

# Lexicon optimization: irregular vowel length changes in Middle English

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## OVERVIEW

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## I. IRREGULAR VOWEL LENGTH CHANGES IN ME: THE ANALOGICAL ACCOUNT

- (1) Lengthening in monosyllabic stems closed by a single consonant (see Appendix A):

OE	PDE
<i>blǣd</i>	<i>blade</i>
<i>cōl</i>	<i>coal</i>
<i>crǣn</i>	<i>crane</i>
<i>geōc</i>	<i>yoke</i>
<i>hōp</i>	<i>hope</i>
<i>hwǣl</i>	<i>whale</i>
<i>mōt</i>	<i>mote</i>
<i>slǣd</i>	<i>slade</i>
<i>þōl</i>	<i>thole</i>

- (2) Shortening in unapocopated disyllabic stems (see Appendix B):

OE	PDE
<i>cīecen</i>	<i>chicken</i>
<i>hāring</i>	<i>herring</i>
<i>rādic</i>	<i>radish</i>
<i>sārig</i>	<i>sorry</i>
<i>sālig</i>	<i>silly</i>
<i>wāpen</i>	<i>weapon</i>
<i>wīðig</i>	<i>withy</i>

- (3) The traditional explanation of lengthening in monosyllabic stems:

levelling from disyllabic inflectional forms subject to Open Syllable Lengthening (Luick 1964: §392.1)

	<b>sg</b>		<b>pl</b>	
OE	<i>hwǣl</i>		<i>hwǣ.las</i>	
			↓	MEOSL
ME	<i>whāl</i>	←	<i>whā.les</i>	
		levelling		

- (4) The traditional explanation of shortening in unapocopated disyllabic stems:

- (4a) levelling from syncopated inflectional forms subject to Closed Syllable Shortening (Jordan 1974: §23)

	<b>sg</b>		<b>pl</b>	
OE	<i>wǣ.pen</i>		<i>wǣp.nu</i>	
			↓	SHOCC
ME	<i>wě.pen</i>	←	<i>wěp.nen</i>	
		levelling		

- (4b) levelling from unsyncopated inflectional forms subject to Trisyllabic Shortening (Luick 1964: §387)

	<b>sg</b>		<b>pl</b>	
OE	<i>hǣ.ring</i>		<i>hǣ.rin.gas</i>	
			↓	TRISH
ME	<i>hě.ring</i>	←	<i>hě.rin.ges</i>	
		levelling		

- (5) The analogical account of shortening in unapocopated disyllabic stems extends to the numerous 'exceptions' of MEOSL (Luick 1964: §392.2): cf. (4b)

	<b>sg</b>		<b>pl</b>	
OE	<i>hǿ.fon</i>		<i>hǿ.fo.nas</i>	
	[MEOSL blocked]		↓	TRISH
ME	<i>hě.ven</i>	←	<i>hě.ve.nes</i>	
		levelling		

## II. EVIDENCE AGAINST THE ANALOGICAL EXPLANATION

(see Bermúdez-Otero 1998)

### TRISH and the ‘exceptions’ of MEOSL

(6) There is no evidence of TRISH in base forms (Ritt 1994: 103-5, Minkova & Stockwell 1996); in fact, *TRISH is not a genuine historical sound change*.

(7) *Incidence of lengthening among unapocopated disyllabic stems in Minkova's corpus* (see Appendix C):

(a)	The post-tonic rhyme contains a sonorant consonant.....	166 items
	N	% e.g.
	(i) Lengthened:	39 23.5 <i>raven</i>
	(ii) Unlengthened:	127 76.5 <i>heaven</i>
(b)	The post-tonic rhyme contains an unchecked vowel.....	24 items
	N	% e.g.
	(i) Lengthened:	0 0 —
	(ii) Unlengthened:	24 100 <i>body</i>
(c)	The post-tonic rhyme consists of vowel plus obstruent.....	41 items
	N	% e.g.
	(i) Lengthened:	1 2.4 <i>naked</i>
	(ii) Unlengthened:	40 97.6 <i>gannet</i>
	Total.....	231 items

(8) *Correlation between lengthening and presence of a sonorant in the post-tonic rhyme*

$$\chi^2 = 12.646$$

$$p < .0005$$

(5 doublets excluded)

		Lengthening			
		YES		NO	
		observed	expected	observed	expected
Sonorant C in post-tonic Rh	YES	34	25	122	131
	NO	1	10	64	55

N.B. The correlation remains highly significant even if we exclude from the corpus items with obstruent+(ə)+liquid sequences (e.g. *better*) to control for the possibility of gemination.

(9) Minkova's (1982) compensatory analysis of MEOSL is correct: *lengthening is circumscribed to disyllabic stems where the post-tonic rhyme contains a deletable -ə*.

- If the schwa is obligatorily deleted (i.e. in stem-final position), lengthening is regular: e.g. OE *nāma* > PDE *name* (Minkova 1982).
- If the schwa is variably deleted (i.e. stem-internally before a sonorant consonant), lengthening is sporadic: e.g. OE *hrǣfen* > PDE *raven*, but OE *hǣfofn* > PDE *heaven*.
- Elsewhere (i.e. if the post-tonic rhyme does not contain a deletable schwa), lengthening is impossible: e.g. OE *bōdig* > PDE *body*, OE *gǣnot* > PDE *gannet*.

