# Two Types of Vowel Shortening Process in OE, ME, and ModE*

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According to Chomsky and Halle, two types of vowel shortening process which go back to OE are still operative in contemporary English. Related to them, there is also an old but still productive process which lengthens vowels in open syllables. These processes under the name of laxing and tensing rules are schematically represented as follows:[1]

(1) LAXING

$$V \rightarrow [-\text{tense}] / \_\_ \; [+\text{cons}] \begin{cases} \begin{bmatrix} -\text{voc} \\ +\text{cons} \end{bmatrix} & \text{(a)} \\ \begin{bmatrix} -\text{stress} \\ V \end{bmatrix} C_0V & \text{(b)} \end{cases}$$

(2) TENSING

$$V \rightarrow [+\text{tense}] / \_\_ \; [-\text{cons}]$$

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1 Cf. *The Sound Pattern of English* (New York: Harper & Row, 1968), p. 253. Rule (2) accounts for the tense vowels in such words as *various, variety, impious, and piety.* (cf. *ibid.*, pp. 52-53) According to Chomsky and Halle, this is a special case of tensing in open syllable, a phenomenon well attested in English since at least the thirteenth century. As for tensing (lengthening in traditional terms) in open syllable, the following are attested in ME, for instance. Cf. also (11) on pages 74 and 75 of this paper.

OE *æcer* acre > ME *āker*
OE *cradol* cradle > ME *crādel*
OE *sadol* saddle > ME *sādel*
OE *weder* weather > ME *wę̄der*

Vowels become lax before certain consonant clusters by rule (1a) and in the antepenults of trisyllabic words mostly of Romance origin by rule (1b).

In this paper I will be concerned with the laxing rule (1) and see how cases (a) and (b) of this rule are historically justified. For this purpose I will first go back to OE and ME and see how their corresponding processes worked at those earlier stages of the language.

In OE vowels were shortened (a) before groups of three consonants and (b) before groups of two consonants followed by at least two unaccented syllables.[2] These processes are represented in terms of rule schemata as follows:

$$(3) \qquad V \rightarrow [-\text{long}] \,/\, \_\_ \; CC \begin{cases} C & \text{(a)} \\ \ldots V \ldots V & \text{(b)} \end{cases}$$

This rule prohibits a long vowel before three consonants, and before two consonants followed by at least two unaccented syllables. To put it the other way round, a long vowel is allowed only before a single consonant in a trisyllabic word, but both before two consonants and before a single consonant in all other words.[3]

Case (a) of rule (3) accounts for the short vowels in such words as *godspell* gospel *(< gōdspell)* and *bræmblas* brambles *(< *brǣmblas)*.[4] In those cases given in (4) below, three consonants result from the gemination of consonants *(pp, tt, kk, dd)* before liquids *(r, l)*, which took place not only in OE but also in other West Germanic languages.

(4) *ætgæddre* together < *ætgæd(e)re*
*blædre* bladder (< *blæddre*) < *blædre*
*gegaddrode* he gathered < *gegad(e)rode*

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2 Cf. A. Campbell, *Old Englisch Grammar* (Oxford at the Clarendon Press, 1974), §285.

3 Cf. Roger Lass and John M. Anderson, *Old English Phonology* (Cambridge University Press, 1975), p. 274.

4 Cf. Campbell, *op. cit.*, §285. Campbell marks Primitive Old English words with an asterisk (*).

*nǣddre* adder (< *nāddre*) < *nǣdre*)
comparative:
*bettra* better < *bet(e)ra*
*deoppra* deeper (< *dēoppra*) < *dēopra*
*geliccra* more like (< *gelīccra*) < *gelīcra*
*hwittra* whiter (< *hwīttra*) < *hwītra*
after inflected forms of nouns:
*attor* poison < *attres* (< *āttres*) < *ātres* gen. of *ātor*
*foddor* food < *foddres* (< *fōddres*) < *fōdres* gen. of *fōdor*
*moddor* mother < *moddru* (< *mōddru*) < *mōdru* nom. pl. of *mōdor*[5]

Case (b) of rule (3) is not so common in OE, yet the following cases are also attested.

