How do native and non-native grammars affect multilingual pronoun comprehension?

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Previous studies have shown that multilingual speakers are influenced by their native (L1) and non-native (L2) grammars when initially learning an additional language (La) [1,2]. Do these effects extend to more proficient multilinguals during online sentence comprehension? Here we use speeded judgment (Experiment 1) and self-paced reading tasks (Experiment 2) to examine the processing of German possessive pronouns sein/ihr ('his/her'; see [3,4] for earlier studies on L2 English). We assess multilinguals’ sensitivity to gender mismatches (e.g. Frau Schmidt küsste ihre/*seine Mutter; ‘Mrs. Schmidt kissed her/*his mother’). The grammatical constraints of possessive pronouns differ cross-linguistically, such that gender agreement with a preceding possessor noun (e.g. Frau Schmidt) is required in German and English, but not in Spanish. To investigate whether native and non-native grammars differentially affect multilingual participants' judgments and reading profiles in German, we compare two groups of advanced speakers of La German (matched in their German proficiency and age of acquisition) with inverse L1–L2 distributions: a group with L1 SPANISH–L2 ENGLISH, and a group with L1 ENGLISH–L2 SPANISH. We show that the reading profiles of both groups are modulated by their L1 grammar, while L2 proficiency selectively affects participants' judgment accuracy but not their reading times (Figure 1). These effects show that multilinguals can resort to their L1 knowledge during La reading comprehension, but that L2 knowledge might only be available in situations that encourage the use of conscious linguistic knowledge, such as acceptability judgment tasks. We suggest that this might occur because the procedures available in a L2 grammar are likely to be less automatized and might need to be consciously invoked in order to inform La processing during reading comprehension.
Figure 1. (A) L2 influence in Experiment 1. Participants read sentences with gender 
(mis)matching possessive pronouns (SOA=500ms p/word) and judged the sentences as acceptable 
or unacceptable. L2 effects were selective and facilitatory: L1 Spanish participants were less likely 
to accept infelicitous sentences as their English proficiency increased (a facilitatory effect) 
whereas L2 proficiency did not modulate the judgments of L1 English speakers. The x-axis shows 
L2 proficiency ratings on a 0–100% scale, with vertical black bars representing the number of 
participants at each point of the scale. (B) L1 influence in Experiment 2. Participants read 
sentences word-by-word and answered comprehension questions. After encountering a gender-
mismatching pronoun, L1 English speakers showed stronger reading disruptions than Spanish 
speakers (post-pronoun regions highlighted in gray), suggesting that they were more sensitive to 
infelicitous pronouns. Error bars indicate the standard error of the mean. Sample sentence: 
Frau/Herr Schmidt küsste ihre/seine Mutter bei dem letzten Familientreffen (‘Ms./Mr. Schmidt 
kissed her/his mother at the last family reunion’).

References