The life cycle of High Vowel Deletion in Old English: from prosody to stratification and loss

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In memory of Richard M. Hogg

INTRODUCTION: SETTING THE GOALS

§1 Old English neuter a-stem nouns display an intricate set of alternations created by a prehistoric sound change known as High Vowel Deletion. Contemporary approaches to these alternations fall into two major camps:

(i) those which posit a synchronic counterpart of HVD in the synchronic grammar (e.g. Dresher and Lahirı 1991, Idsardi 1994);
(ii) those who claim that, by the time of Alfred, HVD has become unproductive and the alternations have become morphologized or lexicalized (e.g. Fulk 2010, Fulk in Hogg & Fulk 2011; Minkova 2011).

§2 The late Richard Hogg (notably Hogg 2000) was highly critical of both approaches. He pointed out that:

(i) analyses positing a synchronic rule of HVD generate chimeras (combinations of variants that never cooccur in a single OE variety);
(ii) analyses that claim that HVD has been morphologized typically fail to explain why certain alternations survive in West Saxon and others do not.

§3 Following Richard’s lead, I take the following approach:

(i) It is impossible to be precise about the absolute chronology of morphologization and lexicalization in the absence of controlled psycholinguistic data:

- the survival of an old pattern of alternation does not necessarily imply that the phonological rule that created it still survives,
- but, conversely, an innovative form may reflect the restructuring of the underlying representation of a single lexical item (lexical change) rather than the loss of a phonological rule (phonological change).

(ii) What is needed, rather, is an analysis that accounts for the relative chronology innovations leading to the eventual loss of HVD alternations.

Developing joint work with Richard (Bermúdez-Otero & Hogg 2003), this paper seeks to show how the relative chronology of innovations in neuter a-stem noun inflection can be elucidated in Stratal OT.
Characteristically, Richard was sceptical about our joint work, and took it with a very large pinch of salt:

Some of the issues that arise in this context are discussed more fully in Bermúdez-Otero and Hogg (forthcoming), which is an attempt to reconsider the evidence for HVD in Late (Ælfrician) West Saxon with a view to presenting an interleaved OT account which also assesses the possible diachronic history of HVD and its eventual loss. Nevertheless, some problems certainly remain, whether or not that account is plausible.

(Hogg 2000: 372, emphasis mine)

I suspect that he was prepared to pursue this work, and to put his name to it, not because he believed it provided the right answers, but rather because he hoped it asked the right questions.

§4

PREHISTORIC DEVELOPMENTS

Prehistoric HVD: transparent and purely prosodically conditioned

§5

Prehistoric paradigms after HVD:

(forms affected by HVD shown in bold)

<table>
<thead>
<tr>
<th>root</th>
<th>*skip-</th>
<th>*word-</th>
<th>*weruð-</th>
<th>*hēafud-</th>
<th>*wætr-</th>
<th>*tungl-</th>
</tr>
</thead>
<tbody>
<tr>
<td>nom/acc.sg.</td>
<td>scip</td>
<td>word</td>
<td>werud</td>
<td>hēafud</td>
<td>wætr</td>
<td>tungl</td>
</tr>
<tr>
<td>nom/acc.pl.</td>
<td>scip-u</td>
<td>word-Ø</td>
<td>werud-Ø</td>
<td>hēafud-u</td>
<td>wætr-Ø</td>
<td>tungl-Ø</td>
</tr>
<tr>
<td>dat.sg.</td>
<td>scip-ē</td>
<td>word-ē</td>
<td>werud-ē</td>
<td>hēafud-ē</td>
<td>wætr-ē</td>
<td>tungl-ē</td>
</tr>
<tr>
<td>dat.pl.</td>
<td>scip-um</td>
<td>word-um</td>
<td>werud-um</td>
<td>hēafud-um</td>
<td>wætr-um</td>
<td>tungl-um</td>
</tr>
</tbody>
</table>

§6

The lautgesetzlich outcome of HVD in the nom/acc.pl. of hēafud was hēafud-u, without syncope.

The only variant found in all relatively old or conservative texts is unsyncopated hēafodu rather than syncopated hēafdu:

<table>
<thead>
<tr>
<th></th>
<th>Vespasian Psalter</th>
<th>Rushworth2</th>
<th>Alfred</th>
</tr>
</thead>
<tbody>
<tr>
<td>hēafodu</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>hēafod</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>hēafdu</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

1 Or, not CP

See Fulk (2010) for extensive discussion.

