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Patterns of reduction in L2 Russian vowels produced by Italian learners

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Modern Standard Russian is characterized by a complex pattern of qualitative and quantitative reduction in unstressed vowels [1]. The challenges in its acquisition by L2 learners have become the object of linguistic research (e.g. [2]), however, studies on Russian vowel reduction interference in Italian speakers have been limited, often relying on impressionistic judgments based on teaching experience rather than empirical data. Namely, previous research [3; 4] often indicates the absence of reduction of underlying /o/ in the Russian speech of Italian speakers. Unlike Russian, Standard Italian is a syllable-timed language lacking such a complex system of vowel phoneme reduction. Some linguists argue that Standard Italian completely lacks vowel reduction [5], while others suggest that Italian features the absence of phonological vowel reduction but displays limited vowel reduction at the phonetic level [6]. It is, thus, expected that the differences between the two language systems might influence the way Italian learners of Russian approach vowel reduction and could potentially impact their pronunciation accuracy.

The present study aims to investigate the acoustic manifestation of reduction in vowels /a/ and /o/ after non-palatalized non-sibilant consonants, as well as the process of acquiring reduction patterns of Russian speech in Italian learners. We predicted that participants would be able to produce reduced vowels to some extent, however, the reduction patterns were expected to be different from the Standard Russian model, which displays two degrees of reduction. Namely, after non-palatalized consonants /a/ and /o/ are neutralized in near-open central vowel [ɐ] in the first pretonic syllable (the phenomenon traditionally labelled Degree 1 reduction) and are further reduced to mid-central [ə] in other unstressed syllables (Degree 2). The hypothesis based on a notion of cross-linguistic influence thus suggests that Italian learners could differ from L1 Russian target production in their production of L2 vowels, both qualitatively and quantitatively.

To test this hypothesis, a phonetic experiment was conducted with a target and a control group. The participants were 16 Italian speakers and 7 native Russian speakers, respectively, recruited from two Italian universities. Participants read 6 short phonetically relevant texts that were created artificially and required a B1-B2 level of proficiency in Russian. The fictional texts contained a total of 36 stimuli with vowels /a/ and /o/ in 4 positions: stressed, first pre-stressed, second pre-stressed, and post-stressed. Since the second pre-stressed and post-stressed positions are considered to have identical status in the reduction pattern, they were grouped as "non-stressed" in the analysis. The stimuli constituted pairs in which the vowel alternation occurred in the root while maintaining a similar consonantal context. All collected recordings were manually transcribed and segmented using *Praat* [7], subsequently, the data were analyzed using mixed-effects linear regression models in *R* [8]. The dependent variables studied were the duration and the frequencies of the first and the second formant (hereafter F1 and F2, respectively). The predictors were the underlying phoneme (/a/ and /o/), and the subjects' L1s; the models also included random intercepts for the consonantal contexts.

The results of the statistical analysis show that in the stressed position, the duration of vowels in the Italian group exceeded those of the Russians (*p*<.001), which may be attributed to a slower reading tempo in L2. The formant values of the unreduced stressed [a] and [o] showed no significant differences between Italian and Russian speakers. Likewise, in the first pre-stressed position (Degree 1 reduction), vowel duration was similar between Italians and Russians. However, the values of F1 in this position differed significantly (*p*<.001), suggesting that while Russian speakers produce a partially neutralized near-open vowel, Italians pronounced a vowel qualitatively more similar to the one in the stressed position.

In other unstressed positions (Degree 2), the duration of vowels differed significantly between Italians and Russians (*p*<.001). Although this effect can be partially attributed to slower reading tempo, differences in vowel duration in the stressed syllable turned out to be smaller; furthermore, they were absent altogether in the pretonic position, indicating a deviation from the native-like quantitative pattern at Degree 2. Finally, the values of F1 differed significantly (*p*<.001), indicating that Italians, in the case of Degree 2 reduction, produced a more open vowel compared to Russians.

The results suggest that Italian learners acquire to a significant degree the most salient feature of Russian vowel reduction, the typologically rare /a/-/o/ neutralization. In read speech, they produced full vowels acoustically close to native targets. However, when it comes to subtle quantitative patterns, these features remain inaccessible to intermediate-level learners. It remains unclear whether the rules governing vowel centralization in L2 can be acquired without explicit classroom instruction at higher proficiency levels. Further investigations, especially longitudinal and using naturally produced speech, are needed to better understand the possible trajectories and outcomes of pronunciation learning regarding the vowel reduction patterns.

References

1. Iosad, P. (2012). Vowel reduction in Russian: No phonetics in phonology. Journal of Linguistics, 48(3), 521-571. doi:10.1017/S0022226712000102
2. Barkov, M., Santiago, F., & Peralta, T. (2022). Production of Vowel Reduction by Mexican Learners of English as L2 and Russian as L3. *Canadian Journal of Linguistics/Revue Canadienne De Linguistique, 67* (1-2), 88-117. doi:10.1017/cnj.2022.6
3. Kovtun, Y., & Rozova, O. (2016). Учет интерференции гласных при обучении итальянцев русскому произношению [Vowel Interference in Teaching Russians to Italians]. (pp. 36-39)
4. Bezhenar, O. (2015). Интерферирующее влияние итальянского языка при изучении русского языка: фонетическая, орфографическая, грамматическая и синтаксическая интерференция [Interfering Influence of the Italian Language in Learning Russian: Phonetic, Orthographic, Grammatical, and Syntactic Interference]. Journal of the RUDN University. Series: Education: Languages and Specialties, 4

5. Bertinetto, P. M. (1981). Strutture prosodiche dell'italiano: accento, quantità, sillaba, giuntura, fondamenti metrici. In: Quaderni degli "Studi di grammatica italiana", 6.
6. Farnetani, E., & Busà, M. G. (1999). Quantifying the range of vowel reduction in Italian. *14th International Conference of the Phonetic Sciences, San Francisco, 1-7 Aug*
7. Boersma, P. & Weenink, D. (2023). Praat: doing phonetics by computer [Computer program]
8. R Development Core Team (2021). R: A Language and Environment for Statistical Computing. *R Foundation for Statistical Computing*