Investigating the production of Italian voiced palatal lateral approximant and the voiced palatal nasal by English-speaking learners: An acoustic study

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Although the body of research on the acquisition of Italian as a second language (L2) has been growing (e.g., [1]; [2]; [3]; [4]), very little is known about the production of Italian palatal sounds by English-speaking learners. The current study examines the production of the Italian voiced palatal lateral approximant /ʎ/ (e.g., ‹*tovag**l**ia*› [to.'va.ʎa] ‘tablecloth’) and the voiced palatal nasal /ɲ/ (e.g., ‹***gn**omo*› ['ɲɔ.mo] ‘dwarf’), from an acoustic point of view. Flege's Speech Learning Model [5] would predict that these two sounds would be perceived as 'similar' sounds and mapped on to their nearest first language equivalents. However, both sounds are known to be difficult for English native speakers to acquire because of their articulation [6]. The difficulty lies in the conformation of the tongue, which must be raised and flattened against the palate, whilst the air flows out from either the mouth or the nose. Therefore, based on [6], [7] and [8] it is predicted that for /ʎ/, participants will exhibit a higher F1, and a lower F2, F3 and F4 than their Italian native-speaker counterparts. Regarding the duration of /ɲ/, based on [9], [10], and [11], it is expected that the English-speaking learners will exhibit a shorter duration. Five English-native speakers and two native-Italian speakers completed a reading and a production task. The stimuli included 48 Italian target words, which were controlled for stress and the number of syllables. An acoustic analysis of 52 tokens was conducted, where F1, F2, F3 and F4 were measured for /ʎ/ productions and duration for /ɲ/. The hypothesis regarding the formant values for /ʎ/ was partially confirmed. The mean values for the English-speaking learners were: F1 = 371.5Hz, F2 = 2064.5 Hz, F3 = 2972 Hz, F4 = 3781.5 Hz, while for Italian participants they were as follows: F1 = 299 Hz, F2 = 1803 Hz, F3 = 2734 Hz, F4 = 3858 Hz. The hypotheses were confirmed for F1 and F4 values, but not for F2 and F3 values. The hypothesis regarding the duration of /ɲ/ was confirmed. The mean duration value for English-native participants was 167ms, while for Italian participants it was 181ms. Moreover, English-speaking learners produced /ɲ/ as /n/ + /j/ at all times. This is consistent with what has been reported previously by [11] regarding the production of English-speaking learners of Spanish, as shown in Figures 2. This pattern of production is attributed to first language (L1) transfer as the sequence /n/ + /j/ exists in words like (e.g., ‹onion› ['ʌn.jən]). The findings of this study are important because they show that L2 learners have difficulty acquiring the phonetic parameters of the L2 sounds. The current study also shows that a complex sound such as, the Italian /ɲ/ is produced as two different sounds that are a legitimate sequence in the learners' first language. This project also makes an empirical contribution to the investigation of Italian as an L2, and fills a gap in the current literature.

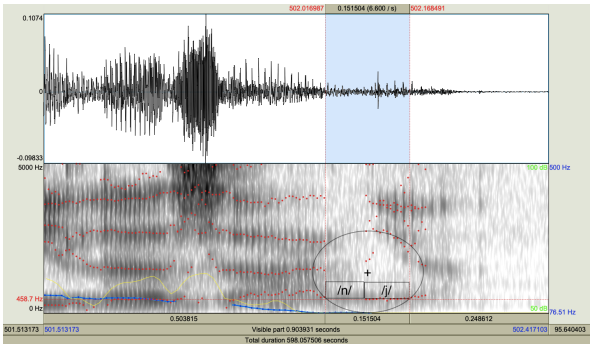

Figure 2. An English-native speaker's spectrogram of the production of the word ‹lasagne› [la.'za.**ɲ**e] 'lasagna'. The circle indicates the production of the /**ɲ**/ as /n/ + /j/.

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