Does high talker variability improve the learning of non-native phoneme contrasts? A replication
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Background
• Acquiring non-native speech contrasts can be difficult when learning a new language.
• This can be improved through phonetic training.
• Two seminal studies report high-variability phonetic training (HVPT) beneficial over low-variability training.
  • Japanese learners of English /r/-/l/.
  • HV and LV training in separate studies.
• **Key finding:** Including multiple talkers during phonetic training is suggested to be advantageous over training including a single talker.
• As a result, HVPT is now a standard methodology. However, effect is less established than often thought.

Research question
Is high variability (HV) over low variability (LV) input in phonetic training beneficial for the amount of improvement in generalisation?

Key hypotheses
1. Greater improvement for HV than LV when tested on generalisation to novel talkers and novel items.
2. Higher performance for LV when tested on trained talkers than on untrained talkers. No or weaker difference for HV.

Participants
• 160 Japanese learners of English (maximal sample based on Bayesian sample estimation)
  • Groups matched for pre-test performance across the high- and low-variability conditions

Stimuli
• Minimal pairs contrasting /l/-/r/ (e.g. rock vs lock)
  • Mostly original items
  • 5 talkers in HV training
  • 1 talker in LV training

Design
• 15 sessions of HV or LV training
  • Pre/post-test design
  • All tests measure generalisation of learning: novel talker and/or novel items

Analyses
• Mixed effects models
  • Bayes Factors for H0 and H1 evidence
  • Exploratory individual differences (e.g. attention)

References

Reasons to replicate
• Small original sample (N = 6 for each of the experiments).
• Statistical analysis cannot address the research question.
• Few conceptual replications of the high vs low variability training contrast, with mixed results.