Attila Starčević

A very special word of Old English

0 Assumptions and frameworks

The fascination surrounding Old English phonology (and related, possibly non strictly phonological points of interest, such as metrical conventions found, especially, in *Beowulf*) has never ceased, not despite more than two hundred years of vigorous analysis. One of the continuing sources of fascinations is found in the NomAccPl of neuter *a*-stem for 'head', which appears variably in the various dialects as *hēafod*, *hēafudu (hēafodu)*, *hēafdu* (but never ***hēafd*) for pre-OE **hæɒfudu*,[1] from Germanic **xaußuðō*. This is a truly special word in all accounts of (pre-) OE phonology, for some approaches at least two forms are analogical, for some *hēafudu* is the only regular continuation of the pre-OE word. This fascination didn't end in the past: *hēafod* will prove instrumental in discovering some of the (pre-) OE constraints.

My treatment of unstressed high vowel deletion (HVD) of pre-OE cannot possibly introduce new data (Sections 1 and 2), the scope cannot be broader than in previous analyses, nor can a new theoretical background be introduced, but it can ask the question of whether an old problem can be analysed from another perspective with a new set of assumptions (Section 3). The assumption I will investigate is whether there was an OE template regulating HVD deletion (or the absence of it) in Section 4. This template will intersect with a number of (pre-) OE sound changes (Section 5), and will prove instrumental in the analysis of a very conservative dialect of OE, the dialect of Anglian as found in the Vespasian Psalter (Section 6). The understanding that certain morphological and phonological processes apply inside a 'window' of a given size is not new, not even in Indo-European languages. Constraints operating on such (implicitly assumed) templatic sizes within metrical feet in Germanic (and OE) are also well-known and have been around at least since the 1950's, such as the notion of resolved heavy syllable, that is, the equivalence of a light syllable *plus* a syllable of any weight (over the head of a singleton intervocalic consonant) to a

[1] The intervocalic fricative is shown as a voiceless one in this phonemic transcription.

The Even Yearbook 14 (2020), Department of English Linguistics, Eötvös Loránd University, Budapest
ISSN 1218–8808, http://seas3.elte.hu/delg/publications/even,

single heavy syllable. But these approaches are fraught with difficulties such as (implied) shared stress, syllable weight as a factor in syncopation (Section 7), syllabification algorithms, rampant extrametricality with some nifty ad hock assumptions (Section 8). We will see in Section 9 that although pre-OE is characterised by syncopation of short unstressed vowels before (historical) long vowels and short vowels, we must posit a very special vowel-to-vowel interaction precluding syncopation in *high vowel + C + high vowel sequences* (boxed in, e.g., *hēa*[*fudu*], *lȳ*[*telu*] < **lȳ*[*tilu*]). The analysis will also show that the stereotyped dative plural *-um* suffix cannot have contained ***u** at the stage of pre-OE when a number of syncopation processes took place; and all this owing to *hēafudu.*

1 What can generally happen to Old English unstressed vowels?

Hogg (1992, §6.1) gives two very simple generalizations for unstressed vowel simplification in (pre-)OE:

(i) one is *reduction in length* (and subsequent loss) along the lines of **VV** > **V** and **V** > **Ø** (e.g., (***ɑi** > ***ai** >) ***ā** > ***ǣ** > **æ** > **ə** <e> in the dative singular of many nominal classes, and loss in the case of ***i/u**),

(ii) the other is *melodic decomposition* leading to loss of contrast among the unstressed vowels (e.g., **æ**, **e**, **i** > **ə**, spelled <e> in recorded OE, as in *wine* 'friend' from **wini*, **ō** (> **o**), **u** > **u** as in the case of strong feminine nouns or the nominative/accusative plural of strong neuter nouns).[2]

In other words, diphthongs become long monophthongs in unstressed syllables (something that took place so early that Hogg doesn't even include this in his generalization), and are later affected by shortening in a subsequent period. Long monophthongs, by contrast, shorten (and simplify melodically). Short monophthongs undergo shortening and may also be deleted (conditions and/or period permitting).

[2] As is usual, asterisked forms show reconstructed data (**wini*), double asterisks show ungrammatical forms (***wordu*). In what follows I will represent the short vowels as is usual in the traditional literature, that is, as **i**, **e**, **u**, **o**, although (on account of Middle English open syllable lengthening) the qualities were rather **ɪ**, **ɛ**, **ɔ**, **ʊ**. This, however, is not directly relevant to the account developed here (as long as one does not think of 'tense' vowels where short ones are intended).

However, not all short unstressed vowels are lost. There is a positional restriction on deletion: unstressed vowels in closed syllables are generally stable in OE independently of the weight of the syllable preceding the deletion-prone vowel, such as ***i**, after a light syllable (*fremed* 'performed', ***fremd* < **framid*), or after a heavy syllable (*fēred* 'departed', ***fērd* < *fōrid*). The vowel spelt as <e> was in all likelihood **ə**. Deletion outside this position, however, did affect the two short high vowels (***i/u**) in pre-historic/written OE (discussed below), but in a controversial fashion that has sparked many analyses.

In addition to length (as Hogg summarizes) that provides stability to an unstressed vowel, there is a structural position that precludes the two short high vowels from deletion (outside the unstressed closed syllabic position) even at a time when deletion did affect the same short historical high vowels. This position seems to be a 'strong' one in a pre-theoretical sense preventing the two high vowels from deletion (***VCi/u**). This position surfaces as (C)**VCə/u** in recorded OE, as in **wini* > *wine* 'friend' NomSg, **wudu* > *wudu* 'wood' NomSg **jevō* > *ġiefu* 'gift' NomSg. In other words, the high vowels are retained after a light syllable.

However, the high vowels after a heavy syllable (VCC/VVC) underwent deletion: **wordu* > *word* 'word' NomAccPl, **lāru* > *lār* 'teaching' NomSg. This is rather straightforward (in all accounts). Complications begin when we see that ***i/u** were also deleted after two light syllables: *VCVCi/u > VCVC (as in **werudu* > *we(o)rod* 'troops'). An added complication is that this deletion is *opaque* in recorded OE (as it transpires from modern editorial length marks or their absence): e.g., *fremede* 'I performed' (expected *fremed* after two light syllables, which is an occurring form, but not for this grammatical word), *hēafdu* 'heads' (expected ?*hēafud*, ?*hēafudu*). Of course, OE *fremede* is **fremedē* in pre-OE, which explains the lack of apocopation of word-final <e>.

It seems, then, that HVD happened and did not happen at the same time (e.g., Hogg 2000): the high vowels were not deleted across the board (but the deletion affected all the major lexical categories, although the often cited examples are taken from the nominal declensions), and this seems to have had an impact on the analogical changes affecting the nominal paradigms to varying degrees in the various dialects after HVD had run its course (giving us a convenient point for classifying some dialects of OE as more innovative). The various dialects developed various 'patch up' means in reaction to the post-HVD

shape of OE morphology, which gives the analyst a convenient point in deciding how conservative (or alternatively, innovative) a dialect is. It seems that it is Anglian that is more conservative than the usual focus in the analysis of HVD, (late) West Saxon. This decision (as Fulk (2016) explains) led to a strange proliferation of deletion rules associated with the two high vowels: high vowel syncope (HVS) taking place inside words and high vowel apocopation (HVA) happening word-finally. The wish is, of course, to unite the two under HVD as they are obviously similar. Hogg (1992, §6.22) treats them as two separate rules, arguing that HVA preceded HVS (based on examples that may have nothing to do with HVD, such as neuter plural *ja*-stem *riċu* 'riches', *wītu* 'punishments'). Both HVS and HVA were preceded by deletion of the non-high vowels. Again there are a number of diachronic changes that intersect with HVD making its workings opaque (in some of the dialects). Let's see the details in 2.

2 High Vowel Deletion (the details)

The word-final pre-OE short vowels ***i** and ***u** were deleted after a heavy syllable, or a concatenation of two light syllables, but were preserved after a single light syllable. This is the word-final position that is relatively unproblematic (all accounts are content in concluding that this is exactly what their approach covers), some often-cited examples follow in (1).

(1) Word-final short ***i/u**

(a) Loss after a heavy syllable

word < **word**__**u**__ 'words', *lār* < *lār***u** 'teaching', *cȳ* < **kȳ**__**i**__ 'cows', *(ġe)swinč* <**(ġe)swinč**__**i**__ 'toil', *fēt* < **fōt**__**i**__ 'feet', *twēm* < **twēm**__**i**__**/ twēm**__**u**__ 'two', *lēs* < **lēs**__**u**__ 'meadow', *brȳd* < *brūd***i** 'bride', *fēr* < **fōr**__**i**__ 'depart (imp)', *ġiest* < **jæsti* 'guest', *wyrm* < **wurm**__**i**__ 'serpent', *nest* < **nest**__**u**__ 'nest', etc.

(b) Loss after two light syllables
ides < **idis**__**u**__ 'wife', *cylen* < **kulin**__**u**__ 'kiln', *we(o)rod* < **werud**__**u**__ 'troops', etc. (there seem to be no certain examples for ***i** following two light syllables)

(c) Loss after a heavy syllable
færeld < **færeld**__**u**__ 'passages', *wunung* < **wunung**__**u**__ 'dwelling place', *heġtess* < **hagatuss**__**i**__ 'witch', etc.

(d) Loss after two heavy syllables
ǣrist < **ǣrist**i*** ‘resurrection’, *byrþenn* < **byrþenn**i*** ‘burden’, *henġenn* <**henġenn**i*** ‘hanging’, *ǣfest* < *ǣfȳst**i*** ‘malice’, *īsern* < ****īsern**u*** ‘irons’

(e) Retention after a single light syllable
nere < **ner**i*** ‘save (imp)’, *wine* < **win**i*** ‘friend’, *scip**u*** < **skip**u*** ‘ships’, *god**u*** < **god**u*** ‘gods’, *sunu* < **sun**u*** ‘sun’, etc.

Although there may be uncertainties about the etymological membership of some words (such as *færeld* above), it seems that most analysts agree that pre-OE final ****i/u*** were deleted after a heavy (or two light) syllables, but were retained after a single light syllable. These data suggest the rule of HVA (a rule which Hogg (1992, §6.22) analyses as a rule separate from HVS), see (2).

(2) HVA

A final, short, unstressed high vowel ****i/u*** is lost immediately after (i) a stressed heavy syllable or (ii) a stressed light syllable followed by a syllable of any weight.

It also seems uncontested that non-final ****i/u*** was retained in word-final closed syllables irrespective of the weight of the preceding syllable, see (3).

(3) ****i/u*** in closed word-final syllables

fremed < **fram**i**d* ‘performed, pple’, *hīered* < **hæþr**i**d* ‘heard, pple’, *fēred* < **fōr**i**d* ‘departed ppl’, *hēafod* < **hæþf**u**d* ‘head’, *wǣron* < **wǣr**u**n* ‘were’, *word**u**m* ‘words’ DatPl, etc.

Hogg (1992) explains the data in (1) with high vowel apocope (HVA), which, of course, cannot apply in (3) given the fact that the vowels are not word-final. Historically, HVA was preceded by non-high vowel apocopation and syncope, which are of no real interest because they happened prior to HVD and don’t seem to have depended on syllable weight and did not contribute to analogical changes sweeping across the nominal classes after they had run their course.

This is why non-high vowel apocope/syncope is not even given any special name (see examples in (4)).

(4) Non-high vowel apocope/syncope

sāwl/sāul < **saiw**a**lō* 'soul', *stān* < *stain**ã*** 'stone' AccSg, *mæġden* < **mæg**æ**tin* 'maiden', *þēodnes* < *þēod**æ**næs* 'prince' GenSg, *hālges* < **hāl**e**ġæs* 'holy' GenSg, *blindra* < **blind**a**ra* (after shortening and merging with ***ɑ**) < **blind**ō**ra* 'more blind', etc.

Not everything is perfect, however. Problems start appearing when ***i/u** (or their reflexes) are followed by another vowel. Perhaps the most commonly cited examples that no article on the high vowels can forgo are found in (5) (these are not the only data, of course).

(5) High-vowel syncope

*hēafodu/hēafudu/hēafdu/hēafod/**hēafd* < **hæƀfudu* < (Germanic) **haußuðō* 'heads',
rīċu < **rīċiju* < (West Germanic) **rīkijō* 'riches',
wītu < *wītiju* < (Germanic) *wītijō* 'punishments' (all NomAccPl)

The words in (5) have been analysed in so many ways that it seems little remains to be said: *hēafodu/hēafudu* is (generally) from the early ninth century Mercian dialect of the Vespasian Palter (*hēafdu* also occurs in the same text, however), early West Saxon shows *hēafdu* (also found is *hēafda,* but this <a> may be a scribal error or show a different scribal tradition, that of Northumbrian, or possibly a qualitatively undefined unstressed back vowel). The difference between *hēaf<u>o</u>du* and *hēaf<u>u</u>du* is scribal/accidental (and does not hold any point of phonological interest).

These forms tell us little in themselves: *hēafdu,* for example, is also found in the Vespasian Psalter, but shows signs of analogy (analysed in detail by Fulk 2010). The only form which is not on record is ***hēafd.* This form, however, has featured in analyses of HVD by Ringe (2002), who says that when high vowel apocope and syncope *could* apply, they *both* applied giving (the non-recorded) ?*hēafd,* which is analogically remodelled in all the dialects along the lines given in (5) above, but not because of constraints operating between

the word-final consonants. We will later see that *hēafd* is, in all likelihood, impossible in any dialect, as no phonological rule could produce it. The rule of HVS can be given along the lines in (6) (as done in Fulk 2010).

(6) High-vowel syncope

> A short high vowel ***i/u*** is syncopated in pre-OE in an open medial unstressed syllable after a heavy syllable (but not after a light one).

Note that according to this formulation, *hēafodu/hēafudu* should be the phonologically expected outcome (before any analogical change had a chance to rectify it).

Note also that these waters are now more dangerous because another dimension has been added to the well-behaved mono-syllabic examples of (1), like *word*: ***absence of stress*** on the first vowel after the heavy syllable is a matter of complication (underlined): *hḗafu̲du*. Old English short stressed vowels in open syllables are not prone to syncopation: *werudes* 'troop's', ***wrudes* (although **wr** is an acceptable cluster of consonants, cf. *wringan* 'twist'). But the same cannot be said about the vowels in unstressed open syllables, as in *hḗafu̲du*. We may suspect that syncopation is allowed here. There is no evidence, either phonological or metrical, that there was (secondary) stress in the word at some stage of English that could act as a buffer protecting the second **u**: ***hḗafú̲du.* This is not to say that there is no evidence for post-primary/tonic stress in non-compounds, but in words like *hḗafu̲du* it cannot be tested, or substantiated etymologically.

Another class of words where an added set of difficulties present themselves is the nominative/accusative plural of heavy neuter *ja*-stems (see (5)). The Germanic form of OE *rīċu/wītu* was **rīkijō/wītijō* (after heavy stems Germanic ***j** is found as ***ij** due to Sievers' Law). By pre-OE times ***ō** is shortened giving **rīċiju/wītiju,* which serves as input to HVA/HVS. Hogg (1992, §6.22) argues that recorded OE *rīċu/wītu* shows that HVA applied first, followed by HVS: ***u** is preceded by a light syllable containing ***i**, prohibiting HVA, but this very same ***u** can strike ***i**, yielding the syncopated *rīċu/wītu.* "From this we must conclude that the internal ordering was: nonhigh vowel syncope – high vowel apocope – high vowel syncope", concludes Hogg (1992, §6.22).[3]

[3] Traditional literature assumes that the processes affecting the high vowels also affected ***j**, a common formative element in Germanic, found in the class of weak verbs, or the various

Note how Hogg shows the pre-OE forms: **rīċiu/wītiu*. This is very nifty manipulation with the data because there is no pre-OE regularity that would have taken away the ***j** from pre-OE **rīċiju/wītiju* (from Germanic **rīkijō/wītijō*). Hogg does not argue with Sievers' Law, but it is plain he must show these data as *rīċiu/wītiu* for at least two reasons. First, if he had opted for *rīċiju/wītiju*, he would have had to admit that diphthongs (***ij** in this case)[4] are also affected by HVS. It is difficult to imagine that *rīċiu/wītiu* could have been phonetically anything other than **rīċiju/wītiju** with **j** filling the empty onset thus avoiding hiatus. Second, if ***ij** is a diphthong, it cannot be deleted, but then ***u** would have to undergo apocopation after a heavy syllable. It seems this is a no-win situation, hence the impossible representation *rīċiu/wītiu.* To admit that *rīċiju/wītiju* syllabifies as *rīċi.ju/wīti.ju* he would have to admit pre-OE had a rising diphthong ***ju** (a type of diphthong not encountered in OE otherwise, cf. also Fulk (2010) on the status of this (supposed) highly marked vowel). This

nominal classes (*ja*-, *jō*-stems). This ***j** caused gemination in West Germanic after light syllables (e.g., **framjan* > **frammjan* > pre-OE **fremmjan* > OE *fremman* 'perform'). It was also found after heavy syllables (but caused no gemination), e.g., **dōmjan* > OE (West Saxon) *dēman*. The presence of this ***j** must be supposed to have continued into pre-OE because otherwise *i*-umlaut would have failed. Hogg (1992, §6.25), however, says that there is a marked contrast between forms like *cynn* (***cynnu*) 'race' NomAccPl (< **kunnju* < **kunnjō* < **kunjō,* with a 'secondary' heavy syllable, resulting from West Germanic gemination as a *ja*-stem noun) and *wītu* 'punishment' NomAccPl (**wītju* < **wītiju* < **wītijō*, with a 'primary' (original) heavy stem syllable after which ***j** is found as ***ij** according to Sievers' Law). This distinction permeates the system (although it is not commonly admitted); it is not a quirk of this particular noun. It seems *cynn* was never **kunnijō* (after gemination and, supposedly, Sievers' Law). This is a very interesting problem that points to a completely different direction. When did Sievers' Law cease to operate? Was West Germanic **kunnjō* possibly ?**kuŋŋō*?, etc., but it is worth marking what Hogg says: "it is difficult to find grounds for asserting that loss of /j/ in similar situations was earlier yet." Yet, no real explanation is offered, but whatever it was (and it seems it must have had something to do with the melodic makeup of the consonants rather than syllable structure), it must have occurred before (or outside the planes that encompass) the processes affecting the high vowels described traditionally.

