Re-evaluating the Other Accent Effect in Talker Recognition

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The Language Familiarity Effect (LFE) describes how listeners are much better at identifying talkers of a familiar language than they are at identifying talkers of an unfamiliar language[4,7]. Recently, evidence has reported an analogous effect—the Other Accent Effect (OAE)— in which talkers of one's own accent are better identified than talkers of another accent.

Although the LFE is firmly established in the literature, evidence for the OAE is mixed. Why do some studies report an OAE while others do not? One possibility is that the presence of the effect is determined by the types of accents examined in the OAE literature. In some cases, comparisons involved the listeners' own native accent and an accent that was socially marked—and evidence shows that social attitudes affect talker identification[2,3]. In other cases, non-native (L2) accents have been used to demonstrate the OAE (rather than regional accents). As we know, L2 talkers' speech is often colored by their L1 phonology[1]. Given that phonological knowledge is thought to be used in talker identification, this may make identification of L2 talkers more difficult. Here, we examined these possibilities by testing Canadian English speakers on their ability to identify Canadian English, Australian English, Mandarin-accented English, and Mandarin talkers. As far as we are aware, this is the first study to systematically compare the same listeners' recognition of regional accented talkers (i.e., Australian English) versus non-native accented talkers (i.e., Mandarin-accented English). We predicted that Canadian adults would not show an OAE when presented with Australian English, a regional accent not typically known to be negatively perceived by Canadians. In contrast, we predict that Canadian listeners will show an OAE when presented with Mandarin-accented English, a non-native accent that is likely socially marked by Canadians[5,6].

To test this, 56 native Canadian English-speaking adults were presented with 16 female talkers in four-voice same-accent line-ups. Talkers were 4 native Canadians, 4 native Australians, and 8 native Mandarin Chinese. After familiarization with each talker and a 1-minute retention interval, listeners were tasked with identifying the correct talker from each line-up. Following each talker selection, listeners reported how confident they were with their decision. Participants completed a total of 16 trials, with each talker serving as the target once.

Listeners recognized Canadian and Australian English talkers equally well ($p = 0.25$), and Mandarin-accented English and Mandarin talkers were also recognized equally ($p = 0.60$). Importantly, the two types of accented talkers were recognized differently, with Australian English talkers recognized significantly better than Mandarin-accented English talkers ($p < 0.001$) (Figure 1). Additionally, listeners' confidence (Figure 2) generally followed accuracy; however, listeners reported more confidence with Mandarin-accented English talkers than Mandarin talkers ($p < .001$) even though performance in both conditions did not differ.

As predicted, Canadian listeners displayed an OAE for Mandarin-accented talkers, but not Australian English talkers. Clearly, accent type matters; an OAE is not always observed when listeners are presented with talkers of an unfamiliar accent. We suggest that our findings reconcile apparent conflicting evidence of the OAE by more carefully considering accent type. Our findings suggest that when listeners are presented with another L1 variant of their language that they do not possess a social bias against, an OAE is unlikely to be observed. In addition, listener confidence in their ability to identify a talker does not always align with their performance. These findings have interesting theoretical implications for how talker recognition works, as well as practical implications for forensics, language learning, and speech technology.

References

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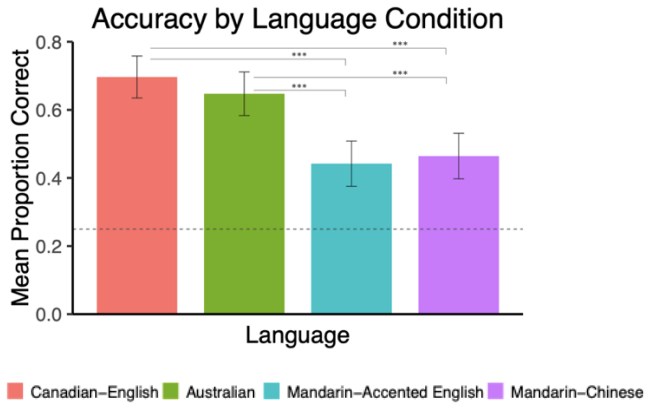

Figure 1. Mean proportion of correct responses in the talker recognition task by language condition (error bars indicate SE).

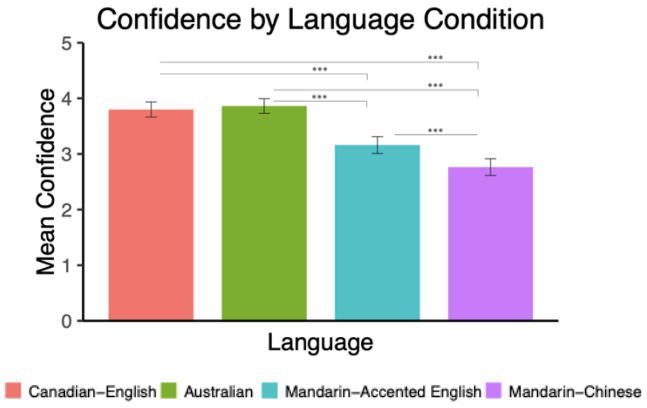

Figure 2. Mean confidence in the talker recognition task by language condition (error bars indicate SE).