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Read the Book vs. Find the Book: Use of Informative Verbs by Children with Autism Spectrum Disorder

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INTRODUCTION

- Adults and typically developing young children use semantically informative verbs (e.g., *ride*) to anticipate the identity of upcoming nouns (e.g., *bike*; Altmann & Kamide, 1999; Fernald et al., 2004).
- We do not yet know whether children with autism spectrum disorder (ASD) are capable of this type of incremental language processing.
- Given their difficulties with contextual integration, children with ASD may have difficulty using semantic information in verbs to predict upcoming nouns.

This study assessed whether preschoolers with autism spectrum disorder (ASD) use **informative** verbs to more rapidly identify the referents of subsequent nouns compared to **neutral** (i.e., uninformative) verbs.

PARTICIPANTS

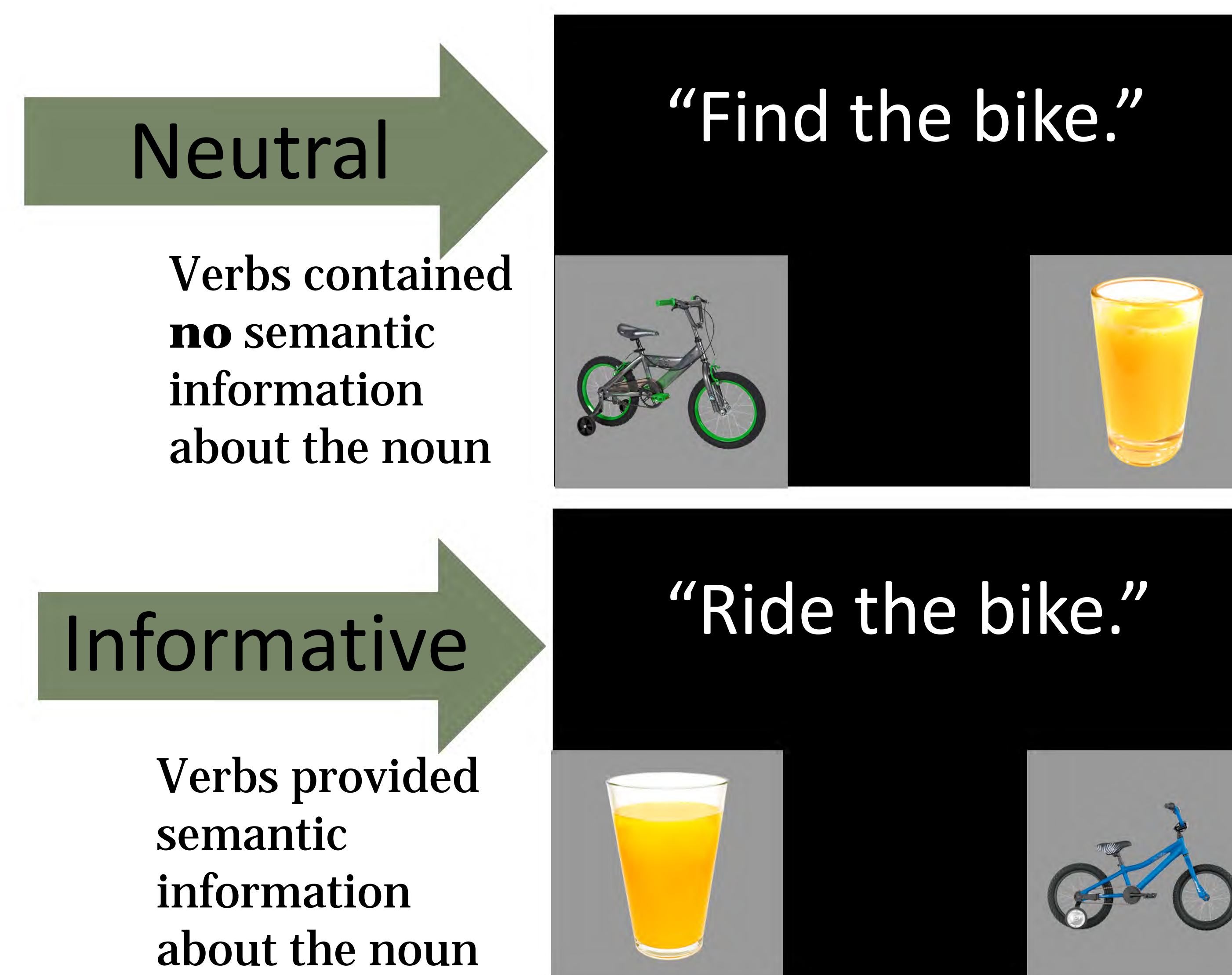
Participants were 20 preschoolers with ASD.

	Mean (SD)	Range
Age (months)	56 (4)	49 – 62
Autism Severity	8 (2)	4 – 10
Ratio IQ	77 (27)	38 – 108
PLS-AC		
Standard Score	77 (24)	50 – 118
Age Equivalent	37 (21)	9 – 78
PLS-EC		
Standard Score	68 (16)	50 – 95
Age Equivalent	31 (15)	5 – 59

Note. Ratio IQ was from the Mullen Scales of Early Learning. Autism severity was the comparison score from the Autism Diagnostic Observation Schedule, 2nd Ed. PLS = Preschool Language Scale, 5th Edition. AC = Auditory Comprehension. EC = Expressive Communication.

