SOME OLD ENGLISH PHENOMENA AND SYLLABLE STRUCTURE

María del Pilar García Mayo
Universidad del País Vasco

ABSTRACT

This paper analyzes some phonological problems in Old English within a syllable structure frame-work. Solutions within this framework are posited for phenomena such as the *-u/Ø* alternation in neuter a-nouns, long-stemmed disyllable words with apparent loss of medial vowel when inflectional endings are added and compensatory lengthening in strong nouns. The syllable structure framework provides a simpler account of these phenomena.

1. INTRODUCTION

The purpose of this paper is to analyze some phonological problems in Old English within a syllable structure framework. The phenomena analyzed are the following: the -u vs Ø alternation in neuter a-nouns; long-stemmed disyllable words like *engel/engles*, with apparent loss of medial vowel when inflectional endings are added and compensatory lengthening in strong nouns (*mearh/mēares*). This paper shows that some of the rules that have already been posited for Old English in a linear framework can be recast in a syllable structure framework obtaining a simpler and more elegant result.

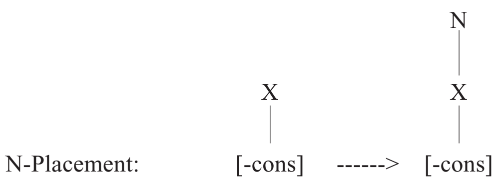
As stated in Rubach (1990:80), the Sonority Sequence Generalization (henceforth SSG) directs the operation of the Syllable Structure Algorithm (henceforth, SSA). Both the SSG and the SSA are given in (1) and (2) respectively:

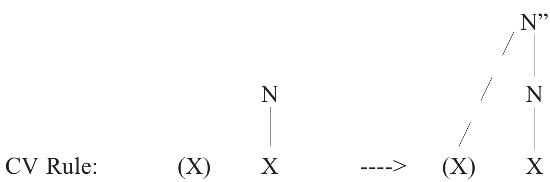
(1) Sonority Sequence Generalization

The sonority of segments must decrease toward the edges of the syllable in accordance with the following scale:

nucleus-liquids-nasals-fricatives-stops

(2) Syllable Structure Algorithm

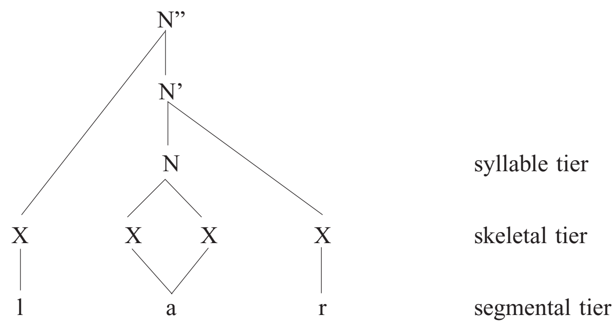




Onset Rule: Attach the prenuclear Xs to N”
Coda Rule: Erect N’ between N and N” to include all the post-nuclear Xs.

The SSA is an algorithm rather than a phonological rule that is ordered among other phonological rules. This means that it applies continuously throughout the lexical and the postlexical components (cf. Kiparsky (1982)) whenever its environment is met. Among the rules in (2), N-Placement and the CV Rule are universal, whereas the Onset and Coda Rules are language specific. A word like *lār* ‘teaching’ has the syllable structure representation in (3):

(3)



2. -u/Ø ALTERNATION IN STRONG NEUTER NOUNS

The Old English strong neuter declension comprises all neuter nouns, most of which ended in a consonant in historical times, the remaining in *-e*. Typical paradigms are as in (4):

(4)	*scip* 'ship'	*word* 'word'	*wundor* 'wonder'	*rīce* 'kingdom'
N/A	scip	word	wundor	rice
Gen.	scipes	wordes	wundres	rīces
Dat.	scipe	worde	wundre	rīce
N/A	scipu	word	wundor	rīcu
Gen.	scipa	worda	wundra	rīca
Dat.	scipum	wordum	wundrum	rīcum

