Ego depletion replication results template.

Participants

We recruited participants (N = 165, males = 38, females = 127, *M* age = 19.8 years, *SD* = 1.6) from an undergraduate participant pool at Tilburg University. The participants were enrolled in the psychology bachelor program and participated in the study for course credit. Participants (n = 20) were excluded from the final analysis because they did not follow the instructions (n = 0), did not meet the meet the specified inclusion criteria for first-spoken language (n = 17), and age (18-30 years) (n = 2). One additional participant was excluded prior to analysis because s/he reported getting only 3 hours of sleep the previous night. 33 participants were excluded because their performance on the letter 'e' task and MSIT fell below 80% accuracy or had mean reaction time or mean reaction time variability values that fell outside two standard deviations of the sample mean on the MSIT. The final sample comprised 48 participants in the hard letter 'e' (ego-depletion) condition and 54 participants in the easy letter 'e' (control) condition. Joey Zagers, Koen Grootswagers, Geert Telkamp, Femke Kortekaas, Joeri Wissink, Danielle van Dijl, and David Lacle served as the experimenter(s), and were not blind to condition assignment. Our procedures followed the approved protocol and did not deviate from our preregistered plan with the exception of a few minor deviations.

- We treated the exclusion, mentioned above, of the participant with 3 hours of sleep (participant 72) like a planned exclusion and ran an additional participant in participant 72's condition.
- During the final hour of data collection we came to the end of one of the 50 participant blocks that we were running. At the end of the 50, the next participant (participant 151) should have been run to replace an excluded participant from the prior block of 50. However, due to a miscommunication this did not occur and the last participant was run as the beginning of the next block of 50.
- Due to experimenter error participants 7 and 145 did not receive the questionnaire, which explains the slightly smaller sample size for these analyses.

Critical analyses

1) Independent samples *t*-test comparing the ex-Gaussian fitted mean overall response time variability (RTV) for the incongruent items on the MSIT across the ego-depletion and control conditions.

Ego-depletion: n = 48; *M* RTV= 0.28; SD = 0.07; SE = 0.01

Control: n = 54; *M* RTV = 0.29; SD = 0.07; SE = 0.01

$t(100) = -0.52$, $p = .61$, $d = -0.10$

2) Independent samples *t*-test comparing the mean overall response time (RT) for the incongruent items on the MSIT across the ego-depletion and control conditions.

Ego-depletion: n = 48; *M* RT= 0.88; SD = 0.13; SE = 0.02

Control: n = 54; *M* RT = 0.89; SD = 0.13; SE = 0.02

t(100) = 0.29, *p* = .773, *d* = -.06

3) A series of independent samples *t*-tests comparing participants' mean ratings of effort, fatigue, difficulty, and frustration across the ego-depletion and control conditions (with positive *t*'s indicating larger rating in the ego-depletion group).

Ego-depletion (n = 47): Effort, *M* = 5.00; SD = 1.10; SE = 0.16; Fatigue, *M* = 3.66; SD = 1.46; SE = 0.21; Difficulty, *M* = 4.40; SD = 1.30; SE = 0.19; Frustrated, *M* = 2.94; SD = 1.54; SE = 0.22

Control (n = 53): Effort, *M* = 3.64; SD = 1.52; SE = 0.21; Fatigue, *M* = 4.11; SD = 1.63; SE = 0.22; Difficulty, *M* = 2.23; SD = 0.87; SE = 0.12; Frustrated, *M* = 2.08; SD = 1.34; SE = 0.18

t-tests: Effort (*t*(98) = 5.06, *M* difference = 1.36, *p* < .001, *d* = 1.02), Fatigue (*t*(98) = -1.46, *M* difference = -0.45, *p* = .15, *d* = -.29), Difficulty (*t*(98) = 9.97, *M* difference = 2.18, *p* <.001, *d* = 1.97), and Frustrated (*t*(98) = 2.99, *M* difference = 0.86, *p* = .004, *d* = .60).

Supplemental analyses

Recommended supplemental analysis

An independent samples *t*-test for differences in overall accuracy on the letter 'e' across the hard (ego-depletion) and easy (control) conditions:

Ego-depletion: n = 48; *M* accuracy = 0.95; SD = 0.04; SE = 0.01

Control: n = 54; *M* accuracy = 0.99; SD = 0.1; SE = 0.002

t(100) = 7.44, p < .001, d = -1.44

Note that the absolute difference is very small, whereas the standardized difference is quite large.

Supplemental analyses preregistered by this lab

No other analyses were preregistered by this lab.

Supplemental post-hoc analyses

The analyses conducted above were re-analysed including people who were non-native speakers and outside of the age range. They are summarized in the table below. In short, the conclusions do not change.

	Control	Ego-Depletion			
	M (SD)	M (SD)	*t*-test (df)	*p*-value	Cohen's *d*
RTV	.30 (.10) n = 70	.28 (.09) n = 75	-0.98 (143)	.33	-0.16
RT	.86 (.20) n = 71	.86 (.18) n = 75	-0.26 (144)	.80	-.04
Effort	3.70 (1.56) n = 70	4.93 (1.11) n = 73	5.45 (141)	<.001	0.91
Difficulty	2.21 (.90) n = 70	4.26 (1.21) n = 73	11.42 (141)	<.001	1.92
Tired	4.06 (1.64) n = 70	3.92 (1.55) n = 73	0.52 (141)	.60	0.09
Frustrated	2.11 (1.34) n = 70	2.95 (1.51) n = 73	3.48 (141)	<.001	0.58
Accuracy	.99 (.01) n = 71	.91 (.09) n = 75	-7.04 (144)	<.001	-1.18
Mu	.70 (.16) n = 70	.70 (.14) n = 75	-0.09 (143)	.93	-0.01

Prior to the late June update to the results template, I conducted analyses with ExGauss.I.mu.MSIT as the dependent variable with the pre-registered exclusion criteria

Ego-depletion: n = 48; *M* RT= 0.72; SD = 0.10; SE = 0.01

Control: n = 54; *M* RT = 0.72; SD = 0.11; SE = 0.02

$t(100) = 0.24$, $p = .81$, $d = 0.05$