The Development of Interconsonantal Laryngeals in Classical Armenian

The historical phonology of Armenian has progressed tremendously in the past half century; nonetheless, some opaque spots still remain, including in particular the development of the laryngeals. The exact phonetic environments under which certain laryngeal reflexes can be expected and others excluded are still very much undecided. In this paper I will focus on offering a simpler, more exact description of the fate of interconsonantal laryngeals in passing from the parent language to Classical Armenian. Section 1 presents a summary of four previous theories which were all forced to distinguish interconsonantal laryngeals occurring in initial syllables from those in non-initial syllable: Winter (1965), de Lamberterie (1982), Beekes (1988, 2003) and Olsen (1999). Section 2 presents an alternative phonological rule which applies to any interconsonantal laryngeal regardless of where in the word it occurs and whether it is preceded by a syllabic sonorant or not.

1. Previous Scholarship
1.1 Winter (1965)

In thoroughly examining the development of laryngeals in Armenian, Winter (1965: 112ff) concludes that in interconsonantal position *h₂ and *h₃ develop to -a- while *h₁ is lost. He cites the following forms and cognates:

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1. An earlier version of this paper was presented at the 26th East Coast Indo-European Conference at Yale University in June 2007. I would like to thank Don Ringe and Ron Kim for reading through very early versions of this paper. The usual disclaimers apply.

2. In particular the development of word-initial laryngeals before full vowels, where Greppin (1973), Kortlandt (1980, 1984) and Beekes (1988, 2003) see actual consonantal traces of the sequences *h₂e and *h₃o in ha- and ho-. Others, such as Olsen (1999: 765ff) are much more skeptical.

3. Before embarking on this paper it must be emphasized that laryngeals were not directly vocalized into vowels. Rather, since laryngeals were phonetically obstruents it is unlikely that they developed directly into vowels in any branch of IE but rather induced anaptyxis (cf. Melchert 1994: 47; Lindeman 1987: 98 and especially Hoenigswald 1988).

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Many of these forms are problematic however and once they are either removed from the list altogether or reshuffled into a different laryngeal group, Winter’s theory becomes untenable. To begin with, all four forms illustrating the development of *Ch₁C sequences are tenuous. Dowstr must be rejected since it has *h₂ as shown by the Greek cognate. Winter’s (1965: 113) attempt to motivate *h₁ based on the palatalization in TA ckācar is unconvincing. Anjn must also be rejected since its cognates are not clear and nothing can be derived from it for certain. Ringe (1996: 36) rejects connecting TB ãnme with Greek âvepoç on phonological grounds since TB does not show a laryngeal reflex. He does not discuss its possible relation with the Armenian form but clearly if they are related there must not be a laryngeal. GEW (p. 105) mentions the possible connection of the Greek form with holm ‘wind’, not mentioning anjn at all. Olsen (1999: 794) links anjn with ON angi ‘smell’ reconstructing *hnēn though the semantics do not make this compelling; nonetheless, there is no interconsonantal laryngeal in Olsen’s reconstruction either, so once again anjn tells us nothing about CHC sequences. Armowkn and -and are problematic for Winter since the quality of the internal laryngeal is uncertain in both cases, as is whether they have an internal laryngeal at all (cf. Hamp 1982, 1983).

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4 T = any stop; H = any laryngeal; R = any resonant [r, l, m, n, w, y]; C = any consonant (including stops and resonants).
Of the remaining forms showing a development to CaC, the reconstruction of hayr, bay and arawr are certain and they are indeed examples of *CHC > CaC:

(2)  
*ph₂tër > hayr ‘father’  
*bʰ₂ti- > bay ‘word’  
*arh₃-tro- > arawr ‘plow’

The three verbal forms (i.e. arari, tam, keam) are more opaque since their exact reconstructions are not solid. The main competing reconstructions for tam and keam all involve CHC sequences:

(3)  
tam  
*de-dh₃-mi (reduplicated athematic present) with loss of the re-duplicant (Klingenschi1982: 85ff)  
*dh₃-ye-mi (Barton 1990-91: 45)

keam  
*gʷ(i)yh₃-ye-mi (Barton 1990-91: 45)  
*gʷiyh₃-mi (Harðarson 1993: 210)  
*gʷeyh₃-mi (Hamp 1976: 87-91, Klingenschi1982: 85)

Nevertheless, since the correct choice among these alternants is not clear, their probative value in establishing the exact conditions for vocalization of CHC sequences is marginal. Finally, arari tells us nothing since despite its clear Greek cognate ἤπατον it is unclear what the proto form was (cf. LIV: 270).

