

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>blæd</i>	<i>blade</i>
<i>cōl</i>	<i>coal</i>
<i>crān</i>	<i>crane</i>
<i>geōc</i>	<i>yoke</i>
<i>hōp</i>	<i>hope</i>
<i>hwāl</i>	<i>whale</i>
<i>mōt</i>	<i>mote</i>
<i>slæd</i>	<i>slade</i>
<i>pōl</i>	<i>thole</i>

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

OE	PDE
<i>cīcen</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>wīdig</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)

	sg		pl	
OE	<i>hwāl̥</i>		<i>hwā.las</i>	
			↓	MEOSL
ME	<i>whāl̥</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)

	sg		pl	
OE	<i>wāe.pen</i>		<i>wāep.nu</i>	
			↓	SHOCC
ME	<i>wē.pen</i>	←	<i>wēp.nen</i>	
			levelling	

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

	sg		pl	
OE	<i>hāe.ring</i>		<i>hāe.rin.gas</i>	
			↓	TRISH
ME	<i>hē.ring</i>	←	<i>hē.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)

	sg		pl	
OE	<i>hēo.fon</i>		<i>hēo.fo.nas</i>	
	[MEOSL blocked]		↓	TRISH
ME	<i>hē.ven</i>	←	<i>hē.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
Sonorant C in post-tonic Rh	YES	34	25
	NO	1	10
		122	131
		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 *hræfen* > PDE *raven*, but OE *hēfon* > 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 *gānot* > PDE *gannet*.

The morphologization of SHOCC: evidence from the *Orrmulum*

(10) The *Orrmulum*:

- 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) Synchronously 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. <demmde> ‘deem’ pret.3sg. OE *dēman*
 <hidd> ‘hide’ p.ptc OE *hȳdan*

(iii) *-þe/-te* suffixation

- e.g. <maȝȝþe> ‘kin’ OE *māȝȝ*
 <seollþe> ‘happiness’ OE *sāl*

(12) *Morphological environments blocking SHOCC*:

(i) Nominal inflection

- e.g. sg. <dækenn> ~ pl. <dæcnness>, 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 *<goddnesse>, OE *gōd*
 <sob> ‘true’ ~ <soblike> ‘truely’, not *<sobþlike>, OE *sōþ*

(iv) Compounding

- e.g. <boc> ‘book’ ~ <bocstaff> ‘letter’, not *<boccstaff>, 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>blæd</i>
bud ~ buu.det	'message'	OE <i>bōd</i>
glad ~ glaa.de	'happy'	OE <i>glæd</i>
fred ~ free.den	'peace'	OE <i>frið</i>

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

baar	'bare'	OE <i>bær</i>
blaad	'blade'	OE <i>blæd</i>
daal	'dale'	OE <i>dæl</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 & Smolensky 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^{Seg}

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

PARSE^{Seg}: Segments are syllabified.

/stɔ:n/	*[_σ μμμ]	WEAKC	IDENT ^{μμ}	PARSE ^{Seg}
[_ω [_σ stɔ:n]]	*!	*!		
[_ω [_σ ston]]		*!	*	
[_ω [_σ stɔ:]n]				*

(22) Further evidence for WEAKC » PARSE^{Seg}:

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 ^μ mə ^μ /	* _θ	WEAKC	PARSE ^{Seg}
[_ω [_σ na ^μ][_σ mə ^μ]]	*!		
[_ω [_σ na ^μ m ^μ]]		*!	
[_ω [_σ na ^{μμ}]m]	*		*

- (23) Vowel length contrasts are *not neutralized* in the environment [C₀—C¹]_{Word} owing to the dominance of faithfulness constraints:

DEP^μ » WEAKC

where DEP^μ: All morae present in the output have an input correspondent

/lok/	FTBIN	DEP ^μ	WEAKC	PARSE ^{Seg}
[_ω [_σ lo]k]	*!			*
[_ω [_σ lɔ:]k]		*!		*
[_ω [_σ lok]]	*		*	

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

input	output	DEP ^μ	WEAKC	PARSE ^{Seg}
/CVC/	[_ω [_σ CVC]]		*!	
/CVVC/ *	[_ω [_σ CVV]C] *			*

The correct pattern of input harmony emerges from the independently motivated ranking DEP^μ » WEAKC » PARSE^{Seg}.

