

Supplementary Material

“Reinstating the Resourceful Self: When and How Self-Affirmations Improve Executive Performance of the Powerless”

Note: This document has two main sections. In section 1, we have provided details of materials and measures used in the experiments reported in our manuscript. Information is presented according to the order of mentioning in the manuscript.

In section 2, we have provided additional analyses and results. As with section 1, this section is organized in order of the studies reported in the manuscript.

SECTION 1: EXPERIMENTAL PROCEDURES AND MATERIALS

General Information Applicable to all three Experiments

Upon arrival at the laboratory, participants were first verbally briefed about the procedure they would follow from start to finish. The experiment was presented as a study on “group dynamics” in which participants would form a group with another participant and would complete an online group task. Participants were informed that they first had to get their roles assigned for the upcoming group task. They were then told that activation of the online group task takes some time and while the experimenter began activating the task (which ostensibly took about 5 to 10 minutes), participants were invited to complete two short and independent tasks. These tasks included the affirmation manipulation and the executive function task, followed by a questionnaire measuring age, gender, affective state (using the PANAS), and manipulation check questions. There were minor adjustments made to each experiment in terms of measures used, and this is explicated in this document for each experiment.

Experiment 1 Method and Materials

After providing informed consent, participants were first exposed to the power manipulation paradigm. For this part, they were told they would work in a group with another participant on a given task. They were told that one member of the group would be assigned to the *subordinate* role while the other would be assigned to the *manager* role in the upcoming group task. Next, after a verbal briefing by the experimenter, the manipulations were carried out on the computer. A screen by screen description of the manipulations and measures is provided below.

Power Manipulation

Text on Screen 1

As already explained by the experimenter, the study you have signed up for consists of two parts that are independent of each other. The first part consists of a few individual tasks and the second part consists of a group task (a task where you will

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the process of completing the task. A form will be given to the Manager based on which your performance on that task will be judged and evaluated. The evaluation will be private. That is, you will not see your Manager's evaluation of you. This evaluation will help determine how the bonus reward mentioned to you by the experimenter is to be divided between the Manager and you. You have no influence over the distribution of the reward as you will not have the opportunity to evaluate the Manager. Only the Manager will be in charge of directing your performance, evaluating it, and determining your reward. Therefore, you may receive some, half or none of the reward based on how the Manager judges your performance and wishes to disburse the reward.

Text on Screen 4 (if assigned to the powerful condition)

Please make sure that you read your role description carefully.

According to the answers you provided on the role assignment questionnaire, you have been assigned the role of a MANAGER. Therefore, you will be paired with someone who has been assigned to the role a SUBORDINATE.

As a Manager, you will be in charge of directing the Subordinate in completing an online version of Tangram (details of the game will be provided before the group task begins). You will decide how to structure the process of completing the task, and you will get to judge and evaluate the performance of the Subordinate. You will be given an evaluation form to assess the performance of the Subordinate and based on which you will determine whether the Subordinate will receive any or none of a bonus reward mentioned to you by the experimenter. The Subordinate will not be able to see your evaluation and will not have an opportunity to evaluate you as a Manager. Thus, as a Manager, you will supervise and evaluate your subordinate and distribute the reward. You can decide if the Subordinate should receive some, half or none of the reward.

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Text on Screen 5

Following the individual tasks, you will participate in a group task with another participant. To assure anonymity, you will type your initials (e.g., IMS, FG) or a nickname of your choice (e.g., Firebird) to use during the Tangram.

Please type in your initials or a nickname of your choice here: _____

Text on Screen 6

Please wait while we pair you with another participant with a role different to yours. We will provide you with the initials of your group member so that you can identify them during the upcoming group task.

Text on Screen 7

You are to work with a participant with the following initials or nickname: -----

Meanwhile, the other participant has also been informed of your initials, and this will help in starting the Tangram effectively.

Note. For the information presented in Screen 7, the program was designed to generate an initial/nickname randomly. Our goal with this design was to make the task enjoyable and realistic to participants, increase task engagement, and to induce a sense of the presence of another participant. It should be noted that, in reality, there was no other participant and the group task never took place.