[4] It is not immediately clear what would have happened to *unstressed* ***ij** in West Germanic. Hogg (2011, §3.17) claims that ***j**/**w** were geminated after short (stressed) vowels (to ***jj**, ***ww**), followed by vocalisation of the first glide, later to develop as expected of OE: e.g., ***ij** > ***ijj** > ***īj** (**friijjō* > *Frīġe*(*dæġ*) 'Friday', **klaj-* > **klajj* > **klaj̄* > *clǣġ* 'clay', etc.). If *wít̄iju* is a legitimate formation, unstressed ***ij** can never have had the same treatment as stressed ***ij** sequences, otherwise we would have an inexplicable loss of the high vowel after a heavy syllable (producing *wītu*), yet cf. §7.70 n.1 (but here the remark concerns unstressed ***ī/i** followed by coda ***j**, cf. *ende* < *endĭ* < **endī* < **endij*, discussed later).

would explain why ***i** was lost (it was preceded by a heavy syllable: **wī-*, **rī-*), but ***ju** still remains.[5]

It is equally possible that syncopation of unstressed ***i** in **rīċiju/wītiju* happened *not* because it was preceded by a heavy syllable, but because it was followed by a vowel (the normal course an unstressed vowel can take in an open syllable followed by a vowel, something which is also true for Modern English, as in *family* **fámlıj**, *separate* **sɛ́prət**). This would again leave us with ***ju**. What cannot be denied is that this was eliminated by recorded OE. There is every possibility that the yod in ***ju** palatalised the preceding consonant resulting in ***rīċ'u/wīt'u** (with ' showing palatalization as secondary articulation). Of course, this palatality would have been lost after a consonant that was already palatal (***ċ**), but may have remained for some time on ***t** as secondary articulation. We have recorded OE (and later English) to prove that ***t'** never assibilated to **ċ**, but this is because this ***j** comes too late to cause such a melodic change (as a matter of fact in OE **ċ** can only come from palatalised ***k**, not ***t**, hence ****wīċu*).

However, there is something deeply unsettling about the formulation of HVS (6): a vowel is syncopated *only if* it is after a *heavy* syllable. Syncopation is generally taken to involve a regressive relationship that holds between two vowels over the head of a consonant, as in *family* in Modern English (giving **fámlıj)**: a vowel extinguishes a vowel preceding it over a single consonant (**ıj** extinguishing **ə** couched between **m** and **l**).

The question that demands to be asked is what syncopation has anything to do with syllable weight. 'Heaviness' is a notion that originates in syllable structure and cannot be interpreted as a vowel-to-vowel relationship, which it seems to be (for extensive discussions see Scheer 2004). For all intents and purposes, 'syllable' is a theoretical notion not entertained by all theories, especially by Government Phonology and its offspring, CV phonology (ibid), whereas syncopation is an empirical (rather than purely theoretical) matter: a vowel (**ə/ı**

[5] Campbell (1977: §353) gives a similar account to that of Hogg's and concludes that *rīċu* is the immediate result of HVS (not noting any intermediate phonological problems(10): "When both a middle and an end syllable contained either i or u, and both were in conditions demanding loss of the vowel, the middle syllable was the one affected." In other words, HVS bled HVA (Kiparsky 1968, and more recently, Baković 2007). Campbell (ibid; cf. Hogg 1992: §6.22 n.1) also entertains the idea that the loss of unstressed ***i/u** (due to apocopation and syncopation) was contemporaneous. But this is an error, and contradicts Campbell's earlier assertion (1977: §345) that ***i** and ***u** remained after a heavy (for him long) accented syllable followed by a light syllable.

in **fáməlɪj/fámɪlɪj**) is deleted because it is followed by another vowel, either optionally or obligatorily depending on other factors such as, for example, the quality of the consonants flanking the deletion-prone vowel. In Modern English, it is generally assumed that the consonants flanking the site of deletion must show a rising sonority profile, hence the impossibility of deletion in *venomous* (****vɛ́nməs** with **nm** showing a sonority plateau). True, for a syllable (traditionally) one needs a vowel, but it is difficult to see how a vowel could extinguish (syncopate) another vowel from left-to-right over the head of one (or a number of) consonant(s), as in **hæƿfudu* > *hēafdu* (here ***æƿ** syncopating ***u** over the head of ***f**).[6]

But this is not all: the vowel undergoing syncopation after a heavy syllable must be *followed* by a heavy syllable: the data suggest that if ***u** is followed by a heavy syllable (underlined), syncopation is categorical (see (7)).

(7) Categorical high-vowel syncope

**hēafu<u>dum</u>* > *hēafdum* DatPl (never **hēafudum*), **hēafu<u>dæs</u>* > *hēafdes* GenSg, as well as the rest of the inflected forms in recorded OE: *hēafd<u>a</u>* GenPl, *hēafd<u>e</u>* DatSg (where the vowels were etymologically long, giving a heavy syllable),[7] **angi<u>lum</u>* > *enġlum* (never *enġelum*), **angi<u>læs</u>* > *enġles*, etc.

So, there must be quite a machinery to deal with a word-internal high vowel: it must be both preceded and followed by a heavy syllable to have categorical syncopation. The question to be asked is how syllable *weight* in itself can extinguish a high vowel, as in *hēafdes, hēafde* (from **hēafdē*)*, hēafdum, hēafda* (from **hēafdā*).

Given the well-known data, it seems that optional syncope applies only if the high vowels were preceded by a *heavy*, and followed by a *light* syllable, as in *hēaf<u>u</u>du/hēafdu* (< **hēaf<u>u</u>du).* Something must be out of order here, or syncopation is just an alternative term for apocopation. But if it is an alternative

[6] Obviously, having a heavy syllable followed by a vowel (with no further vowel) is not sufficient to extinguish that vowel (not even in OE): **fōrid* > *fēred* (***fērd*).

[7] *Hēafudum*, *hēafuda* does appear, but only in late texts or texts probably copied from Anglian sources (where they may have been remodelled on *hēafudu*).

term, why have it? This is why the more-encompassing term high vowel deletion (HVD) was coined, but for this the level of the syllable was not sufficient, analyses started turning their attention to feet.

Before we leave off, let's focus on the second (equally problematic) half of the generalisation of (7): a high vowel in an open syllable is not deleted after a light syllable. Let's look at the data in (8a) and (8b), which shows categorical *absence* of deletion, as opposed to *presence* of deletion in (8c).

(8) Absence/presence of high-vowel deletion

(a) In verbs
fremede 'I preformed' (never ***fremde*) < **framidæ*, etc. (and all 1 class weak verbs with an original light stem, followed by the formative ***j**), cf. *dēmde* 'I judged' (never ** *dēmede*) < **dōmidæ* (and all class 1 weak verbs with an original heavy stem, followed by the formative ***j**), etc.

(b) In nouns
bydel 'beadle' NomAccPl < **budilu* < **budilō*, further forms: *bydeles, bydele, bydelum, bydela* (never ***bydles,* ***bydle*, etc.),
wæter 'water' NomAccPl < **wæteru* < **wæterō*, further forms: *wæteres, wætere, wæterum*, *wætera* (never ***wætre*, ***wætres*) (here there is an ***e** in the stem, rather than a high vowel, but it shows identical behaviour)

(c) Examples ***with*** syncopation in nouns (for contrast)
arhaic *botl* (later *botol*) 'house' NomAccPl < **botlu* < **botlō*, further forms: *botles, botle, botlum, botla* (never ***boteles*, ***botele*, etc.), etc.

It seems that there is something shielding the high vowel ***i** (and also ***e** in some etymologies for *water*, both found as <e> **ə** in recorded OE) from syncopation. Weak verbs of the first class with an original light syllable (8a) do not have syncopation (irrespective of the vowel that follows). Interestingly, nouns (at least in early, Anglian) bifurcate on the basis of the presence (vs absence) of the Germanic stem final consonant cluster in the non-nominative cases: cf. *by**del**es* (with no syncopation, (8b)) vs *bo**tl**es* (with syncopation, (8c)), etc. There is no phonotactic constraint that would have prevented *bydles*. Nouns in (8b) and (8c) behave in a complementary fashion: what is allowed in (8b) is barred in (8c). The only case where they coincide is NomAccSg (*botol* = *bydel*), where the

epenthetic vowel (in *botol*) seems to be a development that postdates the earliest (and most conservative) of OE texts (the quality of the epenthetic vowel depends on the stem vowel). We will return to this in Section 5.

These data are perplexing, to say the least (especially given the shortcomings of the traditional analyses). Let's entertain a new idea. This idea will introduce a template into (pre-) OE phonology, a template which in independent of stress, and is iterative. Before we attempt to do this, let's introduce very briefly the framework that will be put to the test.

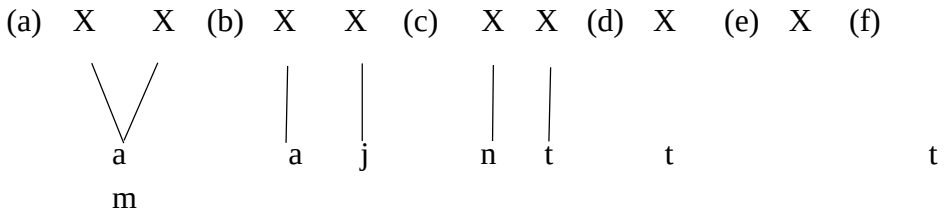
3 Strict CV phonology

The post-generative phonological scene saw many alternative frameworks of analysis that arose out of criticism of classical generative phonology's over-generative rule-governed power and arbitrariness of representation. One of these steps was the disassociation of the timing tier (usually shown as a sequence of X's) from the melodic tier (holding information on the makeup of bundles of features associating to a given timing slot, known generally as 'melody' or melodic tier, see (9)). The structure in (9a) stands either for a long vowel (**a**: in our case), or a geminate consonant (**m**:), (9b) shows a diphthong (**aj**), a coda-onset cluster (**nt**) is shown (9c). With this representation came the understanding that timing slots can appear with unassociated (but lexically specified) melodic material (**t**), shown in (9d), and, even more importantly for the theoretical apparatus, that there may be timing slots with no melodic material whatsoever (9e). This ushers in the notion of a zero category, which makes the theory even more constrained than its predecessors. What's more, there also exist floating melodies without any association to any timing slot (9f). All of these are showcased by various processes in the languages of the world.

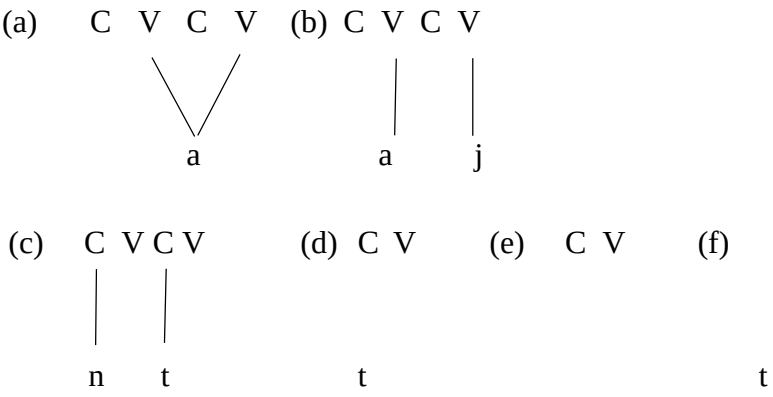
While this (long) line of development cannot be tackled here, let it suffice to say that one of these frameworks is known as Government Phonology, which managed to lateralize the relationships between the segments on the skeleton, claiming that *government* and *licensing* are the only two 'forces' operating between segments on the skeleton. A maximally constrained phonological theory only needs reference to these lateral relations to define what can/cannot happen to a C or V position (making thus the theory fully representational with no derivation of any kind), and suprasegmental structure has only two functions: timing, and the encoding of 'syllabicity' or consonantalness/vocalicness as C

and V. That is, the lateralization of prosodic structure inevitably leads to a skeleton-only model with strictly alternating CV units, under which the bundles of melodic material can be found (but now a melodic bundle must be interpretable both under a C and a V position, a well-known example for which is the melodic prime U which is interpreted as the vowel **u** under V and as **w** under C, and so on). This was a gigantic step in phonological theorising, all of which is amply described by Scheer (2004), see (10) for a reinterpretation of (9).

(9) The timing tier and the melodic tier in Government Phonology



(10) The timing tier and the melodic tier in CV phonology



A number of remarks are in order (none of which are exhaustive): there are no clusters (either vocalic or consonantal) in CV phonology, all clusters are 'virtual', having two CV units that define them (see (10a), which is a long vowel composed of two CV units, with an unpronounced consonant), a geminate/long consonant again is two CV units with an unpronounced vowel between the consonants. (10b) shows a diphthong, (10c) two consonants (a traditional coda-onset cluster), which are linked to two CV units. (10d) shows a CV unit with a consonantal bundle of features not associated lexically to the C position, (10e) shows an empty CV slot, and (10f) a floating bundle of features (defining a **t** in

this case). Melodically empty structural positons are denoted with lower case letters: '$_{v}$' for a vocalic, '$_{c}$' for a consonantal positon). All phonological structure now boils down to a strict succession of CV units. As we can see, having a strict alternation of CV units forces the analyst into a 'templatic' view of linguistic processes from the outset. Let's see how this may have played out in (pre-) OE.

4 The OE template

Having seen the problems that a syllable-based approach to HVD faces, it is time to see how a template-based approach fares. I will assume that OE was dominated by a template the size of two CV units.[8]

4.1 Templates in general and the OE template in particular

The work on templatic morphology is primarily linked to the Semitic languages (e.g. McCarthy 1979, McCarthy & Prince 1990). Templatic morphology or phonology in the Indo-European languages still sounds rather exotic, although some attempts have been made in this direction. Scheer (2003), criticising his earlier work (Scheer 2001), shows that Czech, for example, shows (non-synchronic) templatic characteristics in its nominal and verbal morphology. For lack of space, the Czech template will not be discussed (this template is also discussed in Scheer 2004). Instead the possibility of analysing the OE data with the help of a four-position CVCV template will be introduced (cf. Denwood (2006), and along different by converging lines Charette (2008), argue for a similar CVCV template in Turkish).[9]

In OE, similarly to modern English, the minimal word constraint can be formulated as a constraint that requires lexical words not to fall short of two CV units. Note that the number of word-initial consonants and the enclosed empty vowels between them do not count, hence the ungrammaticality of ***sprɛ**, for example, which is as ungrammatical as a single CV unit with an unpronounced consonant (**ɛ**).[10]

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[8] The first mention of 'template' for OE appears in Colman (1984), and is also used in Colman (1988). This use of the term, however, is reserved for the regularities in diphthong formation.

[9] The notion of 'template' has been proposed for many non-Semitic languages: e.g. by Itô & Mester (1989), Lin (1993), Golston (1996), Crowhurst (1998), Ashwini (2007), etc.

[10] Here we are dealing with two language specific constraints: one regulates the minimal size of lexical morphemes: in OE, as well as Modern English, it is two CV units, or a heavy syllable

I postulate that OE had a constraint that worked from the beginning of the word and looked for CV units, starting with the first stressed pronounced V. The size of this template is CVCV (the second V could also be an empty/unpronounced V). The parameters of this constraint are set out in (11).

