

Does Head Directionality Matter? L1 Effects on Greek Sentence Comprehension and Processing

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A substantial body of research in second language (L2) acquisition and processing has shown that subject relative clauses (SRCs) are easier to comprehend and process than object relative clauses (ORCs). However, studies of languages with head-final relative clauses (RCs) (e.g., Chinese, Turkish) have yielded mixed findings, with some reporting an ORC advantage (e.g., [1], among others). While the hierarchical relation between the head noun and the gap is similar across languages, head-initial and head-final RCs differ in their linear order, leading to different explanations for RC processing difficulty. The present study tests whether L2 RC processing is shaped by structural constraints shared across languages or whether L1-specific processing strategies influence L2 learners' interpretation of RC dependencies. The study takes into account predictions from (a) Relativized Minimality ([2]), (b) the Structural Distance Account ([3]), (c) the Dependency Locality Theory ([4]), and (d) the Linear Distance Theory ([5]). Fifty-four intermediate (mean age: 28.7, SD: 6.9) and fifty advanced adult L2 learners of Greek (mean age: 33.6, SD: 8.7) were divided into two groups based on whether their L1 featured head-initial or head-final RCs. The learners' L1s included Chinese, Turkish, Japanese, and Korean (head-final relative clauses), as well as English, French, Arabic, Hebrew, Spanish, Ukrainian, Russian, and Bulgarian (head-initial relative clauses). A control group of 56 native speakers (NSs) of Greek was also included (mean age: 30;9, SD: 7.58). Participants completed an offline sentence-picture matching task measuring comprehension accuracy and an online self-paced reading task measuring real-time processing involving restrictive right-branching Greek SRCs and ORCs introduced by the relative complementizer *pu* ('that'). Accuracy and reading times were analysed using (generalised) linear mixed effects models. The study predicted that, if L2 processing is driven by hierarchical structure, both learner groups would show an SRC advantage. If L1-specific processing strategies transfer to Greek, learners with head-final L1s may show a reduced SRC advantage compared with learners whose L1s share the similar head-initial structure of Greek. The results indicated that NSs showed the expected SRC advantage, and both L2 learner groups exhibited the same overall pattern, with higher accuracy and faster reading times for SRCs (all comparisons across groups: $p < .001$). However, learners with head-final RCs showed lower accuracy on SRCs ($p = .0016$) and shorter reading times for ORCs ($p = .0011$) compared with learners with head-initial RCs in their L1s. These findings suggest that, although structural constraints lead to an overall SRC advantage, L1 RC structure may modulate this advantage during L2 comprehension and online processing.

References

- [1] Kunyu Xu, Jeng-Ren Duann, Daisy L. Hung, Denise H. Wu. Preference for object relative clauses in Chinese sentence comprehension: evidence from online self-paced reading time, *Frontiers in Psychology*, 10, 2019.
- [2] Luigi Rizzi. Locality and the left periphery, in A. Belletti (ed.), *Structure and Beyond*, 223–251. New York: Oxford University Press, 2004.
- [3] William O'Grady. *Syntactic Development*. Chicago: University of Chicago Press, 1997.
- [4] Edward Gibson. The dependency locality theory: a distance-based theory of linguistic complexity, in A. Marantz, Y. Miyashita & W. O'Neil (eds), *Image, Language, Brain: Papers from the First Mind Articulation Project Symposium*, 94–126. The MIT Press, 2000.
- [5] Roger Hawkins. Do second language learners acquire restrictive relative clauses on the basis of relational or configurational information?, *Second Language Research*, 5, 155–188, 1989.