

Concentration and Diversification of Sound Changes

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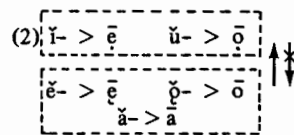
1. Introduction

At least two types of sound change are known to have taken place in stages: native changes and borrowing changes. A change in the rules of native phonology acting in a different direction from a change in loan phonology can increase the complexity of the phonetic system over the history of the language. This paper describes the direction of such sound changes using examples from the lengthening of native vowels in Middle English, Icelandic, and some High German dialects and of borrowings from French into English and from European languages into Japanese.

2. Historical evidence

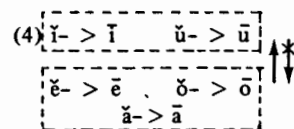
Vowel lengthening in open syllables took place over a wide area of Europe and can be regarded as movement toward a new paradigm. This process occurred in two stages in Middle English and Icelandic and in three in the High German dialects. The first stage in Middle English, the lengthening of non-high vowels, was complete by the middle of the 13th century. High vowels were later lengthened in Northern, North Midland, and East Anglian dialects.

- (1) OE *bācan* > ME *bāken* 'bake'
OE *mēte* > MR *mēte* 'meat'
OE *þrōte* > ME *þrōte* 'throat'
OE *ýfel* > ME *ēvel* 'evil'
OE *sūmor* > ME *sōmer* 'summer'



The lengthening process in Icelandic took place in the 16th century in two stages with high vowel lengthening following that of non-high vowels, but not *vice versa*.

- (3) ON *sǫlr* > ModIce. *sǫlur* 'hall'
ON *gēta* > ModIce. *gēta* 'to get'
ON *līfa* > ModIce. *līfa* 'to live'
(Sommerfelt 1962: 82-3)

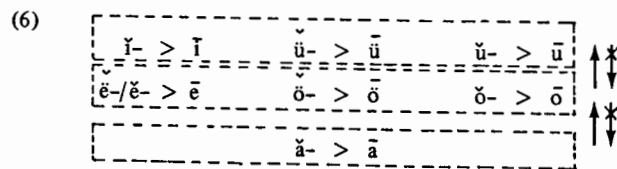


Though the outputs for these two languages differ somewhat in phonetic detail, the order of application to the inputs is the same; lengthening applied first to the non-high vowels and then to the high ones.

A similar lengthening took place in certain High German dialects (e.g. Lower Alemmanic) in the 14th century, but required three distinct stages – lengthening of first low, then mid, and finally high vowels.

- (5) $\check{a}- > \bar{a}$ Adel 'nobility', tragen 'bear', Wagen 'wagon'
 $\check{e}- > \bar{e}$ kleben 'adhere', Rebe 'vine', weben 'weave', Leder 'leather'
 $\check{e}- > \bar{e}$ heben 'heave', edele 'noble', legen 'lay'
 $\check{i}- > \bar{i}$ Biber 'beaver', biben 'shake', wider 'against'
 $\check{o}- > \bar{o}$ loben 'praise', Boden 'ground', Vogel 'bird'
 $\check{o}- > \bar{o}$ ölen 'oil', Öler 'Ölmüller', Vögellin
 $\check{u}- > \bar{u}$ Jugend 'youth', Tugend 'virtue', Jude 'Jew'
 $\check{u}- > \bar{u}$ Jüdel 'Judenkind', mügen 'may'

(Eis 1950: 64-5)



In all three cases, the rule of native phonology which converted short, stressed vowels in open syllables to long ones expanded its scope in a definite order: from only non-high vowels at the first stage (German required an intermediate stage for mid vowels) to all vowels at the final stage. Once some members of a class underwent a change, the rest tended to follow by analogy even though they possessed less phonetic motivation to submit to the change.

3. Evidence from loans

The situation is, however, different in loan phonology. Initially, the manner of borrowing tends to be uniquely specified; that is, all members of a certain class undergo the same change when borrowed. This class may later be subdivided, permitting a plurality of changes, or later borrowings may adopt a different rule.

Perhaps the most well-documented example is French loanwords in English. Stressed vowels in open syllables were lengthened in the words that entered Middle English from Old or Norman French.

