*onto-logical problems: Avestan xšə̄ṇtā and the development of *h₂e-conjugation *media tantum* in "inner Indo-European"

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1 Background

1.1 IIr. *-anta*

- The problem[1]: status of Ved. 3pl. *middle* R(ø)-"thematic" aorist injunctives of the type *juṣánta* 'tasted, enjoyed' (also ind. *ájuṣanta*), *budhánta* 'woke up', *mṛṣanta* 'forgot', etc., besides "passive" aorist indicatives in *-ran, -ram* (and occasionally *active* thematic aorists)

- Synchronically part of the passive aor. paradigm, but formally & functionally a thematic aorist.

- Usually analyzed as (thematized) suppletive middle root aorists, e.g., Cardona 1960: 27: *-anta* = replacement of the pass.aor. 3pl. ending *-ra(n)* based on the active, i.e., a "medialization" of athematic 3pl.act. *-an*).

  - Likely for *kránta* 'they make, procure', but unlikely for *media tantum* forms like *juṣánta* and *mṛṣanta*.

- Watkins 1969: 37f. : *-anta* from *-e/onto* in athematic aorist injunctives must be older than athematic *-ata* < *-ṇto* and reflect an inherited alternation between *-r(o)/*-(e/)nt(o), cf. the quasi-suppletive pattern Ved. 3pl.aor.ind. *ábudhran*: 3pl.aor.inj. *budhánta*

  - The quasi-suppletive distribution 3pl.ind. *-ra(n/m)* : 3pl.inj. *-anta* (Hoffmann 1967: 227, fn. 225; cf. also Jamison 1979: 160) is the norm for these forms, though there are exceptions, e.g., 3pl.ind. *ájuṣanta*, RV 4.33.9a; *ahᵤvanta*, RV 4.6.9d, etc.

- Distribution at least in part due to the meter: pairs like *ábudhran* and *budhánta* are metrically equivalent; *anta*-forms mostly found in cadences of 11- and 12-syllable verses (Cardona 1960: 27f.)

- Insler 1968, Kümmel 1996, Gotō 2013: *anta*-forms = quasi-suppletive middle root aorist forms — but why operate with *two* (inherited?) root aorist stems?

Today's goal:
Discuss the OAv. aorist 3pl. *xšə̄ṇtā* in this context to emphasize the relevance of middle aorist injunctives in *-onto* for understanding the development of "proto-middle" *h₂e-conjugation aorists in "inner Indo-European".

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2 Avestan *xšə̄ṇtā* and Ir. **xša* 'rule'

2.1 Basic averbo

- OAv. 3pl. *xšə̄ṇtā* 'they rule(d)' (*xša* 'rule', Ved. *kṣā*, older *kṣi*; VIA I: 281; Kulikov 2012: 14–15) in Y. 48.5 usually analyzed as a thematic aorist injunctive (Hoffmann, AzI I: 246; Kellens 1984: 365, 1995: 17; Hoffmann and Forssman 2004: 222f.; Cheung 2007: 451)

- Other attested forms of this stem: YAv. 2sg. opt. *xšaēša* (Y. 8.5), the OAv. 3sg. opt. *xšaētā* (Y. 41.2) and the OAv. 3pl. imperative *xšə̄ṇtąm* (Y. 48.5):

(1) Y. 48.5 (Humbach 1991: II, 177; cf. also Insler 1975: 90–1):
*huxšaθrā **xšə̄ṇtąm** mā nə̄ ⁺dušə̄ xšaθrā **xšə̄ṇtā***
"Let good rulers assume rule, do not let bad rulers assume rule over us!'

(2) Y. 41.2 (Humbach 1991: I, 150):
*huxšaθrastū nə̄ nā vā nāirī vā **xšaētā** ubōiiō aŋhuuō hātąm hudāstəmā*
"May a good ruler, man or woman, thus assume rule over us in both existences, O most munificent one among those who exist."

(3) Y. 8.5 (Geldner 1896: 38; Skjærvø 2018: 208):
*vasasca tū Ahura Mazda uštāca **xšaēša** hauuanąm dāmanąm*
"As you wish, O Ahura Mazda, and as you desire may you rule over your own creations."

