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Kindergarteners’ statistical learning is influenced by instruction

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Statistical learning

- Inferring word boundaries (Safran, Johnson & Aslin, 1996; Endress & Bonatti, 2007; Gomez & Gerken, 1999)
- Learning words and referents (e.g. Vouloumanos, 2008; Yu & Smith, 2007; Smith, Suanda & Yu, 2014)
- Acquiring agreement markers (e.g. Lany, 2014; Lany & Safran, 2013; Monaghan, Mattock, Davies & Smith, 2015)
- Learning a meaningful agreement marker (Spit, Andringa, Rispens & Aboh, under review)

Explicit instruction and replication

- Lack of replication in general (Cumming, 2014), and in linguistics in particular (Marsden, Morgan-Short, Thompson & Abugaber, 2018)
- Reported positive effects of explicit instruction in adults (Spada & Tomita, 2010), but no studies with children

Research questions

- Can we replicate our findings that kindergarteners learn a meaningful agreement marker on the basis of distributional properties?
- Does explicit instruction influence the acquisition of such a marker?

Participants

102 Dutch speaking children (51 females, \( M = 5;7 \)), 50 were explicitly instructed, 52 were not instructed

Method

- Exposure
  - Miniature language:
    - Four proper names, three verbs, two grammatical markers,
    - six frequent nouns and twelve infrequent nouns
  - Exposure: 108 training sentences (+ 12 fillers)
- Rule
  - Pli: probability that the noun has multiple referents = 1
  - Tra: probability that the noun has multiple referents = .5
- Test
  - Picture matching task with eye tracking

Results

- Picture matching task
- Eye tracking

Conclusion

Explicit instruction did not increase accuracy, but it did lead to earlier predictive eye movements

In a follow-up experiment, we will test children on a delayed post-test, to investigate the effect of sleep on the development of kindergarteners’ knowledge

References