



Exploring the Contribution(s) of Prosody to Ambiguity Resolution and Reading Comprehension in English as an Additional Language (EAL)

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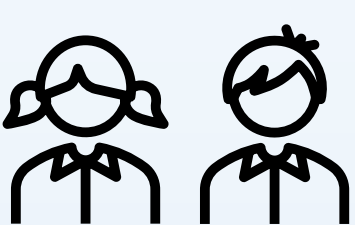
Background

- Pupils who speak **English as an Additional Language (EAL)** make up about 20% of the pupil population in England.
- Despite their heterogeneity in terms of language background and Age of Acquisition in English, they are **consistently found to underperform in reading comprehension** compared to monolingual peers [1-5].
- **Vocabulary and Grammar Knowledge** have both been found to contribute to their reading abilities.
- **Prosody** remains unexplored, particularly among EAL pupils, but is **known to contribute to the development of reading skills** [6-12].

Research Questions

- Do EAL children differ from monolingual peers in reading abilities and prosodic skills?
- Do prosodic skills interact with offline comprehension and online processing of ambiguous sentences in the silent reading of monolingual and EAL children?

Methodology



64 pupils (27 Monolingual and 37 EAL) in Year 5 (mean age: 9;11)
EAL Pupils: 23 home language backgrounds

Reading Comprehension
YARC [13]

Receptive Vocabulary
BPVS3

Reception of Grammar
TROG2

Prosody
PEPS-C
2015 Version [14]

