

Greek reduplicated aorists and the alphathematic conjugation

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1. Alphathematic inflectional endings in Greek: 1) sigmatic aorist, 2) (some) reduplicated aorists, 3) χ -aorist/perfect, 4) perfect, 5) (Homeric) pluperfect.¹

(1) Active paradigm

	Sigmatic	redupl.	χ -aor./perf.	perfect	pluperf.
1sg	$-\sigma-\alpha$	$-\alpha$	$-\chi-\alpha$	$-\alpha$	$-\varepsilon-\alpha$
2sg	$-\sigma-\alpha\zeta$	$-\alpha\zeta$	$-\chi-\alpha\zeta$	$-\alpha\zeta$	$-\varepsilon-\alpha\zeta$
3sg	$-\sigma-\varepsilon$	$-\varepsilon$	$-\chi-\varepsilon$	$-\varepsilon$	$-\varepsilon\iota$ ($< *-\varepsilon-\varepsilon$)
1pl	$-\sigma-\alpha\mu\varepsilon\nu$		$(-\chi)-\alpha\mu\varepsilon\nu$	$-\alpha\mu\varepsilon\nu$	
2pl	$-\sigma-\alpha\tau\varepsilon$	$(-\alpha\tau\varepsilon)$	$(-\chi)-\alpha\tau\varepsilon$	$-\alpha\tau\varepsilon$	
3pl	$-\sigma-\alpha\nu$	$-\alpha\nu, -\alpha\sigma\alpha\nu$	$(-\chi)-\alpha\nu, -(\chi)-\bar{\alpha}\sigma\iota(\nu)$	$-\alpha\nu, -\bar{\alpha}\sigma\iota(\nu)$	

1.1 Standard explanation: sigmatic/reduplicated aorists reflect PIE secondary **mi*-set of endings (1sg. $*-s-\grave{m}$ $> *-s-a$, 2sg. $*-s-s > *-s \rightarrow *-s-as$, 3sg. $*-s-t > *-s \rightarrow *-s-e(t)$), while the (identical) endings of the perfect reflect the PIE perfect endings: 1sg. $*-h_2e > *-a$, 2sg. $-th_2e > *-t^h a \rightarrow *-as$ (but 2sg.perf.act. $\omicron\sigma\theta\alpha$), 3sg. $*-e > *-e$.

E.g. Rix 1992: Starting point of alphathematic inflection = 1sg.act, 3pl.act./mid. *s*-aor. $*-s-\grave{m}$, $*-s-\grave{n}t$, $*-s-\grave{n}to > *-s-a$, $*-s-a \rightarrow *-s-an$, $*-s-ato \rightarrow *-s-anto$; and 1sg., 3pl. perf. $*-h_2e$, $*-r > *-a$, $*-ar \rightarrow *-anti > *-asi$ (replacement of *-r* by *-nti* of the present indicative active). The 3sg.perf.act. ending $*-e$ was then analogically extended to the (*s*-, etc.) aorist.

1.2 Berg (1977: 233) criticizes the idea that 3sg.aor. $*-s-\emptyset \rightarrow *-s-e$ in analogy with the 3sg.perf. (cp. Schwyzler 1939: 750: “kaum nach dem *-e* des aktiven Perfekts, von dem der Aorist in der Bedeutung in ältester Zeit völlig verschieden war”), but his own explanation ($*-s-\emptyset \rightarrow *-s-e$ in analogy with the 3sg. *pluperfect* ending $*-e$ (= undifferentiated 3sg. perfect/pluperfect active), reanalyzed as $*-e-\emptyset$ ($\rightarrow *-e-e$), is equally unlikely (PIE 3sg. pluperfect ending was $*-t$, Jasanoff 1997, 2003; see Katz 2006 [2008] for detailed criticism).

- Relatively complicated analogy scenarios necessary to get the same inflectional paradigm from two different sources.
- No reason why reduplicated aorists should have become alphathematic

¹Only in the sg., see Berg 1977, Katz 2006 [2008].