Text on Screen 8

Your role has now been assigned, and you will be paired with [*group member's initials*]. Please click the forward button and move on to individual tasks that need to be completed while the group task is being activated. For the individual tasks, follow the instructions on the instruction sheet provided and explained by the experimenter. You will be informed by the experimenter when the group task is activated, and you will be guided to another room for the group task.

Affirmation Manipulation

On the instruction sheet, participants were first asked to exit the role assignment web browser and then asked to double-click on a desktop icon that read “Writing task.” In this part, participants were told that we were interested in exploring what life values are of importance to people. To avoid hypothesis guessing or revealing the nature of the task, we simply titled the task as “Writing Task.” Participants further read that they would find information on how to complete the task after the program opened on their screen. Participants were randomly exposed to either the *no-affirmation* condition or the *self-affirmation* condition.

Text on Screen 1 (if assigned to no-affirmation condition)

Below is a list of characteristics and values, some of which may be important to a philanthropist like Bill Gates, some of which may be unimportant. Please rank these values and qualities in order of their importance to this philanthropist, from 1 to 11 (1 = most important item, 11 = least important item).

- ____ Artistic skills/aesthetic appreciation
- ____ Sense of humor
- ____ Relations with friends/family
- ____ Spontaneity/living life in the moment
- ____ Social skills
- ____ Athletics
- ____ Musical ability/appreciation
- ____ Physical attractiveness
- ____ Creativity
- ____ Analytical skills
- ____ Romantic values

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Text on Screen 2

Now please write about why you think the item you ranked "1" is the most valued characteristic to this philanthropist and when such a value would be of importance to him.

Text on Screen 3

You have now completed the writing task. Please close the browser and move forward to the next task as indicated on your instruction sheet.

Text on Screen 1 (if assigned to self-affirmation condition)

Below is a list of characteristics and values, some of which may be important to you, some of which may be unimportant. Please rank these values and qualities in order of their importance to you, from 1 to 11 (1 = most important item, 11 = least important item).

- _____ Artistic skills/aesthetic appreciation
- _____ Sense of humor
- _____ Relations with friends/family
- _____ Spontaneity/living life in the moment
- _____ Social skills
- _____ Athletics
- _____ Musical ability/appreciation
- _____ Physical attractiveness
- _____ Creativity
- _____ Analytical skills
- _____ Romantic values

Text on Screen 2

Now please write about why your most valued characteristic, the item you ranked "1", is personally important to you and describe a time when it had been particularly important to you.

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Text on Screen 3

You have now completed the writing task. Please close the browser and move forward to the next task as indicated on your instruction sheet.

Stroop Task

On the instruction sheet, participants were asked to double click on the desktop icon that read “Stroop task.” They further read that they would find information on how to complete the task after the program opened on their screen.

Text on Screen 1

In this task, you will see three color names (RED, GREEN, and YELLOW) and four X's (XXXX) in different **font** colors. You need to respond to the **font** color of the displayed word, not the meaning of the color word.

For example, if you see:

GREEN

You need to respond to the font color, which is (**red**) and therefore press the associated keyboard button (“**r**”).

If you see:

XXXX

You need to respond to the font color, which is (**green**), and press the associated keyboard button (“**g**”).

The other keyboard button used in this study is “**y**” for font color **yellow**.

Press the space bar for more instructions.