- Synchronically associated with a (mostly) middle thematic present stem *xšaiia-* (OAv. & YAv.; cf. OP *xšaya-*, Ved. *kṣáya-* (with *active* endings)

2.2 Digression: The root shape

- The root is usually given as *xšǎ* (PIr. **xšaH*, PIIr. **kšaH*), e.g., EWA I: 426, Cheung 2007: 451, but there is no good evidence for the expected long-vowel allomorph Ir. **xšā* (Ved. **kṣā*).

  - The second member of compound of Ved. *divá-kṣā(s)-* 'ruler of heaven' in RV 3.30.21c is an *-as*-stem (cf. Scarlata 1999: 92; Jamison 2024: 60), while *ṛbhu-kṣā-* 'master of the Ṛbhus' inflects at least partially as an *n*-stem °*kṣán-* (cf. Scarlata 1999: 91–2).

- The final laryngeal seems to be reconstructed by Meier-Brügger (1978) and Mayerhofer (EWA I: loc. cit.) to uphold the equation with Gk. κτη- (κτέομαι, κτάομαι) — argued below to be spurious (cf. LIV²: 618–9, fn. 1, who also posit only PIIr. **kš-a-*).

- Within Indic, positing a root shape *kṣā* makes sense in the context of other *Cā*-roots that form *-áya*-presents (e.g., *dhā* 'suck(le)': *dháya-*, *hvā* 'call': *hváya-*, *vyā* 'cover': *vyáya-*, etc., see Gotō 1987: 44–5; Lubotsky 1989: 94–6; Kulikov 2012: 14–5; Jasanoff 2023) — again, this root allomorph is unattested and the Iranian forms show that the original segmentation was **kš-a-*.

2.3 Etymology of **xša*

Two competing etymologies for PIr. **xša-* (PIIr. **kša-*), basically depending on the interpretation of the thematic present stem (cf. EWA I: 426f.; Cheung 2007: 451f.).

2.3.1 1.**tek* (LIV²: 618–9)

- A **-i̯(-)e/o-* or **-éi̯e/o-*-present, i.e., **kb̯eH-i̯e/o- < *tk-eh_{1/2}-i̯-e/o-* or **kb̯H-éi̯e/o-* (cf. Peters 1980: 180; EWA I: 426f.; VIA I: 281; Jasanoff 2003: 104ff.), cognate with Ion. Gk. κτέομαι (besides less well attested κτάομαι) 'acquire'

- *xšə̄ṇtā* could then reflect an old (thematic) middle aor. **kš(H)-anta < *tk(H)-(e/)onto* to the same (laryngeal-extended?) root.

2.3.2 $*h_3ek^u$ (LIV^2: 297–8)

- A secondary $*$-*éi̯e/o*-pres. $*h_3k^u(-)s$-*éi̯e/o*-, from a (desiderative?) *s*-stem $*h_3(e)k^u$-*s*- to $*h_3ek^u$ 'catch sight of, behold' (Mayrhofer 1986: 157, LIV^2: 297f., 619 n. 1, Kölligan 2002: 153, Lipp 2009: II, 299ff.)

- Cf. Gk. ὄψομαι 'I will see' < desid./subj. $*h_3(é)k^u$-*se/o*- and maybe also YAv. *aiβiiāxšaiia*- 'to supervise', which Lipp 2009: II, 306 takes from the same $*$-*éi̯e/o*-present — though Werba (1999) argues for a separate, denominal formation (from an unattested $*aby$-*axša*- 'superviser').

→ the family of Gk. κτέομαι, κτάομαι must be kept separate.

3 Discussion

3.1 Problems with the first approach

3.1.1 (Morpho)phonology I

Unexpected lack of compensatory lengthening in IIr. if Ved. *kṣáya*-, Av. *xšaiia*- = Gk. κτέομαι, κτάομαι, < $*tk$-$eh_{1/2}$-*i̯e/o*-. Possible solutions:

- Jasanoff (2003: 101ff.): short root vowels of, e.g., Vedic *hváyati* 'calls', *dháyati* 'suckle', *kṣáyati* reflect their origin as $*h_2e$-conjugation $*i$-presents. Root-final laryngeals in *i*-presents underwent the "AHIHA-rule": $*$-*AHIHA*- > $*$-*AIHA*- (*A* = any vowel, *I* = any high vowel), resulting in a short vowel root allomorph in the 1sg. with subsequent analogical extension of the new root shape to contexts where compensatory lengthening would regularly take place (cf. also Yakubovich 2014)

