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## Abstract

**Aim:** to examine the relation between linguistic skills and problem behavior in typically developing (TD) preschoolers.

**Methods:** an innovative, interactive tablet game and a new coding system.

**Results:** the tablet game provides a valid measure of linguistic skills and evokes increased problem behavior in children with lower linguistic skills.

**Conclusion:** the tablet game is an interesting tool for screening language problems and for how preschoolers deal with them on a behavior level.

## Introduction

The high co-occurrence of linguistic and behavior problems in children is well-known: children with language disorders have an increased risk of developing behavioral disorders (e.g. Conti-Ramsden & Botting, 2004) and this risk is already apparent in young children (Yew & O'Kearney, 2013).

However, whether linguistic problems can also evoke problem behavior in typically developing (TD) children is unclear. Therefore, the present study aimed to examine whether linguistic skills are related to problem behavior in TD preschoolers.

## Methods

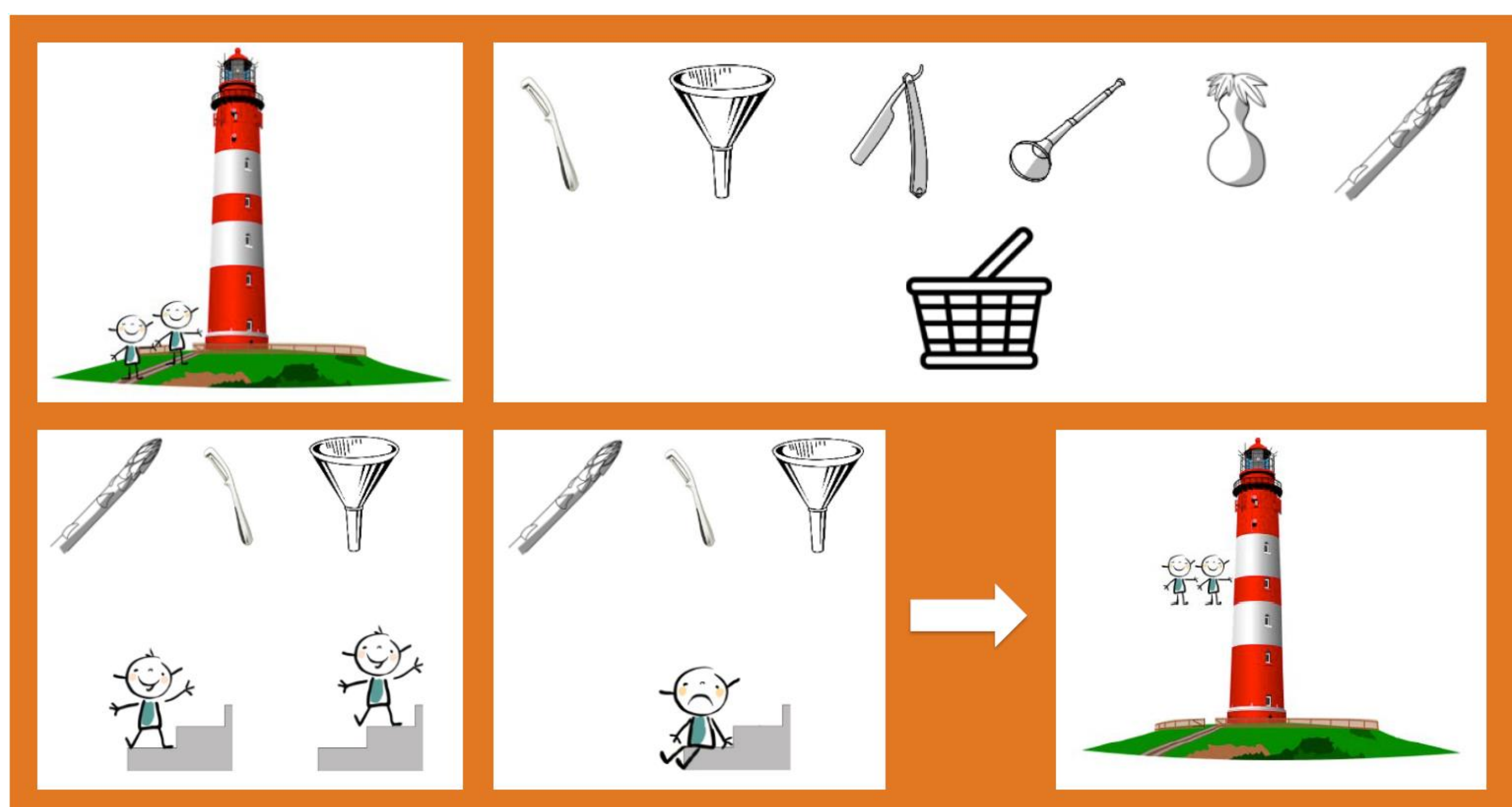
50 monolingual Dutch preschoolers (4-6 years) participated in the study.

We studied the influence of linguistic skills on behavior by eliciting 'communication breakdown' at different linguistic levels (phonetic-phonological, lexical-semantic, syntactic and pragmatic) during an interactive tablet game.



The type (positive affect, nervousness, sadness, and anger/frustration), amount and intensity of children's behavior in response to 'communication breakdown' was coded using a newly developed System for Coding Child Behavior in Interactive Tasks (SCCBIT).

