Appendix A. Individual lab details.

Angela R. Birt, Mount Saint Vincent University, Canada
Megan Muise, Mount Saint Vincent University, Canada
OSF: https://osf.io/qbu3d/

Participants (N = 110, males = 17, females = 93, M age = 21.7 years, SD = 5.0) were recruited from an undergraduate participant pool at Mount Saint Vincent University, Halifax, Nova Scotia, Canada. The participants were enrolled in an undergraduate degree program across a variety of disciplines and participated in the study for course credit. Although no participants were excluded from the final analysis because they did not follow the instructions (n = 0), participants were excluded because they did not meet the specified inclusion criteria for first-spoken language (n = 6), did not meet the specified age criteria (18-30 years) (n = 5), and/or their performance (n = 46) 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. (Note that the criteria for exclusion were not mutually exclusive; i.e., some participants were excluded because they did not meet more than one criterion). The final sample (N = 59, males = 7, females = 52, M age = 20.81 years, SD = 2.67) comprised 31 participants in the hard letter 'e' (ego-depletion) condition and 28 participants in the easy letter 'e' (control) condition. Megan Muise, Dayna Bell, T-Jay Anderson, and Kayla Douglas served as the experimenters, and all were naïve to the purpose of the experiment with the exception of Megan Muise, who played a significant role in carrying out the replication. None of the experimenters were blinded to condition assignment because they read out instructions to the participants. To check whether they remained naïve to the purpose of the experiment, those who were initially naïve were questioned at the end of data collection about the overall purpose and potential results of the study. Their answers indicated that they were unaware until the end. We deviated from our preregistered plan in that we did not collect data on 50 participants per condition after exclusions. This transpired because we administered the experiment with *E-Prime* 2.0 Run Time software, which does not include the data extraction function, and by the time the data were received and data analyses were conducted, there was no opportunity to run additional participants.

Mark J. Brandt, Tilburg University, Netherlands
OSF: https://osf.io/x3y9b/

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Participants (N = 165, males = 38, females = 127, *M* age = 19.8 years, *SD* = 1.6) were recruited from an undergraduate participant pool at Tilburg University. All participants were enrolled in the psychology bachelor program and participated in the study for course credit. Twenty participants were excluded from the final analysis because they did not meet the meet the specified inclusion criteria for first-spoken language (n = 17) and age (n = 2). One additional participant was excluded prior to analysis because s/he reported getting only 3 hours of sleep the previous night. A further 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 (N = 102, males = 22, females = 80, *M* age = 19.6 years, *SD* = 1.5) 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 experimenters, 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: (1) We replaced the participant with 3 hours of sleep (participant 72) with an additional participant in participant 72's condition; (2) 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; and (3) Due to experimenter error participants 7 and 145 did not receive the questionnaire, which explains the slightly smaller sample size for these analyses.

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Dustin P. Calvillo, California State University San Marcos, USA
Nicole V. Mills, California State University San Marcos, USA
OSF: https://osf.io/dj2pf/

Participants (*N* = 146, males = 42, females = 104, *M* age = 20.4 years, *SD* = 3.5) were recruited from an undergraduate participant pool at California State University San Marcos. All participants were enrolled in lower division psychology courses and participated in the study for course credit. Thirteen participants were excluded from the final analysis because they did not meet the meet the specified inclusion criteria for first-spoken language (*n* = 12), and age (*n* = 1). A further 58 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 (N = 75, males = 20, females = 55, M age = 20.2 years, SD = 2.5) comprised 36 participants in the hard letter ‘e’ (ego-depletion) condition and 39 participants in the easy letter ‘e’ (control) condition. Derrick Ocampo, Rachael Van Gundy, Jessee Marriott, Briana Peralta, and Patrick Alarcon served as the experimenters, and they were not blind to condition assignment. Our procedures followed the approved protocol and did not deviate from our preregistered plan.

Nicholas P. Carruth, University of Colorado, Boulder, USA
Akira Miyake, University of Colorado Boulder, USA
OSF: https://osf.io/ps2rc/
Participants (N = 185, males = 103, females = 81, other = 1, M age =19.5 years, SD = 1.8) were recruited from an undergraduate participant pool at the University of Colorado Boulder. All participants were enrolled in a General Psychology course and participated in the study for course credit. Our stopping rule for data collection was either a total of 200 usable subjects (with 100 in each condition) or the end of the data collection period (May 1, 2015). Subjects were run in blocks of 20 randomized and predetermined condition assignments (10 in each condition) until the end of the data collection period. Seven participants were excluded from the final analysis because they did not meet the specified inclusion criteria for first-spoken language. An additional 52 subjects were excluded because they did not meet the project-wide pre-specified inclusion criteria based on the performances on the letter ‘e’ task and the MSIT task (i.e., below 80% accuracy and mean RT and RTV values outside 2 SDs of the sample mean on the MSIT). The final sample (N = 126, males = 72, females = 53, other = 1, M age = 19.6, SD = 1.9) comprised of 55 participants in the hard letter ‘e’ (ego-depletion) condition and 71 participants in the easy letter ‘e’ (control) condition. Eight undergraduate research assistants served as the primary experimenters for this study, and they were all naïve to the purpose of the experiment. This was verified by requiring the experimenters to submit written responses to what they believed the purpose of the study was after the data collection process was completed. None were able to identify the purpose accurately. In addition, Nicholas Carruth also served as an experimenter and collected the data from a small number of participants (n = 16, relatively equally distributed between the ego-depletion [n = 7] and the control condition [n = 9]). As the lead investigator at our research site, however, he was

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not naïve to the purpose of the experiment. None of the experimenters were blinded to condition assignment because they read out instructions to the participants.
Debriefing forms were kept in pre-concealed envelopes to keep the undergraduate experimenters blind to the purpose of the study. These forms explained the purpose of the experiment, asked participants not to discuss the study with their peers and were given out at the end of the study. Our procedures followed the approved protocol and did not deviate from our preregistered plan.

Tracy T.L. Cheung, Utrecht University, the Netherlands
Floor M. Kroese, Utrecht University, the Netherlands
Bob M. Fennis, University of Groningen, the Netherlands
Denise T.D. De Ridder, Utrecht University, the Netherlands
OSF: https://osf.io/daegv/
Participants (N = 204, males = 93, females = 111, M age = 21.5 years, SD = 2.4) from an undergraduate participant pool at Utrecht University. Participants who were enrolled in the Psychology undergraduate program participated in the study for course credit, or for €6 (if they were not undergraduate psychology students). Twenty-three participants were excluded from the final analysis because their performance in 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. Another participant was excluded because their MSIT performance data did not save due to a computer error. The final sample (N = 181, males = 79, females = 102, M age = 21.5 years, SD = 2.2) comprised 89 participants in the hard letter 'e' (ego-depletion) condition and 92 participants in the easy letter 'e' (control) condition. Tracy Cheung and Jantine van Soolingen served as experimenters. Van Soolingen conducted the experiment and was initially naive about the true purpose of the experiment. Van Soolingen was not blinded to condition assignment because she read out instructions to the participants, and at the end of data collection she also revealed that she learned about the true purpose of the experiment when she debriefed participants. Our procedures followed the approved protocol and did not deviate from our preregistered plan.

