



# How Do Different Processes of **Writing** and **Speaking** Affect Syntactic Complexity in Child Second Language Production?

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## Introduction

### Syntactic complexity indices

- Widely used for assessing L2 production quality and for predicting L2 proficiency
- Variability across studies
  - Nominalization in **writing** predicted L2 proficiency (Kim 2014; Lu 2011)
  - Verb phrases per T-unit in **speaking** predicted L2 proficiency (Iwashita et al. 2007)

### Differences between production modalities

- Cognitive processes underlying **writing** and **speaking** (Grabe & Kaplan 1996; Kellogg 1996; Levelt 1989)
  - Writing**: Cyclic process with ample time for planning, encoding, monitoring and revising
  - Speaking**: Linear process tightly constrained by time
- **Writing** (vs. **speaking**) frees up cognitive resources, allowing L2 writers to produce longer and more complex structures
- Biber, Gray & Poonpon (2011), Biber, Gray & Staples (2014)
  - Writing** > **Speaking**: Use of phrasal noun modifiers
  - Writing** < **Speaking**: Use of subordinations

### Research gaps

- Biber, Gray & Poonpon (2011): **Written** and **spoken** data from different genres and from different learner groups
- Biber, Gray & Staples (2014): Tasks with different prompts and with different time allotments
  - Need for controlling for learner group and task-related factors
- Previous research has focused on advanced adult learners
  - Need for testing child L2 learners with lower proficiency



### Research questions

- RQ1: Are there differences between child L2 learners' **written** and **spoken** production in terms of syntactic complexity?
- RQ2: Does syntactic complexity in **written** production predict learner proficiency more reliably than syntactic complexity in **spoken** production?

## Data collection

### Participants

- 76 beginning-level Korean-speaking child L2 learners of English
  - Age: 11.26 (*SD* = 0.44); Age of onset: 7.71 (*SD* = 2.17)

### Procedure

- Written** task: Writing about their favorite teacher
- Spoken** task: Talking about their favorite person
- Language background questionnaire
- Proficiency task (listening & reading): *M* = 79.95% (*SD* = 12.25)

### Corpora

	Written corpus	Spoken corpus
No. of sentences	769	401
Mean no. of sentences per participant	7.21 ( <i>SD</i> = 4.18)	4.76 ( <i>SD</i> = 4.02)
Mean no. of words per participant	47.45 ( <i>SD</i> = 35.68)	24.01 ( <i>SD</i> = 15.20)

## Data analysis

- Measuring syntactic complexity indices using TAASSC (Kyle 2016)
  - Length of production: **MLS** (Mean length of sentence)
  - Sentential complexity: **C/S** (Clauses per sentence)
  - Subordination: **DC/T** (Dependent clauses per T-unit)
  - Coordination: **CP/T** (Coordinate phrases per T-unit), **T/S** (T-units per sentence)
  - Particular structures: **CN/T** (Complex nominals per T-unit), **VP/T** (Verb phrases per T-unit)
- For RQ 1: Mixed-effects linear regression fitted to **each index score** with a fixed factor of **production type** and a random factor of **participant**
- For RQ 2: Stepwise multiple regression on each corpus, with **syntactic complexity indices** as predictors and **proficiency scores** as a dependent variable

## Results

### ! RQ 1: YES!

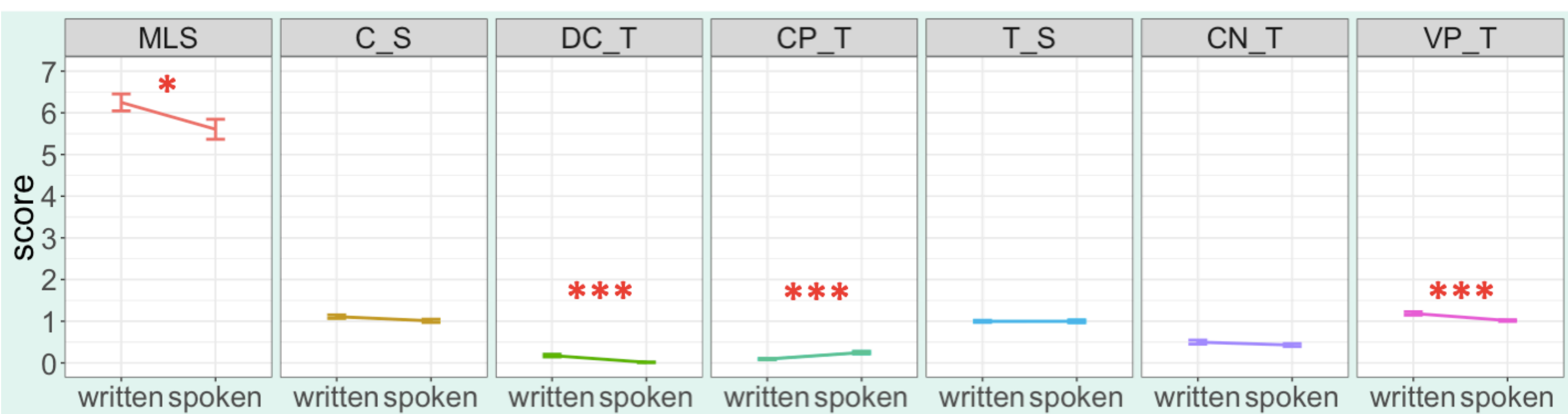


Figure 1. Comparison of the syntactic complexity indices between **written** and **spoken** production. Significance levels: \* = *p* < .05; \*\*\* = *p* < .001.

- Writing** > **Speaking**: length, subordination, particular structures
- Speaking** > **Writing**: coordination

### ! RQ 2: YES!

Written data	Model comparison (Fisher <i>r</i> -to- <i>z</i> transformation )	Spoken data
MLS explained 19.7% of the variance in proficiency	> (one-tailed <i>p</i> = .06)	T/S explained 4.8% of the variance in proficiency

## Conclusion

- The different cognitive processes underlying **writing** and **speaking** resulted in the different levels of syntactic complexity for **written** and **spoken** production in the beginning-level learners
- Syntactic complexity in **written** production was a better predictor of proficiency than syntactic complexity in **spoken** production
- Prior experience with **writing** may help children use more diverse and complex forms while **speaking**

## Selected references

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