

Contingent optionality

We present data from Polish showing that the optionality of one phonological process (vowel epenthesis) is *contingent* on the optionality of another (coronal place assimilation), and argue that this dependency provides evidence for Baković's (2005, *Phonology* 22.3) analysis of epenthesis-assimilation interactions.

In Polish, the verbal prefix /z-/ and the preposition /z/ have several allomorphs the distribution of which is phonologically determined. (Obligatory voicing assimilation is shown but ignored here.)

	<i>when the stem begins with ...</i>	<i>examples</i>			
a.	[z/s] ... an alveolar consonant or non-coronal consonant	[z rɛguwi] 'in general'	[z zamk ^j ɛm] 'with a castle'	[z-bɔ̃kɔvatɕ] 'to become crazy'	
		[s tɔbɔ̃] 'with you'	[s-sunɔ̃tɕ] 'to slip down'	[s-plɛɕtɕ] 'to entwine together'	
b.	[ʒ/ʃ] ... a postalveolar consonant	[ʒ ʒabɔ̃] 'with a frog'	[ʃ-tʃesatɕ] 'to comb down'		
c.	[ʒ/ɕ] ... a prepalatal consonant	[ʒ-zɛ̃bnɔ̃tɕ] 'to become cold'	[ɕ tɕiʃɔ̃] 'with silence'		
d.	[zɛ] ... a coronal fricative in a consonant cluster	[zɛ znak ^j ɛm] 'with a sign'	[zɛ-staʒɛtɕ ɕɛ̃] 'to become old'	[zɛ-ɕfirɔvatɕ] 'to become crazy'	[zɛ ʒbik ^j ɛm] 'with a wildcat'

Two processes, stated here as rules in a standard rule-based analysis, account for the distribution in (a-d). Epenthesis (1) precedes and bleeds assimilation (2) so that e.g. [zɛ ʒbik^jɛm] is not *[ʒɛ ʒbik^jɛm].

1. Vowel epenthesis: (d) ~ (a-c)

$$\emptyset \rightarrow [\epsilon] / \left[\begin{array}{c} \text{COR} \\ -\text{son} \\ +\text{cont} \end{array} \right] _ \left[\begin{array}{c} \text{COR} \\ -\text{son} \\ +\text{cont} \end{array} \right] \text{C}$$

2. Coronal place assimilation: (a) ~ (b) ~ (c)

$$[\text{COR}] \rightarrow \left[\begin{array}{c} \alpha_{\text{ant}} \\ \beta_{\text{dist}} \end{array} \right] / _ \left[\begin{array}{c} \text{COR} \\ \alpha_{\text{ant}} \\ \beta_{\text{dist}} \end{array} \right]$$

As Baković (2005) argues based on similar facts in other languages, the fact that epenthesis (1) must ignore possible coronal place differences between the flanking consonants misses a significant generalization: epenthesis applies whenever assimilation (2) *would otherwise* lead to a geminate in a cluster. Epenthesis should ignore coronal place due to its *interaction* with assimilation, not due to an accident of its statement. This is achieved by ranking a constraint against geminates in a cluster together with one against unassimilated coronals above one against vowel epenthesis (itself above one against changes in coronal place, to account for assimilation when formation of geminates in clusters is not at issue).

3.	/z ʒbik ^j ɛm/ → [zɛ ʒbik ^j ɛm]	NOGEM+C	AGREE(cor)	DEP-V	IDENT(cor)
	~ [z ʒbik ^j ɛm]		W		
	~ [ʒ ʒbik ^j ɛm]	W		L	W

Another argument for Baković's analysis is based on the optionality of assimilation; see (b', c'). When a stem begins with a non-alveolar coronal fricative in a cluster, the otherwise obligatory epenthesis process is then and only then also optional — but assimilation remains prohibited (see d'). (Glosses are in (b-d).)

b'.	[ʒ ʒabɔ̃] ~ [z ʒabɔ̃]	[ʃ-tʃesatɕ] ~ [s-tʃesatɕ]
c'.	[ʒ-zɛ̃bnɔ̃tɕ] ~ [z-zɛ̃bnɔ̃tɕ]	[ɕ tɕiʃɔ̃] ~ [s tɕiʃɔ̃]
d'.	[zɛ-ɕfirɔvatɕ] ~ [s-ɕfirɔvatɕ]; *[ɕ-ɕfirɔvatɕ]	[zɛ ʒbik ^j ɛm] ~ [z ʒbik ^j ɛm]; *[ʒ ʒbik ^j ɛm]

Not applying assimilation in (b', c') requires AGREE(cor) to be ranked below IDENT(cor); because this would *not* lead to a geminate in a cluster for the examples in (d'), epenthesis does not apply either (4). The limited optionality of epenthesis is thus contingent on the independent optionality of assimilation.

4.	/z ʒbik ^j ɛm/ → [z ʒbik ^j ɛm]	NOGEM+C	DEP-V	IDENT(cor)	AGREE(cor)
	~ [ʒ ʒbik ^j ɛm]	W		W	L
	~ [zɛ ʒbik ^j ɛm]		W		