- Standard assumption that 1sg.act. $*-m\# > *-a$ in athematic paradigms (Schwyzer 1939: 659ff., Chantraine 1945) actually problematic for morphological reasons (expected restitution of the 1sg. marker $*-m > -v$):
 - 1sg.opt.act. *-oimi*, *-oin* (att.; Kratinos, Euripides) vs. Arc. 1sg. $\epsilon\zeta\epsilon\lambda\alpha\upsilon\nu\omicron\iota$
 - 1sg.aor. $\epsilon\beta\eta\nu$, $\epsilon\phi\upsilon\nu$, etc.
 - Cp. 1sg. root aor.act. Ved. *ákar-am*, *ábhed-am*; 1sg. them.opt. *bhárey-am*, etc.

Goals of this paper:

- show that the origin of the alphathematic inflection from athematic $*-mi$ -set is unlikely for at least one subgroup of (1), the reduplicated aorist
- argue that the alphathematic inflection of Greek reduplicated aorists reflects (athematic) $*h_2e$ -set of endings

2. Background: reduplicated aorists

2.1 The reduplicated aorist was a PIE category and originally *thematic* (Bendahan 1993, LIV², Jasanoff 2015):

Vedic reduplicated aorist famously productive as causative aorist to *áya*-presents (Jamison 1983). Potentially old *non-causative* reduplicated aorists in Vedic are *thematic* and have non-Ir. cognates (Strunk 1988, Bendahan 1993, Jasanoff 2015):

- Ved. *neśat* ‘disappears’ ← $*ne-n\acute{k}-(e)-$ with restructuring for expected $*nam\acute{s}a-$; the expected outcome is preserved in OAv. *nq̥sat* ‘has disappeared’ < $*ne-n\acute{k}-e-t$ (cp. Kümmel 2000: 288, following Hoffmann 1967: 64f.)
- YAv. *-jāyat* ‘beat, slew’ = Gk. $\pi\acute{\epsilon}\phi\nu\epsilon$ ‘killed’, both from $*g^{uh}e-g^{uh}n-e-$, cp. García Ramón 1998 *pace* Kellens (1984) and Bendahan (1993) (who argue that the Avestan stem *jāyn-* was dissimilated from the intensive stem seen in Ved. *jāñghn-*).
- Ved. *ávocat* = OAv. *-vaocat* = ‘said’, Gk. $\epsilon\acute{\iota}\pi\omicron\nu$, $\epsilon\acute{\iota}\pi\alpha$.
- Gk. $\epsilon\nu\epsilon\gamma\chi\omicron\nu$, $\epsilon\nu\epsilon\iota\kappa\alpha$ ‘brought’ = OAv. *nq̥sat* ‘obtained’ (see below)
- Gk. $\epsilon\upsilon\phi\omicron\nu$ ‘found’ = OIr. *-fúar* (Beckwith 1994, 1996: 25ff.).

Preform should be $*\underline{u}e-\underline{u}r\acute{h}_1-e/o-$ (LIV²: 698: $*\underline{u}r\acute{h}_1$ ‘find’), but early loss of root final laryngeal excepted in reduplicated formations/second compound members (e.g., $\gamma\acute{\iota}\gamma\nu\omicron\mu\alpha\iota$ < $*\acute{g}i-\acute{g}n-e/o-$; cp. Kuiper 1961 for Sanskrit), etc. Unexpected lack of labial dissimilation from $*\underline{u}e-\underline{u}r-e/o-$ to $*\underline{u}e-\acute{r}e/o-$ (cp. $\epsilon\acute{\iota}\pi\omicron\nu$ < $*\underline{u}e-\acute{r}k^u-e-$ < $*\underline{u}e-\acute{u}k^u-e-$). Beckwith 1994: 26, Beckwith 1996: 28 hints that labial dissimilation may not have been in operation before *-r-*; the counterexample is Gk. perf. $\epsilon\acute{\iota}\rho\eta\tau\alpha\iota$ ‘has been said’ < $*\underline{u}e-\acute{r}\acute{e}-tai$ < $*\underline{u}e-\underline{u}r\acute{h}_1-$, Rix 1992: 202, Bendahan 1993: 98.

