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Metrical resolution, spelling, and the reconstruction of Old English syllabification

1 Some preliminaries

The basics of syllable structure are well known: the most sonorous part of the syllable is its *peak*, or *nucleus*, the segment(s) preceding the peak form the *onset*, and the segment(s) following the peak form the *coda*. The peak and the coda together form the syllabic *rhyme*. The peak is the only obligatory part of the syllable, while onsets and codas are optional. Vowels are always peaks, and the sonorants /r, l, m, n/ can also be peaks in English.

Syllable structure is characterized by one constant: the peak has to be filled. The optionality of onsets and codas allows consonants in VCV strings to be differently associated with the peak. The check-list of how word-medial syllable division works, as provided for example by Cruttenden (2008: 50, 258), involves three basic criteria:[1]

(1) Criteria on word-medial syllable division:
- Presence or absence of transparent morphemic boundaries (***morphemic***): *glee.ful*, *slow.ness*, *non.ethical*, *mono.lith*
- Compatibility of onsets and codas with the distribution of word-initial and word-final singletons and clusters (***phonotactic***): *Sa.hara*, *Per.sia*, *ath.lete*
- Syllable division as a rationale for specific consonantal realizations (***allophonic***): US *á{**ɾ**}om*, *cápi{**ɾ**}al*, informal UK *á{**ʔ**}om*, *cápi{**ʔ**}al*, aspirated [t^{h}] in *a[**t^{h}**]íre*, unaspirated [**t**] in *pla.stic*.

A widely attested syllable structure preference cross-linguistically is for intervocalic singleton consonants to be placed in the onset. The principle of filling the

1 Slashes enclose phonemic units, square brackets enclose phonetic realizations, angled brackets enclose spelling forms, and curly brackets indicate ambisyllabicity. Syllable division is marked by a period.

onset in preference to the coda is known as *onset maximality*.[2] An alternative way of syllabification in Present-Day English (PDE) is to assume that at least some intervocalic singletons are *ambisyllabic*, associated simultaneously with the onset and the coda. In addition, the consonant in VCV strings can be variably placed in the coda, or it can be analyzed as being both in the coda and in the onset. These options for English are summarized in (2):

(2) Syllabification of *happy* in English:

[hæ.pi]	Hayes (1995), Gussmann (2002)	[p] onset maximal
[hæ{p}i]	Kahn (1976), Giegerich (1992), Kreidler (2004), Hayes (2009b)	{p} ambisyllabic
[hæp.i]~[hæ{p}i]	Hammond (1999)	[p] ambiguous
[hæp.pi]	Burzio (1994)	[p] functioning like a geminate

In Present-Day English ambisyllabicity is one way of accounting for the realization of the dental stops /t/ and /d/ as alveolar approximant taps [ɾ] before an unstressed vowel in American English, as in *ladder* [ˈlæ{ɾ}ɚ], *waiter* [ˈweɪ{ɾ}ɚ]. In Received Pronunciation, the phoneme /ɹ/ is realized as a tap [ɾ] in ambisyllabic environments (Rubach 1996). While alternative accounts of these and other allophonic patterns have been proposed, ambisyllabicity remains a widely used analytical strategy for addressing both phonetic alternations and stress assignment.[3] Clarifying the empirical base and the type of argumentation in favor of or against ambisyllabicity in earlier English is therefore central to the

2 The principle of onset maximality is commonly extended to clusters which are also possible word-initial clusters, the phonotactic criterion in (1), so that *pilfer* syllabifies as [-ɪl.fə-], while *petrified* syllabifies as [-ɛ{t}r-], see Hooper (1972), Anderson and Jones (1974) for an early treatment, and Jones (1989: 183–195) for applications of this principle to cases of historical epenthesis and metathesis in the history of English. Some problems with this approach are discussed in Ní Chiosán, Welby and Espesser (2012), see also their references. This paper concentrates on -VCV- sequences; the syllabification of intervocalic consonant clusters will not be discussed here.

A related issue is the co-extensiveness of word structure and syllable structure in Germanic: a minimal syllable should equal a minimal word (Liberman 1990a, b). For Old English, this assumption is questioned in Fulk (1997); his objection is based on the treatment of some items in verse, e.g., disyllabic scansion of *dōn, gān*. Non-isomorphy between syllable and word is also assumed in Russom (2002: 309), see also Gordon (2006) for cross-linguistic findings allowing non-isomorphy.

3 For the history of the research on ambisyllabicity in Present-Day English, the phonetic diagnostics and the rules of ambisyllabicity, see the overview in Hayes (2009b), Minkova and Zuraw (forthcoming).

reconstruction of the structural and prosodic roots of Present-Day English, and to the study of the universal principles of speech segmentation.

Following these preliminary remarks, Section 2 surveys the positions on ambisyllabicity in Old English (OE). Section 3 discusses the relevance and reliability of Old English verse evidence for syllabification. Section 4 is a reappraisal of scribal practice with respect to word-division and the incidence of orthographic gemination in Old English manuscripts. Section 5 offers a summary and some suggestions for further research.

2 Was there ambisyllabicity in Old English?

The question of possible ambisyllabicity was not discussed in the earlier canonical descriptions: Campbell (1959), Luick (1914–40), and Jespersen (1909). *CHEL 1* (Hogg 1992b: 96–97) leaves the options open, syllabifying OE *stānas* 'stones' as *staa.nas* (p. 96) and *staa{n}as* (p. 97) without arguing for either option. Ambisyllabicity restricted to V̆CV- for Old English, for example *sċi{p}u* 'ships', *wo{r}orld* 'world', is assumed in Hogg (1992a: 44–45) and Suzuki (1994, 1995). Jones (1989), Lass (1992: 69, 74) and Ritt (1994: 52–64) assume ambisyllabicity for Middle English (ME), while onset-maximal syllabification for Old English and Middle English has been defended by Fulk in his entire work, most prominently in Fulk (1997).[4]

Suzuki (1994) treats all singletons *and* possible word-initial clusters following any stressed vowel as ambisyllabic. His arguments are based on syllabification of the Proto-Germanic (PrG) trisyllabic sequence VVCR̥(R)V in pre-Old English, Old English Breaking, voicing of fricatives, and /h/-deletion. Identifying empirical problems in the cases discussed by Suzuki, and appealing to high-vowel deletion, resolution in the meter, Old English word-division at line ends, and open-syllable lengthening, Fulk's vigorously "contrary" view (1997) is that none of the evidence for ambisyllabicity in Old English is compelling, and some of it is philologically unsustainable. Fulk's reaction to Suzuki's assumption that ambisyllabic consonants are not full-fledged contributors to syllable weight, unlike *real* coda consonants, is that it is an untestable phonetic speculation (1997: 29), and pursuing it would be fruitless for a dead language. His objections are structural and philological, and he does, indeed, identify a number of problematic points

4 Rejecting ambisyllabicity as too restrictive, Bermúdez-Otero (2007: §20) includes a diachronic perspective limited to phrase-level resyllabification in Middle English, referencing onset maximality in the realignment of, e.g., *an uncle* > *nuncle*, *an ewt* > *newt*. This is not conclusive because the re-association can also go in the other direction: *a napron* > *an apron, a nadder* > *an adder.*

in Suzuki's choice of examples providing empirical support for ambisyllabicity, especially with regard to the behavior of intervocalic clusters. He also points out, correctly, that in some cases alternative accounts may predict the same behavior, as is the case with the intervocalic voicing of the fricatives in, e.g., *knife ~ knives, grass ~ graze, bath ~ bathe*.

