

A phonetically-based approach to the phonology of [v]: a case-study form Hungarian and Slovak

Zsuzsanna Bárkányi – Zoltán Kiss
Hungarian Academy of Sciences Research Institute for Linguistics

The labiodental voiced fricative [v] shows a “double-faced” phonological behavior in a number of languages including Hungarian and Slovak (e.g. Czech, Russian, Ukrainian, Hebrew, Swedish, Romanian, etc.) (Siptár—Törkenczy 2000; Pauliny 1979; Barkai—Horvath 1978; Padgett 2002). In some cases it patterns with **obstruents** (e.g. phonotactically or in voicing assimilation): in Hungarian, it can stand after sonorants word-finally (1). In voicing assimilation both in Hungarian and Slovak, before a voiceless obstruent [v] undergoes devoicing (2). In other cases [v] patterns with **sonorants**: In Hungarian, word-initially it can stand after an obstruent (3). In post-obstruent position it does not trigger voicing (4). But in Slovak, across word-boundaries [v] will voice the preceding voiceless obstruent just like other sonorants do (5).

[v]’s phonetic realizations also vary from fricative-like characteristics in some contexts (i.e. devoicing and strong friction noise) to approximant/sonorant-like characteristics in other contexts (i.e. fully voiced with no friction).

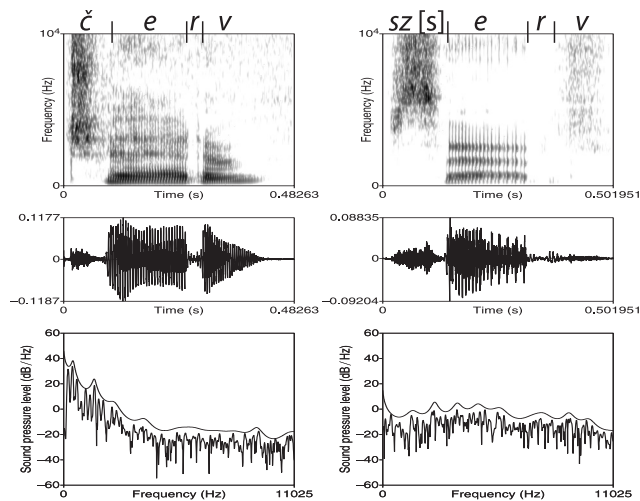
The purpose of this paper is to directly relate [v]’s phonetic characteristics to its phonological behavior. We show that the problems of past formalist/representational approaches – which are related to the fact that these models necessarily and strictly separate phonetics from phonology – can be avoided in an approach which makes use of phonetically and functionally motivated arguments. The main hypothesis is that [v]’s phonetic properties directly influence its twofold patterning (when [v] is realized as noisy/fricative, its behavior patterns with obstruents, when it surfaces as an approximant, it displays sonorant-like behavior).

The model is based on the idea of the phonetic ‘incompatibility’ of voicing and friction/noise (Johnson 2003; Ohala 1983), which results in the surface instability of [v], especially in badly cued and aerodynamically unfavorable positions (i.e. in the vicinity of consonants and/or word-boundary). We will argue that this incompatibility can be resolved in two ways: (1) preserving the contrast either by (i) upholding noise, but losing voicing (in this case [v] is realized as a devoiced fricative [f]/[ɸ]), or (ii) preserving voicing, but in this case noise is lost (this is when we get a fully voiced noiseless [v]/[β]); (2) losing the contrast (deletion of [v]). This hypothesis is backed up by the results of two acoustic/aerodynamic experiments carried out with 10 native speakers of Hungarian and 5 native speakers of Slovak, respectively, focusing on spectral moments (primarily Centre of Gravity values and skewness), voicing, length and formant structure.

The results of the experiments show that in an unfavorable position (e.g. C(#)_C or C_#) Hungarian chooses to preserve the segment by enhancing friction and devoicing [v]. It has not yet been reported about Hungarian that [v] is devoiced in this position. (Note that there is no word-final devoicing of obstruents in Hungarian.) In Slovak, on the other hand, [v] seems to lose friction noise in an unfavorable position and is realized very vowel-like (6). In the C_# context in about half of the cases speakers of Slovak simply deleted [v]. We also present the relevant results of a perceptual experiment concerning the voicing properties of [v] in Hungarian in unfavorable positions.

The paper thus wishes to show that the phonetically-based approach to the phonology (phonotactics and allophonics) of [v] in Hungarian and Slovak is more successful at covering the full range of regularities of this consonant, and need not reckon with exceptions, like earlier models.

- (1) *könyv* ‘book’, *terv* ‘plan’ ~ *vonz* ‘attract’, *torz* ‘distorted’
- (2) Hun. *rév#kalauz* [fk] ‘ferry conductor’ ~ Hun. *réz#kalapács* [sk] ‘brass hammer’
Sl. *v+tom* [ft] ‘in that’ ~ Sl. *z+toho* [st] ‘from that’
- (3) *tviszt* ‘twist’, *kvarc* ‘quartz’ ~ *tréfa* ‘joke’, *klarinét* ‘clarinet’
- (4) Hun. *tviszt* *[dv] ‘twist’ ~ Hun. *tréfa* *[dr] ‘joke’
Sl. *tvár* *[dv] ‘face’ ~ Sl. *tráva* *[dr] ‘grass’
- (5) *brat môže* [dm] ‘brother can’
chlap nám (zavolá) [bn] ‘man us (call), man will call us’
brat vám (zavolá) [dv] ‘brother you PL (call), brother will call you’
- (6) Sl. *čery* ‘worm’ vs. Hun. *szery* ‘organ’



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