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.	fæt	scɪp	bān	word	wěrod
gen. pl.	făta	scǐpa	bāna	worda	wěroda
nom. pl.	fătu	scǐpu	bān	word	wěrod

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

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

$$\mathbf{MAX}^{[-\text{high}]} \gg \mathbf{PARSE}^{\sigma} \gg \mathbf{MAX}^{[+\text{high}]}$$

- $\mathbf{MAX}^{[-\text{high}]}:$ All nonhigh vowels present in the input have an output correspondent
 $\mathbf{PARSE}^{\sigma}:$ Syllables are footed
 $\mathbf{MAX}^{[+\text{high}]}:$ All high vowels present in the input have an output correspondent

- (27)

/fæt-u/	PARSE $^{\sigma}$	MAX $^{[+\text{high}]}$
[$_{\omega}\text{fæt}$]		*!
[$_{\omega}\text{fa}.\text{tu}$] $\overline{\text{tu}}$		

- (28)
- In pre-OE $\dagger bānu$, the final syllable was unfooted, i.e. $\dagger [{}_{\Sigma}bā]nu$, because the constraint RHHRM (Prince & Smolensky 1993: 59) was superordinate: the language did not tolerate unbalanced trochees, i.e. $*[{}_{\Sigma}\bar{\sigma}\bar{\sigma}]$.
 - Note that vowel shortening is not available as a foot-reescuing strategy.

$$\mathbf{RHHRM}, \mathbf{IDENT}^{\mu\mu} \gg \mathbf{PARSE}^{\sigma}$$

/ba:n-u/	RHHRM	IDENT $^{\mu\mu}$	PARSE $^{\sigma}$	MAX $^{[+\text{high}]}$
[$_{\omega}[{}_{\Sigma}\text{ba}:.\text{nu}]$]	*!			
[$_{\omega}[{}_{\Sigma}\text{ba}.\text{nu}]$]		*!		
[$_{\omega}[{}_{\Sigma}\text{ba}:]\text{nu}$]			*!	
[$_{\omega}[{}_{\Sigma}\text{ba}:]\text{n}$] $\overline{\text{n}}$				*

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

input	output	RHHRM	IDENT $^{\mu\mu}$	PARSE $^{\sigma}$
/ $\bar{\sigma}\sigma/$	[$_{\omega}[{}_{\Sigma}\bar{\sigma}]\sigma$]			*!
/ $\bar{\sigma}\sigma/$ $\overline{\text{n}}$	[$_{\omega}[{}_{\Sigma}\bar{\sigma}\sigma]$] $\overline{\text{n}}$			

The correct pattern of input harmony emerges from the independently motivated constraint ranking RHHRM, IDENT $^{\mu\mu} \gg \text{PARSE}^{\sigma}$.

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

slōp	slop		OE <i>oferslop</i> ‘surplice’
smäl	small		
sōc	sock		‘liquid manure’
spär	spar	MLG?	OE <i>spærstān</i> ‘gypsum’
stæf	staff	<staff>	cf. PDE <i>stave</i> also PDE <i>strap</i> (Onions)
strōp	strop		
swān	swan		
swæð	swath		also OE <i>swaðu</i> > <i>swathe</i>
trōd	trod		dial. ‘footpath’ (<i>OED</i>)
trög	trough		
pæc	thack		noun ‘thatch’
þroc	throck		dial. ‘beam for ploughshare’
wræc	wrack		as in <i>wrack and ruin</i>

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

OE	PDE	<i>Orrmulum</i> nom. sg.	Alternative etyma	Observations
bær	bare			-r
gebēd	bead	<běde>	OE <i>bedu</i> ?	
blæd	blade			
gebōd	bode	<bode>		C19 dial. ‘offer’ (<i>OED</i>)
cōl	coal			
crān	crane			
dael	dale	<däle>		
fær	fare		OE <i>faru</i>	
flöt	float		OE <i>flota</i> , <i>flotian</i> ; OF <i>flotte</i> , <i>flotter</i>	
geär	yair			-r
geät	gate	<ȝate>, <gate>	ON <i>gata</i>	
geōc	yoke	<ȝocc>		
græf	grave			Medial Fricative Voicing
hōl	hole		OE <i>holh</i>	
hōp	hope			
hwæl	whale			‘small enclosed valley’
læt	late	<læte> (adv.)	OE <i>late</i> (adv.)	adj.
mōt	mote			
sceād	shade		OE <i>sceadu</i>	
slæd	slade			
spär	spare			-r
spēd	spade			dial. ‘wax secreted by eye’
stæf	stave	<staff>		Medial Fricative Voicing
tām	tame			adj.
þol	thole			‘peg in gunwale of boat’
gewær	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: \sim V qualitative correspondences, see Stockwell (1961, 1962).

