

## Cross-Linguistic Influence and Degrees of Grammaticality: Priming Null and Overt Subject Pronouns in Bilingual Heritage Children

Cross-linguistic influence (CLI) is a central phenomenon in bilingual and heritage language acquisition, often accounting for their differential linguistic outcomes. Structural priming, the tendency to reuse syntactic structures previously encountered, has been proposed as a mechanism underlying CLI [1]. In bilingual contexts, this can result in the production of dispreferred or even ungrammatical structures [2],[3],[4]. However, it remains unclear whether the degree of grammaticality (pragmatic infelicity vs. ungrammaticality) affects the susceptibility of these structures to priming, and thus the extent of CLI.

To explore this, we tested Italian heritage children in Germany, focusing on the production of null and overt subject pronouns (OSPs) in their two languages. Bilinguals acquiring a null subject language (e.g., Italian) alongside a non-null subject language (e.g., German) have been found to produce both infelicitous OSPs in pragmatically inappropriate contexts in the null subject language [5],[6], but also ungrammatical null subject pronouns in non-null subject languages [7]. In this study, we test whether both types of structures can be primed: infelicitous OSPs in Italian (1) and ungrammatical null subjects in German (2).

- (1) ?Marco festeggia il suo compleanno e poi **lui** spegne le candeline.  
Marco celebrates his birthday and then he blows out the candles.
- (2) \*Marco feiert seinen Geburtstag und dann pustet  $\emptyset$  die Kerzen aus.<sup>1</sup>  
Marco celebrates his birthday and then blows out the candles.

We conducted two within-language priming experiments, one in German and one in Italian, with the same group of children, to address the following research questions:

**RQ1:** Can infelicitous/ungrammatical structures (Italian OSPs/German null subjects) be primed within a language?

**RQ2:** Does the degree of grammaticality (infelicitous vs. ungrammatical) affect priming magnitude?

We hypothesized that if infelicitous/ungrammatical structures can be primed, their use should increase following exposure to corresponding primes. We also expect the grammatical status of the structure to influence the magnitude of priming effects. Two scenarios are possible. On the one hand, speakers might produce more infelicitous than ungrammatical structures, given that bilinguals are generally less sensitive to pragmatic infelicity than to syntactic ungrammaticality [8]. On the other hand, priming an ungrammatical structure may trigger a stronger surprisal effect than priming an infelicitous one, potentially leading to a stronger learning effect for ungrammatical structures over the course of the experiment [9].

Children completed both priming tasks in one session (task order counterbalanced). Each task started with a pre-test, followed by a priming phase and a post-test. In the priming phase, children had to describe pictures after hearing prime sentences containing the target structure (OSPs in Italian; null subjects in German). In the pre- and post-test, children described new pictures after baseline primes (e.g., sentences with a new referent). In total, they described 24 pictures and answered memory questions within trials to maintain engagement.

So far, 26 children have been tested (15 Female, age range 6-13,  $M = 9.25$ ,  $SD = 2.05$ ). Infelicitous/ungrammatical structures were rarely produced overall: (i) Ungrammatical null subjects in German:  $M = 0.11$ ,  $SD = 0.31$ ; (ii) Infelicitous OSPs in Italian:  $M = 0.03$ ,  $SD = 0.18$ ; see Figure 1. We modeled the likelihood of producing an inappropriate structure using a Generalized Linear Mixed Model, with *structure type* as the dependent variable (appropriate vs. infelicitous/ungrammatical, coded as 0 and 1). Predictors included *prime phase* (pre-test,

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<sup>1</sup> We tested only sentences containing “und dann”, since the use of only the coordination leads to grammatical sentences in German such as *Marco feiert seinen Geburtstag und pustet  $\emptyset$  die Kerzen aus.*

priming, post-test), *language* (German vs. Italian), and their interaction. Children produced more inappropriate structures in the *prime phase* ( $\beta=0.81$ ,  $SE(\beta)=.42$ ,  $z=1.91$ ,  $p = .05$ ) and in the *post-test* ( $\beta=0.92$ ,  $SE(\beta)=.46$ ,  $z=1.99$ ,  $p = .04$ ) compared to the pre-test. Moreover, children produced more ungrammatical forms in German (e.g., ... *und dann pustet Ø die Kerzen aus* ‘and then blows out the candles’) than infelicitous forms in Italian (e.g., ... *e poi lui spegne le candeline* ‘and then he blows out the candles’).

These findings suggest that structural priming can elicit both infelicitous and ungrammatical forms in bilingual children, albeit at low frequencies. Interestingly, the strongest effect emerged for ungrammatical structures (null subjects in German), suggesting that children may be particularly sensitive to such primes, possibly due to the “surprisal effect” triggered by a mismatch between their predictions and the ungrammatical input. Importantly, priming effects appear to persist beyond the immediate context of the priming experiment, consistent with [10]. Our results indicate that structural priming may function as a mechanism of CLI, particularly when it results in ungrammatical output. Data collection is ongoing, and we will present updated findings at the conference, including possible effects of age and language dominance.

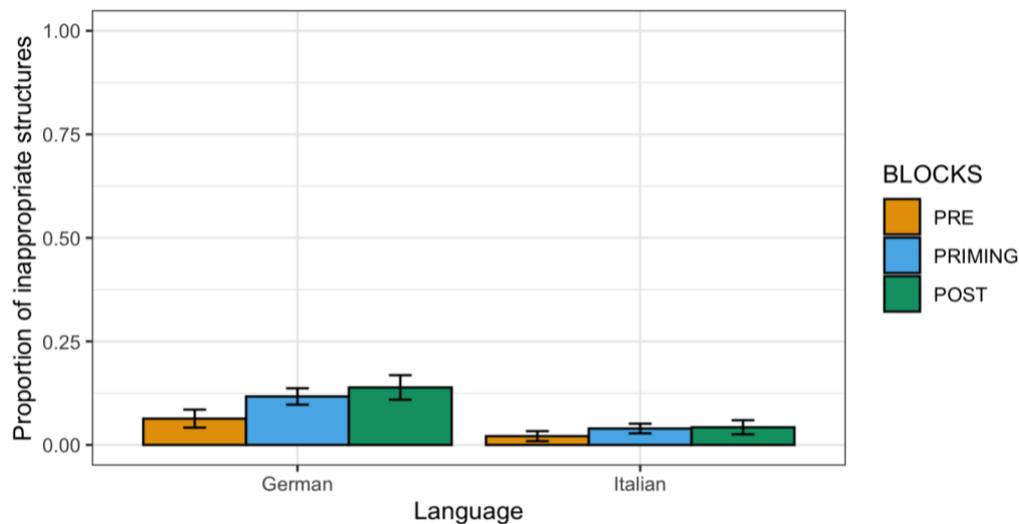


Figure 1: Proportion and standard errors (+/-1) of produced structures (German ungrammatical null subjects; Italian infelicitous OSPs) across prime phase (pre-test vs. priming vs. post-test) and language (German vs. Italian).

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