**Introduction**

- Early interventions improve language outcomes for some children with autism spectrum disorder (ASD), but however, only 30% of children with ASD remain minimally verbal. Identifying relative strengths and weaknesses in language acquisition for children with ASD may help tailor and improve interventions.
- Children with ASD have superior performance in non-speech auditory tasks, but worse performance in language comprehension tasks. Less is known about speech perception abilities for children with ASD.
- Do toddlers with ASD have more or less detailed phonological representations of familiar words compared to typically-developing (TD) toddlers?

**Method**

- Participants: 64 toddlers with ASD (17 female), mean age of 30.6 months (range: 24-36) and 31 typically-developing (TD) toddlers (13 female), mean age of 20.5 months (range: 18-24).
- Toddlers with ASD were diagnosed by an experienced psychologist who administered ADOS-2 and ADI-R.
- Phono-logical Representations: Assessed using a looking-while-listening task.
- saw pictures of two familiar objects.
- heard a sentence labelling one object with either a Correct Pronunciation (CP) or Mispronunciation (MP).
- eye movements video recorded and coded offline.

**Offline Measures**

- After controlling for differences in verbal skills:
  - toddlers in the ASD Group were equally accurate in fixating the target object compared to the TD Group.
  - Significant effect of Group on t0, t1, t2, and t3, \( p^2(1) < .1, p^2 < .29 \).
  - the effect of Mispronunciations was the same for both groups.
  - Significant effect of Condition:Group on t0, t1, t2, and t3, \( p^2(1) < .8, p^2 > .18 \).

**Discussion**

- When collapsing across all trials, ASD and TD toddlers were equally affected by mispronunciations, suggesting that they have the same level of detail in their phonological representations of familiar words.
- When separating trials based on whether toddlers were fixating the target or the distractor object at target word onset, we find evidence that toddlers with ASD and TD may be affected differently by mispronunciations.
- Group differences in overall word recognition accuracy were related to verbal skills, but not nonverbal skills. This dissociation rules out an important alternative explanation: that toddlers who perform better on one lab task perform better on other lab tasks (regardless of the content).

**Results**

The time courses of toddlers’ fixations to the target object were analyzed using Growth Curve Analysis (GCA). Tests of significance were performed using model comparisons (-2*log-likelihood). The sections below analyze the time course of fixations for all trials, then trials separated based on whether toddlers were fixating the target object (e.g., cow) or the distractor object (e.g., shoe) at the onset of the target word (e.g., “cow”).

For target-initial trials, there was a stronger effect of Mispronunciations for toddlers in the TD Group compared to ASD Group.

- **Significant effect of Condition:Group on t0, t1, t2, and t3.**

No effect of Mispronunciations in the ASD Group.

- **Significant effect of Condition:Group on t0, t1, t2, and t3.**

...but a significant effect for toddlers in the TD Group.

- **Significant effect: Group on t0, t1, t2, and t3.**

For distractor-initial trials, the effect of Mispronunciations was the same for both groups.

- **Non-significant effect of Condition:Group on t0, t1, t2, and t3.**

Significant effect of Mispronunciations for toddlers in the ASD Group.

- **Significant effect of Condition on t0, t1, t2, and t3.**

...and in the TD Group.

- **Significant effect of Condition on t0, t1, t2, and t3.**

**References**


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