Gender agreement in Native and Heritage Greek: an attraction study

Introduction A growing body of literature explores attraction errors that form agreement violations in the presence of an intervener; a feature of the intervener (e.g. number) differs from that of the head and its target leading to the illusion of grammaticality. Attribution errors might occur during production and might go undetected in real-time comprehension (e.g. Wagers et al 2009, Vigliocco & Nicol 1998). Compared to number attraction, work on gender attraction is more recent (e.g. Tucker et al. 2016; for Arabic; and Slioussar and Malko 2016 for Russian). Most studies suggest that only ungrammatical sentences can be interpreted as grammatical (“grammatical asymmetry”) and that the markedness of the intervener does not modulate attraction. Meanwhile, research on heritage acquisition has pointed out that gender agreement errors are more robust in production tasks than in off-line comprehension tasks for various groups of Heritage Speakers (HSs) (e.g. Montrul 2008), although highly proficient HSs perform at ceiling. However, in real-time sentence comprehension, little is known so far with respect to how HSs process gender agreement and how they react to attraction manipulations.

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Aim of the study This study examines the processing of gender attraction by Greek Native Speakers (NSs) and HSs of Greek living in Germany targeting two structurally different configurations namely, adjectival predication and pronominal reference. The aim is to explore i) whether gender attraction occurs in Greek, which aligns with the view that attraction occurs cross-linguistically, ii) whether the strength of attraction is modulated by the type of the agreement target, and iii) whether HSs exhibit knowledge of gender agreement rules during on-line sentence comprehension and, if this is the case, whether their attraction patterns are stronger, weaker, or equal to monolinguals’.

Method The pool of participants comprised of 40 adult Greek HSs raised and living in Germany namely, second generation immigrants exposed from birth to Greek at home and sequentially or simultaneously to German (age of onset to bilingualism: 0-4 years old) and 40 NSs in Greece. Gender agreement violations between a direct object and a past participle were tested by manipulating the gender value of the head, the intervener, as well as the target of past-participles (Experiment 1) and object-clitics (Experiment 2). All nouns, heads, and interveners were inanimate neuter or inanimate feminine. Participants listened to sentences (followed by comprehension questions) segment by segment (self-paced listening) by pressing a button on the response box while their Reaction Times (RTs) were measured. The rationale of the task is that longer RTs in ungrammatical sentences indicate sensitivity to ungrammaticality compared to their grammatical counterparts. If attraction occurs, grammaticality will be modulated by the gender value of the intervener.

Results Findings from Experiment 1 show that the two groups exhibited different reaction time patterns with respect to the variables tested. The crucial interaction between grammaticality and intervener was reliable for NSs and only for feminine heads. In the post-critical segment, strong grammaticality effects (longer RTs for all ungrammatical sentences irrespective of the intervener) were captured implying that NSs recovered from attraction. On the other hand, HSs were able to process ungrammaticalities across the board in the critical as well as the post-critical region (longer RTs for all ungrammatical sentences); grammaticality effects were not modulated by the intervener suggesting that HSs were less prone to attraction compared to NSs. Turning to Experiment 2, the attraction effect was significant in the post-critical segment, even though it was not modulated by group or head. Exploratory analysis showed that only feminine heads revealed attraction patterns in NSs in line with Experiment 1 and that HSs did not exhibit any reliable effect.

Discussion Overall, the results suggest that HSs were less vulnerable to attraction compared to NSs. This could be due to different strategies employed during memory retrieval and more data needs to be collected to confirm this. The flat RTs of HSs in Experiment 2 suggest that they might exhibit processing difficulties with gender agreement at the external interface (clitics) than the internal one (adjectival predication) (Osch et al. 2014). The greater sensitivity to attraction with feminine heads in NSs can be captured by the criterion of prototypicality; inanimate nouns are prototypically neuter (Anastasiadi-Simeonidi and Chila-Markopoulou 2003). This finding suggests that certain information carried by the head plays a crucial role in regulating the strength of attraction (Slioussar & Malko 2016).