## growing words

## The Development of Phoneme Categorization



- Speech perception was thought to be done developing in infancy Werker & Curtain. 2005)
- Recent research shows speech categorization abilities are developing well into adolescence
- (McMurray et. al, 2018) • Robust speech categorization requires multiple components: accurately encoding phonetic cues, mapping them to categories, responding in the task
- What components changed during the school years?
- Typical approaches of measurement have assumed speech categorization is discrete/categorical
- Most school-age work has used a task in which kids hear tokens from a continuum and categorize them
- Slope of the function becomes the index of robust categorization
- Steep slopes have been considered to illustrate better perceptual encoding
- Shallow slopes have been considered to reflect deficits in perceptual encoding



### **Slopes on forced choice tasks may not** give the whole picture



# Development of gradiency in phoneme categorization: Implications from the first year of the Growing Words Project

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## **Individual Profile differences**

Within each grade level are different response patterns we can pull apart and examine



## **Does VAS relate to** standardized reading measures\*?



- Gradiency profiles appear to relate to reading skills in preliminary analyses; further exploration will be needed
- Within each grade level, standardized reading scores appear to be lower for the group that seems to have 'messier' encoding of speech categories

\*Reading Average Score is a composite measure of Gort4: Fluency, Castles and Coltheart 2, CELF: Recalling Sentences, and Woodcock Johnson Picture Vocabulary

## **Conclusions and future direction**

- Development of phoneme categorization continues through elementary school, possibly influenced by formal reading instruction
- Canonical view: Forced choice categorical slopes reflect perceptual encoding: • VAS measure offers more nuance
- Future direction:
- Additional analyses looking at connections between gradiency profiles and phonological and language development, and links with disordered reading or language
- Longitudinal analyses into why links between phoneme categorization and reading emerge
- Longitudinal investigations of the sources of individual differences in phoneme categorization

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