Ringe (e.g. Ringe and Taylor 2014) argues for *hēafð: for a refutation, see the appendix at the end of this handout (pp. 13-14).
§7 Prehistoric HVD was transparently conditioned by foot structure (Goering 2016):
Key assumptions:  
• Bimoric trochees  
• Iterative left-to-right footing  
• No light-heavy feet, i.e. no \( \sigma \), except domain-initially.

nom.sg.  \[ \text{scip} \]  \[ \text{word} \]  \[ \text{werud} \]  \[ \text{hēa}[fud] \]  \[ \text{wætr} \]  \[ \text{tungl} \]  
nom.pl.  \[ \text{scipu} \]  \[ \text{wördu} \]  \[ \text{werudu} \]  \[ \text{hēa}[fudu] \]  \[ \text{wætru} \]  \[ \text{tunglu} \]  
dat.sg  \[ \text{scipæ} \]  \[ \text{wor}[dæ] \]  \[ \text{weru}[dæ] \]  \[ \text{hēa[fu][dæ]} \]  \[ \text{wæt}[ræ] \]  \[ \text{tun}[glæ] \]  
dat.pl.  \[ \text{scipum} \]  \[ \text{wor}[dum] \]  \[ \text{weru}[dum] \]  \[ \text{hēa[fu][dum]} \]  \[ \text{wæt}[rum] \]  \[ \text{tun}[glum] \]  

HVD simply targets short vowels in stray unfooted syllables.

**Opacity leads to stratification**

§8 The shortening of long vowels in nontonic final syllables makes HVD opaque:

\[
\begin{align*}
\text{[hēa][fudu]} & > \ [\text{hēa}[fudu]} & > & \ [\text{hēa}[fudu]} \\
\text{but} & \ [\text{hēa}][fudæ] & > & \ [\text{hēa}[fudæ] & > & \ [\text{hēa}][de]
\end{align*}
\]

Why not \( \text{[hēa][fude]} \)?

Later, vowel reduction goes on to make things worse:
e.g. apocope-prone \(-i > -e\) merges with apocope-resistant \(-â > -e\)

§9 The result:

• Vulnerability to apocope is reanalysed as a stratal property:
  neut.nom/acc.pl. endings are reanalysed as stem-level, oblique endings are word-level.

• decoupling processes of vowel deletion across environments:
  final deletion (apocope) is independent from medial deletion (syncope).

This approach has now been generalized to the HVD alternations displayed by adjectives and verbs in work by Penelope Scott: Scott (2005, 2015), Thompson (2011, 2012).

**The situation in the historical period**


§10 Neuter \( a \)-stem paradigms in Alfred, Ælfric, and Rushworth2:

Sources:  
Rushworth2  
Alfred (CP H, CP C, Or L)  
Ælfric  

Lindelöf (1897, 1901)  
Cosijn (1888), Dahl (1938)  

[Each noun is given in the nom/acc.sg., nom/acc.pl., and gen.pl.]