1.2 de Lamberterie (1982)

Improving upon Meillet’s (1936: 42) assessment that ‘zero’ was the reflex of an interconsonantal laryngeal because of *dʰugh₂tër > dowstr ‘daughter’, de Lamberterie (1982: 41) stresses that „rien ne prouve que ce qui est vrai après occlusive le soit aussi après sonante.“ He instead maintains that after a resonant the reflex of an interconsonantal laryngeal is not ‘zero’ but -a-, citing the following examples:

(4)  
de Lamberterie’s Solution (1982: 41ff)  
*THC (H > φ)  
*dʰugh₂tër > dowstr (ἡγάτηρ, Skt. duhitár-)

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*RHC (H > a)
*arh₃-trο- > arawr ‘plow’ (ἀποτροπ)
*alh₁-tr-iyh₂- > alawri ‘mill’ (ἀλεκτρίς ‘female miller’)
*ģenh₁-to > cnaw ‘s/he was born’ ((ε)γένετο)
*ģenh₁-tl- > cnawl(kb) ‘parent’ (cf. *ģenh₁-tér- > skt. jānit-, yevetīp;
*ģēnh₁-tōr > skt. jānit-, yevetōp, lat. genitor)
*gʷeyh₃- > keam ‘I live’ (βίοτος ‘life’)

The forms cited by Winter which do exhibit a CHC sequence and
which were not mentioned by de Lamberterie (hayr, hay, tam) are all
problematic for him. Though he does not state so explicitly he must
restrict his laryngeal development to non-initial syllables. In initial
syllables a separate rule which always vocalizes laryngeals must apply.
As an example, if he tried to maintain only one rule with the conditions
stated as in (4) then *ph₂tēr ‘father’ would develop initially to *ptēr
and ultimately to unattested **tir, rather than actual hayr (cf. inherited
initial *pt- > tʰ- in tʰakʰeaw ‘verbarg sich’ from the root *pteh₂k- ‘sich
ducken’ which is reconstructable from πτόωσο ‘duck mich’, lat. taceō
‘schweigen’, and OHG dagēn ‘schweigen’ (LIV: 495). The only way
*ph₂tēr > hayr can be salvaged under de Lamberterie’s theory is to
assume that a laryngeal in the initial syllable of a word – regardless of
whether a resonant precedes it or not in the word – is always vocalized:

(5) *ph₂tēr > *patēr > *hatēr > *hatir > *hayir > hayr

Creating two CHC rules – one for initial syllables and one for non-
initial syllables – will account for hayr and bay without a problem as
well as tam if Barton’s (1990-91: 45) reconstruction is adopted (*dh₃-
ye-mi).

While his analysis can deal with the forms discussed up to now, it
would be desirable to see if a bifurcation of CHC developments into two
separate rules can be given up and replaced by a single rule.

5 For discussion on the relationship between Greek πτ- and Armenian tʰ- see Greppin
6 Nothing should be concluded from the order of developments presented here. For a
discussion of the chronology of Armenian sound changes, cf. Kortlandt (1980) and
especially Ravnaas (2005).
1.3 Beekes (1988, 2003)

Beekes (1988: 77; 2003: 192ff) similarly believes that interconsonantal laryngeals in initial syllables were always vocalized however he proposes that in internal syllables they were vocalized only when occurring before a cluster. Of the nine forms discussed up till now, Beekes mentions the following five:

(6) Beekes’ Solution
i.) initial syllable:
*CHC- > CaC-
*pʰ₂tʰër > hayr ‘father’
*bʰ₂tʰi- > bay ‘word’
*dʰ₃ > tam ‘I give’ (δo-τος ‘given’, Latin da-tus id.)

ii.) non-initial syllable:
*CHC-V (H > θ)
*dʰugh₂tër > dowstr ‘daughter’

*CHC-C (H > a)
*γẹn₁-tl- > cnawl(kʰ) ‘parent’

Two of the remaining four forms cited by Winter and de Lamberterie do not contradict Beekes’ proposal (on cnaw ‘s/he was born’ and keam ‘I live’ see further below):

(7) *CHC-C (H > a)
*arh₃-tro- > arawr ‘plow’
*alh₁-tr-iyh₂- > alawri ‘mill’

Beekes also mentions the following forms which accord with his rules (1988: 77; 2003:192ff):

(8) i.) initial syllable
*CHC > CaC
*dʰ₂p-ni- > tawn ‘feast’ (OIC. Tafn, Lat. daps ‘(offering) meal’, δαπάνη ‘costs’)
*sh₂d- > at-olkʰ ‘full, fat’ (άδορος)

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7 Müller (1984) – a work I was unable to see – came to the same conclusion as referenced in Olsen (1999: 768).
ii.) non-initial syllable:

*CHC-V (H > 0)

*h₂welh₁men- > gelmn ‘wool’⁸ (Lith. vilna, Got. wulla, Hitt. hulana-, Lat. vellus)

*-omh₁no- > -un (middle part.) (-οµενος)

*yenh₂tër > *[j]ndir > → nër ‘sister-in-law’ (Skt. yātar-, εινυτηρ-, Lat. ianitir-)

*h₂rHm- > armowkn ‘elbow’ (Skt. îrmā-, Latin armus, Got. arms, all ‘arm’)

*h₂nHt- > (dr)-and ‘doorpost’ (Skt. áta-, Lat. antae)

*CHC-C (H > a)

*perh₃kt- > erastank⁹ ‘buttocks’ (προκτος ‘behind, buttocks’)

As for counterexamples, he readily admits that harawunkt₁ ‘field’ – which he derives from *h₂erh₃-ur ~ h₂rh₃-wen- – is a problem for his analysis. He makes recourse to an analogical remedy in which the zero grade *h₂rh₃- > ara- was taken from the oblique cases, assuming a development of long-sonants to -aRa- (cf. section 2.2 below). Beekes’ appeal to a separate development for long sonants however is questionable since his reconstructions for armowkn and (dr)-and both contain long sonants too. He does not explain why the zero-grade of h₂rh₃-wen- is subject to a separate rule which vocalizes the laryngeal while armowkn and (dr)-and are not.