### The morphologization of SHOCC: evidence from the *Ormmulum*

(10) The *Ormmulum*:

- completed by *circa* 1180 in South Lincolnshire (Bourne?) (Parkes 1983)
- authors's dialect not yet subject to MEOSL (Anderson & Britton 1997, Fulk 1996)
- SHOCC already fully morphologized (see Appendix D)

(11) *Morphological environments triggering SHOCC*:

(i) Synchronically underived environments

e.g. <blosstme> ‘blossom’ OE *blōstma*  
<lihht> ‘light’ OE *lēoht*

(ii) Athematic past tense and past participle forms of weak verbs

e.g. <demnde> ‘deem’ pret.3sg. OE *dēman*  
<hidd> ‘hide’ p.ptc OE *hȳdan*

(iii) *-pe/-te* suffixation

e.g. <ma33pe> ‘kin’ OE *māg*  
<seollpe> ‘happiness’ OE *sāel*

(12) *Morphological environments blocking SHOCC*:

(i) Nominal inflection

e.g. sg. <dækenn> ~ pl. <dæcness>, not \*<deccness>, ‘deacon’ OE *dēacon*  
sg. <tákenn> ~ pl. <tacness>, not \*<taccness>, ‘token’ OE *tācen*

(ii) Zero-derived weak verbs

e.g. noun <tákenn> ~ vb. <tacnenn>, not \*<taccnenn>, ‘betoken’ OE *tācen*  
noun <wæpenn> ~ vb. <wæpnedd>, not \*<weppnedd>, ‘arm’ OE *wāpen*

(iii) Derivational suffixation (including suffixoids; see Sauer 1992)

e.g. <god> ‘good’ ~ <godnesse> ‘goodness’, not \*<godnesse>, OE *gōd*  
<sop> ‘true’ ~ <soplike> ‘truly’, not \*<sopplike>, OE *sōþ*

(iv) Compounding

e.g. <boc> ‘book’ ~ <bocstaff> ‘letter’, not \*<bocstaff>, OE *bōc*  
<shep> ‘sheep’ ~ <shephirde> ‘shepherd’, not \*<shepphirde>, OE *scēap*

(13) Implications:

- The morphologization of SHOCC was completed fairly early, i.e. *before C13*.
- The interaction between SHOCC and morphological structure was *orderly, rather than random*. SHOCC was blocked in well-defined morphological environments.
- The morphologization of SHOCC always implies *dependence of morphologically complex forms on their base, never vice versa*. This includes declensional paradigms.

### A brief comparison with Danish (Riad 1992: 355)

- (14) Danish has genuine (i.e. mora-epenthetic, non-compensatory) OSL:

blad ~ blaa.det	‘leaf’	OE <i>blǣd</i>
bud ~ buu.det	‘message’	OE <i>bōd</i>
glad ~ glaa.de	‘happy’	OE <i>glǣd</i>
fred ~ free.den	‘peace’	OE <i>frīð</i>

- (15) In Danish, like ME, there has been sporadic lengthening of monosyllabic stems:

baar	‘bare’	OE <i>bǣr</i>
blaad	‘blade’	OE <i>blǣd</i>
daal	‘dale’	OE <i>dǣl</i>

As in English, this lengthening has been imputed to analogical levelling from disyllabic inflectional forms subject to OSL (Boberg 1896).

- (16) However, there are lengthened words lacking disyllabic forms to trigger lengthening:

Hansen notes that several original *CvC* forms that have lengthened their vowel could not have become that way analogically, for lack of bisyllabic forms to model on. Typical cases are nouns with zero plurals, e.g. *maat* ‘food’, *loof* ‘permission’, *taak* ‘roof’, *høør* ‘flax’, *øøl* ‘beer’, *hool* ‘hole’. The definite article [suffix], which would render these words bisyllabic, was only in severely restricted use at this time. Hence, analogy alone could not explain the situation. Riad (1992: 355)

### III. HOW THE GRAMMAR INTERACTS WITH THE LEXICON: INPUT HARMONY

- (17) *Lexical diffusion ≠ random replacement of lexical specifications*

If we assume that lexical diffusion is nothing more than the substitution of one phoneme for another in the lexical representations of words, we have no explanation either for the direction of the change, nor for the envelope of phonological conditions that continues to control it. Kiparsky (1995: 651)

- (18) *Radical Underspecification Theory: ‘default’ vs ‘marked’ feature values*

- In each environment *E* where the feature [F] is lexically contrastive, one of the values of [F] is designated as the ‘default’; the opposite value is the ‘marked’ value.
- Default values are left *unspecified* in the lexicon; in the grammar, they are filled in by means of context-sensitive structure-building lexical rules.

UR	X[ ]Y	X[-F]Y
Structure-building rule: [ ] → [+F] / X __ Y	X[+F]Y	<i>blocked</i>

In this example, [+F] is the default value of feature [F] in the environment X\_\_Y, assigned by rule; lexical items containing the marked value [-F] block the default rule (see Kiparsky 1993).

(19) *Lexical diffusion as lexicon simplification* (Kiparsky 1995)

- The ‘marked’ feature value is gradually removed from underlying representations on a word-by-word basis.
- Concomitantly, the ‘default’ feature value appears to diffuse, as ever more lexical items cease to block the application of the relevant structure-building lexical rule.

The problem: This approach is descriptive, rather than explanatory; default rules have to be stipulated *ad hoc*.

(20) *An OT alternative: lexicon optimization*

- Let [F] be a lexically contrastive feature in environment X\_\_Y.
- The optimal (=most harmonic) input value of [F] in environment X\_\_Y is that which leads to the best satisfaction of the constraint hierarchy in the output (Prince & Smolensy 1993: §9.3; Itô, Mester & Padgett 1995).

