



# Assessing Early Language Comprehension in Young Children with ASD: Comparing Looking-While-Listening and Parent Report



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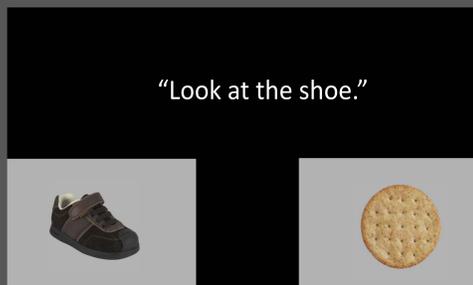
## INTRODUCTION

- Many children with autism spectrum disorder (ASD) have delays in early language comprehension.
- To understand why these delays occur and how to treat them, we must assess early lexical comprehension accurately.
- One common approach for measuring early lexical comprehension is asking parents what words their children understand.
- However, a potential limitation of this method is that parents of children with ASD may have a difficult time accurately judging their children's understanding of specific words.

An alternative method for measuring lexical comprehension is looking-while-listening.

It is non-social, has limited task demands, and requires the child to differentiate the correct referent from only one other option.

For these reasons, looking-while-listening may be a more sensitive measure of comprehension than parent report.



**Our research question was:**

In a looking-while-listening task, do young children with ASD understand words their parents had reported them not to know?

We predicted that children's understanding of 'unknown' words would be evident in the looking-while-listening task.

## METHODS

- Participants were 24 children who had received a DSM-IV diagnosis of ASD from a psychologist as part of a broader research study. An additional 8 children were excluded because they were reported to know the majority of the target words.
- Parents completed the MacArthur Communicative Development Inventory, Words and Gestures (CDI). Only trials in which the target word had been reported as 'unknown' were analyzed.

Participant Characteristics		
	Mean (SD)	Range
<b>Chronological age in months</b>	30 (3)	24 – 36
<b>Bayley-III Composite Score</b>	77 (14)	55 – 100
<b>Autism Severity Score</b>	8 (2)	5 – 10
<b>Number of words understood</b>	96 (70)	0 – 301
<b>Number of words produced</b>	17 (21)	0 – 72

**Note.** Autism severity was measured by calibrated autism severity scores on the Autism Diagnostic Observation Schedule, 2<sup>nd</sup> Edition. Vocabulary was measured by the CDI.

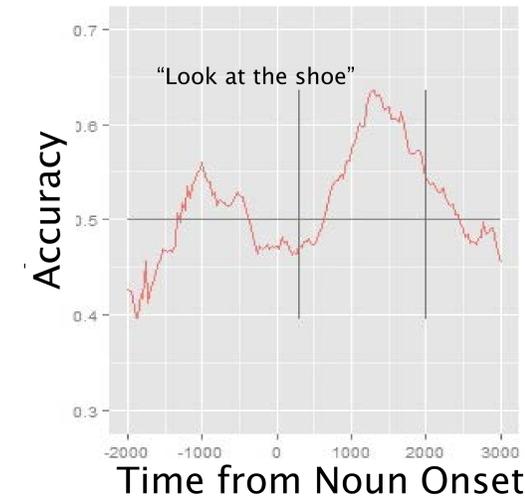
- Children participated in a looking-while-listening task that presented two images on a screen. In each trial, one of the images was named.
- Children's eye gaze was recorded and manually coded offline from video. Looks were coded as to the target, to the distracter, shifting between pictures, or away from the screen.
- The dependent variable was accuracy (i.e., looks to target, relative to looks to target and distracter). Accuracy was calculated during baseline (the 2000ms before noun onset) and during the test window (from 300ms to 2000ms after noun onset).

## RESULTS

Children spent significantly more time looking at the target image after it was named,  $p = .04$ .

**Baseline:**  
 $M = .50, SD = .10$

**Test Window:**  
 $M = .56, SD = .12$



## CONCLUSIONS

In a looking-while-listening task, children with ASD understood words that their parents had reported them not to know.

This is an important finding because it shows that looking-while-listening can reveal lexical knowledge in young children with ASD that may otherwise have been overlooked.

Additional work is needed to investigate the alignment between different measures of early comprehension.

Our goal should be not to identify the 'best' measure of comprehension, but to learn what each measure tells us and what it does not.

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