He does not discuss cnaw ‘s/he was born’, which should not exhibit a vocalic reflex since the laryngeal stands in an open syllable:

\[\text{(9) Expected development of } *\text{genh₁-to}\]
\[*\text{genh₁-to} > *\text{gento} > *\text{cento} > *\text{cinto} > *\text{cint} > *\text{cind}^\text{b}\]

Since Beekes does not offer a solution to this form it is not apparent how he interprets its problematic -a. Not everyone views this -a – which is the mark of the medio-passive preterite – as being a laryngeal reflex though. Godel (1975: 121) compares it to the past tenses in *-ā- which appear in Baltic (Lith. likau ‘I left’), Slavic (OCS biřaxū ‘I gathered’), and Italic (Latin eram ‘I was’, legēbam ‘I was reading’, lēgeram ‘I had read’ and Oscan fufans ‘they were’) and though Godel does not offer a reconstruction of the form Lindeman (1985: 63) is explicit in stating that

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⁸ Beekes does not specify the quality of the laryngeals in this form.

the -a- is not a laryngeal reflex: *cnaw represents *cina- (+ ending -w) which in its turn is an enlargement in *-ã- of a thematic IE imperfect stem *genH-e-. Beekes’ solution does not work as well under the analysis of Jasanoff (1979: 143) and Klingenschmitt (1982: 9) though in which -a- has been leveled throughout the paradigm from the 3rd pl. of athematic aorists in *-nto. The reason for this is that according to Klingenschmitt this generalization „wurde vielleicht durch das Vorhandensein eines erebten Nebeneinanders von Formen wie edan < *e-dh1-onto : edaw < *e-dh3-to, cnan < *genh1-nto : cnaw < *genh3-to veranlaßt oder zumindest erleichtert.” Clearly Beekes’ analysis precludes laryngeal vocalization of a set root in any form of the mediopassive athematic aorist paradigm since no ending begins with a consonant cluster and thus his rule *CHCC > CaCC is never triggered.

Finally, he also does not discuss keam. All three reconstructions mentioned above (3) should not vocalize the laryngeal since it is in a non-initial syllable in an open syllable:

(10) keam

\[ *g"(i)yh3-\text{ye-mi} \quad \text{(Barton 1990-91: 45)} \]
\[ *g"iyh3-mi \quad \text{(Hárdarson 1993: 210)} \]
\[ *g"eyh3-mi \quad \text{(Hamp 1976: 87-91, Klingenschmitt 1982: 85)} \]

He follows Kortlandt (1975) in working off of a structure *g"h3i- via laryngeal metathesis though he does not spell out exactly where the -a- comes from.\(^{12}\)

1.4 Olsen (1999)

Olsen (1999: 768) – like de Lamberterie and Beekes – distinguishes CHC clusters which occur in initial syllables from those that occur in non-initial syllables. The former are always vocalized. As for the latter, she points out that though Beekes’ hypothesis cannot strictly be excluded, only arawr < *arh3-tro- „seems to be beyond discussion as evidence for a development *-CHCC- > -CaCC-.“ She instead offers a different analysis. She posits that all interconsonantal laryngeals in non-initial syllables were vocalized and those not followed by -w- were deleted by a late rule. This latter rule must be late because Armenian -w-

\(^{10}\) For a discussion of these as well as other past tense and modal forms in -a- in Indo-European languages, see Jasanoff (1983) and McCone (1991: ch. 5).
\(^{12}\) For developments of *iH > *ia in Armenian see Olsen (1992, 1999: 770-773) and the critical discussion in Clackson 1994: 41-49.
nearly entirely comes from later sound changes, since original PIE *w had developed to -g-, -v-, and zero depending on environment (cf. Schmitt 1981: 69-70; Olsen 1986). Of the forms discussed up till now, her solution works for the following non-initial CHC sequences

(11) i.) initial syllable

*CHC > CaC
*ph₂tēr > hayr ‘father’
*bʰh₂tʰi- > bay ‘word’
*dh₂p-ni- > tawn ‘feast’
*sh₂d- > at-okʰ ‘full, fat’

ii.) non-initial syllable

ultimately retained *CHC > *CaC > Caw
*arh₃-tro- > arawr ‘plow’
*alh₁-tr-iyh₂- > alawri
*ğenh₁-to > cnaw ‘s/he was born’
*ğenh₁-tl- > cnawl(k)³ ‘parent’

ultimately lost *CHC > *CaC > *CC (at no point does -aw- arise)
*dʰugh₂tēr > dowstr
*h₂welh₁men- > gelmn ‘wool’
*-omh₁no- > -un (middle part.)
*yenh₂tēr > *[i]ndir > → nēr ‘sister-in-law’

