

## Conditioned variability in the realization of Romanian rhotics

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Phonological descriptions of Romanian have predominantly characterized the language's rhotic as the tap /ɾ/ (Chitoran, 2002; Savu, 2012), but the trill /r/ has been observed occasionally in contexts such as word-initially (Avram, 1993; Chitoran, 2002). However, to my knowledge, there are no phonetic analyses of the Romanian rhotic and its possible variants, which would allow for a better characterization of the actual variation attested. As such, the objective of the present study is to provide a phonetic characterization of Romanian rhotics in order to better understand the factors that condition their variability.

To this end, 10 native Romanian speakers performed two production tasks: a picture description and a carrier phrase reading. In the former, participants saw 16 pictures depicting bisyllabic words with word-initial and word-medial, intervocalic <r>, as in *rege* 'king' and *bere* 'beer'. They were instructed to describe each picture using complete sentences. In the carrier phrase task, participants were presented with 32 stimuli (+20 distracters) consisting of 16 real (same words as in the first task) and 16 nonce bisyllabic words with word-initial and word-medial, intervocalic <r>, as in *rena* 'NONCE' and *dera* 'NONCE'. Each stimulus was embedded in the carrier phrase *Spun [TARGET] înca o dată* 'I say [TARGET] again'. The nonce words were used in order to investigate whether trills would be produced more frequently in these words due to hyperarticulation. For all of the stimuli, the vowels flanking <r> were the low and mid vowels /e, a, ə/.

480 rhotics were extracted and analyzed using Praat (Boersma & Weenink, 2011). Manner was determined based on acoustic and auditory inspection; in addition, duration (ms) was measured to further distinguish between taps and trills. In total, five realizations were identified: trills, taps, approximants, taps with a fricated release, and fricatives.

Overall, the most common production was fricative (31%), followed by tap (28%) – either as a simple tap (35 ms), or as a tap with a fricated release – followed by approximant (21%), and lastly, trill (20% of cases; 80 ms). Regarding phonetic context, word-initially the trill occurred most often (30%) – which is consistent with previous observations (Avram, 1993; Chitoran, 2002) – while the approximant occurred the least frequently (16%). Word-medially intervocalically, the trill occurred the least frequently of all rhotics (9%). Regarding the two tasks, the trill rarely occurred in the picture description (6%), but was produced relatively frequently in the carrier phrase reading (26%). Lastly, the trill was produced more frequently in nonce words than in real words (30% versus 14%).

Despite the phonological descriptions of Romanian rhotics, the acoustic analysis performed here shows that there are several other realizations besides the tap and the trill. These results suggest that the variability of Romanian rhotics is conditioned by factors such as position within the word (word-initial versus word-medial), register (formal versus less formal) and word type (real versus nonce words). This conditioned variability can be explained by Lindblom's (1989) hypo- and hyperarticulation (H&H) theory; namely, the theory holds that, in more formal tasks, (such as reading), speakers are more likely to hyperarticulate, while in less formal ones, undershooting (hypoarticulation) is more common. Additionally, speakers tend to hyperarticulate in prosodically strong positions, such as word-initially, and hypoarticulate elsewhere.

## References

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