<table>
<thead>
<tr>
<th>Owun</th>
<th>Alfred</th>
<th>Ælfric</th>
</tr>
</thead>
<tbody>
<tr>
<td>scip</td>
<td>scip</td>
<td>scip</td>
</tr>
<tr>
<td>sciopo, -u</td>
<td>scipu, -a</td>
<td>scipa, -u</td>
</tr>
<tr>
<td>scipa</td>
<td>scipa</td>
<td>scipa</td>
</tr>
<tr>
<td>word</td>
<td>word</td>
<td>word</td>
</tr>
<tr>
<td>word</td>
<td>word</td>
<td>word</td>
</tr>
<tr>
<td>worda</td>
<td>worda</td>
<td>worda</td>
</tr>
<tr>
<td>wæter</td>
<td>wæter</td>
<td>wæter</td>
</tr>
<tr>
<td>wæter</td>
<td>wætru, -a; wæteru, -a</td>
<td>wætera, -u</td>
</tr>
<tr>
<td>wætra; wætera</td>
<td>wætra; wætera; wætra</td>
<td>wætera</td>
</tr>
<tr>
<td>tungol</td>
<td>tungol</td>
<td>tungol</td>
</tr>
<tr>
<td>tungol; tungolo, -u</td>
<td>tungol; tungolu, -a; tunglu, -a</td>
<td>tungla, -u</td>
</tr>
<tr>
<td>tungla</td>
<td>tungla</td>
<td>tungla</td>
</tr>
<tr>
<td>werod</td>
<td>werod</td>
<td>werod</td>
</tr>
<tr>
<td>werod</td>
<td>[werod]</td>
<td>werod</td>
</tr>
<tr>
<td>weroda</td>
<td>weroda</td>
<td>weroda</td>
</tr>
<tr>
<td>hēafod</td>
<td>hēafod</td>
<td>hēafod</td>
</tr>
<tr>
<td>hēafodo, -u; hēafdo, -u</td>
<td>hēafdu, -a; hēafudu, -a; [hēafod]</td>
<td>hēafda, -u</td>
</tr>
<tr>
<td>hēofda</td>
<td>hēafda</td>
<td>hēafda</td>
</tr>
<tr>
<td>—</td>
<td>niêten</td>
<td>nyîten</td>
</tr>
<tr>
<td>—</td>
<td>niêtenu, -a</td>
<td>nyîtena, -u</td>
</tr>
<tr>
<td>—</td>
<td>niêtena</td>
<td>nyîtena</td>
</tr>
</tbody>
</table>

Key innovations with respect to Prehistoric HVD (cf. §5 above)

§11 1. nom/acc.pl. tungol > tungolu
   “paradigm extension” from hēafod to tungol
   Owlun and Alfred (variably)

2. nom/acc.pl. hēafodu > hēafdu
   “levelling” from the oblique forms to the nom/acc.pl.

3. nom/acc.pl. wæter > wætru
   “paradigm extension” from innovative tunglu (after 1 and 2)
   Alfred and Ælfric

The synchronic grammars of Owun, Alfred, and Ælfric are described in §12-§25 below.

The analogical changes that gave rise to these grammars—and, crucially, the order in which those changes took place—are explained in §26-§37.
SYNCHRONIC ANALYSIS

Preview

§12 The inflection of $a$-stem nouns was phonologically stratified:

- neut.nom/acc.pl. → stem level
- other suffixes → word level

§13 In general, vowel deletion avoids unfooted light syllables (i.e. enforces PARSE-Ø), but it is necessary to decouple two aspects:

- apocope of final vowels (stem-level only) violates ANCHOR-R
- syncope of medial vowels

§14 Similarly, there are two processes of vowel insertion:

- parasiting (in word-final obs+son clusters): avoids consonantal sonority peaks i.e. enforces SONPEAK→σ
- anaptyxis (in word-medial obs+son clusters): avoids $α.β$ where $\text{son}(α) < \text{son}(β)$ i.e. enforces CONTACT

Apocope

§15 WS nom/acc.pl. scipa word werod gen.pl. scipa worda weroda

- There is morphological variation in the neut.nom/acc.pl. between /-u/ and /-a/, where the latter is identical with gen.pl. /-a/.
- Neut.nom/acc.pl. /-a/ undergoes apocope in exactly the same environments as /-u/: e.g. neut.nom/acc.pl. **worda, **weroda. Gen.pl. /-a/ does not.

In Alfred, neut.nom/acc.pl. /-a/ is found occasionally in Or; see Cosijn (1888 vol. 2: 7, 15). In Ælfric, it is prevalent; see Pope (1967: 183). Neut.nom/acc.pl. [-a] cannot be derived through lowering from underlying /-u/, for fem.nom.sg. /-u/ remains unchanged: e.g. gifu, **gifa ‘gift’; see Hogg (1997a: §4, 2000: §4).

§16 So...

- Synchronically, vowel deletion is not sensitive to quality.
- The addition of the neut.nom/acc.pl. suffix and apocope both apply at a higher level than the suffixation of other $a$-stem noun endings.
§17 WS *wætru, tunglu*

In WS, apocope became blocked where it would otherwise create word-final obs+son clusters (variably in Alfred, obligatorily in Ælfric):

$$\text{SONPEAK} \rightarrow \sigma \quad \text{PARSE-}\bar{\sigma}$$

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>[o{\text{.wæt.}}.ru.]</td>
<td>[o{\text{.tung.}}.glu.]</td>
<td>*</td>
</tr>
<tr>
<td>[o{\text{.wæt.}}r]</td>
<td>[o{\text{.tung.}}l]</td>
<td>*!</td>
</tr>
</tbody>
</table>

**Syncope**

§18 Owun, Alfred

In stems of the *hæfod*-type, the posttonic vowel resists syncope (variably) in the nom/acc.pl., but syncopates systematically in the oblique cases.