The two forms armowkn ‘elbow’ (<*h₂Hm-) and (dr)-and ‘doorpost’ (<*-Ht-) should have been vocalized. She discards these forms by ascertaining the laryngeal may have been lost in compounds (1999: 675, 677, 768). This is possible for (dr)-and since „a laryngeal between sonorant and a consonant in the second member of a compound or after a syllable of reduplication seems to be lost“ (Weiss 1994: 136). Greek πιμπλαμεν ‘we fill’ < *piplʰ₁-mes illustrates the rule. It is unlikely that πιμπλαμεν is a super-zero-grade, since as Weiss points out one would have anticipated *πιμπλαμεν since the root ends in *h₁. The laryngeal of concern in (dr)-and is in the second syllable and therefore liable to be lost via this rule. However, the laryngeal of concern in armowkn is in the first member of the compound and therefore should not have been lost. This is a problem for Olsen’s theory.

The four forms discussed which do not fit in with her analysis (tam, keam, erastankʰ, harawunkʰ) are not detrimental. Tam ‘I give’ is not problematic if she assumes Barton’s (1990-91: 45) reconstruction *dh₁-
ye-mi. For keam she assumes a development *gʰih₃w-e/o- > keam (Olsen 1999: 772).\(^{13}\) She dismisses erastankʰ since she believes it may have been influenced by the Iranian loanword erankʰ ‘thighs’. Finally, unlike Beekes she connects harawunkʰ with Lithuanian armuō ‘arable land’ reconstructing *h₂arh₃mon- whose *-m- developed to -w-, thus mandating the retention of the reflex of the laryngeal.

She also brings the following forms into the discussion (1999: 767ff):

(12) ultimately retained *CHC > *CaC > Caw
\[\begin{align*}
*gʰerh₃töl &> kerawl ‘eater, eating’ \\
*ĝenhr₁wtd- &> cnawt ‘jaw’ \\
\end{align*}\]

ultimately lost *CHC > *CaC > *CC (at no point does -aw- arise)
\[\begin{align*}
*bʰewHno- &> boyn ‘dwelling’ \\
*bʰewHko- &> boys ‘shoot, plant’ \\
*tewHno- &> tʰoynkʰ ‘poison, venom’ \quad \text{ (Lat. tumor)} \\
*mwehl₁mo- &> melm ‘soft’ \\
*kerh₃s-V- &> seř ‘offspring’ \quad \text{ (Larin Cerēs)} \\
*h₁erh₂s-V- &> her ‘strife, spite’ \quad \text{ (ēpiς)} \\
\end{align*}\]

She also makes the attempt to link the development of the long sonants (i.e. *RH) to her rules, something previous solutions could not do. Towards this end she presents the following forms (cf. armowkn and (dr)-and in (11)):

(13) ultimately retained *CHC > *CaC > Caw
\[\begin{align*}
*mh₃to- &> amawtʰ ‘shame’ \\
*slh₂ti- &> alawtʰkʰ ‘prayer’ \\
\end{align*}\]

ultimately lost *CHC > *CaC > *CC
\[\begin{align*}
*plth₂ni- &> *paltani- \rightarrow *platanii- \quad \text{(-la- under influence of the} \\
\text{full grade *pleth₂-)} \rightarrow *la₉ani- \rightarrow *lani- \rightarrow layn ‘wide’ \quad \text{14} \\
\text{ (πλάτανος, OI lethan)} \\
*h₃rmh₁no- &> armn ‘root’ \quad \text{ (δρυμενος)} \\
*klmh₁no- &> salmn ‘embryo, foetus’ \\
\end{align*}\]

\(^{13}\) Cf. fn. 12

\(^{14}\) The -y- is a result of epenthesis caused by a final -i which is subsequently lost by apocope; cf. *h₂nër > *anër > *anir > *aynir > *ayyir > ayr ‘man’ (Olsen 1985: 5-6).

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Olsen’s attempt to connect the development of the long sonants with THC developments is commendable though as discussed in section 2.2 below it is not without problems. She is also still forced to differentiate non-initial sequences of CHC from initial CHC. Additionally, her explication of erastankʰ ‘breast’ is not entirely plausible. Furthermore, she is forced to explain away dalar ‘green, fresh’ since *dʰalʰro- (cf. ḡαλερός) should surface as **dalr under her analysis. She reconstructs *dʰal-ro since “the usual adjective suffix *-ro- is never added directly to a root ending in -l-, neither in Greek nor Armenian” (1999: 769). Instead, she proposes that the prop-vowel -a- was inserted to break-up the cluster -lr-, citing as support molar ‘errring, deceiving’ from the anit root *mol-ro-.