2.2 Vedic athematic reduplicated aorists *ájīgar* ‘woke up’ (tr.), *ádīdhar* ‘held’, **ápīpar* ‘transferred, helped cross’, *asíśnath* ‘struck’, **síśrath(at)* ‘dissolved’ (tr.), *síśvap* ‘caused to fall asleep’, *yūyot* ‘warded off’, etc., are based on athematic reduplicated present stems (*píparti*, *yuyoti*, ipv. *didhṛtá*) with secondary lengthening of the reduplication syllable (Bendahman 1993: 125, 159ff.). No such forms in Iranian.

2.3 Most of the remaining athematic reduplicated past tense forms should be classified as pluperfects, e.g., subj. *cucyavat* ‘moved’ (tr.), *ádudrot* ‘ran’, subj. *pīpráyat* ‘please’, *ásíśret* ‘lean’, etc. (Bendahman 1993: 171ff.), but distinction between redupl.aor. and pluperfects is notoriously difficult for this group.

2.4 Conclusion: PIE reduplicated aorist was a thematic category.

3. Alphathematic reduplicated aorists in Greek:

3.1 *ἔνεγκον*, ion. *ἔνεικα* ‘I brought’ < **h₁nek̑* ‘receive, take’ (LIV²: 250f.; **h₁ne-h₁nk̑* > **enēnk-* > *ἐνεγκ-* with “wrong” syllabification and Osthoff shortening, Strunk (1988: 574), García Ramón (1999: 73ff.). Suppletive to *φέρω* ‘carry, bring’

- Shape of reduplicant (*HRe-*) not a problem, cp. (late IE?) perfects of the type **h₁le-h₁loȗd^h-* / **h₁le-h₁lud^h-* > Ved. *ruruhur* ‘they have grown’, YAv. ptcp.perf. *urūruduš-*, Gk. *εἰλήλουθα* ‘I have come’, etc. (Kocharov 2012)

3.2 *ἐνεικ-* = dissimilated variant (cp. Gk. *εἶπα*, *εἶπον* < **ue-uk̑^u-*)

- (sporadic?) resonant dissimilation with *-V{n, r, l, u}* > *-Vi/_C*; cp. Lesb. *μοῖσα* ‘μοῦσα’, acc.pl.fem. *ταίς*, Cret. *μαίτυς* ‘μάρτυς’, Hsch. *παίπαλλω* ‘shake’ < int. **pal-pal-*, etc., (Strunk 1988, Bendahman 1993).
- Dissimilation **enenk-* > *eneik-* (Meier-Brügger 1987, Strunk 1988, Beckwith 1996, García Ramón 1999) preferable to the alternative etymology of *eneik-* < prep. **en-* ‘in’ + root aorist of **seik̑* ‘reach’ (Gk. *ἔκω*, *ἔκωνω* ‘I arrive’, Lith. *siekiu* ‘reach’, etc.) based on a proposal by Brugmann (1892) because of the close synonymy of *ἐνεγκ-* / *ἐνεικ-* (Strunk 1988, García Ramón 1999); the variant **enik-* (e.g., Hsch. *ἐνικεν*·*ἤνεγκεν*, *ἔφερεν*; inscriptions: see Meier-Brügger 1987) cannot be interpreted as reflex of a zero grade **sik-* (Strunk 1988: 576f.)

