

## **The effect of non-native German on grammatical gender retrieval in L1 Polish**

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A number of studies have demonstrated that the processing of grammatical gender in L2 is affected by the grammatical gender distinctions acquired in L1 (for an overview, see Sá-Leite, Fraga & Comesaña 2019). However, still little is known about reverse interactions in this domain.

Hence, the aim of this study is to explore the effect of an L2 learned in instructed settings on the retrieval of grammatical gender in L1 in the case of Polish-German bilinguals. The study also seeks to determine the role of some noun characteristics, such as frequency and L1-L2 similarity (cognateness), on gender retrieval among bilinguals in their L1.

Two groups of adult Polish speakers of L2 German participated in an online gender decision task: (i) 20 highly proficient learners and teachers of German (C2 level), and (ii) 20 advanced learners of L2 German (B1 level). Different conditions with altogether 90 nouns were created, in which gender-congruency was manipulated between L1 Polish and L2 German. Nouns in each condition were controlled for length, similarity (Levenshtein distance), and frequency in both languages (corpus data). Half of them were Polish-German cognates.

Repeated measures analyses of variance were run on reaction times. The factors were Congruency (congruent vs congruent cognate vs incongruent) and Gender (masculine vs feminine vs neuter). The Bonferroni test was applied as a post-hoc test when significant effects were found. To assess the role of the noun characteristics, a linear regression analysis was conducted, in which all nouns were analysed together.

The analyses revealed a significant interaction between Congruency and Gender, but only in the group of highly proficient learners (C1). The reaction times for gender-congruent nouns were significantly shorter than the reaction times for gender-incongruent nouns. Importantly, this effect was found with respect to all three gender values. Cognateness turned out to have no effect on reaction time. The regression analysis showed no significant associations between the variables and the reaction times. Gender decisions were thus not made faster when the nouns were more frequent in Polish and German, or more similar between these languages.

These data thus show that the retrieval of grammatical gender in L1 can be affected by L2 learned in instructed settings, at least if the two gender systems are symmetrical. However, a high level of L2 proficiency seems to be required in order for cross-linguistic activation to occur. Moreover, the noun characteristics that have been found to be influential in bare noun recognition in previous research, i.e., frequency and cognateness (e.g., Dijkstra 2005), do not have any impact on gender assignment to bare nouns in L1.

### **References**

Dijkstra, T. (2005). Bilingual visual word recognition and lexical access. In J. F. Kroll & A. M. de Groot (Eds.), *Handbook of bilingualism: Psycholinguistic approaches*. (pp. 179-201). Oxford: Oxford University Press.

Sá-Leite A. R., Fraga I., & Comesaña M. (2019). Grammatical gender processing in bilinguals: An analytic review. *Psychonomic Bulletin & Review*, 26(4), 1148-1173.