(5) *hlammæsse* Lammas < *hlāfmæsse*

*bletsian* to bless < *blētsian* < *blǣdsian* < **blōdisōjan*
compounds in *en-* (< **ǣni-*) and in *sam-* (< **sēm-*):
*enlīepiġ* individual
*enetere* one winter old
*samcucu* half-alive[6]

In ME or rather in the transition period from OE to ME, the process of vowel shortening was simplified in such a way that long vowels were shortened (a) before groups of two consonants (except those groups of lengthening consonants) and (b) before a single consonant followed by at least two unaccented syllables. In terms of rule schemata, the number of consonants is lessened by one for each case as shown below:

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5 For these examples, cf. Joseph Wright and Elizabeth Mary Wright, *Old English Grammer* (3rd ed.; Oxford University Press, 1975), §§150, 260.

6 As for *bletsian*, cf. *ibid.*, §§150, 300. The Wrights mark a theoretical form from Primitive Germanic with an asterisk (*). As for the other examples, cf. Campbell, *op. cit.*, §285.

$$(6) \qquad V \rightarrow [-\text{long}] / \_\_ C \begin{cases} C & \text{(a)} \\ \ldots V \ldots V & \text{(b)} \end{cases}$$

In case (a) of rule (6), the source of the double consonants is immaterial, so that vowels were shortened before any double consonant irrespective of its source. Double consonants may originate in the root of the word or may be formed by inflection or by composition as illustrated below:

(7) original:

ME *softe* soft < OE *sōfte*

1OE, ME *leoht* light < OE *lēoht*

1OE, ME *fist* fist OE *fȳst*

and probably the following:

ME *blis(se)* bliss < OE *blīþs, bliss* (cf. ME, OE *blīþe* joyous)

ME *fell* fell < OE *fēoll* (inf. ME *falle(n)*, OE *feallan* fall)

(*þs* became assimilated to *ss* in OE *bliss* and ME *blis(se)*.)

by inflection:

(verb inflection)

ME *kepte* he kept < OE *cēpte* (cf. infin. ME *kēpe(n)*, OE *cēpan* keep)

ME *mette* he met < OE *mētte* (cf. infin. ME *mēte(n)*, OE *mētan* meet)

ME *ladde, ledde* he led < OE *lædde* (cf. infin. ME *lēde(n)*, OE *lǣdan* lead)

ME *hidde* he hid < OE *hȳdde* (cf. infin. ME *hȳde*, OE *hydan* hide)

(noun inflection)

ME *hafdes, hefdes* < OE *hēafdes* (gen. sing. of ME *hēfed*, OE *hēafod* head)

(adjective inflection)

ME *lasse, lesse* less < OE *lǣssa* less, smaller

by composition:

ME *wisdom* < OE *wīsdōm*

ME *wimman* < OE *wīfman* (*wĭmman*)

ME *fifte* fifth < OE *fīfta* (cf. ME *fīf*, inflected *fīve*, OE *fīf* five)

ME *fifti* fifty < OE *fīftig*

ME *fiftēne* fifteen < OE *fīftīene*[7]

Such a vowel shortening, however, did not take place before such lengthening consonant groups as *ld, mb, nd,* and *ng,* though it supposedly did when these consonant groups were followed by a third consonant. As the process of vowel lengthening before certain consonant groups was already operative in OE, I will also refer to the OE forms when I give the ME examples below where vowel shortening was blocked before these consonant groups.

( 8 ) before *ld:*

OE *ċild* > *cīld* > ME *chīld* (> ModE *child),* but

OE *ċildru* > ME *children* (> ModE *children)*

OE *wilde* > *wīlde* > ME *wīld* (> ModE *wild*)

OE *feld* > *fēld* > ME *fẹ̄ld* (> modE *field*)

before *mb:*

OE *lamb* > *lāmb* > ME *lǭmb,* but

OE *lambru* (pl.) > ME *lambre*

(ModE *lamb* comes down from the new singular form made after the ME plural form *lambre.)*

OE *climban* > *clīmban* > ME *clȳmben* (> ModE *climb*)