§19 So...

- In Owun's and Alfred's grammars, syncope may be prevented—at the stem level only—by the creation of a weak foot which violates NONFINALITY:

$$\text{PARSE-}\bar{\sigma} \quad \text{NONFIN}$$

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>[o{\text{.hæ:a.}}[\text{.fo.du.}]]</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>[o{\text{.hæ:af.}}.du.]</td>
<td>*!</td>
<td></td>
</tr>
</tbody>
</table>

- At the word level, final weak feet are prohibited (by NONFIN) but stressed input vowels resist deletion:

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>/hæ:afod/-</td>
<td>/hæ:afod/-</td>
<td></td>
</tr>
<tr>
<td>[o{\text{.hæ:a.}}.fod.]</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>[o{\text{.hæ:a.}}.fod.}-.a</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

§20 Lexical exceptions to syncope in West Saxon:

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>*hau,tina-</td>
<td>*wix-i,biouða-</td>
<td></td>
</tr>
<tr>
<td>niiten</td>
<td>wegifod</td>
<td></td>
</tr>
<tr>
<td>niétenu</td>
<td>wegifodu</td>
<td></td>
</tr>
<tr>
<td>niêtena</td>
<td>wegifoda</td>
<td></td>
</tr>
</tbody>
</table>
Historically, these medial vowels had been stressed (because long or root-initial).

Synchronously, they are short; however, their exceptional behaviour can be captured by marking them with a lexical foot-head. This correctly predicts that they resist syncope but undergo destressing at the word level.

**Anaptyxis**

§21 WS nom/acc.pl. *waeteru*, but *werod*

Anaptyxis must be word-level, since it counterfeeds apocope:

```
§21 WS nom/acc.pl. waeteru, but werod
Anaptyxis must be word-level, since it counterfeeds apocope:

nom/acc.pl.

<table>
<thead>
<tr>
<th>UR</th>
<th>/werod-/</th>
<th>/wætr-/</th>
</tr>
</thead>
<tbody>
<tr>
<td>SL morph</td>
<td>werod-u</td>
<td>wætr-u</td>
</tr>
<tr>
<td>phon</td>
<td>werod</td>
<td>[apocope blocked]</td>
</tr>
<tr>
<td>WL morph</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>phon</td>
<td>—</td>
<td>waeteru</td>
</tr>
</tbody>
</table>
```

§22 Ascription to the word level correctly predicts that oblique endings trigger anaptyxis:

e.g. *waeteres, waeter, waetera, waeterum*

§23 Anaptyxis avoids coda-onset clusters with a rising sonority profile (CONTACT). It is restricted to environments where the epenthetic syllable may be footed:

e.g.

```
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e.g.

\[
\begin{array}{ccc}
\text{PARSE-}\ddot{\text{o}} & \text{CONTACT} \\
[\text{waet}.ra.] & (*) & *! \\
[\text{waet}.te.ra.] & (*) \\
[\text{wæp}.na.] & (*) & * \\
[\text{wæ}.pe.na.] & (*)*! \\
\end{array}
\]
```
Parasiting

§24 WS wæter vs wætre ~ wætere
Parasiting applies obligatorily at the word level. It cannot apply at the stem level, as it would incorrectly pre-empt optional anaptyxis in oblique forms.