- Jasanoff (2023): PIIr. $*$-*V́h_1i̯*- > -*V́i̯*- by regular sound change;

  - this would account for the distribution of -*áya*- vs. -*ā́ya*-sequences in $*$-*i*- (> -*i̯e/o*-) presents from roots in $*h_1$ vs. roots in $*h_{2/3}$, e.g., *dháya*- 'suckle', *vyáya*- 'cover' vs. *rā́ya*- 'bark', *gā́ya*- 'sing', etc.

  - also explains the mysterious non-causative -*áya*-presents with R(ø), e.g., Ved. *citáyati* 'shines, appears', *iṣáyati* 'is strong', *śucáyati* 'shines, glows', etc., which have long been recognized to be associated with the Caland system (cf. Jamison 1983: 48ff., Jasanoff 2003: 101, Rau 2009, 2013, Yakubovich 2014: 13ff.) → phonologically regular outcomes of "decasuative" $*$-*eh_1*-*i̯e/o*-verbs, cf. stative-inchoative Caland-associated $*ē$-verbs, e.g., Lat. *calēre* 'be(come) warm', *rubēre* 'be(come) red', etc.,

→ If the root really contained $*h_1$, Ved. *kṣáya*-, Av. *xšaiia*- could be equated with Greek κτέομαι

  - κτάομαι could also be a denominative, LIV^2: 619, fn. 1, cf. also Beekes 2010: 788–9.

3.1.2 Phonology II

Can the initial *xš*- of the Iranian forms be considered the regular reflex of an initial "thorn cluster" $*tk$-? (NB with a PIE *velar* rather than a palatal second stop)

- No secure parallels for this particular sequence. Lipp (2009: I, 344ff; 2009: II, 299f.) argues that Avestan and Old Persian should have *š*- or *č* corresponding to Gk. κτ- and Vedic *kṣ*- in these forms, but this conclusion seems to be based primarily on the evidence of $*t\acute{k}$-clusters.

- There is no obvious *phonetic* reason why the regular reflex of $*tk$ > $*t^s k$/$*t^j k^{(j)}$ > $*kt^s$/$*k^{(j)}t^j$ > $*kš$ in Ir. should not have been *xš*-, with the metathesis and affrication usually assumed in the treatment of "thorn clusters" (Schindler 1977, Mayrhofer 1986: 150f., Melchert 2003, Jasanoff 2018a).

3.1.3 Semantics + Syntax

The semantic gap between 'acquire, come into possession of' and 'rule over' has not received a convincing explanation so far.

- Meier-Brügger 1978: 236: 'rule over' (IIr.) older than 'acquire' (Gk.), but see Lipp (2009: II, 299).

There is also a syntactic discrepancy between the use of the genitive of the object in IIr. vs. consistent acc.obj. of κτέομαι, κτάομαι — but could be due to the putative meaning shift in Greek.

- Verbs of ruling and possession vary with respect to the case they take in IIr., cf. Ved. *pátya-* 'be master (over); possess' + (mostly) acc. vs. *īś* 'have power over, possess' + (mostly) gen., so the s discrepancy cannot simply reflect the synchronic rules of case marking for possession vs. ruling verbs (at least in IIr.).

3.2 Problems with the second approach

The second approach avoids these problems, but at the cost of assuming a controversial category, R(ø)-*éi̯e/o*-presents, for Greek and Indo-Iranian.

- LIV^2 reconstructs only 15 such stems as "sicher" for PIE, most of which can now be analyzed as having undergone Jasanoff (2023)'s PIIr. rule $*$-$V́h_1i̯$- > -$V́i̯$-, namely roots ending in $*h_1$ ($*d^heh_1(i̯)$, $*ǵ^hu̯eH$, $*ḱu̯eh_1$, $*u̯i̯eh_1$) or Caland-associated decasuatives ($*kei̯t$, $*sperǵ^h$, ?1.$*ḱeu̯k$), cf. above.