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7 For these examples, I referred to the following, among others. Fernand Mossé, *A Handbook of Middle English,* trans. James A. Walker (Baltimore: The Johns Hopkins Press, 1968); Karl Brunner, *An Outline of Middle English Grammer,* trans. Grahame Johnston (Cambridge, Massachusetts: Harvard University Press, 1963); Samuel Moore, *Historical Outlines of English Sounds and Inflections,* revised by Albert H. Marckwardt (Ann Arbor, Michigan: George Wahr Publishing Company, 1969).

before *nd:*

OE *wundor* > *wūndor,* but *wundru* (pl.)

(ModE *wonder* is from the new singular form made after the OE plural form *wundru.*)

OE *findan* > *fīndan* > ME *fīnden* (> ModE *find*)

OE *blind* > *blīnd* > ME *blīnd* (> ModE *blind*)

OE *grund* > *grūnd* > ME *grūnd* (> ModE *ground*)

before *ng:*

OE *lang* > *lāng* > ME *lǭng,* later *long* (> ModE *long*), but

OE *lengra* > ME *lenger*[8]

(Note that the vowel is again shortened in ModE *long.* ModE *longer* is a new formation from its primitive *long.*)

Originally long vowels before the lengthening consonant groups were not affected by the vowel shortening rule in question, either, as seen in OE *frēond* friend, ME *frēnd;* OE *fēond* enemy, ME *fēnd;* OE *fȳlde* defiled, ME *fīlde;* and so on.[9]

In this connection, it is also noted that the vowel shortening in question probably did not take place before the consonant cluster *st,* either, so that we find long vowels not only in native words, but also in French loanwords, as given below.

(9) native words:

*gāst, gǭst* spirit (OE *gǣst*)

*prę̄st* priest (OE *prēost*)

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8 For these examples, I referred to A. A. Prins, *A History of English Phonemes* (Leiden: Leiden University Press, 1972), §§2.49-2.55, among others. As Prins says, vowels were also lengthened before *rd, rl, rn, rd,* and *rs*(=[rz]), but the lengthened vowels were shortened again before these consonants in the transition period from OE to ME and in early ME and during the ME period itself, so that towards the end of the 14th century lengthening was maintained only before *mb* (for *i* and *o*), *nd* (for *i* and *u*), and *ld* (for all vowels). Cf. *Ibid.,* §2.49 and Mossé *op. cit.,* §18.

9 Cf. Brunner, *op. cit.,* §9 and E. E. Wardale, *An Introduction to Middle English* (London: Routledge & Kegan Paul, 1967), §86.

*blāst* blast (OE *blǣst*)

*lę̄st* least

*māst*, *mǭst* most (OE *mǣst*)

*ę̄st* East (OE *ēast*)[10]

(But vowels were shortened in such words as *fist* (cf. (7) above) and *brest* breast (OE *brēost*).)

French loanwords:

(*ē* before *st*)

| | | | | |
|---|---|---|---|---|
| OF | beste | ME | bę̄ste | "beast" |
| | feste | | fę̄ste | "feast" |

(*ā* before *st*)

| | | | | |
|---|---|---|---|---|
| OF | chast | ME | chāst | "chaste" |
| | haste | | hāste | |
| | paste | | pāste | |
| | taste-nt | | tāste | |
| | wast | | wāst | "waste" |

(*ō* before *st*)

| | | | | |
|---|---|---|---|---|
| OF | coste | ME | cǭste | "coast" |
| | ost | | ǭst | "host" |
| | oste | | ǭste | "host" |
| | poste | | pǭste | "post" |
| | roste-nt | | rǭste | "roast" |
| | toste-nt | | tǭste | "toast" |

(In early ModE, however, variant forms with a short vowel are frequently found for the second group of French loanwords and sometimes found for the third group of French loanwords.)[11]

Finally in connection with case (a) of rule (6), it is also worth men-

10 Cf. Mossé, *op. cit.*, §21.

11 Cf. A. J. Bliss, "Vowel-Quantity in Middle English Borrowings from Anglo-Norman," §§37, 38 in *Approaches to English Historical Linguistics: An Anthology* ed. Roger Lass (New York: Holt, Rinehart and Winston, 1969).

tioning that the effect of this rule could also be reversed by analogical levelling, so that we find *ēvre* beside *ēver* ever and *ōþre* as gen. pl. of *ōþer* other. The long vowels in *ēvre* and *ōþre* are due to analogy with *ēver* and *ōþer*, respectively.[12]

Turning to case (b) of rule (6), the following cases are observed.