**In lexical diffusion processes, optimal input specifications expand at the expense of non-optimal ones —where the relative harmony of input specifications is determined by the constraint hierarchy.**

## IV. INPUT HARMONY PATTERNS IN OE AND ME

**Input harmony in monosyllables closed by a single consonant**

## (21) -VVC monosyllables escaped SHOCC because the final consonant was extrasyllabic:

**WEAKC » PARSE<sup>Seg</sup>**

where WEAKC: A consonant at the right edge of the prosodic word is dominated by the fewest possible prosodic nodes (Spaelti, 1994).

PARSE<sup>Seg</sup>: Segments are syllabified.

/stɔ:n/	* <sub>σ</sub> [μμμ]	WEAKC	IDENT <sup>μμ</sup>	PARSE <sup>Seg</sup>
[ <sub>ω</sub> [ <sub>σ</sub> stɔ:n]]	*!	*!		
[ <sub>ω</sub> [ <sub>σ</sub> ston]]		*!	*	
[ <sub>ω</sub> [ <sub>σ</sub> stɔ:]n]    ɔ̃				*

(22) Further evidence for WEAKC » PARSE<sup>Seg</sup>:

In compensatory lengthening triggered by the loss of stem-final schwa (e.g. /namə/ → [na:m] ‘name’), the floating mora skips the final consonant so that the latter can become extrasyllabic (Bermúdez-Otero 1998: §3.3; cf. Riad 1992: 335-6).

/na <sup>h</sup> mə <sup>h</sup> /	*ə	WEAKC	PARSE <sup>Seg</sup>
[ <sub>ω</sub> [ <sub>σ</sub> na <sup>h</sup> ][ <sub>σ</sub> mə <sup>h</sup> ]]	*!		
[ <sub>ω</sub> [ <sub>σ</sub> na <sup>h</sup> m <sup>h</sup> ]]		*!	
[ <sub>ω</sub> [ <sub>σ</sub> na <sup>h</sup> ] <sub>ω</sub> m]			*

- (23) Vowel length contrasts are *not neutralized* in the environment [<sub>C<sub>0</sub>\_\_C<sup>1</sup>]<sub>Word</sub> owing to the dominance of faithfulness constraints:</sub>

**DEP<sup>μ</sup> » WEAKC**

where DEP<sup>μ</sup>: All morae present in the output have an input correspondent

/lok/	FTBIN	DEP <sup>μ</sup>	WEAKC	PARSE <sup>Seg</sup>
[ <sub>ω</sub> [ <sub>σ</sub> lo]k]	*!			*
[ <sub>ω</sub> [ <sub>σ</sub> lɔ: <sub>ω</sub> ]k]		*!		*
[ <sub>ω</sub> [ <sub>σ</sub> lok]]			*	

- (24) \ In monosyllabic stems closed by a single consonant, the optimal input specification of vowel length in long (bimoric):

input	output	DEP <sup>μ</sup>	WEAKC	PARSE <sup>Seg</sup>
/CVC/	[ <sub>ω</sub> [ <sub>σ</sub> CVC]]		*!	
/CVVC/	[ <sub>ω</sub> [ <sub>σ</sub> CVV]C]			*

The correct pattern of input harmony emerges from the independently motivated ranking DEP<sup>μ</sup> » WEAKC » PARSE<sup>Seg</sup>.

**Input harmony in disyllables**

- (25) *OE High Vowel Deletion*

The basic pattern: High vowels are deleted in unstressed word-final syllables when preceded by a heavy stressed syllable or a light stressed syllable plus another syllable (Campbell 1959: §345-6).

e.g.	‘vat’	‘scip’	‘bone’	‘word’	‘troop’
nom. sg.	fǣt	scīp	bān	word	wěrod
gen. pl.	fāta	scīpa	bāna	worda	wěroda
nom. pl.	fātu	scīpu	bān	word	wěrod

(For some recalcitrant problems surrounding HVD, see Hogg 1997)

(26) *HVD targets high vowels in unfooted syllables* (see Kager 1997):

**MAX<sup>[-high]</sup> » PARSE<sup>S</sup> » MAX<sup>[+high]</sup>**

- MAX<sup>[-high]</sup>: All nonhigh vowels present in the input have an output correspondent  
 PARSE<sup>σ</sup>: Syllables are footed  
 MAX<sup>[+high]</sup>: All high vowels present in the input have an output correspondent

(27)

/fæt-u/	PARSE <sup>σ</sup>	MAX <sup>[+high]</sup>
[ <sub>σ</sub> fæt]		*!
[ <sub>σ</sub> fa.tu]      ɛ		

- (28) • In pre-OE †*bānu*, the final syllable was unfooted, i.e. †[<sub>σ</sub>bā]nu, because the constraint RHHRM (Prince & Smolensky 1993: 59) was superordinate: the language did not tolerate unbalanced trochees, i.e. \*[<sub>σ</sub>ōō].
- Note that vowel shortening is not available as a foot-reescuing strategy.

**RHHRM, IDENT<sup>μμ</sup> » PARSE<sup>S</sup>**

/ba:n-u/	RHHRM	IDENT <sup>μμ</sup>	PARSE <sup>σ</sup>	MAX <sup>[+high]</sup>
[ <sub>ω</sub> [ <sub>σ</sub> ba:nu]]	*!			
[ <sub>ω</sub> [ <sub>σ</sub> ba.nu]]		*!		
[ <sub>ω</sub> [ <sub>σ</sub> ba:]nu]			*!	
[ <sub>ω</sub> [ <sub>σ</sub> ba:]n]      ɛ				*

(29) \ In unapocopated disyllabic stems, the optimal input specification of stressed vowel length is short (monomoric):

input	output	RHHRM	IDENT <sup>μμ</sup>	PARSE <sup>σ</sup>
/ōσ/	[ <sub>ω</sub> [ <sub>σ</sub> ō]σ]			*!
/ō̄σ/      ɛ	[ <sub>ω</sub> [ <sub>σ</sub> ō̄σ]]      ɛ			

The correct pattern of input harmony emerges from the independently motivated constraint ranking RHHRM, IDENT<sup>μμ</sup> » PARSE<sup>σ</sup>.

