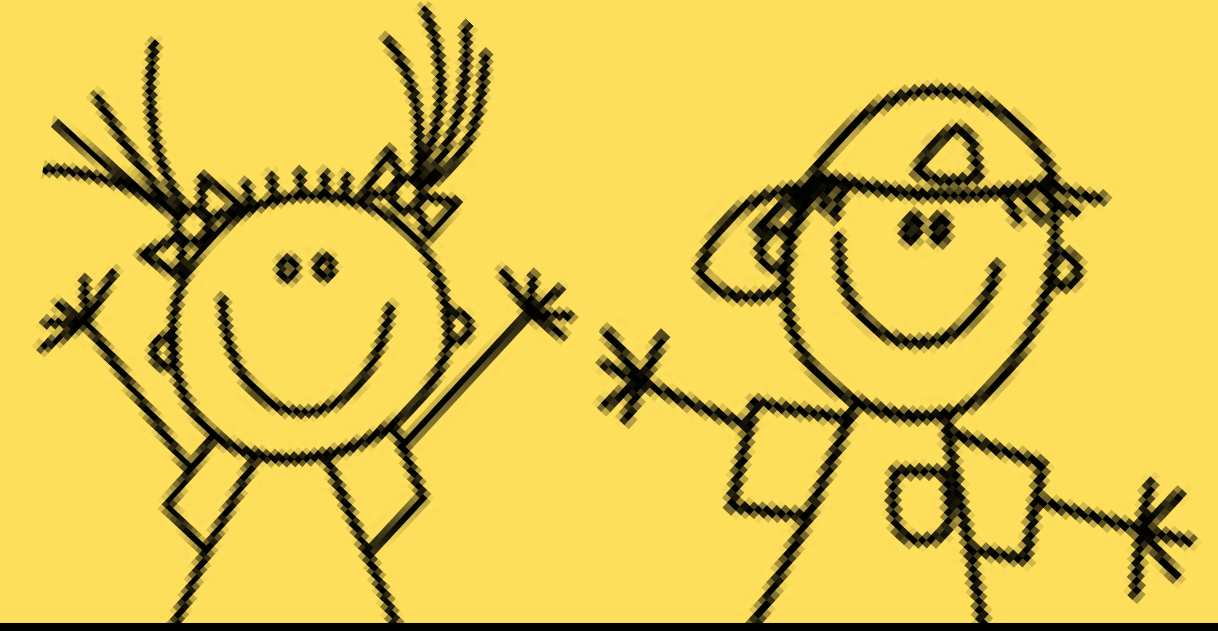




Similarity-Induced Interference in Sentence Processing: The (Missing) Role of Pragmatics

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Rationale

- One of the key issues in language processing is how concepts in sentence are combined and integrated to give meanings. The similarity-based interference theories of sentence processing (Gordon et al., 2002; Gordon et al., 2006; Van Dyke & McElree, 2006, 2011; Acheson & MacDonald, 2011) predicted that the similarity (either semantic or phonological) between the to-be-integrated concepts in sentence could be responsible for impoverished comprehension in complex sentence understanding (object relative clauses or ORCs vs. subject relative clauses or SRCs in English).
- Using both Chinese ORCs and SRCs¹, this study manipulated the pragmatic similarity of the to-be-integrated concepts in sentence (i.e., both concepts are same-gender vs. different-gender proper names), to investigate beyond semantics and phonology, whether similarity-based interference theories of language processing could be extended to online integration of pragmatic information in complex language structure understanding.

Participants

- Thirty-six Chinese college students (30 female and 6 male, mean age=19.50, SD=2.14) were recruited for this study. It took participants about 20 minutes to complete the experiment.

Materials & Design

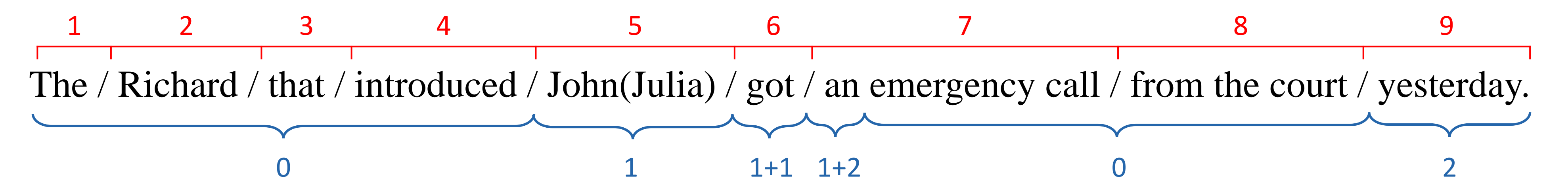
- 2(Syntax: ORCs, SRCs) × 2(Pragmatics: Similar, Dissimilar) within-subject design.
- Forty target sentences were counterbalanced across 4 conditions, resulting in 4 stimulus lists and participants were randomly assigned to one of the four lists. There were 40 extra sentences as fillers.