Adrienne Crowell, Texas A&M University, USA
Anna Finley, Texas A&M University, USA

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Brandon J. Schmeichel, Texas A&M University, USA

OSF: https://osf.io/8j6yv/

Participants (N = 130, males = 40, females = 90, M age = 18.9 years, SD = 0.8) were recruited from an undergraduate participant pool at Texas A&M University. The participants were enrolled in Introduction to Psychology and participated in the study for course credit. Fifty-four participants were excluded from the final analysis 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. Two participants were excluded due to experimenter error and one participant was excluded due to computer error. The final sample (N = 73, males = 20, females = 53, M age = 18.9 years, SD = 0.9) comprised 34 participants in the hard letter 'e' (ego-depletion) condition and 39 participants in the easy letter 'e' (control) condition. Josh Cook, Adrienne Crowell, Anna Finley, Yvette Ibarra, and Laney Rowe served as the experimenters. Cook, Ibarra, and Rowe were naïve to the purpose of the experiment and ran the majority of the participants overall (N = 127) and the participants included in the final analysis (N = 70). None of the experimenters were blinded to condition assignment, because they read out instructions to the participants. We deviated from our preregistered plan in the following way: experimenters did not run two participants through the practice trials and were excluded from analyses (see above).

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Malte Elson, Ruhr University Bochum

OSF: https://osf.io/uh5ax/

Participants (N = 106, males = 32 females = 74, M_{age} = 23.3 years, SD = 3.1) were recruited through messages to student email lists, Facebook groups, and posters on campus of Ruhr University Bochum. All participants were enrolled as Bachelor or Master students and received 7 EUR for their participation in the study. Two participants were excluded from the final analysis because they did not meet the specified inclusion criteria for age. Another participant was excluded due to an error in the experimental procedure. A further 14 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 (N = 90, males = 27, females = 63, M_{age} = 22.9 years, SD = 2.7) comprised 42 participants in the hard letter 'e' (ego-depletion) condition and 48 participants in the easy letter 'e' (control)

condition. Malte Elson served as the experimenter and ran all participants. He was not naïve to the purpose of the experiment and was not blinded to condition assignment because he read out instructions to the participants. His procedure followed the approved protocol and did not deviate from his preregistered plan.

Jacqueline R. Evans, Florida International University, USA
Benjamin A. Fay, Florida International University, USA
Alexandra E. Mosser, Florida International University, USA
OSF: osf.io/7bneu
Participants (N = 167, males = 56, females = 111, M age = 21.1 years, SD = 2.8) were recruited from an undergraduate participant pool at Florida International University. All participants were enrolled in undergraduate psychology courses and participated in the study for course credit. Four participants were excluded from the final analysis because they did not meet the meet the specified inclusion criteria for first-spoken language (n = 3) and age (18-30 years; n = 1). Seventy-four 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. In total, 78 participants were excluded (1 participant was excluded for both not meeting the first-spoken language criteria, as well as falling below the required accuracy performance, and 1 participant was excluded because the data was not recorded properly by an experimenter). The final sample comprised 40 participants in the hard letter 'e' (ego-depletion) condition and 49 participants in the easy letter 'e' (control) condition. Julio Martin, Giuliana Kunzle, Jessica Carvajal, and Orlando Olano served as the experimenter(s), and were naive to the nature of the study. For all experimenters, naivety was checked at the beginning and end of study involvement by asking them to complete an online survey, which inquired about their knowledge of several social psychological phenomena, including ego-depletion. Experimenters were considered naïve to the nature of the study if they did not indicate familiarity or understanding (ability to explain to researchers) of the concept of ego-depletion. Our procedures followed the approved protocol and did not deviate from our preregistered plan.

Zoë Francis, University of Toronto at Scarborough, Canada

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Michael Inzlicht, University of Toronto at Scarborough, Canada
OSF: https://osf.io/2hxzr/

We recruited participants (N = 140, males = 41 females = 99, M age = 19.2 years, SD = 2.1) from an undergraduate participant pool at University of Toronto at Scarborough. The participants were enrolled in Introduction to Psychology and participated in the study for course credit. One participant was excluded from all analyses because he guessed the hypothesis of the experiment, and one participant was excluded due to not having done the MSIT practice trials. Twenty-five participants did not meet the meet the specified inclusion criteria for first-spoken language (12 of those were over six when they learned English, 13 had unknown English nativity) and three participants who were slightly outside of the required age range (one 31 years old, and two 17 year olds), so these non-native-English participants were included in a secondary reported analysis, if they met the MSIT accuracy**.** A total of 80 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 (these 80 exclusions included the three participants who had already been excluded due to being under 18 or not having completed the practice MSIT). The final sample (following all exclusion criteria) comprised 23 participants in the hard letter 'e' (ego-depletion) condition and 28 participants in the easy letter 'e' (control) condition (N = 51). Two undergraduate research assistants, Clarence Kwong and Jacqueline Conway, served as the experimenters and were not blind to condition assignment. We deviated from our preregistered plan in the following ways: Six of the participants included in the final analysis did the experiment with more than one other participant. Despite collecting 140 participants, we are also well below our expected number of participants (n = 51) due to a high frequency of people misunderstanding or underperforming on the MSIT, as well as one over-aged participant, two under-aged participants, and many without confirmed English nativity.

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Martin S. Hagger, Curtin University, Australia
Nikos L. D. Chatzisarantis, Curtin University, Australia
Maria Zwienenberg, Curtin University, Australia and University of Bordeaux, France
OSF: https://osf.io/quwx9/

Participants (N = 144, males = 28, females = 116, M age = 20.8 years, SD = 4.6) were recruited from an undergraduate participant pool at Curtin University. All participants were

enrolled in an undergraduate degree programme in psychology and participated in the study for course credit. Twenty-six participants were excluded from the final analysis because they did not meet the meet the specified inclusion criteria for first-spoken language (n = 19) and age (n = 7). A further 17 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 (N = 101, males = 21, females = 80, M age = 20.0 years, SD = 2.4) comprised 46 participants in the hard letter 'e' (ego-depletion) condition and 55 participants in the easy letter 'e' (control) condition. Maria Zwienenberg, Nikos L. D. Chatzisarantis, and Martin S. Hagger served as the experimenters. Zwienenberg was naïve to the purpose of the experiment and ran the majority of the participants overall (n = 111) and the participants included in the final analysis (n = 78). None of the experimenters were blinded to condition assignment because they read out instructions to the participants. Our procedures followed the approved protocol and did not deviate from our preregistered plan.