(11) Parameters of the OE CVCV-template

EDGE: left

SIZE: CVCV (i.e. two CV units)

FIRST ANCHOR POINT: a pronounced V, the head of the template; the C's in the template can remain empty (= c)

SECOND ANCHOR POINT: a pronounced V or empty V (= v)

OPERATION: iterative; the head always attaching to a pronounced V (**note**: diphthongs and long vowels occupy two CV units (CVCV); this is a lexical matter)

This is as stipulative and arbitrary a constraint on OE phonology as any other, syllable-based or otherwise (the difference being that syllable based accounts have a longer provenance). The viability and non-circularity of all constraints lies in their application to the widest possible range of data: a stipulative constraint that works loses its arbitrariness with the help of the data that it handles. If we apply this templatic constraint, a unified picture of HVD can be developed.

(12) High vowel deletion (templatic deletion)

High vowels are deleted if they cannot attach to a CVCV template.

A high vowel which can attach to a CVCV template is not deleted. Let us see how this works for pre-OE data.

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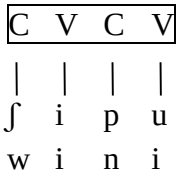
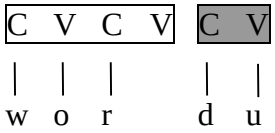
in traditional accounts (in the form of either a long vowel, as in *Shah* **ʃɑ**:, or a short vowel followed by a consonant, as in *bass* **bas**). A further constraint stipulates that in both OE and Modern English the V of the first CV slot much attach to a pronounced vowel, rendering **rɛ, prɛ, sprɛ** equally ungrammatical (subminimal). The question of what silences the vowels in word-initial clusters such as **pr** (or rather **p$_{v}$r** with 'v' showing a silenced vowel) or **spr** (**s$_{v}$p$_{v}$r**) is a theoretically-laden question, something that is not directly relevant now, but whatever feature of the consonants silences the vowels insures that the V of the first CV fails to detect the vowel as a possible anchor point. (Modern English needs another constraint: no lexical word can end in a short vowel, no matter how long the word is: ***trɛjpa**.)

(13) HVD and the OE template

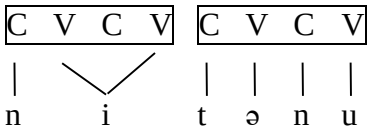
(a) **ʃipu/wini*



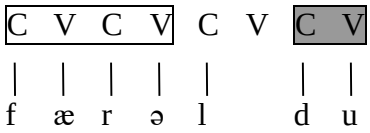
(b) **word*



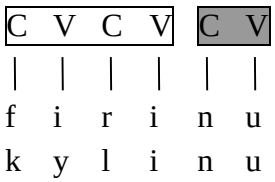
(c) **nītinu*



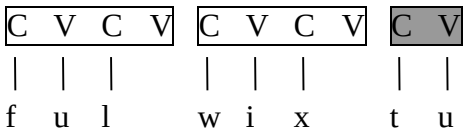
(d) **færeld*



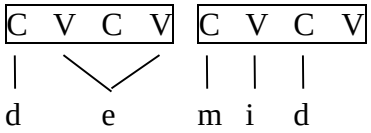
(e) **firinu/kylinu*



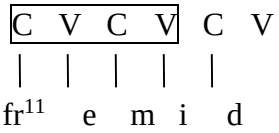
(f) **fulwiht*



(g) **dēmid*

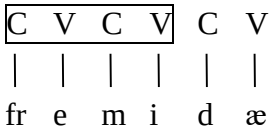


(h) **fremid*

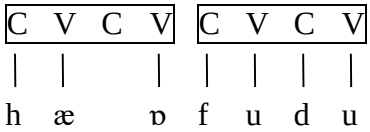


[11] The analysis of word-initial branching onsets is fraught with difficulties for accounts that advocate the CV approach, and this probably shows that they are marked structures (and as such they deviate from the least marked 'syllable' type of strictly alternating consonants and vowels (something that can be found in all languages), i.e., CVCV. We will not analyse these here, and show them as 'lump' consonant clusters (e.g., **fr**, **br**, **tr**, **spr**, etc.), see also preceding footnote.

(i) **fremidæ*



(j) **hæƿfudu*



The data are reconstructed, and show a state of pre-OE at the point when HVD became active. The template applies from the left edge of the word attaching to the (first) pronounced V. The size is two CV units. The application is iterative. The first vocalic position of the template must be filled with a pronounced vowel, the second position is either a pronounced V or an empty V (see (13f)). HVD occurs under the following circumstances: the constraint on the size of template is not satisfied ((13b), (13d), (13e) and (13f)). The areas where the size of the template is not met are shaded. It is here that the two vowels undergo deletion. In (13g) the high vowel attaches to the head position of the template and thus escapes deletion. In (13h) it attaches to the second anchor point of the first CVCV template. As can be seen, it is the iterated application of the CVCV template that decides on the preservation of the high vowels. Any other (i.e. non-high) vowel is not deleted (13i) (we will see that these word-final vowels were long in pre-OE). If the traditional account relies on counting syllables and their weight, this account relies on counting CV units.

This templatic constraint explains the OE form *hēafodu/hēafudu* NAccPl < **hæƿfudu* (the last two (underlined) vowels are preserved because they can attach to the CVCV template). This was a form that was ruled out as a possible phonologically developed (i.e. non-analogical) form by Hogg (2003: 369). The alternative form *hēafdu* can be viewed to be the result of syncope (at a later stage of OE). This templatic analysis must concede that a form like *hēafod* 'head' NomAccPl cannot be the result of a phonological process affecting the historical word. It must then be the result of analogical levelling based on bi-syllabic words like *werod* 'troops' NomAccPl. (cf. Hogg (2003; §4) for the dialectal variation and incidence of the various forms, as well as Fulk (2010) for a more recent approach).

This templatic analysis seems to usher in through the back door the much contested notion of resolution, i.e. the equivalence of *one light syllable plus another syllable* to one heavy syllable (discussed later). This is not the case here,

however. A ‘resolved syllable’ is a CVCV template whose anchor vowels happen to be pronounced. The notion of ‘shared stress’ does not enter the picture. There are two independent constraints: one designates the head of the template as stressed (‘stress the first vowel in the stem’), the other regulates the size of the template (‘OE is dominated by a template whose size is two CV units’). The melodic decomposition of the second vowel in the OE template is the function of absence of stress (**wini* > *wine*). Resolution, as it is often claimed, is not (only) a meter-specific device needed to check the number of positions in an OE half-line. It is part of OE phonology: HVD is one of the processes that can capture it at work.

This neatly dovetails with the usual assumption on the gist of resolution (two syllables can function as a single unit): two syllables (of which the first one must be light) are equivalent to a single heavy one (hence the identical behaviour of *word* and *firen*). In short, HVD is captured with the help the CVCV template.

Since the notion of syllable is non-existent in CV phonology, the question of syllable weight does not arise in mono-syllabic words closed by a single C: what we can say is that OE *wer* ‘man’, for example, satisfies the OE minimal word requirement imposed on lexical words (it comprises two CV units) and, by default, it also satisfies the OE CVCV template (**wer**$_{\mathrm{v}}$ *wer* in terms of CV phonology).

That HVD is not simply a process of apocopation, i.e. the general loss of unstressed short vowels word-finally, has always been present in various analyses in one way or another. In Sievers–Brunner (1965; §146–149) the conditions governing HVD are given as (see (14)), minimally amended to with ~~*i/u*~~:

(14) Sievers–Brunner (1965) on HVD

(i) final **i/u* are lost in the following configuration of syllables:

light - { light / heavy } - ~~*i/u*~~

heavy - heavy - ~~*i/u*~~

(ii) they are preserved after

heavy - light - *i/u*

Although the necessary condition for the loss of the high vowels is absence of stress, it is not the sufficient condition. In other words, unstressed high vowels *can* be preserved. HVD does not depend on syllable weight either (in ****ski****pu* and **ky****le****nu* the (highlighted) syllable preceding ***u** is light, yet the effects are different: *scipu* vs. *cylen*). The Sievers–Brunner account is clearly a templatic analysis in disguise. The generalisation of 'counting' in the templatic account put forth here refers to the counting of CVCV size portions of the skeleton (given the conditions in (11)).

4.2 The OE CVCV template in close up

In this section I show with the help of the OE template that in OE there is no distinction between rising sonority clusters and coda-onset clusters.

HVD, coupled with the OE CVCV template, shows that in OE the vocalic position between the members of a rising sonority cluster (branching onset, or muta cum liquida, as traditionally referred to) was visible for the template. This is supported by the NomAccPl plural of *a*-stem neuter nouns: **botlu* 'house' > *botl*, **wedru* > *wedr* 'weather', etc. These nouns originate in Germanic mono-syllabic stems ending in an obstruent *plus* sonorant cluster, followed by a suffixal inflectional vowel (see (15)).

(15) Rising sonority clusters and the OE template[12]

botlu/*wedru*

C	V	C	V	C	V
|	|	|		|	|
b	o	t		l	u
w	e	d		r	u

[12] Rising sonority clusters is a cover term for branching onsets (i.e. rising sonority clusters found word-initially, e.g. **dr**) and bogus rising sonority clusters (those that do not occur word-initially, but can occur word-internally (sometimes) flanking a vowel that alternates with zero, e.g. **dl ~ dəl**). In OE they behave identically, hence the cover term.

The data show that the OE template has access to the empty vowel couched between the members of a rising sonority cluster. The high vowel ***u** is deleted as it cannot attach to a CVCV template. In other words, rising sonority clusters (**wedru* > *wedr*, **botlu* > *botl*) and coda-onset clusters (**þingu* > *þing* 'thing') behave in the same way as far as HVD is concerned: they are simply consonants flanking an empty (unpronounced) vowel.[13]

A syllable-based account would have to resort to coda-capture' (e.g. Anderson 1982, Hall 1992), i.e. the first consonant of a rising sonority cluster would have to be syllabified into the coda to make the first syllable heavy (**wed.ru*) in order to account for HVD. The same capturing effect would have to be *suspended* in the case of a single intervocalic consonant to derive the right result (**ski.pu* > *scipu*). HVD shows that s+C sequences were also clusters flanking an empty vowel: **nestu* > *nest* 'nest'.[14] The syllable based approach cannot account for the data without resorting to ad hoc solutions like coda capture.

One of the constraints on the OE template in (11) was that the first anchor point must be a full vowel. Rising sonority clusters (given that the vowel they enclose is accessible to the OE template) offer a testing ground. The prediction is that in the sequence CVVCØCV the second iteration of the template is unsuccessful (the empty vowel, Ø, cannot house the first anchor point). This prediction is supported by the following data: **spātlu* > *spātl* 'saliva' Nom-AccPl, **ātru* > *ātr* 'poison', **fōdru* > *fōdr* 'fodder', **hūslu* > *hūsl* 'Eucharist', etc. These data show that the head of the template must always be a pronounced vowel. This explains why the vowel enclosed by word-initial rising sonority

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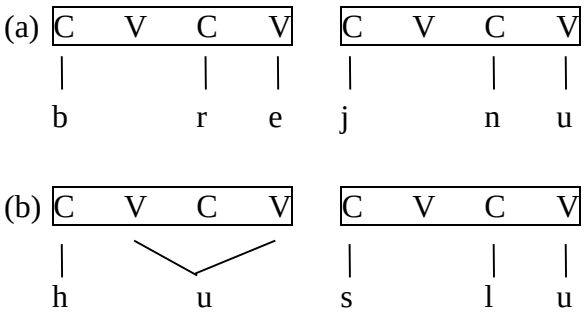
[13] This is not to say that these clusters pattern uniformly in all other respects too: while long vowels are commonly found before rising sonority clusters, they are less common before coda-onset (falling sonority) clusters. There is no evidence in OE that the long vowel of *frōfor* 'comfort' was shortened in any of the non-NomSg forms after syncopation: *frōfre, frōfra, frōfru* (words such as this one are not remarkable phonologically and abound in OE). Words that have a long vowel before a coda-onset cluster are fewer in number, especially those that contain a non-coronal coda-onset cluster: *lēoht* **xt** 'light', *fēng* **ŋg** 'seize, pt' (in addition to those that end in a coronal cluster: *frēond* 'friend', *dūst* 'dust').

[14] Examples involving ***sk** (> **ʃʃ**) followed by a high vowel seem non-existent and ***sp** is rare (e.g. *wæsp/wæps* < **wæspu,* a historically *ō*-stem noun which has joined the *a*-stem masc. nouns, which thus makes it unreliable as a testing ground). In other classes where they do occur their behaviour cannot be tested with the help of HVD.

clusters (including s+C clusters) is invisible to the template. Let us see what the effects would be of a template whose head could link to an empty vowel.

(16) **brægnu/*hūslu*



(16a) and (16b) show that in case the template could set anchor indiscriminately to both full and empty vowels, the OE data could not be accounted for: ***brægnu/**hūslu* 'brain, Eucharist'. This justifies the constraint on the template which states that the head must always link to a full vowel.

We have just seen that HVD shows that rising sonority sequences were also clusters (the empty vowel between the two consonants was visible). There is no proof that long vowels are shortened before consonant clusters of any type: e.g. *fēng* 'seize' 1/3SGPAST, *tāhte* 'teach' 1/3SGPAST, *þūhte* 'seem' 1/3SGPAST (for coda-onset clusters), and *ātres* 'poison' GSG, *Hūsle* 'Eucharist' DSG, *spātles* 'saliva' GSG (for rising sonority clusters). The length in these vowels is justified by their diachronic development: a short vowel would have resulted in OE ***fing, **teahte* (with breaking)*, **þohte, **ætres, **Hosle, **spætle* (cf. Campbell 1959; Chapter 5). Closed syllable shortening cannot be demonstrated for Proto-Germanic either. How this is handled by CV phonology is not relevant now.

4.3 The OE template and syncopation

We have seen in connection with both verbal and nominal paradigms that a high vowel is not syncopated after a light syllable, but is lost after a heavy syllable (see Section 2). The relevant data are shown in (17).

(17) The syncopation of the high vowels

NO: **frem**i**dV* > *frem**e**dV* ‘performed’, **wer**u**dV* > *wer**u**dV* ‘troop’ vs.

YES: **hīer**i**dV* > *hīer**Ø**dV* ‘heard’, **eng**i**lV* > *eng**Ø**lV* ‘angel’

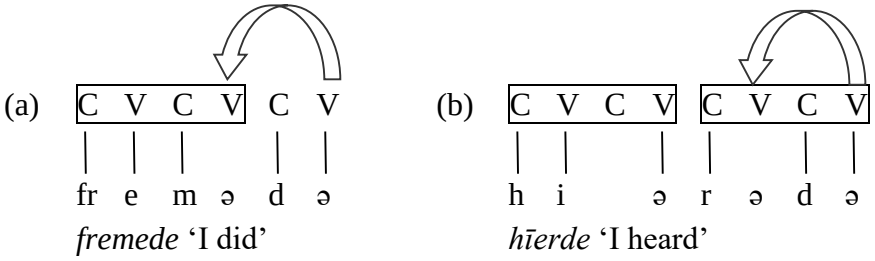
The absence of syncopation after light but not after heavy syllables cannot be accounted for with reference to the stress of the following vowel (all of the vowels, shown as ‘V’ here for simplicity’s sake, are unstressed).

(18) The OE template and syncopation

Syncopation cannot penetrate a CVCV template.

Stipulative though it may be, as all constraints, it explains why there is no syncopation after a light syllable: the second vowel is resistant to government coming from outside. The usefulness of all constraints lies in their scope of application: the greater the pool of data accounted for with a constraint, the more explanatory it becomes. This restriction on lexical representation can be represented graphically as shown below in (19).

(19) The relationship between the OE template and syncopation



In (19) (for recorded OE) two representations are shown (V = any pronounced vowel; no attempt has been made at the correct representation of the diphthong in (19b)). The iterations of the CV template are boxed. In (19a) the pre-OE vowel ***i** is shown as a schwa. Syncopation is graphically shown with a white arrow. The position I take here is that this historic vowel had lost its distinctive melodic properties by recorded OE times and show it accordingly as a schwa (this schwa is justified by examples like the one shown in (19b) where the same vowel is lost to syncopation, note the absence of the association line between

the schwa and the timing slot V). The syncopation of **ə** is allowed for by the absence of stress on the first V (**ə**) of the second iteration of the template: *hīer<u>ə</u>de*. The collapse of the integrity of the second CVCV stretch was initiated by the absence of stress and is signalled by the syncopation of **ə**.

The schwa in (19a) cannot be reached by syncopation from outside the template. Note that even in traditional approaches, syncopation is only possible over the head of a singleton inter-vocalic consonant (cf. Modern English *family* with an unpronounced vowel spelt as <i>). Let's investigate a further aspect of the OE template.

(20) The imperviousness of the OE template

werudV > werudV* (e.g., *wer**u**d**es*) vs
hæɒfudV > hēafdV* (e.g., *hēaf**d**e**s)*

budilV > bydelV* (e.g., *byd**e**l**es*) vs
angilV > enġlV* (e.g., *enġ**l**e**s*)[15]

The loss of the high vowels in *hēafdu* and *enġles* happens *after a heavy syllable*, but only if these high vowels are, in turn, *followed by a heavy syllable*. If the syllable *before* the high vowels is *light*, there is no syncopation. As we have seen, this aspect of syncopation cannot be tackled satisfactorily by the traditional syllable-based approach (which is basically a description of the facts not related to any other property of the language or of phonological theory in general).