Distribution of variants (Meier-Brügger 1987, Strunk 1988):

- Ionic, Homer: *ἐνεικ-*; alphathematic inflection (but: also thematic inf. *ἐνεικέμεν*, T 194, ipv. *ἔνεικε*)
- Attic: *ἐνεγκ-*, thematic inflection (alphathematic starting from the 4th century, e.g., *ἀπήνεγκαν* (IG II² 1620.37-8), att. 2sg. & 2pl.ipv. tend to be alphathematic (possibly influenced by *ἐνεικ-*))

3.3 Alternative to getting the alphathematic inflection from an old athematic reduplicated aorist: Cowgill 1965, Rix 1992: 215, LIV²: 250: alphathematic inflection = reflex of/analogical to the inflection of an old root aorist of the same root:

- **Hnenġ*, “root variant with double nasal” (Cowgill 1965: 151) unlikely, Cowgill’s “1sg.mid.aor.” *námśi* in RV 6.51.12 = loc.sg. of a verbal noun of the synchronic root variant *namś-* (Kümmel 2000: 284, fn. 452)
- *(*e-*)*h₁nek-t* = Ved. *ánat* ‘reached’ (Rix 1992), but this form belongs to **h₂nek* ‘reach’ (problem: **h₁nek* ‘receive, take’ and **h₂nek* ‘reach’ (LIV²: 282ff.) virtually indistinguishable in Vedic (García Ramón 1999: 59f.)
- Differently García Ramón 1999: 62, 76: alphathematic inflection reflects athematic stem **h₁ne-h₁nġ-ŋ* or influence from root aorist **h₁ek-ŋ* indirectly reflected in the Ir. active *s*-aorist *nāš-*

Conclusion: no evidence for an old (active) **mi*-conjugation root aorist

3.5 Evidence for an old *middle* root aorist of **h₁nek*: Toch. TB class I subj.3.sg. *entār/enktār* ‘shall take’ < **h₁nġ* (middle root aorist, Hackstein 1995: 223, LIV²: 250, Malzahn 2010: 583f.), root TB *enk* ‘take, seize’, TA *emts(ā)* = *medium tantum* in Toch. R(∅) middle root aorist implies full grade active root aorist, but this is not directly attested anywhere. Semantically, the Toch. subj. is equivalent to the formally *active* aorist Gk. *ἐνεῖχα/ἐνεγχε*.

3.6 OAv. *nqsať* ‘obtained’ (Y 51.16)= Gk. *ἐνεγχε*?

tam kauuā vištāspō magahiiā xšaθrā nqsať
vaŋhēuš padəbiš manəhō yqm cistim ašā maŋtā
spəntō mazdā ahurō aθa nəszdiiāi uštā

“Kavi Vištāspa, by (his) power over the offering, presents that (insight) (proceeding) on the paths of good thought, (that) insight which the prosperous Wise Ahura has conceived with truth. Let (him) thus announce to us the (things) desired.” (Humbach 1991: I, 190)

Humbach 1991: II, 231f.: ‘presents; offers’ from *qs/nas* (*s*-aor.opt. *našīma*, etc.), suppletive to *bar* ‘bring, carry’; García Ramón 1999: 61: ‘erlangt, nimmt an’

nqsať < **Hna-Hnġ-a-t* < **Hne-Hnġ-e-* (Strunk (1988: 574), García Ramón (1999: 61)).

NB syllabification **h₁ne-(h₁)nġ-e-* also necessary for Gk. *ἐνεγχε*.

3.7 Summary: Avestan *nqsať* and Greek *ἐνεγχε/ἐνεῖχα* most likely go back to a reduplicated verbal stem **h₁ne-(h₁)nġ-* that surfaces with thematic inflection in Avestan and with thematic and alphathematic inflection in Greek.

4 εἶπα ‘I said, spoke’ < **ue-uk^u*- (with labial dissimilation to **ue-ik^u*-, cp. perf. εἶρηται ‘has been said’ < **ue-irē-tai* < **ue-ur^hh₁*-) = Ved. *ávocat* ‘has said’, OAv. *-vaocat* ‘says’ (**uek^u*).

Suppletive to λέγω in Greek and *mrao-/mru-* ‘speak’ in Avestan (suggesting that the reduplicated present Ved. *vívakti* ‘speaks’ is an innovation of the Indic branch, *pace* LIV²: 673).