We assessed the children's receptive vocabulary (PPVT-III-NL) to test the validity of the game as a measure of receptive linguistic skills.



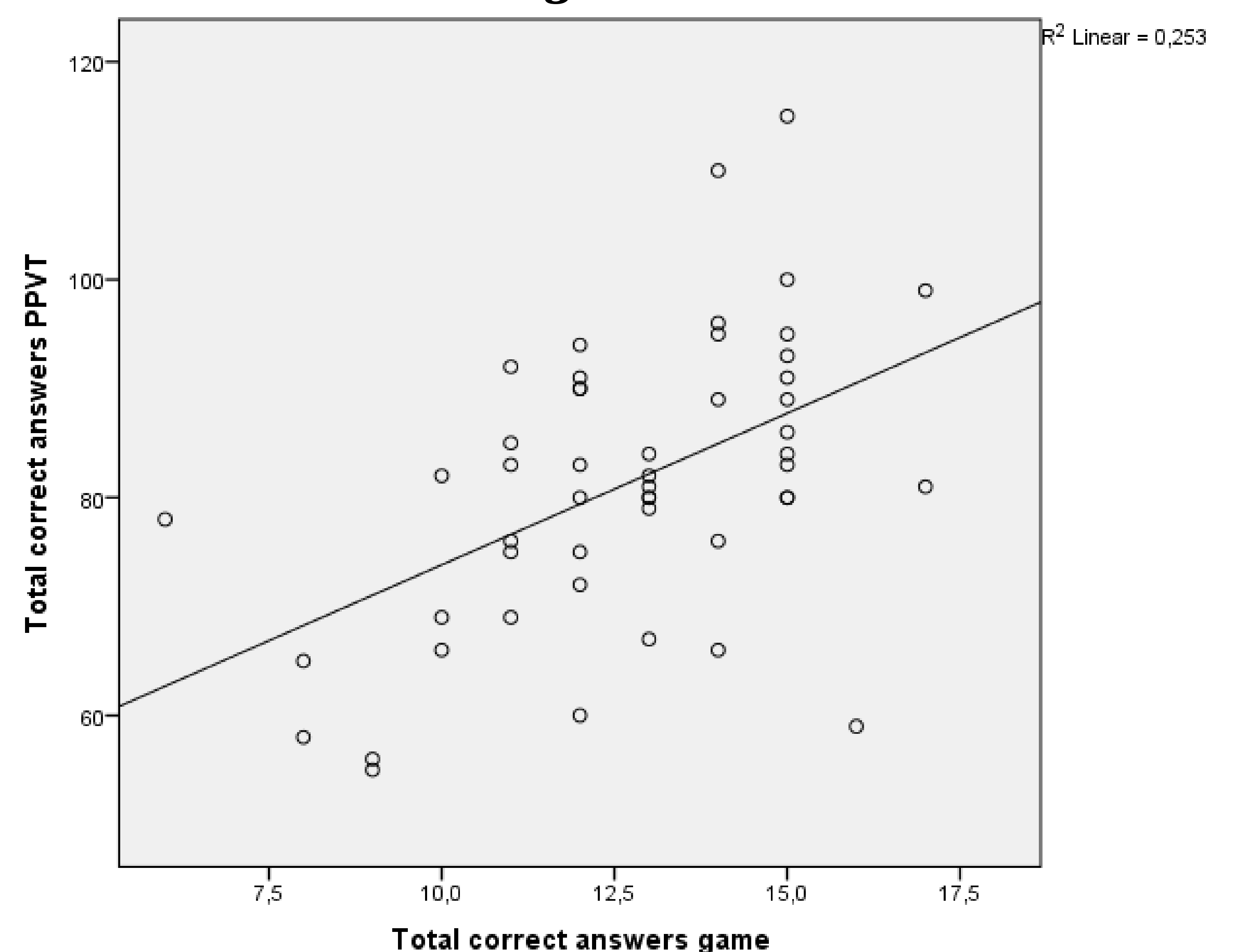
## Results

The PPVT scores correlated significantly with the total score of the game (number of correct answers) controlled for age,  $r(50) = .408, p = .004$  (Figure 1).

There was a significant negative correlation between total score of the game and total intensity of coded externalizing behavior (anger/frustration) controlled for age,  $r(50) = -.329, p = .019$ .

More specifically, the score on the pragmatic level correlated with both the total amount and intensity of coded externalizing behavior when controlled for age,  $r(50) = -.368, p = .009$  and  $r(50) = -.375, p = .007$ .

Figure 1



## Conclusions

- The PPVT validates the game as a measure of general linguistic skills.
- Linguistic skills and problem behavior are related in TD preschoolers.
- The developed tablet game is a potentially interesting tool for screening language problems as well as for examining how preschoolers deal with them on a behavior level using the developed coding system.

## Acknowledgements

We would like to thank the strategic theme Dynamics of Youth and the Utrecht Institute of Linguistics OTS of Utrecht University for supporting this research.

## Bibliography

- Conti-Ramsden G., & Botting N. (2004). Social difficulties and victimization in children with SLI at 11 years of age. *Journal of Speech Language and Hearing Research*, 47(1), 145-161.
- Yew, S., & O'Kearney, R. (2013). Emotional and behavioural outcomes later in childhood and adolescence for children with specific language impairments: meta-analyses of controlled prospective studies. *Journal of Child Psychology and Psychiatry*, 54(5), 516-524.