**Appendix S1**

**The executive tasks**

The Simon task (Simon & Rudell, 1967) was used as a measure of inhibition. In the task, a blue or red square appears on either the left or right side of the screen. The participant has to press the left button each time a blue square appears and the right button when a red square appears, irrespectively of the location of the square. On congruent trials, the square is on the same side as the correct response key (e.g., a blue box on the left side) and on incongruent trials the square is on the opposite side. On incongruent trials, the participant has to suppress the conflicting spatial information. The Simon effect is calculated by subtracting the average reaction time or error rate on the congruent trials from the average reaction time or error rate on the incongruent trials.

In the present version of the test, we used 100 trials, of which half were congruent and half incongruent, separately randomised for each subject. The trials were divided into four blocks, with 5 s breaks in-between. Before the actual test took place, all participants performed a practice sequence. Each experimental trial began with an 800 ms fixation cross, followed by a 250 ms blank interval. After this, a red or blue box appeared and remained on the screen for 1000 ms, unless a response was given. Finally, the screen was blank for 500 ms.

The Flanker task (adapted from Eriksen & Eriksen, 1974) is another measure of inhibition. In this task, the subject is presented with an array of five horizontal arrows and has to determine the direction of the middle arrow by a left or right key press. On congruent trials, the arrow in the middle points towards the same direction as the other four arrows (the flankers); on incongruent trials, the middle arrow points towards the opposite direction to the other four. The Flanker effect is calculated by subtracting the mean reaction time or error rate of the congruent trials from the mean reaction time or error rate of the incongruent trials.

Our version of the Flanker test consisted of 100 trials, half congruent and half incongruent, separately randomised for each subject. The trials were divided into four blocks with 5 s breaks in-between. Before the actual test took place, a practice sequence was presented to each participant. Each trial began with an 800 ms fixation cross, which was immediately followed by a row of five arrows remaining on the screen for 800 ms unless a response was given. Finally, the screen went blank for 500 ms.

The Number-Letter task (adapted from Rogers & Monsell, 1995) is a measure of shifting and monitoring abilities. In this task, a number-letter pair (e.g., “3A”) appears in one of two boxes appearing in one column, and the subject has to decide either whether the number is even or odd, or whether the letter is a vowel or a consonant, depending on which box the pair appears in. Each time the number-letter pair appears in the upper box, the subject has to determine the number and each time the pair appears in the lower box the subject has to determine the letter. The response was given with two keys, one for vowels or even numbers, and another for consonants or odd numbers. The task consisted of three blocks: two single task blocks (number only and letter only) and one mixed tasks block. In the mixed task block, a trial is either a repetition trial, where the task of the subject is the same as on the previous trial, or a switch trial, where the task shifts.

The Number-Letter task yields two executive measures. The switching effect (NLSE) is calculated by subtracting the average reaction time or error rate of the repetition trials in the mixed task block from the average reaction time or error rate of the switch trials in the mixed task block. The switching effect can be considered as a measure of a subject’s general set-shifting capacity, with higher capacity correlating with smaller switching effect. The mixing effect (NLME) is calculated by subtracting the average reaction time or error rate of the single block trials from the average reaction time or error rate of the repetition trials in the mixed task block. Whereas the switch cost is typically taken to measure simple set shifting abilities, the mixing cost is generally considered as a monitoring or preparedness cost. On repetition trials of the mixed block, unlike single task trials, the subject has to monitor for possible task switches.

The single task blocks consisted of 32 trials each. The mixed task block consisted of 32 switching trials and 48 repetition trials. Of the repetition trials, 24 were number trials and 24 were letter trials. The number-letter pairs appeared in the two squares randomly. Each block was preceded by a practice sequence.

**References**

Eriksen, B. A., & Eriksen, C. W. (1974). Effects of noise letters upon the identification of a target letter in a nonsearch task. *Perception & Psychophysics*, *16*(1), 143–149. https://doi.org/10.3758/BF03203267

Rogers, R. D., & Monsell, S. (1995). Costs of a predictible switch between simple cognitive tasks. *Journal of Experimental Psychology: General*, *124*(2), 207–231. https://doi.org/10.1037/0096-3445.124.2.207

Simon, J. R., & Rudell, A. P. (1967). Auditory S-R compatibility: the effect of an irrelevant cue on information processing. *The Journal of Applied Psychology*, *51*(3), 300–304. https://doi.org/10.1037/h0020586