

**The metalinguistic abilities of Spanish-Catalan bilinguals and Spanish monolinguals:
Non-typically developing speakers in the spotlight.**

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Despite the fact that during the last years the bilingual advantage hypothesis as such has been target of substantial criticism, especially in the executive control domain (see De Bruin 2015 for an overview), most researchers agree that, in general, being bilingual seems to lead to more advantages than disadvantages (see Adesope et al. 2010 for a review). Nonetheless, while during the last fifty years bilingualism among typically developing (TD) individuals has been encouraged, in some communities individuals with developmental disabilities and intellectual disabilities (IDs), as is the case of those with Prader-Willi Syndrome (PWS), have been discouraged from becoming bilingual under the assumption that learning/acquiring an L2 would have a negative effect on their L1 development (Paradis et al. 2011). This still somehow common practice does not seem to be supported by the scarce available research on the effects of bilingualism in individuals with IDs (Kay-Raining Bird et al. 2016) and the lack of research on bilingualism in individuals with PWS.

The main objective of this paper is to analyze the metalinguistic abilities of eight Catalan-Spanish bilinguals (mean age = 18.27; range 10;5-33;11; SD 8.77) and eight Spanish monolinguals (mean age = 23.13; range 9;4-47; SD 11.48) with PWS using a Sentence Judgment Task (SJT). Bilinguals tend to outperform monolingual speakers in metalinguistic tasks due to their ability to dissociate form and meaning and to recognize the arbitrariness of language. Speaking two languages makes them aware from very early on that it is common to have different words to refer to one concept in each language (see Friesen & Bialystok 2012 for a complete review). In the offline SJT that we created in Spanish following the experimental design used by Bialystok and collaborators in English (Friesen & Bialystok 2012), participants were presented with 24 oral experimental items and were asked to indicate whether the sentence was correct or incorrect according to four conditions: grammatically correct-semantically correct (GCSC), grammatically correct-semantic violation (GCSV), grammar violation-semantically correct (GVSC), grammar violation-semantic violation (GVSV). Each experimental condition included six items and the target linguistic phenomena included were related to morphology (gerund periphrasis, irregular verbs and reflexive pronouns) in three experimental items and the order of the sentence elements (possessor-possession, auxiliary-lexical verb and the dative-accusative clitic clusters) in the other three. Items were randomized and two lists were created in order to avoid an order presentation effect. Participants were randomly and evenly assigned to either one of the two versions of the task.

Data analysis was carried out by means of a Logistic regression mixed-effect analysis (glmer model) between the accuracy of the answers and the independent variables using RStudio (Rstudio Team 2019). Experimental Condition, Linguistic Dimension, Group, Intelligence Quotient (measured by the TONI-2 standardized test), Receptive Vocabulary Age Equivalent (measured by the PPVT-3-Spanish version standardized test) and Mother Education Level (secondary school vs. postsecondary school as a measure of socioeconomic status) were introduced as fixed effects. Participant, Experimental item, List, Gender and Chronological Age were entered as random effects. The GCSC Experimental Condition, Morphology, Monolinguals and Postsecondary Education were the reference variables for the analysis. Preliminary results do not show a main effect of Experimental Condition, nor of Linguistic Dimension or Group. On the other hand, a marginal significant main effect of Receptive Vocabulary is found ($p = .0921$), which

reveals a trend suggesting that when the level of vocabulary increases so does the level of response accuracy. A significant interaction between Experimental Condition and Linguistic Dimension is found. More specifically, data show that in comparison to GCSC, in GVSC sentences the probability to respond more accurately with order errors than with morphological ones is of 94% approximately vs. the 6% in the case of GCSC ($p=.0283$). In a similar vein, when compared to GCSC, in GCSV sentences a trend is found suggesting that the probability to be more accurate when judging order than morphology with semantic “distractions” is about 91% vs. the 9% in the case of GCSC ($p=.0629$). These results show that bilinguals and monolinguals do not differ in their being more sensitive to word order violations than to morphological accuracy. In fact, these bilinguals and monolinguals do not differ with respect to their overall metalinguistic abilities even though for the bilinguals Spanish is not their dominant language.

Item examples:

•Grammatically correct-semantically correct (GCSC)

*La semana pasada Javier **puso** la lavadora por primera vez (Morphology-irregular verb).*

Teresa siempre ha pensado que es mejor hacer ejercicio por la mañana (Order-Auxiliary and lexical verb in the present perfect verb tense).

•Grammatically correct-semantic violation (GCSV)

*El concierto comenzó cuando el guitarrista **trajo** la jirafa eléctrica. (Morphology-irregular verb)*

Esta mañana Laura ha comprado muchos gritos para la fiesta. (Order-Auxiliary and lexical verb in the present perfect verb tense)

•Grammar violation-semantically correct (GVSC)

*Raquel estaba ayer muy nerviosa y **dició** que hoy no trabajaba. (Morphology-irregular verb)*

Esta semana trabajado mi madre ha todas las tardes sin descanso. (Order-Auxiliary and lexical verb in the present perfect verb tense)

•Grammar violation-semantic violation (GVSV)

*Ayer mi madre **tenió** fiebre y el policía le recetó un antibiótico. (Morphology-irregular verb)*

Hoy pasado nosotros hemos por la silla central para coger el metro. (Order-Auxiliary and lexical verb in the present perfect verb tense)

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