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Text on Screen 2

GREEN → press button “r” because the font color is red

YELLOW → press button “y” because the font color is yellow

RED → press button “g” because the font color is green

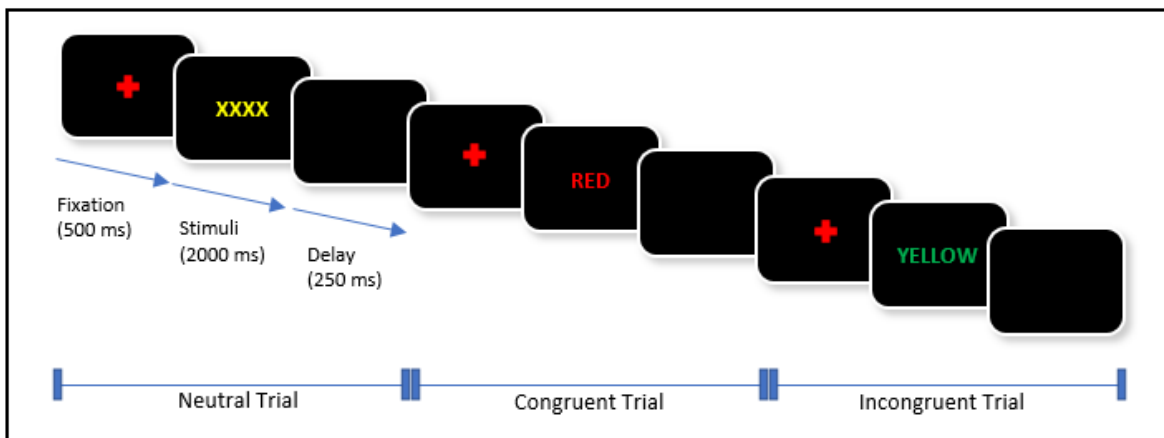
XXXX → press button “r” because the font color is red

The name and the font color are considered conflicting in some cases (e.g., RED in the example above) and not in other cases (for instance, YELLOW in the example above). Therefore, try to ignore the meaning of the color word and instead indicate the font color by pressing the associated key. You will see a “+” sign before the start of every word.

You start with a few practice trials as a warm up and then proceed to the real trials. You must answer as fast and as accurately as you can. Please ask the experimenter if you have any questions at this stage.

Press the space bar to start.

Note. Participants first completed 8 practice trials before the start of experimental trials. Between the practice and experimental trials, participants were informed that they had now completed the practice trials and they should press the spacebar to proceed when they were ready for the experimental trials. All trials were randomly presented to the participant. Graphical representation of the sequence of events is as follows:



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Generic Questionnaire

In this first experiment, the questionnaire had questions pertinent to Age, Gender, and Nationality, along with the PANAS, manipulation checks questions, and questions related to English proficiency and color blindness.

Background Questions

What is your gender?

Female

Male

Other_____

How old are you?

What is your nationality?

PANAS

This scale consists of a number of words that describe different feelings and emotions. Read each item and then indicate the extent to which you feel that way right now, that is, at the present moment.

1
not at all

2

3

4

5
extremely

1. Interested
2. Distressed
3. Excited
4. Upset
5. Strong
6. Guilty
7. Scared
8. Hostile
9. Enthusiastic
10. Proud
11. Irritable
12. Alert
13. Ashamed
14. Inspired
15. Nervous
16. Determined

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- 17. Attentive
- 18. Jittery
- 19. Active
- 20. Afraid

Note. The order by which these items were presented was randomized, and item numbers were not presented in the experiment. To calculate the Positive Affect (PA) Score of each participant we took the average of the participant’s responses on items 1, 3, 5, 9, 10, 12, 14, 16, 17, and 19. To calculate the Negative Affect (NA) Score of each participant, we took the average of the participant’s responses on items 2, 4, 6, 7, 8, 11, 13, 15, 18, and 20.

Fear of Negative Evaluation

Read each of the following statements carefully and indicate how characteristic it is of you:

I worry about what other people will think of me even when I know it doesn't make any difference.

1	2	3	4	5
not at all				extremely

I am unconcerned even if I know people are forming an unfavorable impression of me.

1	2	3	4	5
not at all				extremely

I am frequently afraid of other people noticing my shortcomings.

1	2	3	4	5
not at all				extremely

I rarely worry about what kind of impression I am making on someone.

1	2	3	4	5
not at all				extremely

I am afraid others will not approve of me.

1	2	3	4	5
not at all				extremely

I am afraid that people will find fault with me.

1	2	3	4	5
not at all				extremely

Other people's opinions of me do not bother me.