2. A Unitary Rule

What the three preceding theories have in common is a bifurcation of the development of interconsonantal laryngeals into those that are in word-initial syllables and those that are not. The former are always maintained whereas the latter are only sanctioned in specific phonological environments. I propose that a simpler analysis is possible and that one rule applies to all interconsonantal laryngeals regardless of their position in a word: namely, interconsonantal laryngeals were lost when flanked by two non-syllabic sonorant consonants, the second of which was a nasal:

(14) *RHN > RN (R = [r, l, m, n, w, y]; N = [m, n])

2.1 Non-long-sonants

The lexical items presented throughout this paper whose shapes follow straightforwardly from this refined rule are listed in (15). I treat non-long sonants first:

(15) *H > ø / R__N
    *h₂welh₁men- > gelmn ‘wool’
    *-omh₁no- > -un (middle part.)
    *bʰewHno- (or *bʰowHno-) > boyn ‘dwelling’
    *tewHno- > tʰoynkʰ ‘poison, venom’
    *mwelh₁mo- > melm ‘soft’

15 For clarification, the second part of a diphthong is considered non-syllabic and can thus establish the left half of the environment for this rule.

16 Note that I do not necessarily agree with all of these reconstructions but simply wish to show that the analysis proposed in this paper can account for them.
*H > -a- elsewhere
*ph₂těr > hayr ‘father’
*bʰh₂ti- > bay ‘word’
*arth₃-tro- > arawr ‘plow’
*de-dh₁-mi or *dh₁-yə-mi > tam ‘I give’
*alhrtr-iyl₁₂- > alawri ‘mill’
*ɡenhrto > cnaw ‘s/he was born’
*ɡenhr₁-to > cnawl ‘parent’
*dh₂p-ni- > tawn ‘feast’
*sh₂d- > at-otf₁ ‘full, fat’
*perh₃kt- > erastank⁸ ‘buttocks’
*ɡʷerh₃tōl > kerawl ‘eater, eating’
*ɡenhr₁-wd- > cnawt ‘jaw’
*d⁶alh₁-ro- > dalar ‘green, fresh’

Observe that both reconstructions of tam are compatible with the unitary rule approach which is an advance over Olsen whose phonological rule leaves tarn unexplained. Additionally no epenthetic vowel breaking up an *-lr- sequence is required for dalar. Its development follows straightforwardly from *dʰalh₁ro-.¹⁷ Since the deletion of interconsonantal laryngeals is sensitive to a following nasal, the word holm ‘wind’ can easily be connected with ḍnéμος and Latin animus as the o-grade of the form *h₂enhrmo-. On the other hand Olsen’s rule cannot account for the failure of *h₁ to not exhibit a reflex in this word.

The following non-long-sonants require some comments however: dowstr, boys, nēr, harawunk⁸, seř, heř, and keam.

2.1.1 dowstr and boys

The loss of the laryngeal in these two forms can be explained via phonological rules active in the parent language (cf. Ringe 2006: 15). Specifically, a laryngeal was lost if it was: i.) the second of four consecutive nonsyllabics at the underlying level and at the same time adjacent to a syllable boundary on its right (cf. Schmidt 1973 for Indo-Iranian and Hackstein 2002 for Indo-European) and ii.) if it was tautosyllabic with a preceding *-oR- sequence, where R is any sonorant (i.e. the „Saussure Effect“; cf. Melchert 1994: 49-51; Nussbaum 1997).

¹⁷ During the oral presentation of this paper, Alan Nussbaum commented that this still not need have a laryngeal and can be analyzed differently. Cf. Kimball 1988: 246, fn. 19 who suggests Greek ἰαλορός could be analyzed ἰαλ-ερός.
In this way, the first rule will explain dowstr whose stem form was leveled in from the oblique forms, and the second rule will account for boys only if we adopt the -o- grade reconstruction (Olsen 1999: 43):

(16) gen. sg. *d^bugh2t^res > *dug.t^res → stem *dug- leveled in Armenian, as well as in Lithuanian duktė, Gothic daughtar, Osian futfr
 *b^bowko- > *b^bowko- > boys (cf. *torh1mos > τορμος ‘socket’, Old English pearm ‘intestine’)

Schmidt-Hackstein’s phonological rule also explains the failure of taygr ‘brother-in-law’ to exhibit a reflex of the laryngeal in *dayh2wër (Huld 1988). The zero-grade with stress on the suffix would have been *dayh2wr- with the crucial *CH.CC sequence prompting loss of the laryngeal (cf. Ringe (2006: 69-70, fn. 1)). The resulting laryngeal-less form was then leveled through the paradigm.

