

# Examining the training effects of the maze task for native language development.

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This paper aims to report a study that investigated the effects of linguistic training with a maze task on high school students' knowledge of a low-frequency construction of their native language. Recent psycholinguistic evidence suggests that repeated exposure to this type of structure can modify knowledge and behavior in relation to them (Wells et al., 2009; Fine et al., 2013; Fraundorf & Jager, 2016). More specifically, processing those constructions repeatedly seem to lead speakers to adapt their syntactic expectations and reduce their processing disadvantage. Enkin & Forster (2014) have proposed using the maze task as an L2 training instrument that exposes participants repeatedly to linguistic structures in an engaging and playful manner. Considering those previous studies, we investigated whether exposure to a low-frequency construction in the L1 through a maze task used as a pedagogical instrument could facilitate the manner high school students process and perceive it. We analyzed the behavior of 82 Brazilian Portuguese speakers towards different patterns of pronoun placement in acceptability judgment and self-paced reading tasks that were used as pretests, immediate posttests, and delayed posttests. Our intervention was a four-session maze task training with 30 sentences that had third-person object pronouns in enclitic position (e.g., *Maria pegou a bola e lançou-a longe/ Maria caught the ball and threw it far away*). This structure has fallen into disuse in Brazilian Portuguese and is usually acquired later in life through schooling (Kato; Cyrino & Corrêa, 2009; Nunes, 2015) since it is more recurrent in formal variants of the language. Our results indicate that the students who underwent the maze task training had a significant improvement in terms of acceptability rates for the trained structure from the pretest to the immediate posttest ( $p < .001$ ) and from the immediate posttest to the delayed posttest ( $p < .001$ ). However, there was not a significant difference in the self-paced reading task, neither on the target nor on the spillover region. We interpret that the repeated exposure to sentences with third-person object pronouns in enclitic position in a ludic activity that requires engagement and attention led speakers to become more familiarized with this construction, which can be taken as evidence that the maze task has the potential to be beneficial to native language development. We also discuss how conducting the self-paced reading tasks in group sessions with teenagers may have accounted for our results in terms of reaction time.

Examples

Target sentences

**Third-person object pronoun in enclitic position:**

Maria pegou a bola e **lançou-a** longe

Maria caught the ball and **threw-it.ACC** far

*'Maria caught the ball and **threw it** far away'*

Control sentences:

**Third-person object pronoun in proclitic position:**

Maria pegou a bola e **a** lançou longe

Maria caught the ball and **it.ACC** threw far

*'Maria caught the ball and **threw it** far away'*

**Third-person subject pronoun used as object in enclitic position:**

Maria pegou a bola e lançou **ela** longe

Maria caught the ball and **threw it.NOM** far

*'Maria caught the ball and **threw it** far away'*

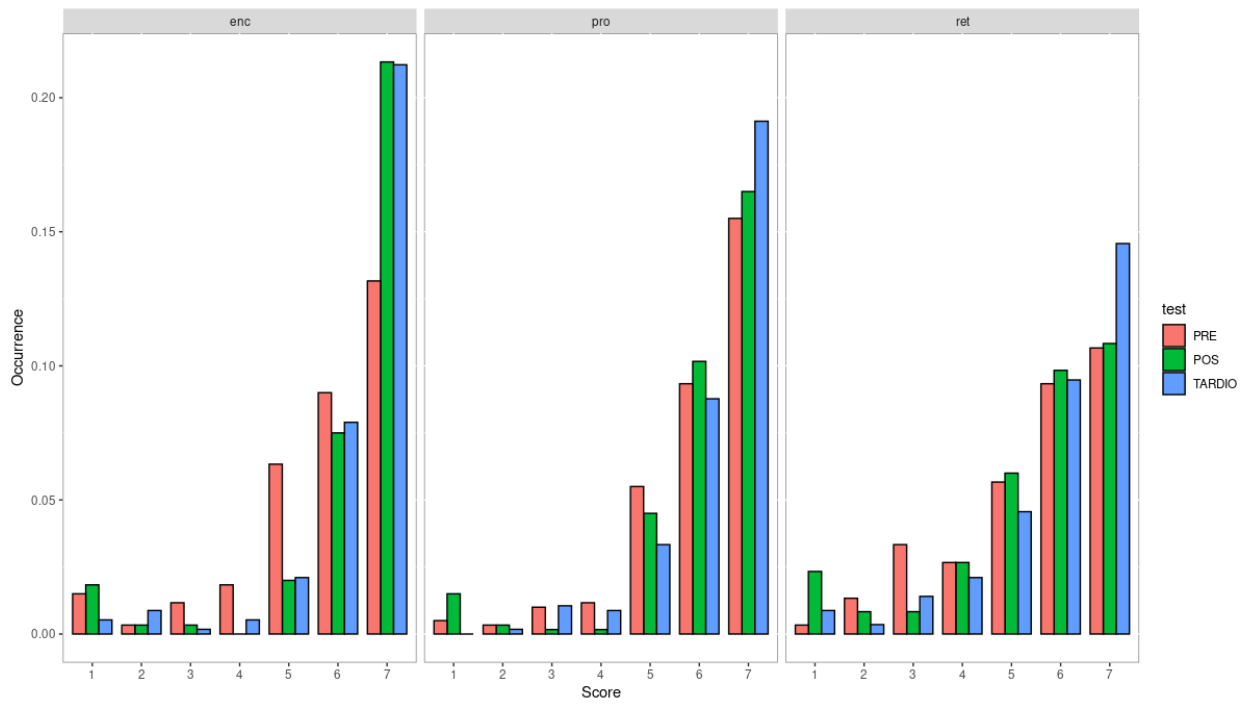


Figure 1: Acceptability judgment for object pronouns in enclitic (*enc*) and proclitic (*pro*) position and subject pronouns in enclitic position (*ret*) in prettest (*pre*), immediate posttest (*post*), and delayed posttest (*tardio*).

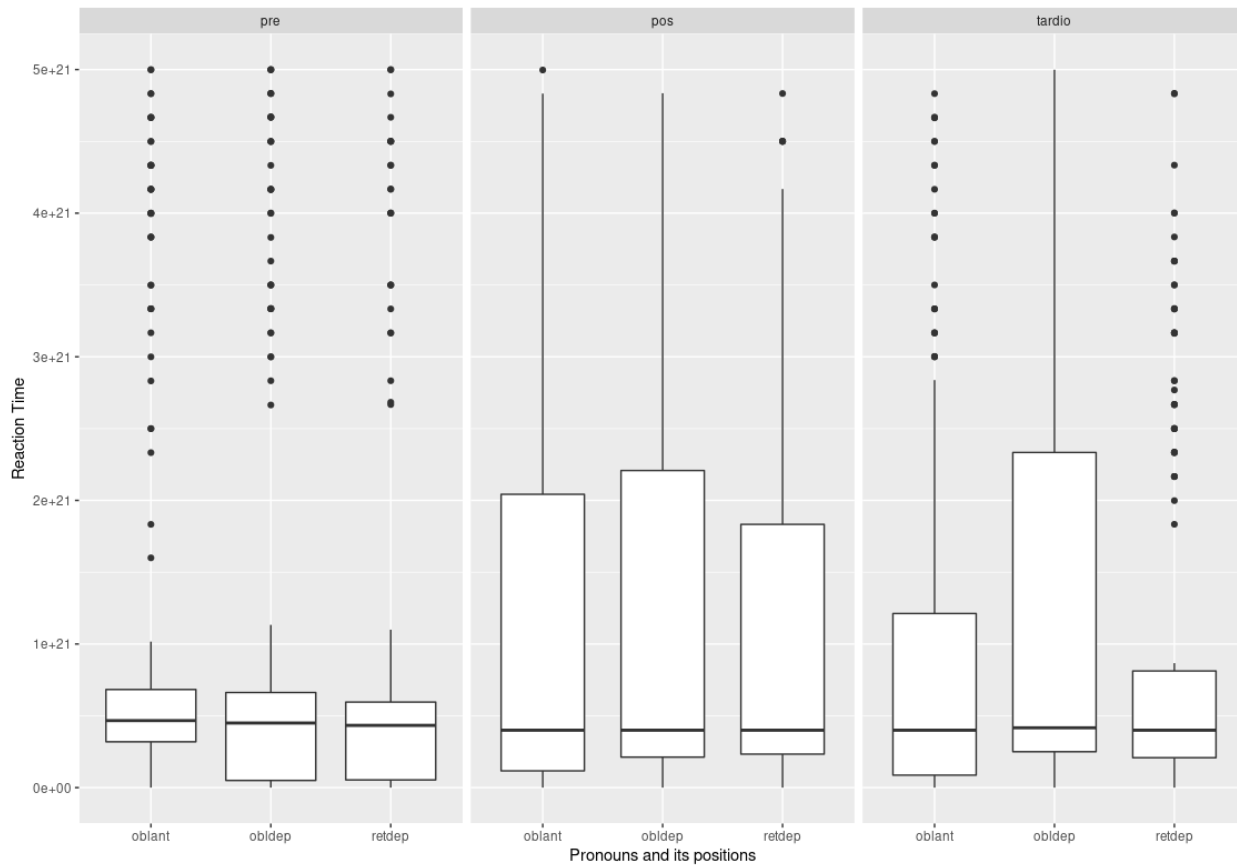


Figure 2: Target reaction times in self-paced reading task for object pronouns in enclitic (*oblant*) and proclitic (*obldep*) position and subject pronouns in enclitic position (*retdep*) in prettest (*pre*), immediate posttest (*post*), and delayed posttest (*tardio*).

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