

On the phonetic instability of the Polish /r/

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It is estimated that as many as 75 of the world's languages have a rhotic sound in their phoneme inventory (usually a trill) and more than 80% of those that have a rhotic phoneme, have only one (Madiesson 1984). However, speakers of languages that have a trill as the only 'r-sound', hardly ever produce it. For instance, Wells (1982:411) says that in Scottish English trilled realisations of the rhotic are only heard in declamatory styles, while in natural speech they are realised as taps. Substitutions of the same kind take place in Polish and Russian, despite the fact that both are said to have a post-alveolar trill in their sound systems. The major reason for this trill/tap replacement is that trills definitely constitute an articulatory difficulty as they require a high amount of muscular effort, which is probably why they tend to be the last sounds acquired by children. As a consequence, speakers of many languages replace them with other rhotics that are easier in articulatory terms.

The present paper reports on the results of an experiment whose primary aim was to demonstrate that in the Polish language the rhotic phoneme has several different physical realisations. Also, the authors wanted to determine the relative frequency of those allophones as well as their distribution. A secondary objective of the study was to establish whether adolescents and adults use those different variants of the rhotic segment with a similar frequency.

In order to achieve these goals, a group of four female adolescents (all aged 13) as well as a group of woman (between 37 and 42 years) were asked to read 360 words embedded in the carrier phrase *Napisala X na tablicy* 'She wrote X on the board'. In all the target words the rhotic sound was placed in intervocalic position. The influence of prosodic position was investigated by using words in which the rhotic occupied an onset position in accented syllables and unaccented ones. The phonetic context investigated in the study included all the possible vowel–rhotic–vowel combinations except for those in which the 'r' sound was followed by the high front vowel, which is an impermissible sound sequence of Polish found only in a limited number of words of foreign origin.

The results show that there are noticeable differences between the two age groups. First of all, in a majority of cases (68%) the young produced either an approximant or a fricative, while in the other group tap realisations are still more frequent than approximants and fricatives (57%). However, in the investigated contexts, the differences are not statistically significant ($p > 5\%$).

Interestingly, in both groups approximants are much more frequent when the flanking vowels are high.

The study reveals that the Polish rhotic phoneme has three major variants, namely tap, fricative and approximant. Given the frequency of occurrence of the approximant, especially in the speech of the young, one can hypothesise that a vigorous sound change concerning this speech segment is taking place the way it has occurred in Dutch, as reported by van Bezooijen, Kroezen and van den Berg (2002).

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