Florian Lange, Hannover Medical School, Germany
Elke Heise, Technische Universität Braunschweig, Germany
Henrik Hoemann, Technische Universität Braunschweig, Germany
OSF: https://osf.io/93nuz/
We recruited participants (N = 120, males = 45, females = 75, M age = 21.9 years, SD = 2.5) from an undergraduate participant pool at Technische Universität Braunschweig. The participants were enrolled in courses from various fields of study (e.g., psychology, engineering, mathematics) and participated in the study for partial course credit or payment of 10 €. Fourteen 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 (N = 106, males = 40, females = 66, M age = 21.9 years, SD = 2.6) comprised 54 participants in the hard letter 'e' (ego-depletion) condition and 52 participants in the easy letter 'e' (control) condition. Henrik Hoemann, Felix Burgdorf and Veronika Drößler served as the experimenters, and were not blind to condition assignment. Experimenters were asked before and after data collection whether they had noticed any difference between the hard and the easy letter 'e' condition. All of them indicated that they had noticed that one task was more difficult than the other. Being asked about their expectations with regard to the results

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(before and after data collection), none of them indicated to have a strong belief concerning the strength or direction of any possible effect. Our procedures followed the approved protocol and did not deviate from our preregistered plan.

Kevin Lau, Arizona State University, USA
Gene A. Brewer, Arizona State University, USA
OSF: https://osf.io/sp4ey/
Participants (N = 132, males = 62, females = 70, M age = 19.4 years, SD = 1.8) from an undergraduate participant pool at Arizona State. The participants were enrolled in Introduction to Psychology and participated in the study for course credit. Participants (n = 1) were excluded from the final analysis because they did not follow the instructions (n = 1), did not meet the meet the specified inclusion criteria for first-spoken language (n = 0), and age (18-30 years). 32 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 47 participants in the hard letter 'e' (ego-depletion) condition and 52 participants in the easy letter 'e' (control) condition. Kevin Lau and Aza Maltai served as the experimenters, and were not blind to condition assignment. Participant numbers 1 to 28 were assigned to conditions based on an alternating order (i.e., Participant 1 in the easy condition, participant 2 in hard, participant 3 in easy, etc.). Participants numbers 101 to 204 were assigned based on a previously randomized list. Other than this, our procedures followed the approved protocol and did not deviate from our preregistered plan.

Bridget P. Lynch, University of Georgia, USA
Michelle R. vanDellen, University of Georgia, USA
W. Keith Campbell, University of Georgia, USA
OSF: https://osf.io/6zxc4/
Participants (N = 172, males = 48, females = 124, M age = 19.1 years, SD = 1.0) were recruited from an undergraduate participant pool at the University of Georgia. The participants were enrolled in introductory psychology and participated in the study for credit toward a course requirement. Participants (n = 93) were excluded from the final analysis for the following reasons: did not meet the specified inclusion criteria for first spoken language (n

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= 10), experienced a computer or experimenter error (*n* = 7; see lab log), indicated in the debriefing that they knew the true nature of the experiment (*n* = 14; see lab log), or 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 (*n* = 62). The final sample (*N* = 79, males = 17, females = 62, *M* age = 19.1, *SD* = 0.9) comprised 42 participants in the hard letter 'e' (ego-depletion) condition and 37 participants in the easy letter 'e' (control) condition. Bridget Lynch, Ana Moldoveanu, Sophia Huynh, Sarah Kirschbaum, and Molly Minnen served as the experimenter(s), and all but Bridget were blind to condition assignment. Lynch ran seven participants only two of which were included in the final analysis. Our procedures followed the approved protocol, but deviated from preregistered plan in the following ways: (1) a fifth experimenter (Bridget) was added, as a graduate student she was not blind to the experiment (Bridget was added because the other experimenters all had the flu that week), and (2) only 172 participants of the proposed 180 participants were collected because our semester ended before we could reach our goal of 180 and for the same reason only 27.9% of our overall sample was male (relative to the 30% we were aiming for as per our protocol).

Dominique Muller, Université Grenoble-Alpes, France
Oulmann Zerhouni, Université Grenoble-Alpes, France
Cédric Batailler, Université Grenoble-Alpes, France
OSF: https://osf.io/6zsrt/
We recruited participants (*N* = 111, males = 29, females = 82, *M* age = 20.5 years, *SD* = 2.2) from an undergraduate participant pool at University of Grenoble-Alpes. The participants were enrolled in a study on word, number recognition, and reaction time. The first 31 participants received course credit and the rest of the sample received 10 euros for their participation. Participants (*n* = 2) were excluded from the final analysis because they did not follow the instructions (*n* = 1) and did not meet the meet the specified inclusion criteria for first-spoken language (*n* = 1). In addition, 33 participants were excluded because their performance on the letter 'e' task or the 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 32 participants in the hard letter 'e' (ego-depletion) condition and 46 participants in the easy letter 'e' (control) condition. Cédric Batailler and Camille Piollet served as the experimenter(s), and were blind to condition

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assignment. For those experimenters who were initially blind, blinding was done by giving a different and unrevealing name to both files ("easy" and "hard"). Our procedures followed the approved protocol and did not deviate from our preregistered plan, except that we recruited a little more than the planned 100 participants because more registered for our study

Henry Otgaar, Maastricht University, the Netherlands
Carolien Martijn, Maastricht University, the Netherlands
Hugo Alberts, Maastricht University, the Netherlands
Alexej Michirev, Maastricht University, the Netherlands
Harald Merckelbach, Maastricht University, the Netherlands
Mark L. Howe, City University London, UK
OSF: https://osf.io/jpnkh/
We recruited participants (N =100, males = 14, females = 86, M age = 21.6 years, SD = 2.5) from an undergraduate participant pool at Maastricht University. The participants were bachelor psychology students and participated in the study for payment of 7.50 euro. Participants (n = 2) were excluded from the final analysis because of an error in saving data in *E-Prime*. In addition, 29 participants were excluded because their performance on the letter 'e' task or the 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 sample comprised 25 participants in the hard letter 'e' (ego-depletion) condition and 44 participants in the easy letter 'e' (control) condition. Alexej Michirev served as the experimenter. Because the experimenter read the instruction to participants, he was aware who received the ego depletion or control condition and this deviated from the protocol. For the rest, our procedures followed the approved protocol.