Silent Reading Eye-Tracking Experiment

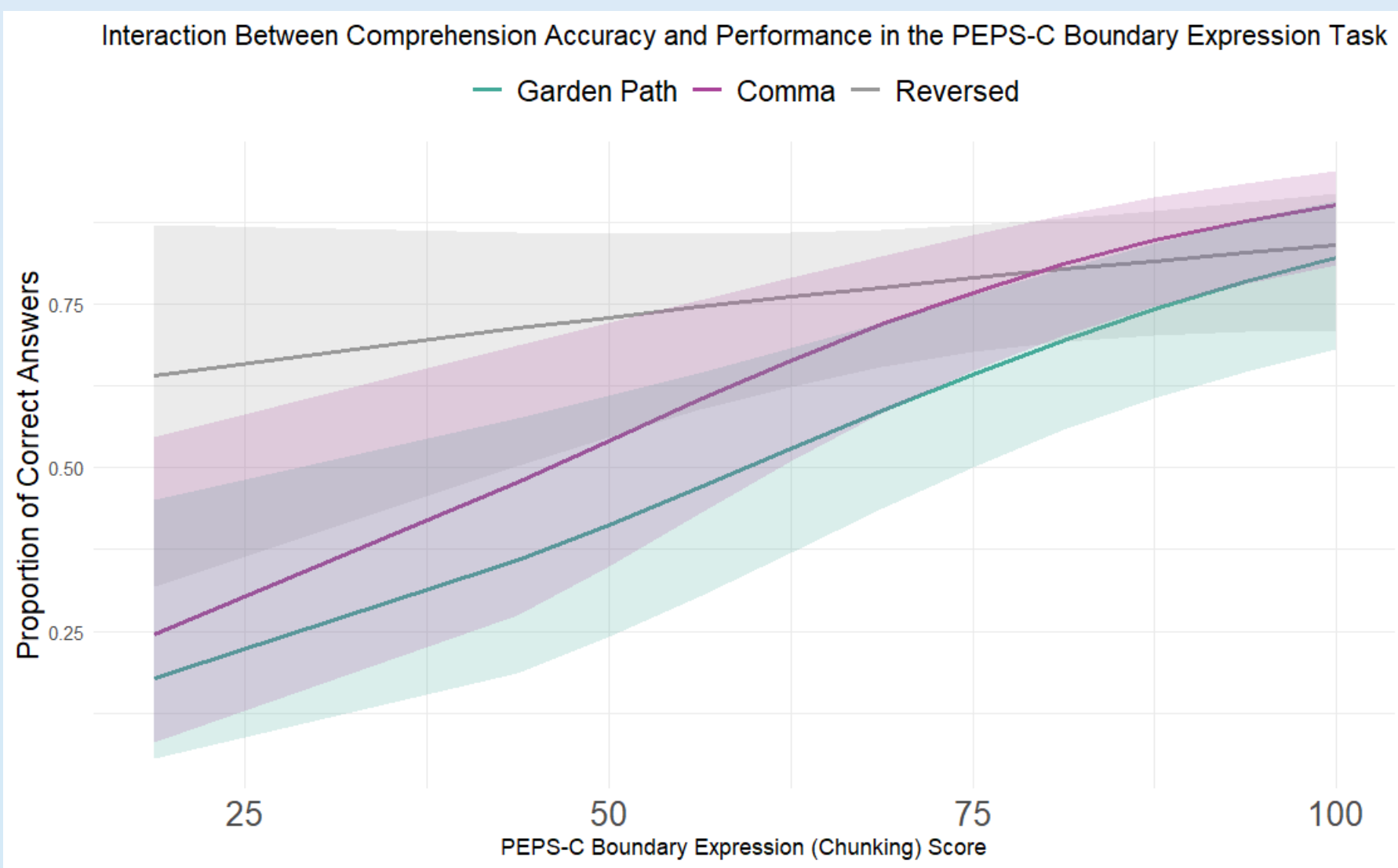
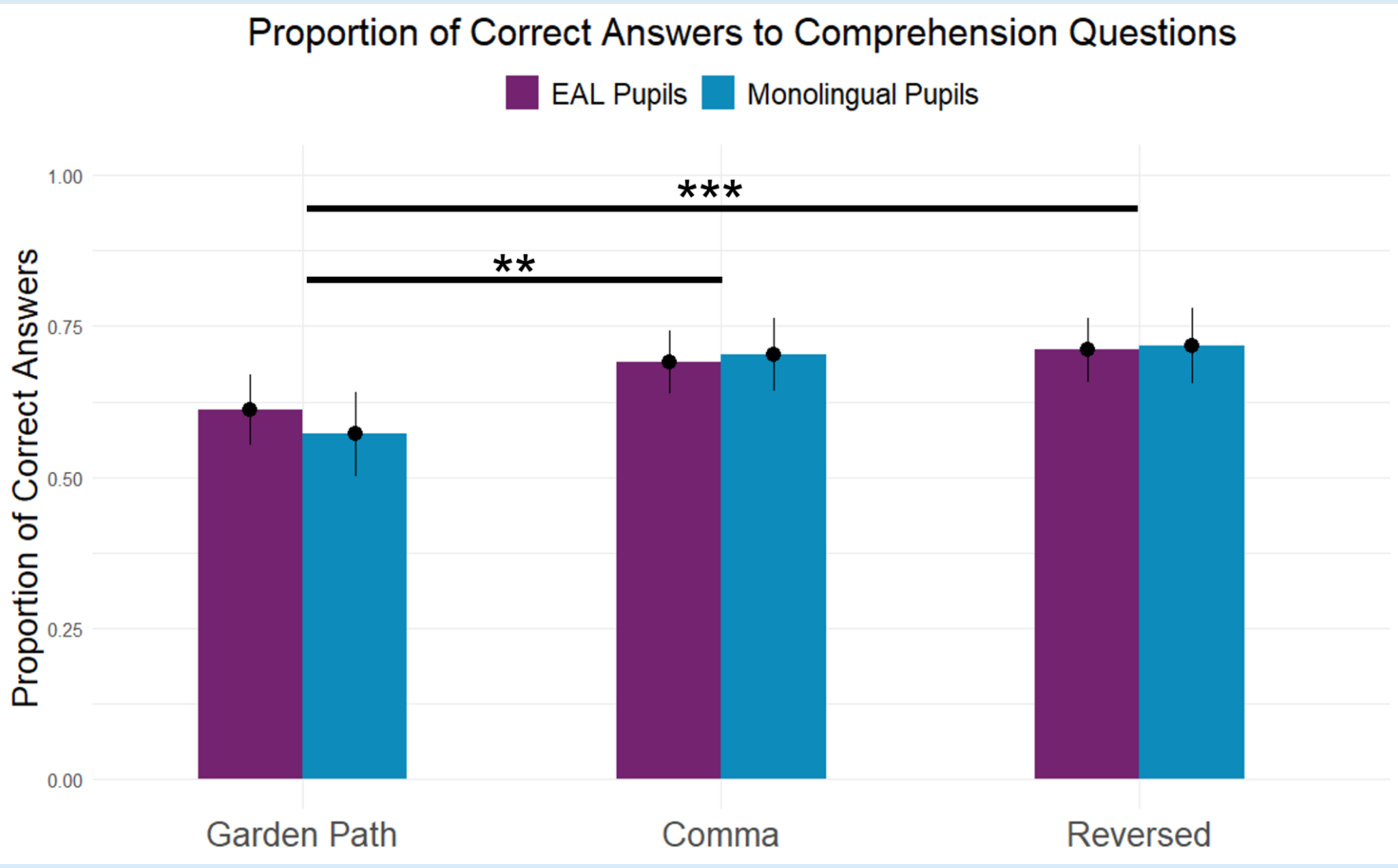
