Do narrative skills of bilinguals at preschool age predict literacy development in primary school?

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Background

Narrative skills (i.e., macrostructure) develop similarly in mono- and early bilinguals (e.g., Otwinowska et al., 2018; Pearson, 2002) and are shared between languages (e.g., Bohnacker, 2016; Paradis et al. 2011).

There are correlations between narrative skills and literacy in monolinguals and bilinguals (Bishop & Edmundson, 1987; Bliss et al., 1998; Uccelli & Páez, 2007; Westby, 1991).

Do narrative skills (story structure and story complexity) at preschool age predict reading and spelling in L2 German of bilingual primary school children?
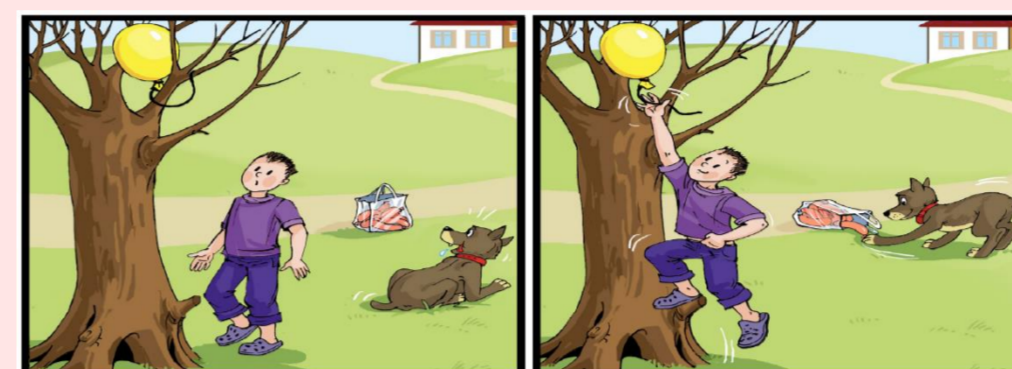
Longitudinal design

Preschool

Narrative skills (MAIN; Gagarina et al., 2012)
- Story structure and story complexity

Example items from MAIN

Intelligence (SON-R; Tellegen, Laros & Petermann, 2007)
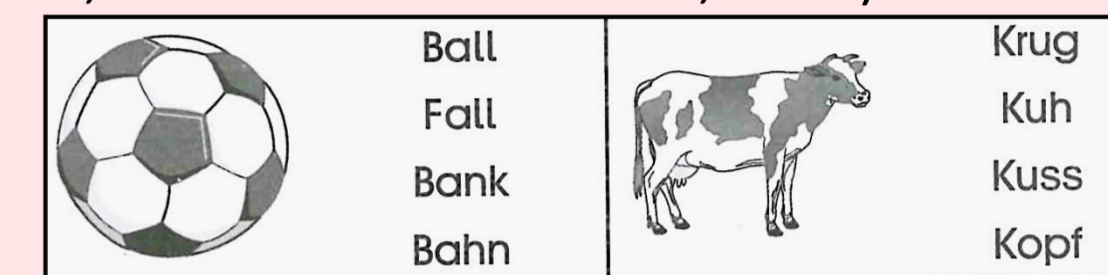- Nonverbal intelligence test (logical reasoning scale)

Background factors (Questionnaire, Gagarina, Klassert & Topaj, 2010)
- Age of acquisition (AoA) of German
- SES (parents' education on a scale from 1 to 3)

Primary school (1st and 2nd grade)

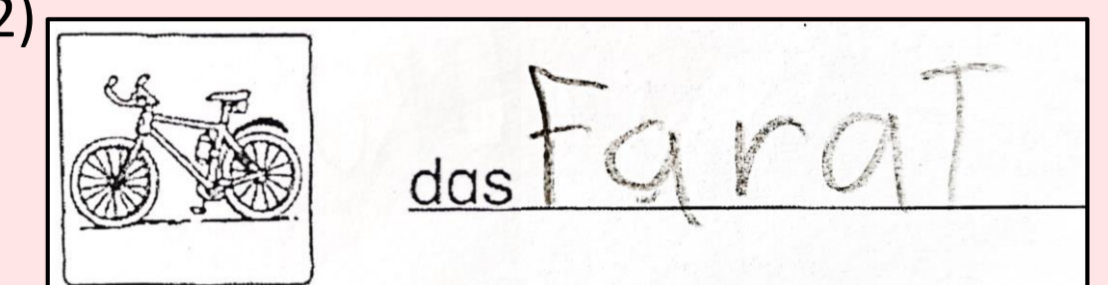**Reading task** (ELFE 1-6; Lenhard, Schneider & Schneider, 2006)
- Separate subtests for word, sentence and text comprehension

