

Bilingualism and cognitive ability

[Law](#), [Evidence](#)



Due to the extensive body of research that has been conducted on the effects in which bilingualism can have on cognitive ability, various studies have evidently suggested that children who learn a second language attain higher scores in regards to performance in various tasks throughout their development. One study in particular, conducted by Bonifacci, Giombini, Bellocchi and Contento (2011), identified that bilingual and monolingual children did not differ from each other in elementary cognition tasks (reaction time, a go/no-go and two working memory), however, in anticipation tasks it was evident that bilinguals were found to be faster and more accurate. The importance of research and study into the area of bilingualism and cognitive ability is also emphasized by many academics due to the controversy and conflicting results between monolingual and bilingual ability that is highlighted from researchers such as Rosenblum and Pinker (1983). A more recent study that has reiterated this, conducted by Salvatierra and Rosselli (2010), titled 'The effect of bilingualism and age on inhibitory control' intended to determine the effectiveness that mastering two languages may have on the results in which older adults receive on inhibitory control tasks. From this, it was further hypothesized in this study that the results would indicate that bilingual participants would score higher on the tasks than would the monolinguals. Participants of this study were allocated into two groups based on their age and proficiency in either one or two languages. Monolinguals (N= 108) and bilinguals (N= 125) participants each were required to partake in an assessment with certain marking criteria to ensure that all participants were equal in regards to non-verbal cognitive capacities. The researchers of this study did not disclose the gender of the

participants. It should also be noted that a greater sample size was used than in other studies that were conducted in the past to further increase the likelihood of attaining accurate results. An assessment of what actually constitutes being bilingual was also a distinct part of the method section in this report. This acted as an integral part of the design in that it enabled Salvatierra et al (2010) to determine the strength (balanced or unbalanced) a participant may have in English and Spanish. This was established by the Boston Naming Test (BNT). The final part of the experimental method section resided in an inhibitory control task that contained two conditions, simple and complex, that participants had to perform under. The procedure of this study initially involved contacting the participants by phone in order to set up an interview to establish what languages were known. All participants knowingly signed a consent form that was in accordance with the current ethical guidelines. At the early stages of the testing, the Simon task was administered followed by the Block Design, with participants that scored below not receiving further testing. The BNT was then completed with half the bilingual participants allocated into the English and Spanish versions of the test. To allow for the reduction in response time that occurs due to the aging process, transformations of the data into z scores occurred. The results of this study were categorized into three sub sections. The first indicated that complex Simon condition produced significantly smaller effect than the same in the simple position. Interactions highlighted that older bilinguals were more efficient at inhibiting relevant information than older monolinguals but only under the simple Simon condition. This advantage, however, was not evident in the younger bilingual participants. Finally, the

balance and non balanced bilinguals evidently showed that effect in which the language group had was significant, while also exhibiting this in the area of the effect of age. The original aim of this study intended on determining the effects in which bilingualism would have on the results of a complex Simon task, predicting that Bilinguals would attain higher scores. Through the results, it was highlighted that the hypothesis was refuted, as this advantage was only evident in the simple condition. This current study relates to current research in that it supports the notion that bilinguals outperform monolinguals in certain tasks. As the various strengths in this study were identified in regards to research that had been conducted in the past, limitations also became evident. One such limitation that may be noted is the type of language in which participants considered to be their second. It was stated from previous studies, particularly Ardila (2007), that certain second languages can impact the effect in which bilingualism has on the processes in the brain and cognitive ability. Another limitation that was identified was the education level in which the participants had attained. These limitations could be addressed in future research by providing longitudinal studies that analyze the proficiency and correlation between the learning of more than one language and cognitive ability over the duration of early schooling years. It is evident from the findings of this study that due to the discrepancies that were highlighted, future research should be focused on addressing the ability of participants in verbal and non-verbal tasks while determining the levels of language proficiency and the origins of both languages. Research should also focus on the effects that repetition has on the evident advantage seen by bilinguals in the inhibitory task. References:

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