OE	PDE	Observations
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B.1 Items without *muta cum liquida* clusters

B.1.1 Unshortened (e.g. TOKEN)

ācum	oakum	reduced form of <i>ā-cumba</i>
æfen	even	as in <i>evensong</i> , <i>evenbell</i> , etc.
bēacen	beacon	
bōcen	beechen	
bōsig	boosy	dial. ‘stall, crib’
bȳsting	beestings	‘cow’s colostrum’ — unshifted V: dial.?
dēacon	deacon	
drēorig	dreary	
ēastre	Easter	
glōmung	gloaming	
grādig	greedy	<i>greed</i> is a C17 back-formation
hālig	holy	cf. wk. adj./noun <i>hālga</i> > <i>hallow</i>
hāðen	heathen	
hūsl	housel	now obs.
īfig	ivy	
īren	iron	
īrisc	Irish	
ōsle	ouzel	‘blackbird’
stānig	stony	
tācn	token	
tānel	teanel	dial. ‘basket’
tāsel	teasel	
tīdung	tiding	
þūsend	thousand	
wāsend	*wāsend?	weasand
wīcing	Viking	
wērig	weary	

B.1.2 Shortened (e.g. WEAPON)

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

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

B.2 Items with *muta cum liquida* clusters

B.2.1 Unshortened (e.g. CLOVER)

bītel	Angl. *bētel?	beetle	'mallet, hammer'
brīdels		bridle	
clāfre		clover	
īdel		idle	
nāndl		needle	
spīðra		spider	
stēpel		steeple	

B.2.2 Shortened (e.g. DEVIL)

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

ātor ~ āttor	atter	
āfre ~ ēffre	ever	geminate fricatives should resist voicing
bādling ~ bāddel	badling	
blādre ~ blāddre	bladder	
fōdor ~ fōddor	fodder	
hlāder ~ hlādder	ladder	
lýtel ~ lÿttel	little	
nādre ~ nāddre	adder	

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

dēofol ~ dīfol	devil	dialectally also /ɪ/
fōðor	fother	'cartload'; technically, 'measure of weight'
lēapor	lather	
lýbre	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 <opþre>
rādels	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> ¹	‘errand, message’	<i>ārende</i>
<blosstme>	‘blossom’	<i>blōstma</i>
<freollsenn>	‘celebrate’	<i>frēols</i> ²
<ȝittsunng>	‘covetousness’	<i>gūtsung</i> ³
<lihht>	‘light’	<i>lēoht</i>
<nohht>	‘not’	<i>nōht</i>
<ohht>	‘anything’	<i>ōht</i> ⁴

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:

<dæcn̩ess>	‘deacon’ pl.	<i>dēacon</i>
<ehne> ~ <eȝhne>	‘eye’ pl.	<i>ēage</i> ⁵

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

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

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

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

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

<tacness>	'token, sign' pl.	<i>tācn</i>
! <hallʒhe> ⁶	'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> ⁷
<cwemmdē>	'please' pret. 3sg.	<i>cwēman</i>
<demmdē>	'deem' pret. 3sg.	<i>dēman</i>
<dredde>	'dread' pret. 3sg.	<i>adrādan</i>
<fedde>	'feed' pret. 3sg.	<i>fēdan</i>
<flemmde>	'banish' pret. 3sg.	<i>flēman</i>
<ȝemmde>	'heed' pret. 3sg.	<i>ȝēman</i>
<hidd>	'hide' p. ptc.	<i>hȳdan</i>
<keppete>	'keep' pret. 3sg.	<i>cēpan</i>
<kidde>	'make known' pret. 3sg.	<i>cȳpan</i>
<ledde>	'lead' pret. 3sg.	<i>lādan</i>
<sleppete>	'sleep' pret. 3sg.	<i>slēpan</i>
<sohhte>	'seek' pret. 3sg.	<i>sēcan</i>
<spredd>	'spread' p. ptc.	<i>sprādan</i>
<tahhte>	'teach' pret. 3sg.	<i>tēcan</i>
<þohhte>	'think' pret. 3sg.	<i>þencan</i>
<þuhhte>	'appear' pret. 3sg.	<i>þyncan</i>
<weptenn>	'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> ⁸	'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>

⁶ *Haliȝ* is exceptional in the *Orrmulum* in that it is the only word where the suffix *-iȝ* undergoes syncope (see Burchfield, 1956: 77, fn. 1, for a list of *-iȝ* derivatives). Note also the OE weak noun *hālga* 'saint'.

⁷ 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).

⁸ 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> ⁹
! <hallʒhenn>	'consecrate'	<i>hālig</i> (see note 6)

D.4.2 *-þ/-t*

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

<ahhte>	'property'	<i>āgan</i> 'own, possess'
<maʒʒþe>	'kin'	<i>māg</i>
<lappþe>	'hostility'	<i>lāþ</i>
<seollþe>	'happiness'	<i>sāl</i>
<wrapþe>	'wrath'	<i>wrāþ</i>

