

Supplementary Materials S1: Original Stereotype Threat Study Methods and Results

1. Participants.

Ninety-nine subjects were invited to participate in the study. Based on subjects' failure to complete various measures and/or data missingness (missing data, incomplete tasks, incomplete submissions), there was a final sample of eighty-one subjects (32 White, 9 Black, 22 Asian, 7 Latino and 9 bi-racial or Other). Participants were students at Princeton University who identified as female. Subjects received credit toward a course requirement or \$16 cash for their participation.

2. Design.

2(Condition: Threat vs. Control) x 2(Mindset: Fixed vs. Growth) factorial design manipulated the effects of gender stereotype threat and mindset on cognitive performance. Only female subjects were invited to participate.

3. Procedure.

First, participants entered the lab and completed a baseline WMC measure on the RSPAN, followed by several pre-manipulation surveys on a battery of non-cognitive and attitudinal measures of theoretical importance, including mindset, personality, grit, and a variety of other additional measures to gauge students' academic attitudes and sense of belonging in school. Next, participants received a stereotype threat manipulation or a control and then a fixed or growth mindset manipulation depending on their condition. They then completed a post-manipulation WMC measure on the OSPAN along with the quantitative sub-section of the GRE. At the end of the experimental session, participants completed experiment surveys assessing attitudinal factors, GPA, SAT scores, and demographic information. Finally, after the experiment ended participants also completed a survey battery of non-cognitive measures including: mindset, personality, and perseverance/grit measures. At the conclusion of the experiment participants were debriefed and thanked for their participation. The entire experiment was no longer than 1.5 hours.

4. Tasks.

All tasks are identical to those outlined in the materials and methods of this paper. However, as mentioned above, the original study included a stereotype threat manipulation. The threat manipulation procedure was based on Schmader and Johns (2003) - only female participants were recruited and were either assigned to the threat or control condition. In the threat condition, subjects were informed that the OSPAN task was indicative of "quantitative capacity" ability and were then informed this capacity was indicative of group ability. Subjects were then instructed to complete a gender identification survey, which consisted of a single question asking participants to indicate their gender. In the control condition the OSPAN task was simply described as a "working memory capacity" measure. See Supplementary Materials B for exact instructions.

5. Data Preparation & Analytic Approach.

In each of the analyses below, homogeneity of variance assumptions were tested with Levene's test and where the test was statistically significant, Bonferonni corrections were used and reported below. In cases where Levene's tests were non-significant these results were not reported and normal t-tests and/or tests of analysis of variance are reported below.

6. Threat and Mindset Effects.

To examine the degree to which the manipulations caused participants to endorse more fixed or malleable mindsets a 2(Condition: Threat vs. Control) x 2(Mindset: Fixed vs. Growth) factorial ANOVA was conducted on the mindset measure's difference score.

The difference score is the post mindset scale scores subtracted from the pre mindset scale scores (before the manipulations). The mindset scales were reverse scored such that higher scores indicate more malleable mindsets. In this analysis, the main effect of threat (i.e., threat vs. control) was non-significant, $F(1, 72) = .25$, $p = .6184$, $\eta^2_{\text{partial}} = .00346$. As expected, the main effect of mindset was significant, $F(1, 72) = 14.003$, $p = .000364$, $\eta^2_{\text{partial}} = .164$, indicating that the mindset manipulations made participants more malleable ($M = .20$, $SD = .58$) or fixed ($M = -.37$, $SD = .75$), respectively. The interaction was not significant, $F(1, 72) = 2.807$, $p = .0982$, $\eta^2_{\text{partial}} = .0375$.

7. Effect of Manipulation on Cognitive Measures.

Two 2(Condition: Threat vs. Control) \times 2(Mindset: Fixed vs. Growth) factorial ANOVAs analyzed the effects on cognitive performance on WMC via the OSPAN and standardized test performance on the math GRE. Results revealed, for state WMC on the OSPAN, non-significant effects of: threat, $F(1, 73) = 1.96$, $p = .166$, $\eta^2_{\text{partial}} = .0026$, mindset, $F(1, 73) = .0304$, $p = .583$, $\eta^2_{\text{partial}} = .0051$, and their interaction, $F(1, 73) = .000$, $p = .989$, $\eta^2_{\text{partial}} = .0000026$.

On the math GRE, the ANOVA results indicated non-significant effects of: threat, $F(1, 76) = 3.56$, $p = .063$, $\eta^2_{\text{partial}} = .045$, mindset, $F(1, 76) = .069$, $p = .794$, $\eta^2_{\text{partial}} = .00088$, and their interaction, $F(1, 76) = .168$, $p = .683$, $\eta^2_{\text{partial}} = .0022$. Based on these findings we collapsed the threat condition in the current research.