→ I follow LIV^2: 619, fn. 1, Lipp 2009: II, 299ff. in assuming that the root underlying the Indo-Iranian forms is ultimately $*h_3ek^u$, but without accepting the reconstruction of an $*$R(ø)-*éi̯e/o*-present.

4 The derivational prehistory of IIr. *(H)kšanta*

4.1 The root shape revisited

Starting point: synchronic averbo of the root *xša*.

- That the PIIr. root shape was indeed /(H)CCa/ is shown by the striking equation between Ved. *kṣa-trá-* n., YAv. *xša-ϑra-* n., and OP *xša-ça-* n., all 'rule, reign; kingdom'.
    - This equation confirms that the interpretation of this root and other *C(C)a*-roots with "*áya*-presents" as *C(C)ay-/C(C)i*-roots arose only later within the Indian grammatical tradition.
- The thematic aor.inj. *xšə̄ṇtā* and its optative *xšaētā* moreover suggest that the sequence /xša/ was originally a thematic *stem*, which was only later reanalyzed as a *root*.
- That is, PIIr. *(H)kšanta* was at some point segmented as *(H)kša-nta*. From this new root, the present stem was then derived.

4.2 The nature of the aorist

Problem: status of aorist *(H)kšanta*?

- If we compare this form with cognates of $*tek$ and $*h_3ek^u$ (the main etymological contenders) outside of IIr., it is noticeable that no old aorist of $*h_3ek^u$ 'catch sight of' is attested anywhere.
- Contributing factor possibly suppletion with similar roots of perception ($*u̯ei̯d$, $*derḱ$), but crucially we observe that *the desiderative s-stems of this root were reanalyzed as neo-roots that subsequently built their own averbos* in the IE daughter languages.
    - Cf. the Vedic neo-root *īkṣ* 'see, perceive' < $*h_3i-h_3k^us$-.

- If we assume that the unreduplicated desiderative stem *$h_3k^u s$- likewise underwent a semantic change from 'see' to 'oversee' > 'supervise, govern over' (cf. the possible parallel of YAv. denominal *aiβiiāxšaiia*- 'to supervise' from *aby-*axša*- 'superviser'; Werba 1999), it would make sense that the resulting PIIr. neo-root *(H)kš* 'oversee, supervise; rule', once it was reanalyzed as aoristic, would have formed a primary "proto-thematic" middle aorist.

    – Middle inflection is the norm for verbs of seeing and perception in most older IE languages & cross-linguistically in languages with the relevant morphological voice distinction, cf. Kemmer 1993: 127ff., Grestenberger 2014: 55f., including IIr.

- Verbs of ruling likewise tend to be middle-marked (cf. Ved. *pátya-*, Av. *paiθiia-* 'be master over, possess'; Ved. *íś-* 'have power over; possess; rule').

4.3   Why *-anta?

So you have a punctual/"aoristic" neo-root in PIIr. and want to form a primary verb. Which inflectional class are you going to pick?

- Middle root aorists were not a productive category in PIIr., so not an obvious choice.

- Middle *s*-aorists tend to be oppositional middles to transitive *s*-aorists rather than *media tantum* — in addition to phonotactic considerations.

→ A better starting point: the class of roots associated with PIIr. "passive" aorists of the type 3sg. *ábodhi*, 3pl. *ábudhran*:

- Most of the old forms of this class are aoristic/punctual intransitive change of state verbs or experiencer verbs rather than actual passives (e.g., *śuc* 'flare up, be kindled', *budh* 'wake up', *jan* 'be born', *pad* 'fall', *cit* 'appear', *juṣ* 'find pleasure in, like', *ruc* 'become light, light up').

- The 3pl. indicative ending *-ra(n/m)* of this class is routinely replaced with the ending *-anta* in the injunctive (indicatives in *-anta* exist as well for some of these verbs).

- Some of these roots are moreover associated with an *active* thematic aorist paradigm with R(ø), notably *juṣ* and *vid*.

