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

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Publication date
2017

Citation for published version (APA):
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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

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

Methods

Online Tests Phase (Word Monitoring)

Offline Test Phase (Grammaticality Judgment Task)

Measures

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.

Preliminary Results

Mean = 0.51 (SD = 0.08)
Range = 0.37 - 0.69

Mean = 0.52 (SD = 0.13)
Range = 0.25 - 0.87

Proportion utterances correct

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

Preliminary analysis (lmer): 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).

Visual inspection: no evidence of learning in both groups. 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.

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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 Broedele.