The acquisition of and

**Question:** Is there a developmental asymmetry between different ands? If so, is S-and acquired first?

**The Somebody Experiment**

- **Stage:** 3 characters, 2 objects
- **ConjunctionType:** S-and vs. NP-and
- **Set-up:** Match vs. Mismatch
- **Experimental procedure:**
  - Experimenter A says to Wilbur: *Okay Wilbur, make it so that*
  - **S-and:** [Somebody has a carrot] and [somebody has a donut].
  - **NP-and:** Somebody has [a carrot and a donut].
  - Experimenter B sets up the scene behind the curtains.
  - When Wilbur finishes the set-up, Experimenter A lifts the curtains and asks the child: “Did Wilbur get it right?”
  - If the answer is no, the child participant is invited to fix the scene by moving around the objects on the stage.
  - **Adult participants** see an online version of this experiment that uses the same material and mimics this procedure closely.

- **Results & Analysis in mixed-effect logit models:**
  - **Production:** as early as 2 years old
  - **Comprehension:** much less understood

- **Possible interpretations:**
  - Developmental asymmetry: S-and >> NP-and?
  - A non-linguistic principle Fairness!
  - The child desires to distribute objects among the characters as evenly as possible
  - Affecting the interpretation of the NP-and condition: Do children have an S-and interpretation of NP-and, or are they observing Fairness?

**The Somebody Experiment 2.0**

- **Stage:** 2 characters, 3 objects
- **ConjunctionType:** S-and vs. NP-and
- **Set-up:** Match vs. Mismatch
- **Experimental procedure:** same as Exp 1
- **New materials** increases the complexity of NP-and sentences, which will need to be taken into consideration when interpreting the results:
  - **S-and:** [Somebody has a carrot] and [somebody has a donut].
  - **NP-and:** Somebody has [a carrot and a donut], and somebody has milk.

- **Results & Analysis using the exact same model specification as Exp 1:**
  - **Children:** main effects of ConjunctionType (b = 3.623, p < .01) and Set-up (b = 3.224, p < .01), but no significant interaction between them (b = 0.351, p = .753).
  - **Adults:** a marginally significant interaction between ConjunctionType and Set-up (z = 1.726, p = .084).

- **Possible interpretations:**
  - Developmental asymmetry: S-and >> NP-and?
  - Full competence of NP-and, but the accuracy is lower due to the complexity of the NP-and sentences & difficulty of fixing the scene?

**Summary & Outlook**

- **In Exp 1 & Exp 2,** we observed that children exhibited full grammatical knowledge of S-and, but their performance on NP-and appeared to be lagging behind.

  - Possibly, evidence in favor of a developmental asymmetry. However:
  - **Exp 1:** Fairness! may have led children to distribute objects as evenly as possible, yielding what looks like an S-and interpretation of NP-and sentences.

  - **Exp 2:** Side-stepping Fairness!, performance on NP-and improved considerably, but still lower than S-and, plausibly because NP-and condition is systematically more complex.

  - **Next step (on-going):** a forced choice task, always with equal number of objects

  - Neutralizing the effect of Fairness!

  - Keeping the NP-and sentences comparatively simple

**References**