This paper will not review all arguments for treating intervocalic consonants in Old English as ambisyllabic or not. Instead, the principles of syllabification in Old English will be addressed with reference to two areas: the behavior of VCV strings in verse, and the orthographic choices on division of words at line-ends and consonant gemination in the Old English manuscripts.

3 Resolution in Old English meter

> Prosodic rules (...) constitute a paralinguistic system that specifies the poetic language as a derivative of the system (not necessarily of the surface representations!) of ordinary language. From this point of view, poetic language is a potentially abstract entity, in that the metrically relevant representations need only have a virtual existence as stages in a grammatical derivation, with no physical realization at all (Kiparsky 1977: 241).

One of the most important tests for syllable weight in Old English is the metrical phenomenon known as Resolution, illustrated in (3):

(3) Old English Resolution:[5]

a.	**m**ihtig **m**eredēor 'mighty sea-beast'	S w / S‿w s	*Beo* 558a
b.	**s**nellic **s**ǣrinc 'sturdy sea-man'	S w / S s	*Beo* 690a

Resolution is based on the metrical equivalence of a sequence of a stressed L(ight) syllable plus the following unstressed syllable, as in *me.re* 'sea' in (3a) and a H(eavy) stressed syllable, as in *sǣ* 'sea' in (3b). In (3a), a "normal", i.e., four-position, scansion is impossible unless both syllables of *mere* jointly fill the first strong position of the second foot; *mere* is thus metrically equivalent with *sǣ* in (3b). It is this equivalence that seems to be an insurmountable problem for the ambisyllabicity hypothesis: since syllables with filled codas are heavy in

5 Capital *S* indicates a strong position filled by a syllable with an alliterating onset. Small *s* is a strong position filled by a non-alliterating syllable. Small *w* stands for a weak metrical position; weak metrical positions can be filled by more than a single unstressed syllable. The tie symbol in S‿w indicates a "resolved" strong position. The slashes divide metrical feet. Further information on the conventions of Old English scansion and resolution can be found in Stockwell and Minkova (1997a, b).

the meter, as in *mih-* in *mihtig* 'mighty' in *Beo* 558a, if the intervocalic consonant of *mere* is also in the coda of the first syllable, that syllable is already heavy and resolution ought to be blocked.

3.1 Resolution and the variable weight contribution of intervocalic consonants

The argumentation for and against ambisyllabicity rests on the shared assumption that syllable boundary placement is a factor determining the weight of the syllable: in V́.CV the first syllable is *always* light, while in V́C.V the first syllable can be heavy – the assumption relates to the cross-linguistic propensity of heavy syllables to attract stress. Functionally, V́C syllables in Old English align with heavy syllables of the type V́V, V́VC, V́CC, V́VCC; all five types can be full lexical items as in *fær* 'journey', *sǣ* 'sea', *blōd* 'blood', *benc* 'bench', *brēost* 'breast'. In the verse VC syllables also behave like the other heavy syllables, as illustrated in (3). Suzuki (1994, 1995) confronts the metrically based objection to ambisyllabicity and sets it aside with the argument that "the syllable that is closed on account of ambisyllabicity (-V́CV) consistently counts as lighter than the genuinely closed syllable (-V́CCV- or -V́VCV-), as most persuasively demonstrated by meter" (1994: 79). I believe that skepticism about metrical evidence as an irrefutable argument against amisyllabicity is the right approach, but not for the reason given by Suzuki. The position needs to be explored and clarified further.

To avoid the conundrum of a V́{C} syllable as light or heavy, Suzuki's formal representation of the relevant syllabic associations (1994: 80) assigns units of weight (moras) to intervocalic consonants derivatively, whereby the initially onset-maximal consonant is adjoined to the coda of the syllable to the left. The claim is that ambisyllabic consonants are *never* moraic, while full codas count as moras. However, there is good evidence that "intrinsic" mora count is an unstable notion (Hammond 1999: 137), and extensive cross-linguistic research has shown that the reference to discrete and strictly binary timing units of syllable weight is problematic. Gordon (2006) and Ryan (2011) argue convincingly that in natural living languages syllable weight is gradient; for gradient syllable weight in the Old English verbal system, see Minkova (2012).

The specific contradictions that emerge from the all-or-nothing approach to weight adopted in Suzuki have to do with the nature of the consonant and the conflict between weight and stress. First, labeling all singletons following a stressed vowel as non-weight-contributing faces the problem of compensatory lengthening following intervocalic voiceless velar fricative loss in Old English, as in PrG **teuh-an,* OE *tēo(ha)n* 'to tug'; PrG **sehw-*, OE *sēon* 'to see'; Gothic

swaihra, OE *swehor* (early) ~ *swēor* 'father-in-law', PrG **sleah-an* > OE *slēan* 'slay', PrG **þleu.han* > OE *flēon* 'flee'. Of significance in this context is that in the verse words like *sēon* 'to see', *flēon* 'to flee' scan preferentially as disyllabic in the early poems, as was thoroughly documented and argued in Fulk (1992: 92–104). This is illustrated in (4a, 4b):

(4) Absence of resolution in Old English VhV sequences:

a.	*feorhsēoc flēon* 'life-sick flee'	S s / S w	*Beo* 820a
b.	*dēaþwīc sēon* 'death-place see'	S s / s w	*Beo* 1275b
c.	*æfre flēon* 'ever flee'	S w / S w	*Instructions* 40a[6]