Michael C. Philipp, Massey University, New Zealand
Peter R. Cannon, Massey University, New Zealand
OSF: https://osf.io/nqyb3/
Participants (N = 86, males = 27, females = 59, M age = 22.7 years, SD = 3.9) were recruited from local student job search websites and paper notices placed on local noticeboards around the Massey University campus in Palmerston North, NZ. Participants were given a NZD$10 grocery voucher in thanks for their participation. All participants satisfactorily followed the

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instructions and met the specified inclusion criteria of having English as their first-spoken language and being between 18 and 30 years old. Eleven 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 38 participants in the hard letter ‘e’ (ego-depletion) condition and 37 participants in the easy letter ‘e’ (control) condition. Natalie Nikora, Olivia Sievwright, Katie Knapp, Adam Burston, and Randi Nehls served as the experimenters. Experimenter blinding was achieved, in part, by having one experimenter administer the Letter E task and the other administer the MSIT task. This resulted in the experimenter administering the MSIT task being unaware of which version of the Letter E task that had been previously administered to each participant. Experimenters were also blind to the focal dependent variable of the study. At the conclusion of data collection none of the experimenters guessed that the primary measure of the MSIT task was reaction time variability. We deviated from the procedures of our preregistered plan only in that some of our experimenters differed from those named in the preregistration. The other procedures were followed according to our preregistered plan

Katrin Rentzsch, University of Göttingen and University of Bamberg, Germany
Dario Nalis, University of Bamberg, Germany
Astrid Schütz, University of Bamberg, Germany
OSF: https://osf.io/t8ycs/
We recruited participants (N = 122, males = 45, females = 77, M age = 22.1 years, SD = 2.3) from an undergraduate participant pool at the University of Bamberg, Germany. Participants were recruited via email or blackboard messages and participated in the study for either partial course credit (n = 14) or payment of 7€ (n = 107). Two participants were excluded from the final analysis because of an experimenter error (n = 1) or because the person did not meet the inclusion criterion of having German as a mother tongue (n = 1). Both of these excluded participants had been assigned to the easy letter ‘e’ (control) condition. Seventeen 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 51 participants in the hard letter ‘e’ (ego-depletion) condition and 52 participants in the easy letter ‘e’ (control) condition. Female experimenter M. and female experimenter E.

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served as the experimenters, and were not blind to condition assignment. However, experimenters were naive to the implications of the conditions and the hypotheses. Blinding was checked at the end of the study by having the experimenters provide their thoughts on what the implication of the conditions and the hypotheses were. Our procedures followed the approved protocol and did not deviate from our preregistered plan.

Lara Ringos, Loyola University Maryland, USA
Marianna Carlucci, Loyola University Maryland, USA
OSF: https://osf.io/s9uvc/
Participants (N = 100, males = 24, females = 76, M age = 19.76 years, SD = 1.65) were recruited from an undergraduate participant pool at Loyola University Maryland. All participants were enrolled in an undergraduate degree program in psychology and participated in the study for course credit. One participant was excluded from the final analysis due to not following instructions and another was excluded due to a computer malfunction during the experiment. A further 30 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 (N = 68, males = 15, females = 53, M age = 19.9 years, SD = 1.9) comprised 32 participants in the hard letter 'e' (ego-depletion) condition and 36 participants in the easy letter 'e' (control) condition. Theresa Tokar, Caitlin Romano, Kaitlin Cassidy, Miriam Mckiney and Emily Devaney served as the experimenters. All of the experimenters were blind to the purpose of the experiment. None of the experimenters were blinded to condition assignment because they read out instructions to the participants. Our procedures followed the approved protocol and did not deviate from our preregistered plan.

Caroline Schlinkert, Vrije Universiteit Amsterdam, The Netherlands
Michel Schrama, Vrije Universiteit Amsterdam, The Netherlands
Sander L. Koole, Vrije Universiteit Amsterdam, The Netherlands
OSF: https://osf.io/ybqpg/
Participants (N = 108, males = 35, females = 73, M age = 20.7 years, SD =2.7) were recruited from an undergraduate participant pool at Vrije Universiteit Amsterdam. All participants were enrolled in an undergraduate degree programme in psychology and participated in the study

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for course credits or monetary reward. Participants (n = 3) were excluded from the data analysis, because they did not receive the instructions in the right manner. Twenty-six 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 (N = 79, males = 27, females = 52) consisted of 36 participants in the hard letter 'e' (ego-depletion) condition and 43 participants in the easy letter 'e' (control) condition. Isabel van Oorschot and Joyce van Brecht served as the experimenter(s), and were blinded to the condition assignment and the purpose of the study. Our procedures followed the approved protocol and did not deviate from our preregistered plan.

Angelos Stamos, KU Leuven, Belgium
Sabrina Bruyneel, KU Leuven, Belgium
Siegfried Dewitte, KU Leuven, Belgium
OSF: https://osf.io/sz65p/
Participants (N = 117, males = 58, females = 59, M age = 20.5 years, SD = 2.8) were recruited from an undergraduate participant pool at KU Leuven. Participants were enrolled in various undergraduate programmes and participated in the study for course credits or a payment of six Euro. Two participants were excluded from the final analysis because they did not meet the specified inclusion criteria for the age limit. Twenty two 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 (N = 93, males = 44, females = 49, M age = 20.2 years, SD = 1.9) comprised 43 participants in the hard letter 'e' (ego-depletion) condition and 50 participants in the easy letter 'e' (control) condition. Sientje Palmans, Tatjana Dessers, Mitte Scheldeman, and Suzanne Bauwens served as the experimenters. They were naïve to the purpose of the experiment. The experimenters were initially blind to condition assignment but after training in the step by step procedure all of them figured out that one condition was more difficult than the other. Our procedures followed the approved protocol and did not deviate from our preregistered plan.

Gustav Tinghög, Linköping University, Sweden

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Lina Koppel, Linköping University, Sweden
OSF: https://osf.io/yi5fm/

Participants (N = 102, males = 66, females = 36, M age = 23.3 years, SD = 2.6) were recruited from a participant pool at Linköping University. The participants participated in the study for payment of 100 SEK (approximately 12 US$). Two participants were excluded from the final analysis because they did not meet the meet the specified inclusion criteria for age (18-30 years). An additional 18 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 (N = 82, males = 52, females = 30, M age = 23.1 years, SD = 2.3) comprised 40 participants in the hard letter 'e' (ego-depletion) condition and 42 participants in the easy letter 'e' (control) condition. Lina Koppel served as the experimenter, and was not blind to condition assignment. Our procedures followed the approved protocol and did not deviate from our preregistered plan.