The OE template has proved useful in accounting for HVD and now it can also be used in explaining the absence of syncopation after light syllables. With the introduction of the template a number of hitherto unrelated aspects of OE fall into place. The difference between *bydel ~ bydeles* vs. *botol ~ botles* in early OE can now be explained as a function of the nature of the CVCV template embracing the second vocalic position: pronounced in *bydel-*, empty in *botl-* (the second pronounced vowel in *botol* represents historically a 'secondarily' developed pronounced vowel, discussed in Section 5).

[15] The <ġ> after the nasal is reconstructed to have been **dʒ** (as a result of palatalization of earlier ***ŋg**).

4.4 Further characteristics of the template

In accordance with (18) government from outside cannot penetrate the template. However, government originating from inside the template (from the second vowel) *can* hit the first vowel. This is how we can explain the alternations (across dialects and possibly within one given dialect) in (21).

(21) Government originating from inside the template

> **hæɒf**u**du* > *hēaf**u**du* ~ *hēafØdu* 'head' NomAccPl vs.
>
> **þūri**l**u* > *þȳrØlu* 'hole' NomAccPl, **hīeri**d**e* > *hīerØde* 'hear' 1/3SgPastInd

The fact that there are no alternations in the case of <e> **ə** (< ***i**) in recorded OE (especially West Saxon), e.g. *þȳrlu* ~ ***þȳrelu*, as opposed to <u/o> (< ***u**), e.g. *hēafodu*/*hēafudu* ~ *hēafdu*, can only be explained as a difference in the quality of the two unstressed vowels: the process of melodic change in the two high vowels was not completed simultaneously (the change ***i** > **ə** <e> (and complete loss when syncopated) was completed earlier than in the other high vowel, ***u**).[16] The difference in the quality of the two unstressed vowels is apparent word-finally: ***i** always appears as <e> (a vowel into which many front vowels merged historically), whereas ***u** appears as <u/o>, still showing a phonological opposition to <a> **ɑ** (the only other unstressed back vowel): **wini* > *wine* vs. **bedu* > *bedu* 'prayer'. The situation can be summed up as 'word-internal schwa is obligatorily syncopated'. If, however, the second vowel of the OE template is a schwa, it cannot be reached by government (in accordance with (18)): *frem<ə>de* ~ ***fremØde*. We will return to this problem from the perspective of pre-OE in Section 8 when we show that the loss of historical ***i** (> **ə**) in *hīerde* (< **hauridæ*) is due to the inability of the vowel to attach to the CVCV template (in which case it was syncopated).

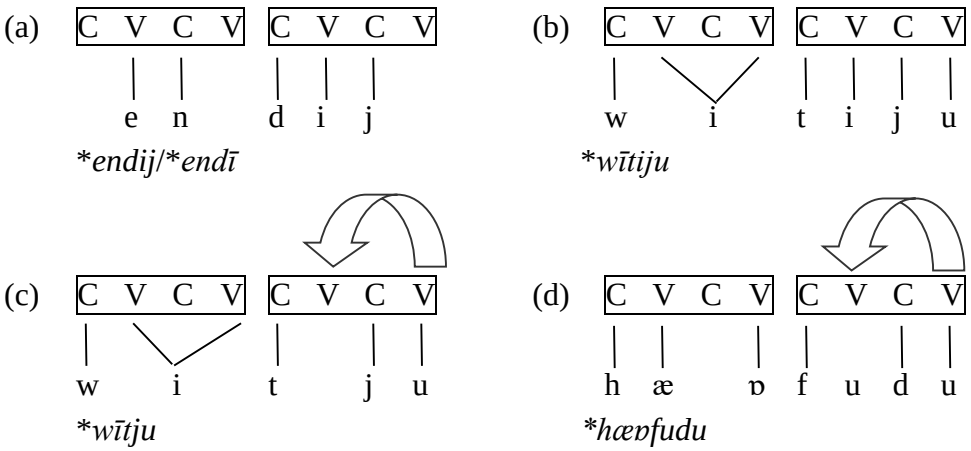
[16] The change **u** > **ə** was only completed in Middle English25: e.g., *sunu* 'son' > *sune*. Word-final schwa later underwent across-the-board apocopation (resulting in *sun*).

4.5 The OE template and syncopation

Let us take a representative, and often cited example, of the Germanic *ja*-stem masculine: **andjaz* 'end' (**andijaz* according to Sievers' Law) is found is OE as *ende*. The intermediate stages can be reconstructed as **andij* > **endij* (~ **endī*) > early OE *endi* > *ende* (Campbell 1959; §355 (3)). Note that ***i** (e.g. **wini*) never appears as <i> in early OE, as opposed to ***ī** (e.g., *endi*). This clearly shows that HVD can only be short-HVD. This lends further justification to the OE template. Similar examples are (now with neuter nouns): **wītī* 'punishment', **rīkī* 'kingdom', appearing in OE as *wīte* and *rīċe*. Given the templatic account, the failure of the high vowel to delete is easily accounted for (it comprised a CVCV template, i.e. it was long at the time when HVD applied). Whether the actual pronunciation of ***ij** in **endij*-type nouns was ***ij** or ***ī** makes no difference: both satisfy the CVCV template.

The plural of the *ja*-stem neuter nouns is *-u* (< **-ō*). The analysis below makes use of the OE template (see (22) below).

(22) Representative examples of the *ja*-stem masculine/neuter nouns



(22a) shows that in **endij*/**endī* 'end' NomAccSg there can be no deletion of the high vowel: it is 'saved' by the OE template; (22b), shows **wītiju* 'punishment' NomAccPl shows that neither of the high vowels is lost (they allow for a second iteration of the template). The words whose representative here is taken to be **wītiju* are all found with their ***u** preserved in OE: *wītu*. Obviously, there must have been a stage shown in (22b), otherwise we would have a completely

inexplicable case of high vowel retention after a heavy syllable, i.e. we would have an unexplained second iteration of the OE template in *wītu*. Forms in this class (NomAccPl) are uniformly stable across OE dialects, showing that here there was really no analogical process involved, or otherwise it would be difficult to explain how all dialects 'analogised' in the same direction.

The fact that there are no alternations like **wītu** ~ ?****wītəu** ~ ****wītju** (whose spelling would be *wītġ(e)u,* with *ġ(e)* showing a common OE spelling practice of rendering **j**) can be explained as the loss of distinctive features of ***i** and syncopation (a word-internal schwa is syncopated, cf. (22c)). After the obligatory syncopation of schwa, the representation in (22c) still shows a possibility yielding ***wītġ(e)u* **wītju**. This possibility cannot be ruled out by any feature inherent in the representation in (22c). It must be concluded that post-consonantal yod (in Cj sequences) was lost for melodic (rather than structural) reasons (observable in the case of HVD). The loss of post-consonantal yod must therefore have been completed before recorded OE. The behaviour of words like **wītiju* shows that the representation given earlier for *hēafudu* (repeated in (22d)) is further justified. That is, *hēafudu* (contra Hogg 2003) *is* the result of a phonological process, not analogy. Mutatis mutandis, if *hēafudu* cannot be the result of a phonological process then neither can *wītu* (a form which cannot plausibly be the result of any analogical process as all neuter nouns with a heavy stem reject plural ***u**: e.g. *word*). The floating **u** in (22d) shows that it can (optionally) be syncopated yielding *hēafdu*. We may safely say that this syncopation occurred after the templatic shortening discussed here (otherwise the noun should have surfaced as ***hēafd*).

This templatic account, coupled with the fact that melodic decomposition affected the front (short) high vowel earlier than the back high vowel, does away with self-contradictory statements given by Campbell (1959; §353 (p. 147)): "Unaccented *i* and *u* seem to have been lost at exactly the same time; otherwise [**wītiu*] would have become [**wītu*] and then [**wīt,* after HVD]; while, if *u* were lost first, the development would have been [**wītiu* > **wīti* > **wīt*]" (I have replaced the original example with the one discussed here). This is difficult to interpret: if ***u** is lost first, it does so for unexplained reasons as the preceding syllable is light: **wīt**i**u* > ***wītu*.

In light of the above, namely that the loss of post-consonantal ***j** after the syncopation of **ə** (**wītəju* > **wītju* > *wītu*) is a process operating between

consonantal melodies, can shed new light on why ***j** is lost in the verbal paradigm, e.g. **dēmjan* (< **dōmijan* by Sievers' Law). As (22b) shows the loss of ***j** cannot be linked to syllable weight or the OE template. We must conclude that this is a melodic affair (affecting structure of the consonants, not the skeleton and its role in deletion). As there are no remnants of this ***j** in recorded OE (***dēmġ(e)an*), just as there are no signs of (the structurally parallel) ***j** in the case of heavy-stem *ja*-stem neuter nouns in the plural (recall **wītju* > *wītu*, ***wītġ(e)u*), the process must have been played out in prehistoric OE on the melodic level between consonants.

Up to this point we have found a number of processes that can be described more insightfully if a templatic account of OE phonology is adopted: absence of syncopation after light syllables, HVD, the hitherto unexplained alternations like *hēafudu* ~ *hēafdu* (as well as the non-existence of alternations like *þȳrlu* ~ ***þȳrelu* (at least) in West Saxon and, by the same token, the existence of forms exemplified by *wītu*). (In Section 6 we will see why Anglian can be regarded more conservative than West Saxon, showing that *þȳrelu* really *is* the phonologically expected outcome with an unsyncopated **ə** <e>.). We have also found melodic constraints (e.g., **wītju* > *wītu*) that have previously been put down to constraints operating with syllable weight (cf. Hogg (2011) on the possible absence of ***j** after heavy syllables).[17]

4.6 The OE template and long vowels

We have seen that long vowels occupy two CV slots on the timing tier (e.g., *bān* = b**a**$_{c}$**a**n, with the box showing the long vowel occupying two CV slots, with 'c' showing a silent consonant). How is this relevant to HVD? Stressed long vowels are not nearly as interesting as unstressed long vowels for the simple reason that by recorded OE long vowels disappear from unstressed syllables (and are found merged as whatever sound it is that appears as <e> for those that

[17] Sievers' Law was formulated almost exclusively on the behaviour of *ja*-stem nouns. A curious gap, however, remains: heavy-stem *jō*-stem nouns, for which the same ***j/ij** alternation should be observed, are never found with **u** in OE (e.g. **bandjō* > **bandijō* > **bendiju* > (expected) ***bendu* (recall **wītiju* > *wītu*). It seems ***ijō** rather irregularly developed to ***ī** in this class of nouns in Germanic (it was *bandi* in Gothic), later to be shortened to ***i** in North-West Germanic (Ringe and Taylor 2014: 14), from which OE *bend* straightforwardly follows. This is certainly an anomaly of Common Germanic.

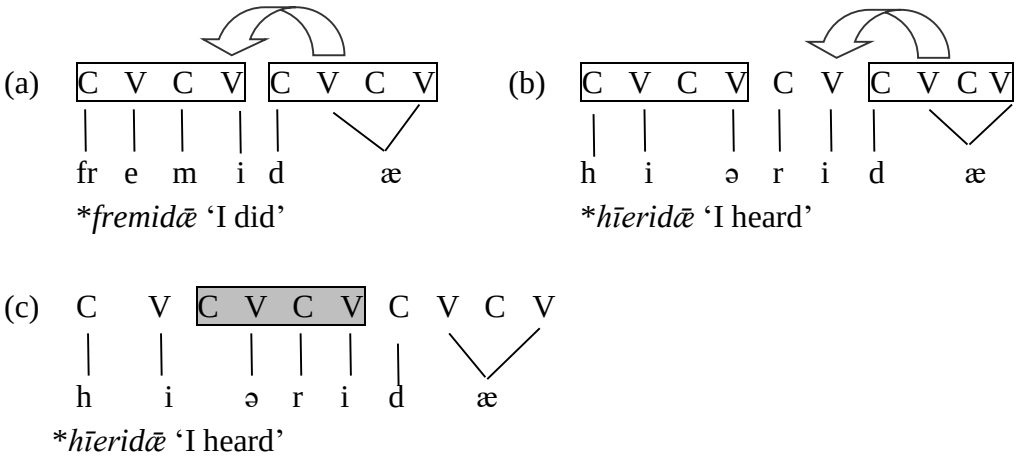
originate in front vowels). The origin of length (and its gradual loss) is described, for example, by Hogg (2011). This does not mean, however, that all traces of length are irretrievably lost. There are some rules of thumb that one can find helpful: for example, if a word-final unstressed vowel is found after a heavy syllable (supposing it is the result of purely phonological changes at a point in time before analogical levelling takes over), it originates in a historical long vowel (e.g., *stāne* 'stone' DatSg < *stainæ* < **stainai*, *ende* < **andī, helpe* 'help' PrSubj < **helpæ*, *stāna* GenPl < **stainō* < *stainōo,* etc.). The reverse does not hold: if a word-final unstressed vowel is found after a light syllable, it can originate in either a historically **long** (e.g., *guma* 'man' NomSg < **gumō* < *gumōom*) or a historically **short** vowel (but then it must be preceded by a light syllable, e.g. *sunu* 'sun' NomSg < **sunu*, *wine* 'friend' NomSg < **wini*). To the latter class we can add: or any **long** vowel that was shortened early enough to be 'saved' from deletion by a preceding historically short vowel in a light syllable: e.g., *scipu* < **skipō*, *ġiefu* < **jevō* < **gevō*, etc. (of course, the very same ***ō**, when preceded by a heavy syllable, was lost: *word* < **wordu* < **wordō*). This somewhat clumsy formulation on how ***u** (and ***i**) found its way into recorded OE can be explained more straightforwardly as: word-final short high vowels were saved from deletion if they attached to a CVCV template (underlined here): *scipu*, *wine*, *sunu*, *ġiefu*, etc. To this class can be added the notoriously difficult cases discussed here: *hēafudu* (recorded as such, but claimed traditionally to be the result of analogy), **rīċiju* (recorded as *rīċu* after ***i** > **ə** and syncopation at a stage postdating templatic deletion when the high vowel <u> could again be preceded by a heavy syllable), **strenġiþu* (> **strenġþu*, analogically refashioned to *strenġþ*).

I have identified three causes that contributed to the opaque nature of HVD in recorded OE: (i) absence of stress (shown with x here) on the head of the CVCV template in forms like *hēafuďu*, **rīċiďu*), (ii) melodic decomposition of unstressed ***i** > ***ə** (which seems to have been more advanced than that affecting ***u**) and (iii) syncopation of schwa (leading to forms like *hīerde* (**hīerədæ* < **hīeridæ*), which is never found as *hīerede*, not even in very conservative Anglian). The syncopation of ***ə**, coupled with the shortening of unstressed front long vowels (and their mergers), made the templatic deletion of the high vowels even more opaque (cf. *hīerde*, where <e>, originally a long vowel, is now found as a (presumably) short vowel after a heavy syllable, in obvious violation of a previous constraint that defined pre-OE). What is more,

syncopation seems to have been chiefly responsible for the gradual obfuscation of the templatic constraint that originally protected the short high vowels from deletion.

The representation in (23) shows the pre-OE form of *fremede* when long vowels could still be found unstressed.

(23) Long unstressed vowels in pre-OE



As can be seen long vowels (as well as diphthongs) occupy two CV slots (here exemplified with ***ie** and **æ**), something that already satisfies the OE CVCV template. We can say that ***long vowels*** come with a ***lexically specified CVCV template***. We can see the consequences of this: in (23b) the formative ***i** is not enclosed in a template. It seems it could not ‘share’ a position with the previous or the following template (it could not ‘snatch’ a foothold from the second half of the first diphthong or the first half of the long vowel, see (23c) for an impossible snatching of a CV slot from a diphthong shown with shading). As such it was affected by syncopation (discussed in Section 8), hence the recorded *hīerde*. As opposed to this, in (23a), the same ***i** was enclosed in a CVCV template and as such was shielded from syncopation from the following vowel (shown with gradual fill), and so it escaped deletion after it shifted to **ə** in recorded OE, giving *fremede*. This is how CV phonology can show in structural terms the rather cumbersome: ‘unstressed word-internal ***i** in an open syllable is syncopated if it is preceded by a heavy syllable and followed by a heavy syllable (= heavy by a consonant cluster or by having had an original long vowel)’. The deletion fol-

lows from the position of the pre-OE ***i**, i.e., from the fact that it was not enclosed in a CVCV template that could save it from deletion. It is still not clear why categorical syncopation happened in forms like *enġlum* DatPl (< **enġilum*). The pre-OE ***i** should have been enclosed in a template: *enġilum*. We will return to this in Section 7 and 8.

Do we have any independent evidence for claiming that long vowels lexically occupied two CV slots and this template was seen as a stretch of material that could be accessed by any other regularity of (pre-) OE? It seems we do.