It has to be admitted that the negative evidence of absence of resolution at the right edge of the verse is not conclusive because of the special requirements that constrain the material placed in that position. But the disyllabic scansion of the verbs in (4) has to be evaluated also in the context of later changes: loss of /h/ and lengthening of the vowel. The usual explanation of the lengthened vowel is onset [h]-loss and vowel contraction, but an alternative scenario would be lengthening as a consequence of the weakening and loss of ambisyllabic [-h-] which yields its weight to the preceding vowel. The loss of the already weak consonant in the coda is compensated by increased vowel length; coalescence with the previously unstressed vowel follows. The two pathways yield the same result, and both rely crucially on the inherent properties of the segment, but attributing /h/-loss to the association of the consonant with the coda has the (limited) advantage of avoiding the problem of stability of OE /h-/ word-initially, not a good fit for an account linking [h] exclusively with the onset position.[7]

Second, in Suzuki's interpretation, the coda of an unstressed -VC syllable counts as weight-contributing, as in *swu**tol*** 'clear', which is a sequence of a

6 The full line is *æfre flēon / unrihte gestrēon* 'ever flee / unright gains'. The relevance of the example is the pairing of *flēon* : *gestrēon*, the latter with an etymologically long diphthong, which is strongly suggestive of the completion of the lengthening in *flēon*.

7 As Robert Fulk has pointed out to me, this is not the only possible scenario for vowel contraction involving /h-/ loss in Old English. The end-points are not in dispute: disyllabic –VhV- strings emerge as monosyllabic –VV- strings, but an intermediate disyllabic string with the first vowel preserving its original length in hiatus, -V. V- , could have been used by the poets, since uncontracted disyllabic forms do not testably appear in positions where an initial heavy syllable is required in the meter. A parallel of this is the treatment of *sie* 'be, subj. sg.', *dōn* 'to do' and similar forms, where the contraction is non-compensatory (Hogg and Fulk 2011: §6.148, §6.154). A full re-examination of the metrical and spelling evidence might help us decide which pathway is more probable; for now I prefer to think of /h-/-loss as a trigger of compensatory lengthening, a factor which overrides the tendency to overall length stability.

L(ight) + a (H)eavy syllable, but the shared coda of a stressed syllable, the [-t-] of *swu{**t**}ol,* is non-moraic, as is supposedly the coda of *ǣr* 'before'. Such moraic assignments are based on an ideal of a bimoric stressed syllable or foot, but run against the phonological realities of conservative Old English, where "superheavy" syllables, such as the first syllables of *nǣddre* 'adder', *ðēostre* 'dark' are unexceptional. Assigning a full mora to all codas in unstressed syllables is also problematic, especially in view of the possibility that stress-assignment is blind to such codas, i.e., they are considered non-weight-bearing, or extrametrical – for this analysis in Present-Day English, see Hayes (1982).

One inference from this specific instantiation of ÝCV is that for the period when [h] was still present intervocalically, it was possibly ambisyllabic, enhancing the weight of the first syllable. The point to be taken away and studied further is that historically the behavior of ambisyllabic consonants may have been variable depending on the nature of the segment, as is indeed the case in Present-Day English.

3.2 Syllabification and the paraphonological component of meter

Another argument related to considering the option of ambisyllabicity in Old English in spite of resolution comes from the general principle of matching metrical templates to surface realizations. In Kahn's (1976) classic analysis of Present-Day English, the basic rule for syllabification is onset-maximal: VCV is syllabified V.CV. In slow and careful speech syllabification stops at that point. The allophonic variation observable in, e.g., *a./t/om ~ á{ɾ}om ~ a.[tʰ]ómic* is attributed to subsequent association of the onset to the coda of the stressed syllable to the left. This process is optional and characterizes more informal and rapid speech styles. Put in terms of analytic levels, underlyingly all VCV sequences are V.CV, but the surface realizations can be either V.CV or V{C}V.[8]

Projecting Kahn's analysis to earlier English: if we assume that like Present-Day English, Old English syllabification starts out as onset-maximal, the selection of ÝCV structures for the metrical rule of resolution is predictable: Ý.CV meets the general structural description of the environment for resolution. Potential ambisyllabic associations in speech which may affect the weight of the first syllable are ignored in evaluating whether a line is metrical or not. At first blush this may look like a heretical decoupling of the verse evidence from the forms of the spoken

8 It should be noted for comparison that in the framework of interleaved morphological and phonological operations (Bermúdez-Otero 2011), the re-association of onsets to codas occurs in a different cycle of the derivation.

language, yet any theoretical framework that distinguishes between meter and speech will resolve the apparent conflict. As Kiparsky (1977) argues, meter is componential. One component is the pattern generator, specifying the size and the internal structure of the verse design. A second component is the *paraphonology,* or the "metrically relevant range of phonological representations" of phonological units (1977: 90).[9] A third component, the "comparator", matches the paraphonological representations to the meter to ensure compliance with the verse design.

Since paraphonological options are available to all poets at all times, the argument in the context of Old English meter is that the metrically relevant phonological representation of a ÝCV string is Ý.CV in those positions where resolution applies. In some well-studied cases of paraphonological choices such as postvocalic syncope in Present-Day English (Kiparsky 1977), Middle English pre-vocalic elision of <-e>, vowel apocope, syncope, and contraction (Minkova 2009), this is the "phonology of opportunity", where optional representations are used selectively in the verse. Taking just one example, the treatment of unstressed final <-e> in an early, southern Middle English text, *The owl and the nightingale*, we find that the poet treats stem-final <-e> variably, as illustrated in (5):

(5) Treatment of <luue>, OE *lufu* 'love' in *The owl and the nightingale*:[10]

a. Disyllabic:

ne last his *luue* no leng more	517
al mai þe *luue* gan awai	1510
hit nis for *luue* noþeles	510
Swiche *luue* ich itache & lere	1347

b. Monosyllabic before vowels

an habbe boþe *luue &* þonc	461
& soþ hit is of *luue* ich singe	1339

c. Monosyllabic before consonants

an *luue* ne deþ no3t bute rest	1452
þat dusi *luue* ne last no3t longe	1466

In non-northern Middle English in the first half of the thirteenth century the final unstressed vowels in lexical disyllables were probably still part of such words'

9 For a discussion of the componential organization of meter based on Kiparsky (1977) and an application of the componential approach to metrical analysis within Optimality Theory, see Hayes (2009a).

