Listeners identify voices more accurately when they understand the language being spoken—a phenomenon known as the language-familiarity effect (LFE). High-proficient speakers of a foreign language persist in identifying voices more accurately in their native language than the second language. (Parrachione & Wong, 2007)

We assessed two hypotheses that might explain magnitude of the LFE among highly-proficient second-language speakers. That the LFE depends on:

1. How much listeners currently use the other language (immersion)
2. When listeners began learning the other language (age of acquisition)

We found that degree of second-language immersion, not age of acquisition, accounts for a reduction in the LFE among highly-proficient bilinguals.

Results: Immersion

Based on participant responses to an extensive language background survey, the Mandarin-speaking participants were further divided into two groups:

- The Low-Immersion Mandarin group (N = 16), who reported currently speaking Mandarin the majority of the time in their daily lives.
- The High-Immersion Mandarin group (N = 14), who reported currently speaking English the majority of the time in their daily lives.

The magnitude of the LFE in talker identification by highly-proficient bilinguals is related to the extent to which these individuals currently use their native and second languages.

Low-Immersion group:
- Significantly better talker identification in Mandarin than English: LFE: 13.4% ± 12.5%
  - \( t_{28} = 4.27, p < 0.0007, d = 1.13 \)

High-Immersion group:
- Equally accurate talker identification in both languages:
  - LFE: 2.1% ± 16.8%
  - \( t_{28} = 0.48, p = 0.64, d = 0.18 \)

Significantly greater LFE for Mandarin speakers with low English immersion than those with high English immersion
- \( t = 4.24, p < 0.0003, d = 1.61 \)

Results: Age of Acquisition

Previous reports have demonstrated that early bilinguals (who learned both languages before age 5) have a significantly reduced language-familiarity effect compared to late bilinguals (who learned one of their languages after age 5). (Bregman & Creel, 2014)

All Mandarin-English bilinguals in this study began learning English after age 5
- Mean age of acquisition = 8.3 ± 2.6 years; range = 6-14 years old

We found no significant relationship between age at which Mandarin speakers began learning English and the magnitude of their LFE.
- \( r = -0.15, p = 0.42 \)

The Low-Immersion and High-Immersion Mandarin groups did not differ in age at which they began learning English:
- \( t = 0.0, p = 1.0 \)

Other factors also did not predict LFE magnitude:
- Years of study: \( r = 0.26, p = 0.18 \)
- Current English ability: \( r = -0.1, p = 0.6 \)

Conclusions

Our findings are consistent with the original views of Goggin and colleagues (1991) and recent work of Orena and colleagues (2015) that the amount of experience that listeners have with a community of speakers is related to their ability to accurately identify voices from that community.

The persistence of a LFE in bilinguals is not only a function of their later acquisition (Bregman & Creel, 2014), but also varies with respect to the quality and quantity of bilinguals’ second-language experiences.

These observations are consistent with the findings of Perrachione and Wong (2007) that, with practice, the LFE could be trained away in Mandarin-English bilinguals, but not English monolinguals.

The ability of highly proficient bilinguals to accurately identify voices in their second language is a function of how immersed they are in real-world use of that language.

Even bilinguals who began learning their second language later in life may be able to overcome the LFE in talker identification with sufficient usage of the second language.

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References


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