§25 Parasiting prevents consonants from constituting sonority peaks:

\[ wæt \rightarrow [\omega|o\omega[\sigma]\text{tr}] \]
\[ *! \]
\[ **[\omega|o\omega[\sigma]\text{tr}] \]
\[ *! \]
\[ **[\omega|o\omega[\sigma]\text{r}] \]

** ANALOGICAL CHANGE IN THE HISTORICAL PERIOD **

Evolution of the stem level

§26 **System A:**
apocope permitted after obs+son clusters \( \text{PARSE-}\sigma \rightarrow \text{SONPK-}\sigma \)
wæter  
\( \omega\)-final weak feet permitted — no syncope \( \text{PARSE-}\sigma \rightarrow \text{NONFIN} \)
hēafodu

**System B:**
apocope permitted after obs+son clusters \( \text{PARSE-}\sigma \rightarrow \text{SONPK-}\sigma \)
wæter  
\( \omega\)-final weak feet banned — syncope \( \text{NONFIN} \rightarrow \text{PARSE-}\sigma \)
hēafodu

**System C:**
apocope blocked after obs+son clusters \( \text{SONPK-}\sigma \rightarrow \text{PARSE-}\sigma \)
wæt(e)ru  
\( \omega\)-final weak feet banned — syncope \( \text{NONFIN} \rightarrow \text{PARSE-}\sigma \)
hēafodu

← Conservative  Advanced →

<table>
<thead>
<tr>
<th>SYSTEM A</th>
<th>SYSTEM B</th>
<th>SYSTEM C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prehistoric OE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rushworth2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alfred</td>
<td></td>
<td>Ælfric</td>
</tr>
</tbody>
</table>
§27 The transitions from A to B and from B to C involve the upwards percolation of word-level rankings into the stem-level, in line with the life-cycle of phonological processes (e.g. Bermúdez-Otero & Trousdale 2012, Bermúdez-Otero 2015):

\[
\begin{array}{cccc}
\text{Word-level rankings} & \text{Stem level} \\
\text{System A} & \text{System B} & \text{System C} \\
\text{NONFIN} \rightarrow \text{PARSE-∅} & \checkmark & \checkmark \\
\text{SONPK} \rightarrow \sigma \rightarrow \text{PARSE-∅} & & \checkmark \\
\end{array}
\]

The role of input optimization

§28

- Each step in this development is contingent on the restructuring of the input to the word level.
- Restructuring renders the input either identical with the output or, if the output alternates, identical with the basic output alternant (in OE, the uninflected nom/acc.sg.)

- Input restructuring occurs when crucial alternation evidence is not robust.

Restructuring I: from nom/acc.pl. tungol to tungolu

§29 Paradigms in system A:

<table>
<thead>
<tr>
<th>UR</th>
<th>nom/acc.sg.</th>
<th>nom/acc.pl.</th>
<th>oblique</th>
</tr>
</thead>
<tbody>
<tr>
<td>/həːfod/-</td>
<td>həafod</td>
<td>həafodu</td>
<td>həafda</td>
</tr>
<tr>
<td>/tuŋgl/-</td>
<td>tungol</td>
<td>tungol</td>
<td>tungla</td>
</tr>
</tbody>
</table>

- Learner's default hypothesis: stem = nom/acc.sg. = /tuŋgl/-
- Only cue to correct UR: nom/acc.pl. tungol (against expected tungolu)

§30 The cue is not robust:

- A learner who fails to encounter nom/acc.pl. tungol will retain the default hypothesis. As a result, there is a gradual shift of items from the tungol to the həafod class.
- Even if the learner encounters the crucial form, she may be led up the garden path and assume that deletion may target syllables which are not adjacent to the main foot:

  garden-path analysis:  
  /tuŋgl-u/ \rightarrow [tungol], so... /həːfod-u/ \rightarrow [həːfod]

  E.g. *Vespasian Psalter* nom/acc.pl. həafod, diəful, etc. (Keyser & O'Neil 1985: 144)
§31 *Water*, UR /wætr-/ is not vulnerable to reanalysis because there is robust evidence throughout the phonology that oblique *wætra* cannot be derived by syncope: e.g. *hēofones*; *weroda*; *fremede* vs *hīerde*; etc.

**Restructuring II: from nom/acc.pl. *hēafodu* to *hēafdu***

§32 System-A derivations:

<table>
<thead>
<tr>
<th>nom/acc.sg.</th>
<th>oblique</th>
<th>nom/acc.pl.</th>
</tr>
</thead>
<tbody>
<tr>
<td>/hæ:afod/-</td>
<td>/hæ:afod/-</td>
<td>/hæ:afod/-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SL morph</th>
<th>phon</th>
<th>phon</th>
<th>phon</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>WL morph</th>
<th>phon</th>
<th>phon</th>
<th>phon</th>
</tr>
</thead>
<tbody>
<tr>
<td>—</td>
<td>[[hæ:a:].fod.]-e</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>—</td>
<td>[[hæ:a:].f].de.</td>
<td>[[hæ:a:].f.o.d.u.]</td>
<td>—</td>
</tr>
</tbody>
</table>

§33 • The learner's default assumption:

stem in input to word level = 'hæ:afod- = nom/acc.sg.

