How prediction promotes children’s word learning
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Introduction
• Correlational findings suggest prediction supports language learning¹,² but empirical evidence is lacking.³
• Does prediction influence how children learn novel words, and if so, how?
• We hypothesized that learning may differ as a function of how children:
  1. predict the probable, familiar referent
  2. redirect attention to the correct, novel referent when their prediction is inaccurate

Methods
• Children 3-5 years old (N=56)
• Novel word learning task

Learning Trials
Constrained: Yummy! Let’s eat soup. I’ll stir it with a spoon/cheem.
Unconstrained: Neat! Look over there. Take a look at the spoon/cheem.

Constrained: Vroom! Vroom! You can drive the truck/fep.
Unconstrained: Woohoo! I can see a truck/fep.

Test Trials
Where’s the cheem? Where’s the fep?

Results
• In learning trials, children used semantic cues to predict the probable referent, but had a novelty bias:

  ![Graph showing gaze ratio over time](image)

  - In the constrained context, what increases children’s accuracy in test trials?
    • Prediction = pre-noun target looks
    • Prediction error = post-noun target looks minus pre-noun target looks

    Predicting the familiar referent does not correlate with test accuracy ($r=0.04, p=0.755$), but prediction error was marginally correlated with test accuracy ($r=0.27, p=0.052$).

Summary
• Children make predictions during learning.
  • They do so in the constrained context and, unexpectedly, in the unconstrained context too.

  • In the constrained learning context:
    • Prediction alone doesn’t explain learning.
    • Redirecting attention to the novel referent may be necessary for learning.

  • In the unconstrained learning context:
    • Children may use pragmatic cues for prediction.
      • When a speaker says, “Neat! Look over there!” children infer that the novel object is the probable referent.⁴⁵

Future Directions
• Make learning novel words easier.
  • Decrease number of novel words.
  • Increase number of learning trials.

  • Make the unconstrained context neutral.
    • We need a context where familiar and novel referents are equally probable.
    • Collect norming data for sentences.

  • A broader question to ponder:
    • Do children learn differently from predictions that are verified vs. predictions that are violated?

Thanks