Johannes Ullrich, University of Zurich, Switzerland
Pierpaolo Primoceri, University of Zurich, Switzerland
Sarah Schoch, University of Zurich, Switzerland
OSF: https://osf.io/kp4xd/

Participants were undergraduate students from the University of Zurich (N = 121, males = 38, females = 83, M age = 23.0 years, SD = 2.7). They participated in the study for course credit or a payment of CHF 15. Six participants were excluded from the final analysis because they did not follow the instructions (n = 2), did not meet the specified inclusion criteria for first-spoken language (n = 3), or because no data were recorded due to an accidental computer restart during the MSIT task (n = 1). Of the remaining participants, 12 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 (N =103, males = 32, females = 71, M age = 23.0 years, SD = 2.7) comprised 50 participants in the hard letter 'e' (ego-depletion) condition and 53 participants in the easy letter 'e' (control) condition. Pierpaolo Primoceri and Sarah Schoch served as the experimenters and were not blind to condition assignment. Our procedures followed the approved protocol and did not deviate from our preregistered plan.

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Wanja Wolff, Potsdam University, Germany
Milena Muzi, Potsdam University, Germany
Ralf Brand, Potsdam University, Germany
OSF: https://osf.io/25weu/wiki/home/

Participants (N = 111, males = 55, females = 56, M age = 23.6 years, SD = 2.5) were recruited from an undergraduate participant pool at the University of Potsdam. The participants were enrolled in an introductory course at the department of Sports and Exercise Psychology and participated in the study for course credit or voluntarily. Participants (n = 2) were excluded from the final analysis because the experimenter administered the task incorrectly (n = 1) and technical errors in saving the data (n = 1). 22 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 (N = 87, males = 41, females = 46, M age= 23.5, SD = 2.3) comprised 38 participants in the hard letter 'e' (ego-depletion) condition and 49 participants in the easy letter 'e' (control) condition. Marlon Fedke, Georg Hetland, Richard Heinrich, Lisa Häfker, and Jessika Fuhr served as the experimenters, and were naïve to the purpose of the experiment. None of the experimenters were blinded to condition assignment because they read out instructions to the participants. Our procedures followed the approved protocol and did not deviate from our preregistered plan.

Cleoputri Yusainy, Brawijaya University, Indonesia
Supra Wimbarti, Gadjah Mada University, Indonesia
Ratri Nurwanti, Brawijaya University, Indonesia
Calvin Octavianus Anggono, Brawijaya University, Indonesia
OSF: https://osf.io/ptzmh/

Participants (N = 200, males = 100, females = 100, M age = 20.6 years, SD = 1.1) were undergraduate students at Gadjah Mada University participating for payment of US$5. Two participants were excluded from the final analysis due to noncompliance with instructions. A further 42 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

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sample (N = 156, males = 63, females = 73, M age = 20.6 years, SD = 1.1) comprised 82 participants in the hard letter ‘e’ (ego-depletion) condition and 74 participants in the easy letter ‘e’ (control) condition. Four research assistants served as the experimenters, and were blinded to condition assignment. Blinding was checked at the end of their running by asking them about the research hypotheses. Our procedures followed the approved protocol and did not deviate from our preregistered plan.

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Appendix B. Supplementary analyses

Consistent with the original study by Sripada et al. (2014), we excluded participants whose accuracy on the letter 'e' and MSIT tasks in the sequential-task experiments fell below 80%. This inclusion criterion resulted in relatively high rates of participant exclusion across participating labs. As a consequence, we conducted post hoc analyses to assess the extent to which potential exclusions may have biased the sample and influenced the detection of an ego-depletion effect. We conducted two analyses. First, we conducted an analysis of rates of exclusion due to accuracy across depletion and no-depletion groups to establish whether exclusion rates were greater in one condition. Higher exclusion rates in the depletion condition may suggest that participants with low accuracy would be more vulnerable to depletion and eliminating them would reduce the probability of detecting an ego-depletion effect. We compared rates of exclusion due to accuracy rates across conditions using chi-square analysis in each laboratory individually and in the total sample. Results are presented in Table B1. Results indicated five labs in which the exclusion rates were statistically significantly different across conditions.

In a second analysis, we computed the meta-analytic effect size for the ego-depletion effect across the 23 labs' results including data of participants previously excluded for accuracy. Forest plots and overall effects of the analysis for RTV and RT are presented in Figures B1 and B2, respectively. Results revealed small averaged sample-weighted effect sizes for the mean RTV (d = 0.004, 95% confidence interval: -0.07 to 0.08) and RT (d = 0.08, 95% confidence interval: 0.01 to 0.16). The confidence intervals for the RTV dependent variable included the value of zero, but the confidence intervals for RT did not, suggesting the existence of a small effect (z = 2.12, p = .034). Only one of the 23 replications had effect sizes with 95% confidence intervals that did not include zero for RTV and RT. Together with the small RT effect size, this suggests that only extremely large studies would have the power to

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reliably detect the apparent RT effect. We found very low heterogeneity in the effect sizes for mean RTV (I^2 = 0.00%, Q_{22} = 20.12, p = .576) and RT (I^2 = 5.07%, Q_{22} = 23.18, p = .392) indicating virtually no variability in the effect size across labs. Data and analysis files for these analyses can be found under the supplementary analyses component of the main ego-depletion Sripada et al. RRR webpage on the OSF: https://osf.io/jymhe/

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Table B1

Analysis of Rates of Exclusion for Participants with Low Accuracy (<80%) on Experimental Tasks Across Depletion and No-Depletion Groups for Each Lab

Study	Depletion		No depletion		χ^{2a}	*p*
	Excluded	Included	Excluded	Included		
Birt & Muise	22	31	24	28	0.23	.632
Calvillo & Mills	30	36	28	39	0.18	.670
Carruth & Miyake	32	55	20	71	4.71	.030
Crowell, Finley, & Schmeichel	29	34	25	39	0.63	.427
Evans & Fay	41	40	33	49	1.77	.184
Francis & Inzlicht	33	23	28	27	0.72	.396
Hagger, Chatzisarantis & Zwienenberg	14	46	9	55	1.76	.184
Lau & Brewer	19	47	13	52	1.37	.242
Lynch, vanDellen & Campbell	31	42	31	37	0.14	.709
Philipp & Cannon	5	38	6	37	0.10	.747
Ringos & Carlucci	17	32	13	36	0.77	.381
Brandt	32	48	20	54	2.89	.089
Cheung, Kroese, Fennis & de Ridder	12	89	10	92	0.23	.634
Elson	9	42	5	48	1.50	.220
Lange, Heise & Hoemann	6	54	8	52	0.32	.570
Muller, Zerhouni & Batailler	23	32	10	46	7.63	.006
Otgaar, Martijn, Alberts, Michirev, Merckelbach & Howe	25	25	6	44	16.88	.000
Rentzsch, Nalis & Schütz	11	51	6	52	1.35	.246
Schlinkert, Schrama & Koole	17	36	9	43	3.07	.080
Stamos, Bruyneel & DeWitte	16	43	6	50	5.00	.025
Ullrich, Primoceri & Schoch	7	50	5	53	0.41	.521
Wolff, Muzi & Brand	16	38	6	49	5.93	.015
Yusainy, Wimbarti, Nurwanti & Anggono	17	82	25	74	1.93	.164

Note. [a]Chi-square test to test whether the proportion of participants excluded due to accuracy was equivalent across both depletion and no-depletion conditions.