10 The lines are cited from Stanley's edition of *The owl and the nightingale*. The edition is based on the older manuscript, London, British Library, Cotton Caligula A. ix, dated c1275(?a1216) (MED), Central Worcester (LAEME).

underlying representation. The poet uses this "regular" phonological option in (5a), where the nom. acc. sg. of the originally disyllabic stem OE *lufu* and its inflected forms scan as disyllabic both before consonants and before vowels. The more common pattern before vowels for both inflected and uninflected forms, however, is shown in (5b); elision is a contextually conditioned paraphonological option which must have been present in the poet's rapid speech phonology. The elision option is extended in (5c) to a pre-clitic position, irrespective of the segmental environment. The text represents a diachronic stage in which the paraphonology is morphologically constrained: in the absence of a prevocalic context dative forms of *luue* in *The owl and the nightingale* are all disyllabic. Jumping a century and a half forward, this is no longer the case in Chaucer: a spot-check of the phrase *for loue* verse-medially in the first four Fragments of *The Canterbury tales* shows *love* as monosyllabic three times before consonants and three times before vowels. In historical phonology such evidence is valued highly as one of the quantifiable indicators of change in progress; in the case shown here an argument can be made that by the second half of the fourteenth century London English had reanalyzed *love* as monosyllabic, with disyllabic *love* as a paraphonological option, especially favored at line ends.

For another illustration of how meter selects phonological representations opportunistically, we can turn to the variable realization of post-consonantal /r, l, m, n/ as syllabic or non-syllabic in the Old English poetic corpus. Examples of this behavior for *tācn* 'token', *wuld(o)r* 'glory', *symb(e)l* 'feast', drawn from the data cited in Fulk (1992: 66–91), are shown in (6):

(6) Variable treatment of -C + /r, l, m, n/ in Old English verse:

a.	Monosyllabic:		
	Sete sigores **tacn**	S͡w / S͡w w s	*GenA* 2313a
	wuldorspēdige weras	S s w w / S͡w	*And* 428a
	symbelwynne drēoh	S s w / s	*Beo* 1782b
b.	Disyllabic		
	tacen sette	S w / s w	*GenA* 1044b
	wuldorþrymmes	S w / s w	*And* 702b
	symbel þicgan	S w / s w	*Beo* 1010b

Focusing on etymologically monosyllabic stems, Fulk shows that "parasiting", the disyllabic metrical use of such stems, is not randomly distributed in the poems. He tabulates the proportion of the occurrences of mono- vs. di-syllabic forms (1992: 83–84) and finds a positive correlation between monosyllabicity and early date of composition of a poem, proposed on independent grounds. Poems presumed to belong to the ninth century or later invert the earlier proportions in favor of disyllabic use. Fulk argues convincingly that this is a good heuristic

procedure for testing the dating of Old English verse. Since West Germanic "parasiting" is a pre-Old English change, the monosyllabic use of the relevant stems in verse means that the poet has access to archaic forms of the language. This analysis does not preclude disyllabic realization in speech. In terms of paraphonological options, we can interpret the chronology of the poetic use as a switch from original underlyingly non-syllabic sonorants in the *tācn*, *symb(e)l* type words to fully syllabic [-ən / -n̩], [-əl / -l̩], etc., in later verse. In both early and late verse the primary choice is with the underlying realization.

Although couched in a different theoretical framework, the potential of meter to select different representations for post-consonantal sonorants can be illustrated for Present-Day English, too. A well-known example of meter referring to underlying form rather than surface realization is the account of the behavior of <-sm> in Present-Day English meter and speech. The first step of the analysis posits an input non-syllabic /m/ in words like *abysm, baptism, chasm, prism, schism*; /m/ becomes syllabic on the surface by the rule in (7):

(7) m → [+syllabic] / C – # (from Hayes 1988: 228)

The rationale for positing underlying non-syllabic analysis as set out in Hayes (1988) is that /m/ is realized as non-syllabic before vowel-initial suffixes *(spasmodic, orgasmic*, etc.; that *-sm#* words are surface exceptions to a general rule placing the primary stress on the rightmost non-final stressed syllable of a stem, e.g., exceptional *enthúsiàsm* vs. regular *enthùsiástic*, suggesting that stress-placement treats */m/* as non-syllabic. The "lateness" of /m/ becoming syllabic either as [m̩] or as [əm] is arguably also attested by the fact that if *-sm#* was syllabic in *baptism*, it would violate a rule of Post-Stress Destressing, which removes weak stress from nonfinal syllables when it immediately follows strong stress, as in *sénsory* from */sénsòry/* (cf. *áuditòry)*. On the other hand, the realization of <-sm> as disyllabic in speech is confirmed by the intuitions behind dictionary transcriptions for such forms, which are always with a syllabic <-sm>: [-zəm ~ -zm̩].

The evidence of English verse shows that poets treat <-sm> commonly as non-syllabic, especially, but not exclusively, before vowel-initial function words where the sonorant can be associated with the onset of the vowel-initial syllable within the clitic group, e.g., ***abysm*** *of* [-ɪz{m}əv], ***chasm*** *of* [-æz{m}əv].[11] This lends support to the theory that poetic language can draw on representations that differ from the surface forms. The option of disyllabic <-sm> exists, too, especially before consonant-initial words, as the examples in (8b) show.

11 "Down verge of an **abysm** of stagnant air", Walter De la Mare (1873–1956), *Winged chariot* (1951 l. 688) and "A sudden **chasm** of ghastly light", Emily Brontë (1818–1848), *The complete poems* (25:1).

(8) Variable treatment of <-sm> in English verse:
   a. Monosyllabic <-sm>:
      (There floweth daily forth a stream of joy)
      Into a **chasm** whose depth we know not of
      (Henry Alford, *The school of the heart* 1868, lines 123–124)

      Her own fond image in this **prism** survey'd,
      (The farmer-lady sees a grace display'd)
      (Samuel Jackson Pratt, *Cottage-pictures* 1803, lines 571–572)

      (Since here thy word hath shown wherein)
      The deadly guilt of **schism** consists.
      (Bernard Barton, *The true schismaticks* 1826, lines 3–4)
   b. Disyllabic <sm>:
      And from the **chasm** flung between
      (Comes up the roar of tides unseen.)
      (Arthur Henry Adams, *London streets, interlude – Eurydice* 1906, lines 9–10)

      With force endowed it **prism**-wise, whereby
      (All motives to themselves men justify)
      (Philip James Bailey, *Festus XL* 1877, lines 28551–28552)

      (Become the arms and ammunition)
      To muster **schism** and sedition.
      (Jacob Bailey, *Narrative verse satire in Maritime Canada* 1779–1814, lines 156–157)

The selective use of underlying representations is "widely observed in other metrical systems: the phonological representation scanned is one in which some or all of the phonological rules are 'undone'" (Hayes 1988: 228).