(4)   Vedic R(ø)-aorist forms in *-anta* (Grestenberger 2022: 105)

-anta	them. aor.	pass. aor.	root
(á)juṣanta	*(a)juṣát(a)*	*jóṣi, ajuṣran*	*juṣ* 'enjoy'
budhánta	—	*ábodhi, ábudhran/-m*	*budh* 'wake up, notice'
mŗṣanta	—	—	*mŗṣ* 'forget'
vidánta	*ávidat*	*(á)vedi*	*vid* 'find'
(á)h(u)vanta	*áh(u)vat*	—	*hū* 'call, invoke'

- Grestenberger (2022) argues that these 3pl. injunctives in *-anta* represent an intermediate step in the development of inherited "stative-intransitive" h_2e-conjugation aorists (Jasanoff 2003; see also Jasanoff 2017, 2018b, 2019) into *middle* thematic aorists in IIr. and Gk. via the introduction of a thematic 3pl. *-onto* that replaced the older, late PIE 3pl. ending *-ro*.

- In Vedic, where the relevant forms in *-anta* are associated with passive aorist paradigms and functionally alternate with 3pl. forms in *-ran/m*, this development is still in progress.

- Greek shows a more advanced stage in which such thematic middle forms gave rise to full-blown thematic (mostly middle) aorist paradigms.

- The development of these verbs differed from that of the thematization of inherited *active* root aorists like those of *kŗ, gam* on the one hand (Cardona 1960: 22–24), and from the development of *active thematic* aorists associated with *h_2e-presents* on the other (Jasanoff 2017; Rau 2024).

(5) Development of middle "proto-thematic" aorists, *$b^h e u d^h$ 'wake up' (Grestenberger 2022: 120)
    a. Late PIE.: 3sg. *$b^h ó u d^h$-e, 3pl. *$b^h u d^h$-ró 'awoke, became aware' (≈ Ved. *bódhi: ábudhran*) →
    b. Pre-Graeco-Aryan: 3sg. *$b^h (ó?) u d^h$-e(to?), 3pl. *$b^h u d^h$-ónto 'awoke, became aware' (Ved. *budhánta*, Gk. ἐπύθοντο)
    c. Pre-Greek: 3sg. *$b^h u d^h$-é-to, 3pl. *$b^h u d^h$-ónto (Gk. ἐπύθετο, ἐπύθοντο)

- Presumably, the replacement of *-*ro(-)* by *-*onto* took place in analogy with the thematic 3pl. middle ending of *thematized imperfective middles*, where the inherited *$h_2 e$-conjugation endings were replaced by renewed (thematic and athematic) middle endings in their middle functions more rapidly than in the perfective/aorist.

- In the latter, the original (unrenewed) *$h_2 e$-endings continued to be associated with middle uses until relatively late in the game (see, e.g., Villanueva Svensson 2006, 2007–2008 [2009], 2010–2011 [2012]; Jasanoff 2019 on the 3sg. *-*e*).

- *$h_2 e$-conjugation 2sg. imperatives in *-*ó* that were "re-medialized" as *-*ó-s u e/o* (Ved. *-ásva*) could also have played a role in introducing thematic middle forms into other parts of the paradigm, especially for *juṣ* (Jasanoff 2024).

= effectively an inherited pattern whereby some thematic/thematized Proto-Indo-Iranian *media tantum* aorists continued old proto-middles, sometimes in a quasi-suppletive relationship with passive aorist forms → the neo-root *(H)kš '(over)see, watch (over); rule' also formed a middle, descriptively thematic 3pl. aorist form *(H)kšanta (as if < *$h_3 k^u s$-onto) based on this existing pattern.

- Based on the premise that this root was identified as belonging to the group of experiencer verbs with aorists of that type (notably *vid, juṣ*, and *mṛṣ*) based on semantic/argument structure similarity.

4.4 *-*onto* or *-*o-nto*?

- Core of the proposal: it was specifically the 3pl. middle form *-*onto* > *-*anta* that gave rise to the thematic paradigm attested in Avestan.

- At stage (5b) above, the *-anta* forms of this type were essentially quasi-suppletive thematic forms within inherited athematic (*$h_2 e$-conjugation) paradigms.

- A form like *(H)kš-anta would thus have been inherently ambiguous between a thematic and an athematic interpretation (*(H)kš-a-nta vs. *(H)kša-nta) and hence liable to reanalysis:

    – The former (older) segmentation gave rise to the thematic aorist forms attested in Avestan.
    – the latter, innovative one led to the root shape *(H)kša from which the nominal *(H)kša-tra- was then formed, as well as the associated present stem *(H)kšai̯a-.

