

# Opacity and Ordering (Bakovic 2011)

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## Feeding and Bleeding

		/tue/	/tio/	/tou/	/tei/
<b>V1 Deletion:</b>	$V \rightarrow \emptyset / \underline{\quad} V$	t e	t o	t u	t i
<b>Palatalization:</b>	$t \rightarrow tʃ / \underline{\quad} [-bk]$	tʃe			tʃi
		[tʃe]	[to]	[tu]	[tʃi]

## Counter-Feeding and Counter-Bleeding

		/tue/	/tio/	/tou/	/tei/
<b>Palatalization:</b>	$t \rightarrow tʃ / \_\_\_ [-bk]$		tʃio		tʃei
<b>V1 Deletion:</b>	$V \rightarrow \emptyset / \_\_\_ V$	t e	tʃ o	t u	tʃ i
		[te]	[tʃo]	[tu]	[tʃi]

# 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  $A \rightarrow B / C\_ D$  is opaque if there are surface structures with either of the following characteristics:

- a. instances of  $A$  in the environment  $C\_ D$ .
- b. instances of  $B$  derived by  $P$  that occur in environments other than  $C\_ D$ .

## Kiparsky's Evidence

Diachronically languages change from opaque to transparent rule orders

## Opacity (Kiparsky 1973a: 79)

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 (McCarthy 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  $\approx$  Underapplication

Counter-Bleeding  $\approx$  Overapplication

## Bakovic (2011):

Kiparsky's Equivalence Hypothesis is not generally true

# Counter-Feeding without Underapplication

- Counter-Feeding on Intermediate Levels

**ə-Epenthesis**   **Stop-Deletion:**   **Degemination:**

/reiz-z/ → [reiz-ə-z]

/test/ → [tes]

/list-z/ → [lis-z] → lis

(Singapore English)

# Underapplication without Counter-Feeding

- Blocking of Rules by other Rules
- Exceptionality
- Optionality

## Disjunctive Rule Blocking (Latin Stress)

- a.  $V \rightarrow [+stress] / \_ C_0 \check{V} C_0^1 V C_0 \#$  (stress the antepenult if the penult is light)
- b.  $V \rightarrow [+stress] / \_ C_0 V C_0 \#$  (stress the penult)
- c.  $V \rightarrow [+stress] / \_ C_0 \#$  (stress the ultima)

# Overapplication without Counter-Bleeding: Self-Destructive Feeding (Turkish Deletion)

	a. /aja g + su/	b. /tʃan+ s u/	c. /bebe g +i/
<b>Elision:</b>	s/j → ∅ / C _	∅	∅
<b>Deletion:</b>	g → ∅ / V _ V	∅	∅
	[aja+u]	[tʃan+u]	[bebe+ i]
	<u>Glosses:</u> (23a) 'his foot', (23b) 'his bell', (23c) 'baby (acc.)'		

## Mutual Bleeding (Lardil Epenthesis &amp; Deletion)

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

Elision:  $V \rightarrow \emptyset / V \_$

a. /papi+ u<sub>ɹ</sub>/    b. /t<sup>j</sup>æmpæ+u<sub>ɹ</sub>/

w

$\emptyset$

[papi+wu<sub>ɹ</sub>]

[t<sup>j</sup>æmpæ+ɹ]



## Fed Counter-Feeding (Lardil Deletion)

	a. /dibirdibi/	b. /yiliyili/	c. /wangalk/
<b>Apocope:</b> $V \rightarrow \emptyset / \sigma \sigma \_ \#$	$\emptyset$	$\emptyset$	
<b>Deletion:</b> $[-\text{apical}] \rightarrow \emptyset / \_ \#$	$\emptyset$		$\emptyset$
	[dibirdi]	[yiliyil]	[wangal]

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

# Fed Counter-Feeding (Basque)

**Raising-to-High:** [-low]  $\rightarrow$  [+high] / \_\_V

**Raising-to-Mid:** [+low]  $\rightarrow$  [-low] / \_\_V

a. /alaba+a/    b. /seme+e/

i

e

[alabe+a]      [semi+e]

Glosses: (12a) 'daughter', (12b) 'son'

# Fed Counter-Feeding (Nootka)

a. /mu: q /    b. /ħaju+ q i/    c. /ħa:k<sup>w</sup>+fitħ/

## Labialization:

[+dors] → [+rnd] / [+rnd] \_\_                      q<sup>w</sup>                      q<sup>w</sup>

## Delabialization:

[+dors] → [-rnd] / \_\_ ]<sub>σ</sub>                                      q                                      k

[mu: q ]                      [ħaju+q<sup>w</sup>i]                      [ħa: k +fitħ]

Glosses: (13a) 'throwing off sparks', (13b) 'ten on top', (13c) 'to take pity on'

## Feeding and Bleeding among more Rules

“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