BACKGROUND
We know very little about the lexical representations of children with ASD. In particular, we know little about their phonological representations.
- Toddlers with typical language development (TLD) are sensitive to mispronunciations of familiar words and treat them differently than both familiar and unfamiliar words (White & Morgan, 2008).
- There is some evidence that children with ASD have enhanced low-level perceptual skills, so they may be even more sensitive to mispronunciations.

Child-level factors and lexical processing
- Studies have consistently shown processing efficiency for familiar words is related to vocabulary size (Fernald et al., 2006; Law et al., 2016).
- Law and Edwards (2015) found vocabulary size also enhanced low-level perceptual skills, so they may be even more sensitive to mispronunciations.

Current Study
- Do children with ASD differentiate between nonwords and mispronunciations of familiar words?
- Is their performance related to nonverbal IQ?
- Is their performance related to language comprehension?

PROCEDURE
- Looking-while-listening task (Fernald, et al., 2008).
- Children saw an familiar object and an unfamiliar object.
- Children heard a correct production of a familiar word, a mispronunciation of a familiar word, or a nonword.
- Looks to each image were manually coded from video-recordings of participants.
- Two blocks of trials, administered over two visits.
- In a visit, children heard the familiar word and the nonword, or heard the mispronunciation. Children never heard a familiar word and its mispronunciation on same visit.

Block A
Real: “Find the shoes”
Novel: “Find the dazz”

Block B
MP: “Find the sooze”

GROWTH CURVE ANALYSIS
- Mixed effects logistic regression modeled the probability of looking at familiar object over the time course of the trial
- Predictors: orthogonal Time1, Time2 and Time3 values, experimental condition, child-level scores, and interactions.
- Outcome: log-odds looking to familiar vs. unfamiliar object
- Models allowed randomly varying Time effects by participant and participant-by-condition.

RESULTS
- Auditory comprehension and nonverbal IQ were highly correlated, r = .86, for n = 15 children with both scores.
- Comprehension did not relate to looking patterns, p = .52,
- Over and above nonverbal IQ.
- On average, children looked to unfamiliar objects when they heard nonwords as much as they looked to familiar objects when they heard real words, p = .12.
- Nonverbal IQ moderated looking behavior in real and novel word conditions. An SD increase in IQ predicted an increase in proportion looks to familiar object by .1 for real words.
- Children with low IQ did not show an increase in looks to the familiar object after hearing real words.

CONCLUSIONS
- While eye-tracking tasks are considered to have low task demands and work well with very young listeners, we found that the children with ASD with low nonverbal IQ (< 70) did not show reliable looking behavior on this particular task.
- Children with ASD above this threshold reliably mapped nonwords to novel objects and real words to familiar objects.
- Like their TD peers, most children with ASD were sensitive to one-feature mispronunciations of familiar words, indicating that they have detailed phonological representations.
- Autism severity and other child-level measures were not associated with responses to mispronunciations within this sample.