Procedure

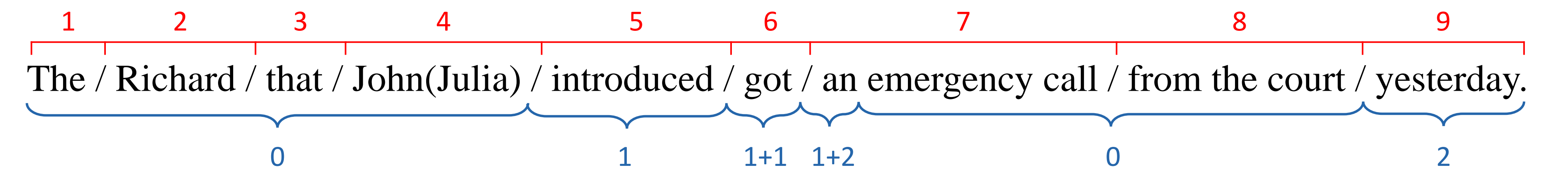
- Participants read sentences in a self-paced moving window fashion and answered a comprehension question immediately after reading each sentence.

Methods

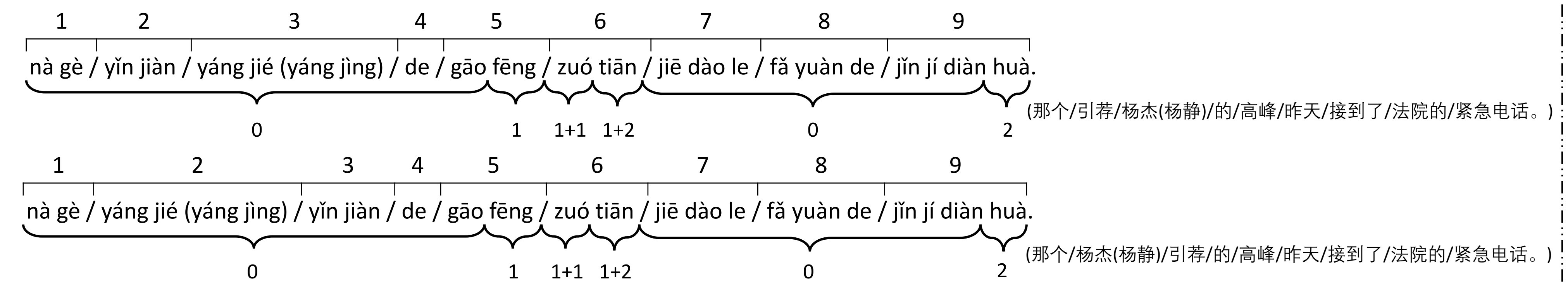
Subject Relative Clause: Similar (vs. Dissimilar)



