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Toddlers Acquire Verb Transitivity in Non-Social Overhearing Contexts

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Acquiring word meanings is typically described as a social process involving live interaction and joint attention to the referent. However, the ability to learn meanings in non-social contexts could be useful in many overhearing situations, in which speech may not be child-directed, and learners may lack discourse and situational context. Is social context required to trigger toddlers’ abilities to map verbs to meaning? We address this question in the following experiment. Our results indicate that 2-year-olds can acquire a novel verb’s meaning even in socially impoverished contexts. This finding has implications for treatment of children with Autism Spectrum Disorders.

How do children discover the meanings of words? We often describe this process as a social one, involving live interaction with an interlocutor and joint attention to the referent (e.g., Tomasello & Farrar, 1986; Roseberry et al., 2009; Krcmar et al., 2007).

Participants: 36 toddlers (25.0 to 29.9 months, mean age 27.1 months)
4 trials, each consisting of:
1) Syntactic Familiarization: novel verb presented in one of two contexts
   a. Transitive, e.g., The boy is going to lorp the girl, or
   b. Intransitive (conjoined-subject), e.g., The boy and the girl are going to lorp

The sentences stream ambiently from speakers while the toddler watches an unrelated video (animated shapes move on the screen) or plays quietly with toys (e.g., Lany & Saffran, 2011).
2) Test: 2 simultaneous dynamic video scenes
   a. A causative action
   b. A synchronous action
   
At test, toddlers hear, e.g., Where’s lorp? Eye gaze is recorded (Tobi T60XL).

Results

Based on previous work (Arunachalam et al., in press), we expected children’s gaze in the two conditions to diverge beginning 1 sec after the onset of the Response window. Proportion of looks to the Causative Scene serves as dependent measure.

Toddlers in the Transitive Condition (N = 18) reliably prefer the Causative Scene compared to the Intransitive Condition (N = 18) from 1 to 2 sec of the Response window (t(34) = 2.4, p < .03).

Multi-level logistic regression models reveal the same pattern:

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