The development of verb vocabularies: Are late talkers actually different from their typically developing peers?

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Introduction

Both semantic and syntactic properties of a verb impact vocabulary development. We ask:

Does the impact of verb properties on verb vocabulary development vary depending on children's age (16-30 months) or language abilities (late talkers and typically developing children)?

Manner/Result

- Manner verbs: encode how an event unfolds
  - e.g., walk, dance
- Result verbs: encode the event endstate
  - e.g., close, finish
- Prior research:
  - Mixed evidence for manner or result advantage (e.g., Gentner, 1978; c.f. de Lamos 1981)
  - At age 2: (Horvath et al., 2019)
    - TDs have manner bias
    - LTs have result bias
    - Unclear whether this demonstrates a difference or delay
- Hypothesis: Both LTs and TDs will demonstrate early result bias. A manner bias will emerge with larger vocabularies

Durative/Punctual

- Durative events can be protracted over time
  - e.g., run, play
- Punctual events are instantaneous
  - e.g., break, hit
- Prior research: Durative verbs may be easier because children have more time to view the referent event (Abbot-Smith et al., 2017; Horvath et al., 2018)
- Hypothesis: Younger children will bias for durative verbs, but this will disappear with age

Syntactic complexity

- Verbs can appear in syntactic frames of varying complexity
- Prior research: Children struggle to acquire verbs in complex syntactic environments (He et al., 2020)
- Hypothesis:
  - All children will be more likely to produce verbs that appear in less complex frames
  - Bias will be greater for younger vs. older children
  - Bias greater for LTs vs. TDs

Methods

Participants

Data from Wordbank (Frank et al., 2016)

- MBCDI-WS, ages 16-30 months (M =22, SD = 4.7)
- N = 5520
  - N(LT) = 821
  - N(TD) = 4699
  - Cutoff <15th percentile

Verbs

Coded for:

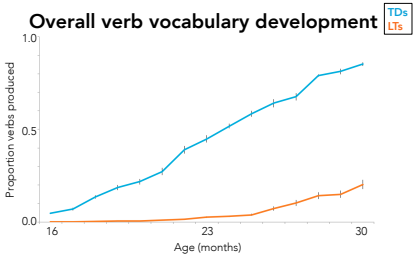
- Manner (N = 50) versus result (N = 45)
- Durative (N = 47) versus punctual (N = 33)
- Syntactic complexity
  - Estimated from CHILDES (MacWhinney, 2000)
  - M = 1.4; SD = 0.4; range = 0.13 ("hurry") – 2.11 ("give")

Analysis

Mixed-effects logistic regression:

(Produce) ~ (1|Child) + (1|Verb) + Input_Frequency + Verb_Imageability + Age*Group*Property

Overall verb vocabulary development

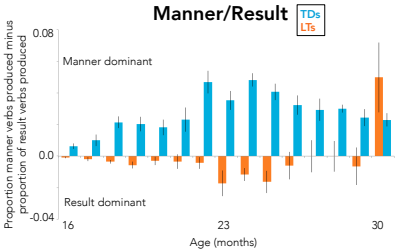


Significant effects of age, group and age*group in all regressions

- Older children > younger children
- TDs > LTs
- Differences between TDs and LTs greater in older than younger children

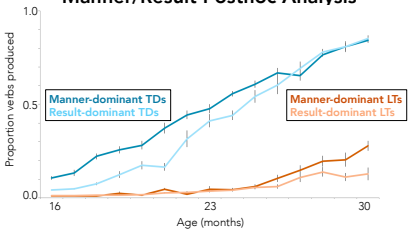
Results

Manner/Result



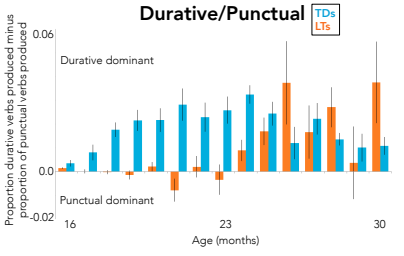
- No main effect of Manner/Result (MR)
- **Significant** age*MR interaction (b = 0.14, p < 0.001)
  - For manner verbs, older children > younger children
- **Significant** group*MR interaction (b = 0.20, p = .001)
  - For manner verbs, TDs > LTs

Manner/Result Posthoc Analysis



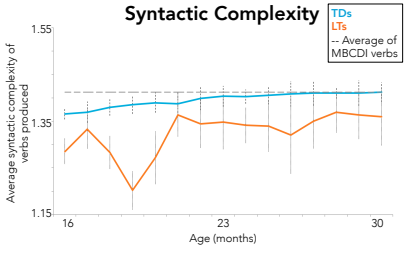
- **Significant** age*group*dominance interaction
  - TDs: Manner dominance = larger verb vocabulary sizes at younger ages (significant)
  - LTs: Manner dominance = larger verb vocabulary sizes at older ages (not significant)

Durative/Punctual



- No main effect of Durative/Punctual
- No significant interactions

Syntactic Complexity



- **Significant** main effect of syntax (b = - 0.78, p < .001)
  - Lower complexity > Higher complexity
- No significant interactions

Conclusions

- Properties of verbs differentially impact children based on age/language ability
- Manner dominance advantage
  - Future research: Why does this manner advantage exist?
- LTs and TDs different in their patterns of verb acquisition
  - Future research: Can we improve LTs' outcomes by targeting specific types of verbs?

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