(10) OE *sūþerne* > ME *suþerne* (> ModE *southern*)
OE *ǣrende* < ME *ę̄rende* < *erende* (> ModE *errand*)
OE *hāligdōm* > ME *halidom* (cf. OE *hālig*, ME *hǭli* holy)
OE *Crīstendōm* > ME *Cristendom* (*cf.* OE *Crīste*, ME *Crīste*)
OE *hālig dæg* > ME *hǭly day* > *holyday* (< ModE *holiday*)
OE *ālderman* (WS *ealderman*) > ME *alderman* (cf. OE *ald* > *āld*, ME *āld*, *ǭld*)
OE *frēondscipe* > ME *frendshipe* (> ModE *friendship*) (cf. OE *frēond*, ME *frēnd*)
OE *stigrāpas* > *stīrāpas* > ME *stiropes* (> ModE *stirrups*) (pl. of OE *stīrap*, ME *stīrǭp*)
OE *wǣpenes* > ME *wepenes* (< ModE *weapons*) (pl. of OE *wǣpen*, ME *wēpęn*)[13]

Just as long vowels remained long before the lengthening consonant groups, short vowels remained short in the environment which caused shortening in trisyllabic words, through they were lengthened in an open syllable in disyllabic words as shown below.

(11) OE *æceres* > ME *akeres* (gen. sing. of OE *æcer* acre, ME *āker*)
OE *sadoles* > ME *sadeles* (gen. sing. of OE *sadol* saddle, ME *sādel*)
OE *heofones* > ME *hevenes* (gen. sing. of OE *heofon* heaven, ME *hęven*)

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12 Cf. Mossé, *op. cit.*, §21.
13 For these examples, I referred to Wardale, *op. cit.*, §84 in addition to those already mention in fn. 7 above.

OE *wederes* > ME *wederes* (gen. sing. of OE *weder* weather, ME *wę̄der*)[14]

ModE *acre* and *cradle* are from their respective nominative forms in OE and ME, whereas ModE *saddle* comes down from its genitive form. In the former case, the genitive form was ousted by the nominative form, while in the latter the nominative form was ousted by the genitive form. As for ModE *heaven* and *weather,* their pronunciation reflects the genitive form, but their spelling reflects the nominative form.

The vowel laxing rule in ModE has already been referred to at the beginning of this paper. To be exact, rule (lb) is part of rule (12) as given below, but as a historical remnant, that is the part in question.

$$(12)\qquad V \rightarrow [-\text{tense}] / \_\_\_\ C \begin{cases} C_0 + i \begin{Bmatrix} k \\ d \\ \check{s} \end{Bmatrix} & \text{(a)} \\ (C_1+) \begin{bmatrix} -\text{stress} \\ V \end{bmatrix} C_0 V & \text{(b)}^{15} \end{cases}$$

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14 For these examples and the immediately following explanation, cf. Wardale, *op. cit.*, §79.

15 Chomsky and Halle, *op. cit.*, p. 180. About this rule, Chomsky and Halle say as follows:

By rule (19) [=rule (12) in this paper] a stressed vowel becomes lax before the affix *ic, id,* or *-ish* (though not *-iv* or *-is*) and before an unstressed nonfinal syllable. In particular, then, bisyllabic affixes such as *-ity, ify* will have the effect of laxing the immediately preceding vowel, and the same will be true in a variety of other cases.

