

## The Effects of Accented Speech on Knowledge Acquisition

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Research on perception of accented speech has found both that listeners readily adapt to speech spoken in an unfamiliar accent (Bradlow & Bent, 2008), but that they also process this speech differently (Hanulikova, Alphen, van Goch, & Weber, 2012). Thus, even though there is some accent adaptation, listeners may still find unfamiliar accents challenging to comprehend. We investigated whether accented speech impairs understanding and retention of spoken input. 58 native American English speakers and 55 native Mandarin Chinese speakers listened to 10 classroom-style spoken passages (1-2 min each) about animal behavior (Figure 1). After each passage, participants answered 6 multiple-choice questions with 4 choices (chance performance is 25%). The passages were recorded in English by two speakers, one a native American English speaker and the other native speaker of Mandarin Chinese who had a detectable Mandarin accent. The speech was controlled for grammatical errors, disfluencies, and sound quality. Participants heard the half the passages in each accent, alternating between American and Mandarin accents, with passage accent and order counterbalanced across subjects. A mixed effects logistic regression analysis on question answering accuracy showed significant effects ( $p < 0.05$ ) for both Listener Native Language and Spoken Passage Accent (Fig. 2). Overall, native American listeners were more accurate than native Mandarin listeners and all participants were more accurate on American than Mandarin accented passages. While numerically it is true that the accuracy difference between questions about American and Mandarin accented passages is smaller for Mandarin listeners than American listeners, this interaction did not reach significance. Our results suggest that speech with less familiar accents may impair knowledge acquisition, even for listeners who speak with that accent themselves. We will discuss implications for accent adaptation research.

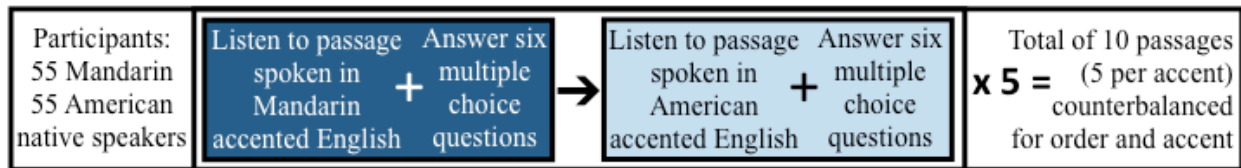


Figure 1. Overview of experimental design.

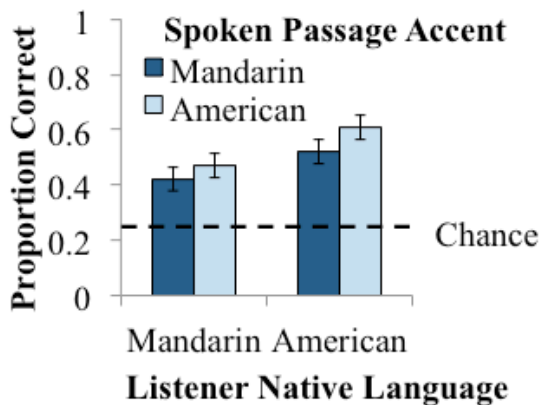


Figure 2. Average proportion of questions answered correctly in all conditions. Error bars represent Standard Errors.

### References:

- Bradlow, A. R., Bent, T. (2008) Perceptual adaptation to non-native speech. *Cognition* 106. 707-729.
- Hanulikova, A., van Alphen, P.M., van Goch, M.M., & Weber, A. (2012). When one person's mistake is another's standard usage: The effect of foreign accent on syntactic processing. *Journal of Cognitive Neuroscience*, 24, 878-887.