- The choice of the inflectional class of the present stem was based on the synchronic association of similarly shaped C(C)ắ-roots with *-*ái̯a*-presents after the application of PIIr. *-*V́h₁i̯*- > -*V́i̯*-, e.g.:

(6)   a. *d^hắ : *d^h ái̯a- 'suck(le)'
    b. *u̯i̯ắ- : *u̯i̯ái̯a- 'cover'
    c. *ću̯ắ- : *ću̯ái̯a- 'swell'
    d. *ȷ́^{h}u̯ắ : *ȷ́^{h}u̯ái̯a- 'call'
    e. *(H)kša : x, x = *(H)kšái̯a-

- a present stem *(H)kšái̯a- is clearly motivated in terms of the proposed derivational history and the morphosemantics of the aorist stem: *media tantum* roots associated with former stative-intransitive *$h_2 e$-conjugation aorists (≈ IIr. passive aorists) tend to form *root-accented ya*-presents in IIr. (e.g., *ábodhi : búdhya-, ápādi : pádya-, ájani : ȷ́áya-, áśoci : śúcya-*, etc.; cf. Jasanoff 2003: 154–64).

- Thus both from a formal and from a semantic point of view, a present with the surface form *(H)kšáịa- was basically a given for this root.

- Due to the unusual root shape, the synchronic segmentation of these types of presents was notoriously difficult: when the aorist stem was lost in Old Indic, *kṣáya-* was reanalyzed as a class I present from a root *kṣay/kṣi* like the other roots of this class.

- Since the presents of these roots are mostly active, *kṣáya-*, too, switched to active inflection.

→ The middle inflection of both the aorist and the present stem in Avestan reflects the older situation.
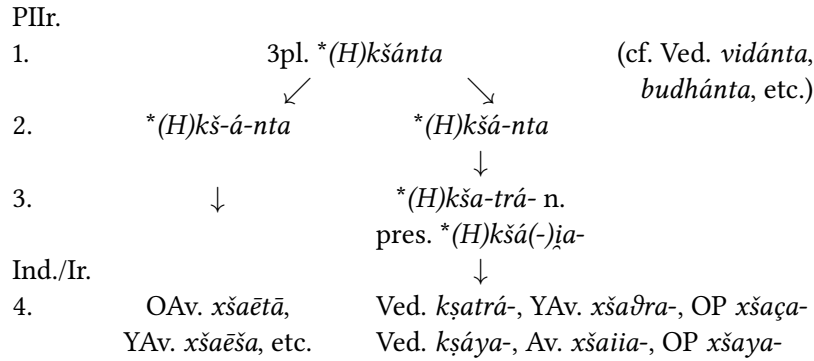
PIIr.

1.		3pl. *(H)kšánta*	(cf. Ved. *vidánta*,
		↙ ↘	*budhánta*, etc.)
2.	*(H)kš-á-nta*	*(H)kšá-nta*	
		↓	
3.	↓	*(H)kša-trá-* n.	
		pres. *(H)kšá(-)ịa-*	
Ind./Ir.		↓	
4.	OAv. *xšaētā*,	Ved. *kṣatrá-*, YAv. *xšaϑra-*, OP *xšaça-*	
	YAv. *xšaēša*, etc.	Ved. *kṣáya-*, Av. *xšaiia-*, OP *xšaya-*	

Figure 1: Summary: development of the neo-root *(H)kša* and its derivatives in Indo-Iranian

4.5   Digression II: why not *-ento?

- If you're a Freiburg school Indo-Europeanist just minding your own business, you're probably wondering why I'm not considering the possibility that the IIr. middle injunctives in *-anta reflect an athematic 3pl. middle ending *-ento (cf., e.g., Rix 1992, Bendahman 1993, Harðarson 1993, Tichy 2009) as in, e.g., Gk. 3pl. ipf. ἐπρίαντο 'they bought' < *e-kʷrih₂-ento (Rix 1992: 215), δίενται 'they speed along' < *dih₁-entoi̯, ἔθεντο 'they set down (for themselves) < *e-dʰh₁-ento; Ved. *yujanta* 'they yoked' < *i̯ug-ento (Bendahman 1993: 14).