• The derivation of nom/acc.pl. *hēafodu* departs from the default assumption:

stem in input to word level (nom/acc.pl.) = 'hæ:a,fod- ≠ nom/acc.sg.

Cue: only nom/acc.pl. *hēafodu*, wēpenu

§34 The cue is nonrobust: cf. *nīeten*

<table>
<thead>
<tr>
<th>/hæ:afod/-</th>
<th>/nīytin/-</th>
</tr>
</thead>
<tbody>
<tr>
<td>nom/acc.sg.</td>
<td><em>hēafod</em></td>
</tr>
<tr>
<td>nom/acc.pl.</td>
<td><em>hēafodu</em></td>
</tr>
<tr>
<td>oblique</td>
<td><em>hēafda</em></td>
</tr>
</tbody>
</table>

So the learner reverts to the default hypothesis:

• The representation of nom/acc.pl. form in the input to the word level is restructured to ['hæ:afod-u], yielding syncopated *hēafdu*.

• Concomitantly, syncope ceases to be blocked by the nom/acc.pl. suffix and percolates into the stem level.
Restructuring III: from nom/acc.pl. wæter to wætru

§35 System A/B derivations (ignoring medial epenthesis):

<table>
<thead>
<tr>
<th></th>
<th>nom/acc.sg.</th>
<th>oblique</th>
<th>nom/acc.pl.</th>
</tr>
</thead>
<tbody>
<tr>
<td>UR</td>
<td>/wætr-/</td>
<td>/wætr-</td>
<td>/wætr-/</td>
</tr>
<tr>
<td>I morph.</td>
<td>—</td>
<td>—</td>
<td>/wætr-o/</td>
</tr>
<tr>
<td>phon.</td>
<td>[/.wæt.]</td>
<td></td>
<td></td>
</tr><tr>
<td>[/.wæt.]</td>
<td></td>
<td></td>
<td></td>
</tr><tr>
<td>[/.wæt.]</td>
<td></td>
<td></td>
<td></td>
</tr><tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(violates SONPK→σ)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>II morph.</td>
<td>—</td>
<td>[/.wæt.]-a</td>
<td>—</td>
</tr>
<tr>
<td>phon.</td>
<td>[/.wæ.te.]</td>
<td></td>
<td></td>
</tr><tr>
<td>[/.wæt.].a.</td>
<td>[/.wæ.te.]</td>
<td></td>
<td></td>
</tr><tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>wæter</td>
<td>wætra</td>
<td>wæter</td>
<td></td>
</tr>
</tbody>
</table>

§36 Consider a learner in the following position:

- Through exposure to forms like wordu, hēafdu, etc, she knows that neut.nom/acc.pl ↔ /-u/ / a-stem ___

- Through exposure to oblique forms like wætres she knows that the underlying representation of the stem is /wætr-/

Such a learner successfully constructs the UR /wætr-u/ for the nom/acc.pl.

But, for underlying /wætr-u/ to undergo apocope, the learner must discover the stem-level ranking PARSE-ð » SONPK→σ.

However, as a result of restructuring I (nom/acc.pl tungol > tungolu) and restructuring II (nom/acc.pl. tungolu > tunglu), the learner's trigger experience is increasingly populated by forms like nom/acc.pl. tunglu, wæ¯pnu.

Forms like tunglu and wæ¯pnu violate PARSE-ð but respect SONPK→σ. They are therefore countercues inhibiting the acquisition of the ranking PARSE-ð » SONPK→σ at the stem level. Hence, their increased occurrence leads to restructuring III.

§37 In this approach, restructurings I and II are the preconditions for restructuring III.

The analysis successfully accounts for the relative chronology of innovations in the loss of HVD alternations (see §3 above).

REFERENCES


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**FIVE ARGUMENTS AGAINST RINGE’S *hēafid***

(1) Nom/acc.pl. *<heafd>, <heabd>, <heafil> are completely unattested in the historical record.