Going back to the issue at hand: Old English resolution and the syllabification of V́CV sequences. It has been shown clearly that resolution applies selectively in the meter depending on the position of the resolvable sequence; for details see Fulk (1992, 2002), Suzuki (1995), Hutcheson (1995), Russom (1995, 2002) and references there. Resolution applies systematically *only* to stressed syllables. Resolution is much more robustly attested in the on-verse than in the off-verse.[12]

12 "A resolvable sequence occupies one metrical position of the verse when resolved, but may stand unresolved toward the end of the verse, occupying two metrical positions" (Russom 2002). Hutcheson (1995: 95) points out that in some contexts, e.g., S s / S͡w w : *dryhtcwēn duguþe* (Wid 98a), or S͡w s / S w: *merestrēam mōdig* (Ex 469a), resolution is effectively restricted to the a-verse.

These are metrically circumscribed restrictions, not unlike the choices regarding the syllabicity of <-e> in (5) or the treatments of the sonorants in (6) and (8).

The actual performance of verse in Present-Day English is an open-ended matter, quite possibly varying from individual to individual; it is at best peripheral to the analysis of the correspondences between the metrical template and the spoken language. Nevertheless, some commonly assumed pragmatic aspects of the composition, consumption, and transmission of Old English verse do seem relevant in the context of resolution and the modes of syllabification. One such consideration is the oral and often formulaic nature of the compositions intended not for private reading, but for public recitation. The delivery of verse, therefore, would have been associated with slow and careful speech, increasing the likelihood of onset-maximal syllabification of ṼCV strings. Also, the scribes who recorded Old English verse were familiar with Latin verse, where onset-maximal syllabification is the rule not just word-internally, but also across word-boundaries, see also 4.1. below.[13] The "sloppiness" and optionality of ambisyllabicity (since the resulting lenitions and deletions are less effortful) would be inadmissible in the context of strict adherence to syllabic measures. As Ælfric writes on meter in his *Grammar:*

(9) Ælfric (ca. 955 – ca. 1010) on meter:
Se cræft is swa ameten, þæt ðær ne mot beon furðon an stæf ofer getel ac beoð ealle þa fers geemnytte be anum getele, gif hit aht beon sceal.
'This art is so measured out that there may not be one letter beyond the number and all the verses should be equal, if it should be anything good'.

Thus, seen from this practical angle, too, the maintenance of Ṽ.CV syllabification in Old English verse seems logical.

The interpretation of why resolution survives with any regularity in Old English verse in this section is compatible, but not identical, with Fulk's description of Old English verse as *diaphanous*:

> A characteristic of Old English meter (...) is its embodiment of metrical archaisms. In part this is a consequence of poets' knowledge of verse traditions (...) A meter of this sort (...) is thus (...) a *diaphane*, inasmuch as in the course of scansion one must look through the surface forms and take into account a historical dimension that underlies the recorded text (Fulk 2005: 151).

13 In Latin, word boundaries can be ignored in syllabification: *ab oris* is metrically *a.bo.ris*. In Old English, compounds retain pre-compound word boundaries: *Beo* 78a: *healærna mæst* 'of hall-rooms largest' is S s w / s, i.e., *hea**l**.ær.na* not **hea.**l**ær.na*, in conformity with the morphemic criterion in (1).

This is obviously not the first time that a parallel has been drawn between synchronic modeling and diachronic change. Old English resolution can thus represent both an earlier *and* an underlying type of syllabification, which is phonologically also onset-maximal syllabification.[14]

Summing up the discussion so far: like Present-Day English, Old English syllabification was underlyingly onset-maximal; this is the principle behind the use of resolution in the verse, while ambisyllabicity is a "surface" phonetic event, also possibly a chronologically later event. Positing exact moraic content for a syllable is unreliable without reference to the nature of the segments, a point illustrated by the behavior of intervocalic [h] in early Old English. An appeal to the concept of *paraphonology* is important because it allows us to identify phonological representations that are specific to a particular type of verse. On the assumption that the paraphonology of Old English provided access to both onset-maximal ÝCV syllabification *and* ambisyllabification, the selection of Ý.CV structures in specific verse positions does not constitute evidence against the possibility of realization of VCV structures as Ý{C}V.

4 Orthographic tests for Old English syllable structure

Spelling has always provided support for the reconstruction of past phonological states. Scribal omission of final <-e> and its unetymological insertion in late Old English through Middle English is a cornerstone in the reconstruction of final vowel loss in English (Minkova 1991: 45–62). One type of argument used in Fulk

14 One of the compelling initial arguments in favor of positing ambisyllabicity in Present-Day English is the absence of (C)Ý# monosyllables (Kahn 1976). Fully stressed light monosyllables do not exist in Old English, either, setting aside the possibility of ambivalent weight for some pronominal forms; the same situation obtains in Proto-Germanic. From that point of view an ambisyllabic realization in pre-Old English is an appealing option historically. However, the coextensiveness of word structure and stressed syllable structure can be challenged (see note 2 above), as in *Singapore, gingham* in Present-Day English, where [ŋ] is ambisyllabic (Hayes 2009).

There is also the issue of pre-Old English High Vowel Deletion, one of the most highly valued tests of the 'lightness' of the stressed syllable in ÝCV forms, accounting for the historical difference between nom. acc. plural *sci.pu* 'ships' vs. *word* 'words' < **wor.du*. It is therefore probable that pre-Old English syllabification was more pervasively onset-maximal, with ambisyllabic representations emerging and gradually becoming stronger in Old English – this scenario fits the demise of resolution as a metrical device in late Old English – and early Middle English, but it does not exclude the strikingly archaic use of resolution as late as the Middle English *Poema morale*, as argued in Fulk (2002).

(1992: 90–91) to support his analysis of "parasiting" noted in 3.2 above, is that in some instances the orthographic evidence indicates unambiguously that monosyllabic forms of, e.g., *ēþel* 'country' could not have arisen by analogy, because irrespective of the use of the form in early verse, the spelling shows a vowel before <l> overwhelmingly, over 200 times, against a single instance of <ēþl>, while with the originally disyllabic *sāwol*, spellings with and without a vowel in the second syllable are common. Examples of reliance on orthographic evidence in historical phonology are easily multiplied; what I want to focus on in the following section, however, is a more specific variety of orthographic evidence, the treatment of words at line-ends in the Old English manuscripts.

4.1 Word-division in Old English manuscripts

The principles and the data on word-division in the Old English manuscripts were extensively documented and analyzed by Wetzel (1981); a subset of the same data was also discussed in Lutz (1986). Wetzel collected a corpus of 125,000 attestations of divided words in 168 Old English manuscripts. The most significant single group of attestations, 52,000, are derived words. Unsurprisingly, the syllabification principle followed for this set is morphemic, as in (1) above; in 98.9% of the cases (Wetzel 1981: 45–46) this principle governs the word-division.