PROCEDURE

- Children completed a looking-while-listening task that presented two images on a screen, with speech describing one of the images.
- Trials were either Neutral or Informative.

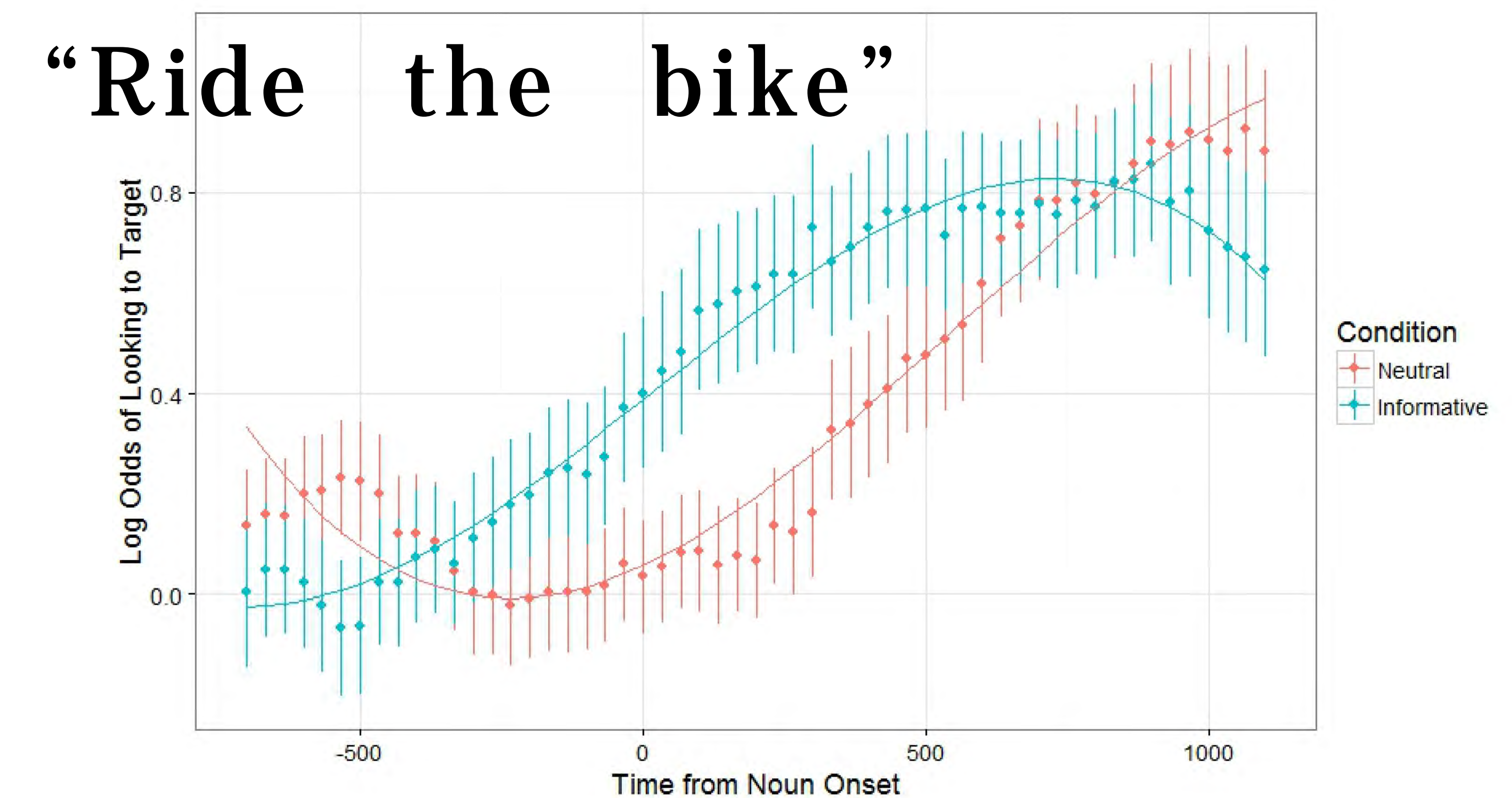


MODELING APPROACH

- Growth curve analysis modeled the probability of looking at the target image over the time course of the trial.
- **Independent variable:** Time (time course of the trial)
- **Dependent variable:** empirical log odds of looking to target from 300 ms after verb onset to 1100 ms after noun onset (~ 1800 ms window; see Figure in Results).
- Models allowed participant and participant by condition random effects. Time terms were orthogonal. The Neutral Condition was the reference condition.
- The final model included fixed effects of Linear, Quadratic, and Cubic Time, Condition, and the interactions between each time term and Condition.

RESULTS

- Model results indicated a significant interaction for Quadratic Time x Condition ($t = -3.34, p < .001$).
- Children used semantic information in verbs to predict which image would be named, as illustrated by a 'head start' in Informative Trials.



CONCLUSIONS

- Children with ASD can use semantic information in verbs to anticipate upcoming nouns.
- However, children with ASD may be slower than their peers to integrate and use this information.
- Ongoing work will examine this issue by comparing performance of young children with ASD to typically developing children.

References

- Altmann, G. T. M., & Kamide, Y. (1999). Incremental interpretation at verbs: Restricting the domain of subsequent reference. *Cognition*, 73, 247-264.
- Fernald, A. (2014, November). *The search for the object begins at the verb*. Presented at the 29th Annual Boston University Conference on Language Development, Boston.

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