
Research Question

How can we differentiate participant-to-argument matching (PAM) from other processes in infant learning of verb meaning?

Syntactic Bootstrapping

Infants exploit relations between the syntax of sentences and the conceptual categories of events they perceive to infer the types of events a new verb can label (e.g., 1-3).

Participant-to-Argument Matching (PAM)

Children expect the number of arguments in a clause to match one-to-one the participants in a scene, or vice versa, it should take them longer to process.

Prior Work

Adapted from the Violation of Expectations Paradigm (20), tests compatibility between a particular scene and sentence.

PAM says that only a transitive clause will be a good fit for a 2-participant event concept. Can we find that children have this expectation?

A New Method: Violation of Fit

Version One: Scenes, then Sentences

- Familiarization: familiarize children to an event that we think they will most readily view with 2 participants, based on adult norming.
- Test: measure surprise upon hearing a transitive or intransitive description containing a novel verb

Version Two: Sentences, then Scenes

- Familiarization: dialogues containing a novel verb in transitive or intransitive frames
- Test: measure surprise upon seeing a 2-participant event labelled by that novel verb

Results and Discussion

Analyzed mean looking time during first test trial with a 2x2 ANOVA (clause type * event):

- Significant interaction (F(1,38)=6.82, p<0.02), no main effects.
- Children looked longer when they heard an intransitive than a transitive description for KNOCK-OVER, but not TEAR

Effect of clause type for KNOCK-OVER: are children using a stronger strategy than ANP for this event?

- Compatible with not only PAM but also Thematic Linking: intransitive with an agent subject a poor fit for a change
- But we need to determine whether this effect stands up under scrutiny: not replicating in an ongoing follow-up study

No effect of clause type for TEAR: support for ANP, or methodological issues?

- Children disliked the TEAR video, more variable looking time
- Potential for variability during familiarization to mask any effect of linguistic stimulus at test

- New method requires further refinement to differentiate PAM from alternative hypotheses

A New Test of One-to-One Matching Between Arguments and Participants in Verb Learning

Arunachalam & Waxman (2010)

(3) The boy is going to mop the girl.
(4) The boy and the girl are going to mop.

Yuan, Fisher, & Snedeker (2012)

(5) He’s going him.
(6) He’s going it.

Future Directions

Develop method to be sensitive to linguistic stimulus

- Version 2: Sentences, then Scenes foregounds syntactic manipulation, so may be more sensitive

Differentiate PAM not only from ANP, but also from Thematic Linking

- Test an infant with a patient subject, which should be a better fit for an event of change under Thematic Linking

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