The subset of divided words with a single intervocalic consonant, graphic <VCV> sequences, in Wetzel's study, a total of 30,442 instances, shows a division <V-CV> in 99.4% of the cases (1981: 110). This subset bundles together inflected and uninflected words and words derived with *-ing, -ung, -ende,* etc. A closer look at the remaining 0.6% of exceptions (188×) where the division is <VC-V>, reveals that these are almost exclusively divisions in which the single consonant belongs to the stem, followed by a vowel-initial suffix: *gebyr-eð, cwæd-on, muð-es, min-um, dys-ige,* etc., raising the level of predictability even higher, to 99.9%. Indeed, only 48 <VC-V> divisions out of 30,442 total are of monomorphemic words, e.g., *of-er* 'over', *wor-uld*.

This vanishingly small number of exceptions should make anyone suspicious, and Wetzel recognizes, of course, that the level of consistency is surprising in such a large corpus, but he dismisses the possibility of scribal convention. His reasoning is that if the scribes were taught to divide orthographic <VCV> into <V-CV>, this should apply to the letter <x> representing [ks], but in fact this letter is placed to the right only about 15% of the time. But this is *not* an argument against the learned practice of word-division: the inconsistency of <x> division has to do with the fact that it is a single letter representing a cluster, while all other single-consonant letters correspond to a single segment. There were no

[ks-]-initial words in the language, while [-ks], spelled <x> was common, so we can expect the scribes to be reluctant to place <x> to the right.

The unprecedented pedantic adherence to <V-CV> division could be doubly motivated. On the one hand, one can imagine that the Old English scribes, writing under conditions of slow and careful self-dictation, would syllabify onset-maximally, without regard to further changes in speech, see 3.2 above. Reading would also be slow and deliberate. Addressing specifically the treatment of written language when read aloud, Ælfric Bata, a disciple of Ælfric's, admonishes the student: "*legite distincte et aperte atque verbatim sed et syllabatim ac sensatim*" (Gwara 1997: 182) ['read distinctly and clearly and word for word, but also syllable by syllable and according to sense'].

On the other hand, a 99.9% consistency is so unusual for any set of forms in a living language that it suggests more than a mere linguistic basis in the practice of word-division. Additional consideration should be given to the scribes' background and the setting of Old English manuscript production. As far as we know, in Anglo-Saxon England lay literacy was practically non-existent. The scribes who produced vernacular manuscripts were trained in Latin; knowledge of Latin was equivalent to education. In Alfred's age the main attention of the men of learning was on translating from Latin, and even the distinction between the two scripts used for writing Latin, the Caroline minuscule, and the Anglo-Saxon minuscule, became "blurred (...) and most of the letter-forms distinctive of Anglo-Saxon minuscule dropped out of use in writing English" (Roberts 2005: 2–3). The only linguistic instruction available to the scribes was Latin orthography and grammar. And this, I believe, is the key to the striking regularity of the pattern of <V-CV> word-division found in the corpus. From the Greeks[15] to the Romans, in Priscian's *Institutiones grammaticae*, and Donatus' *Ars grammatica*, both of them widely used textbooks for the study of Latin, the "rule" is onset-maximal word-division. It is commonly assumed that the Romans borrowed this practice from the Greeks and it was an easily acquired spelling convention:

> [T]he particular statements of the Roman grammarians on which the received doctrine [<VCV> syllabifies as <V-CV>, DM] is founded represented neither the facts of Greek pronunciation nor the facts of Roman pronunciation, but had their origin in a mere practical rule – admirably simple and easy of application – devised by some Greek grammarian for the division of words *in writing*, when one was near the end of a line and had room

15 The Greek roots of the word-division practice are widely recognized, though not attributed to a particular source. William Goodwin's highly influential *Greek grammar* (1892: 24) states: "The following rules, based on ancient tradition, are (...) observed in dividing syllables at the end of a line: Single consonants (...) are placed at the beginning of a syllable".

> for part of a word only; (...) this rule was adopted bodily by the Roman grammarians (Hale 1896: 251–252).

The extent to which this "admirably simple and easy of application" rule overlaps the "natural" syllabification in Latin cannot be discussed here, nor is this the place to explore the issues posed by the syllabification of hetero-organic consonants clusters.[16] What is of interest in the context of evaluating the evidence from the manuscript practice of word-division in Old English is that the original "doctrine" of <V-CV> adopted by the scribes referred to the written word: "*in scribendo*", "*in scriptura*" are phrases used repeatedly by the grammarians in reference to the rule. Syllable division is then not about phonetics, but about writing conventions. Hale (1896: 269) concludes that the rules "provide a clear method to follow '*in scribendo*', and nothing could be more natural than that the scribes should accept gratefully what was so happily laid down for them". An appeal to a simple Latin model, therefore, seems a logical explanation for the uniformity of the word-division practice at line ends in Old English. Writing was a hard-earned and valuable skill in the scriptoria: the instruction must have been rigorous, and replicating the Latin prescriptive pattern was not difficult. It is also noteworthy that the minute number of "exceptions" occur in only 7 out of 168 examined manuscripts; indeed, in one single manuscript, Ker 334 (Junius XI in the Bodleian Library, *The Cædmon manuscript of Anglo-Saxon Biblical poetry*), 36.7% of the VCV divisions are <VC.V> (Wetzel 1981: 117–118). Clearly, and reassuringly, there were some "incompetent" and careless scribes whose training was not sufficient to suppress their insecurity about syllabification in speech.

4.2 Orthographic gemination in Old English

Another aspect of the Old English orthographic records relevant to the methodology of reconstructing syllabification is the incidence of what can be labeled

16 See note 13 above on onset-maximal syllabification in Latin across word boundaries. Note that the division of words containing *muta cum liquida* in Old English manuscripts recorded in Lutz (1986) and discussed in linguistic terms is also in line with the practice recommended by the Roman grammarians. Although for the purposes of reconstructing the history of English the vernacular documents are crucial, it has to be acknowledged that at any point in Old English and "even in the century before the Conquest far more manuscripts were written in Latin than in English" (Roberts 2005: 3).

