Initial Consonant Mutation

Participants

Twenty-six speakers of Welsh were recruited from online Welsh communities; only Welsh-dominant participants’ data is reported here. Welsh-dominance was determined using the Bilingual Language Profile questionnaire [4].

Materials

We employed a two-alternative forced choice task: listeners categorized the voicing of the initial stops of nonwords embedded in both an auditory and visual carrier phrase.

Results

A generalized linear mixed-effects model was fit to the data with voiceless, voiceless, and the interaction of these factors as the fixed effects. The random effects included participant and item intercepts. A Wilcoxon signed-rank test was then performed to test for significance of the manipulation. The model was then refitted with the additional predictor of carrier phrase condition (auditory or visual) and the fixed effects of voiceless and voiceless interaction. We did not find any significant differences in the auditory and visual conditions.

Future Directions

While this task successfully demonstrated categorical perception of stop voicing in Welsh, it did not demonstrate any influence of the orthographically-presented morphological environment on phonetic categorization of the following stop. The current design does not allow us to determine whether participants have no bias towards perceiving morphologically well-formed utterances, or whether they simply did not integrate the orthographic cues provided.

Future work will test a variant of this task with similar test materials, in which participants are instructed to identify the possessor of the target noun they hear. This task could be phrased in a way to ask participants “Who does BLANK belong to?”: the target word begins with a voiced or voiceless segment. Participants heard each target two times (once in each orthographic carrier context) and used the keyboard to report whether they heard the word in question.

Materials Continued...

A two-alternative forced choice task was employed to test the hypothesis that participants will categorize more ambiguous stops as voiced when they occur in well-formed utterances. This predicts that Welsh listeners are biased to hear real words (e.g. “his cat” rather than “his cats”) when presented with an ambiguously-voiced stimulus.

Methodology

Materials

Nonwords were recorded in both orthographic carrier contexts by a native Welsh speaker and modified in Praat to fall along a 9-point continuum from -120 ms of pre-voicing to 120 ms VOT in 30 ms intervals (values based on average VOT values in current speech). Participants heard each target two times (once in each orthographic carrier context) and used the keyboard to report whether the target word began with a voiced or voiceless segment.

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