4.7 Old English morphology and long vowels

The evidence comes from compounding, analysed in Starčević (2009, 2013), where the suitability of the Germanic Foot (Dresher & Lahiri 1991) in accounting for a number of OE phonological processes was evaluated. It was shown that the Germanic Foot was at best problematic for its implications with respect to stress (for example, the exceptional stressing of OE words with a light stressed syllable, e.g., *gúma* 'man'), mora sharing, resolved stress, etc. Compounding proves equally problematic. For our purposes, compounding will be taken informally to involve A and B to yield AB. Before a rule is attempted, some examples are supplied in (24). Truncation is shown as '✖' here.

(24) Examples for OE compounding

consonant final
cyning 'king' + *gereord* 'banquet' = *cyninggereord* 'kingly banquet'
hæsel 'hazel' + *hnutu* 'nut' = *hæselhnutu* 'hazelnut'
lēoht 'light' + *bǣre* 'bearing' = *lēohtbǣre* 'luminous'

vowel final
- *monosyllabic*
  cū 'cow' + *horn* 'horn' = *cūhorn* 'cow horn'
- *multisyllabic*

(a) ending in <i>: not applicable, unstressed ***i**, if not deleted, appears as <e> in recorded OE, <i> in very early OE

(b) ending in <e>: (sometimes) truncated

(b1) **light syllable** before final vowel

wine ‘friend’ (< **wini*) + *drihten* ‘lord’ = *winedrihten* ‘chum lord’

cyrice ‘church’ + *gang* ‘going’ = *cyric✖gang* ‘church attendance’

cwene ‘female’ + *fugol* ‘bird’ = *cwen✖fugol* ‘female bird’

(b2) **heavy syllable** before final vowel

ende ‘end’ + *lāf* ‘remnant’ = *endelāf* ‘last remnant’

wīte ‘punishment’ + *þēow* ‘slave’ = *wīteþēow* ‘slavery as punishment’

ēage ‘eye’ + *wund* ‘wound’ = *ēag✖wund* ‘eye wound’

(c) ending in <a>: <a> truncated

(c1) **light syllable** before final vowel

guma ‘man’ + *stōl* ‘chair’ = *gum✖stōl* ‘throne’

(c2) **heavy syllable** before final vowel

steorra ‘star’ + *glēaw* ‘clever’ = *steor(r)✖glēaw* ‘clever at astronomy’

scucca ‘devil’ + *gyld* ‘service’ = *scucc✖gyld* ‘idolatry’

(d) ending in <u> (with <o> as an allograph of <u>)

(d1) **light syllable** before final vowel: <u> not truncated

medu ‘mead’ + *wērig* ‘weary’ = *meduwērig* ‘drunk’

(d2) **heavy syllable** before final vowel: not applicable, <u> (< ***u**) deleted due to HVD.

(e) Summary (truncation)

Preceding syllable	C-final	mono-syllabic ending in a (long) V	multisyllabic ending in unstressed			
			<i>	<e>	<a>	<u> (<o>)
	trun’d?	trun’d?	trun’d?	trun’d?	trun’d?	trun’d?
light	no	*n.a.*	*n.a.*	**yes/no**	**yes**	no
heavy	no	no	*n.a.*	**yes/no**	**yes**	*n.a.*

Words ending in consonants are not truncated. On the face of it, the deletion of what appears as <a> is categorical, the deletion of <u>, however, never happens. It is clear that the vowels appearing as <e> in recorded OE must represent a pool of vowels with different pre-OE values, giving an insight into pre-OE phonology, see summary in (24e).

We may take the etymological (pre-OE) length of word-final inflectional vowels into consideration: **endī/endij*, **kwenō(n)*/**kwenȭ*, **gumā*, etc. We have already concluded that unstressed long vowels that survive into recorded OE must originate in pre-OE long vowels. What is more, long vowels are always preserved in OE irrespective of the weight of the preceding syllable (*ende*, *cwene*, *guma*) and truncated in compounding. This, however, does not explain *ende*, which escapes truncation in compounding. What is more, if we suppose on the basis of OE that long vowels survive into OE, we are forced to conclude that *wine* and *medu* had long final vowels (**winī*, **medū*), but this is incorrect etymologically, and there is no sound basis for assuming such lengthening in pre-OE (other than for the purposes of escaping word-final deletion).

Bliss (1967: §37, app. §4), Kuryłowicz (1948/1949, 1970) and Suzuki (1996) note that morphological identity among the words involved in alternations sensitive to HVD may have given rise to the equivalence between morphologically comparable words with and without an overt ending, e.g., *hof* 'enclosure' = *word*, *gifu* 'gift' = *gūð* 'combat'. Suzuki (1996) claims that ***i**/***u** were reanalysed as part of the stem, rather than a suffix that they originally were: e.g., *wine* < **win-i* 'friend', rather than *win-e* and, similarly, *gif-u* (< **gif-ō*), reanalysed as *gifu*.

Fulk (1992) follows Kaluza's (1896) insight in viewing short vowels as descending from proto-Germanic plain vowels, and the long ones as those of the circumflected ones (traditionally called trimoraic): e.g., *-e* (< **ôz*) FemAccPl, *-a* (< **ô*) MascNomSg, etc.

Fulk (2002: 336) adds another category to the "long endings": all inflections ending in a consonant. Bliss (1967) and, more recently, Suzuki (1995, 1996) classify long vowels as those that remain after heavy syllables by OE times. Consequently, all of those vowels that are lost after heavy syllables are short. This may leave a synchronic alternation between *-e* (< ***i**)/***u*** (e.g., in NomSg) and zero: e.g., *wine* 'friend' vs *wyrm* 'serpent' (*i*-stem nouns), *sunu* 'son' vs. *hand* 'hand' (*u*-stem nouns), etc. In some cases, however, the phonological shape of the vowel that appears after both heavy and light syllables is

the same as the one that still alternates with zero in a given paradigm (e.g., *wine* NomSg vs *wyrm* < **wyrmi* NomSg vs *wine/wyrme* DatSg). Suzuki (1996: 286) treats the dative singular ending *-e* (found in a certain class of nouns) as long because it usually appears as unresolved (that is, it is not treated as a single unit with a preceding short vowel), known as Kaluza's Law.

As can be seen, both accounts are synchronically opaque: <e> (< ***i**) NSg is synchronically indistinguishable from <e> (< ***ai**) DatSg. Fulk's and Kaluza's system of long vowels is not coextensive with that postulated by Bliss and Suzuki, but all analyses agree that Kaluza's Law worked at a very early stage of OE when there still existed a quantitative distinction between unstressed vowels in inflectional endings. Suzuki (1996: 285), similarly to Bliss (1967: §5 in app. B) and many others, argues that the short vowels that Kaluza's Law makes use of in resolution all go back to pre-OE ***i** and ***u**, which were subject to HVD based on the weight of the preceding syllable.

Irrespective of how a synchronic morphological account[18] can deal with OE compounding, we must conclude that a diachronic account can only resort to vowel length that was still contrastive in pre-OE. Let us formulate our rule for OE compounding in (25).

(25) OE compounding

Take A and B

if A ends in a consonant or a stressed vowel, put A and B together,

if A ends in an unstressed vowel,
(i) truncate the final vowel of A if it is long, put A and B together
(ii) if the final vowel of A is short, put A and B together

[18] Campbell (1959; §341, fn. 3; §348, fn. 2) claims that it is by analogy to *a*-stem nouns (that originally contained a short **a** in Germanic) that nouns of the *ō*-stem and the weak declension appear with no connecting vowel: i.e., *giefstūl* 'gift-throne' < **gefō*, *heortlēas* 'dispirited' < **hertōn*, *carlēas* 'free from care' < **karō*, etc. That the length of the stem final vowel may have had anything to do with truncation is left unexplored. However, the age of the compounds also seems to have been a factor. This conclusion is supported by Campbell (1959; §348, fn.2) himself who says that compounds with a connecting vowel, like *naf**u**gār*/*naf**e**gār* 'auger' are late, probably based on the nominative (*nafu* 'nave' < **nafō*) or genitive (*nafe*). This neatly dovetails with our analysis: the above old compound (*carlēas*) was formed when the final vowel was still long (and truncated), the new compound (*nafugār*) after shortening affected word final ***ō** (> **o** > **u**).

If we accept (25) and work backwards, as it were, we can now supply the missing disambiguating length marks on the final vowels of the examples in (24), see (26).

(26) Word-final (unstressed) inflectional vowels
winĕ, medŭ, cyricē, cwenē, ēagē, gumā, steorrā, scuccā

The disambiguated vowels in (26) only show reconstructed quantity, but tell us nothing about quality. This reconstruction is probably true for classical or at least non-late OE. If spelling is anything to go by, it seems that in word-final unstressed position in this period there is no short or long <i>, no long <u> for the high vowels, only long <a> exists for the low vowels and both long and short <e> for the (presumably) front (and/or central) mid region. It is equally possible that short <u> was actually a short **ɔ** (or **o** in traditional accounts, with <o> usually being treated an as allograph of <u>). This in turn means that there were no unstressed high vowels in word final position in inflectional endings.

Note, however, that there is one more surprise at the end of vowel-final words: *ende* does not undergo truncation (*endelēaf*), contrary to our expectations (***endlēaf*). Let us look at some etymological considerations. The word is a *ja*-stem noun: **andjas* > **andijas*. The ***i*** was responsible for umlaut. There is some controversy over what the pre-OE form of the word was (e.g., Campbell 1959, Hogg 2011): **andij* or **andī*. What is certain is that it cannot have been **andi* (**endi* after umlaut) because word-final ***i*** would have been deleted by HVD (***end*). It may, however, have been **andī*. We must, however, discard the possibility of **endij* surviving into OE. One piece of evidence comes from spelling: **endij* is expected as <endiġ>. The other is phonological: in OE there was no general monophthongisation of word-final **ij** <iġ> to a vowel spelt <e> (e.g., *īfiġ* 'ivy', ***īfe*). We must conclude therefore that *ende* must have been **endī*:

(i) the high front vowel caused umlaut,
(ii) it was not lost to HVD because it was long,
(iii) ***ij** must have undergone monophthongisation to ***ī** before the first written evidence appears, and
(iv) ***ī** must finally have undergone shortening to ***i** (*ende* is found with word-final <i> in very early manuscripts: *endi*),

(v) unstressed **i** is later shifted to a vowel spelt <e> in classical OE (the same change in melody affected the etymological short ***i** in **wini* > *wine* **winə**).

The shortening of ***ī** to ***i** (> **ə**) and HVD were in a counter-feeding relationship (the shortening comes too late, as it were, for *endi* to undergo HVD). Compounding treats *ende* identically to *winĕ* and *medŭ*. All this evidence triangulates pre-OE ***endij*/**endī* as very early OE *endĭ*, later OE *endĕ*. We can now extend (26), shown in (27).

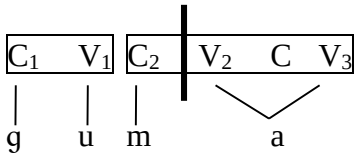
(27) Word-final (unstressed) inflectional vowels
winĕ, medŭ, endĕ, cyricē, cwenē, ēagē, gumā, steorrā, scuccā

This gives us the following word-final unstressed vowels for a stage of OE before which all inflectional vowels lost their distinctive quantity: **ŭ** (or **ɔ̆**), **ĕ**, **ē** and **ā**. We must reject Suphi's (1988) claim that there was no quantitative distinction in inflectional vowels. Phonology and morphology treat them differently, so they must be different. The quality of the vowels shown as <e> and <ē> must remain conjectural.

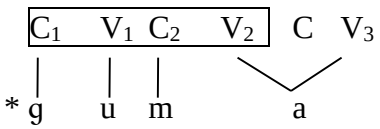
The data from OE compounding lends itself well to a templatic analysis. Compounding deletes a word-final long, but not a word-final short vowel. Long vowels are the size of an OE CVCV template (underlined) that is accessed by truncation: *cyricē, cwenē, ēagē, gumā, steorrā, scuccā* (of course, *ā = aa* = CVCV), see (28) for *guma*.

(28) OE *gumā* for purposes of compounding

(a) long vowels/diphthongs occupy two CV units lexically



(b) splitting of long vowels into two parts (ungrammatical)



As can be seen, the long vowel occupies two CV slots (28a). The association of a long vowel with two CV units is lexical. This length is coextensive with the OE template. A long vowel (or diphthong) cannot be cut in half by the template (see (28b)): *guma a. This is corroborated by the data we have discussed so far. Of course, an additional mechanism must explain the splitting in half of the C_2V_2 unit, but that must be disregarded now. One reason may be that the morphological parsability of the lexical item *guma* would have been compromised (after all, there are a number of OE words beginning with *gu*-).

5 Syllabic Sonorant Formation and the OE template

One phonological class of nouns that can offer further insights into pre-OE phonology is the class of words that contain a Consonant+Sonorant cluster that had come to stand word-finally as a result of various apocopation rules, such as **gr**, **fr**, **tr, tl**. This happened in the NomAccSg of *a*-stem masculine and neuter nouns. Let's have a look at (29) from recorded OE.

(29) Syncopation in *a-stem* masculine and neuter nouns

		MASCULINE			NEUTER			
		(a)	(b)	(c)	(d)	(e)	(f)	(g)
SING	NOM /ACC	*enġel* 'angel'	*fugol* 'bird'	*hefon* 'heaven'	*tungol* 'star'	*botol* 'house'	*wæter* 'water'	*bydel* 'beadle'
	GEN	*enġles*	*fugles*	*hefones*	*tungles*	*botles*	*wæteres*	*bydeles*
	DAT	*enġle*	*fugle*	*hefone*	*tungle*	*botle*	*wætere*	*bydele*
PLUR	NOM /ACC	*enġlas*	*fuglas*	*hefonas*	*tungol*	*botol*	*wæter*	*bydel*
	GEN	*enġla*	*fugla*	*hefona*	*tungla*	*botla*	*wætera*	*bydela*
	DAT	*enġlum*	*fu-glum*	*hefonum*	*tun-glum*	*botlum*	*wæterum*	*byde-lum*

In (29) a typical OE paradigm is shown exemplifying syncopation (or absence thereof) before vowel initial inflectional suffixes. The data in (29c), (29f) and (29g) (shaded) show absence of syncopation in those cases where the vowel is protected by the OE template (previously explained as absence of syncopation after a light syllable). In (29a), (29b), (29d) and (29e) in the boxes shown with the ragged lines the vowel that appears in the Nom Sg is syncopated, as expected

(the traditional explanation being that the syncopated vowel is preceded by a heavy syllable). The nouns in (29a) and (29b), as well as (29d) and (29e) appear to be the same, at least synchronically at some stage of recorded OE. However, these nouns looked somewhat different in pre-OE (shown in (30)).

(30) Syncopation in bi-syllabic *a-stem* masculine and neuter nouns in pre-OE

		MASCULINE			**NEUTER**			
		(a)	(b)	(c)	(d)	(e)	(f)	(g)
SING	**NOM/ACC**	*aŋgil*	*fugl*	*hevun*	*tuŋgl*	*botl*	*wæter* [19]	*budil*
	GEN	*aŋgil-*	*fugl-*	*hevun-*	*tuŋgl-*	*botl-*	*wæter-*	*budil-*
	DAT	*aŋgil-*	*fugl-*	*hevun-*	*tuŋgl-*	*botl-*	*wæter-*	*budil-*
PLUR	**NOM/ACC**	*aŋgil-*	*fugl-*	*hevun-*	*tuŋgl-*	*botl-*	*wæter-*	*budil-*
	GEN	*aŋgil-*	*fugl-*	*hevun-*	*tuŋgl-*	*botl-*	*wæter-*	*budil-*
	DAT	*aŋgil-*	*fugl-*	*hevun-*	*tuŋgl-*	*botl-*	*wæter-*	*budil-*

The data in (30) show a reconstructed piece of synchronic pre-OE after the loss of the Germanic NomAccSg suffixes (data where '-' appears should read as 'followed by a vowel in the inflectional suffix'). As can be seen OE *enġel* and *fugol* show a different state of affairs in pre-OE: *enġel* is etymologically an original bi-syllabic stem, as opposed to originally mono-syllabic **fugl*, **tungl*, **botl*. This paradigm was both reduced and expanded to the one shown in (29) after the operation of the following processes:

(i) syncopation (it operated after heavy syllables, but not light ones, before a vowel-initial suffix), reducing bi-syllabic nouns with an initial heavy syllable (with a consonant+sonorant cluster: **aŋgil-*) and monosyllabic nouns with a heavy root syllable (with a consonant+sonorant cluster: **tuŋgl*) to the same shape: VCCCV- (*e**nġl**es* = *tu**ngl**es*) (shown in doubly framed boxes above), against which worked

(ii) syllabic sonorant formation (or epenthetic vowel insertion) that applied to consonant+sonorant clusters word-finally: **tuŋgl* > *tung**o**l* (with an epenthetic vowel, or, alternatively, syllabic sonorant, but

[19] I take *wæter*/*weter* to represent the development of a bi-syllabic stem (cf. Fulk 2010).

not **aŋgil*, where OE *enġel* shows the direct continuation of ***i**, itself the cause of *i*-mutation). This epenthetic vowel is found as <o> after back vowels, and as <e> after front vowels. The exact phonetic interpretation must remain conjectural at this point.

