Adapting to Foreign-Accented Speech After a Brief On-Line Intervention

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Introduction

U.S. schools attract students from all over the world, especially in STEM fields. In 2012, ~18% of U.S. graduate students were international; these individuals make valuable contributions to diversity, research, and teaching. Many international teaching assistants (ITAs) speak English as a second language (L2) with accents that native English-speaking listeners may find difficult. Emphasis has been on improving ITAs' proficiency and accent; however, listeners can adapt to accented speech ([1], [2], [3]). Previous adaptation studies have relied on off-line measures. We used a shadowing task to capture, on-line, listeners' perception of features that can make an accent challenging.

Question

What kind of experience with a non-native speaker's accent is most beneficial to native English listeners?

Stimuli & Procedure

Recordings of 68 ITAs (Mandarin speakers of English as L2) yielded these 7 difficult features of Mandarin-accented English:
1. /l/ vs. /w/: very ambiguous with wary
2. /h/ vs. /h/: rocket ambiguous with jacket
3. Consonant clusters: schwa added or consonant dropped
4. Final consonant voicing: mbb ambiguous with mbb
5. Interdental fricative /θ/: thin ambiguous with sin
6. /n/ vs. /n/: ship ambiguous with sheep
7. /ai/ and /ei/: smile ambiguous with small

7 short, meaningful stories were created w/ multiple instances of each feature and recorded, spoken by a native Mandarin speaker and a native English speaker.

50 native-English-speaking undergraduates then listened to each story 3 times: (1) shadowing the brand-new story, (2) silently listening to the same story while viewing its text script, and (3) shadowing the same story again.

Results

Undergraduates adapted to the ITA's accent. Experience with the accent led to fewer missed words when shadowing a new story. (As expected, post-shadowing shadowing was better than pre-shadowing shadowing.)

Conclusion & Future Steps

Repeated exposure to non-native accented speech, along with a text “subtitle” intervention, leads to better on-line comprehension of that speaker’s accent (as indicated by shadowing performance). Even difficult “imposter” words can be accommodated after our procedure.

This simple intervention takes about an hour, and might be useful to improve communication with ITAs and their students.

Follow-up experiments will test:
1. Consolidation: Does learning a speaker’s L2 accent last?
2. Generalization: The accents of Mandarin speakers of L2 English vary in the (7) identified features that native listeners find difficult. Can listeners who have adapted to one speaker’s accent transfer to another speaker’s accent?

3. Intervention: Presumably, seeing the text script supported adaptation. What, if any, effect did shadowing have?

References