In case (b) we have the subcases $\_\_\_ CC+VC_0\ V$ and $\_\_\_ CVC_0\ V$ The first subcase causes laxing in the boldface position in *profund+ity, pronu+iation, wild+erness* (if derived from *wIld*); but neither case applies in the boldface position of *mountainous, countenance, counterfeit, mountebank, bountiful,* etc., since in these words the consonant sequence after the stressed vowel is not followed by a formatice bonudary (+). Examples of laxing still unaccounted for in this analysis are *abundant, contrapuntal.* (p. 181)

They also cite *scEnic, bAsic,* and *cIclic* as some counterexamples to case (a) of this rule. As for counterexamples to case (b) of this rule, cf. (20) on page 81 of this paper.

As evidence for the continuation of rule (1) in ModE, Chomsky and Halle also go back to early ModE and find examples of the operation of this rule. The following tense-lax alternations in Hart's speech are the most typical of them.

(13) [ey]-[i] afein-afinite
[ow]-[u] pronouns-pronunsiasion
[ī]-[e] grīk-gresian, kīp-kept
[ē]-[e] mēne-ment, lēv-left
[ā]-[a] kompār-komparison (*also* komparizon)
([ū]-[o] lose-lost)
([ō]-[o] cone-conic)[16]

Alternations in parentheses are not found in Hart's speech, but Chomsky and Halle have little doubt about the presence of such alternations.

According to Chomsky and Halle, rule (la) accounts for the following cases.

(14) within a formative:
evict, apt, crypt
across formative boundary:
descrip+tion (cf. describe), satisfac+tion (cf. satisfy)
conven+tion (cf. convene), interven+tion (cf. intervene)
deten+tion (cf. detain), absten+tion (cf. abstain)
reten+tive (cf. retain), conten+t (cf. contain)
wid+th (cf. wide), los+t (cf. lose)[17]

This rule, however, does not apply to shorten vowels when these vowels are followed by certain consonant clusters, dental clusters in particular, within a single formative. Accordingly we find a diphthong preceding the cluster [nt] in such words as *pint, count,* and *plaint,* and a diphthong preceding other dental clusters in such words as *hoist, toast, wild,*

16 Cf. *Ibid.*, p. 263.
17 Cf. *Ibid.*, pp. 171 & 172.

and *field*.[18] Chomsky and Halle account for such exceptions by the following lexical redundancy rule.

$$(15)\quad V \rightarrow [-\text{rule (la)}] / \_\_ \begin{bmatrix} +\text{consonantal} \\ +\text{anterior} \\ +\text{coronal} \end{bmatrix} \begin{bmatrix} +\text{consonantal} \\ +\text{coronal} \end{bmatrix}$$ [19]

Laxing does not occur in such cases as *plain+tive, restrain#t,* and *complain#t,* either.

The examples given by Chomsky and Halle do not seem appropriate to argue for rule (la) for the following reasons. As such words as *evict, apt,* and *crypt* do not show any morphophonemic alternations, there is no need to account for the short vowels of these words by rule (la). The remainder of the examples given in (14) show morphophonemic alternations with their corresponding verbs or adjectives, but they seem to be more appropriately regarded as the holdovers from the past history of the English language rather than the product of contemporary English. Yet rule (la) seems to be less problematic, compared with the so-called trisyllabic laxing rule (lb), which is supposed to account for such alternations as $I \rightarrow i$, $E \rightarrow e$, and $A \leftarrow æ$, as illustrated below.

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18 For information, I will show the etymologies of these words below.

The *i* in *pint* is from OF, Lat. *i*, for which ME *ī* was substituted. Like the other ME *ī*, this *ī* becomes *ai* in ModE due to the Great Vowel Shift. Cf. Eilert Ekwall, *A History of Modern English Sounds and Morphology*, trans. Alan Ward (Totowa, New Jersey: Rowman and Littlefield, 1975), §69.

The *ou* in *count* is from OF *u, ou* [u], for which ME *ū* was substituted. Like the other ME *ū*, this *ū* becomes *au* in ModE due to the Great Vowel Shift. Cf. *Ibid.*, §101.

The *ai* in *plaint* is from the OF diphthong *ai*. Cf. Otto Jespersen, *A Modern English Grammar on Historical Principles, Part I Sounds and Spellings* (London: George Allen and Unwin, 1965), §3.615.

