

Examining the roles of language familiarity and bilingualism in talker recognition

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ABSTRACT

Experience with a language facilitates talker recognition (e.g., Hollien et al., 1974; Goggin et al., 1991; Thompson, 1987), and this is known as the *language familiarity effect* (LFE). Bilingualism can also affect talker recognition in terms of: (i) how listeners attend to talker-specific versus language-specific features, and (ii) how listeners generalize their learning of the identity of an individual speaker across two languages. Previous research has studied the LFE from both angles. Bilinguals may have a general voice recognition advantage regardless of familiarity (Levi, 2018), and an advantage for generalizing voice learning across languages they know (compared to monolinguals generalizing from an unfamiliar language to their L1 or vice versa: Orena et al., 2019). We tested the role of the LFE against a general bilingual advantage in talker recognition using a talker identification task which trained two groups of bilinguals in either Cantonese or English, then subsequently tested them on both languages to assess learning and generalization. Participants belonged to one of two groups: a bilingual group familiar with both test languages (English-Cantonese), and a bilingual group familiar with just one test language (English-other). Stimuli were short excerpts sampled from a bilingual Cantonese-English corpus of spontaneous speech (Johnson et al., 2020). Preliminary results ($n = 49$) are consistent with a bilingual talker advantage interpretation — there was no difference in overall performance between the groups. A glmer model demonstrated improved talker recognition on test items in the language of training ($\beta = 0.2$; $p < 0.001$). There was also an effect of training language such that Cantonese training resulted in stronger generalization to English and novel Cantonese utterances than the reverse ($\beta = -0.12$, $p = 0.028$). These results may be due to the structured variability of F0 in Cantonese, which may give all listeners additional beneficial information.

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