**BACKGROUND**

- **Relative Language Exposure**
  - Exposure to one language relative to another (or others) over a period of time (e.g., 60% exposure to English and 40% exposure to Spanish yields an English-dominant bilingual).

- **Positive correlation between exposure and expressive vocabulary** (Pearson et al., 1997).
  - Children with exposure >75% do not have significantly different expressive vocabularies relative to monolinguals (Pearson et al., 1997).

- **Relative language exposure is differentially predictive of expressive and receptive vocabulary in 5-year-olds**
  - More exposure is needed to reach monolingual levels of expressive vocabulary relative to receptive vocabulary (Fenson et al., 2011).

- **Socioeconomic Status (SES)**
  - Typically measured as a function of paternal and/or maternal education and/or income.
  - Some evidence that SES influences parent report of early vocabulary (Pearson et al., 2009; Fenson et al., 2001; Bredekamp & Copple, 1997), but cause and effect are not clear.

**RESULTS**

### Analysis

- **Preliminary analyses revealed no significant difference in the relative language exposure of children from high SES (maternal education at or above 4 years of college) or low SES (maternal education below 4 years of college).**

- **A Repeated Measures Analysis of Variance (ANOVA) was run with SES and Language Exposure as factors, and with vocabulary (MCDI receptive vocabulary, MCDI expressive vocabulary, CCT receptive vocabulary) as the repeated measures.**

### Effects of SES

- **Significant quadratic interaction between SES and vocabulary measure** ($F(1,70) = 5.54; p = .02$)

- **Planned comparisons reveal significant differences in receptive vocabulary on the CCT as a function of maternal education, as well as on MCDI expressive vocabulary, but no significant difference in receptive vocabulary on the MCDI across levels of maternal education.** ($t(0) = 2.20, p = .027$; $t(0) = .10, p = .32$)

### Effects of Minimal Second Language Exposure

- **Results reveal a significant main effect of Language Exposure across all vocabulary measures** ($F(1,70) = 7.09; p = .007$)

- **Planned comparisons reveal within each vocabulary measure (MCDI receptive vocabulary, MCDI expressive vocabulary, and CCT higher vocabulary) results to a larger vocabulary** ($t(0) = 2.38, p = .028$; $t(0) = 2.36, p = .021$; $t(0) = 2.7, p = .008$)

- **Replicates**

- **Partial Correlations**
  - Parent reports of expressive and receptive vocabulary on the MCDI
  - Neither SES nor relative language exposure accounted for unique variance in parent report

- **Child performance on the CCT**
  - Relative language exposure explained significant variance above and beyond SES ($r(27) = .28, p = .02$) but SES did not account for unique variance in child performance

### Figures

- **Effects of SES and expressive vocabulary**
- **Effects of Minimal Second Language Exposure**

**UNANSWERED QUESTIONS**

1. What are the effects of relative language exposure and SES on receptive vocabulary in the second year of life?

2. Do relative language exposure and SES affect parent reports of child language?

3. Does minimal second language exposure have an effect on early vocabulary?

**METHODS**

### Participants

- **72 English-dominant children from the San Diego area (mean age 36.23)**
- **≥ 80% English exposure**

### Measures

- **Relative Language Exposure**
  - Language Exposure Questionnaire (New & Abraham-Galisteo, 2007; Fenson et al., 2002).
  - Intensive interview-style questionnaire asking parents who interacts with the child, in what language, and for how long.

- **SES**
  - Mother’s education level (Fenson et al., 2001).

- **Parent reports of expressive and receptive vocabulary**
  - MacArthur-Bates Communicative Development Inventory, Words and Gestures Form (Fenson et al., 2001).

- **Child performance measure of receptive vocabulary**
  - Comprehension Test (CT; Fenson et al., 2004). 41 trials of paired images on a touch screen.
  - Experiment prompt: “Where is the shoe?”
  - CCT performance shows convergent validity with parent report on the MCDI and test-retest reliability (Fenson & Nyberg, 2008; Fenson & Strain, 2011).

### CONCLUSION

1. **Effects of SES and relative language exposure on early lexical knowledge are replicated**, even when assessed directly via child performance measures.

   - Effects of SES and language exposure are not artifacts of parent report
   - They extend to receptive vocabulary
   - Emerge in language abilities during the second year of life
   - Consistent with a large body of work documenting positive relationship between SES and expressive vocabulary in preschool children

2. **However, parent reports of receptive vocabulary at 16 months of age show no difference associated with SES.**

   - Importantly, child performance on the CCT tells us SES effects on receptive vocabulary are present, consistent with the extant literature on expressive vocabulary (Hoff, 1996; nd, 2000).

   Conversely, parent reports are influenced by relative language exposure, as children with second language exposure have lower reported vocabulary than for those who do not hear a second language.

3. **Children with minimal second language exposure exhibit effects in the size of their dominant language’s receptive vocabulary before age 2.**

   - The early developing language system appears sensitive to seemingly minimal differences in language input

**FUTURE DIRECTIONS**

Assess a broader continuum of second language exposure.

- The present study is limited to English exposure above 80%. Previous work has established a relationship between higher levels of L2 exposure and expressive vocabulary. Are such effects present in early receptive vocabularies as well?

   Investigate the continuous relation between relative language exposure and executive function.

   - How does language exposure relate to other cognitive skills? Recent research suggests monolinguals and bilinguals exhibit differences in executive function, but determining whether small changes in executive function are related to differences in language exposure could inform theories about the relationship between language and cognition.

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