

Supplementary material belonging to:

Article: The Effects of Increased Dopamine-Levels on Attentional Control During Reading and Reading Comprehension

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ELECTRONIC SUPPLEMENTARY MATERIAL 1**Background Variables****Executive Functioning***

Participants completed the Behavior Rating Inventory of Executive Function—Adult version (BRIEF-A; Scholte & Noens, 2011), a self-report questionnaire of 75 items designed to examine adult's executive functions in daily life. Participants rated the frequency of the described behaviours on a 3-point scale (1 = never, 2 = sometimes, 3 = often). Scores on the BRIEF-A range from 75 to 225, with a lower score reflecting better executive functioning. A total score was calculated for each participant. Internal consistency of the scale in the present study was Cronbach's $\alpha = .96$.

Attentional Control

Participants completed a Dutch translation of the Attentional Control Scale (ACS; Derryberry & Reed, 2002). Participants rated twenty statements about attention and concentration in daily life on a four-point Likert-scale (e.g. 'It's very hard for me to concentrate on a difficult task when there are noises around', 'It is easy for me to switch between two different tasks' and 'After being disrupted or distracted, it is easy for me to shift my attention away from the distractor'). Scores on the ACS range from 20 to 80 points, with a higher score reflecting better attentional control in daily life. A sum score for all items was calculated for each participant. Internal consistency was Cronbach's $\alpha = .85$.

Reading Motivation*

Participants completed a researcher-constructed reading motivation survey. The survey consisted of three subscales: engagement in reading related activities (13 items, e.g. If I like a book of a certain author I will read more books of the same author, I am a member of a book club, I regularly go to a book store to see if there are nice books; Cronbach's $\alpha = .71$), attitude towards reading for pleasure (21 items, e.g. Reading a book for

** These variables were also used as alternative indicators for baseline DA functioning.*

pleasure is amusing, Reading a book for pleasure is boring; Cronbach's $\alpha = .82$), and reading in spare time (12 items, e.g. Reading a book costs me too much of my spare time, I only read if I have to, I always read before I go to sleep; Cronbach's $\alpha = .81$). Items were based on and extensions of the *Reading Attitude Scale* (Aarnoutse & Konings, 2013), the 'Reading Involvement' and 'Social Reasons for Reading' subscales of the *Motivations for Reading Questionnaire* (MRQ; Wigfield & Guthrie, 1997), the 'Value of Reading' subscale of the *Motivation to Read Profile* (MRP; Gambrell et al., 1996), and the *Self-Regulation Questionnaire-Reading Motivation* (de Naeghel et al., 2012). Participants rated their agreement with statements on a 5-point Likert-scale, with higher scores indicating higher agreement. Negative statements were recoded so that higher scores on statements reflected a more positive attitude or more motivation. Principal components analysis applied to the three subscales resulted in one component, containing component loadings ranging from .77 to .88, explaining 70.1% of the variance. Higher aggregate scores reflected higher reading motivation.

Language Skills

Participants completed a researcher-constructed language test, containing of four subtests: spelling, grammar, vocabulary and syntax. For the spelling subtest, participants had to complete the spelling for 40 words in which one or two letters were missing. In the grammar subtest (15 items), participants had to choose the right form of a verb, noun, or pronoun from two options. For both the spelling and the grammar subtest, one point was awarded for each correct answer. For the vocabulary subtest, participants had to determine whether words were real words or nonsense words from a list of 68 words containing 51 real words and 17 nonsense words. A total score was calculated by adding all correctly recognized real words minus the nonsense words that were incorrectly categorized as real word. Finally, participants had to complete twenty MC-questions about the form and meaning of several sentences. One point was awarded for each correct answer. Principal components analysis applied to the four subtests resulted in one component containing component loadings ranging from .68 to .76, explaining 51.5% of the variance. Higher aggregate scores reflected better language skills.

References

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