

Frequency of use predicts the application of consonant mutations in Polish

It is shown that frequency of use is an essential element of a phonological analysis. Supporting material for this claim comes from Polish data showing the application of consonant mutations. Two types of frequency are important predictors of pattern application: pattern frequency and word frequency. Patterns with different frequencies in the lexicon are considered: *-ist-a* \approx 740 words, and *-ek* > 1,400 words. Similarly, an analysis of a corpus-based frequency list reveals that words in *-ek* are 11 times more frequently used than words in *-ist-a* (in the frequency range 1-10,000). As for the impact of pattern frequency, the less frequent a pattern is in the lexicon, the more susceptible it is to modifications. Regarding word frequency, the more frequent a word is, the more resistant it is to change.

<i>-ist-a</i> (low freq.)		<i>-ek</i> (high freq.)	
fle[t] – fle[tɛ]- <i>ist-a</i> vs. 'flute' Bonapar[t]-e – bonapar[t]- <i>yst-a</i>	pattern modification – mutations avoided in new words	kro[k] – kro[tɕ]- <i>ek</i> 'step' drin[k] – drin[tɕ]- <i>ek</i>	mutations preserved in new words
[...t] ~ [...tɛ]- <i>ist-a</i> replaced by [...t] ~ [...t]- <i>yst-a</i>		[...k] ~ [...tɕ]- <i>ek</i>	
	<i>Base</i>	<i>-ist-a</i>	<i>word freq.</i>
a. mutations	fle[t] 'flute'	fle[tɛ]- <i>ist-a</i>	65000
b. vacillating words:			
no mutations	al[t] 'alto'	alt[t]- <i>yst-a</i>	23000
mutations	al[t]	alt[tɛ]- <i>ist-a</i>	
c. no mutations	Bonapar[t]-e	bonapar[t]- <i>yst-a</i>	5500

Frequency of use interacts with the preference for transparent bases (Base-Identity). The tendency to avoid mutations is stronger for weaker patterns than for more robust patterns (because it introduces a change). Low frequency and new words fail to show mutations. In addition, the acceptability of mutations is shown to be gradient and dependent on the featural/perceptual similarity of mutated consonants to their base correspondents before *-ist-a*. Mutations of velars are not attested. As for coronals, mutations of [t d r] are gradually eliminated, while mutations of [s z n] are preserved. Mutations that would involve more perceptual contrast (two features) with their base correspondents are avoided (in accordance with Steriade's 2008 P-maps).

	expected mutations	change of features	mutations before <i>-ist-a</i>
[s z n]	[ɕ z ɲ]	[±anter]	tolerated
[t d r]	[tɛ dz z]	[±anter], [±strid]	avoided (new tendency)
[k g x]	[tɕ dz ɕ]	Place, [±strid]	avoided (categorically)

In an analysis of the data, morphophonological schemas are represented as constraints whose ranking is related to their frequency in the lexicon. Schemas interact with identity constraints. Following dual-route models of lexical access (Hay 2003), words are retrieved from memory either by the whole-word route or the decomposed route in response to their frequency. New/rare words are not independently represented in the mental lexicon and are, therefore, more susceptible to base identity pressures. This analysis provides evidence for the integration of generative phonology with usage-based approaches.

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