

## Short- and long-term L2 syntactic learning through verb-repetition priming

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Syntactic priming can promote the learning of syntactic forms in L2 learners [1, 2], but the mechanisms underlying such learning are not fully understood. Under implicit learning accounts [3], priming operates through error-based adjustments that increase the subsequent use of a target structure. However, syntactic priming is stronger when primes and targets share the verb (i.e., there is a lexical boost [4]), which is typically short-lived and may not reflect abstract syntactic adaptation [5]. It therefore remains unclear whether a priming task with verb repetition promotes learning of a new L2 syntactic form, and whether any such effect persists over longer periods of time.

We investigated these questions by asking whether L1-Spanish learners of English ( $N = 141$ ) could increase their use of the double-object (DO) dative construction (e.g., *A cowboy gives a pirate a cup*) through syntactic priming with prime-target verb repetition. The DO structure provides a useful test case for learning because English allows both DO and prepositional-object (PO) datives (e.g., *A cowboy gives a cup to a pirate*), whereas Spanish allows only the PO equivalent. In a spoken production study, participants described target dative events at three time points: a pretest (T1) administered before the priming task, an immediate posttest (T2) right after the priming task, and a delayed posttest (T3) one week later. At all three tests, target descriptions were produced without an immediately preceding prime and target items were rotated across tests so that participants never described the same target more than once. This design allowed us to measure immediate priming effects (within the priming task), short-term learning (T1 vs. T2), and long-term learning (T1 vs. T3). To distinguish priming-based learning from test-retest effects, participants were randomly assigned to either an experimental group ( $N = 71$ ) or a control group ( $N = 70$ ). English proficiency varied considerably across participants but was comparable between groups. All participants completed the priming task, but differed in the type of prime sentences they were exposed to. Experimental participants described target events immediately after DO/PO primes, whereas control participants described the same targets after existential sentences that mentioned the same characters and objects but without providing a dative structure (e.g., *There is a cowboy, a cup, and a pirate*).

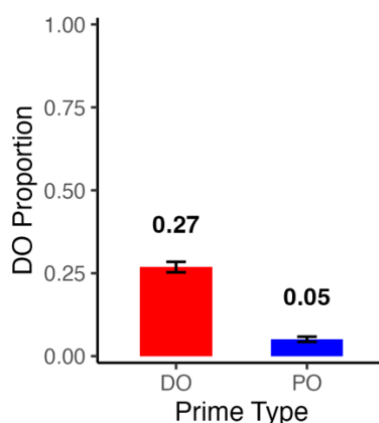
We found a strong immediate priming effect in the experimental group in the priming task ( $\beta = 2.79$ ,  $SE = 0.46$ ,  $z = 6.02$ ,  $p < .001$ ; Figure 1). Critically, there was a Group  $\times$  Test interaction for T1 vs. T2 ( $\beta = 5.24$ ,  $SE = 1.28$ ,  $z = 4.10$ ,  $p < .001$ , Figure 2), indicating short-term learning of the DO construction in the experimental group. This effect was reduced and only marginal at T1 vs. T3 ( $\beta = 4.21$ ,  $SE = 2.23$ ,  $z = 1.88$ ,  $p = .059$ ), suggesting that long-term learning was attenuated over one week. L2 proficiency did not modulate the learning effect at either time point.

These findings provide evidence that a priming task with verb repetition can promote syntactic learning of an L2 structure that is not supported by the learners' L1. However, the attenuation of this effect at T3 suggests that long-term learning from lexically-based priming may be relatively weak, possibly because part of the effect depends on lexically dependent rather than fully abstract syntactic representations.

## References.

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**Figure 1.** Mean DO responses by Prime Type in the syntactic priming task. Error bars show 95% confidence intervals.



**Figure 2.** Mean DO responses for the control and experimental groups at pretest (T1), immediate posttest (T2), and delayed posttest (T3). Thin lines represent individual participant trajectories, whereas thick lines and filled circles represent group means. Error bars show 95% confidence intervals.