(30) Conclusion:

**The direction of lexical vowel length change in ME is governed by patterns of input harmony emerging from independently motivated constraint rankings.**



APPENDIX A  
LENGTHENING IN MONOSYLLABIC STEMS

- Appendices A and B are based on a manual search of Holthausen (1934), crosschecked with the *Corpus of OE*, the *OED*, Onions (1966), and —for Appendix A— Ritt (1997).
- Obsolete and/or dialectal forms have been included only if the *OED* records attestations later than 1850.
- Relatively robust cases are highlighted in bold; relatively problematic forms are given in normal type.

A.1 Unlengthened items (e.g. GOD)

OE	PDE	<i>Ormmulum</i> nom. sg.	Alternative etyma	Observations
<b>bǣc</b>	<b>back</b>	<bacc>		
<b>bǣð</b>	<b>bath</b>	<bapþ>		
<b>blǣc</b>	<b>black</b>			
<b>bræs</b>	<b>brass</b>	<brass>		
<b>brōc</b>	<b>brock</b>			C19 dial. ‘badger’ ( <i>OED</i> )
<b>gebrōc</b>	<b>brock</b>			C19 dial. ‘fragment’ ( <i>OED</i> )
<b>brōð</b>	<b>broth</b>			
<b>ceāf</b>	<b>chaff</b>	<chaff>		
<b>cōt</b>	<b>cot</b>			also OE <i>cote</i> (fem.) > <i>cote</i>
<b>dōl</b>	<b>dull</b>		<i>*dyll-?</i> ( <i>OED</i> )	
<b>fæt</b>	<b>vat</b>			
<b>flæt</b>	<b>flat</b>		ON <i>flatr</i>	also OE <i>flet(t)</i> > Scots <i>flet</i>
<b>glǣd</b>	<b>glad</b>	<gladd>		
<b>glæs</b>	<b>glass</b>			
<b>gōd</b>	<b>god</b>	<godd>		
<b>græs</b>	<b>grass</b>			
<b>hlōt</b>	<b>lot</b>	<lott>		
<b>hōc</b>	<b>hock</b>		OE <i>hocc</i>	obs./dial. ‘mallow’
<b>hrǣd</b>	<b>rad</b>			C19 dial. ‘ready’ ( <i>OED</i> )
<b>lōc</b>	<b>lock</b>			cf. OE <i>locc</i> (of hair)
<b>lōs</b>	<b>loss</b>			OE <i>to lose</i>
<b>mōs</b>	<b>moss</b>			
<b>pǣþ</b>	<b>path</b>			
<b>plōt</b>	<b>plot</b>			(of land); only once in OE
<b>sǣd</b>	<b>sad</b>			
<b>sǣp</b>	<b>sap</b>			
<b>sceōt</b>	<b>shot</b>			‘act of shooting’
<b>scōt</b>	<b>scot</b>		ON <i>skot</i> , OF <i>escot</i>	as in <i>scot-free</i>
<b>slǣc</b>	<b>slack</b>			

<b>slōp</b>	<b>slop</b>			OE <i>oferslop</i> ‘surplice’
<b>smǣl</b>	<b>small</b>			
<b>sōc</b>	<b>sock</b>			‘liquid manure’
spær	spar		MLG?	OE <i>spærstān</i> ‘gypsum’
<b>stǣf</b>	<b>staff</b>	<staff>		cf. PDE <i>stave</i>
<b>strōp</b>	<b>strop</b>			also PDE <i>strap</i> (Onions)
<b>swān</b>	<b>swan</b>			
<b>swǣð</b>	<b>swath</b>			also OE <i>swaðu</i> > <i>swathe</i>
<b>trōd</b>	<b>trod</b>			dial. ‘footpath’ ( <i>OED</i> )
<b>trōg</b>	<b>trough</b>			
<b>þǣc</b>	<b>thack</b>			noun ‘thatch’
<b>þrōc</b>	<b>throck</b>			dial. ‘beam for ploughshare’
<b>wrǣc</b>	<b>wrack</b>			as in <i>wrack and ruin</i>

## A.2 Lengthened items (e.g. WHALE)

OE	PDE	<i>Ormmulum</i> nom. sg.	Alternative etyma	Observations
bǣr	bare			-r
gebēd	bead	<bēde>	OE <i>bedu</i> ?	
<b>blǣd</b>	<b>blade</b>			
gebōd	bode	<bode>		C19 dial. ‘offer’ ( <i>OED</i> )
<b>cōl</b>	<b>coal</b>			
<b>crān</b>	<b>crane</b>			
dǣl	dale	<dǣle>		
fǣr	fare		OE <i>faru</i>	
flōt	float		OE <i>flota, flotian</i> ; OF <i>flotte, flotter</i>	
geār	yair			-r
geāt	gate	<ǰate>, <gate>	ON <i>gata</i>	
<b>geōc</b>	<b>yoke</b>	<ǰocc>		
grǣf	grave			Medial Fricative Voicing
hōl	hole		OE <i>holh</i>	
<b>hōp</b>	<b>hope</b>			‘small enclosed valley’
<b>hwǣl</b>	<b>whale</b>			
lǣt	late	<lǣte> (adv.)	OE <i>late</i> (adv.)	adj.
<b>mōt</b>	<b>mote</b>			
sceād	shade		OE <i>sceadu</i>	
<b>slǣd</b>	<b>slade</b>			
spær	spare			-r
spēd	spade			dial. ‘wax secreted by eye’
stǣf	stave	<staff>		Medial Fricative Voicing
tām	tame			adj.
<b>þōl</b>	<b>thole</b>			‘peg in gunwale of boat’
gewǣr	aware	<warr>		-r
wēr	weir			-r

**APPENDIX B**  
**SHORTENING IN UNAPOCOPATED DISYLLABIC STEMS**

- Items with potentially geminating *muta cum liquida* clusters are treated separately in order to control for the potential rôle of the geminate.
- For V:~V qualitative correspondences, see Stockwell (1961, 1962).