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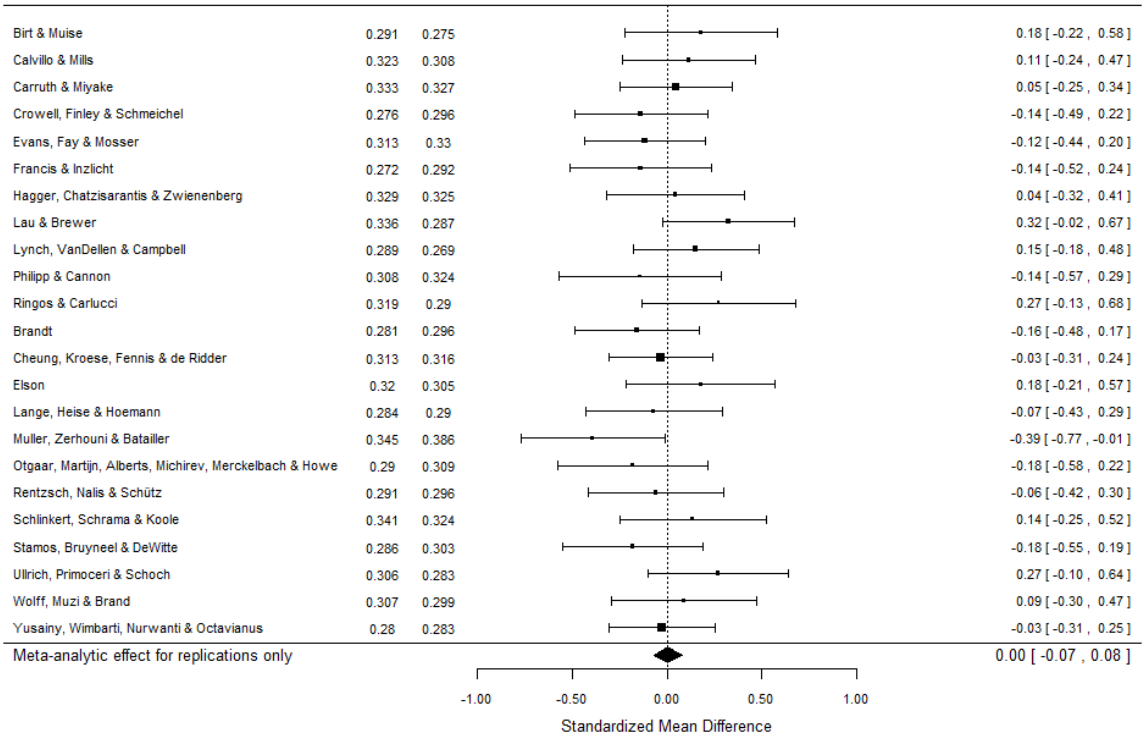

Figure B1. Forest plot of the effect of depletion condition on RTV (reaction time variability) for the multi-source interference task with larger, positive effect sizes indicating greater depletion. For each lab, the figure shows the standardized mean difference (Cohen's *d*) across depletion and control groups and a forest plot of the standardized mean difference scores with 95% confidence intervals. Data includes participants previously excluded for task accuracy falling below 80%.

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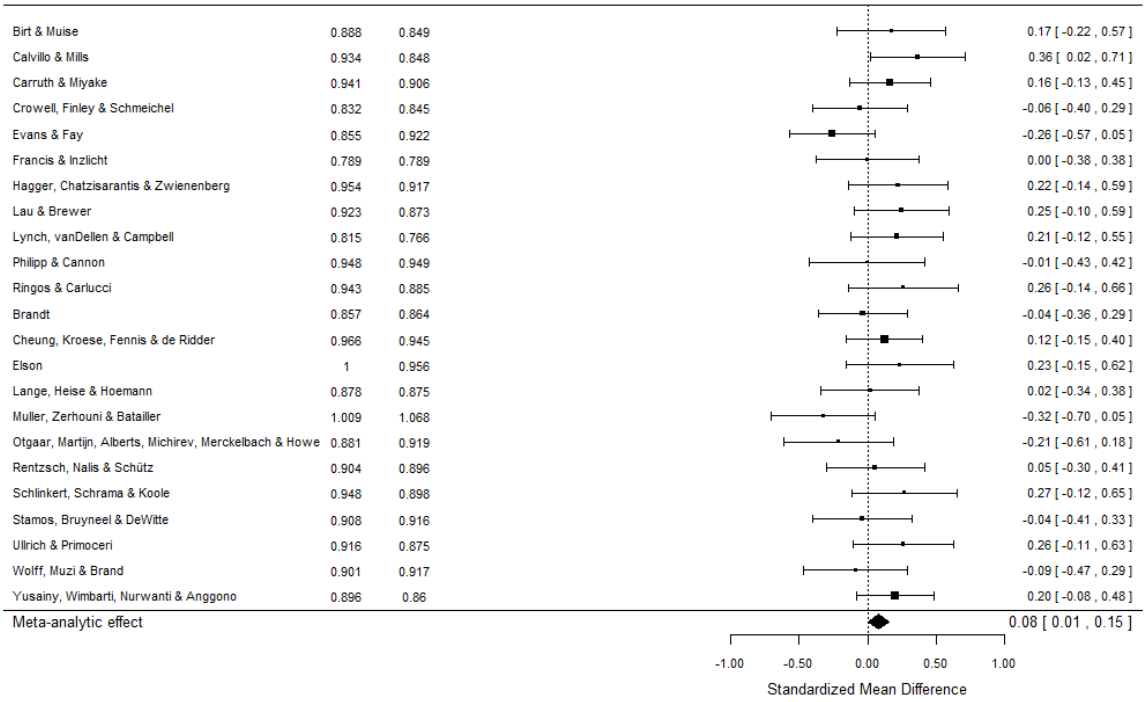

Figure B2. Forest plot of the effect of depletion condition on RT (reaction time) for the multi-source interference task with larger, positive effect sizes indicating greater depletion. For each lab, the figure shows the standardized mean difference (Cohen's *d*) across depletion and control groups and a forest plot of the standardized mean difference scores with 95% confidence intervals. Data includes participants previously excluded for task accuracy falling below 80%.

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Appendix C. Results of meta-analysis of letter ‘e’ task performance and self-report ratings of effort, fatigue, difficulty, and frustration.

