Arabic Speakers’ “false” gemination of English singletons in production and perception
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Arabic makes quantity distinction of segments such as vowels and consonants, and such a quantity distinction seems to influence Arabic speakers’ learning of a second language (L2). In the current study, we examine whether a consonantal quantity distinction in Arabic influences L2 learning. In particular, we investigate whether Arabic speakers geminate singleton consonants in English and whether such “false” gemination occurs both in perception and production domains. We also investigate how word structures of the native language (L1) are related to the false germination.

We examined word-medial consonants in three conditions: 1) CVCCV (words ending with a singleton C, such as commit), 2) CVCCV-C (words ending with a consonant cluster due to suffixation, such as water-s), and 3) CVCCVC (monomorphemic words ending with a consonant cluster, such as select). Arabic allows both singletons and geminates in the first and second conditions of the current study. However, only geminates are allowed in the third condition. If Arabic speakers were to be influenced by the native language (L1), they would falsely geminate or perceive as a geminate the medial C only in the third condition.

A group of native speakers of Arabic participated in perception (AX task) and production (reading) tasks. For the perception experiment, an Arabic-English bilingual produced stimuli consisting of 15 English words and 15 nonwords for each condition along with filler items. For the second condition, the nonword stimuli ended with clusters such as /ts/, /kt/, and /gz/. Each word was produced in two versions: one natively (i.e., singleton) and the other with a deliberately geminated medial consonant. We presented each subject with a randomized set of 80 pairs consisting of two versions (singleton vs. geminate) of the same word and filler items, to judge whether each pair had the same or different words. In the production task, each subject read 30 English words and nonwords in isolation, which are classified into the three conditions of our interest. We examined the duration of the medial consonants in production and the error rate in perception.

Perception results indicated that Arabic speakers committed more errors in the CVCCVC than in the CVCCV condition, while error rate in the CVCCVC-C condition was intermediate between the two conditions. We also noted that the participants made more errors in the CVCCVC-C condition for the nonwords than for the words. Production results showed that Arabic speakers produced the medial consonants with longer duration especially in the CVCCVC condition. Both production and perception results demonstrate that Arabic speakers falsely produce and perceive geminates in English, and that such gemination is not random but closely related to the L1 structure. In addition, we observed that some Arabic speakers produced the final consonant clusters of the nonword stimuli with an epenthetic vowel without geminating the medial consonants. This suggests that both false gemination and epenthesis are strategies to remedy the syllabic structure to comply with L1 patterns; the resulting syllable structures with false gemination or epenthesis do not violate L1 phonotactics.