Of particular interest among the strong neuter nouns is the distribution of the plural N/A suffix *-u*. In general, this suffix is present after light stems and absent after heavy stems. Thus, there are nouns like *god* 'god', *lim* 'limb', *brim* 'sea', *dor* 'door' with light syllable configurations (i.e. a short vowel followed by a single consonant, VC)[1] and, therefore, with *-u* suffix. On the other hand, there are nouns like *hūs* 'house', *bān* 'bone', *sār* 'pain', *land* 'land', *hors* 'horse' ... with heavy syllable configurations (i.e. a long vowel (V:) or a consonant cluster (CC)) that do not take that suffix. However, *rīce* 'kingdom' is a heavy-stemmed noun which, contrary to the generalization stated above, takes the *-u* suffix in the N/A plural: *rīcu*. *Wundor* 'wonder' is another word that does not follow the generalization: it has a light syllable configuration but the *-u* suffix does not appear in the N/A plural.

2.1 A LINEAR SOLUTION

A possible account of the distribution of the *-u* suffix in a linear framework would be, briefly, the following. The attachment of *-u* to all the stems would have to be allowed and then a phonological rule would delete it after heavy bases:

(5) -u Apocope $$\begin{bmatrix} \text{-cons} \\ \text{+high} \\ \text{+back} \end{bmatrix} \text{------> Ø /} \quad \begin{matrix} \text{V:C \_} \\ \\ \text{CC \_\_} \end{matrix}$$

To account for words like *rīce* 'kingdom' and *wīte* 'punishment', a rule of Vowel Truncation (informally given in (6)), ordered after -u Apocope, would be needed:

(6) Vowel Truncation $\quad$ V ------> Ø / ______ V

(7) / rīce + u /

-u Apocope ________

Vowel Truncation rīcu

Lastly, to account for *wundor* ‘wonder’, an underlying representation with a heavy syllable and a rule of Epenthesis which breaks it later would have to be posited (cf. section 2):

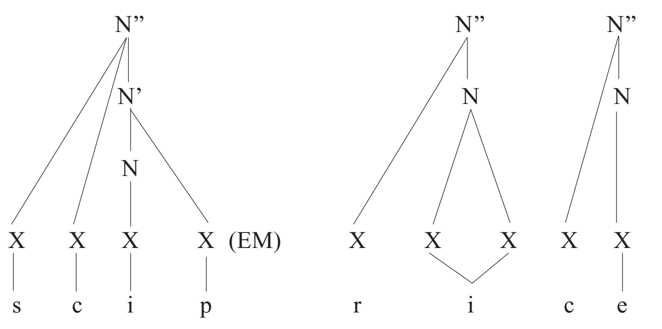
(8) / wundr + Ø /

Epenthesis wundor

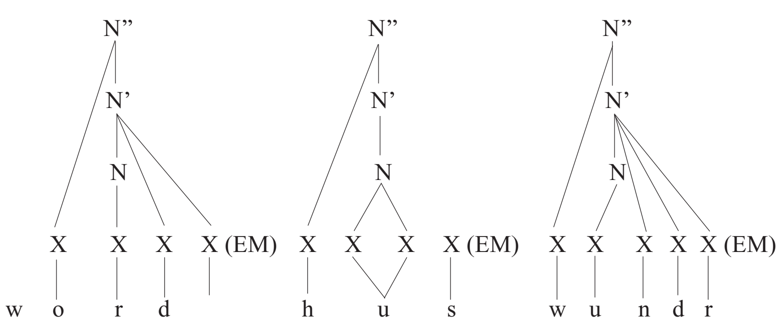
2.2 A SYLLABLE STRUCTURE SOLUTION

The syllable structure representation of some model strong neuter a-nouns is given in (9):

(9) a. *scip/scipu* b. *rīce/rīcu*



c. *word/word* d. *hūs/hūs* e. *wundor/wundor*



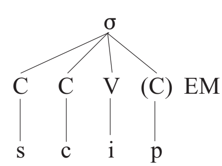
In the representations above, we assume that the last consonant is extrametrical (EM). With that assumption in mind, the syllable structure framework allows us to arrive at a certain generalization. We observe that the representations in (9a) and (9b) have a non-branching nucleus and those are the items that take the *-u* suffix. We would like to find now that the representations in (9c), (9d) and (9e) have a branching nucleus but, unfortunately, that is not the case. The general property that characterizes them is that they have a branching nucleus or coda. The best generalization we can arrive at within this framework is that nouns with a non-branching nucleus will take the suffix *-u*, whereas nouns with a branching nucleus or coda will not. The linear account with an apocope anda truncation rule is, however, preferred.