Ball	Krug
Fall	Kuh
Bank	Kuss
Bahn	Kopf

Example items for word reading

Spelling task (HSP; May, 2002)
- Single words and sentences (nr. of correct words and graphemes)

das FaraT

Example item "Fahrrad" (bike) from word spelling test

Sample

59 bilinguals
- 54 % girls, 46 % boys
- Russian (n = 37) or Turkish (n = 22) as home language
- German as environmental and school language

	M	SD
Age in preschool (y;m)	5;7	0;6
Age in 1st grade (y;m)	7;2	0;4
Age in 2nd grade (y;m)	8;1	0;4
AoA German (y;m)	1;8	1;0
Intelligence (IQ)	105.1	15.1
SES	2.0	0.6

Correlations

	Grade	Story structure	Story complexity
Reading Words	1st	.02	.03
	2nd	.23	.22
Sentences	1st	-.07	.02
	2nd	.2	.15
Texts	1st	.12	.16
	2nd	.21	.08
Spelling Graphemes	1st	.34 **	.28 *
	2nd	.25 *	.11
Words	1st	.29 *	.38 **
	2nd	.21	.06

Spearman correlation coefficients (+ p < .1, * p < .05, ** p < .01, *** p < .001)

Spelling

1st grade: r = .34 **

2nd grade: r = .25 *

Results

Reading:
- No significant correlations between narrative skills and all reading tasks (see table on the left)

Spelling:
- Significant correlations in 1st grade for story structure and complexity (see table and figures on the left)
- Insignificant correlations in 2nd grade, except for story structure and number of graphemes (see figures)
- Regression analyses (table on the right) reveal that story structure in preschool predicts spelling in 1st, but not in 2nd grade

