**Supplementary Materials**

Table **S1**. *Descriptive statistics of performance across the four tasks. SDs are given in parentheses.*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Total** | **Group proficiency** | |  | **Group AoA** | |
|  | Bi-high | Bi-low |  | Early | Late |
| ***ANT*** |  |  |  |  |  |  |
| Overall RTs | 458.7 (54.23) | 458.15 (51.6) | 459.45 (57.89) |  | 458.32 (55.35) | 458.98 (53.59) |
| Alerting | 41.13 (21.01) | 42.24 (21.93) | 39.61 (19.69) |  | 43.54 (23.64) | 39.33 (18.71) |
| Orienting | 30.67 (18.65) | 31.17 (17.7) | 30 (19.94) |  | 31.01 (18.26) | 30.42 (19) |
| Conflict | 80.81 (24.15) | 77.98 (25.14) | 84.67 (22.27) |  | 81.25 (27.46) | 80.48 (21.46) |
| ***Stroop*** |  |  |  |  |  |  |
| Overall RTs | 559.67 (87.07) | 568.59 (85.43) | 547.47 (88.23) |  | 570.4 (91.22) | 551.68 (83.29) |
| Stroop effect | 79.54 (36.62) | 82.18 (34.83) | 75.94 (38.81) |  | 82.03 (37.47) | 77.68 (36) |
| ***Simon*** |  |  |  |  |  |  |
| Overall RTs | 426.14 (73.33) | 429.57 (75.86) | 421.45 (69.81) |  | 423.17 (68.65) | 428.35 (76.8) |
| Simon effect | 126.75 (107.1) | 134.65 (122.54) | 115.95 (80.78) |  | 120.05 (88.72) | 131.73 (119.04) |
| ***TEA*** |  |  |  |  |  |  |
| EC | 96.29 (10.06) | 96.48 (8.6) | 96.04 (11.8) |  | 97.76 (6.59) | 95.2 (11.91) |
| ED | 77.99 (22.87) | 78.04 (22.98) | 77.92 (22.82) |  | 80.59 (20.48) | 76.06 (24.39) |
| ER | 71.51 (26.13) | 71.52 (25.51) | 71.49 (27.07) |  | 73.24 (24.78) | 70.22 (27.1) |

Note: Alerting effect: No-cue vs. Double-cue trials; Orienting: Centre-Cue vs. Single-cue trials; Conflict effect: congruent vs. incongruent trials;

Stroop effect: congruent vs. incongruent trials;

Simon effect: congruent vs. incongruent trials;