One can reasonably ask why Schmidt-Hackstein’s rule did not apply to arawr ‘plough’ (< *arh3tro-), alawri ‘mill; female miller’ (< *alhitriyh2-), cnawl(kh) ‘parent’ (< *genh]\tl-), cnawt ‘jaw’ (< *genh1wd-), and erastankh ‘buttocks’ (< *perh1kt-)18. Since Schmidt-Hackstein’s rule is not observable in every CH.CC sequence it is possible that some of the clusters in the forms above do not trigger it. For instance, no example is attested for sequences which contain two liquids (cf. Hackstein 2002: 19). It is possible that arawr and alawri were exempt from Schmidt-Hackstein’s rule since their CH.CC cluster consisted of two liquids.19 Since the interconsonantal laryngeal in cawltí1 and cnawt is not flanked by liquids this corollary to Schmidt-Hackstein’s rule is inapplicable. I propose to alter their reconstructed forms slightly so as to eliminate a CH.CC sequence as follows:

(17) *genh1tlɔl > cnawl (cf. Olsen 1999: 640)

18 Schmidt-Hackstein’s rule is not applicable to tawn ‘feast’ (<*dh2p-ni-) since no syllable boundary exists between the laryngeal and the following consonant.
19 This failure of Schmidt-Hackstein’s rule to apply in the environment of liquids on both sides of the H is not too surprising since within PIE there must have been a strong desire to keep liquids from getting too close to one another. This is clearly seen when one observes that no PIE root contains two liquids (cf. Cooper 2008: 8, Ringe 1998). Note the failure of the rule to occur before *-sr- in *kerh3srom > Latin cerebrum (Hackstein 2002: 19). Perhaps from such roots in liquids, the maintenance of the laryngeal before the suffix *-sr- generalized to other contexts which did not contain a laryngeal in the root: *temHsreh2es > Latin tenebrae.
20 The -w- under this reconstruction remains obscure. Note however that under Olsen’s reconstruction the *w should have been vocalized and a development similar to the following should have occurred: *genh1wd > *genh1ud > *cinh1ut > *cinut > **cint.

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Finally, where exactly the syllable break is in *perh₂kt- is anything but clear. It is reasonable to assume that it was syllabified as *perh₂k.t- with a decrease in the sonority of the first syllable; thus, the environment for Schmidt-Hackstein’s rule would not have been met.

2.1.2 nër

Beekes’ reconstructed history of this form requires the non-vocalization of the laryngeal. Since *h₂ in *yenh₂tër is not in the environment *RHN it should leave a vocalic reflex. I follow Schmitt’s (1996) proposal for the development of this form into Armenian, which crucially requires the vocalization of *h₂:

(18) *Hyēnh₂tēr > *yenaṭēr → *yenēṭēr (vowel assimilation) >
*yineyr > *yneyr > *neyr > nër ‘sister-in-law’

2.1.3 harawunkʰ

I follow Beekes’ reconstruction (*h₂erh₃-ur ~ h₂rh₃-wen-). Particularly the oblique form *h₂rh₃-wen- should have resulted in vocalization of both laryngeals (ara-) and this stem was subsequently leveled throughout the paradigm (cf. section 2.2 below for discussion of long-sonants).

2.1.4 heṛ and seṛ

Under the reconstruction given by Olsen (repeated from 12):

(19) *h₁erh₂s-V- > heṛ ‘strife, spite’
*kerh₃s-V- > seṛ ‘offspring’

both of these forms should not exhibit a reflex of the interconsonantal laryngeal since the trilled final -ṛ in the Armenian reflexes would not be explained:

(20) Development with vocalization of *H
*h₁erh₂s-V- > *eras-V- > *era-V- > *erV > **heṛ
*kerh₃s-V- > *seras-V- > *sera-V- > *serV > **ser

---

21 Following Kortlandt (1997).
22 For the loss of word-initial *yi-, Schmitt cites loss of [ya] in the word Hreay ‘Jew’ as compared to the Syriac yohāδ-āyā.
23 The exact source of the initial h- is not clear.

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The trilled -ř must stem from a sequence *rs which exactly would have arisen had the interconsonantal laryngeal not been vocalized in line with Olsen’s theory. This is not fatal to the idea espoused here and I account for both forms via other means.

The etymology of her is unclear and its connection with Greek ἐρειξ was already rejected by Hübschmann (1897: 466) whose analysis was more recently endorsed by Clackson (1994: 181).24 Klingenschmitt (1982: 96) reconstructs the related verbal root er-a- ‘sieden, kochen, aufwallen’ as *h₁ers-ah₂-ye/o- connecting it to the Latin errāre ‘umherirren’. His reconstruction of the root dispenses with Olsen’s awkward -rHs- sequence which is unknown to PIE roots and accounts for the Armenian -r quite easily.

The lack of a laryngeal reflex in ser and the occurrence of a trilled -r can be accounted for by adopting Olsen’s (1989b: 5-15) formulation of the RUKI-rule in Armenian. Specifically, word final *-s when following -i- or -u- (of whatever source, including eg. *-ẽ, *-o) developed to *-ž. Following apocope of the syllable-final vowel and other changes such as the deletion of intervocalic *-t-, this intermediate *ž developed to -r if it found itself after -i- or -u-; otherwise it was deleted:

\[
(21) \begin{align*}
*{-s} & > -r: *d'ẽh₁-ti-s > *dẽtis > *dijiz > *diž > dir \text{ ‘position’} \\
*{-s} & > 0: *b'r-ti-s > *bardž > *bardž > bard \text{ ‘heap’}
\end{align*}
\]

