

## The Russian adaptation of [y] as L1 bimodal perception

Klaas Seinhorst, University of Amsterdam

The high front rounded vowel [y] is usually borrowed into Russian as /u/ with palatalization of the preceding consonant: e.g. /men<sup>j</sup>u/ < Fr. *menu*, /d<sup>j</sup>una/ < Germ. *Düne*. Paradis (2006) argues that this poses a problem for the phonetic view on loanword adaptation, claiming that /C<sup>j</sup>u/ sequences are “cross-linguistically rare” and “perceptually unnatural”. She further argues that only the phonological view can explain the adaptation, whereas the perceptual view would incorrectly predict /u/, /ju/ or /uj/. However, both of Paradis’ claims turn out to be based on false assumptions, and the question remains why allegedly cross-linguistically rare sequences would be derived effortlessly by a phonological model of borrowing.

Nevertheless, some phonological knowledge needs to be involved in the adaptation, because segments that can not be palatalized in native Russian words are not palatalized in loanwords either, e.g. /tsur<sup>j</sup>ix/ *Zürich* instead of \*/ts<sup>j</sup>ur<sup>j</sup>ix/: the perception process is constrained by phonotactic knowledge. This observation calls for a formalization in which the phonetics can interact with the phonology, as proposed for loanword adaptation by Boersma & Hamann (2009).

I will argue that visual cues play a crucial role in the Russian adaptation of [y]. Its F<sub>2</sub> frequency is not similar to Russian [u], and acoustic measurements suggest that the F<sub>3</sub> of [y] does not favour /u/ either. However, [y] has a very salient visual property: its roundedness. High rounded vowels show a great degree of lip protrusion, that is lacking in the unrounded vowels, so in spite of their different F<sub>2</sub> values [y] looks very much like [u] (but not like [i]). Since perceivers pay attention to the most reliable modality in case of incongruent cues (Traunmüller & Öhrström 2007), the percept /C<sup>j</sup>u/ is preferred over /C<sup>j</sup>i/.

Given these two premises, both of which are motivated independently, we can explain all instances of [y] in Russian with a simple Optimality-Theoretic grammar. No loanword-specific constraints or ranking need to be invoked.

### References:

- Boersma, Paul & Silke Hamann (2009). Loanword adaptation as first-language phonological perception. In: Calabrese, Andrea & W. Leo Wetzels (eds.), *Loan phonology*, 11–58. Amsterdam: John Benjamins.
- Paradis, Carole (2006). The unnatural /C<sup>j</sup>u/ (< foreign /Cy/) sequence in Russian loanwords: a problem for the perceptual view. *Lingua* 116: 976–995.
- Traunmüller, Hartmut & Niklas Öhrström (2007). Audiovisual perception of openness and lip rounding in front vowels. *Journal of Phonetics* 35: 244–258.