

## Effects of language modality and script similarity on bilingual Stroop performance

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### AG 2

The Stroop Task has been widely used with monolinguals to investigate automatic processing by comparing performance on an automated task (visual word recognition) to a novel task (color naming). Recently, the Stroop task has been used to study L1 and L2 processing in spoken bilinguals (Coderre & van Heuven 2014). To date, no studies have attempted to assess Stroop effects in Deaf bilinguals, while controlling for language proficiency and including bilingual control groups varying in cross-language similarity. In the current study, we select bilinguals whose languages differed in cross-script similarity: ASL-English bilinguals (single script), English-Chinese bilinguals (low script similarity), English-Korean bilinguals (moderate script similarity), English-Spanish bilinguals (high script similarity). Comparison across these four groups allowed us to ask whether language modality and cross-language script similarity impacted the Stroop interference effect. Results support the following conclusions: Stroop interference effects are independent of language modality but are dependent on language proficiency. Second, contrary to some claims in the literature, deaf signers, who do not use speech, show highly automated access of printed words as well as signed words. Third, cross-language script similarity is a critical factor in shaping bilinguals' experience of Stroop interference in their two languages. Deaf ASL-English bilinguals show the greatest cognitive control at no cost to accuracy among the four bilingual groups.

**References:** Coderre, E.L. & W.J.B. van Heuven (2014). The effect of script similarity on executive control in bilinguals. *Frontiers in Psychology* 5, 1070. Dupuis, A. & I. Berent (2015). Lexical access to signs is automatic. *Language, Cognition and Neuroscience*, 11, 1–6. Marschark, M. & E. H. Shroyer (1993). Hearing status and language fluency as predictors of automatic word and sign recognition. *American annals of the deaf*, 138(4), 370–375. Stroop, J. R. (1935). Studies of interference in serial verbal reaction. *Journal of Experimental Psychology* 18(6), 643–662.