ON THE FEASIBILITY OF CROSS-SITUATIONAL LEARNING OF VERBS

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BACKGROUND

Cross-situational learning (CSL) proposes that learners accumulate word-referent association across multiple contexts (Frank et al., 2009; Yu & Smith, 2007). Previous studies deliver (Liu et al., 2019; Rodrigo et al., 2020; West et al., 2022) controversial results on **verb-action co-occurrence**.

How do learners extract relevant events from a dense perceptual stream?

Are temporal proximity and action salience sufficient cues?

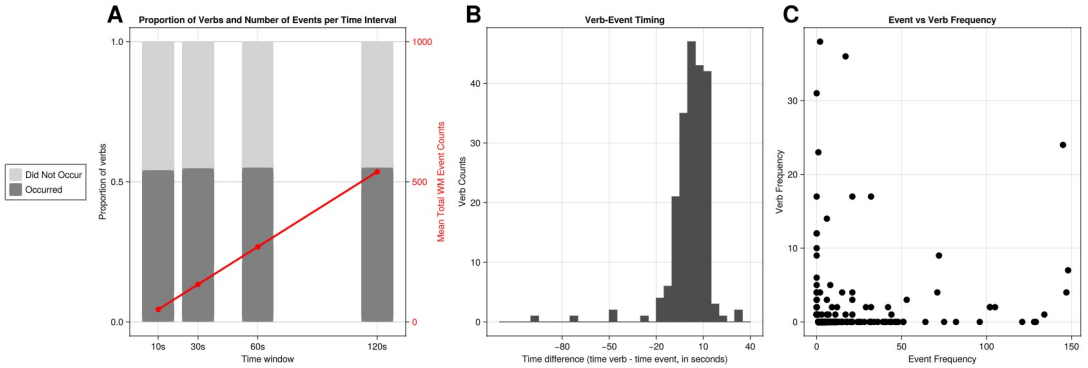
RESULTS

Temporal Alignment:

- 34 % verb-event mappings within 10 seconds;
- 53 % ~ within 50 seconds;
- **45 % verbs: no event at all.**

Event Salience & Frequency:

- 10,852 "*worth talking about*" events;
- 26 % of verbs = one of the events;
- ↗ **in number of events** as time window widens.
- 285 event types in at least half of 10-sec-bins;
- **Moderate correlation with verbs** (r =.15, p = .01)



METHODS

Corpus & Sampling

- Rollins Corpus (CHILDES): me06.cha & di06.cha (mother-infant dyads)
- **389 verb tokens** (59 unique types) from caregiver speech

Annotation

- Silent video clips in 10-, 30-, 60-, 120-sec-bins;
- Group 1: „*important and salient events*"
- Group 2: events „*worth talking about*"

DISCUSSION

- The environment is **event-dense** and **ambiguous**
- Most verbs **do not** align with any observable event;
- No steady accumulation possible

- **„Eureka-moments"** as high-impact learning events where linguistic and perceptual information perfectly aligns;
- Learning may be **episodic** and **discontinuous**, driven by sparse and powerful alignment

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