2.3 A CV SOLUTION

Let us find out how the same set of data would be accounted for within Clements and Kayser's (l983) CV Phonology framework. These authors define the notions light syllable and heavy syllable in terms of the category *nucleus*. The nucleus is a prosodic category consisting of any and all tautosyllabic sequences of the form V(X), where X ranges over single occurrences of C and V. Light syllables are those containing a simple, non-branching nucleus, that is a V, while heavy syllables are those containing a complex (=branching) nucleus, that is VV or VC. In (10), the representation of strong neuter a-nouns is given in a CV framework:

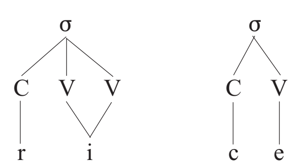
(10) a. *scip/scipu*

non-branching nucleus



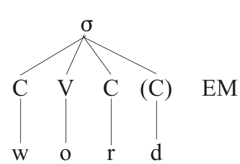
b. *rīce/rīcu*

non-branching nucleus[2]



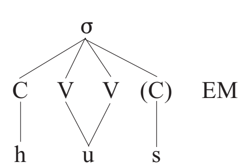
c. *word/word*

branching nucleus

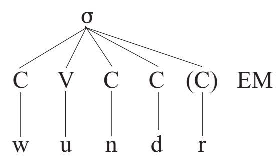


d. *hūs/ hūs*

branching nucleus



e. *wundor/ wundor*



branching nucleus

Again, we assume that the final consonant is extrametrical. Within a CV framework, we arrive at the generalization stated in (11) for the distribution of the *-u* suffix in strong neuter a-nouns in Old English:

(11) A word takes *-u* when the syllable has a non-branching nucleus. When the syllable has a branching nucleus the suffix *-u* is not added.

3. LONG-STEMMED DISYLLABLES

There is a group of words in Old English in which a second syllable vowel alternates with Ø when suffixes are added. Typical paradigms are given in (12):

(12)		*engel* 'angel'	*wæter* 'water'
	N/A	engel	wæter
	Gen.	engles	wætres
	Dat.	engle	wætre
	N/A	englas	wætras
	Gen.	engla	wætra
	Dat.	englum	wætrum

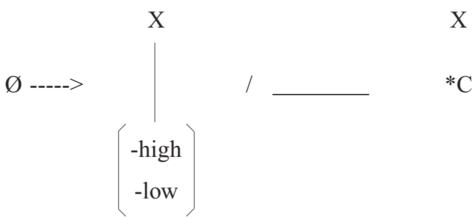
Like *engel* is, for example, *fugol* 'bird'. Like *wæter* are words like *tungol* 'star', *wæpen* 'weapon' and *wundor* among others. These are all forms in which it appears that an unstressed vowel is deleted before a sonorant consonant when a vowel follows. Assuming a deletion rule, we would posit underlying /engel+ es/ and derive [engles]. A problem facing this analysis, as Dresher (1985:53) points out, is that "it does not apply in forms like *steadelas* and *ofergeotele* and *heofenes*, where we also have an unstressed vowel before a sonorant which is followed by a vowel."