If *-ž had developed to some type of rhotic sound other than *-r before final apocope25 at an intermediate stage of the development of ser a final sequence of two rhotics would have occurred. It is not unreasonable to imagine that such a sequence *-r¿r would have yielded a nom. sg. in -ř which could have spread throughout the paradigm26:

---

24 Olsen (1999) seems to vacillate on which Greek cognates to connect with the root. She mentions a connection with ἐρειξ (p. 768) as well as with ἀρη ‘act of) violence’ and ἐπήρεα ‘violent, hostile action’ (p. 206). Under ἀρη GEW (p. 137) states „weitere Beziehungen unsicher.“ Even if these latter two forms are connected with Armenian her the reconstruction of the root as *h₁erh₁-s- is improbable. Furthermore if this root consists of two morphemes (i.e. *h₁er₁h₁-s-) then this reconstruction must be motivated and made to coincide with the verbal form er-a- (see the immediately following discussion in the text).

25 It cannot have developed fully to -r since PIE *-r is not lost in word-final position after a consonant (cf. dustr < *d'uhg₂tēr). The intermediate rhotic in the development from *-s > *-ž > -r could have been one of a number of possible rhotic sounds including: an alveolar tap, a retroflex tap or even a uvular fricative. In what follows I will represent this postulated rhotic using the IPA symbol for a voiced uvular fricative: [k].

26 Olsen (1989b) offers one apparent counterexample to my claim of the development *-r¿r > -ř; namely, the word sayr ‘edge of knife’ which she takes...
(22) \(*\text{ker}_{\text{r3}}\text{-} \text{es} > *\text{ser}_{\text{es}} > *\text{ser}_{\text{i3}} > *\text{ser}_{\text{i3}} > *\text{ser}_{\text{r}} \text{ 'offspring'}^\text{27}\)

For a change of two rhotics to -ř- compare the change *-sr- > *-hr- > *-rr- > -ř- in k\(\text{\textacuten}}\)eř ‘sister’s’ < *swesros and eřak besides errak, both derivatives from erir ‘third’ (Ravnæs 2005: 194; 202; Schmitt 1981: 31). Ravnæs in fact considers rr > ř to still be a living rule in Classical Armenian.

2.1.5 keam

Any of the reconstructions given in (10) above will work for keam. Barton’s *\(\text{gw(i)yh}_{\text{r3}}\)-ye-mi is the only one that would work in every form of the paradigm. Haröarson’s *\(\text{gwiyh}_{\text{r3}}\)-mi should have no laryngeal reflex though the stem *\(\text{gw}^\text{w}\text{iya-}\) could easily have been leveled in from the second and third singular forms where laryngeal vocalization would have been regular (*\(\text{gwiyh}_{\text{r3}}\)-si, *\(\text{gwiyh}_{\text{r3}}\)-ti). The same holds for Hamp’s *\(\text{gw}^\text{w}\text{eyh}_{\text{r3}}\)-mi.

2.2 Long-Sonants

Olsen (1999) attempts to combine the outcome of non-word initial *RHC and *THC sequences under a single rule. I believe she was on the right track and six of the seven forms she cites fall in line with the unitary rule laid out in (14):

(23) \[
\begin{align*}
*\text{H} & > \emptyset / R\_N \\
*\text{h}_{\text{r3}}\text{rmh}_{\text{r1}}\text{n} & > \text{armowkn ‘elbow’} \\
*\text{h}_{\text{r3}}\text{rm}_{\text{r1}}\text{no} & > \text{armn ‘root’} \\
*\text{klm}_{\text{r1}}\text{no} & > \text{salmn ‘embryo, foetus’} & (\text{öp} \text{mevoc}) \\
*\text{H} & > -\text{a-} \text{ elsewhere} \\
*\text{mh}_{\text{r3}}\text{to} & > \text{amawt}^\text{h} ‘\text{shame’} \\
*\text{slh}_{\text{r2}}\text{ti} & > \text{alawt}^\text{h}k^\text{h} ‘\text{prayer’} \\
*\text{plth}_{\text{r2}}\text{ni} & > *\text{paltani-} \rightarrow *\text{platani-} (\text{-la- under influence of the full grade *pleth}_{\text{r2}}-) > *\text{la} \text{ðani-} > *\text{lani-} > \text{lawn ‘wide’}
\end{align*}
\]

from *\(\text{kh}_{\text{r3}}\text{ris}.\) The analysis above predicts unattested **sayr. Nevertheless, since sayr occurs predominately in compounds in Armenian, e.g. sayradir ‘edge’, (Olsen 1999: 55, 445) an inflected nominative sg. form in *-s is unlikely. The simplex could have been backformed from the more common compound. In addition, its exact reconstruction is disputed, cf. Hamp (1994).

\text{27} A form ser ‘kind, race’ also occurs. This could be generalized from the oblique cases where -r is expected according to the theory proposed in this paper (N.B. the quality of the vowel resulting from contraction is unclear): *\(\text{ker}_{\text{r3}}\)-s-V- > *\(\text{ser}_{\text{r3}}\)-V- > *\(\text{ser}_{\text{r3}}\)-V- > *\(\text{ser}_{\text{r3}}\)-V- > ser-

Note that the derivation of ser from the nominative and ser from the oblique cases is exactly opposite of what Olsen’s theory predicts (1989b: 16).

