

Achieving native-like accuracy of French/English vowels for Canadian bilingual speakers: effects of language proficiency, context of language use and daily exposure time

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A study from MacLeod et al. (2009) on the production of high vowels in English and French bilinguals has shown that the production of vowels of bilinguals can be close to the production of native speakers. However, a study on Spanish and Catalan vowels by Bosch & Ramon-Casas (2011) has shown that bilinguals that learn Spanish and Catalan simultaneously or had acquired Spanish earlier produced vowels with more variability and less accuracy compared to bilinguals that acquired Spanish later. Mayr et al. (2018) found similar results with Spanish-Galician bilinguals.

The current study aims to enlarge the study population to one that is more representative of the general population and expand the focus of the research to all vowels found in both English and French (for Canadian speakers), all to give an accurate picture of second language learning. Our research questions are (1) how close to native-like articulation proficiency bilinguals can achieve with varying levels of L2 proficiency, (2) how strong the effect of second language learning is on their first language and vice versa and (3) which factors influence a native-like vowel production.

To achieve our research goal, we are analyzing all vowels present in both languages in 3 different contexts (sentence-initial focus, sentence-medial focus, and sentence-final unfocused position) with six repetitions for each vowel. We recorded participants with a high-quality microphone and saved the recordings locally as an uncompressed audio format. Due to the pandemic, we could only record a smaller number of participants in a soundproof room, while we recorded others in a quiet room in the participant's house. Participants were selected based on the following criteria: self-identification of their level in both languages, their native language, the contexts of their language use (work/school, friends, family), and their daily language use (exposure). Dominant speakers of one language (English and French) are grouped into either a *weak*, *medium* or *strong* group concerning their L2 proficiency. As additional groups, we also examine a simultaneous bilingual group, i.e., speakers that have acquired both languages before the age of 5, and 2 groups of 'monolingual' speakers whose L2 knowledge is limited to their school education. At the end of this project, we aim to have ten speakers in each group. A subset of this data is currently analyzed and, preliminary results for all speaker groups will be presented at the conference.

Based on the groups, we expect the English group to show less accurate productions and more variability for the rounded front vowels as they are not present in English. We predict higher formants, especially the F2, in the weaker group compared to the stronger ones. Quebec French has lax vowels, unlike metropolitan French. Therefore, we anticipate little to no difference between the production of the French group compared to the English monolinguals. The nasal vowels are another obstacle for the English group; thus, we predict higher F3 for English speakers struggling to target the French nasal vowel qualities.

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