- *-ento would have given -anta in Vedic, but requires additional assumptions in Greek to explain thematic -οντο in, e.g., ἵκοντο 'they reached', ἐπύθοντο 'they learned', both supposedly thematized root aorists, vs. ἐπρίαντο, ἔθεντο, where no thematization took place.

- Rix (1992: 210f.), Harðarson (1993: 155): thematization started in the 3pl. with the replacement of active *-ent by *-ont and middle *-ento by *-onto.

  - But no such thematization ever took place in conspicuous inherited root aorists such as ἔβην, ἔστην, ἔθη[κα], ἔφῡ (or inherited athematic presents, for that matter) — the only evidence for this development in old root aorists comes precisely from the 3pl. forms of R(ø)-thematic aorists in Greek, usually without unambiguous reflexes of old (active) root aorists, making the argument circular.
  - Athematic aorist 3pl. forms were much more likely to be replaced with the "alphathematic" ending -αν < *-n̥t or sigmatic -σαν < *-s-n̥t, cf. 3pl. ἔβαν < *gʷh₂-ent vs. ἔβησαν; Doric 3pl. ἔθεν < *e-dʰh₁-ent vs. ἔθεσαν; 3pl. ἐμίγην vs. (ἐ)μίγησαν, etc.
  - Although thematic -ονται sometimes replaced athematic -αται in certain athematic *presents* in certain dialects, this does not seem to have happened in the aorist, certainly not systematically enough to give rise to the Greek R(ø)-thematic aorist in this manner.
  - Moreover, the presumed later replacement of *-ento, *-entoi̯ by -ate, -ata in Vedic and by -αται, -ατο in Greek (caused by a 'satzphonetisch bedingte Akzentverlagerung', Bendahman 1993: 14, or through analogy with the endings of originally acrostatic paradigms, Harðarson 1993: 53) requires further comment.

- It is more economical to operate with *-onto for equations like Ved. *budhánta*: Gk. ἐπύθοντο, Ved. *vidánta*: Gk. ἴδοντο, Ved. *mṛṣanta, juṣanta*, etc. - crucially, the putative Greek *-ento forms have a totally different averbo than these equations (thematic aorists!), which clearly point to *-onto.

- Gk. ἔθεντο could come from *e-dʰh₁-n̥to by regular sound change (cf. Rix 1992: 74, 248; less clear if this would also work for ἐπρίαντο and δίενται) — no need for a 3pl. middle allomorph *-ento(i̯)?

5 Conclusion

- The IIr. root underlying the OAv. 3pl. aorist xšə̄ṇtā is /xša/ < PIIr. *(H)kša; no long-vowel allomorph.

- The associated present stem Ved. kṣáya-, Av. xšaiia- must be kept separate from Gk. κτέομαι, κτάομαι.

- The Indo-Iranian root is a neo-root that goes back to a reanalyzed (desiderative?) s-stem *h₃kᵘ̯-s- to *he₃kᵘ̯ 'see, catch sight of' (LIV²: 619, fn. 1).

- This root became aoristic in PIIr. and formed a "proto-thematic" middle aorist with a 3pl. middle *(H)kš-anta, based on the semantic similarity with a class of inherited *media tantum* *h₂e-conjugation aorists in which -anta < *-onto had replaced older *-ra(n/m) < *-ro(-), e.g. Ved. vidánta, budhánta, juṣánta.

- Such forms were ambiguous between a thematic and an athematic interpretation because they were in a suppletive relationship with an inherited *athematic* paradigm and therefore liable to reanalysis.

- Due to this ambiguity, the attested root shape *(H)kša arose through the resegmentation of the 3pl. middle *(H)kš-anta (and associated middle forms) as *(H)kša-nta. From this new root shape, the *-(á)i̯a-present and the nominal *-tra-stem were then formed.

- OAv. xšə̄ṇtā thus provides crucial new evidence for the importance of the 3pl.inj. ending *-onto > *-anta as *Scharnierform* for transforming inherited *athematic* *h₂e-conjugation aorists into Indo-Iranian (and, more broadly, inner IE) **thematic R(ø) *media tantum***.

- This account also explains the peculiar morphophonological behavior of Ir. *xša, whose vowel seems to be capable of acting both as a root vowel (in the present stem) and a suffix vowel (in the aorist stem), a descriptive fact whose importance has not been given due consideration so far.

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