- (7) a; cape, plate(s), maten, cave, male, fame, blame
 e; degre 'degree', cete 'whale', chere 'cheer'
 i; deliten 'delight', quiten 'requite', arive(d) 'arrive(d)'
 o; note, robe, trone, noble, close, cote 'coat'
 u; dute 'doubt', rute 'route', spuse 'espouse', gout
 ü sputin 'dispute', escusen 'excuse', üse(d) 'use(d)'

(Based on Behrens 1886)

- (8) OF $\check{i}- > ME \bar{i}$ OF $\check{u}- > ME \bar{u}$ OF $\check{u}- > ME \bar{u}$
 OF $\check{e}- > ME \bar{e}$ OF $\check{o}- > ME \bar{o}$
 OF $\check{a}- > ME \bar{a}$

Later borrowings from Modern French into Modern English continued to do so – whenever possible – but added on- or off-glides to make up for the loss or change of some of the Middle English vowels.

- (9) a; façade [fə'sá:d, fæ-; F. fasad]
 e; bouquet [A, bu(:)kéi, — / B. bəukéi; F. bukɛ]
 i; fatigue [fə'ti:g; F. fatig]
 o; bureau [bjúərou], — / F. byro
 u; recoup [rikú:p; F. recouper rəkupe]
 ü; perdu [pə:djú:; F. pɛrdy]
 (Skeat 1891, 173-6)

- (10) F. $\check{i}- > E. \bar{i}$ F. $\check{u}- > E. j\bar{u}$ F. $\check{u}- > E. \bar{u}$
 F. $\check{e}-/\check{e}- > E. ei$ F. $\check{o}-/\check{o}- > E. ou$
 F. $\check{a}- > E. \bar{a}$

The initial rule was simple – 'lengthen stressed vowels in open syllables' – but intervening developments worked against this rule and forced a restructuring. The net effect was that the loan phonology became more complex, not simpler.

- (11) OF > ME Vowel lengthening \Leftrightarrow $\begin{cases} \text{ModF} > \text{ModE} \\ \text{i) Vowel lengthening} \\ \text{ii) Diphthongization} \\ \text{iii) Vowel lengthening with glide-prefixation} \end{cases}$

The same thing happened with the epenthetic vowels Japanese inserts between the consonants in Dutch, Portuguese, and English loanwords to make them conform to its phonetic paradigm of open syllables – schematically,

$$\# C_1 L V_1 C_2 (C_3 \dots) > \# C_1 V_2 r V_1^{(1)} C_2 V_3 (C_3 \dots)$$

where C_1 denotes the velar and palato-dental stops (k , g , t , and d) and L , liquids (Japanese has only r). Historically, there are three distinct stages. 16th century loanwords (from Portuguese) have both forward and backward assimilation of the epenthetic vowels to the original V_1 (or its Japanese equivalent V_1').

- (12) Po. Christo > J. kirisito 'Christ' 1591
 Po. Christão > J. kirisitan 'Christian' 1587 (Arakawa 1967)

Borrowings between the middle of the 18th century and the middle of the next (mostly from Dutch and Portuguese) have only backward assimilation of the first epenthetic vowel; the quality of the second one is determined, not

by forward assimilation, but by the preceding consonant (typically, *i* or *u*, but *o* after *t* or *d*).

(13) Po. Christo > J. *kirisuto* 1600

Po. Christão, Du. Christen > J. *kirisutean* 1713 (Saito 1967)

In the most recent period, all such vowel assimilation has disappeared in favour of consonant assimilation.

(14) E. (Jesus) Christ > J. (*ziizasu*) *kuraisuto*

E. Christian > J. *kurisutyān*

Diagrammatically,

(15) Po./Du./E. #C₁LV₁C₂(C₃...)>

a. J. #C₁V₂rV₁⁽ⁱ⁾C₂V₃(C₃...) Backward & Forward Vowel Assimilation

b. J. #C₁V₂rV₁⁽ⁱ⁾C₂V₃(C₃...) Backward Vowel Assimilation
 Forward Consonant Assimilation
 (Loss of Forward Vowel Assimilation)

c. J. #C₁V₂rV₁⁽ⁱ⁾C₂V₃(C₃...) Forward Consonant Assimilation
 (Loss of Backward Vowel Assimilation)

4. Conclusion

Though the manner of borrowing into Japanese was once uniquely determined, drastic processes like Forward and Backward Vowel Assimilation of epenthetic vowels have gradually given way to Forward Consonant Assimilation, which represents a weaker process, but a more complicated rule.

Thus, native phonology and loan phonology seem to differ in the power of analogy to promote rule generalization. The examples cited suggested that, for native phonology, once some members of a class submit to a change, analogy works to include those with less phonetic motivation, while loan phonology has the option of restructuring borrowed classes in ways not always predictable by analogy.

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