Working Memory in Preschool Children with and without Phonological Delays

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Assessment of Word Learning
- Nonword Repetition vs. Standardized Tests
- Less culturally based (e.g., Roelofs & Haynes, 2001)
- Sensitive to individual differences (e.g., Gray, Plaut, Varon, & Hartshorn, 1999)
- Process versus product based (Dix, Ogden, & Campbell, 1999)

• Form Characteristics
  - Phonotactic Probability
  - Likelihood of occurrence of a sound sequence (Common vs. Rare)
  - Neighborhood Density
  - The number of similar sounding words (Dense vs. Sparse)

Effects of Phonotactic Probability and Neighborhood Density
- Word Learning (Storkel, 2004)
  - Children with phonological delays learned a similar number of words, however,
    - Common-Dense > Rare-Sparse (PD Children)
    - Rare-Sparse > Common-Dense (TD Children)
- Nonword Repetition
  - Manipulating form characteristics in NWRT affects performance but does not differentiate groups
  - Common > Rare (TD & PD) i.e., Gathercole et al. (1999), Masson et al., 2005
- Ongoing Data Collection

Two Tasks
- Nonword Repetition (NWRT)
  - Repetition of lists of nonwords varying in the number of nonwords to be recalled
  - Nonword Language Processing Task (NLPT)
  - Maintenance of a nonword in memory while processing the meaning of a sentence

Factors
- Significant effect of density for PD group only
- 2 (density) x 2 (phonotactic probability) x 4 (length) ANOVA
- No interaction with group
- Significant effect of phonotactic probability
- 2 (density) x 2 (phonotactic probability) x 4 (length) ANOVA

Questions
- Do form characteristics have the same effect on performance across two different working memory tasks?
- If the effect the same for children with and without phonological delays?

Ongoing Data Collection
- Compare performance to a phonology-equivalent group
- Examines differences in experimental and naturalistic word learning tasks
- NWRT, NLPT, & standardized vocabulary tests as predictors of novel word learning

References