Effects of Dialect Familiarity on Lexical Processing Efficiency
Using the Visual World Paradigm: A Preliminary Investigation

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Background and Motivation

- Children need to recognize words quickly and accurately
- Children who speak a nonmainstream dialect experience the added challenge of recognizing words in both the familiar nonmainstream dialect (home) and the unfamiliar mainstream dialect (school)
- Semantic predictability benefits
- Spoken language comprehension
- Word recognition
- Dialect familiarity affects lexical processing efficiency (accuracy and speed) in both children and adults

Methods

- 53 preschool children recruited from Madison, WI.
  - Native speakers of AAE (n = 20)
  - Native speakers of GAE (n = 33)
  - N (girls) = 13
  - Age (months) mean (sd) = 47.8 (8.1)
  - Vocabulary (SS) EVT-2 mean (sd) = 95.5 (11.6) range = 67-121
  - Maternal Education Level
    - High School = 16
    - Some College = 2
    - College & Above = 1
  - Native speakers of AAE (n = 20)
    - High School = 15
    - Some College = 6
    - College & Above = 24

Lexical Processing Measure: Visual World Paradigm

- Procedure
  - Children heard a familiar word embedded in a carrier phrase, e.g., “Find the ___.”
  - Saw a 2x2 grid of photographs including three distractor images
  - Measured children’s patterns of looking to objects over the course of a trial
- Analysis
  - Generalized linear mixed effects model of data from 250ms to 1500ms after word onset.

Results

- Model 1: Dialect Familiarity
  - Log odds ~ (1+ Time + Time2 + Time3) x Dialect
  - Random slopes for child

- Model 2: Effects of Vocabulary & Maternal Education Level
  - Log odds ~ (1 + Time + Time2 + Time3) x Vocabulary x Maternal Education Level
  - Random slopes for child & dialect condition

Discussion

- Nonmainstream and mainstream speakers of English were comparably accurate in recognizing words in both the familiar and the unfamiliar dialect
- There was a complex relationship among spoken word recognition, vocabulary size, and maternal education
- Children from families with high maternal education recognized familiar words more accurately and quickly than children from families with low maternal education
- Vocabulary size predicted word recognition for children from families with low levels of maternal education

Future Considerations

- The effect of dialect familiarity depends on
  - Complexity of the linguistic environment or the linguistic structure
  - Magnitude of phonological and morphological deviation from the familiar native dialect

What did we learn?

- Children, as young as age 3, could reliably adapt to some forms of linguistic variation such as dialect
- There is a complex relationship among spoken word recognition, vocabulary size, and maternal education
- Recruiting children from diverse populations is crucial for understanding spoken word recognition

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