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Only (dr)-and from *h₂Hti- has no laryngeal reflex where one is expected. This is not detrimental since it is possible that no laryngeal should be reconstructed for this form to begin with (cf. Hamp 1983). Additionally, as pointed out in section 1.4 this could be an example of laryngeal loss in the second member of a compound (Weiss 1994: 136).

In addition to coping with the long-sonant forms mentioned by Olsen, the unitary approach permits one to maintain Winter (1965: 104ff) and Klingenschmitt’s (1970: 80) derivation of čanačem ‘I know’ from *gnh₂-ske/o- (cf. γνωσκεω). Similar -ske/o- verbs such as amacšem ‘I am ashamed’ (< *(s)mh₁-) and alačšem ‘I beseech’ (*plh₁- or *slh₂-) can be treated identically. None of these verbal forms follow from Olsen’s account.

Other forms mentioned by Clackson (1994: 36-41) in his discussion of long-sonants in Armenian follow straightforwardly from the unitary approach:

\begin{align*}
(24) & \quad \textbf{H } > \emptyset / \text{R} \textunderscore \text{N} \\
& \quad *\text{wrh₁n-} > \text{garn} ‘\text{lamb’} \\
& \quad *\text{tlh₂-ni-} > \text{tal} ‘\text{district (of a city)}’ \\
& \quad *\text{g”lH-no-} > *\text{kaln} \rightarrow \text{kalin} (\text{under analogy with forms like hin ‘old’}) ‘\text{acorn}’ (βόλανος) (\text{Clackson 1994: 135ff})
\end{align*}

\begin{align*}
*\text{H } > & \text{-a- outside}³⁰ \\
& \quad *\text{pwlH-s or *tplH-} > \text{kʰalakʰ ‘city’} \quad (\text{Skt. pūr, πτόλις}) \\
& \quad *\text{prH- wo-} > \text{haraw ‘south’} \quad (\text{Skt. pūrva- ‘first’}) \\
& \quad *\text{plh₁-b’-ni-} > \text{alawni ‘dove’} \\
& \quad *\text{prh₃wyom} > \text{araj ‘fron, foresize’} \quad (\text{Skt. pūrvyā- ‘former, old’, Av. paouruitia ‘first’) (Olsen 1999: 196ff)} \\
& \quad *(s)rHdye- > \text{aracem ‘I pasture’} \\
& \quad *\text{gnh₃ti-} > \text{canawtʰ ‘known’}
\end{align*}

²⁸ The Latin and Old Norse cognates (antae and ond respectively) are unfortunately not probative since the laryngeal could have been lost in Latin via syncope and in Old Norse via loss of internal schwa.

²⁹ Cf. Clackson for the references to these reconstructions in addition to alternate reconstructions without *RHC sequences.

³⁰ It is interesting to observe that kʰarawson ‘forty’ (< *(k”)twr-dkomt-) and ewt’anasonn ‘seventy’ (< *septm-dkomt-) share the ‘long-sonant’ development. An epenthetic vowel must have been inserted so as to alleviate the large consonant cluster. See footnote 3 for a discussion of how laryngeals were vocalized.
The remaining forms discussed by Clackson are not as probative since alternative reconstructions exist which do not contain long-sonants. Two simple examples are: i.) erkan ‘mill’ which can be either from *gʷrH- nuh₂- with a long-sonant (Normier 1981: 27) or *gʷreHwn- with a full grade (Olsen 1999: 298) and ii.) aland ‘heresy’ which Olsen (1999: 779) takes to be from (h₂)lh₂eh₂- (cf. ἀλανομαι ‘I err’) without a long-sonant at all, since the second laryngeal will automatically be lost since it stands before a vowel.

Olsen’s rule can only account for three of these twelve forms (haraw, alawni, canawtʰ). She is forced to seek alternative etymologies for some of them, and even concedes (1999: 98ff) that the verbal forms čanacʰem and alacʰem do continue long sonants, thus separating the outcome of *RHC sequences from *THC.

3. Summary
The analysis proposed in (14) attempts to unite the development of interconsonantal laryngeals in one rule which applies regardless of which syllable of the word the sequence occurs in, as the analyses of de Lamberterie, Beekes, and Olsen are all forced to do. Additionally the rule in (14) can account for the distributions of the two outcomes of long-sonants as aR and aRa which Clackson (1994: 41) concluded occurred „under unknown phonetic conditions.“ None of the previous theories were able to fully unify the development of long-sonants with interconsononatal laryngeals under a single rule.

Apparent counterexamples to the rule introduced in (14) were explained away either via one of the two reconstructed PIE phonological rules of laryngeal loss (i.e. the „Saussure Effect“ for boys and Schmidt-Hackstein’s rule for dowstr), or by refining the RUKI-rule in Armenian (ser), or finally by calling on other plausible reconstructions (nër, herê).

References


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