What remains stable in the two paradigms in (29) and (30) is the absence of syncopation in bi-syllabic nouns with a light initial syllable (shaded). I interpret this as the conserving effect of the OE template (explained in Section 4). Note that the presence of syncopation in (29e) shows that the stem must have been a monosyllabic heavy stem ending in a consonant+sonorant cluster originally (**fugl*, **botl*, shown with ragged lines above). In bi-syllabic stems with a light initial syllable, followed by another light syllable, there is no syncopation (as in (29c), (29f) and (29g)).

A speaker whose synchronic grammar contained the data in (29) would probably have reanalysed *enġel* and *tungol* as having the same underlying structure in either of these directions: *enġel*/*tungol* (with an underlying VCCVC stem undergoing syncopation when followed by a vowel) or *enġl*/*tungl* (with an underlying VCCC stem to which syllabic sonorant formation applies word finally, but not before vowels). Neither of these synchronic reanalyses is true to the etymological state of affairs, of course.

Now, all this is relevant to the OE template in a direct way. Neuter nouns formed the NomAccPl with ***u** (< ***ō**). The phonology should have been obvious: ***u** was lost after a heavy syllable, but retained after a light one (reinterpreted here as: 'if it was able to attach to a CVCV template'), see (31) below.

(31) Neuter *a*-stem nouns in pre-OE (all data reconstructed)

		NEUTER				
		(d)	(e)	(f)	(g)	(h)
SING	**NOM/ACC**	*tuŋgl*	*botl*	*wæter*	*budil*	*hæƿfud*
	GEN	*tuŋglæs*	*botlæs*	*wæteræs*	*budilæs*	*hæƿfudæs*
	DAT	*tuŋglæ*	*botlæ*	*wæteræ*	*budilæ*	*hæƿfudæ*
PLUR	**NOM/ACC**	***tuŋglu***	***botlu***	***wæteru***	***budilu***	***hæƿfudu***
	GEN	*tuŋglā*	*botlā*	*wæterā*	*budilā*	*hæƿfudā*
	DAT	*tuŋglum*	*botlum*	*wæterum*	*budilum*	*hæƿfudum*

In all of these examples, extended with **hæþfud*, we can see that pre-OE ***u**, when preceded by a heavy syllable (as in (31d) and (31e)) or a stretch of phonological material coextensive with the CVCV template (as in (31f) and (31g)), should be lost in OE, save the word **hæþfud**u*** (31h), where ***u** attached to the second vocalic slot in the CVCV template, thus escaping deletion. This form is expected to appear in recorded OE, which really does (as Anglian *hēafodu*). In earlier accounts, this form has been interpreted as the result of analogical reanalysis from earlier *hēafod* or *hēafdu*, which also occur in the texts (sometimes alongside each other), showing the result of either apocopation or syncopation (as explained above).

All in all, *hēafodu* has been analysed too often as an irregular form phonologically. Our discussion relying on the OE CVCV template has tried to shed light on the possibility that this is not case, that it really does show the result of a short word-final ***u** not deleted after a light syllable (**hæþfudu*). The analysis I adopted here claims that the word-final ***u** was saved from deletion because it attached to a CVCV template. We will see that this template must really be regarded as a very special protective environment, as is the word **hæþfudu* itself, where we have two ***u**'s one after the other, both of which were resistant to decomposition to schwa. In Section 4.5 we saw that the melodic decomposition of **u** > **ə** must have happened at a much later stage than the ***i** > **ə** change. This schwa was affected by syncopation rather early, giving forms like *enġles/enġle* (< **enġilæs*), which are never encountered as *enġ**e**les/enġ**e**le* (as opposed to *hēaf**o**du*), etc., which, even if they are found, are never taken as real phonological entities with the word-internal <e> standing for **ə**, but rather as late forms showing scribal influence (possibly the result of copying from Anglian sources). We will pick up on this again in Section 8.

The rest of the neuter NomAcc plurals in (31) should all give (phonologically) *tungl, botl, wæter, bydel*, and, of course, *hēafodu*. Historic ***u** is lost because it failed to attach to a CVCV template (save the word *hēafodu*). Whether forms like *tungl, botl* were ever mono-syllabic is extremely difficult to determine, but e.g., Fulk (2010) claims there is convincing evidence that they scan as mono-syllabic in early poetic texts, whereas originally bi-syllabic forms never do. Whatever the original situation may have been, later developments show that forms like *tungol* behave as bi-syllabic. Where such epenthetic vowels developed is fraught with difficulties (cf. Fulk 2010).

Note that the real structural parallel to *hēafodu* should be (the hypothetical neuter noun) *enġelu* (< **angilō*), with a heavy initial syllable followed by a light syllable containing ***i** (reduced to **ə** by early recorded OE) followed in turn by **u**. This hypothetical *enġelu* should be found as either *enġlu* (given that the reduction of ***i** to **ə**, and its subsequent, was more advanced than that of ***u**), or *enġelu* (if syncopation was optional). The existence of forms like *enġelu* would prove that *hēafodu* also shows the expected phonological development. It is exactly these types of nouns that we turn to next.

6 West Mercian as a conservative dialect of OE

The early ninth century gloss to the Vespasian Psalter composed in the West Mercian dialect of Anglian is surprisingly conservative and offers a rare glimpse into (pre-) OE. This dialect was extensively analysed by Fulk (2010), and compared to other extant texts (such as those written during the time of Aelfric, and those of Northumbrian origin). In this dialect of Anglian HVD is distributed on a strictly etymological basis, not disturbed by syllabic sonorant formation (discussed above) and the obscuring of the difference between etymologically bi-syllabic stems with a heavy initial syllable and monosyllabic stems with a heavy initial syllable. The data are taken from Fulk (2010) and involve forms that would have had an etymological word-final **u**, such as the NomAccPl of neuter nouns, and NomSg of feminine nouns, see (33) for some examples.

(33) NomSgFem, and NomAccPl of monosyllabic neuter nouns with a heavy initial syllable followed by a light syllable (originally monosyllabic with a heavy initial syllable after HVD, before syllabic sonorant formation)

frōfur ‘comfort’ < **frōfru*, *ātur* ‘poisons’ < **ātru*, *bēcen* ‘signs’ < **bēknu*, *fācen* ‘crimes’ < **fāknu*, *wēpen* ‘weapons’ < **wēpnu*, *wuldur* ‘glories’ < **wuldru*, *wundur* ‘wonders’ < **wundru*, *hreġl* ‘garments’ < **xreglu*,[20] etc.

[20] For Fulk (2010, §3.8) *hreġl* NomAccPl ‘garments’ is an original monosyllabic noun with a light stem. This is probably because it originates in **hreglu* (later affected by palatalization of ***g/ɣ**), and for Fulk branching onsets are syllabified with the following vowel (**hre|glu*, with ‘|’ showing the syllable boundary here). However, if the stem syllable is light (and for Fulk it does seem to be), it is difficult to see why plural ***u** was deleted after a light syllable. HVD shows that the syllabification is obviously **hreg|lu*, producing a heavy initial syllable. This again shows that branching onsets were not syllabified in the same way as they (probably)

All these nouns have an etymological heavy stem ending in a consonant+sonorant cluster, showing the signs of syllabic sonorant formation (e.g., *ātur* < **ātr* < **ātru*). These nouns offer a remarkable insight into the early life of this class of neuter nouns, most of which developed analogical *-u* in West Saxon, e.g., *wundru*, *wǣpnu*. To the class of well-behaved plural neuters can be added feminine nouns with the same historical vowel: *frōfur* 'comfort' <**frōfru*. In stark contrast to this class stands the class of etymologically bi-syllabic nouns with a heavy initial syllable, where the historical ***u** is retained (see (34) below).

(34) Etymological ***u** in di-syllabic forms (NomAccPl of neuter *a*-stems)

calferu 'calves', *hēafudu* 'heads', *lomberu* 'lambs', *nētenu* 'cattle', *ēadiġu* 'blessed', *forċerredu* 'corrupted', *īdelu* 'idle', *īrenu* 'iron', *lȳtelu* 'little', *ōðeru* 'other', *wōēriġu* 'weary', etc.

The paradigms of the two types of nouns in the case of a neuter *a*-stem class would have differed only in the NomAccPl in this conservative dialect of Anglian, see (35).

(35) Comparison of the paradigms of the types of nouns shown in (33) and (34)

		NEUTER			
		(a) (for (33))		(b) (for (34))	
		obst+son		*obst+son*	*obst+obs*
SING	**NOM/ACC**	*ātur* < **ātr*	=	*nēten* <**næƿtin*	*hēafod* < **xæƿvud*
	GEN	*ātres*	=	*nētnes*	*hēafdes*
	DAT	*ātre*	=	*nētne*	*hēafde*
PLUR	**NOM/ACC**	***ātur*** < **ātr*	≠	***nētenu*** < **næƿtinu*	***hēafodu*** < **xæƿvudu*
	GEN	*ātra*	=	*nētna*	*hēafda*
	DAT	*ātrum*	=	*nētnum*	*hēafdum*

would be in Modern English. This also shows some of the unease surrounding the notion of syllables as applied to HVD/HVA. Of course, in the case of *hreġl* syllabic sonorant formation does not apply because the result of the palatalization of ***g/ɣ** was (probably) reinterpreted as part of a diphthong, and in some dialects was lost, leading to compensatory lengthening of the preceding vowel, or simply the diphthong underwent mono-phthongisation: *hrǣl* (cf. Hogg 1992, §7.71).

(35) shows the paradigms of neuter *a*-stem nouns with an etymologically heavy first syllable followed by either an etymological obstruent+sonorant cluster (35a) or a consonant + vowel (***i/u**) followed by another consonant (usually a sonorant, but sometimes an obstruent, as in the often repeated example of *hēafod*, in (35b), with the thick line marking the division). Note that, synchronically, at the surface at least these two types of nouns would only have differed in NomAccPl ((35a) would have had no *-u* in this dialect of Anglian, (35b) would have preserved this etymological *-u*). The vowel between the consonant and the sonorant in (35a) is due to syllabic consonant formation (*ātur* < **ātra* NomAccSg, **ātrō* NomAccPl), the vowel in the same position in (35b) is original (*nēten* < **næƿtin, hēafod* < **hæƿfud*). A distinction between two such paradigms resting on the presence vs absence of an etymological vowel between the first syllable of the stem and the suffix *-u* in the NomAccPl would have been exceedingly prone to analogical reanalysis (taken into account that syllabic sonorant formation would have taken away any further differences synchronically, cf. *ātur* vs. *nēten*). And this is exactly what we find in the various dialects (original plural *hēafudu* reinterpreted as either *hēafud* (a formation also occurring in the Vespasian Psalter, as well as in South Northumbrian) or *hēafdu* (in West Saxon)).

The implications of this conservative Anglian dialect must be emphasised again: if *hēafodu*/*nētenu* are not original, it would be impossible to explain why they should have taken a form like this in NomAccPl (and not in any other case) if they were otherwise declined identically to *ātor/bēcen*. This plural form is simply impossible to extract from the rest of the attested forms.

Fulk (2010) discusses the exceptions to this exceptional piece of conservatism of Anglian phonology (35), none of which are material to the observation that phonologically it is this dialect of Mercian (as found in the *Psalter*) that preserves etymological ***u** where it ought to *and* loses it where it ought to. Di-syllabic nouns with a light initial syllable followed by another syllable are also well-behaved (with some minor exceptions), as are monosyllables with an original heavy stem, see (36) below.

(36) Plural of di-syllabic nouns with a light initial syllable

ġuguð 'youths', *meġen* 'powers', *yfel* 'evils', *miċel* 'large', *moniġ* 'many' (all bi-syllabic), etc.

The historical suffix **īġ* is found as <iġ> in this dialect. The extraordinary conservatism shows that the suffix contained a short vowel (**ij**) at the time of composition of the glosses: NomSgFem *ēadiġu* (rather than *ēadiġ*). Note that words like NomSgFem *hefiġ* do not prove that the vowel was either long or short, both would have resulted in *hefiġ*. In the templatic approach the vowel **u** has no place to attach to, either because the preceding vowel is long (occupying two CVCV positions) or because the vowel is short (and is also preceded by another short vowel in an open syllable, again occupying two CV slots): both would explain the absence of **u** in *hefiġ*.[21] The exceptions to this pattern can be reasonably explained by resorting to analogy (Fulk 2010).

As remarked above, the two near-identical paradigms presented in (35) beg for analogical reinterpretation. This is exactly what happened across the OE dialect continuum. In short, some dialects reinterpreted etymologically bi-syllabic stems like *nēten/hēafod* as synchronically mono-syllabic *nētn-/hēafd-* before vocalic endings (with syllabic sonorant formation taking care of forms where no vowel followed, as in *nēten*, and (probably) phonotactic constraints ensuring that *hēafd* surfaces as *hēafod*). This is what we find in late West Saxon: *nīetnu*, *nīetnes, hēafdu, hēafdes,* etc. We must conclude that it was syncopation of earlier *nīetenu* to *nīetnu* that ushered in the reinterpretation of original bi-syllabic stems and monosyllabic (*nētn-/hēafd-*). After the syncopation of <e> **ə** before <u> in *nīetnu* the two paradigms were merged for good.

In the Vespasian Psalter syncopation before <u> is not yet generally found in words like *nētenu*. It is easy to see that Saxon would now also produce forms like *hēafdu.* We must also conclude that syncopation revealed the loss of the rule of HVD as a synchronic rule (forms like *hēafdu* were now well-formed). In the Vespasian Psalter we also find forms like *hēafod* for NomAccPl. In a dialect where syncopation before <u> had not yet taken place, but where HVD

[21] The question of the length of the vowel in <iġ> is bound up with the question of secondary stress, retention of length under such stress and the presence of syncopation affecting the short vowels (originating in long vowels), cf. Hogg (1992, §6.32). All in all, in this dialect the vowel must be analysed as short, otherwise *ēadiġu* would be inexplicable in a dialect in which HVD depends purely on phonology.

is (or was) fully operational, this form is somewhat mysterious, but it can be explained as conforming to etymologically well-formed plurals like *weorud* 'troops', where the plural suffix ***u** was regularly lost after two light syllables. Still we must conclude that *hēafod* (Pl) is phonologically unusual in this conservative dialect: short ***u** should not have been lost after a light syllable, but from the point of view of morphology it reduces the number of morphosyntactic contrasts. Alternatively still, they may be scribal slips of the hand (even the best scribe can nod off at times).

The various recorded forms offer a window into a number processes that happened at different times in different dialects leading to different analogical solutions (Fulk 2010). The form *hēafd* is not on record in any texts in any dialect. The reason for this seems that HVD did not survive as an active rule (in any dialect) after syncopation happened, which may just be a diachronic coincidence (after all the cluster **ft** is well-formed in OE in general, as in *hæft* 'prison').[22]

The notion of the CVCV template can handle the data in a straightforward manner: if **u** has no anchor point on the template, it is deleted. The conclusions from have already been argued for: what is interesting at this point is that the gloss of the Vespasian Psalter offers evidence for this special object in pre-OE phonology: the CVCV template that could save word-final short high vowels from deletion. Let us look at some examples for pre-OE (see (37)).

(37) The workings of the pre-OE CVCV template (all data reconstructed to the right of '<')

(a) b ē k e n < **b e e** k n ~~u~~ (b e $_c$ e k $_v$ n u)[23]

(b) w e o r u d < **w e r u** d ~~u~~ (w e r u d u)

(c) n ē t e n u < **n e e** **t e n u** (n e $_c$ e t e n u)

(d) h ē a f o d u < **h æ ƿ** **f u d u** (h æ $_c$ ƿ f o d u)

(e) ē a d i ġ u < **æ ƿ** **d i g u** ($_c$ æ $_c$ ƿ d i g u)

[22] Facts support the notion of word-final devoicing in OE in the class of fricatives (the distribution of voiced and voiceless fricatives being allophonic). It may well have been the case that, similarly to Modern English and many of the Germanic languages, the opposition in the class of stops was that between fortis and lenis, lenis being devoiced word-finally, hence <hēafd> **hæƿft**.

[23] The bracketed representation translates into the usual practice of CV phonology in rendering non-pronounced consonants as 'c', unpronounced vowels as 'v'. Of course, all phonological material is reduced to strictly alternating CV units in this framework.