'orthographic' gemination. The existence of phonological geminates in Old English is part of all descriptions of the Old English consonantal system. The minimal pairs in (10) show that singletons and geminates were contrastive word-medially:

(10) Singletons and geminates in Old English:

*bi**t**ela* 'beetle'	*bi**tt**er* 'bitter'
*bi**t**e* 'bit, morsel, cut'	*bi**tt**e* 'bucket'
*cy**l**e* 'chill, fever'	*cy**ll**(e), cy**ll**an* 'wineskin'
*ho**p**ian* 'to hope'	*ho**pp**ian* 'to hop'
*ma**n**u* 'mane'	*ma**nn**(a)* 'man'
*sæ**p**(e)* 'sap'	*sæ**pp**e* 'spruce, fir'

With the exception of the approximants /w/ and /j/, all Old English non-initial consonants could appear either as singletons or as geminates. The Old English geminates can be traced back to various sources. Some arose already in Proto-Germanic from assimilation: PrG **wu**ll**ō* > OE *wull* 'wool'; PrG **ste**rr**on-* > OE *steo**rr**a* 'star'. Geminates due to assimilation could arise after both short and long vowels, as in the verb paradigm of *cȳþan* 'to make known' > past sg. *cȳþ-de ~ cȳdde*; after syncope of the inflexional vowel in *lǣdan* 'to lead', > 3rd sg. *lǣd-þ* > *lǣdt* > *lǣt(t) ~ lǣd*; *mētan* 'to meet' > 3rd sg. *mēt-þ* > *mēt(t)*. By far the most important source of consonant gemination in Old English, however, is West Germanic (Consonant) Gemination, which was under way, but not necessarily completed, by the early fifth century. The gemination is in evidence in the earliest Old English written records, around the first quarter of the eighth century, compare Gothic *sibja* 'amity' to early OE *megsi**bb**i* 'affection among relatives'. Since West Germanic (Consonant) Gemination occurred only after short vowels, the most common distribution pattern of geminates was in the environment <$\breve{V}C_1C_1$>.

The syllabification of true intervocalic geminates is uncontroversial: they are heterosyllabic: /$VC_1.C_1V$/. In the verse geminates after short stressed vowels block resolution, e.g., *wæs se* grimma *gæst / Grendel haten* (*Beo* 102), where *grimma* 'grim' has to fill both a strong and a weak metrical position – the a-verse scans w w S / w S. In the course of Old English the salience of the geminate-singleton contrast varied according to the position of the geminate in the word and the length of the vowel to the left. Word-final geminates were particularly vulnerable: <bedd> 'bed' alternates in spelling with <bed> in the nom. acc. sg, but in the inflected forms only <dd> spellings are attested, similarly <fearr> ~ <fear> 'bull', but inflected <fearrV(-)>; <grimm> ~ <grim> 'grim', but inflected

<grimmV(-)>. Another environment where the contrast was apparently unstable is when a double consonant of any origin was followed by another consonant: *eallne ~ ealne, lȳttle ~ lȳtle, æddre ~ ædre* 'vein', *blæddre ~ blædre* 'bladder' etc. The vowel length in the latter forms can be questioned, see Campbell (1959: 182–183). There is no metrical test for either the authenticity of a geminate or the length of the vowel of such forms in Old English. Neither /VC_1C_2V/ nor /$VC_1C_1C_2V$/ can be resolved, and /VVCCC/ sequences are shortened to /VCCC/ as in the obscured compound *gōd-spell* > *godspell* 'gospel', but both before and after the shortening the initial syllable is treated as heavy in the meter.

The geminate's position with respect to stress is also of consequence (Luick 1914–1940: §672.2). By the tenth century, geminates became unstable in unstressed medial syllables, as in (11):

(11) Variable consonant-doubling in medial syllables in Old English:

*gyldene ~ gylde**nn**e* 'golden'	*dropude ~ dro**pp**ode* 'dropped'
*atelice ~ ato**ll**ice* 'horribly'	*to brucane ~ bruce**nn**e* 'for using'
*forene ~ fore**nn**e* (1×)'before'	*goretende ~ gore**tt**ende* 'roving'
*candele ~ cande**ll**e* 'candle'	*ēowere ~ ēowe**rr**e* 'your'

The interatonic alternations of <-ene ~ -enne> are especially common in Old English, but the variability is attested in other forms, too. Such spelling instability indicates blurring of the difference between heterosyllabicity and ambisyllabicity; the etymological length of the consonants was no longer a determining factor for orthographic doubling in positions other than after a primarily stressed vowel.[17] This is an initial step in the long-term loss of singleton-geminate stem-internal contrast in English: although the full simplification of such geminates is a Middle English development, the instances of sporadic inverse orthographic doubling of consonants in Old English are arguably an indication of perceived similarity between VC.CV and V{C}V.

Of special interest in this context is a pattern originally identified by Bülbring (1902: §546) as "Northumbrian geminations" found in *The Lindisfarne Gospels* (Li), *The Rushworth Gospels* (Ru), *The Durham Ritual* (DurRitGl), etc. This orthographic gemination occurs specifically after short vowels, but it cannot be

17 Even in those positions an unsystematic search of the *Dictionary of Old English* (*DOE*) (Cameron et al. 2007) reveals some variation: *begyten ~ begyttan* 'acquire' (Nic MsB), *hetend ~ hettend* 'enemies, nom.pl.' (Brb 10), cited in Orton (2000: 37), *droppende ~ dropende* 'dropping'; *forgytol ~ forgyttol* 'forgetful', *āginað ~ āginnað* 'begin', and after a long vowel *hlūtor ~ hlūttor.* Occasional variants such as Brb B, C *inwitta* ~ Brb A *inwidda* 'evil one' (cited in Orton 2000: 168) also *inwitum, inwuda* (*DOE*); *bite ~ bide* (PsCaJ) may well be the precursors of the first more solid evidence of tapping of the kind attested in ME *potage* (1230) *podech* (1528) ~ *porage* (1533) 'porridge' (Minkova 2014: 147).

attributed to West Germanic (Consonant) Gemination. It is attested most robustly, but not exclusively, if the consonant is a voiceless stop:

(12) Northumbrian geminations:

<(to) bre**cc**ane> 'break, part' (Li, Ru)	<sli**tt**en> 'torn' (Li, HomS 42)
<ea**tt**a> 'eat' (Li)	<spre**cc**a> 'speak' (Li)
<gegri**pp**an> 'seize' (Li, DurRitGl)	<wri**tt**en> 'written' (Li, DurRitGl)

One interpretation of these spellings (Luick 1914–1940: §§391, 670) is that the doubling of the consonants is intended to mark the shortness of the preceding vowel. Kortlandt (1997) rejects this hypothesis and proposes instead that the spellings are best analyzed as a case of preglottalization – in his account they are simply a continuation of the preglottalized stops which have been reconstructed for Proto-Germanic. Kortlandt references Liberman as the original proponent of the idea that PrG had glottal stops and that the glottalized consonants of some Present-Day English dialects are a replication of an earlier state. He supports that reconstruction, but uses different arguments. According to Kortlandt (2003: 9) in Old Northumbian "the double consonant cannot denote either a preceding short vowel (because the attested form is earlier than the lengthening of short vowels in northern English) or a true geminate (because the short vowel is regularly lengthened at a later stage in these dialects)".