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1 2 3 4 5
not at all extremely

When I am talking to someone, I worry about what they may be thinking about me.

1 2 3 4 5
not at all extremely

I am usually worried about what kind of impression I make.

1 2 3 4 5
not at all extremely

If I know someone is judging me, it has little effect on me.

1 2 3 4 5
not at all extremely

Sometimes I think I am too concerned with what other people think of me.

1 2 3 4 5
not at all extremely

I often worry that I will say or do the wrong things.

1 2 3 4 5
not at all extremely

Comprehension and Visual Control Questions

Is English your native language?

Yes No

Was there any part of the study that you had trouble understanding? If yes, which part?

Yes_____ No

Do you suffer from any visual disorder that prevents you from seeing certain colors?

Yes No

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Manipulation Check Questions for Power

Before responding to the manipulation check participants read:

“You have come to the final questions of the individual task. The next step of this study, which is the group task, is about to begin. The experimenter will lead you to another room shortly for this purpose. However, before that, we would like you to indicate *to what extent you feel that*:

You have power and control over the outcomes in the group task

1 2 3 4 5 6 7 8 9
not at all very much

Your group member has power and control over the outcomes in the group task

1 2 3 4 5 6 7 8 9
not at all very much

Note. The order in which the questions were presented was randomized.

Experiment 2 Method and Materials

Self-Esteem Measure (Rosenberg, 1965)

After signing up for the experiment, participants were sent a link and asked to fill out a questionnaire which was framed as a pre-requisite to the laboratory study and through which a participation number would be provided. Participants were only able to participate in the study if they had completed the self-esteem questionnaire and had a participation number to show for it. The email with a link to the self-esteem measure was sent to participants, two weeks before participants' laboratory session and responses were collected 10 days to a week before the lab session.

Below is a list of statements dealing with your general feelings about yourself. Please indicate the extent to which each statement is characteristic of you.

On the whole, I am satisfied with myself.

1	2	3	4	5
not at all				extremely

At times I think I am no good at all.

1	2	3	4	5
not at all				extremely

I feel that I have a number of good qualities.

1	2	3	4	5
not at all				extremely

I am able to do things as well as most other people.

1	2	3	4	5
not at all				extremely

I feel I do not have much to be proud of.

1	2	3	4	5
not at all				extremely

I certainly feel useless at times.

1	2	3	4	5
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not at all				extremely
I feel that I'm a person of worth, at least on an equal plane with others.				
1	2	3	4	5
not at all				extremely
I wish I could have more respect for myself.				
1	2	3	4	5
not at all				extremely
All in all, I am inclined to feel that I am a failure.				
1	2	3	4	5
not at all				extremely
I take a positive attitude toward myself.				
1	2	3	4	5
not at all				extremely

Note. Questions were presented in a random order. Items 2, 5, 6, 8, and 9 are reverse scored.

Power Manipulation

To manipulate power, we employed the same procedure outlined in Experiment 1 of this document with one exception. In addition to the *low-power* and *high-power* conditions, this experiment also had a *control* condition. Participants in the control condition were informed that they too would be paired with another participant, such that they both will work as colleagues on the task, with equal rights, and that they both will receive the designated reward, upon completing the task.

Affirmation Manipulation

Following the power manipulation, participants were randomly assigned to either the *no-affirmation* or *self-affirmation* conditions.

Text on Screen 1(if assigned to no-affirmation condition)

Below is a list of characteristics and values, some of which may be important to you some of which may be unimportant. Please rank these values and qualities in order

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of their importance to you, from 1 to 11 (1 = most important item, 11 = least important item).

- _____ Artistic skills/aesthetic appreciation
- _____ Sense of humor
- _____ Relations with friends/family
- _____ Spontaneity/living life in the moment
- _____ Social skills
- _____ Athletics
- _____ Musical ability/appreciation
- _____ Physical attractiveness
- _____ Creativity
- _____ Analytical skills
- _____ Romantic values

Text on Screen 2

Now that you ranked the values, please briefly describe a situation where the 9th valued characteristic (the item you ranked "9") might be important to an average university student.