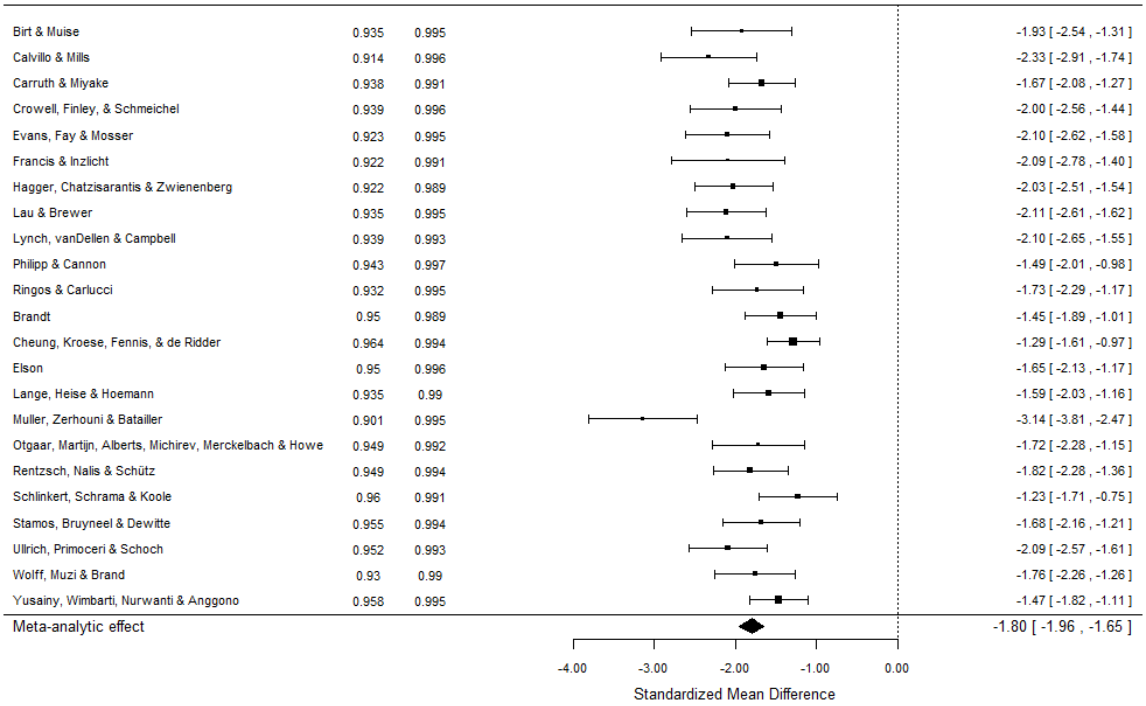

Figure C1. Forest plot of the effect of depletion condition on accuracy rates on the letter ‘e’ task with positive effects indicating greater accuracy. For each lab, the figure shows the standardized mean difference (Cohen’s *d*) across depletion and control groups and a forest plot of the standardized mean difference scores with 95% confidence intervals.

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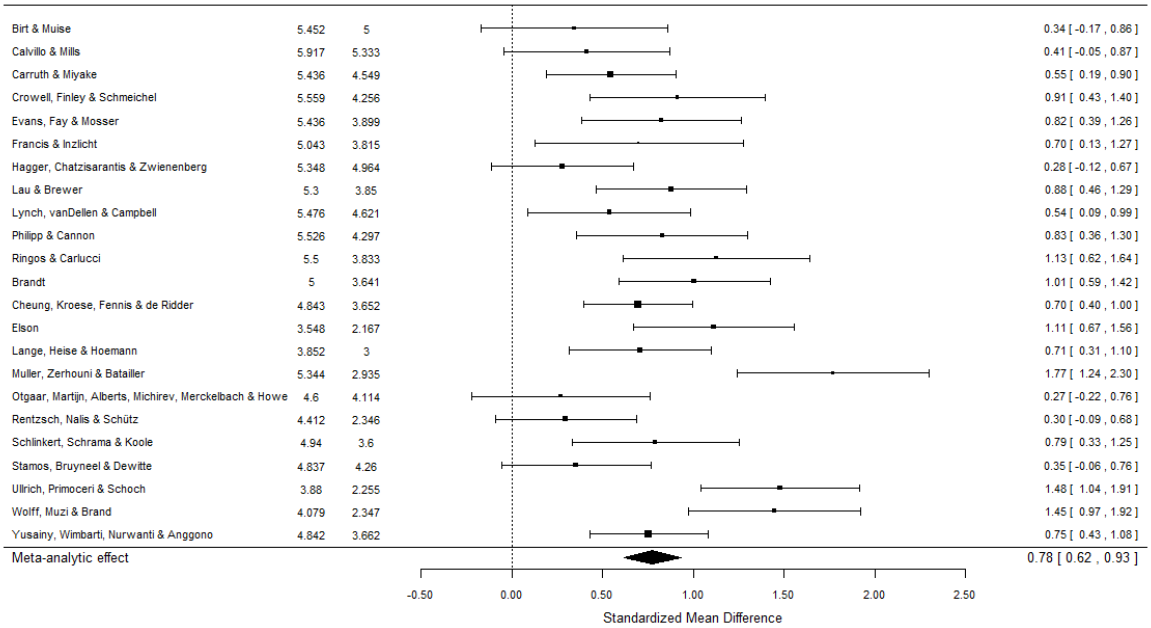

Figure C2. Forest plot of the effect of depletion condition on self-reported effort. For each lab, the figure shows the standardized mean difference (Cohen's *d*) across depletion and control groups and a forest plot of the standardized mean difference scores with 95% confidence intervals.

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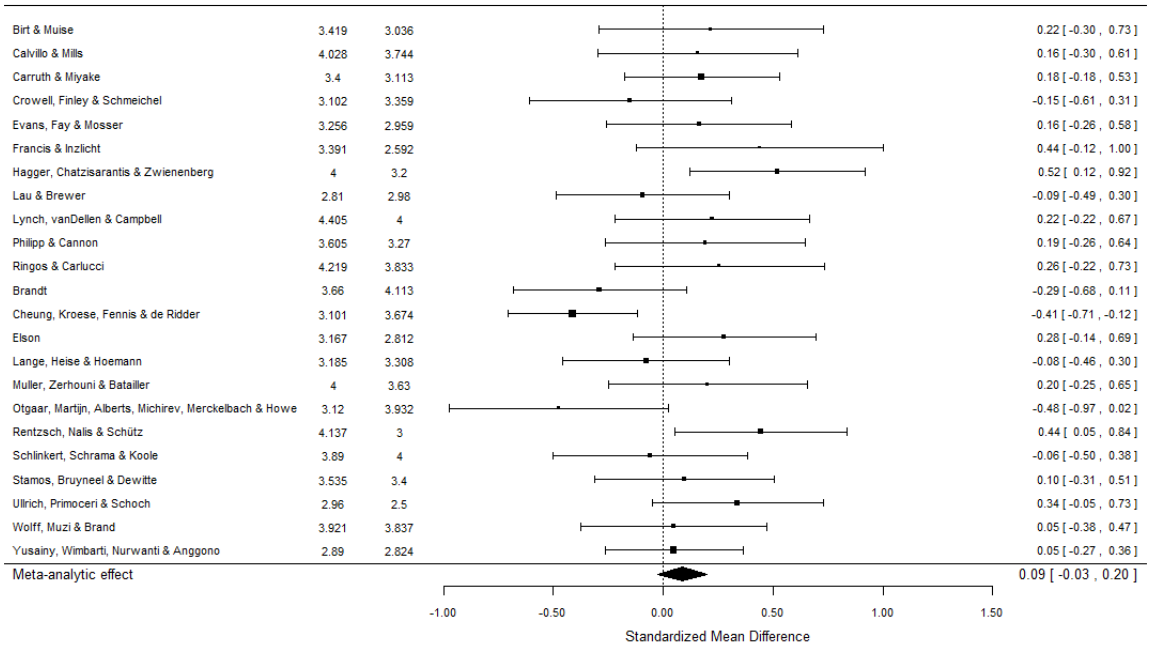

