We learn a remarkable number of words during childhood, using ostensive cues, statistical co-occurrences, or syntactic contexts. But much of the time, the most informative cues to meaning come from discourse. Sullivan & Barner (2016, Dev Sci.): 2- year-olds learn words via “discourse bootstrapping”, i.e., inferring meanings from discourse cues. Our question: How does discourse bootstrapping interact with children’s developing prediction skills? The speed and accuracy of linguistic prediction dramatically increases from age 2 (Kerby et al., 2012, JCP; Mars & Haring, 2012, JEP-HPP). This could improve discourse bootstrapping (e.g., by easing processing, Rabagliati et al., 2016, Cogn). However, when older children’s predictions are wrong, they have trouble revising expectations (Trueswell et al., 1999, Cogn.). This could specifically impede learning from discourse connectives like but, which imply contrast with prior meaning, i.e., a violation of discourse expectations.

**Experiment 1 – Learning from different connectives**

<table>
<thead>
<tr>
<th>[after singing happy birthday]</th>
<th>[Ross wants to sit down]</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mother.</strong> Hooray! <strong>Fraser (2;04):</strong> But I wanna say that!</td>
<td><strong>Mother.</strong> I don’t mind. <strong>Ross (2;07):</strong> But daddy might.</td>
</tr>
</tbody>
</table>

But does learning to predict affect how children learn from contrastive, expectation-violating connectives?

**Causal**  
No Connective: Katy wore a dax on a cold day  
Causal: Katy was cold SO she wore a dax  
**Contrast** But: Katy was cold BUT she wore a dax

Sample. N=118 children from 2 to 8 years + 18 adults.  
**Items.** 24 per participant, rotated across three within-subject conditions, and counter-balanced for meaning, side, order, etc.

**Experiment 2 – Enhanced Replication**

**Improvements:** Equal number of inferential So and contrastive But items (No Connective Items dropped). Revised set of items, for which adult intuitions should be more robust.

**Condition**  
No connective  
So  
But

**Potential concerns about design:**

1. Only 1/3 of items contrastive, biasing towards non-contrastive responses?  
2. Even adults are unsure about contrastive But items!

**Experiment 3 – Linguistic or Motor prediction?**

**Counter-explanation 1:**  
Perhaps 5-year-olds predictively prepare their response early, and cannot inhibit that motor action after they hear but?

**Sample.** N=16 5-year-olds.  
**Items.** As in Exp. 2.

*Even when actions cannot be planned in advance, five-year-olds still misinterpret contrastive, expectation-violating But.***

**Experiment 4 – But do they really understand But?**

**Counter-explanation 2:**  
Perhaps 5-year-olds do not understand contrastive component of but? Test comprehension without prediction/learning.

**Sample.** As in Exp. 3  
**Items.** 6 per condition

*Outside predictive contexts, 5-year-olds can understand contrastive component of But.*

**Conclusions**

Evidence that children’s developing ability to process via prediction plays an important role in language learning, and can even impede learning (e.g., Huang & Arnold, 2016, Cognition).

**Open questions:**

- How do children learn to recover if expectations are violated?  
- When the bottom-up signal is stronger, are expectations easier to revise?