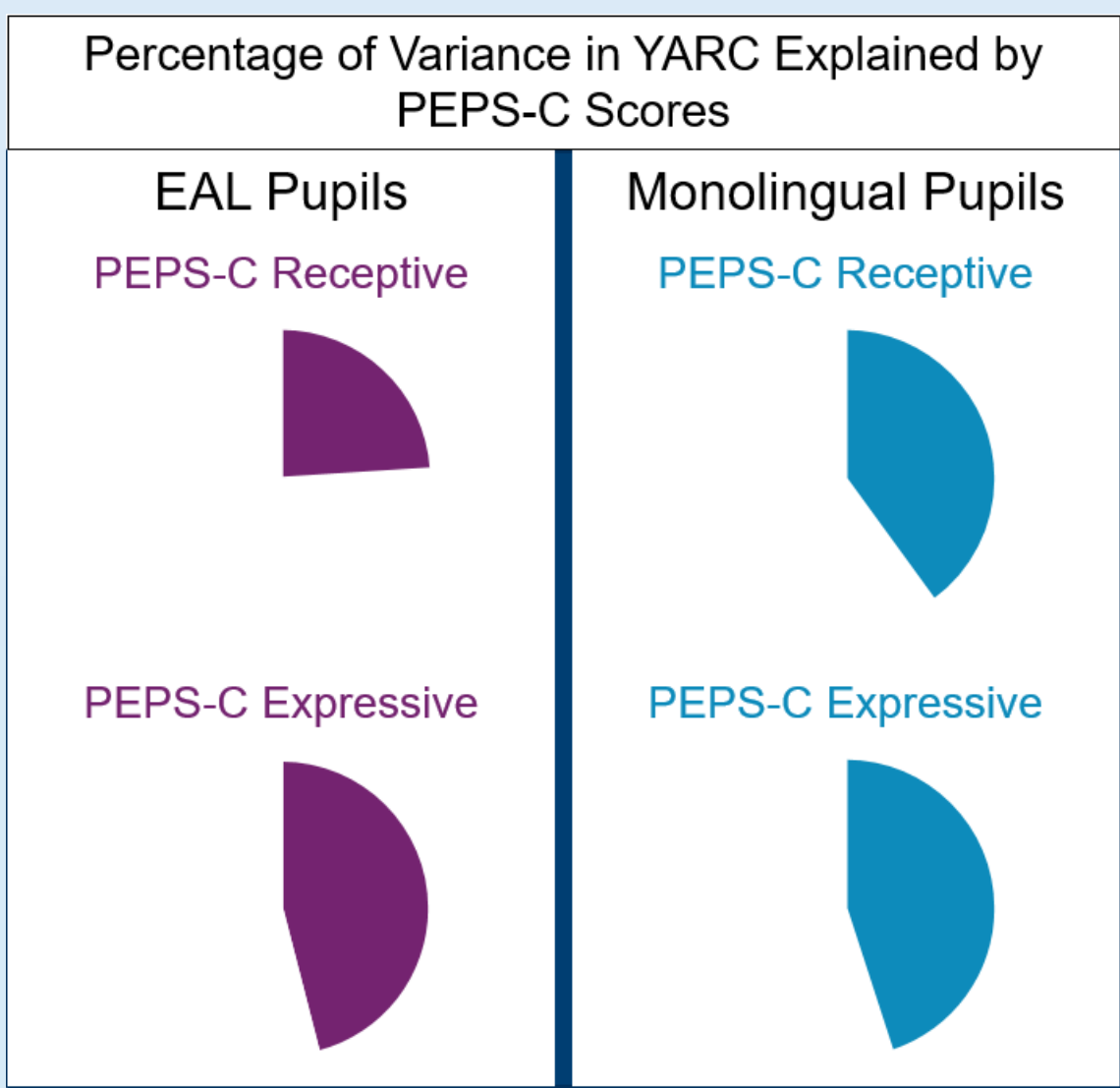
Prosodic syntactic effect of commas in NP-Zero Garden Path Sentences [15]