4.1 Alphathematic forms in Homer much rarer than thematic forms: 5x 2sg. εἶπας, 2x 2pl.ipv. εἶπατε (ἔειπ’(α), Pind. N 9.33; εἶπα, Hdt. (2x),)

4.2 Strunk 1988: Alphathematic inflection younger & analogical to the sigmatic aorist (but also notes Ved. subj. *-vócati*); Bendahman 1993: 203: reduplicated aorist replaced the expected old root aorist very early and took over its athematic inflection

Problems:

- No motivation for analogical athematic inflection
- the reduplicated aorist must be old, given the Indo-Iranian/Greek equation.
- No good evidence for an old *active* root aorist. The OAv. 3sg.ipv. *ūcqm* ‘let it be said’ is synchronically the imperative of the passive aorist OAv. *vācī* = Ved. *avāci*, Kümmel 1996: 148 (or could imply an old “root stative-intransitive” present 3sg. **uk^u-ór*, Jasanoff 2015).

Patientive/passive aorist *avāci* could be oppositional to original active root aorist, but this is not attested anywhere.

4.3 Vedic has both thematic and athematic subjunctives *vócati* (5x in RV, e.g., RV V 27.4 *yó ma íti pravócati*, cadence of anuṣṭubh) and *vocāti* (1x in RV, book X), seemingly parallel to Gk. alphathematic vs. thematic inflection in εἶπα, εἶπον.

The athematic subjunctive tends to be found in cadences (3x in 8-syllable verses, 1x jagatī), making it unlikely that it is secondary to the thematic one as suggested by Bendahman 1993: 202, LIV²: 673.

4.4 Summary: athematic (“*mi*-conjugation”) inflection of Vedic reduplicated aorists not to be equated with the alphathematic inflection of the Greek reduplicated aorists εἶπεγα and εἶπα. The latter appears to be an archaism while the former is an innovation.

5 **Proposal:** Alternative to alphathematic inflection (in the reduplicated aorist) < **mi*-set: remnants of **h₂e*-set of endings before thematization.

5.1 Jasanoff 2003, 2015, Forthcoming: **h₂e*-endings that were not formally renewed as middles surface as formally *active* conjugations:

- (inner) IE thematic active conjugation
- Hittite (act.) *hi*-conjugation (1sg. *-hhe/-hhi*, 2sg. *-tti*, 3sg. *-i*, etc.)

- PIE perfect active (*-h₂e, *-th₂e, *-e)
- ... likewise (some?) Greek alphathematic aorists?

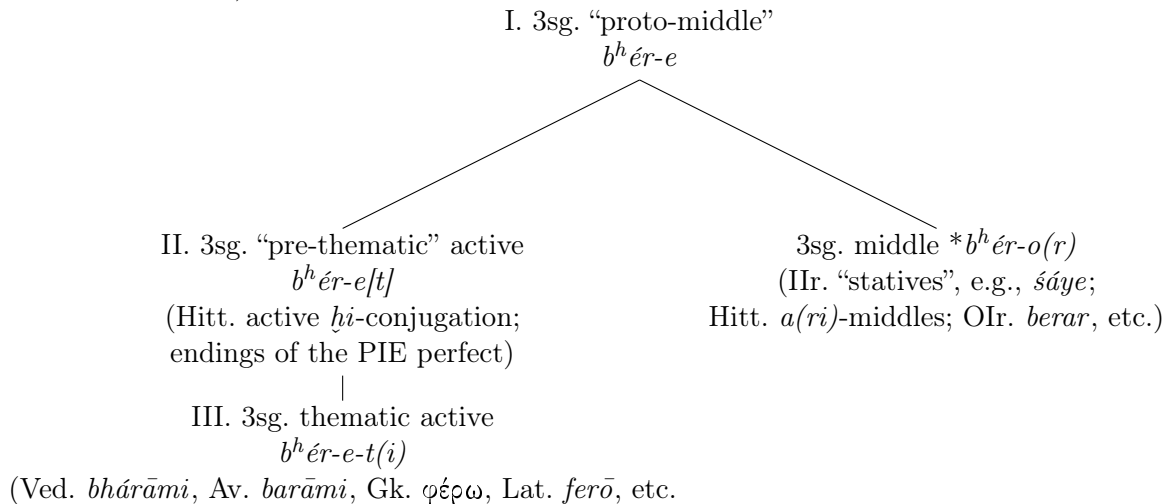
Some advantages:

