

# Why Do Female Infants Say More Words? An Input/Output Analysis of Talking Status & Gender Shannon Dailey and Elika Bergelson | Department of Psychology & Neuroscience, Duke University

### BACKGROUND

- Language differences in infancy persist (Elliott, et al., 1989)
- Girls learn language faster than boys (Kimura, 1999; Fenson et al., 1994)
- Language delays/deficits disproportionately affect boys (Shriberg, et al., 1999)
- Gender-based lang diffs are generally examined pre- or post-talk onset, not both (e.g. Huttenlocher et al, 1991, Johnson et al, 2014).
- Here we combine input and production data longitudinally.

### **Research Questions:**

1) Do male and female infants **produce** different quantities of words?

2) Does infants' input vary by **gender** and whether they've begun **talking**?

### METHOD

- Analysis from 44 infants (21 female), 6-17 months (SEEDLingS corpus)
- Monthly daylong audio and hourlong video recordings at home for each infant
  - ~68 hours of recordings analyzed per infant
- Annotated *child-directed* and *child-uttered* object words
  - Only concrete nouns (e.g. foot, ball)

REFERENCES

• Analyzed input/output types & tokens: Wilcoxon tests over raw values, multi-level/linear regressions over log values.



236–248. Johnson, K., Caskey, M., Rand, K., Tucker, R., & Vohr, B. (2014). Gender differences in adult-infant communication in the first months of life. Pediatrics, 134(6), 160. Kimura, D. (1999). Sex and Cognition. MIT Press. Shriberg, L. D., Tomblin, J. B., & McSweeny, J. L. (1999). Prevalence of speech delay in 6-year-old children and comorbidity with language impairment. J Speech Lang Hear R, 42(6), 1461-1481.



• Input counts from hourlong videos

• Significant effect of talk status on both types and tokens overall.(*ps*<.001).

• No gender differences in input:

• Types or tokens pre-talk, post-talk, or overall; no interactions (all ps > .05).

• Not shown here: **no gender differences** in utterance types (question, imperative,

## **DISCUSSION & CONCLUSIONS**

Language production: Nouns infants said Not surprising: Female infants have larger productive noun vocabularies than males.

Language input: Nouns infants heard

- Female infants do not hear more noun types or tokens in their input.
- Regardless of gender, infants get an input boost once they start talking.

Our results replicate and support the finding that **girls have a production** advantage, independent of language exposure.



Noun input did not vary by infant gender; it varied by infants' talk status.