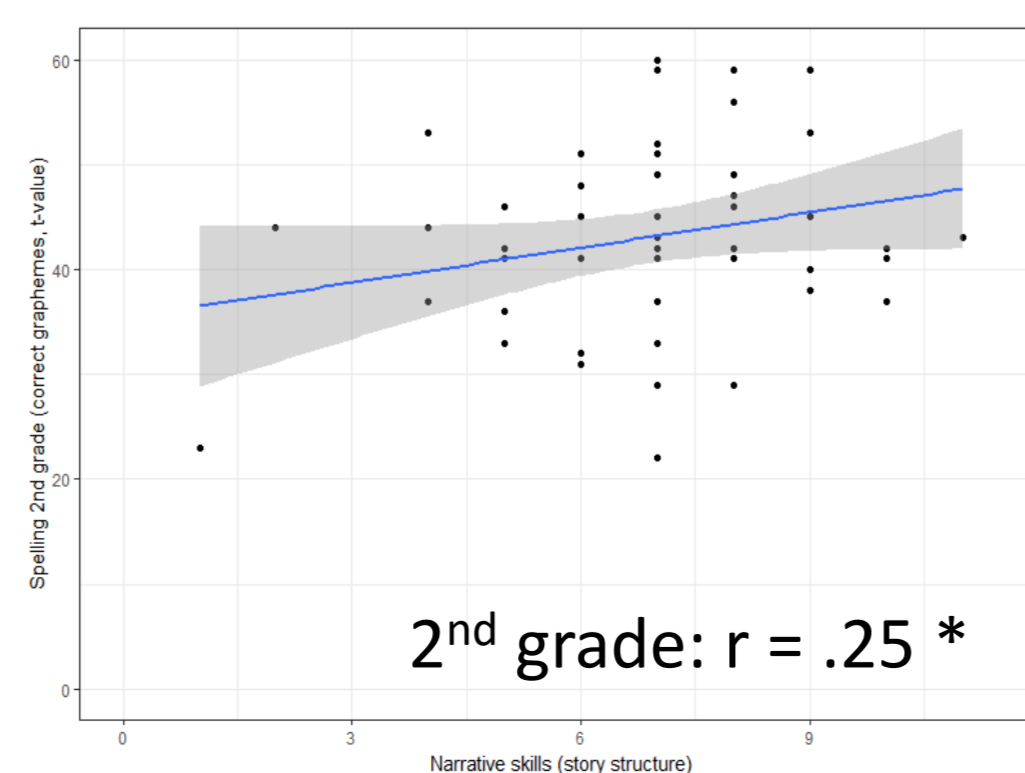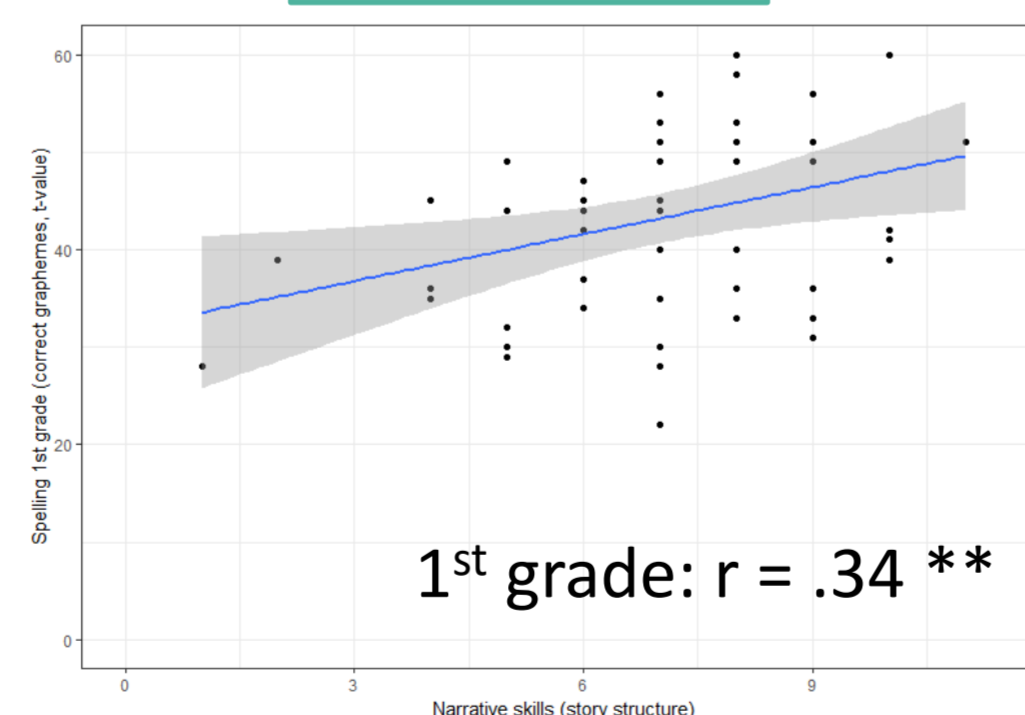|	1st grade		2nd grade	
	b	p	b	p
(Intercept)	17.93	+	17.98	
Story structure	1.33	*	1.19	+
Intelligence	0.18	*	0.16	+
AoA German	-0.14		0.05	
Adj. R²	19%		8%	

Regression analyses predicting number of correctly spelled graphemes.
(+ p < .1, * p < .05, ** p < .01, *** p < .001)

Conclusions

In contrast to previous research, narrative skills did NOT predict early reading. Possible reasons:
(1) Test characteristics: a) time limitations in the ELFE test and b) multiple choice selection in contrast to text reading
(2) Small sample size and other background factors might influence outcomes

However, larger correlation coefficients in 2nd than 1st grade could indicate an increasing role of narrative skills over the course of primary school.

Story structure predicted spelling in 1st grade:
(1) Since reading and writing correlate, we expected this result
(2) Test characteristics: no time limit in HSP and possible repetitions of items reduce memory load

YES, story structure in bilingual children's preschool narratives is predictive for spelling abilities in the 1st grade, but NOT for early reading in either 1st or 2nd grade.