D.4.3 *Other suffixes*

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

<aeddmodleʒʒc>	'humility'	<i>mōd</i>
<aedmodliʒ>	'humbly'	<i>mōd</i>
<aedmodnesse>	'humility'	<i>mōd</i> ¹⁰
<anfald>	'onefold'	<i>ān</i>
<buhsumm>	'obedient, pliable'	<i>būgan</i> 'bend'
<clænleʒʒc>	'cleanliness'	<i>clāne</i>
<clænnesse> ¹¹	'cleanness'	<i>clāne</i>
<cubliʒ>	'familiarly'	<i>cūþ</i>
<deoplikerr>	'deeply' comp.	<i>dēop</i>
<ffffald>	'fivefold'	<i>fīf</i>
<flæshlic>	'carnal'	<i>flæsc</i>
<ʒæpleʒʒc>	'caution'	<i>gēap</i>
<galnesse>	'wantonness'	<i>gāl</i>
<gastlic>	'spiritual'	<i>gāst</i>
<godleʒʒc>	'goodness'	<i>gōd</i>
<godnesse>	'goodness'	<i>gōd</i>
<halsumm>	'wholesome'	<i>hāl</i>
<hehlike>	'high'	<i>hēah</i>
<lefliʒ>	'affectionately'	<i>lēof</i>
<onnlicnesse>	'likeness'	<i>gelīc</i>

⁹ 'Christian', but Orm has <Cristene> ~ <Crissene>, whence also <Crissennom>.

¹⁰ Here the relevant feature of the forms <aeddmodleʒʒc>, <aedmodliʒ> (also <aeddmodliʒ>) and <aedmodnesse> (also <aeddmodnesse>) 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.

¹¹ Not *<clennnesse>. Orm's orthography occasionally allows triple consonant graphs: e.g. <drunkennnesse> 'drunkenness' ll. 14741, 15377, 15389 (Holm, 1922: 94); <skillæs> '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 ā, ēa), its short counterpart being <e>; cf. <clennlike> below (see Anderson & Britton, 1997: §49-51). Note also the antonym <unnclænnesse>.

<meocle ^{ʒʒ} c>	'meekness'	Orm <meoc>
<meocnesse>	'meekness'	Orm <meoc>
<sellcuþlike>	'unusually'	<i>cūþ</i>
<secnedd> ¹²	'sicken' p. ptc.	<i>sēoc</i>
<soþlike>	'truly'	<i>sōþ</i>
<swéþlike>	'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> ¹³	'likeness'	<i>gelīc</i>
! <mannsenn>	'excommunicate' vb.	<i>mān</i>
! <wissenn> ¹⁴	'instruct'	<i>wīs</i>

D.4.4 Suffixoids¹⁵

Suffixoids fail to trigger SHOCC:

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

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

¹³ But cf. <onlicnesse> above.

¹⁴ Whence <wissinng> '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>.

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

¹⁶ Not *<leffful>; see note 11.

¹⁷ It is significant that a good deal of the morphologically unexpected applications of SHOCC in the *Orrmulum* are concentrated in a handful of roots: <clennlike>, <clennsenn>, <unnclennsedd>; <Crissene>, <crisstnenn>; <hallȝhe>, <hallȝhenn> (plural noun), <hallȝhenn> (vb.); <wissenn>, <wissinng>, <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>east</i>
<bocstaff>	'letter, character'	<i>bōc</i>
<breostlin>	'breast-plate of linen'	<i>brēost</i>
<bridgume>	'bridegroom'	<i>bryd</i>
<dædbote>	'penitence'	<i>dæd</i>
<dæþshildiȝ>	'guilty, condemned'	<i>dēap</i>
<dríȝcrafftess>	'magical arts'	<i>dry</i>
<driȝmenn>	'magicians'	<i>dry</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>
<licwurrþiȝ>	'agreeable'	<i>gelīc</i>
<shephirde>	'shepherd'	<i>sceāp</i>
<subdale>	'southward'	<i>sūþ</i>
<útbressenn>	'burst out'	<i>ūt</i>
<útledenn>	'lead out'	<i>ūt</i>
<útnummenn>	'outstanding'	<i>ūt</i>
<útwiþþ>	'beyond, out of'	<i>ūt</i>
<wifmann> ¹⁸	'woman'	<i>wīf</i>
! <ædmod> ~ <aeddmod> ¹⁹	'humble'	<i>ēaðe</i>
! <chappmenn>	'chapmen, merchants'	<i>cēap</i>
! <godspell>	'Gospel'	<i>gōd</i> ²⁰
! <laffdiȝ>	'lady'	<i>hlāf</i>
! <weppmann>	'man'	<i>wēpn</i> ²¹

¹⁸ Alongside the grammaticalized form <wimmann>.

¹⁹ Both Fulk (1996: 496-7) and Anderson & Britton (1997: 49-50) observe that the form <aeddmod>, as well as its derivatives <aeddmodleȝȝc>, <aeddmodliȝ> and <aeddmodnesse>, 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 <æþ> (cf. Fulk, 1996: 504-5).

²⁰ 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.).

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

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