Rather than positing underlying /engel+Ø/ and /engel+es/ with a rule of deletion applying to /engel+es/, we can posit underlying /engl+Ø/ and /engl+es/ and apply a rule of epenthesis to /engl+Ø/. The underlying representation of the long-stemmed words mentioned above are given in (13):

(13)	Masculine Nouns	Neuter Nouns
	/engl/	/tugl/
	/fugl/	/wæpn/
		/wætr/
		/wundr/

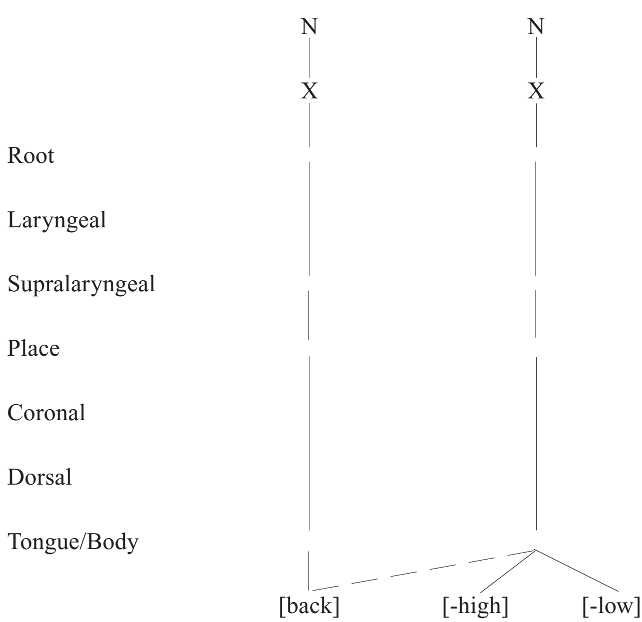
Consider all sonorants in this environment extrametrical. The rule of epenthesis will insert a vowel before a syllable final extrasyllabic sonorant consonant. This rule is given in (14):

(14) Epenthesis Rule



The quality of the epenthetic vowel depends on the nature of the stressed vowel: if the stressed vowel is front, the epenthetic vowel is [e]; if the stressed vowel is back, the epenthetic vowel is [o]. In order to account for this phenomenon, we need to posit a Spreading rule. This rule is given in (15), following Steriade's (1987:597) Overlapping Tier Hypothesis:[3]

(15) Spreading Rule



4. COMPENSATORY LENGTHENING IN STRONG NOUNS

Consider the paradigm given in (16):

(16)	*mear/me̅a̅res*	
N/A	mearh	me̅a̅ras
Gen.	me̅a̅res	me̅a̅ra
Dat.	me̅a̅re	me̅a̅rum

Like *mear* are words like *ealh* ‘temple’, *healh* ‘corner’, *fearh* ‘pig’ and *wealh* ‘foreigner’. In Old English, vowels often underwent compensatory lengthening owing to the loss of following consonants only, usually the spirants χ, g, and ζ. Compensatory lengthening following loss of χ (velar spirant allophone of the glottal fricative phoneme /h/) took place after /r/ and /l/, as the words mentioned above show. This loss of χ is later than breaking. Breaking is a phenomenon consisting of the diphtongization of a front vowel when it is followed by a consonant or a group of consonants produced in the back of the mouth. The relevant changes produced by breaking are shown in (17):

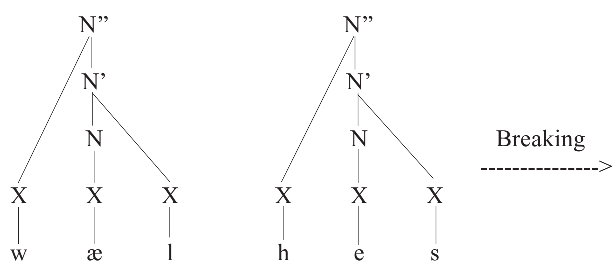
(17) Breaking

æ̆ ------>	ĕa before l + consonant
ĕ ------>	ĕo before r + consonant

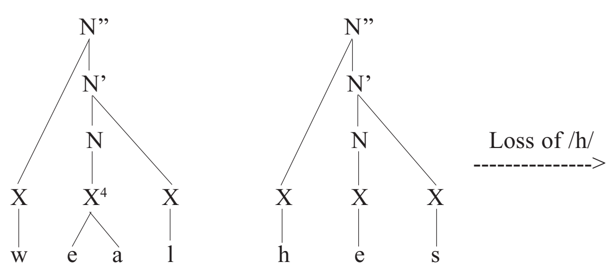
Let us see now how the syllable structure framework handles the representation of the compensatory lengthening phenomenon. Consider, for example, the genitive singular of the word *wealh*, namely *we̅a̅les*:

(18)

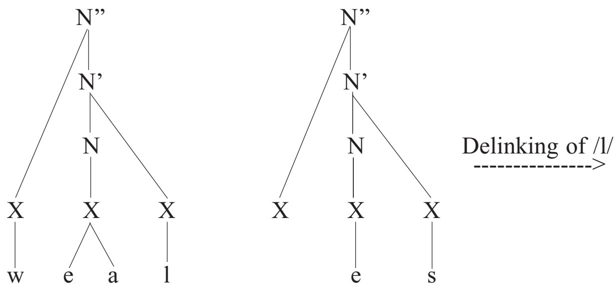
(a)



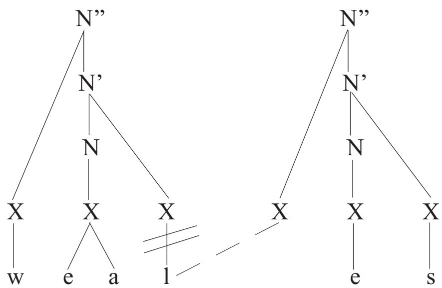
(b)



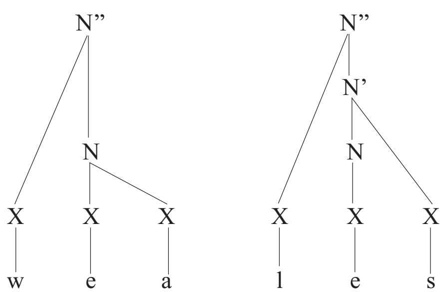
(c)



(d)

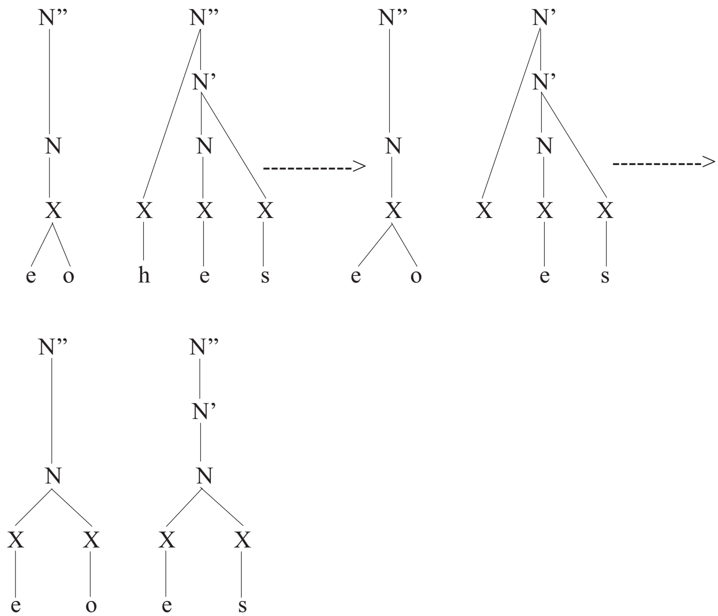


(e)



As a consequence of the delinking of /l/ in (c) and its linking to the empty segment to its right in the skeletal tier, we still have another free X slot. One of the elements of the short diphthong will be linked to that slot –by some rule that will have to be stipulated– and the final result is a long diphthong. Hayes (1989) calls this type of compensatory lengthening *double flop* because what is lengthened is not the segment next to the one that is lost. In a word like *w*$\overline{ea}$*les*, the diphthong is lengthened, skipping the other segment. In a syllable structure framework, the long diphthong can be explained as a consequence of the onset deletion triggering compensatory lengthening in the preceding syllable.
There is also compensatory lengthening in Old English in short-stemmed monosyllables ending in a vowel or diphthong. Consider a word like *eoh* ‘horse’ and its genitive singular $\overline{eo}$*s*:

(19)