Garden Path	While the girl was eating the cookies baked in the oven.
Comma	While the girl was eating, the cookies baked in the oven.
Reversed	The cookies baked in the oven while the girl was eating.

Question: *Did the girl eat the cookies?*

Results

- **No statistically significant differences** between groups in reading comprehension (YARC), vocabulary (BPVS3), grammar (TROG2) or prosody (PEPS-C). Each of the assessments (BPVS3, TROG2, PEPS-C Receptive and Expressive) **predicts YARC scores** in both groups. (RQ1)
- **Different factors explain variance in reading comprehension (YARC)** for EAL and monolingual pupils: for EAL strongest predictor is **expressive prosody (PEPS-C)**, while for their monolingual peers it's **vocabulary (BPVS3)**. **Expressive prosody explains similar % of variance** in YARC for both groups (Fig. 1).

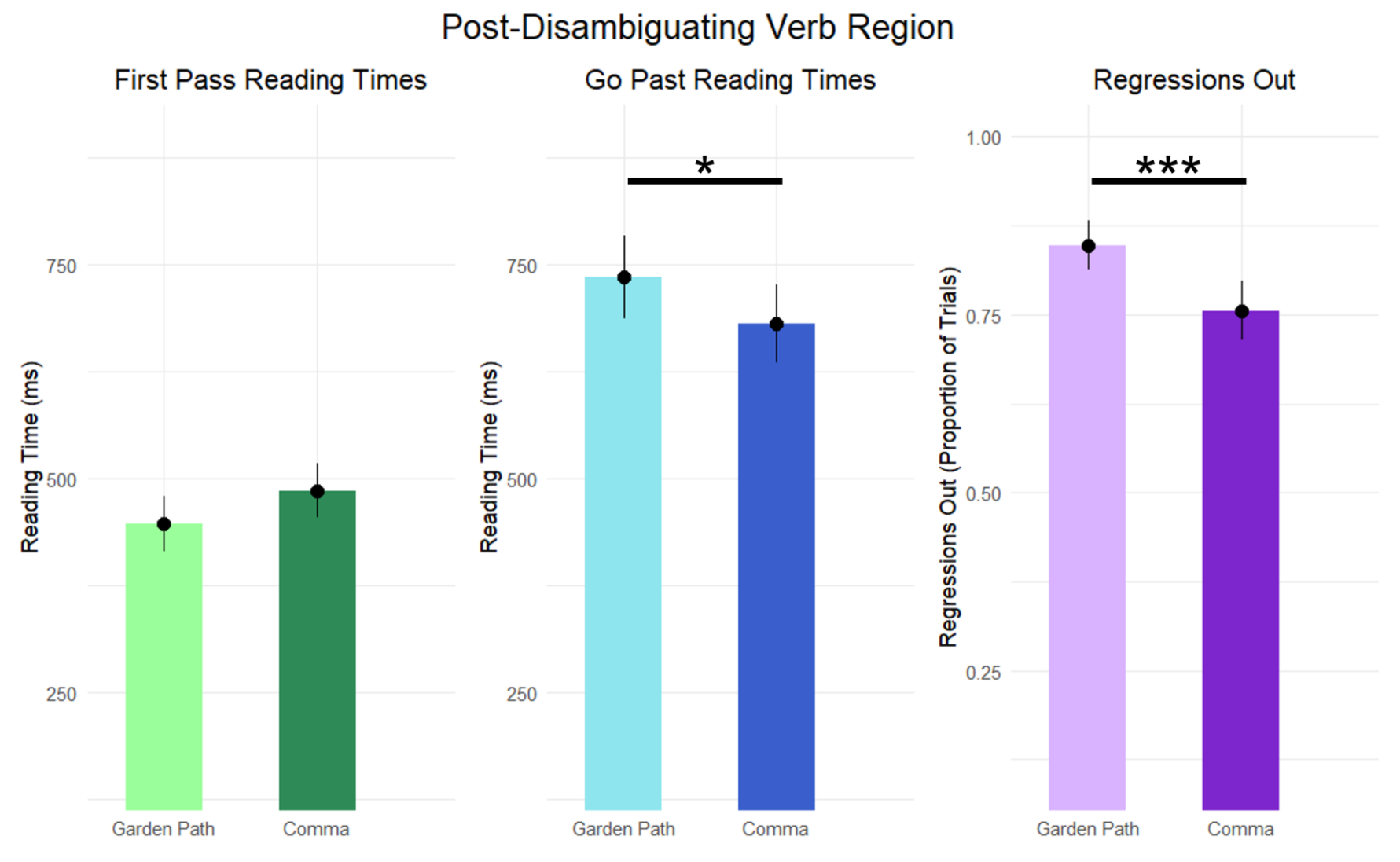
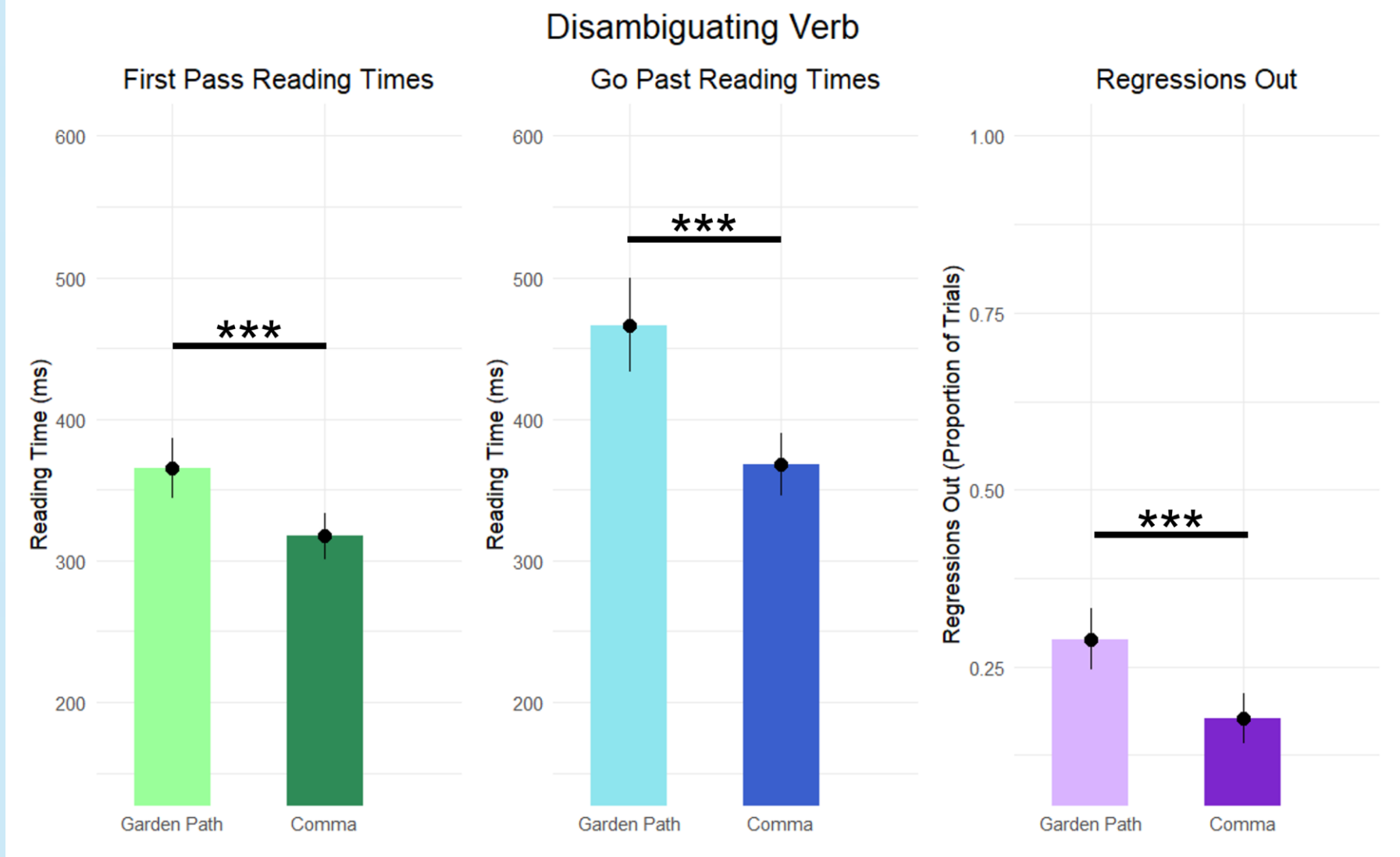
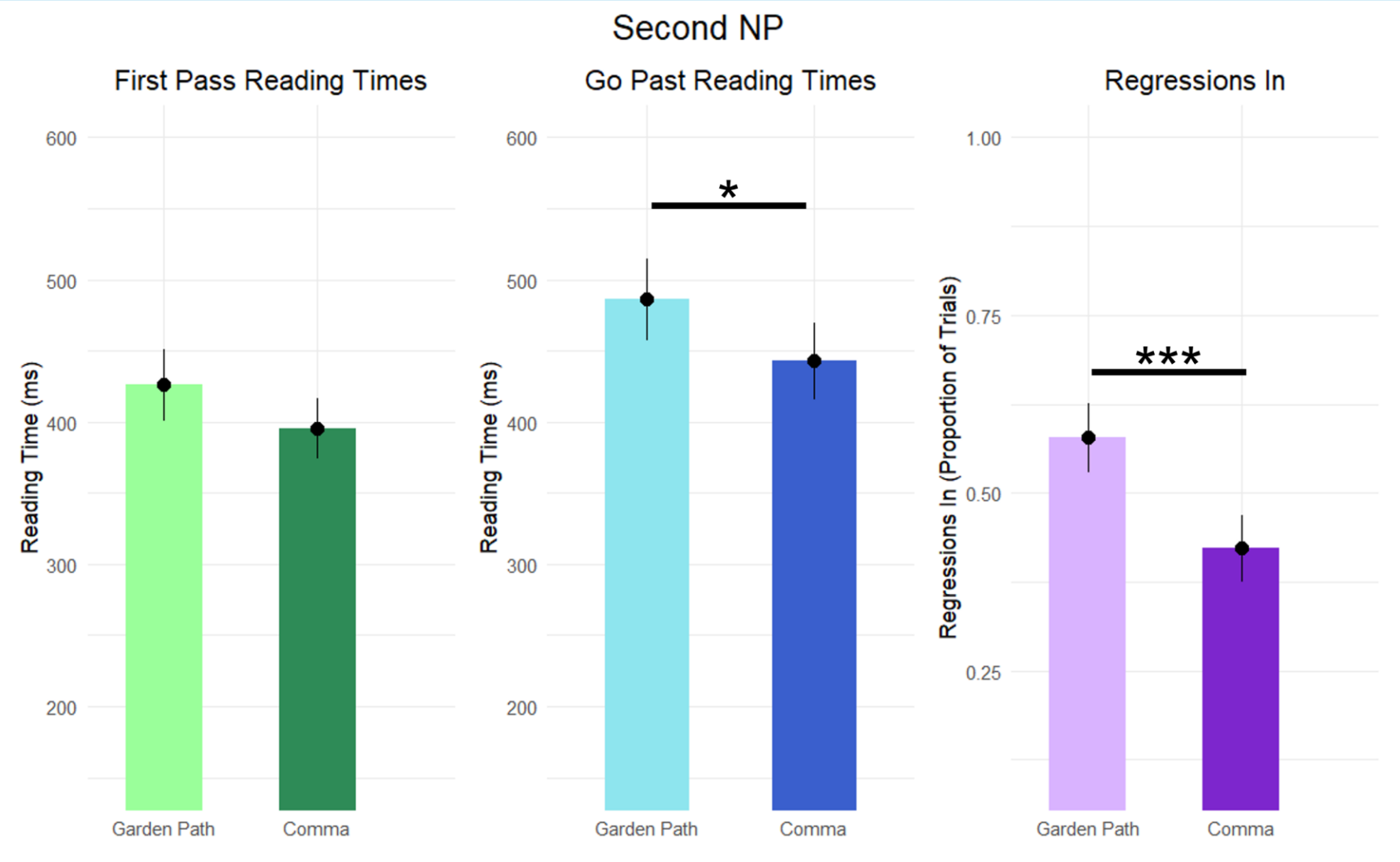
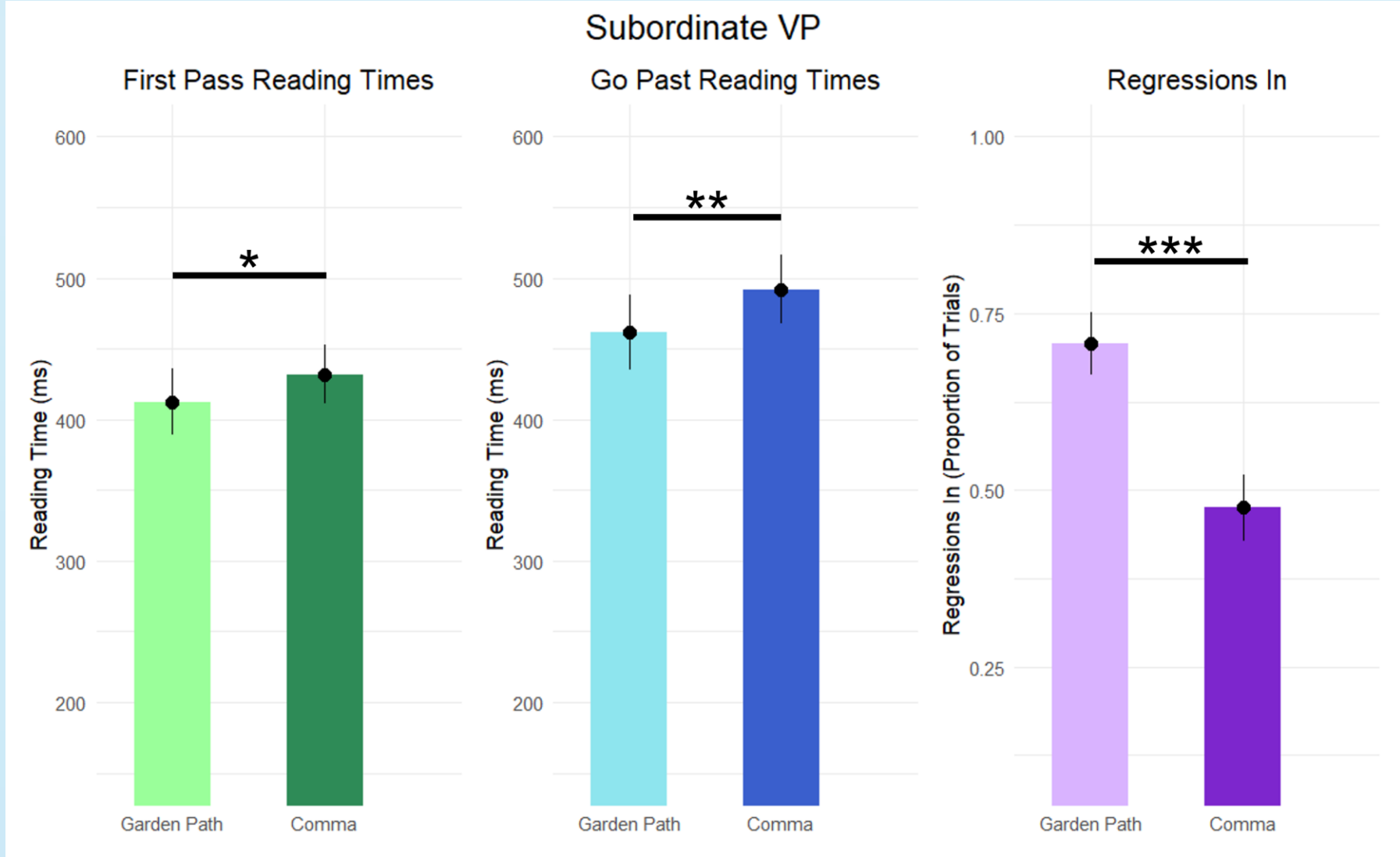