(2) Nom/acc.pl. *bēafidū ∼ bēafidō* is the only form found across several dialects in relatively old or conservative texts:

- **Mercian:** *Ps(A) 67.21, Ps(A)Ca 6.23;*
- **West Saxon:** *CP(H) 105.5;*
- **Northumbrian:** *LkGl(Ru) 21.28.*

(3) Ringe states that, after syncope and after the shortening of word-medial /i/, apocope was prevented from applying to *nīetīnu* (from earlier *nīetīnu*) by foot structure: *[^nīe][tinu] > nīetenu* (Ringe and Taylor 2014: 301). By parity of reasoning, we must infer that, at the supposedly earlier time of syncope, *[^bēa][fidu] and *[^mēa][rifpu]* were protected by foot structure too. If so, the lautgesetzlich outcome of *bēafidū is bēafidū,* not unattested **bēafil.** Ringe cannot get out of this contradiction except by purely *ad hoc* manoeuvres.

First, Ringe could assert that, unlike apocope, supposedly earlier syncope was not controlled by foot structure. However, this would be completely circular, since syncope and apocope show exactly the same prosodic conditioning. Both processes apply in open syllables after a stressed heavy syllable, but not after a stressed light syllable: cf. syncope in dat.pl. *[^bēa][fiu][dum] > bēafidum,* but not in *[^weru][dum] > werodum;* cf. apocope in nom/acc.pl. *[^wor][du] > word,* but not in *[^sīpu] > sīpu.* To appeal to footing in one case (apocope) but not the other (syncope) is to use metrical structure in a purely *ad hoc* way.

Alternatively, Ringe could assert that footing was non-iterative at the time of syncope (whence *[^bēa][fidu] > bēafidū,* later *bēafil by apocope), whereas it was iterative at the supposedly later time of apocope (whence *[^nīe][zinu] > nīetenu*). However, this would be purely circular reasoning: there is no independent evidence for this change in stress assignment. In addition, positing an early pattern of non-iterative footing would conflict with the independent evidence for iterative footing in early Germanic: for example, the application of Sievers’ Law and WGmc Gemination in PrGmc *Ili:katjan > OE ĥeattan.*
shows that in PrGmc the initial heavy syllable [liː] formed a foot by itself and the following substring [katjan] was metrified in the same way as PrGmc *satjan > OE *settan (Kiparsky 1998: §6).

(4) The behaviour of *-iþu in forms like *strengþ < *streng-iþu (Ringe and Taylor 2014: 291) can be explained by restructuring, as, prehistorically, the suffix was subject to extraordinarily complex alternations within and across paradigms (Fulk 2010: 140-1). Notably, the nom.sg. alternates between -iþu and -iþ, and oblique forms like the dat.sg. alternate between -iþǣ and -þǣ.

Given this starting point, *mæriþu is replaced by mærþu through the same independently motivated process of levelling that gives West Saxon hēafdu from earlier hēafudu (see §32-§34 in this paper). In turn, this facilitates the restructuring of the UR of the suffix to /-θu/. Thereafter, learners assume the phonologically transparent derivations /mæːr-θu/ > [mæːrθ] and /trym-θu/ > [trymθ].

(5) Forms like eln < *elinu ‘ell’ involve a poorly understood process $\varphi$ whereby unstressed -i- is lost in adjacency to l even after a stressed light syllable (Ringe and Taylor 2014: 275ff). The rise of eln is thus perfectly compatible with the lautgesetzlich status of hēafudu, pace Ringe and Taylor (2014: 291), provided that $\varphi$ applies later than High Vowel Deletion (Luick 1914-40: 309-10) and that it can target syllables with a single coda consonant of the appropriate sonority level (Walkden p.c.): i.e. *[eli]nu >HVD elin >_g eln. Alternatively, if $\varphi$ was later than High Vowel Deletion but restricted to open syllables, the replacement of nom/acc.sg. elin with eln could simply reflect levelling from suffixed forms like *[eli][num] >HVD elinum (no change) >_g elnum. Crucially, elin is attested in a very early monument (LdGl 42), exactly as predicted in the scenario where $\varphi$ applies late (Walkden p.c.). In contrast, Ringe predicts elin to be later than eln, since in his account elin can only arise through the application of parasiting to earlier eln (Ringe and Taylor 2014: 330).


