The L3 acquisition of Spanish rhotics by native Mandarin speakers
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The L2 acquisition of the two Spanish rhotics (the tap /ɾ/ and the trill /r/) by native English speakers has received considerable attention in recent years (e.g., Face 2006; Olsen 2012). These studies have found that the tap is easier to acquire than the trill, which is partly due to positive transfer of the English flap, a highly similar sound (Colantoni & Steele 2008; Olsen 2012), as well as the more demanding aerodynamic constraints involved in producing the trill (Face 2006; Johnson 2008). Very few studies have investigated the acquisition of the Spanish rhotics by speakers of other languages (but see Rafat 2008 for the acquisition of Spanish /r/ by native Farsi speakers). In the present study, I examine the acquisition of the Spanish rhotics by native Mandarin speakers who speak English as an L2. Mandarin has one rhotic consonant (a voiced rhotic approximant/fricative; Duanmu 2007) which differs greatly from the Spanish rhotics (in place and manner). Mandarin also has a voiced alveolar stop and a voiced dental lateral, two segments that bear some similarity to the tap both perceptually and articulatorily (in terms of place and voicing). Such similarities could impede acquisition (Flege 1995). In contrast, native Mandarin speakers who have acquired the English flap may have an advantage producing the nearly identical Spanish tap. Based on these facts, I investigate the following two questions: (1) What are the developmental stages in the acquisition of the tap and the trill by native Mandarin speakers? (2) How does transfer from the learners’ L1 Mandarin or L2 English affect acquisition of the Spanish rhotics?

L1 Mandarin-L2 English-L3 Spanish speakers of beginner, intermediate and advanced Spanish proficiency were recorded performing a word repetition task in Spanish and English. English target stimuli consisted of words containing the English flap (e.g., [ˈwa.ɾə.ɹ] water) to determine whether or not the Mandarin speakers have acquired the flap. The Spanish target stimuli consisted of both rhotics in intervocalic position (e.g., [ˈka.ɾo] caro ‘car’; [ˈpe.ɾo] perro ‘dog’). Duration, voicing, and manner of the Spanish rhotics and the English flap were measured and compared to the values of the control speakers. Preliminary results for the learners’ realization of the tap indicate their difficulty articulating the target manner, as 2 of 3 participants tended to produce a brief approximant (80% occurrence) in place of the tap (17% occurrence). Interestingly, the duration of such approximants matches that of a native-like tap and the segment is perceptually very similar to a tap. The one Mandarin speaker who produced the tap with some regularity (50% accuracy) also consistently produced an accurate English flap, while the other learners demonstrated difficulty articulating the flap. Preliminary results for the trill indicate that Mandarin speakers experience relatively more difficulty acquiring the trill. Only one participant was able to produce trills that were native-like along all three parameters. The other two participants produced a variety of non-target segments – approximants (70%), stops (7.5%), fricatives (7.5%), and taps (15%).

The fact that Mandarin speakers produce a non-target yet perceptually similar segment in place of the tap suggests that learners may aim for native-like percepts as opposed to native-like articulations. It also appears that the Mandarin rhotic is more perceptually distinct than the English rhotic: English L2 Spanish learners tend to substitute their L1 rhotic for the tap and the trill until they acquire the target manner (Face 2006; Johnson 2008), yet no Mandarin-like rhotics were observed. L2 English-based transfer was also observed. Only the learner who was able to produce a native-like English flap was able produce a native-like Spanish tap and this only
occurred in post-tonic syllables, the same context in which the English flap occurs. This suggests that the presence of L2 allophones facilitate the acquisition of L3 phonemes, provided the phonetic contexts are the same.

References