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

Lammertink, I.L.; van Witteloostuijn, M.T.G.; Boersma, P.P.G.; Wijnen, F.; Rispens, J.E.

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

Imme Lammertink¹, Merel van Witteloostuijn¹, Paul Boersma¹, Frank Wijnen² & Judith Rispens¹
University of Amsterdam¹, Utrecht University²

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

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

Preliminary Results

Online NADL (word monitoring)

Offline NADL (grammaticality judgment)

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

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

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

Preliimnary 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).

Contact

E-mail: i.l.lammertink@uva.nl; website: www.progracy.com

References

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

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