The *oi* in *hoist* (< *hoise*) was wrongly introduced for the *i* in *hise* in early 16th century and pronunciation followed suit. Cf. Prins, *op. cit.*, §4.40 and Ekwall, *op. cit.*, §93.

As for the long vowels in *toast, wild,* and *field,* an explanation has already been given. Cf. (8) and (9) of this paper.

(16) I → i:

| | |
|---|---|
| divine | divinity |
| satire | satiric |
| derive | derivative |
| line | linear, delineate |
| reconcile | conciliate |
| E → e: | |
| serene | serenity |
| obscene | obscenity |
| appeal | appelative |
| plenum | plenitude |
| delicious | delicacy |
| A → æ: | |
| profane | profanity |
| compare | comparative |
| explain | explanatory |
| grateful | gratitude [20] |

There are also alternations of back vowels (*ōw-ā* as in *verbose-verbosity, cone-conic; æw-ʌ* as in *profound-profundity, abound-abundant*),[21] but they are left out of consideration here because they are more complicated and more problematic.

Chomsky and Halle set up an identical underlying tense vowel in the second syllable of each pair of related words in (16). The tense vowel in trisyllabic words ends up as lax due to rule (lb), but the tense vowel in disyllabic words is further subject to Diphthongization and Vowel Shift Rule as formulated below.

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19 Cf. Chomsky and Halle, *op. cit.*, p. 175.
20 Cf. *Ibid.*, pp. 50 & 178 *et passim.*
21 Cf. *Ibid.*, pp. 186-187 *et passim.*

(17) Diphthongization:

$$\phi \rightarrow \begin{bmatrix} -\text{voc} \\ -\text{cons} \\ +\text{high} \\ \alpha\ \text{back} \\ \alpha\ \text{round} \end{bmatrix} / \begin{bmatrix} +\text{tense} \\ \alpha\ \text{back} \end{bmatrix} \_\_$$

This rule accounts for the following changes:

ī→īy　　ū→ūw

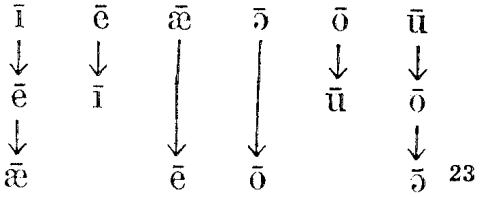
ē→ēy　　ō→ōw

ǣ→ǣy　　ɔ̄→ɔ̄w[22]

Vowel Shift Rule:

$$\begin{bmatrix} +\text{tense} \\ \text{V} \end{bmatrix} \rightarrow \begin{cases} [-\alpha\ \text{high}] / \begin{bmatrix} \overline{\alpha\ \text{high}} \\ -\text{low} \end{bmatrix} & \text{(a)} \\ [-\beta\ \text{low}] / \begin{bmatrix} \overline{\beta\ \text{low}} \\ -\text{high} \end{bmatrix} & \text{(b)} \end{cases}$$

This rule has the following effects:




[23]

(18) trisyllabic words:

| | | | |
|---|---|---|---|
| divīn+i+ty | serēn+i+ty | profǣn+i+ty | |
| divin+i+ty | seren+i+ty | profæn+i+ty | rule (lb) |

disyllabic words:

| | | | |
|---|---|---|---|
| divīn | serēn | profǣn | |
| divīyn | serēyn | profǣyn | Diphthongization |
| divēyn | serīyn | (not applicable) | Vowel Shift (a) |
| divǣyn | (not applicable) | profēyn | Vowel Shift (b) |

22 Cf. *Ibid.*, p. 183.
23 Cf. *Ibid.*, p. 187.

dəvāyn sərīyn prəfēyn Other rules[24]

