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
- 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 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 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

1. Written task: Writing about their favorite teacher
2. Spoken task: Talking about their favorite person
3. Language background questionnaire
4. Proficiency task (listening & reading): M = 79.95% (SD = 12.25)

Corpora

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

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!

<table>
<thead>
<tr>
<th>Written data</th>
<th>Model comparison (Fisher r-to-z transformation)</th>
<th>Spoken data</th>
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<tr>
<td>MLS explained</td>
<td>19.7% of the variance in proficiency &gt; (one-tailed p = .06)</td>
<td>T/S explained 4.8% of the variance in proficiency</td>
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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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