OE	PDE	Observations
<b>B.1 Items without <i>muta cum liquida</i> clusters</b>		
<b>B.1.1 Unshortened (e.g. TOKEN)</b>		
<b>ācum</b>	<b>oakum</b>	reduced form of <i>ā-cumba</i>
<b>āfen</b>	<b>even</b>	as in <i>evensong</i> , <i>evenbell</i> , etc.
<b>bēacen</b>	<b>beacon</b>	
bācen	beechen	
<b>bōsig</b>	<b>boosy</b>	dial. ‘stall, crib’
bȳsting	beestings	‘cow's colostrum’ — unshifted V: dial.?
<b>dēacon</b>	<b>deacon</b>	
<b>drēorig</b>	<b>dreary</b>	
<b>ēastre</b>	<b>Easter</b>	
<b>glōmung</b>	<b>gloaming</b>	
<b>grāedig</b>	<b>greedy</b>	<i>greed</i> is a C17 back-formation
<b>hālig</b>	<b>holy</b>	cf. wk. adj./noun <i>hālga</i> > <i>hallow</i>
<b>hāðen</b>	<b>heathen</b>	
<b>hūsl</b>	<b>housel</b>	now obs.
<b>īfig</b>	<b>ivy</b>	
<b>īren</b>	<b>iron</b>	
<b>īrisc</b>	<b>Irish</b>	
<b>ōsle</b>	<b>ouzel</b>	‘blackbird’
stānig	stony	
<b>tācn</b>	<b>token</b>	
<b>tānel</b>	<b>teanel</b>	dial. ‘basket’
<b>tāsel</b>	<b>teasel</b>	
<b>tīdung</b>	<b>tiding</b>	
<b>þūsend</b>	<b>thousand</b>	
wāsend	*wāsend?	weasand
<b>wīcing</b>	<b>Viking</b>	
<b>wērig</b>	<b>weary</b>	

**B.1.2 Shortened (e.g. WEAPON)**

<b>ānig</b>	<b>any</b>	low stress?
<b>bōsm</b>	<b>bosom</b>	eModE /u:/ > /ʊ/ (note C16 <boosome>)
<b>cīcen</b>	<b>chicken</b>	

fōstor	foster	-sC-
<b>hāring</b>	<b>herring</b>	vowel still long in various dialects ( <i>OED</i> )
<b>rādic</b>	<b>radish</b>	
<b>sārig</b>	<b>sorry</b>	
<b>sālig</b>	<b>silly</b>	Also obs. dial. <i>seely</i>
þīstel	thistle	-sC-
<b>wāpen</b>	<b>weapon</b>	
<b>wīðig</b>	<b>withy</b>	

## B.2 Items with *muta cum liquida* clusters

### B.2.1 Unshortened (e.g. CLOVER)

bīetl	Angl. *bētel?	beetle	‘mallet, hammer’
<b>brīdels</b>		<b>bridle</b>	
<b>clāfre</b>		<b>clover</b>	
<b>īdel</b>		<b>idle</b>	
<b>nādl</b>		<b>needle</b>	
<b>spīðra</b>		<b>spider</b>	
<b>stēpel</b>		<b>steeple</b>	

### B.2.2 Shortened (e.g. DEVIL)

#### (i) Geminated forms attested in OE — OE qualitative correspondences

ātor ~ āttor	atter	
ǣfre ~ ǣffre	ever	geminate fricatives should resist voicing
bādling ~ bāddel	badling	
blādre ~ blāddre	bladder	
fōdor ~ fōddor	fodder	
hlāder ~ hlādder	ladder	
lýtēl ~ lýtēttel	little	
nādre ~ nāddre	adder	

#### (ii) Geminated forms unattested in OE — OE qualitative correspondences

dēofol ~ dīofol	devil	dialectally also /I/
fōðor	fother	‘cartload’; technically, ‘measure of weight’
lēaþor	lather	
lȳpre	lither	or group (iii); dial. ‘lazy, sluggish’
ūder	udder	or group (iii)

#### (iii) ME qualitative correspondences

brōðor	brother	Note OE <broððran>, <broððre>
mōdor	mother	Note sporadic OE <moddor>
ōðer	other	Note OE <oppre>
rāðels	riddle	
rōðor	rudder	
tēafor	tiver	dial. ‘red dye’

**APPENDIX C**  
**LENGTHENING IN UNAPOCOPATED DISYLLABIC STEMS**

This appendix is based on Minkova's (1982) corpus. It lists the PDE reflexes of those OE candidates to OSL which have remained disyllabic. For the corresponding OE and OF forms, see Minkova (1982: 33-40) and Bliss (1952/3: §56).

