

Supplemental Materials: EEG Processing Information

Additional details on EEG processing, as presented in Lugo-Candelas et al. (2017) method section:

“Electroencephalography (EEG) was continuously recorded from Ag–AgCl electrodes attached to the scalp with a 64- channel Lycra Electro-Cap setup in accordance with the International 10–20 System. In accordance with prior studies utilizing the Posner task with young children (e.g., Rich et al. 2005; Rich et al. 2007), analyses focused on midline electrodes (F3, Fz, F4, FC3, FCZ, FC4, C3, Cz, C4, CP3, CPz, CP4, P3, Pz and P4). NeuroScan amplifiers (with 16-bit A–D conversion) were set for high and low band pass at 0.01 to 100 Hz, respectively, and EEG was amplified at 1000 Hz. Impedances were maintained below 10 kΩ. Vertical eye movements were detected through two channels of electrooculogram (EOG), recorded from facial electrodes above and below the outer canthus of the left eye. Two electrodes were placed on the left and right mastoids and data were re-referenced off-line to an average mastoid reference that was filtered with a 30 Hz filter (24 db/Oct). Ocular artifacts were regressed from the data in accordance with Gratton et al. (1983). EEG epochs that exceed ± 150 μ V were excluded. Epochs were baseline corrected and averaged for each block.

ERPs were time locked to target onset and constructed by averaging epochs separately for each target type (valid, invalid, and control) for each block. The analyses focused on the mean amplitudes of the P1 (scored in a window of 10-100 ms post stimulus onset), N2 (scored in a window of 50-220 ms post stimulus onset) and the P3 (scored in a window of 130- 400 ms post stimulus onset), all with a 200 ms pre-stimulus baseline. ERP windows were determined from inspection of the grand average waveforms for both groups and based on prior research (e.g., Abundis-Gutiérrez et al. 2014; Lamm et al. 2006; Rich et al. 2005; Tsai et al. 2009).”

References

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