Figure C3. Forest plot of the effect of depletion condition on self-reported fatigue. For each lab, the figure shows the standardized mean difference (Cohen's *d*) across depletion and control groups and a forest plot of the standardized mean difference scores with 95% confidence intervals.

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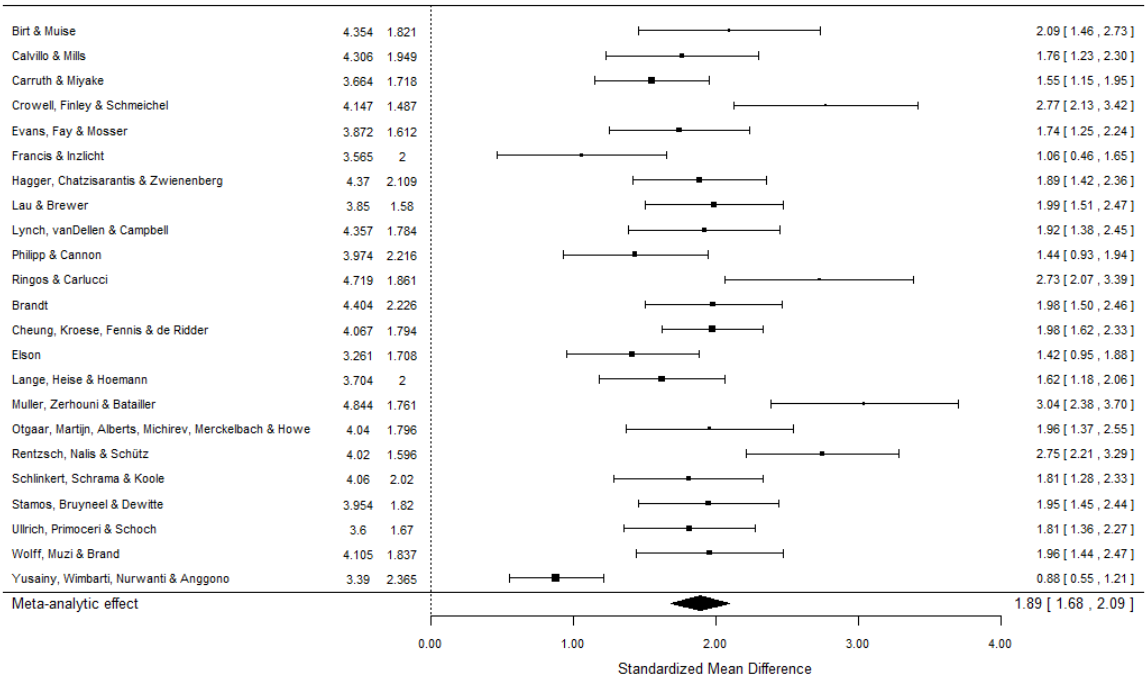

Figure C4. Forest plot of the effect of depletion condition on self-reported difficulty. For each lab, the figure shows the standardized mean difference (Cohen's *d*) across depletion and control groups and a forest plot of the standardized mean difference scores with 95% confidence intervals

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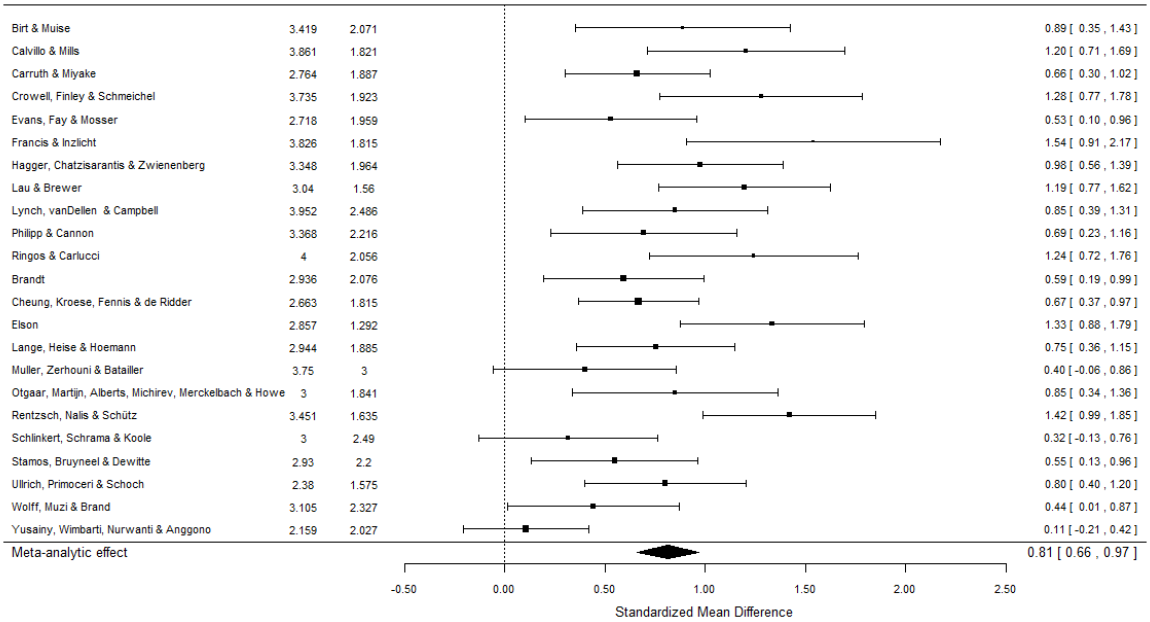

Figure C5. Forest plot of the effect of depletion condition on self-reported frustration. For each lab, the figure shows the standardized mean difference (Cohen's *d*) across depletion and control groups and a forest plot of the standardized mean difference scores with 95% confidence intervals.

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