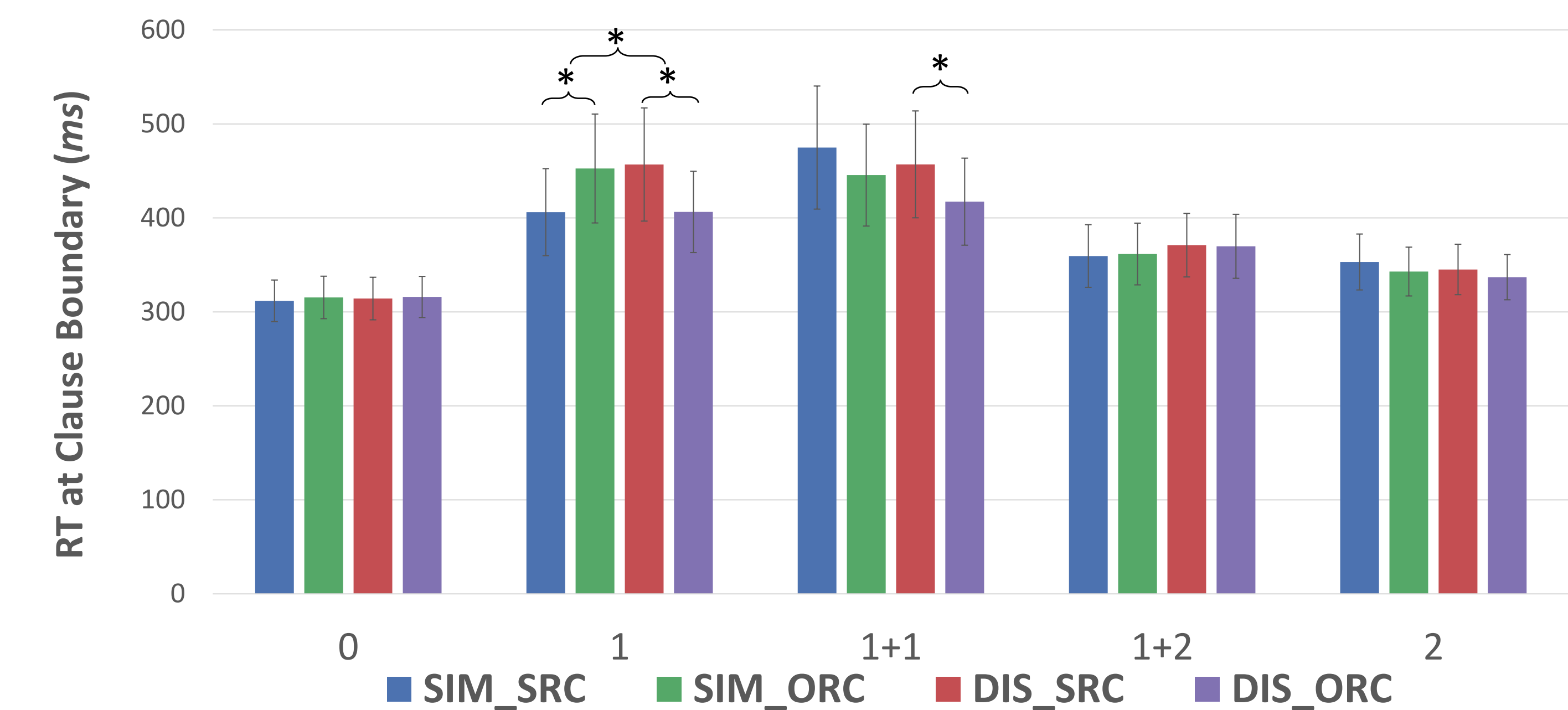
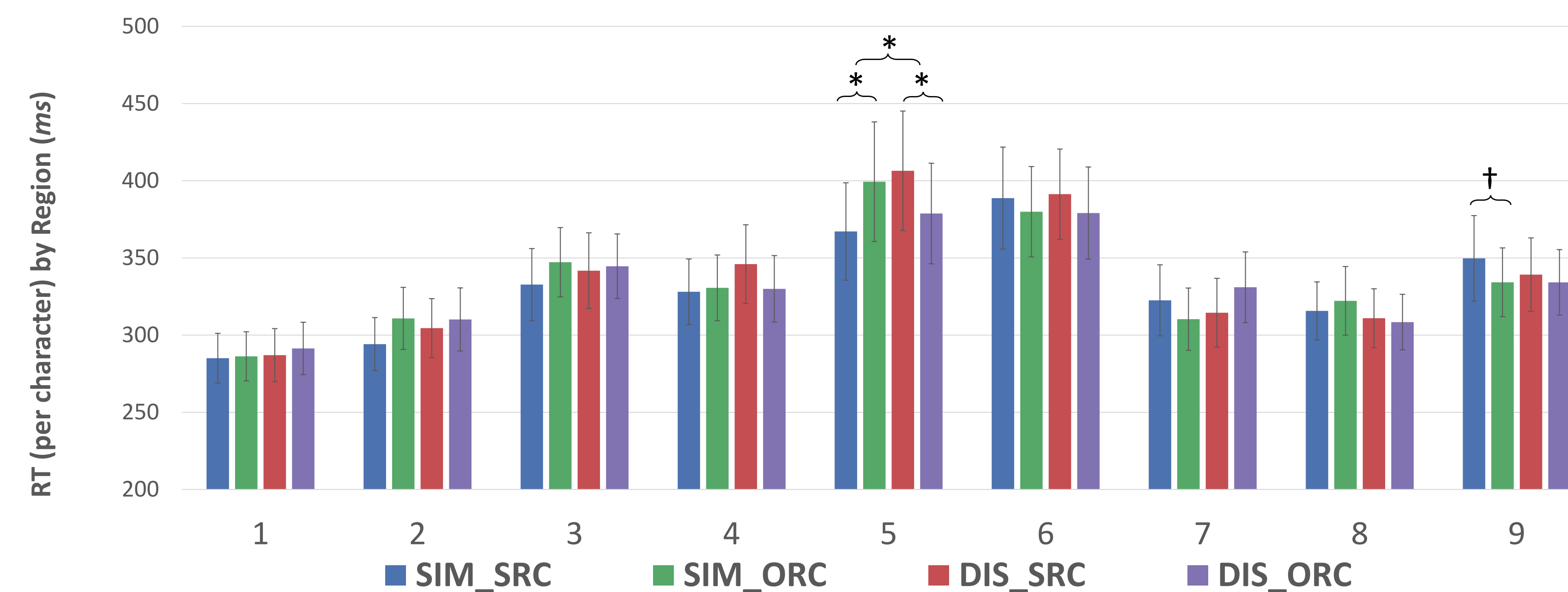
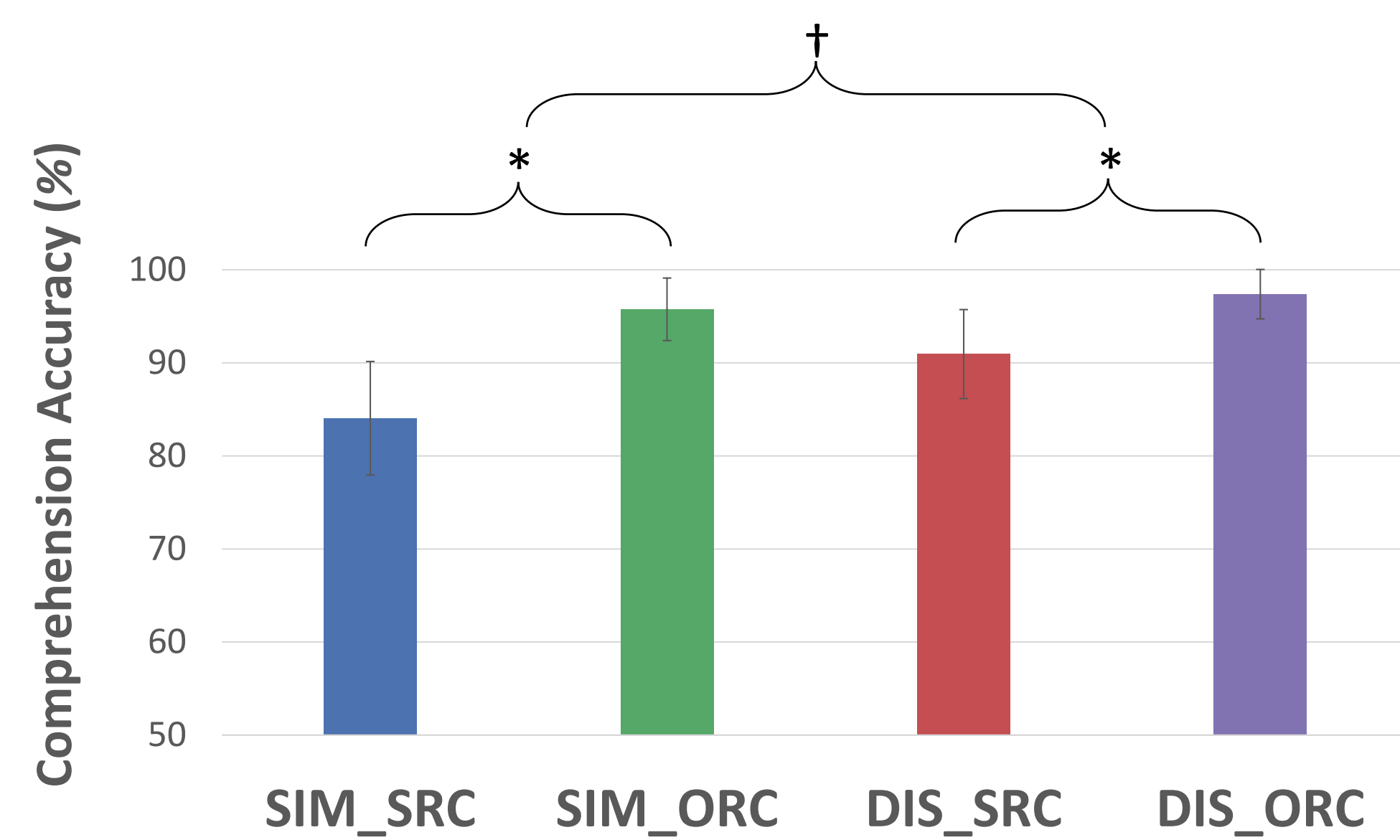
Object Relative Clause: Similar (vs. Dissimilar)



(Chinese Versions)



Results



†: $p < 0.1$; *: $p < 0.05$

Conclusion

- Online measure indicated that in comparison to English language, SRCs are harder to understand than ORCs in Chinese, replicating many previous findings (cf. Hsiao & Gibson, 2003), however, pragmatic information such as the gender roles of the characters embedded in sentence was not immediately taken into consideration to impact online sentence parsing;
- Offline measure revealed a drastically different story such that comprehension was differentially impaired when the to-be-integrated concepts are similar vs. dissimilar under complex sentence structure (SRCs in Chinese), supporting the claims made by similarity-based interference theories of sentence processing;
- Further studies are under way to investigate the potential online impact of pragmatic information on complex sentence processing using more complicated syntactic structures.

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Footnote

¹In sharp contrast to English language, Chinese SRCs are generally harder than ORCs to process and to understand (Hsiao, 2003).