**C.1 The unstressed rhyme contains a sonorant consonant: 166 items**

**C.1.1 Lengthened: 39 items**

*acorn, acre, beaver, besom, chafer, cradle, even, gable, haven, hazel, ladle, maple, navel, open, over, raven, staple, taper, treadle, weasel; bacon, basin, blazon, capon, favour, flavour, label, labour, mason, paper, patient, savour, razor, tabor, vacant, vapour, azure, moment, odour.*

**C.1.2 Unlengthened: 127 items**

*addle, aspen, bastard, batten, besom, better, blather, bottom, bracken, brothel, cackle, camel, canon, castle, chaffer, clatter, cocker, cockle, copper, creddle, edder, father, feather, fennel, fester, fetter, fettle, gammon, gather, gavel, gravel, hammer, hatchel, heaven, hovel, hover, kettle, Latin, latter, leather, maslin, nether, nettle, otter, oven, uvver, pebble, pepper, pottle, rather, reckon, repple, saddle, seven, shackle, shovel, smother, sollar, swaddle, talent, tetter, throttle, throstle, water, wattle, weather, wether, whether; alum, azure, baron, barren, barrel, cattle, channel, chattel, clamour, dragon, flatter, gallon, hazard, latten, mallard, manor, panel, satchel, satin, tabard, talon, tassel, travel, valour, vassal, warrant, beryl, bezant, cellar, deavour, desert, felon, herald, kennel, lecher, lesson, metal, pennon, peril, present, record, revel, second, tenant, tenor, treasure, tremor, venom, coffin, collar, common, coral, florin, foreign, honour, moral, volume; colour, covin.*

**C.2 The unstressed rhyme contains an unchecked vowel: 24 items**

**C.2.1 Lengthened: 0 items**

**C.2.2 Unlengthened: 24 items**

*barrow, belly, berry, body, callow, fallow, ferry, harry, harrow, heavy, holly, many, mellow, narrow, nephew, penny, poppy, ready, sallow, shadow, steady, tarry, yellow; jolly.*

**C.3 The unstressed rhyme consists of vowel plus obstruent: 41 items**

**C.3.1 Lengthened: 1 item**

*naked.*

**C.3.2 Unlengthened: 40 items**

*basket, chalice, collop, eddish, gannet, haddock, jaspis, planet, provost, radish, relic, trivet; anet, anise, barrat, claret, damask, faggot, habit, latchet, marish, palace, palate, statute, brevet, jealous, legate, prelate, senate, trellice, bonnet, closet, crotchet, forest, profit, rocket, rochet, socket, solace; cherish.*

**APPENDIX D**  
**MORPHOLOGICAL CONDITIONING OF SHOCC IN THE ORRMULUM**

- Items such as <deofell> ~ <deofless> ‘devil’ OE *dēofol* are not significant owing to the possibility of resyllabification across the syncope site: i.e. <deo.fless>.
- The right column gives the morphological base in its OE form.
- Exceptions to the generalizations proposed are marked with an exclamation point (!).

### D.1 Underived environments

SHOCC applies regularly in synchronically underived environments:

<errnde> <sup>1</sup>	‘errand, message’	<i>ārende</i>
<blosstme>	‘blossom’	<i>blōstma</i>
<freollsenn>	‘celebrate’	<i>frēols</i> <sup>2</sup>
<ʒittsunng>	‘covetousness’	<i>gūtsung</i> <sup>3</sup>
<lihht>	‘light’	<i>lēoht</i>
<nohht>	‘not’	<i>nōht</i>
<ohht>	‘anything’	<i>ōht</i> <sup>4</sup>

Before *sC* clusters, shortening applies inconsistently: e.g.

<asskenn>	‘ask’	<i>āscian</i>
<brest>	‘breast’	<i>brēost</i>
<esstess>	‘dainties’	<i>ēst</i>
<fosstrenn>	‘foster’ vb.	<i>fōstor</i>
<prest>	‘priest’	<i>prēost</i>

### D.2 Nominal inflection

Syncope attendant on the addition of nominal inflections fails to trigger SHOCC:

<dæcness>	‘deacon’ pl.	<i>dēacon</i>
<ehne> ~ <eʒhne>	‘eye’ pl.	<i>ēage</i> <sup>5</sup>

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<sup>1</sup> <errnde> occurs as nom. and acc. sg. There are no alternations to justify an unsyncopated underlying representation /e:rændə/.

<sup>2</sup> \**frī-hals* > OE *frēols* ‘free’, whence *frēolsian* (Campbell, 1959: §238.2). Note that the SHOCC-triggering cluster occurs within the morphological base.

<sup>3</sup> Related forms: *gūtsian*, *gūtsere*, *gūtsiendnes*, etc. The *-s-* is to be analysed not as a derivational formative, but as part of the base.

<sup>4</sup> No longer synchronically related to <awihht> (OE *āwiht*) and <nawihht> (OE *nāwiht*)

<sup>5</sup> Orm's nom. sg. form is <eʒhe>; his plural form appears to involve double marking, with *-e* being added to the normal weak ending (cf. OE *ēagan*). The spelling <ehhne>, suggesting a shortened root-vowel, appears just once in the manuscript, in contrast with well over a dozen occurrences of <ehne> ~ <eʒhne>.

<tacness>	‘token, sign’ pl.	<i>tācn</i>
! <hallzhe> <sup>6</sup>	‘holy’ infl.	<i>hālig</i>

### D.3 Verbal inflection

SHOCC applies regularly to athematic past tense and past participle forms of weak verbs:

<brohhte>	‘bring’ pret. 3sg.	<i>bringan</i> <sup>7</sup>
<cwemnde>	‘please’ pret. 3sg.	<i>cwēman</i>
<demnde>	‘deem’ pret. 3sg.	<i>dēman</i>
<dredde>	‘dread’ pret. 3sg.	<i>adrādan</i>
<fedde>	‘feed’ pret. 3sg.	<i>fēdan</i>
<flemnde>	‘banish’ pret. 3sg.	<i>flīeman</i>
<zemnde>	‘heed’ pret. 3sg.	<i>gēman</i>
<hidd>	‘hide’ p. ptc.	<i>hȳdan</i>
<keppte>	‘keep’ pret. 3sg.	<i>cēpan</i>
<kidde>	‘make known’ pret. 3sg.	<i>cȳpan</i>
<ledde>	‘lead’ pret. 3sg.	<i>lādan</i>
<sleppte>	‘sleep’ pret. 3sg.	<i>slāpan</i>
<sohhte>	‘seek’ pret. 3sg.	<i>sēcan</i>
<spredd>	‘spread’ p. ptc.	<i>sprādan</i>
<tahhte>	‘teach’ pret. 3sg.	<i>tācan</i>
<þohhte>	‘think’ pret. 3sg.	<i>þencan</i>
<þuhhte>	‘appear’ pret. 3sg.	<i>þyncan</i>
<wepptenn>	‘weep’ pret. 3pl.	<i>wēpan</i>

### D.4 Derivation

#### D.4.1 Zero-derived weak verbs

Syncope attendant on the addition of verbal inflections to zero-derived weak verbs fails to trigger SHOCC:

<ahnenn> <sup>8</sup>	‘obtain’	<i>āgen</i> (whence <i>āgnian</i> )
<becnenn>	‘beckon’	<i>bēacn</i>
<huslenn>	‘to admit to Communion’	<i>hūsl</i>
<tacnenn>	‘betoken’	<i>tācn</i>
<wæpnedd>	‘arm’ p. ptc.	<i>wāepn</i>

<sup>6</sup> *Haliz* is exceptional in the *Ormmulum* in that it is the only word where the suffix *-iz* undergoes syncope (see Burchfield, 1956: 77, fn. 1, for a list of *-iz* derivatives). Note also the OE weak noun *hālgā* ‘saint’.

<sup>7</sup> OE pret. 3sg. *brōhte*, from an athematic Germanic form *\*braŋx-t-*; cf. also OE *þōhte* (*þencan*) and *þūhte* (*þyncan*) (Campbell, 1959: §753.9.b.5).

<sup>8</sup> Note that in Orm’s dialect *hn-* no longer is a permissible onset cluster: e.g. <nesshe> ‘tender’ OE *hnesce*.

! <crisstnenn>	‘christen’	<i>Crīsten</i> <sup>9</sup>
! <hallzhenn>	‘consecrate’	<i>hālig</i> (see note 6)

D.4.2 *-p/-t*

The suffix *-p/-t* triggers SHOCC consistently:

<ahhte>	‘property’	<i>āgan</i> ‘own, possess’
<ma33pe>	‘kin’	<i>māeg</i>
<lappē>	‘hostility’	<i>lāp</i>
<seollpe>	‘happiness’	<i>sāl</i>
<wrappe>	‘wrath’	<i>wrāp</i>

D.4.3 *Other suffixes*

All derivational suffixes other than *-p/-t* fail to trigger SHOCC:

<æddmodle33c>	‘humility’	<i>mōd</i>
<ædmodli3>	‘humbly’	<i>mōd</i>
<ædmodnesse>	‘humility’	<i>mōd</i> <sup>10</sup>
<anfald>	‘onefold’	<i>ān</i>
<buhsumm>	‘obedient, pliable’	<i>būgan</i> ‘bend’
<clænle33c>	‘cleanliness’	<i>clāene</i>
<clænnesse> <sup>11</sup>	‘cleanness’	<i>clāene</i>
<cupli3>	‘familiarily’	<i>cūp</i>
<deoplikerr>	‘deeply’ comp.	<i>dēop</i>
<fiffald>	‘fivefold’	<i>fīf</i>
<flæshlic>	‘carnal’	<i>flāesc</i>
<3æple33c>	‘caution’	<i>gēap</i>
<galnesse>	‘wantonness’	<i>gāl</i>
<gastlic>	‘spiritual’	<i>gāst</i>
<godle33c>	‘goodness’	<i>gōd</i>
<godnesse>	‘goodness’	<i>gōd</i>
<halsumm>	‘wholesome’	<i>hāl</i>
<hehlike>	‘high’	<i>hēah</i>
<lefli3>	‘affectionately’	<i>lēof</i>
<onnlicnesse>	‘likeness’	<i>gelīc</i>

<sup>9</sup> ‘Christian’, but Orm has <Cristene> ~ <Crisstene>, whence also <Crisstenddom>.

<sup>10</sup> Here the relevant feature of the forms <æddmodle33c>, <ædmodli3> (also <æddmodli3>) and <ædmodnesse> (also <æddmodnesse>) is the absence of vowel shortening in the second root *mōd* after the addition of a consonant-initial derivational suffix. For the behaviour of the first root, see D.5 below.

<sup>11</sup> Not \*<clennesse>. Orm's orthography occasionally allows triple consonant graphs: e.g. <drunkennesse> ‘drunkenness’ ll. 14741, 15377, 15389 (Holm, 1922: 94); <skilllæs> ‘ignorant’ l. 3715. Moreover, the length of the root-vowel is redundantly specified by the graph <æ>, which uniquely designates the long vowel /ɛ:/ (OE *ǣ*, *ēa*), its short counterpart being <e>: cf. <clennlike> below (see Anderson & Britton, 1997: §49-51). Note also the antonym <unnclennesse>.