Though the underlying vowels are determined by the morphophonemic alternations in ModE, it is interesting to note that the same or the similar vowels are also found in ME and that Vowel Shift Rule is in a sense parallel to the Great Vowel Shift. For instance, the ME *divīne* divine had actually a tense *ī* in its second syllable.[25] The vowel *ē* in such words as *serene* can be traced back to the ME *ę̄* or *ę̄* (cf. such French loanwords as *extrēme, suprę̄me,* and *sevę̄re*[26] in ME). As for *æ* in *profǣn,* it also seems to find its correspondent in the later development of the ME *ā,* that is *ǣ,* which, however, finally become *ei* in ModE. These ME vowels (*ī, ę̄* or *ę̄, ā*) were long in open syllables (in disyllabic words) and later become *ai, ī,* and *ei,* respectively, due to the Great Vowel Shift. The Great Vowel Shift and the approach taken by Chomsky and Halle are diagrammatically represented as follows. (But the back vowels (*ū, ō, c̄*) are left out of consideration here.)

(19) The Great Vowel Shift:

| ME (Chaucer) | ModE (Shakespeare) | now | Illustration ME | ModE now |
|---|---|---|---|---|
| ī | ai | | *mine* mi:n | main |
| ę̄ | ī | | *meet* mę:t | mi:t |
| ē > ę̄ | ē | > ī | *meat* mę:t | me:t mi:t |
| ā > ǣ | > ei | | *mate* ma:t mæ:t | meit[27] |

Chomsky and Halle:

| underlying vowels | Diphthongization | Vowel Shift (a) | Vowel Shift (b) | Other rules | |
|---|---|---|---|---|---|
| ī → | īy → | ēy → | ǣy → | āy | (as in *divine*) |
| ē → | īy | | | | (as in *serene*) |

24 Cf. *Ibid.*, pp. 184 & 188.
25 Cf. Bliss, *op. cit.*, §10.
26 Cf. *Ibid.*, §25. According to Dobson, the ModE pronunciation of these words may go back to ME variants with *ę̄* instead of *ę̄*. Cf. *Ibid.*, p. 204, fn. 36.
27 Cf. Prins, *op. cit.*, §4.1 and Jespersen, *op. cit.*, §8.11.

ǣ → ǣy → ēy (as in *profane*)

The historical justification of Chomsky and Halle's analysis has yet to be made. Even Patricia M. Wolfe, who is a supporter of Chomsky and Halle's position, points out the weaknesses of their analysis. That is, (as was also noted by Chomsky and Halle themselves), there is no evidence as to whether such a change as we have seen above came about by the addition of an exchange rule (Vowel Shift Rule in this case). Nor is there any evidence as to whether the mid vowels raised first, or the high vowels diphthongized and lowered.[28]

Coming back to the trisyllabic laxing rule (lb), it seems to be historically justified in view of the fact that such a laxing actually occurred in ME as we have seen above. But how about its synchronic justification? Is it really a part of the synchronic grammar of ModE (and contemporary English)? The best way to answer this question is to see whether there are any exceptions to this rule. And ironically enough, Chomsky and Halle are among the first to have noticed them, though they often come up with some makeshifts (like rule (21) below) for some of these exceptions. The following are some of the exceptions noted by them.

(20) *obEsity, hIbernate, Isolate, prObity,* and

many before ___ $CVC_0 \begin{bmatrix} -\text{low} \\ -\text{consonantal} \end{bmatrix}$

(e.g., *rotary, notary, rosary, decency, primary, papacy, vagary, vacancy, ivory, irony, regency, potency, credence, nature*)[29]

(apparent exceptions)

*credulity, community, obscurity, lunacy, scrutiny,* etc.[30]

In the case of these apparent exceptions, the trisyllabic laxing rule (lb) (=(12b)) applies, but it is followed by rule (21) as formulated below, so that we have a tense vowel after all in the syllable in question.

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28 Cf. Patricia M. Wolfe, *Linguistic Change and the Great Vowel Shift in English* (Berkeley: University of California Press, 1972), p. 172.

29 Cf. Chomsky and Halle, *op. cit.*, p. 181.

30 Cf. *Ibid.*, p. 198.

(21) $u \rightarrow \begin{bmatrix} +\text{tense} \\ -\text{round} \end{bmatrix} / \_\_ C_0^1V^{31}$

The exceptions can be multiplied easily by adding different suffixes like *-ify* (*-fy*), *-ery* (*-ry*), and *-age* to the stem of the word. The following are what I have noticed.