- No need to assume that the reduplicated aorist was ever *mi*-athematic, or influenced by (unattested) active root aorists
- Brings the original inflection of the redupl. aorist more in line with that of the perfect
- ... especially w.r.t. the problem of the 3sg. -e
- Thematization of old *-h₂e-categories must be assumed anyway, so the variation $\xi\nu\epsilon\iota\alpha/\xi\nu\epsilon\gamma\chi\omicron\nu$ and $\epsilon\dot{\iota}\pi\alpha/\epsilon\dot{\iota}\pi\omicron\nu$ is expected.

5.2 Jasanoff 2013, 2015: Both the PIE perfect and the reduplicated aorist are morphologically derived from a *stative-intransitive* *-h₂e-aorist (as reduplicated “intensives” of the simple aorist):

- (2) a. Thematic aorist:
 3sg.aor. * $\check{u}\acute{o}\check{i}d-e$ → 3sg.pres. $\check{u}id-é$, (late PIE) imperfect * $\check{u}id-é[t]$ ⇒ reanalyzed as aorist * $\check{u}id-é-t$ (Ved. *ávidat*, Gk. $\epsilon\dot{\iota}\delta\epsilon$)
- b. Reduplicated aorist:
 3sg.aor. * $g^{uh}e-g^{uh}ón-e$ → 3sg.pres. * $g^{uh}e-g^{uh}n-é$, (late PIE) imperfect * $g^{uh}e-g^{uh}n-é[t]$ ⇒ reanalyzed as aorist * $g^{uh}e-g^{uh}n-é-t$ (YAv. *-jaγnat*, Gk. $\xi\pi\epsilon\varphi\nu\epsilon$)

Thematization path (Watkins 1969, Jasanoff 1998, 2003, etc.) for simple thematic active present stem (same for simple thematic aorist except for the difference in root grade/accent, Jasanoff Forthcoming):



5.3 PIE “prethematic” 3sg. *-h₂e-conjugation active paradigm * $\check{u}e-\check{u}k^u-h_2e$, * $\check{u}e-\check{u}k^u-th_2e$, * $\check{u}e-\check{u}k^u-e$ (stage II) was thematized (> stage III) late. Alphathematic inflection of Greek $\xi\nu\epsilon\iota\alpha$, $\epsilon\dot{\iota}\pi\alpha$ represents stage II/“athematic” *-h₂e-endings:

	Stage II	Pre-Greek	Greek
1sg	*-h ₂ e	*-a	-a
2sg	*-th ₂ e	*-(s)t ^h a	⇒ -as
3sg.	*-e	*-e	-e

Advantages:

- No complicated analogies necessary: alphathematic inflection of reduplicated aorist looks like inflection of the perfect because they go back to the same set of endings
- Replacement of expected 2sg. *-t^ha by -as independently necessary for the perfect (maybe *-t^ha → *-t^has → -as, cp. Ved. secondary 2sg.mid. -thāh)
- Early replacement of 3pl. *-rs by *mi*-3pl. *-nt(i) likewise necessary for perfect & alphathematic redupl. aorist alike (cp. Hitt. *hi*-conj. 3pl.pres. -anzi)
- No indication that the PIE reduplicated aorist (or its ancestral category) was *mi*-athematic. Original *h₂e-inflection accounts for both the remnant alphathematic (stage II) endings and the newer thematic (stage III) endings.

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