Three auditory subtests: EC (Elevator with Counting) measures sustained attention; ED (Elevator with Distraction) measures auditory inhibition; ED (Elevator with Reversal) measures attentional switching.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | AgeofSchool | Age | SES | Ravens | Forward | Backward | Sex | Immersion |
| ANT Conflict |  |  |  |  |  |  |  |  |
| *Est* | -1.62 | 0.51 | -0.16 | -0.33 | -0.14 | -0.35 | -1.63 | 0.11 |
| *t* | -0.96 | 0.37 | -0.07 | -0.81 | -0.78 | -1.94 | -0.39 | 0.03 |
| *p* | 0.34 | 0.71 | 0.94 | 0.42 | 0.44 | 0.05 | 0.70 | 0.98 |
| Orienting |  |  |  |  |  |  |  |  |
| *Est* | 1.58 | -0.39 | -3.63 | -0.25 | 0.05 | 0.13 | -6.55 | 2.18 |
| *t* | 1.20 | -0.37 | -2.09 | -0.80 | 0.34 | 0.92 | -2.00 | 0.64 |
| *p* | 0.23 | 0.71 | **0.04 \*** | 0.43 | 0.73 | 0.36 | **0.05\*** | 0.52 |
| Alerting |  |  |  |  |  |  |  |  |
| *Est* | 1.14 | -1.05 | 1.71 | -0.06 | -0.08 | -0.11 | -3.63 | -1.35 |
| *t* | 0.75 | -0.87 | 0.86 | -0.17 | -0.50 | -0.66 | -0.97 | -0.34 |
| *p* | 0.45 | 0.39 | 0.39 | 0.86 | 0.62 | 0.51 | 0.33 | 0.73 |
| ANT Overall |  |  |  |  |  |  |  |  |
| *Est* | 4.31 | -2.69 | -3.81 | -2.00 | -0.96 | -1.27 | -25.26 | 3.15 |
| *t* | 1.23 | -0.95 | -0.82 | -2.38 | -2.63 | -3.40 | -2.89 | 0.34 |
| *p* | 0.22 | 0.34 | 0.41 | **0.02 \*** | **0.01 \*\*** | **0.00 \*\*\*** | **0.00 \*\*** | 0.73 |
| Stroop effect |  |  |  |  |  |  |  |  |
| *Est* | 5.14 | -2.61 | -7.88 | -0.61 | -0.26 | -0.91 | -5.10 | 4.76 |
| *t* | 2.05 | -1.30 | -2.39 | -1.03 | -1.02 | -3.42 | -0.82 | 0.73 |
| *p* | **0.04 \*** | 0.19 | **0.02 \*** | 0.30 | 0.31 | **0.00 \*\*\*** | 0.41 | 0.47 |
| Stroop overall |  |  |  |  |  |  |  |  |
| *Est* | 11.76 | -3.62 | -21.86 | -2.03 | -1.80 | -2.30 | -49.13 | 11.82 |
| *t* | 2.19 | -0.84 | -3.09 | -1.59 | -3.23 | -4.02 | -3.69 | 0.85 |
| *p* | **0.03 \*** | 0.40 | **0.00 \*\*** | 0.11 | **0.00 \*\*** | **0.00 \*\*\*** | **0.00 \*\*\*** | 0.40 |
| Simon |  |  |  |  |  |  |  |  |
| *Est* | 11.27 | 4.92 | 6.29 | -2.96 | -2.16 | -1.24 | -63.06 | -1.24 |
| *t* | 1.58 | 0.86 | 0.67 | -1.74 | -2.91 | -1.63 | -3.55 | -0.07 |
| *p* | 0.12 | 0.39 | 0.51 | 0.08 | **0.00 \*\*** | 0.10 | **0.00 \*\*\*** | 0.95 |
| Simon overall |  |  |  |  |  |  |  |  |
| *Est* | 10.00 | -2.86 | -7.43 | -2.87 | -1.48 | -1.32 | -46.29 | -2.51 |
| *t* | 2.14 | -0.76 | -1.21 | -2.58 | -3.07 | -2.65 | -4.00 | -0.21 |
| *p* | **0.03 \*** | 0.45 | 0.23 | **0.01 \*** | **0.00 \*\*** | **0.01 \*\*** | **0.00 \*\*\*** | 0.84 |
| EC |  |  |  |  |  |  |  |  |
| *Est* | 0.86 | 0.18 | -0.39 | 0.17 | 0.06 | 0.07 | -0.91 | 1.59 |
| *t* | 1.20 | 0.32 | -0.41 | 0.98 | 0.75 | 0.86 | -0.51 | 0.85 |
| *p* | 0.23 | 0.75 | 0.68 | 0.33 | 0.45 | 0.39 | 0.61 | 0.40 |
| ED |  |  |  |  |  |  |  |  |
| *Est* | -0.14 | 1.90 | 3.51 | 1.05 | 0.58 | 0.34 | 4.61 | 0.16 |
| *t* | -0.10 | 1.63 | 1.83 | 3.03 | 3.84 | 2.22 | 1.28 | 0.04 |
| *p* | 0.92 | 0.10 | 0.07 | **0.00 \*\*** | **0.00 \*\*\*** | **0.03 \*** | 0.20 | 0.97 |
| ER |  |  |  |  |  |  |  |  |
| *Est* | -3.51 | 0.77 | 2.90 | 1.00 | 0.55 | 0.44 | 9.25 | -3.31 |
| *t* | -2.12 | 0.58 | 1.33 | 2.54 | 3.20 | 2.49 | 2.25 | -0.77 |
| *p* | **0.04 \*** | 0.57 | 0.19 | **0.01 \*** | **0.00 \*\*** | **0.01 \*** | **0.03 \*** | 0.44 |