(f) h e f i g < **h e f i** g ~~u~~ (h e f i g u)
(g) s c i p u < s **k i p u** (s_v k i p u)
(h) w ō ē r i ġ u < **w œ œ** **r i g u** (w œ $_c$ œ r i g u)
(i) w i n e < **w i n i** (w i n i)
(j) s u n u < **s u n u** (s u n u)
(k) h e f ī ġ < h e **f i i** g ~~u~~ (h e f i $_c$ i g u)
(l) b e n d < **b a n** d ~~i~~ (b a n_v d i)
(m) h r e ġ l < h **r e g** l ~~u~~ (h_v r e g_v l u)
(n) **h r e ġ l u < * * h **r e g l u** (* * h_v r e g_v l u)

The examples in (37) show how the CVCV template in pre-OE could prevent ***i/u*** from deletion (if the vowels found an anchor point, they escaped deletion), but if the short high vowels failed to link to a slot on the template, they were deleted (shown with strikethrough). Given our formulation of the OE template in (11), the first vowel of the CVCV template must link to a pronounced vowel (hence the absence of the template's second iteration in **bēk$_v$nu* (the vowel between **k** and **n** has no pronunciation, shown with 'v').

One of the empirical reasons for introducing the template was that length (that is, shortness) itself was not enough to explain deletion as some short high vowels persisted into recorded OE, whereas others (of the same etymological origin) were deleted, and the only plausible conclusion to be drawn is that this must have depended on structural (i.e., skeletal) conditions. The structural conditions are impossibly awkward and theoretically cumbersome to formulate in traditional syllabic terms. To remedy this, the problem has been analysed from the point of view of CV phonology where syllable structure does not underlie phonological processes (it is secondary/derived), the underlying phonological skeleton is made up of CV units. We have suggested that the deletion of ***i/u*** must have depended on whether they could link to the second position of a CVCV template. If such an association was possible, the vowels persisted into recorded OE spelt as <e> and <u>, see (37c) to (37e), and (37g) to (37j). If no such association presented itself, the high vowel was lost (as in (37a), (37b) and (37f)). Note that in (37f) the word-final vowel could not attach to a CVCV template because no such template was available (the first iteration of the template was already coextensive with a CVCV span). See (37c) to (37e), as well as (37h) for words that contain a number of iterations of the pre-OE CVCV template.

Long vowels and diphthongs are lexically two CV units long, as in (37a) and (37h), for example; vowels followed by a coda consonant, as in (37l), also occupy two CV slots (**bandi* = *ban$_{v}$di). It has to be borne in mind that long vowels (and diphthongs) occupy two CV units lexically (something that cannot be overridden), hence (37k) must be represented as hefiig, not hefi ig, with the first (stressed) vowel not partaking in the template.

Contrast now (37f) and (37k): none of these words prove the length of the vowel in <iġ>: the word final ***u** would have been lost in either case. It is (37h) that proves that the suffix <iġ> contained a short vowel (**ij**) with ***u** having been preserved after it. The often discussed *hēafodu* is no longer special, it fits the pattern of conservative West Mercian at a time when pre-OE HVD was in fact templatic (structural) deletion dependent on the availability of a CVCV span into which ***i/u** could anchor. We do not have to resort to the weight of syllables, it is CVCV spans that have to be isolated (long vowels and diphthongs already occupy a CVCV span lexically, a 'closed syllable' in traditional syllabic theories, as in (37l), also translates as a CVCV span in terms of CV phonology). Examples such as (37m) show that branching onsets (like pre-OE **gl**) were treated by OE phonology as consonant clusters (as witnessed by the impossibility of creating a CVCV span across them that could have saved ***u** from deletion), see (37n).

7 Heavy syllables and syncopation

Present in all accounts of HVD is the notion that pre-OE ***i/u** was deleted before heavy syllables (those that used to be heavy by virtue of containing a long vowel in pre-OE, and those that were closed by a consonant), but not before a light syllable, so *hēafde/nētne* (<-*e*> **ə** < ***æ** < ***ai**), *hēafdes/nētnes* (<-*es*> **əs** < ***as**), *hēafda/nētna* (<-*a*> **ɑ** < ***ā** < ***ɔ̃**), *hēafdum/nētnum* (<-*um*> **um** < ***om**) vs *hēafudu*/*hēafodu* (<-*udu*> **udu** < *-**udu**) and *nētenu* (<-*enu*> **ənu** < ***inu**), which show no syncopation of ***i/u** before a light syllable. This dichotomy affects disyllabic stems with a heavy syllable followed by a light syllable only (as *hēafod/nēten*), stems composed of a light syllable followed by another light syllable are unaffected (as discussed earlier): *bydele*, *bydela*, *bydelum*, etc. (***bydles*). This is due to the fact that the second vowel in such stems is shielded from syncopation by virtue of being part of a CVCV span, as in *bydele*.

According to most recent accounts (e.g., Fulk 2010), the failure of syncopation is paralleled by the mechanism of resolution under secondary stress,

regulated by Kaluza's Law, operating in ancient OE poetry: *-wine* counting as one (resolved) position in Beowulf, for example, as opposed to *-winum*, *-wina*, etc., counting as two positions in the four positon grid of an Old English poetic line, with the final syllable of *wine* originating in an etymologically light syllable (**wini*), as opposed to *winum*, *wina* where the final syllable is etymologically heavy (**winum*, **winā*). Kaluza's Law can only be observed under secondary stress in Beowulf (and even then not perfectly), possibly showing the remnant of a more general rule that originally worked under primary stress as well. Although the parallels between the presence of resolution and absence of syncopation before etymologically heavy syllables are often cited, it is not clear what is supposed to constitute the exact parallel between the two processes: Kaluza's Law regulates the number of positions in a poetic line (ensuring that *wine* counts as one, *wina* as two), whereas the absence of syncopation in *hēafudu*/*nētenu* depends on the weight of the last syllable. One is part of a poetic tradition (which must have had its phonological basis at one point), the other seems to be regulated purely by phonology (a heavy syllable produces syncopation, a light one does not).

The problems do not end here, however. Why should the weight of syllables be conducing to syncopation? If syncopation is observed before a heavy syllable (and its absence before a light syllable), this does not automatically warrant the introduction of syllable weight into the mechanism regulating syncopation. Syncopation, after all, is a vowel to vowel relationship (with a singleton intervening consonant), still observed in English (e.g., *family*, *history*, *veteran*). It is difficult to see how syllable weight could have contributed to syncopation (happening in *hēafdum* < **hēaf***u***dum**, but not in *hēaf***u***du*), and not only for theory-internal reasons (with the notion of the syllable lacking in CV phonology).

If we take a closer look at the heavy syllables that lead to syncopation in (recorded) OE, we again see a disparate set of environments: the inflectional syllables are heavy either by being closed by a word-final consonant (*-um*, *-an*, *-es*, etc.) or by having an etymologically long inflectional vowel (<*-a*> **ɑ** < ***ā**, <*-e*> **ə** < ***æ**, etc.). But the distinctive length in the unstressed vowels, in almost all accounts, had been lost before (or shortly after) recorded OE. That is, the length of the vowels was a matter of pre-OE. Yet, the presence

of syncopation persisted into recorded OE even after loss of length of the unstressed inflectional vowels: *hēafde, hēafda*,[24] not *hēafode, hēafoda, hēafodes* (even if such forms do occur in late West Saxon, they are usually regarded as late analogical forms modelled on Anglian, based on phonologically regular *hēafodu*).

So in conclusion, we have syncopation happening before heavy syllables, some of which are not even heavy in OE (those that lost their length). This in turn means that the appeal to the weight of syllables loses its attraction as an explanation (at least in recorded OE): now *hēafde, hēafda, hēafudu* all end in a light syllable (but behave differently). This again means that any account of syncopation based on syllable weight must explain why consonant final inflectional suffixes always cause syncopation (*hēafdes, hēafdum*). Now the appeal to syllable weight as an organising principle is out of reach (light syllables sometimes do cause syncopation, sometimes they don't, whereas syllables closed by a consonant always do). The relationship between syllable weight and syncopation remains obscure.[25] The line of demarcation must lie somewhere else.

8 Old English foot structure and its problems

It seems certain at this point that what appeared to be a dubious and contested piece of phonological evidence (*hēafudu*) in so many analyses must be taken for

[24] Of course, it is possible that the results of syncopation were lexicalised by recorded OE times (in other words, there was simply no vowel to be syncopated in words like *hēafdes;* syncopation became categorical). In terms of CV phonology, the historical vowel ***u** in *hēafdes* (< *xæɒf**u**dæs) is an unpronounced vowel couched between two consonants having no melodic specifications (a 'v'). Still, the question remains why syllable weight was conducive to syncopation in pre-OE, a period in which it was still a matter of phonology (as opposed to OE where it is most certainly a matter for the lexicon, not phonology).

[25] Modern English offers a very interesting parallel with pre-OE as regards syllable weight and its relation to syncopation. In *radio*, for example, syncopation is unusual: rέjdɪjəw/rέjdəjəw ~ ***r**έjdjəw. This seems to be a correlate of syllable weight with **əw** (or **əʊ** in more traditional transcriptions) constituting a heavy syllable. However, this is where the similarities end. In *radiant* (with **ənt** forming a heavy syllable) syncopation is widely attested: rέjdəjənt/rέjdɪjənt ~ rέjdjənt (~ rέjdʒənt). The line of division between **əw** and **ənt** is a lexical property of vowels: stress. The two diphthongs in *radio* are both stressed (this is a lexical property of these vowels): r**έj**dɪj**ə́w**. The difference between **ɛj** and **əw** is that the former has been earmarked (by a mechanism that is not relevant there) for bearing the tone (which is a rhythmic phenomenon), giving r**έj**dɪjəw (cf. Szigetvári 2020). The similarities between **əw** and **ənt** are only superficial, syllable weight is not their unifying feature (as a matter of fact, there is no such feature here). Accounts of OE that lump long vowels/diphthongs (*ǣ < *aj) and short vowels + coda consonant(s) (*æs) together seem to be missing a point.

what it is: original absence of syncopation before a short vowel (in a light syllable, cf. again Fulk 2010, as well as Bermúdez-Otero 2005). Early texts do not show any reliable evidence that the penultimate vowel in *hēafudu* is due to analogical undoing of earlier syncopation. If it were, we would also like to encounter the same reverse of syncopation before the other vowels: *hēafude, hēafudes, hēafuda, hēafudum.* These forms, however, are not on record in the early texts (some of these may appear in the later texts, especially the genitive singular and dative, but then these are best viewed as analogical orthographic reformations, based on Anglian texts or declensional classes were the unsyncopated vowel may have been justified, cf. Goering 2016).

It appears that in recorded OE there was no possibility for restoring the pre-historic vowel before the vocalic endings in *hēafdes, hēafde,* etc. because the declensional paradigm of words like *hēafod* was too 'worn down' to allow for this restoration. As a matter of fact, we see from the later developments the relaxing of the constraints regulating syncopation: *hēafudu* is found as *hēafdu* in West Saxon, for example, a form which is (possibly) best explained as the result of syncopation after HVD had run its course (as opposed to Anglian *hēafud,* which seems to be the result of morphological levelling, based on forms like *weorod*). What transpires from this is the special status of sequences like **-ĭCŭ* (> *-ĕCŭ,* e.g., *lȳtelu, nētenu*) and **-ŭCŭ* (> *-ŭCŭ,* e.g. *hēafudu*).[26] These sequences resisted syncopation for longer than any other sequences of vowels and/or syllable types (**-udæs, *-inæ* < **-inǣ* < **-inæj, *-udā, *-udum,* etc. giving *hēafdes, nētne, hēafda, hēafdum*).

The unity of CVCV sequences has reasserted itself in a number of phonological regularities of (pre-) OE: the second vowel in such sequences is resistant to syncopation (*bydele,* rather than ***bydle*). HVD deletion treats the CVCV sequence as an object of phonological integrity, deleting ***i/u** outside this domain (**werudu* > *weorod*). What's more, we have seen that the high vowels are protected from apocopation if they attach to the second positon of such a CVCV sequence (**fatu* > *fatu*, **wini* > *wine*, **hēafudu* > *hēafudu* vs **wordu* > *word, *færeldu* > *færeld*). We have also seen that the high vowel in the first (unstressed) position of the CVCV sequence failed to undergo syncopation if followed by a high vowel in the next syllable (*hēafudu* vs *hēafda, hēafdes,*

[26] The other two combinations of high vowels do not seem to be on record (as traditionally assumed for this stage of the language), which must be a diachronic coincidence: **-ĭCĭ* and **-ŭCĭ.*

hēafde < **hēafuda*, etc.). All this is difficult to explain if we do not accept the special status of CVCV sequences. We claim the special status of these sequences to originate in a templatic constraint of OE, one that is centred around a CVCV template.

Perhaps the term 'template' as such has not been used as an organising principle in OE, but there have been attempts to find such a grouping. What follows is not intended to be an exhaustive coverage of the ideas, but it seems the organising principle has been sought at the level of the syllable and the foot. Keyser and O'Neil (1985: 4–12) formulate their principle based on moras (assuming that short vowels carry one mora, long vowels two, and coda consonants a mora each) arriving at the principle that groups moras into binary, left-headed quantity sensitive feet. The equivalence of two light syllables to a heavy one is easily captured in this approach. Hogg (2011: 222) rephrases the rules in terms of 'rhythmemes' along very similar lines. Dresher and Lahiri (1991) develop the notion of the Germanic Foot to be able to capture a number of Germanic processes, including OE and Gothic. The Germanic Foot can be criticised from a number of perspectives, from its unusual character cross-linguistically to its inability to capture a number of OE processes (Hayes 1995, Starčević 2013), but the underlying idea is the shared equivalence of a light syllable and another syllable to one heavy syllable (in short, *word* and *weorod* both constitute a foot, the historical inflectional short vowel ***u** (sitting in a light syllable), however, was incapable of hosting its own foot and was accordingly deleted: **wordu*, **werudu*). The same idea has been viewed to underlie 'resolution' (and its absence) in secondary stressed ictuses in Beowulf (known as Kaluza's Law). A somewhat simpler foot type is suggested by Idsardi (1994) who claims that an optimal (closed) foot weighs *exactly* two moras. This means that an ideal full ('closed') syllable like *wer* constitutes an ideal closed foot (weighing two moras), so does *wine* (weighing two moras), but not *werod* or *cyning*, which are less ideal because the foot (based on resolved syllables) weighs more than two moras (with *weord* weighing 3 moras and *cyning* 4 moras, not counting the intervocalic onset consonant). Idsardi's approach obviously captures well the idea that the minimal size of OE lexical words is two moras at the level of the syllable (***spræ*, for example, falling short of this requirement), but the insistence on feet weighing exactly two moras makes it necessary for the addition of some cumbersome mechanisms.

Cyning, for example, a word of unproblematic phonological makeup and history in OE, is first footed as [cy[ning] with *-ning* being footed into a unit, but not [cyning] (or [cynin<g>]), because that would weigh more than exactly two moras. After this cycle, the initial degenerate (subminimal) open foot ([cy-) is merged with the second one yielding [cyning] (Idsardi 1994: 526). This merging is a necessary patch up mechanism because otherwise [cy- would be allowed into the inventory of OE syllable (foot?) types. Recall: there are no lexical monosyllables of this structure, and, accordingly, no feet of this kind.

This is not the end of the account, as Idsardi claims that feet weighing more than two moras are only allowed in initial syllables of words (*lēoht, fēng*, *word*), all other feet must be exactly bi-moraic. To salvage some parts of the account he must allow final-consonant extrametricality into the mechanism. Even granting this, it is not immediately obvious why *cyning* is footed as it is. If <g> is extrametrical, the second syllable (and foot) weighs two moras (-in<g>). But then if resolution is also part of the mechanism, ordering must be imposed on footing: extrametricality comes first, resolution second. First, <g> is designated as extrametrical, yielding an 'ideal' heavy syllable of two moras (-in<g>), which is footed accordingly as an ideal foot weighing two moras (..[in<g>]). Note that having resolution designating a foot after marking the last consonant as extrametrical would be impossible ([cynin<g>]) (given the commonly entertained constraints) because such a resolved foot would be too heavy, weighing 3 moras.

This ushers in serialism, and begs the question of why such an elaborate mechanism is needed in the first place. We don't see any reason why *wine* and *fæt* (weighing the ideal two moras) would be more 'ideal' than *word, weorod, lēoht, fēng, cyning* (all weighing more than two moras).[27] Some of these can be salvaged by extrametricality (*word* and *werod*, but not the rest). There is no phonological evidence for their unusual behaviour or structure, apart from theory internal considerations. What's more, extrametricality must be suspended

[27] The underlying problem with this analysis is that we do not see why *cyning* is lumped together with *lēoht* or *fēng*. The latter two are problematic but for different reasons than those propagated by the analyses that rely on ideal and less ideal feet type: having a long vowel or diphthong before a non-coronal cluster (**xt** and **ŋg**) *is* marked cross-linguistically (as opposed to *word*). Compared to *lēoht* or *fēng*, *cyning* is unremarkable (having a short vowel followed by a consonant cluster). The cited analyses, however, do not single out *lēoht* or *fēng* as problematic to the exclusion of *word* or *cyning*.

for monosyllabic words ending is a single consonant, such as *fæt* (otherwise the word is subminimal, weighing 1 mora only: *fæ<t>*).