<meocle33c>	‘meekness’	Orm <meoc>
<meocnesse>	‘meekness’	Orm <meoc>
<sellcuplike>	‘unusually’	<i>cūþ</i>
<secnedd> <sup>12</sup>	‘sicken’ p. ptc.	<i>sēoc</i>
<soþlike>	‘truly’	<i>sōþ</i>
<swétlike>	‘sweetly’	<i>swēte</i>
<wislike>	‘wisely’	<i>wīs</i>
! <clennlike>	‘cleanly’	<i>clāne</i>
! <clennsenn>	‘cleanse’	<i>clāne</i>
! <dunnwarrd>	‘downward’	<i>adūne</i>
! <herrsumm>	‘obedient’	<i>hīeran</i>
! <liccness> <sup>13</sup>	‘likeness’	<i>gelīc</i>
! <mannsenn>	‘excommunicate’ vb.	<i>mān</i>
! <wissenn> <sup>14</sup>	‘instruct’	<i>wīs</i>

#### D.4.4 Suffixoids<sup>15</sup>

Suffixoids fail to trigger SHOCC:

<læffull> <sup>16</sup>	‘believing’	<i>gelēafa</i>
<nīþfull>	‘envious’	<i>nīð</i>
<soþfasst>	‘true, faithful’	<i>sōþ</i>
<unnþæwfull>	‘immoral’	<i>þēaw</i>
<whilwendlic>	‘temporary’	<i>hwīl</i>
! <wissdom> <sup>17</sup>	‘wisdom’	<i>wīs</i>

<sup>12</sup> Derived by means of an *-n-* weak verb formative (OE *-n-i-an*; see Lass, 1994: 203).

<sup>13</sup> But cf. <onlicnesse> above.

<sup>14</sup> Whence <wissinnng> ‘instruction’. In OE, *wīsian* alternated with *wissian*, which presumably already had a short vowel (Campbell, 1959: §287). Forms such as <clennsenn>, <mannsenn> and <wissenn> may suggest that in Orm's dialect the presence of the *-s-* formative in thematic weak verbs (OE *-s-i-an*; see Lass, 1994: 203) triggers SHOCC consistently. If so, the derivational verbal suffix *-senn* would pattern with the derivational nominal suffix *-þ/-t*. The evidence is, unfortunately, insufficient: note, in particular, that it is doubtful whether Orm perceived <wissenn> as containing the *-s-* formative, given that he does not write <wissenn>.

<sup>15</sup> In the classification of morphemes as suffixes, suffixoids, or compound formatives, I follow Sauer (1992).

<sup>16</sup> Not \*<leffful>; see note 11.

<sup>17</sup> It is significant that a good deal of the morphologically unexpected applications of SHOCC in the *Ormmulum* are concentrated in a handful of roots: <clennlike>, <clennsenn>, <unnclennsedd>; <Crisstene>, <crisstnenn>; <hall3he>, <hall3henn> (plural noun), <hall3henn> (vb.); <wissenn>, <wissinnng>, <wissdom>. This suggests incipient lexicalization of an already heavily morphologized process, rather than random analogical levelling.

## D.5 Compounding

Transparent compounding fails to trigger SHOCC:

<æstdale>	‘eastward’	<i>ēast</i>
<bocstaff>	‘letter, character’	<i>bōc</i>
<breostlin>	‘breast-plate of linen’	<i>brēost</i>
<bridgume>	‘bridegroom’	<i>brȳd</i>
<dædbote>	‘penitence’	<i>dǣd</i>
<dæpshildiȝ>	‘guilty, condemned’	<i>dēap</i>
<drīȝcrafftess>	‘magical arts’	<i>drȳ</i>
<driȝmenn>	‘magicians’	<i>drȳ</i>
<dunstiȝhinng>	‘descent’	<i>adūne</i>
<fictre>	‘fig-tree’	<i>fīc</i>
<hehfaderr>	‘God the Father’	<i>hēah</i>
<larfaderr>	‘teacher’	<i>lār</i>
<larspell>	‘doctrine’	<i>lār</i>
<licwurrȝiȝ>	‘agreeable’	<i>gelīc</i>
<shephirde>	‘shepherd’	<i>scēap</i>
<subdale>	‘southward’	<i>sūȝ</i>
<ūtbresstenn>	‘burst out’	<i>ūt</i>
<ūtledenn>	‘lead out’	<i>ūt</i>
<ūtnummenn>	‘outstanding’	<i>ūt</i>
<ūtwiȝȝ>	‘beyond, out of’	<i>ūt</i>
<wifmann> <sup>18</sup>	‘woman’	<i>wīf</i>
! <ædmod> ~ <æddmod> <sup>19</sup>	‘humble’	<i>ēaðe</i>
! <chappmenn>	‘chapmen, merchants’	<i>cēap</i>
! <goddspell>	‘Gospel’	<i>gōd</i> <sup>20</sup>
! <laffdiȝ>	‘lady’	<i>hlāf</i>
! <weppmann>	‘man’	<i>wēpn</i> <sup>21</sup>

<sup>18</sup> Alongside the grammaticalized form <wimmann>.

<sup>19</sup> Both Fulk (1996: 496-7) and Anderson & Britton (1997: 49-50) observe that the form <æddmod>, as well as its derivatives <æddmodleȝȝc>, <æddmodliȝ> and <æddmodnesse>, displays conflicting orthographic clues: on the one hand, the graph <æ> implies a long vowel (see footnote 11 above); on the other, the double consonant implies shortness. The change *-ðm-* > *-dm-* (Campbell, 1959: §424) may be regarded as obscuring the relationship of the compound with its base: OE *ēaðe* ‘easy, friendly’, Orm <æȝ> (cf. Fulk, 1996: 504-5).

<sup>20</sup> In this form shortening may already have occurred in OE (Luick, 1964: §204.1; Campbell, 1959: §285), although this is hard to ascertain. Orm is aware of the correct etymology of the word (Dedication, ll. 157ff.).

<sup>21</sup> The truncation of the first element, already encountered in OE (Campbell, 1959: §477.5), may be a sign of grammaticalization.

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