

Cross-dialect phonetic convergence in the lab: New Zealand English and American English

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It is well-known that a speaker adjusts their pronunciation towards a model talker, when and after the speaker shadows model speech stimuli [1, 2]. This lab-based convergence takes place even when model talkers and participants speak different dialects of the same language [3, 4, 5].

The first goal of this study is to attempt a replication of the previous findings about lab-based cross-dialect convergence. In particular, we explored whether New Zealand English (NZE) speakers modify the phonetic values of the DRESS vowels when and after shadowing model speech stimuli with DRESS vowels produced by American English (AmE) speakers. Notice that the phonetic values of DRESS vowels are largely different between NZE and AmE. DRESS vowels shift upward in the history of NZE, and they are usually classified as high vowels rather than mid vowels. The second goal of this study is to test whether the modification of DRESS vowels influences the production of TRAP vowels in a post-shadowing session. As with DRESS vowels, NZE TRAP vowels are produced with a relatively higher tongue position than AmE TRAP vowels.

Twenty-four female NZE speakers participated in this research. The experiment consists of five key sessions: baseline session, shadowing session I, post-shadowing session I, shadowing session II, and post-shadowing session II. The participants read aloud target words with DRESS vowels and TRAP vowels in the baseline and post-shadowing sessions, and shadowed words with DRESS vowels that were produced by an AmE model talker (target condition) and a NZE model talker (control condition) in the shadowing sessions.

Mixed-effects linear regression models were constructed in relation to the F1 values of the DRESS and TRAP vowels respectively. The statistical results suggest that the NZE speakers converged towards an AmE model talker in terms of DRESS vowels when and after they shadowed model speech stimuli with DRESS vowels. In particular, they produced DRESS vowels with higher F1 values in the AmE shadowing session and the first half of the AmE post-shadowing session than they did in the baseline session. It was also found that they produced TRAP vowels with slightly more AmE-like formant values in the AmE post-shadowing session. More specifically, they produced TRAP vowels with higher F1 values in the AmE post-shadowing session than in the baseline session.

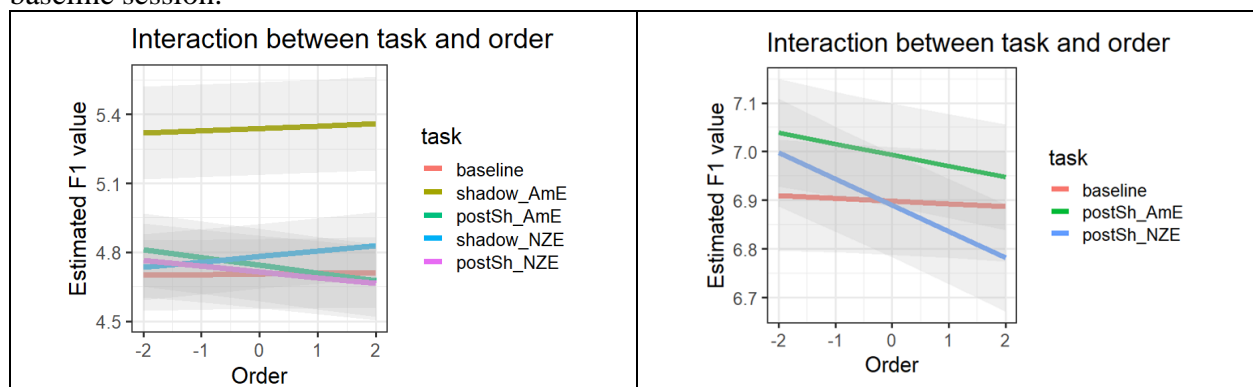


Figure 1. F1 values of DRESS vowels (left-hand) and TRAP vowels (right-hand) in key sessions

References

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