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VOWEL REDUCTION IN ISRAELI HERITAGE RUSSIAN

General: This study examines the phonological system of vowel reduction patterns of Israeli Heritage Russian speakers (IHRs), and compares them to those of native Russian speakers. Results of the ongoing study show a systematic significant difference between the two groups of speakers: native speakers reduce target vowels to two distinct categories depending on prosodic position; conversely, IHRs reduce target vowels to a single category. The results further suggest that IHRs possess a "hybrid" phonological system of vowel reduction in Russian, combining aspects of L1 (Russian) and L2 (Hebrew) in a specific way.

Heritage speakers are sequential bilinguals, exposed at an early age to one language though typically not reaching native-like proficiency, then subsequently switching to another dominant language (Polinsky and Kagan 2007, Benmamoun et al 2010). Here we focus on speakers who were born in Israel to Russian speaking parents, or immigrated to Israel from Russia in preschool. This is the first study characterizing Russian vowel reduction in Heritage speakers, Hebrew-speaking or otherwise. It is also the first study of Russian vowel reduction done without assuming orthographically-based underlying representations, and distinguishing between reduction patterns in both real and nonce words, which have been shown to behave differently in previous studies (e.g. Kawahara 2011).

Reduction patterns – Russian vs. Hebrew: Prosodically-constrained stress-related Russian vowel reduction is well documented in native speakers (e.g. Jakobson 1929, Crosswhite 1999, Barnes 2002, Padgett 2004). Speakers display a three-way distinction in both length and quality: underlying /o/ and /a/ surface respectively as [o] and [a] in stressed syllables, as shorter [ɐ] in the first pretonic syllable, and as the shortest [ə] in other unstressed syllables. In Modern Hebrew, on the other hand, vowel reduction is quantitative (e.g. Maymon 2001, Cohen et al. in progress), as stressed and unstressed vowels differ significantly in length, but not in quality.

Experimental study: We conducted a production experiment to determine the patterns of vowel reduction in the Russian of IHRs. Subjects were exposed to auditory stimuli (base forms of mono- and disyllabic real and nonce words with stressed /o/ and /a/) and were required to produce the forms with and without stress-attracting suffixes. Hence, the underlying vowels were produced in three distinct prosodic positions:

a. Stressed position (repetition); e.g. stress-final bare stem form – */most/* 'bridge sg.'
b. Pretonic position; e.g. stem with monosyllabic stress-attracting suffix – */most- ɨ/* 'bridge pl.'
c. Other unstressed position; e.g. stem with disyllabic stress-attracting suffix – */most-oˈvoj/* 'of-bridge adj.'.

Results and analysis: The quantity (length) of the vowel and its quality (F1, F2) are analysed and compared to a control group of native Russian speakers.

The results for native speakers producing real words support past research (Jakobson 1929, Crosswhite 1999, Barnes 2002, Padgett 2004). Underlying /o/ in stressed syllables, pretonic

syllables, and other unstressed syllables all differ significantly from one another, a two-pattern vowel reduction system. Unstressed syllables are shorter and more fronted than their stressed counterparts. Among unstressed syllables, those in pretonic position are lower and longer than those in other unstressed positions. IHRs display similar reduction patterns when producing real words.

In nonce words, native speakers maintain this two-pattern reduction. Unlike in real words, vowels in pretonic syllables are not significantly shorter or more fronted than stressed syllables; however, the height contrast between pretonic and other unstressed syllables remains, as vowels in pretonic syllables are significantly lower. In other unstressed syllables, the vowels are shorter and more fronted than in stressed syllables, but do not differ significantly in height.

In contrast, the results for IHRs producing nonce words show a clear departure from the pattern attested for native speakers. Stressed syllables differ from unstressed syllables in both duration and quality, yet there is no significant difference between pretonic and other unstressed syllables. That is, when producing nonce words IHRs no longer distinguish between two categories of unstressed syllables, and instead display a single-pattern vowel reduction system.

Conclusions: Our study shows that IHRs display two different patterns of vowel reduction, one for real words and one for nonce words. Of the two, the pattern for nonce words may be more telling of IHRs' productive phonological system, given that the native-like pattern attested in real words may be attributed to rote-learning or imitation. Furthermore, they evidently do not employ wholesale the Hebrew vowel reduction system, given that stressed and unstressed syllables differ in quality as well as quantity. Therefore, IHRs combine elements of both languages' phonological systems. The number of categories is Hebrew-style, with the vowel reduction pattern showing no significant difference between pretonic and other unstressed vowels. The nature of the categories, however, is Russian-style, with unstressed vowels differing from stressed vowels in both quantity and quality.

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