

Language experience and cognitive effects on L2 processing of gender and number agreement

Adult learners demonstrate a persistent difficulty acquiring gender agreement (Bartning, 2000; Dewaele & Véronique, 2001). Late bilinguals' reduced sensitivity to morphosyntactic information has been associated with several factors, including age of acquisition (Hawkins & Chan, 1997; Clahsen & Felser, 2006), language proficiency (Ojima, Nakata, & Kakigi, 2005), cross-linguistic similarity (Sabourin, 2003; Tokowicz & MacWhinney, 2005), reliance on semantic rather than morphophonological and syntactic cues (Lew-Williams & Fernald, 2007), and limitations of cognitive resources such as working memory (McDonald, 2006). Despite much research, the relative importance and interaction of these factors is still unclear and online studies examining these issues with noun-adjective agreement are scarce. The present studies examine the role of three factors on adults' L2 processing of noun-adjective gender and number agreement: (1) age of acquisition (whether late bilinguals can show native-like processing patterns), (2) language experience (beginners vs. intermediates; immersed vs. not-immersed), and (3) cognitive load (animate vs. inanimate nouns; gender vs. number agreement).

In Experiment 1 (Sagarra & Herschensohn, 2011), beginning and intermediate adult learners of Spanish and Spanish monolinguals completed a non-cumulative moving window task (online) and a grammaticality judgment task (offline) containing sentences with noun-adjective gender agreement and disagreement with animate and inanimate nouns. Experiment 2 (Sagarra & Herschensohn, 2013) mirrors Experiment 1 but compares grammatical gender with number agreement/disagreement. Experiment 3 (in progress) uses eye-tracking methodology to investigate how immersed and non-immersed learners process grammatical gender and number agreement/disagreement. Taken together, the results of these experiments reveal that Spanish monolinguals and intermediate learners were sensitive to all agreement violations, showing that adult learners can develop processing patterns qualitatively similar to those of native speakers. In contrast, the beginners were insensitive to agreement violations in online tasks, despite 180 hours of instruction. Also, immersed learners were more sensitive to gender agreement violations than non-immersed learners. With regard to cognitive load, (a) natural gender agreement was more costly than grammatical gender agreement (intermediates, Spanish monolinguals), because animate nouns have two genders but inanimate nouns have one, and (b) gender disagreement was more costly than number disagreement (intermediates), because Spanish nouns have more irregular gender than number inflections (lexical accounts: Domínguez et al., 1999) or because gender disagreement forces the processor to return to the lexical identification stage but number failure merely requires checking of the final processes of syntactic recognition (Hernández et al., 2007). These findings shed light on current representational and computational models of second language acquisition.