Comprehension Scores (Offline Measures)

- All pupils performed **significantly worse in the Garden Path Condition** compared to the Comma and Reversed Conditions (Fig. 2), in line with [15]. No significant differences between groups in any of the experimental conditions.
- Performance in Garden Path and Comma conditions -compared to the Reversed condition- is influenced by performance in the PEPS-C Boundary Expression (**Chunking**) subtest, but not by receptive grammar (TROG2). No group effects.

Eye-Tracking Data (Online Measures)

While | the girl | was eating (,) | the cookies | baked | in the oven.
Subordinate VP Second NP Disambiguating Verb Post-Disambiguating Verb Region



- Consistent **garden-path effects** in sentences without a comma. Findings generally in line with [15].
- **Online processing** of garden path vs. comma sentences is **not influenced by prosody (PEPS-C)**; only simple effect found in the subordinate VP and disambiguating verb.
- **Online processing** of garden-path vs. comma sentences is **influenced by receptive grammar (TROG-2)** in the subordinate VP and the post-disambiguating verb regions. Simple effect also found in the subordinate VP.

Conclusion

- **EAL pupils on par with monolinguals** in all tasks, but higher contribution of prosodic skills to their reading abilities (RQ 1).
- Evidence of **explicit prosodic skills involved in reading disambiguation abilities** (RQ 2).
- **No evidence of implicit prosody** involved in disambiguation in silent reading; no evidence of prosody contributing to the online processing of ambiguity for either group (RQ3).