Prosodic transfer in long-standing Bulgarian-Turkish bilingualism: evidence from unstressed vowel reduction

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This paper reports the results of an investigation into prosodic transfer in the speech of a long-standing bilingual Bulgarian–Turkish community in North-eastern Bulgaria. Bulgarian is characterised by a prosodically conditioned process of vowel *reduction*, which affects both duration and vowel quality: a six-vowel system in stressed syllables is reduced to a 4- or 3-vowel system in unstressed syllables. Turkish, on the other hand, is characterised by a vowel-affecting process of a fundamentally different nature, namely vowel *harmony*, and word-level prominence is typically described as pitch accent based, rather than dynamic stress. Given that unstressed vowel reduction is a pervasive prosodic process in Bulgarian, and theoretically at odds with vowel harmony in Turkish, the question arises as to whether long-standing contact between the two languages can result in transfer effects in either direction.

We report the results of an acoustic study of stressed and unstressed vowels in these two understudied varieties of bilingual Bulgarian and Turkish, comparing them to each other and to monolingual Eastern Bulgarian and Istanbul Turkish. The monolingual Bulgarian spoken in the same geographic area exhibits neutralising categorical reduction, whereby non-high vowels raise and merge with their high counterparts ([1], [2], [3]). Standard (monolingual) Turkish non-high vowels,however, undergo only gradient undershoot in unstressed syllables, with no evidence of categorical shift and merger ([1], [2]). The data were obtained from 14 bilingual speakers in experimentsdesigned to elicit penultimately stressed 4-syllable nonsense words (and lexical items to verify linguistic representativeness). Measurements for duration, F1 and F2 are reported, and used to evaluate distinct aspects of vowel stresslessness (undershoot, categoricality and neutralisation). To quantify overall reduction and contrast, we compare pairs of token sets (stressed vs unstressed, high vs non-high) using the Pillai statistic of significant MANOVAs on F1, F2 and duration as response variables. The 3 acoustic parameters are also separately assessed across different syllables, using a variety of metrics, including ANOVA, dependent *t*-tests and overlap of probability density functions.

Our results reveal intricate transfer patterns between the contact varieties. Bilingual Turkish stressed vowel quality bears striking resemblance to that of Eastern Bulgarian vowels: spectral properties are practically identical, indicative of transfer from the ambient monolingual variety of Bulgarian. Bilingual Bulgarian vowel qualities are close enough to those in Bilingual Turkish to assume identical stressed targets in the bilinguals' phonologies. Bilingual Bulgarian reduction, however, is very weak (suggesting Turkish influence), whereas in Bilingual Turkish the level of reduction is intriguingly higher than in not just Istanbul Turkish (as expected), but even Bilingual Bulgarian. This suggests present-day Bilingual Bulgarian rests upon a powerfulTurkish substratum – a vestige of a once Turkish-dominated phonology, without unstressed vowel reduction – while present-day Bilingual Turkish phonology shows clear evidence of cross-*linguistic* transfer and approximation to ambient Eastern Bulgarian. At the same time, clear differentiation between Bilingual Bulgarian and Eastern Bulgarian reduction patterns points to a degree of resistance to cross-*dialectal* transfer. We are thus not dealing with wholesale or unidirectional borrowing, but two layers of cross-linguistic transfer. In the first, segmental properties (vowel quality) have been borrowed from ambient Eastern Bulgarian into bilingual varieties. Eastern Bulgarian also affects Bilingual Turkish prosodically, as evidenced in intensified vowel reduction. In the second, a Turkish prosodic substrate exerts influence on Bilingual Bulgarian. We consider the implications for understanding mechanisms of prosodic transfer in contact situations, and the interaction of prosodic transfer with segmental phonology.

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