

**Eye tracking agreement processing and attraction errors in the aging brain:
A subject-verb agreement comprehension study in Spanish**

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Prediction and ungrammaticality detection are fundamental for efficient language processing (Kuberperg & Jaeger, 2016), but we know little about how they evolve through age. *Crystallized* and *fluid* abilities are two key factors that have been found to affect lexical and ungrammaticality detection in both young (YA) and older adults (OA). More precisely, in a first experiment the results revealed that when detecting agrammaticalities, a distinct grammaticality pattern arises for OA with respect to YA, showing higher processing difficulties in the processing of the agrammatical sentences for the seniors (Cano-Sánchez et al., 2020), according to the *Risky Reading Strategy* (Rayner et al., 2016). But why?

In a second work-in-progress experiment, we use the agreement attraction paradigm, a classical phenomenon to generate errors by an illusion of grammaticality, in order to investigate the effects of aging in the ungrammaticality detection and the processing of agreement computation during sentence comprehension. In this particular case, we will manipulate subject-verb agreement computation in Spanish to test whether older adults are more susceptible to agreement attraction errors than younger adults (Question 1) and to what extent do cognitive abilities influence the computation of agreement during reading comprehension in Spanish (Question 2). Based on our first experiment and on previous studies (Reifegerste et al., 2017) we expect that older adults have more agreement attraction errors than younger adults (Hypothesis 1) and that the modulation of the agreement computation due to the influence of cognitive abilities is bigger for OA compared to YA (Hypothesis 2).

The eye-movement reading patterns of 40 young adults (18-34 y.o.) and 40 older adults (>60) healthy native Spanish speakers will be recorded. In addition, we will also control for Working Memory Capacity (WMC), Executive Control (EC) and Print Exposure (PE), since all these elements can modulate the effects.

In the end, we expect that the results of this second experiment replicate the findings obtained in our previous one and previous studies (e.g. Reifegerste, et. al., 2017) and can contribute to shed further light in the study of the effects of aging during grammatical processing.

Keywords: aging, eye-tracking, agreement processing, working memory, executive control.