Lubotsky 2008: 357), similarly in Avestan *dāt*.

Thus, it turns out that the *k*-aorist originated from a common development of Italic, Greek, Phrygian, Balto-Slavic, Indo-Iranian and Tocharian, which therefore may not be dated later than non-Anatolian Indo-European. It was clearly anterior to the rise of the *satəm* languages. I now think that the Proto-Indo-European laryngeals **H₂* and **H₃* were uvular stops **q*, **q^w* which developed into pharyngeals **ʕ*, **ʕ^w* after the separation of Anatolian from the other languages, especially because they were preserved as stops in Lycian (cf. Kloekhorst 2008b). The color of the three laryngeals was preserved in the separate branches of Indo-European, not only because they were syllabified as distinct vowels *e*, *a*, *o* in Greek (Beekes 1969), Phrygian (Lubotsky 1988: 14f.) and Armenian (Kortlandt 2003b: 54-56 and 75-78), but especially because **H₂* and **H₃* merged before **e* after Brugmann’s law in Indo-Iranian (cf. Lubotsky 1990). The rise of distinctive voicedness in the stops took place when the Anatolians and the Tocharians had already left the Indo-European homeland north of the Black Sea (cf. Kortlandt 1985b). It follows that the original PIE system with fortis **t* [t:], glottalic **d* [t̚] and lenis **d^h* [t], all of them voiceless, still existed when the *k*-aorist originated. In word-final position, the three stops merged into **-d* [t̚] in the non-Anatolian languages, e.g. Latin *quod*, Old High German *hwaz*, Avestan *kaṭ* ‘what’. Original **-t* [t:] was apparently preserved in Hittite *milit* ‘honey’ and in the instrumental ending *-t* (cf. Kloekhorst 2008a: 580, 799). Monosyllabic lengthening (Kortlandt 2015) preceded all of these developments. We may therefore conclude that at a stage between the Anatolian and the Tocharian separation from the other languages the form **stēqt* [stæ:qt:] developed into **stēʕkt* [stæ:ʕkt], probably with an intrusive **-k-* because the color of the laryngeal does not play a role, and perhaps with loss and later restoration

of the laryngeal in this form, so that we may reconstruct **stēkt* for an intermediate stage. This might offer an explanation for the Balto-Slavic loss of a laryngeal after a long vowel (e.g. Kortlandt 1985a). The loss of the ending **-t* in the final cluster can be dated after the rise of voicedness because the latter did not affect the final **-k*. This scenario may also account for the loss of the laryngeal in the Lithuanian permissive ending *-iē < *-oiH₁t* and for the absence of a vocalic reflex of the laryngeal in the corresponding Greek optative ending *-oi*, where the accentuation points to an ending **-o-ī(t)* (cf. Bally 1945: 20, Kortlandt 1986: 154) with a long **ī* from the athematic flexion.

The problem with this solution, as Dr Alwin Kloekhorst reminds me, is that the restoration of the laryngeal is incompatible with the circumflex reflex in Balto-Slavic (cf. Kortlandt 2014b). It follows that it was not the laryngeal but the coloring of the vowel that was restored here. This problem must be viewed in connection with the rise of the phoneme /a/ in the separate branches of Indo-European (cf. Lubotsky 1989). It is a known fact that the sound **a* is frequent in early borrowings in the languages of Europe, including Armenian. When the new sound entered the vowel system of the speakers who moved from the Indo-European homeland to the west, the pressure to replace the vowel [æ:] by [a:] in the form **stēkt* originated. This holds for the speakers of the following branches, in this order (cf. Kortlandt 1990): Anatolian, Italo-Celtic, Germanic, “Temematic” (cf. Kortlandt 2003a), Greek, Phrygian, Armenian, Thracian, Albanian, Balto-Slavic. The speakers who remained in the region north of the Black Sea preserved the original system with three laryngeals and no **a* until they moved east, first the Tocharians, who developed a vowel **a* from syllabic laryngeals at an early stage, and then the Indo-Iranians, who apparently never developed a vowel **a* distinct from **e* until the absorption of **H₂* by a following cluster-initial glottalic consonant, as was discovered by Lubotsky (1981). The lowering of **e* to *a* in Indo-Iranian is matched by the raising of syllabic laryngeals to *i*. Both developments are unknown elsewhere. The lengthening of PIE **o* in open syllables (Brugmann’s law) can now be explained by the absence of long **ā* after the rise of short **a* in closed syllables as a result of Lubotsky’s law before the lowering of the long vowels **ē* and **ō* to **ā*. This leads to the following relative chronology (cf. Lubotsky 1990: 134):

1. Lubotsky’s law,
2. Brugmann’s law,
3. palatalization of velars before front vowels,
4. merger of the non-high vowels,
5. merger of the laryngeals.

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