Once more, the explanation is that onset deletion causes lengthening of the diphthong in the preceding syllable. However, to arrive at the correct surface form of this type of words, we will probably need a Vowel Truncation rule which will delete the vowel in the inflectional ending.[5]

5. CONCLUSION

The analysis of some Old English phenomena has shown that some of the rules that have already been posited in a linear framework can be recast in a Syllable Structure framework obtaining a simpler and nicer result. Thus, we have seen that a strong neuter noun takes *-u* when the syllable has a non-branching nucleus. When the syllable has a branching nucleus the suffix *-u* is not added. In long-stemmed disyllables like *engel* we have posited underlying /engl+Ø/ and /engl+es/ and a rule of epenthesis (cf.(14)) that will insert a vowel before a syllable final extrasyllabic sonorant consonant. Finally, compensatory lengthening in strong nouns can be explained in a syllable structure framework as a consequence of the onset deletion triggering compensatory lengthening in the preceding syllable.

Notes

1. Normally VC counts as heavy. Hence, extrametricality (EM) is necessary here. For more on the concept of extrametricality see Hayes (1982).
2. *Rīce* is a noun that, at first blush, looks like *hūs*. That is to say, it should have a branching nucleus and no necessity to add a *-u* suffix. However, *rīce* takes the *-u* suffix in the N/A

plural: *rīcu*. In order to solve this problem, an underlying *-e* is posited and, in this way, the nucleus is no longer branching.

3. The Overlapping Theory Hypothesis is based on the idea that vowels and consonants are, in general, not distinctively specified for the same set of terminal features. Except for the Dorsal articulator node (reserved for vowels) and the Velar articulator node (reserved for velar/uvular consonants), vowels and consonants share their class tiers.
4. This category was referred to as *complex segment* in the earlier literature. The term refers to units (both consonants and vowels) which count phonologically as single segments but which have internal structure comparable to that of sequences of segments. Clements and Keyser (1983: 85-95) illustrate complex segments with an example from Spanish.
5. However, if we apply the truncation rule in (6) here we will obtain the wrong results. Further research is needed in this area. An alternative solution will be to posit *-s* as the genitive ending instead of *-es* and then have a /h/ deletion rule apply (informally h -----> Ø / _____ C; /eoh+s/ ----> /ēōs/).

References

Campbell, A. *Old English Grammar*. Clarendon Press: Oxford, 1959.

Clements, G.N. and S.J. Keyser. *CV Phonology: A Generative Theory of the Syllable*. Cambridge, MA: MIT Press, 1983.

Clements, G.N. "The Geometry of Phonological Features." *Phonology Yearbook* 2 (1985): 225-252.

Dresher, B.E. *Old English and the Theory of Phonology, Outstanding Dissertations in Linguistics*, Garland Publishing, Inc., 1985.

Hayes, B. "Extrametricality and English Stress." *Linguistic Inquiry* 13.2 (1989): 227-276.

Hayes, B. "Compensatory Lengthening in Moraic Theory." *Linguistic Inquiry* 20.2 (1989): 253-306.

Kiparsky, P. "From Cyclic to Lexical Phonology." *The Structure of Phonological Representations* Part I. Eds. H. van der Hulst and N. Smith. Dordrecht: Forist, 1982. 131-175.

McCarthy, John J. "Feature Geometry and Dependency: A Review." *Phonetica* 43 (1988): 84-108.

Mitchel, B and Fed C. Robinson. *A Guide to Old English*. Basil Blackwell, 1983.

Penovich, M. P. *Old English Morphology*. North Holland Publishing Company, 1979.

Rubach, J. "Final Devoicing and Cyclic Syllabification in German." *Linguistic Inquiry* 21.1 (1990): 79-94.

Steriade, D. "Locality Conditions and Feature Geometry", *Proceedings of the North Eastern Linguistic Society (NELS)* 17 (1987): 595-617

Wetzels, L. "Phonological Timing in Ancient Greek." *Studies in Compensatory Lengthening*. Eds. L. Wetzels and Engin Sezer. Dordrecht: Foris, 1986.