Opacity and Ordering (Bakovic 2011)

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Gereon Müller & Jochen Trommer:
Modul 04-046-2012: Opazität
April 17 2012
# Feeding and Bleeding

<table>
<thead>
<tr>
<th>V1 Deletion: $V \rightarrow \emptyset/\underline{\phantom{V}} V$</th>
<th>/tue/</th>
<th>/tio/</th>
<th>/tou/</th>
<th>/tei/</th>
</tr>
</thead>
<tbody>
<tr>
<td>Palatalization: $t \rightarrow tʃ/\underline{\phantom{tʃ}} [−bk]$</td>
<td>$tʃe$</td>
<td>$tʃe$</td>
<td>$tʃi$</td>
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</tr>
<tr>
<td></td>
<td>$[tʃe]$</td>
<td>$[to]$</td>
<td>$[tu]$</td>
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Counter-Feeding and Counter-Bleeding

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\[ \begin{array}{l}
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Kiparsky’s Original Claim

Rule Ordering maximises Rule Applicability
Kiparsky’s Revised Claim

Rule Ordering maximises Rule Transparency/Learnability (minimizes opacity)
Opacity (Kiparsky 1973a: 79)

A phonological rule P of the form \( A \rightarrow B / \underline{C} \underline{D} \) is opaque if there are surface structures with either of the following characteristics:

a. instances of A in the environment \( C \underline{D} \).

b. instances of B derived by P that occur in environments other than \( C \underline{D} \).
Kiparsky’s Evidence

Diachronically languages change from opaque to transparent rule orders
A phonological rule $P$ of the form $A \rightarrow B / C\_\_\_\_ D$ is opaque if there are surface structures with either of the following characteristics:

a. **Underapplication**: instances of $A$ in the environment $C\_\_\_\_ D$.

b. **Overapplication**: instances of $B$ derived by $P$ that occur in environments other than $C\_\_\_\_ D$. 
Surface Truth (McCarthly 1999:332)

“The generalization expressed by a phonological rule is not surface true if there are surface counterexamples to that generalization”
Kiparsky’s Equivalence Hypothesis

Counter-Feeding ≈ Underapplication

Counter-Bleeding ≈ Overapplication
Bakovic (2011):

Kiparsky’s Equivalence Hypothesis is not generally true
Counter-Feeding without Underapplication

- **Counter-Feeding on Intermediate Levels**

  \[ \varepsilon - \text{Epenthesis} \quad \text{Stop-Deletion: Degemination:} \]

  \[
  \begin{align*}
  /reiz-z/ & \rightarrow [reiz-\varepsilon-z] \\
  /test/ & \rightarrow [tes] \\
  /list-z/ & \rightarrow [lis-z] \rightarrow lis
  \end{align*}
  \]

  (Singapore English)
Underapplication without Counter-Feeding

- Blocking of Rules by other Rules
- Exceptionality
- Optionality
Disjunctive Rule Blocking (Latin Stress)

a. \( V \rightarrow [+\text{stress}] / \_ C_0 \tilde{V} C_0^1 V C_0 # \)  
   (stress the antepenult if the penult is light)

b. \( V \rightarrow [+\text{stress}] / \_ C_0 V C_0 # \)  
   (stress the penult)

c. \( V \rightarrow [+\text{stress}] / \_ C_0 # \)  
   (stress the ultima)
Overapplication without Counter-Bleeding: Self-Destructive Feeding (Turkish Deletion)

\[
a. \text{/
\text{ajag} + s\text{u}/} \quad b. \text{/
\text{tfan} + s\text{u}/} \quad c. \text{/
\text{bebeg} + i/}
\]

\[
\text{Elision: } \text{s/j } \rightarrow \emptyset / C \quad \emptyset \quad \emptyset
\]

\[
\text{Deletion: } \text{g } \rightarrow \emptyset / V \quad \emptyset \quad \emptyset
\]

\[
[\text{aja+u}] \quad [\text{tfan+u}] \quad [\text{bebe+ i }]
\]

Glosses: (23a) ‘his foot’, (23b) ‘his bell’, (23c) ‘baby (acc.)’
More Intricate Interactions

Mutual Bleeding (Lardil Epenthesis & Deletion)

Epenthesis: $\emptyset \rightarrow w / i \_ u$
Elision: $V \rightarrow \emptyset / V \_\_\_$

\[
\begin{align*}
\text{a. } /papi+ u_/ & \quad \text{b. } /t^jæmpæ+u_/ \\
\text{w} & \\
\emptyset & \\
[papi+wu_/] & [t^jæmpæ+] \\
\end{align*}
\]
Fed Counter-Feeding (Lardil Deletion)

Apocope: \( V \rightarrow \emptyset / \sigma \sigma \_ \# \)

Deletion: \([-\text{apical}] \rightarrow \emptyset / \_ \#\)

Glosses: (11a) ‘rock cod’, (11b) ‘oyster species’, (11c) ‘boomerang’

\[\text{a. } /\text{dibirdibi}/ \quad \text{b. } /\text{yiliyili}/ \quad \text{c. } /\text{wangalk}/\]
Fed Counter-Feeding (Basque)

Raising-to-High: $[-\text{low}] \rightarrow [+\text{high}] / \_\_V$
Raising-to-Mid: $[+\text{low}] \rightarrow [-\text{low}] / \_\_V$

Glosses: (12a) ‘daughter’, (12b) ‘son’

\begin{align*}
a. & \text{ /alaba+a/} & b. & \text{ /seme+e/} \\
\end{align*}
More Intricate Interactions

Fed Counter-Feeding (Nootka)

Labialization:

\[ [+\text{dors}] \rightarrow [+\text{rnd}] / [+\text{rnd}] \_ \_ \quad q^w \quad q^w \]

Delabialization:

\[ [+\text{dors}] \rightarrow [-\text{rnd}] / \_ \_ \_ \_ \quad q \quad \quad k \]

Glosses: (13a) ‘throwing off sparks’, (13b) ‘ten on top’, (13c) ‘to take pity on’
“For example, one can ask: do the definitions . . . allow for the possibility that A feeds B because A bleeds some intervening rule C that would otherwise bleed B? (And: is the answer intuitively correct?)” (fn.3)
Overview

1. Terminology

2. Rule Ordering vs. Opacity

3. More Intricate Interactions