(22) trisyllabic words with *-ify* (*-fy*):

*beautify* 'bjutəˌfaɪ, 'bɪu- (cf. *beauty* 'bjutɪ, 'bɪutɪ)

*glorify* 'glorəˌfaɪ, 'glɔr- (cf. *glory* 'glorɪ, 'glɔrɪ)

*stupefy* 'stjupəˌfaɪ, 'stɪu-, 'stu- (cf. *stupid* 'stjupɪd, 'stɪu-, 'stu-)

*notify* 'notəˌfaɪ (cf. *notice* 'notɪs)

trisyllabic words with *-ery* (*-ry*):

*bakery* 'bekərɪ, -krɪ (cf. *baker* 'bekəˑ)

*slavery* slevrɪ, -vərɪ (cf. *slave* slev)

*machinery* mə'ʃinərɪ, -nrɪ (cf. *machine* mə'ʃin)

*scenery* sinərɪ, -nrɪ (cf. *scene* sin)

*spicery* spaɪsərɪ, -srɪ (cf. *spice* spaɪs)

*winery* 'waɪnərɪ (cf. *wine* waɪn)

*cajolery* kə'dʒoləɪ (cf. *cajole* kə'dʒol)

*popery* popərɪ, -prɪ (cf. *pope* pop)

*foolery* fulərɪ (cf. *fool* ful)

*buffoonery* bʌ'funərɪ, -nrɪ (cf. *buffoon* bʌ'fun)

*bravery* brevərɪ, -vrɪ (cf. *brave* brev)

*finery* 'faɪnərɪ (cf. *fine* faɪn)

*greenery* 'grinərɪ, 'grinrɪ (cf. *green* grin)

*embroidery* ɪm'brɔɪdərɪ, -drɪ (cf. *embroider* ɪm'brɔɪdəˑ)

trisyllabic words with *-age*:

*acreage* 'ekərɪdʒ, 'ekrɪdʒ (cf. *acre* 'ekəˑ)

*brokerage* 'brokərɪdʒ, 'brokrɪdʒ (cf. *broker* 'brokəˑ)

*leverage* 'lɛvəˑɪdʒ, -vrɪdʒ, 'livəˑɪdʒ, -vrɪdʒ (cf. *lever* 'lɛvəˑ, 'livəˑ)

*orphanage* 'ɔrfənɪdʒ (cf. *orphan* 'ɔrfən)

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31 *Ibid.*, p. 195.

*siphonage* 'saɪfənɪdʒ (cf. *siphon* 'saɪfən, -fan, -fɒn)[32]

Of these examples, *leverage* is a little peculiar in that the vowel in the first syllable can be either lax or tense. The lax vowel can be explained by the so-called trisyllabic laxing rule (but no rule is needed when the first vowel of the word *lever* is originally lax), whereas the tense vowel is considered a more recent development ('livə vs. 'livəɪdʒ, -vrɪdʒ).[33]

The data suggest that what Chomsky and Halle call trisyllabic laxing rule (lb) (=(12b)) has many exceptions to it, and for this reason it makes us hesitate to call it a productive phonological rule in ModE (and contemporary English).

Conclusion. Two types of vowel shortening rule, (3a) and (3b) in OE, and (6a) and (6b) in ME, may be regarded as fully productive. Exceptions are also phonologically predictable, though in some cases (e. g. before the consonant cluster *st*) there was considerable variation in vowel length, and in others vowel length was sometimes reversed by analogical levelling. As for (la) and (lb) (=(12b)), however, they do not seem to be fully productive phonological rules in ModE (and contemporary English). They seem to be the remnants from the past history of the English language. At least the examples given by Chomsky and Halle for these rules and the many exceptions to them as noted above lead us to such a conclusion.

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32 Phonetic transcriptions of these words are based on John Samuel Kenyon and Thomas Albert Knott, *A Pronouncing Dictionary of American English* (Springfield, Mass.: Merriam, 1953).

33 I owe this to Dr. Gordon Fairbanks at the University of Hawaii.

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