Phonologically Conditioned Phonetic Change

Josef Fruehwald

Conditioned Sound Changes

In conditioned sound changes, what matters most: the phonological or phonetic properties of the context?

Do the contexts which phonetically favor the change undergo it first? Fastest?

Case Studies

Data was drawn from the Philadelphia Neighborhood Corpus. I focused on two conditioned sound changes.

/ay/ Raising

<table>
<thead>
<tr>
<th>/ay/ Raising</th>
<th>/ey/ Raising</th>
</tr>
</thead>
<tbody>
<tr>
<td>surface</td>
<td>flap</td>
</tr>
<tr>
<td>bite</td>
<td>biting</td>
</tr>
<tr>
<td>bairn</td>
<td>bairn</td>
</tr>
<tr>
<td>/ey/ Raising</td>
<td></td>
</tr>
<tr>
<td>eyC</td>
<td>eyP</td>
</tr>
<tr>
<td>22585</td>
<td>19851</td>
</tr>
<tr>
<td>denz</td>
<td>dizi</td>
</tr>
</tbody>
</table>

Analysis

/ay/ → /ay/ /-voice]/w

/ey/ → +peripheral/ _ C]/w

These phonological processes were operating at the onset of the phonetic change, and defined which variants would undergo, or not undergo the change.

Conclusions

The abstract phonological properties of the conditioning environments played an early role in selecting which variants underwent the change, and which didn’t. These phonological processes entered the grammar concurrently with the phonetic changes.

References: See handout

/ey/ Raising

Even though /l/ seems to phonetically bias /ey/ in the direction of the change, it does not undergo the change in this context.

/ay/ Raising

Effect of following segment on /ay/ duration

Effect of following segment on vowel height

/ay/ appears to always pattern according to the phonological properties of the following segment, not the phonetic properties of its context.
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ay_model <- lmer(F1.n ~ TD * Context * Decade + (TD * Context | Speaker) +
(1 | Word), data = ayTD_comp)
round(summary(ay_model)$coefs, digits = 2)

# Estimate Std. Error t value
# (Intercept) 1.50 0.09 17.68
# TD -0.01 0.11 -0.14
# ContextFlap 0.22 0.12 1.79
# Decade 0.02 0.01 1.79
# TD:ContextFlap -0.04 0.17 -0.24
# TD:Decade -0.13 0.01 -8.56
# ContextFlap:Decade -0.03 0.02 -1.92
# TD:ContextFlap:Decade 0.01 0.02 0.59

ey_model <- lmer(Diag ~ VClass * Decade + (VClass | Speaker) + (1 | Word), data = ey)
round(summary(ey_model)$coefs, digits = 2)

# Estimate Std. Error t value
# (Intercept) 0.52 0.05 11.12
# VClassF -0.49 0.07 -7.38
# VClassL 0.40 0.13 3.03
# VClassV -0.39 0.14 -2.90
# Decade 0.11 0.01 15.39
# VClassF:Decade -0.08 0.01 -11.20
# VClassL:Decade -0.08 0.02 -4.14
# VClassV:Decade -0.11 0.02 -6.26

References


Labov, William, Ingrid Rosenfelder, and Josef Fruehwald. ???? 100 years of language change. Language .