A new approach, one still heavily reliant on consonant extrametricality, is offered by Goering (2016). In his analysis the explanation for HVD lies in pre-OE at a time when long vowels in inflectional suffixes had not yet shortened. Footing happens from left to right, grouping syllables into (strictly) bimoraic units (feet), with final feet being distressed (2016: 178). This gives us the following parsing for the various inflectional forms of *hēafod*, in (38), where all heavy syllables host their own feet.

(38) Feet in *hǽafud-*
(a) *[hǽa] [fúd] Nom Sg > *hǽafod*
(b) *[hǽa] [fúdu] Nom Pl > *hǽafodu*
(c) *[hǽa] **fu**[28] [dǽ] Dat Sg > *hǽafde*
(d) *[hǽa] **fu** [dǽs] Gen Sg > *hǽafdes*
(e) *[hǽa] **fu** [dā́] Gen Pl > *hǽafda*
(f) *[hǽa] **fu** [dúm] Dat Pl > *hǽafdum*

In (38) the various inflectional forms for *hēafod* are shown with the historical vowels in the inflectional suffixes. The high vowels are deleted when unfooted (shown with strikethrough in (38)) giving the attested forms of OE. This explains rather straightforwardly the known set of data, as well as that in (39). We will not discuss the issue of distressed final feet (we will take it for granted here, as in (38a): *hǽafúd* > *hǽafud*).

(39) (Resolved) Feet (resolution showed with italicisation)
(a) **[skipu]* > *scipu*
(b) **[wini]* > *wine*
(c) **[weru]*d**u** > *werod*
(d) *[word]**u** > *word*
(e) *[bōk]**i** > *bēč*
(f) **[færel]*d**u** > *færeld*

[28] **-fu-** does not host its own foot because it sits in a light syllable.

In (39a) and (39b) we see that the high vowels are footed, hence they are not affected by HVD, all those that are unfooted are deleted. Data in (39c) and (37f) show that resolved feet built on two light syllables behave identically to feet made up one heavy syllable (39d-e). What's more, in (37f) we have a resolved foot that is less 'ideal' than that in (37c): the second syllable in the resolved foot is heavy (*færeldu*). The account explains the data, but this is not where it ends. Goering accepts both resolution (as we saw above) and extrametricality. However, it is not clear how both of these principles should be accommodated (see 40).

(40) Extrametricality and resolution
(a) *[hēa] [fudu] <m> > ****hēafodum***
(b) *[hēa] f~~u~~ [dum] > *hēafdum*

In (40a) the last consonant is extrametrical, so a bimoraic resolved foot could be formed on [fudu]. This, however, would result in an OE form that is not on record. In (40b) there is no extrametricality, a foot is built on bimoraic [dum], no foot can be built on -fu- because it is found inside a light syllable, and so this unfooted ***u** is deleted.

It is the latter analysis (with no extrametricality) that gives us the desired result. In Goering's analysis extrametricality is rampant. In his own admission: "It is important to emphasize that final consonant extrametricality does not seem to have been a universally available option" and "[there is some reason to] assume a limited form of extrametricality, applying selectively when necessary to achieve a satisfactory foot" (2016: 179).

Goering is dogged by mono-syllables that may weigh more than the bimoraic ideal (*fēond*, *lēoht*, *torht*, etc., which could only be made ideal by allowing multiple consonants to be extrametrical). He concludes: "This rule of extrametricality is also limited with regard to initial syllables, in large part because the tolerance of initial feet with more than two moras makes more widespread extrametricality unnecessary" (2016: 179). It seems we have extrametricality and we don't, it can be relied on whenever necessary, to drive the right results. Word-final long vowels (as in **hēafdā*) do not seem to present any difficulties (for any analysis for that matter).

The above discussion shows again that the insistence on equating the behaviour of syllables made heavy by virtue of a long vowel (**hēaf**dā***) and those

made heavy by a word final consonant (*hēaf**dum**, hēaf**des***) is rash. This equation just sits uneasily with any approach we have seen so far. Perhaps this is because they just cannot be accessed using the same tools (the heaviness of word-final syllables). If word-final long vowels are fundamentally different from word-final VC# sequences, we are short of an explanation as to why the high vowel was lost in both **hēaf**u**dum* and **hēaf**u**dā*, but not in **hēafudu*. If it is not syllable weight that gives us the line of demarcation, what is it?

9 A very special configuration of pre-OE

In the templatic approach to HVD long vowels are singled out as objects that qualify lexically for a CVCV stretch. We have also seen that the high vowels are protected from syncope if they attach to a CVCV template, see (41) for examples (CVCV templates shaded, with long vowels lexically occupying a CVCV stretch).

(41) The CVCV template
(a) *hēa fu daa, hēa fu dææ
(b) *hēa fudu
(c) *bydi lum
(d) *weru du
(e) *bē ki
(f) *hēa fudæs
(g) *hēa fudum

In (41a) we see that ***u** did not attach to a CVCV template and was consequently deleted (*hēafda, hēafde*). The long inflectional vowels occupy a CVCV template size of material (**hēafudā*). In (41b) the same ***u** could now attach to a CVCV template and was consequently saved from deletion (appearing as *hēafodu* in early conservative OE). (41c) shows ***i** attaching to a CVCV template, being thus saved from deletion by syncopation (*bydelum, **bydlum*), as opposed to (41d, e) which show ***i**/**u** lost to apocopation.

If we compare (41f, g) to (41b) we see that the only difference is the presence vs absence of syncopation. In (41b) the only likely candidate capable of stopping syncopation is (secondary) stress, as stressed vowels were not prone to syncopation at any stage of OE. However, there is no evidence of secondary

stress in ?**hé̍afù̍du* (according to accepted wisdom, only a heavy syllable could bear secondary stress but only if followed by a vowel,[29] e.g., Hogg 1992, §2.86–87). There is no reason to suppose that the (underlined) medial vowel of **hēafu̲du* was ever long. As a matter of fact, syncopation in *hēafdes*, etc. show it cannot have been anything but short.

So although ***i**/**u** were safe from deletion once inside a CVCV template in pre-OE, it doesn't mean this could save them from deletion in later OE. It seems deletion inside a CVCV template in OE came in two waves. The first vowel of the CVCV template (***u** in **hēafudæs*) was deleted in the first wave, if the second vowel of the CVCV template was not a high vowel (***æ**). This explains *hēafdes* < **hēafudæs*. If both vowels were high vowels, the first vowel resisted syncopation for a longer period, producing OE *hēafodu* < **hēafudu*. Such medial vowels were deleted only in recorded OE, giving us the phonologically regular (but later) *hēafdu*.

That there must have been two clearly demarcated stages of deletion receives support from the structure of paradigms like that of *hēafod* (discussed earlier). We have no evidence from early OE that there is any analogical strive to restore the **u** before vowels other than **u** (note that by this stage of OE the inflectional vowels had lost their length and were all short): ***hēafudes*, ***hēafuda*, ***hēafude*. The failure of restoration of the historical ***u** shows that syncopation had been deeply 'entrenched' by recorded OE. Inserting a vowel into the original position of the historical vowel in any of the cases is very difficult or impossible in such a highly worn-down paradigm (there is no paradigmatic source for analogical insertion of the vowel). OE shows no such attempt, and this may be for a reason.

The other side of the coin must be mentioned again: the perseverance of forms like *hēafodu* (with no syncopation in early OE) also shows that the vowel must be original (where else could it come from in such a worn-down paradigm characterised by syncopation in all its forms save the NomAccPl?). So, we have at least two waves of syncopation: (i) the *first* wave of syncopation before long inflectional vowels (**hēaf#dā*) and (ii) the *second* wave of syncopation before (original) short non-high vowels (**hēaf#dæs*) in pre-OE, leaving *hēafodu* un-

[29] Hence *blíssod* (< **blíssōd*) 'rejoiced, pple', but *blíssòde* (< **blíssò̍de*) 'I rejoiced'(as evidenced by the metrical conventions of Beowulf, where such heavy syllables can 'carry' a position).

touched in OE (to be affected by a *third* wave syncopation only in later, recorded, non-conservative/non-Anglian OE: *hēaf~~u~~du*). Whether syncopation in pre-OE before long vowels and syncopation before non-high vowels was contemporaneous or not is impossible to establish, but they were completed in pre-OE, having no effect on the development of the paradigms in OE.

Why should a sequence of two high vowels in a CVCV stretch have been so special in pre-OE to preclude syncopation from occurring? Actually, similar communication across vowels in pre-OE is well-known from (at least) two other processes: *i*-umlaut and back umlaut. Both these processes affected a stretch of vowels across consonants, triggered by ***i**/**j** and the back vowels ***u**/**ɑ**, respectively. The data are well-known and mostly uncontested. Sensitivity of a phonological rule can develop around any feature. This seems to have happened inside a CVCV template in pre-OE as well: syncopation failed to apply if both vowels were high (the only two high vowels being ***i** and ***u**). Similarly to umlaut, the CVCV template hosting two high vowels was singled out by the language as a special domain in which syncopation was suspended (just like the stretch of vowels before ***i** in pre-OE was singled out to be affected by (iterative) *i*-umlaut: *heġtess* 'witch' < **xaɣatussi*). This sensitivity of the syncopation rule did not survive past early recorded OE, as is well-known, leading ultimately to forms like *hēafdu* (< **hēafudu*) and *lȳtlu* (< **lȳtilu*), discussed earlier.[30]

The last form that stands unaccounted for is DatPl *hēafdum*. If the argumentation developed here is correct, we would not expect syncopation in *hēafdum*, where the vowel in the suffix is **u** (***hēafudum*). However, there is no evidence for *-um* precluding syncopation. The explanation resting on the weight of *-um* can no longer be upheld. The conclusion we can draw from our discussion is that the vowel of the DatPl suffix was not **u** at the stage when syncopation depended on vowel quality.

The DatPl suffix *-um* originates in Proto-Germanic *-*om*-. However, as discussed by Hogg (2011, §2.69), the usual change of Proto-Indo-European ***o** to Germanic ***a** must be disregarded in medial syllables to account for the North and West Germanic suffix *-um*. This suffix appears to be a stereotyped suffix

[30] Interestingly the integrity of the *high V + C + high V* sequences with respect to absence of syncopation is recognised by Hogg (2011, §3.64) without giving it a formal status, who says that in the Vespasian Psalter "syncope fails in a syllable preceding inflexional *-u* (but not *-um*), be it fem.nom.sg. or neut.nom.acc.pl." (as in *nētenu*) and that this is "a single, principled exception" to the rule of syncopation of vowels in open syllables after heavy syllables (as in *hēafdum*).

across nominal classes (irrespective of their history). The quality of the vowel in recorded OE (**u**, instead of **o**) is usually attributed to the following nasal (Hogg 1992, §6.57).

However, as Hogg (1992, §6.60) and Hogg (2011, §3.9) remark, we have some justification for supposing that there was more to this suffix than appears in the stereotyped spelling: the suffix also appears (even in early West Saxon) as *-on, -an* (*ramman* 'rams' for *rammum, beorgan* 'hills' for *beorgum, dagon* 'days' for *dagum,* etc.). Hogg claims that although this change must have had its phonological grounding (with *-m* losing its distinctive place of articulation and the vowel showing a back quality that is not easy to interpret), there may have been an analogical shift of the DatPl *-an* suffix from the *an*-declension to the dative plural of *n*-stems, from where it spread to the rest of the classes. It is also possible that the <*um*> spelling was part of a highly conventionalised spelling system that concealed a great deal of phonological variation.

Whatever the exact mechanism may have been, it seems we do have a point for claiming that the vowel of <*um*> was not ***u** at the stage when syncopation was prohibited in ***u**C**u** sequences. It appears the ***u** of ***um** had already been lowered to ***ɔ/ɑ** in pre-OE. If this is true, we have an explanation for why the suffix <*um*> patterns with <*es*> in producing syncopated sequences for **hēafud-*. It seems at this stage of early OE the NomAccPl was the only suffix that contained the high vowel **u** in the neuter *a*-stem class (*hēafodu*). The precise quality of the vowel in (alternative dative plural) *-an*/*-on* must remain speculative: it must have been a back, non-high (round) vowel.

We are now able to differentiate a number of waves of vowel loss (let's call them syncopation for a cover term): the first one is templatic deletion of the high vowels (all high vowels are deleted outside the CVCV template: **wórdu* > *word, *hǽɒfudā* > *hḗafda*), the second one is syncopation happening inside the CVC template before the non-high vowels (**hǽɒfudæs* > *hḗafdes*) due to absence of stress on the first vowel of the template, the third one concerns the deletion of the high vowels ***i/u** before another high vowel (**hǽɒfudu* > *hḗafdu*) due to absence of stress on the first vowel of the template. This latter syncopation is the most recent of the ones discussed here (recorded Anglian of the Vespasian Psalter does not even show it). The first and the second waves were complete before OE. In conclusion, let's see a summary with some of the representative examples of where loss of the high vowels took place and why (not), see (42).

(42) Loss of high vowels[31]

pre-OE (representative examples)	**OE**	**Phonologically regular**	**Alternation in OE**	**Templatic analysis**	**Loss of the high vowels**	**Reason**
*hæþfudu	hēafudu (Ang)	yes	yes: *hēafudu ~ hēafud ~ hēafdu*	hæþ fudu	no	final **u** not deleted because it attaches to the CVCV template, medial **u** not deleted because it is inside the *high V + C + high V* (protective environment precluding syncopation) (note: long vowels/diphthongs occupy two CV units lexically)
	hēafud (alternative Ang)	no	yes (see above)	--	(analogical)	remodelled on *weorud*
	hēafdu (WS)	yes (after HVD ceased to operate)	yes (see above)	hæþ f~~u~~du	yes (syncopated)	collapse of protective *high V + C + high V* environment in later OE (reason for collapse: absence of stress on first **u** of *-fudu*)
*hæþfudæs	hēafdes	yes	no	*hæþ f~~u~~dæs	yes (syncop	syncopation in second CVCV (*-*fudæs*)

[31] Templatic deletion shown with shading, iterations of the CVCV template boxed, syncopated high vowels shown with double strikethrough, e.g., ~~u~~.

					ated, pre-OE)	before non-high Vs, induced by lack of stress on ***u**
*hæɒfudum	hēafdum	yes	no	*hæɒ fu~~u~~dom (*o* undefined back, non-high V)	yes (syncopated, pre-OE)	syncopation in second CVCV before non-high Vs, induced by lack of stress on ***u**
*hæɒfudæ	hēafde	yes	no	*hæɒ fu dæ	yes (templatic deletion, pre-OE)	loss of high V outside of CVCV template
*framidæ	fremede	yes	no	*frami dæ	no (template stable in both pre-OE or OE)	retention of high vowel inside template (no syncopation)
*hæɒridæ	hīerde, hīrde, hȳrde	yes	nog	*hæɒ ri dæ	yes (templatic deletion, pre-OE)	loss of high V outside of CVCV template
*wordu	word	yes	no	*wor du	yes (templatic deletion, pre-OE)	loss of high V outside of CVCV template

*skipu	scipu	yes	no	scipu	no	retention of the high vowel inside template
*lūtilu	lȳtelu (Ang)	yes	yes: *lȳtelu* ~ *lȳtlu*	lȳ telu	no (template stable in Anglian)	final **u** not deleted because it attaches to CVCV template, absence of syncopation of ***i** > **ə** inside protective *high V + C + high V* environment
	lȳtlu (WS)	yes	yes	lȳ t**e**lu	yes (syncopated, non-Anglian)	collapse of protective *high V + C + high V* environment in later OE (reason for collapse: absence of stress on **ə** in *-telu*)
*werudu	weorod	yes	no	*weru du	yes (templatic deletion, pre-OE)	loss of high V outside of template
*wōrigu	wōēriġu (Ang) <ōē = ø̄>	yes	yes	wōē riġu	no (template stable in Anglian)	final **u** not deleted because it attaches to CVCV template, absence of syncopation of ***i** inside protective *high V + C + high V* environment

10 Conclusion

I have tried to argue for a templatic approach to HVD on the basis of a very conservative dialect of Anglian. The high vowels ***i**/**u** escaped deletion if they attached to a CVCV template (*word* vs *fatu, færeld* vs *hēafodu*). It turned out that *hēafodu* is the regular phonological continuation of pre-OE **hæƿfudu,* and that *hēafod* was analogical, whereas *hēafdu* is a phonologically regular, but later formation. I have also dismissed the possibility of syllable weight playing a role in syncopation (**hēafdæ*, **hēafdā, *hēafdum*) and have argued instead for a very special configuration of the high vowels inside the CVCV template that precluded syncopation. HVD has turned out to be even more intricate than originally construed. It seems there were (at least) three waves of high-vowel deletion in pre-OE, extending into OE (some templatic, some due to syncopation proper). Based on the special status of *high vowel + C + high vowel* sequences I have also argued that the DatPl *-um* cannot have contained a high back vowel at the time of syncopation.

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Attila Starčević
Eötvös Loránd University
starcevic.attila@btk.elte.hu