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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

Visual inspection: different NADL dynamics between children with and without SLI. Preliminary analysis do not support this claim, however.

More research is needed to evaluate how NADL relates to language performance and developmental language disorders.

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

Preliminary Results

**Online NADL (word monitoring)**


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.

**Offline NADL (grammaticality judgment)**

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

Preliminary analysis (glmer): 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).

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.

Conclusion

Visual inspection suggests different NADL dynamics between children with and without SLI. Preliminary analysis do not support this claim, however.

There exist large individual differences in children's sensitivity to non-adjacent dependencies.

More research is needed to evaluate how NADL relates to language performance and developmental language disorders.

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References

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