Interactions between syntactic and lexical gender congruency in L1 Spanish-L2 German speakers

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The non-selective nature of bilingual lexical access often results in cross-linguistic influence (CLI) in lexical processing; however, such effects are not as evident at the syntactic level. While research on L2 sentence production suggests a high degree of L1-L2 interactivity also at a structural level (e.g. Hartsuiker & Bernolet, 2017), work on L2 sentence comprehension often reports uniform processing patterns despite L1 differences. These discrepancies in CLI have led to interest in the interaction between lexical and syntactic processing in bilinguals, with available evidence showing that interactive lexical processing can impede target syntactic processing (e.g. Hopp & Lemmerth, 2018). Such findings have led to the *Lexical Bottleneck Hypothesis* (Hopp, 2018), according to which incomplete parsing partially arises from lexical processing (i.e. slowdowns and CLI) in bilinguals.

This empirical study extends previous work on lexical-syntactic interactions in L2 sentence processing by examining the detection of ungrammaticality and type of L1-L2 grammatical gender mapping. 145 adult L1 Spanish speakers with intermediate-advanced L2 German proficiency and 111 L1 German speakers completed a 64-item German self-paced reading task focusing on noun gender congruency and word order with attributive adjectives. Target nouns were either congruent (same gender), incongruent (masculine-feminine mismatches) or L2 neuter (Spanish masculine/feminine). These nouns were paired with attributive adjectives appearing either prenominally (grammatical in German, ungrammatical in Spanish; see (1a)) or postnominally (ungrammatical in German, grammatical in Spanish; see (1b)).

Results showed that the detection of ungrammaticality in the L2 was influenced by L1-L2 gender congruency as well as L2 proficiency level. Only high-proficiency L2 adults detected ungrammaticality in target NPs where syntactic ungrammaticality interacted with grammatical gender. For these speakers, findings revealed earlier and stronger sensitivity to ungrammatical syntax with gender congruent nouns compared to delayed effects with gender incongruent ones (p=.012). With neuter nouns, the advanced group displayed earlier and more pronounced sensitivity to ungrammatical syntax than for incongruent nouns (p<.001), thus indicating that neuter nouns patterned with congruent ones.

This study shows cross-linguistic lexical gender effects in the detection of syntactic ungrammaticality, even when the latter is independent of gender information. Furthermore, it highlights the important role of the specific type of cross-linguistic lexical overlap in L2 sentence processing, illustrating that contrasts in L1-L2 features go beyond a mere binary same/different distinction. Though both incongruent and neuter noun NPs would be cross-linguistically different on a binary scale, these data clearly show significantly less interference at the level of lexical processing for L2 nouns belonging to a gender class without analogue in the L1 (neuter). The present findings further the need for an integrated and more nuanced study of the bilingual language system, encompassing both the bilingual mental lexicon and the L2 parser.

References

Hartsuiker, R. J., & Bernolet, S. (2017). The development of shared syntax in second language learning. *Bilingualism, 20*(2), 219-234.

Hopp. H. (2018). The bilingual mental lexicon in L2 sentence processing. *Second Language, 17*, 5-27.

Hopp, H., & Lemmerth, N. (2018). Lexical and syntactic congruency in L2 predictive gender processing. *Studies in Second Language Acquisition, 40*(1), 171-199.

Examples

(1a)   **Attributive adjectives in prenominal position**

Ich bin dankbar, denn <u>eine neue Schule</u> ist in dem Altbau am Marktplatz.

I am thankful, because a new school is in the old-building at-the market-square

'I am grateful because there is a new school in the old building on the market square.'

(1b)   **Attributive adjectives in postnominal position**

*Ich bin dankbar, denn <u>eine Schule neue</u> ist in dem Altbau am Marktplatz.

I am thankful, because a school new is in the old-building at-the market-square

'I am grateful because there is a school new in the old building on the market square.'