Online implicit learning of nonadjacent dependencies in children with and without Specific Language Impairment

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Online implicit learning of nonadjacent dependencies in children with and without Specific Language Impairment

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Background

**NADL**: Nonadjacent dependency learning

Examples: *He walks; Yesterday we walked*

**Sensitivity to NADs** is fundamental to language acquisition[1]

Measuring implicit NADL in children:

> **Offline**: accuracy on grammaticality judgment task
> **Online**: response times (RT) to NAD-rule items versus non-NAD-rule items reflect learning dynamics [2,3,4]

**NADL in SLI:**

> **Offline**: not as effective as in people without SLI [5]
> **Online**: no data available as yet


Preliminary analysis (lmer): No evidence for a difference in RT between rule and no-rule blocks between TD and SLI group (Block*Sample: estimate = 89.57; z = 1.67). Large individual differences in both groups.

RQ: Do the speed and degree of learning nonadjacent dependencies differ between children with and without SLI?

**Measures**

Online: Press green button upon hearing [target] and press red button when third word is not [target]

**Participants**
27 children with SLI (M = 9.1 years; F = 6)
27 age-matched controls (M = 9.1 years; F = 10)
SLI and TD group did not differ in Age and were matched on nonverbal IQ.

Online tests phase (word monitoring)

**Measures**

Online: grammaticality judgment task

**Participants**
27 children with SLI (M = 9.1 years; F = 6)
27 age-matched controls (M = 9.1 years; F = 10)
SLI and TD group did not differ in Age and were matched on nonverbal IQ.

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References

Acknowledgements
Recruitment SLI: Viertaal; Pento Amersfoort; Auris Leiden, Haarlem & Breda, FOSS Oudervereniging TOS. Recruitment and testing elementary schools TD: Binnenmeer, Startnest & Wheermolen, Darlene Keydeniers & Iris Broedelet.

**Online NADL (word monitoring)**

**Preliminary Results**

Visual inspection: no evidence of learning in both groups. Wider range of scores obtained in TD group.

Preliminary analysis (glmmer): No evidence that children as a group scored above chance level (estimate = 51.4%; z = 0.80, p = 0.43) or that the groups differed in performance (estimate = 1.03 odds; z = 0.24; p = 0.81).

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