Glottalization, the overlap of glottal and oral closure in the production of a single consonant, is typical word- or syllable-finally: *sho**p**, sto**p** me*; *sho**t**, a**t**las*; *sho**ck**, cho**c**olate* show 'glottal reinforcement' of [ʔp], [ʔt], [ʔk] in many types of British English (Cruttenden 2008: 166–167, 180). If the phonetic mechanism of glottalization in the older language is assumed to have been the same as the currently observable instances of glottalization, then we can posit a link between orthographic doubling and the doubly associated original singletons in (12) – an intervocalic consonant behaving both like a word-final consonant and an onset represented in the spelling by doubling.[18]

There is a typological comparison of relevance to the reconstruction of ambisyllabicity. Recall that the overall distribution of phonological geminates in the Old English system favors geminates after short vowels. Similarly, the

18 Kortlandt overlooks the fact that Northumbrian gemination is also found with /m/: *cymmes* 'comes' (Li), *summum* 'some, dat. pl.' (Li). While these will not fit his account of orthographic doubling indicating pre-glottalization of oral stops, it is possible to interpret <mm> as perceived syllable-final phonetically lengthened /m/, parallel to the phonetic lengthening observed in Present-Day English. Ladefoged (2005: 71) illustrates the difference between initial and final /m/ in Present-Day English with the word *mum*, where 'the final **m** is much longer than the initial **m**'.

Northumbrian orthographic geminations are most common intervocalically after short vowels. Inverse spellings, as in the Northumbian set in (12), limited as they may be, suggest that orthographic doubling could signal insecurity about the exact association of the consonant. Analytically, this corresponds to some accounts of intervocalic consonants following a short vowel in Present-Day English, where "certain single consonants behave like biconsonantal sequences" (Burzio 1994: 53), see the reference in (2) in Section 1. Also, as in the case of <grimm> ~ <grim> 'grim', but inflected <grimmV(-)>, noted above, or *æcer ~ æccer* 'field', (Old Frisian *ekker,* Old Saxon *akkar*), where the singleton is attributed to the uninflected form (Campbell 1959: 168), insecurity could also have been triggered by paradigmatic alternations.

One should also consider the historic connection between doubling of consonants and the notion that the stressed syllable of a word should be structurally the same as a stressed lexical monosyllable. In Present-Day English this was one of the motivations behind positing ambisyllabicity in the first place (see notes 2, 14). There were no #(C)V# lexical words in Old English. With reference to spelling in Present-Day English: 66% of disyllabic English words with one medial consonant that contain a stressed lax vowel in the first syllable are written with a geminate (e.g., *rabbit, grammar*), see Treiman, Bowey, and Bourassa (2002), Eddington, Treiman, and Elzinga (2013). The experimental results they cite support the criteria cited in (1), but they also underline the significance of orthotactic constraints (positional constraints on the sequences of graphemes that are used in words), which include the way in which <CC> are syllabified: <C_1C_1> sequences are unacceptable word-initially, and therefore <VC_1C_1V> are never syllabified *V. C_1C_1V, thus *bitter* cannot be *bi.tter*. The same principle would apply to the way in which Old English scribes employed orthographic geminates for etymological singletons: the doubling of the consonant would guarantee that a short vowel in a stressed syllable was closed by a consonant and was therefore orthographically and phonologically 'legal'.

On a final note, orthographic gemination in older English has a long and interesting history. Without rehearsing the voluminous literature on the orthography and phonology of the late twelfth-century autograph manuscript *The Ormulum*,[19] it should be pointed out that the innovative spelling system of that manuscript is fully compatible with a potentially ambisyllabic status of intervocalic singletons. Orm's system involves doubling of consonants after short vowels except in VCV structures (<*godd*> 'god' nom., but <*godess*> 'god's,). Put differently, an unambiguous coda (*godd* 'god', *serrfenn* 'serve') is doubled, while potentially ambisyllabic codas are not doubled.

19 See Murray (1995), Fulk (1996), Anderson and Britton (1999) and references there.

5 Summary

Syllables and their exact composition cannot be accessed directly. Even in Present-Day English, where scholars can conduct experiments with native speakers, the debate about the principles of syllabification and the methodologies of finding the right solutions continues. This study focuses on two potential paths of inquiry into the history of syllabification in earlier English. The first topic is the onset-maximal association of singletons between a short stressed vowel and another vowel in the verse. The broader discussion of the special phonological properties of meter in relation to speech led to the proposal that the behavior of VCV syllables with respect to resolution in Old English verse reflects only initial, deep-level syllabification. Any further re-syllabification is optional and linked to informal registers, which makes it logical that it would be ignored by the well-trained Anglo-Saxon scribes. Thus the verse-specific application of the syllabification procedure remains uninformative as to the possible ambisyllabic association of intervocalic consonants in speech.

The second line of inquiry was the evidence from spelling collected from word-division at line-ends and from orthographic gemination. The astonishing regularity of onset-maximal division of <VCV> strings as <V-CV> at line-ends can be attributed to formal register syllabification, as in the verse, and to the rigorous schooling of the scribes: the simple rule of word-division at line-ends was handed down from the Greeks to the Romans and was easily adopted by the Old English scribes. Another orthographic source, consonant gemination, was found to be strongly suggestive of ambisyllabicity, though admittedly the proposed interpretation which draws on phonetic parallels with Present-Day English must remain conjectural.

Throughout the study, I have tried to make inferences on what can be taken as evidence and what can be discarded as deviance in the light of general linguistic probabilities. A full discussion of the role of ambisyllabic consonants in calibrating the weight of the preceding syllable in earlier English is still needed, and so is a detailed study of the behavior of different consonant types and their dependence of the nature of the flanking vowels.

The extent to which Old English spelling reflected categorical distinctions is debatable. Luick (1914–1940: §27) believed that the Old English tradition of faithful and regulated scribal practices was relaxed in the twelfth century, and thereafter *man schrieb wie man sprach* ‘one wrote as one spoke’, a dictum which Stanley (1988: 328) pronounced completely wrong, insisting instead that *man schrieb* ***nie*** *wie man sprach* ‘one **never** wrote as one spoke’. The single conclusion that one can take away from the material in this paper is that in historical reconstruction both points of view have some validity.

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