Table **S2**. *Outputs of Multivariable Linear Regression Models*

Table **S3**. *Outputs of Multiple Stepwise Regression Analyses*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Step | Variable | *Adj. R2* | *C(p)* | *AIC* | *RMSE* |
| **EC** | 1 | Ravens | 0.01 | -1.38 | 1783.75 | 10.02 |
| **ED** | 1 | Forward | 0.11 | 30.91 | 2151.42 | 21.62 |
| 2 | Ravens | 0.17 | 14.01 | 2135.80 | 20.88 |
| 3 | L2AoA | 0.17 | 7.70 | 2120.74 | 20.57 |
| 4 | Backward | 0.19 | 4.35 | 2117.33 | 20.38 |
| **ER** | 1 | Backward | 0.08 | 39.05 | 2221.04 | 25.01 |
| 2 | Ravens | 0.12 | 29.06 | 2212.35 | 24.51 |
| 3 | Forward | 0.15 | 22.17 | 2206.11 | 24.14 |
| 4 | Sex | 0.16 | 19.47 | 2203.63 | 23.97 |
| **ANT overall** | 1 | Backward | 0.11 | 20.35 | 2564.20 | 51.27 |
| 2 | Sex | 0.14 | 12.97 | 2557.26 | 50.43 |
| 3 | Ravens | 0.16 | 6.56 | 2550.95 | 49.66 |
| **Conflict** | 1 | L2Proficiency | 0.03 | 1.31 | 2196.38 | 23.75 |
| 2 | Backward | 0.06 | -3.91 | 2190.96 | 23.44 |
| **Alerting** | 1 | Sex | 0.00 | -2.83 | 2137.33 | 20.99 |
| **Orienting** | 1 | SES | 0.01 | 4.95 | 2070.75 | 18.60 |
| **Stroop overall** | 1 | Backward | 0.14 | 38.20 | 2782.17 | 80.90 |
| 2 | Sex | 0.18 | 26.60 | 2771.97 | 79.02 |
| 3 | Forward | 0.21 | 17.57 | 2763.58 | 77.49 |
| 4 | SES | 0.23 | 12.26 | 2746.97 | 76.51 |
| **Stroop effect** | 1 | Backward | 0.07 | 3.87 | 2384.84 | 35.23 |
| 2 | SES | 0.09 | 1.24 | 2372.21 | 34.96 |
| **Simon overall** | 1 | Backward | 0.09 | 34.36 | 2711.68 | 69.80 |
| 2 | Sex | 0.15 | 18.88 | 2697.64 | 67.64 |
| 3 | Forward | 0.18 | 10.67 | 2689.76 | 66.40 |
| 4 | Ravens | 0.20 | 6.38 | 2685.45 | 65.67 |
| 5 | Age of School | 0.22 | 4.22 | 2660.78 | 65.22 |
| **Simon effect** | 1 | Forward | 0.06 | 18.52 | 2901.30 | 103.79 |
| 2 | Sex | 0.11 | 6.08 | 2889.28 | 101.00 |
| 3 | Backward | 0.13 | 2.19 | 2885.32 | 99.96 |
| 4 | Age of School | 0.14 | 1.74 | 2860.69 | 99.64 |

*Note*: Both the forward and backward conditions in the Corsi tapping task were used as a measurement of working memory, but differed in demand level: the backward condition is relatively more demanding than that the forward condition.

The ranking of the degree of significance is indexed by the Step (i.e., the strongest predictor was added in Step 1).