Text on Screen 3

You have now completed the writing task. Please close the browser and move to the next task as indicated on your instruction sheet.

Text on Screen 1 (if assigned to self-affirmation condition)

Below is a list of characteristics and values, some of which may be important to you, some of which may be unimportant. Please rank these values and qualities in order of their importance to you, from 1 to 11 (1 = most important item, 11 = least important item).

- _____ Artistic skills/aesthetic appreciation
- _____ Sense of humor
- _____ Relations with friends/family
- _____ Spontaneity/living life in the moment
- _____ Social skills
- _____ Athletics
- _____ Musical ability/appreciation
- _____ Physical attractiveness

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- ____ Creativity
- ____ Analytical skills
- ____ Romantic values

Text on Screen 2

Now that you ranked your values, please write about why your most valued characteristic, the item you ranked "1", is personally important to you and describe a time when it had been particularly important to you.

Text on Screen 3

You have now completed the writing task. Please close the browser and move forward to the next task as indicated on your instruction sheet.

Flanker Task

Text on Screen 1

In this task, you will see nine arrows on the screen, and you are meant to identify the direction of the middle arrow.

In the example below, the middle arrow (highlighted in red only for illustrative purposes) is pointed towards the right. You will have to identify the direction by pressing the letter 'L' which is located on the **right side** of your keyboard to indicate that the arrow is pointed towards the right.



If the middle arrow is pointed towards the left (as the example below demonstrates), then you will have to press the letter 'A' which is located on the **left side** of your keyboard to indicate that the arrow is pointed towards the left.



Press any key on your keyboard to continue.

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Text on Screen 2

All possible combinations of arrows are as follows:

→→→→→→→→ Press L in this case

←←←←←←←← Press A in this case

←←←←→←←←← Press L in this case

→→→→←→→→→ Press A in this case

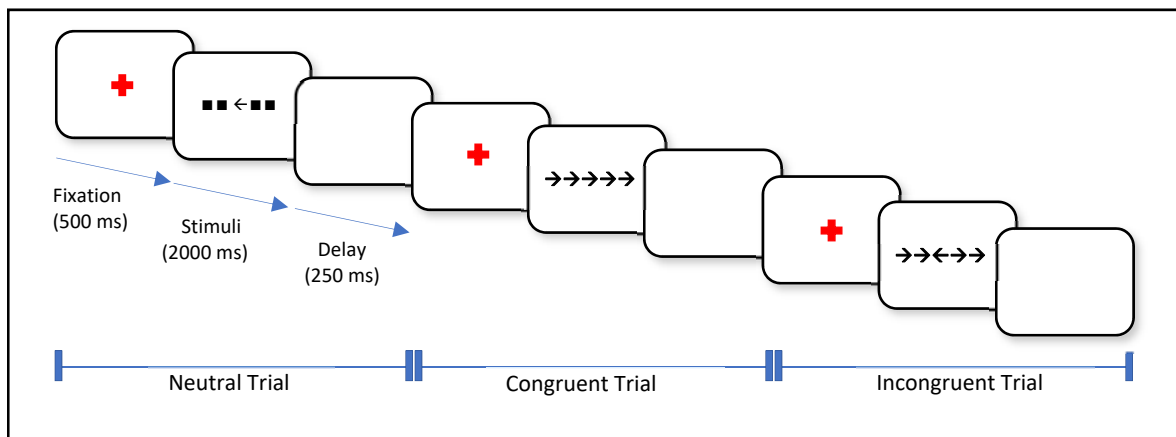
You will find combinations where the middle arrow is surrounded by boxes and not arrows (■ ■ ■ ■ ← ■ ■ ■ ■). In either case, always indicate the direction of the arrow placed in the middle of the array. You will need to respond as FAST as you can while being as ACCURATE as you can.

You will start this task with a practice run before moving on to the actual task.

Please let the experimenter know if you have any questions at this stage.

Press any key on your keyboard to begin.

Note. Participants then completed 12 practice trials before the start of experimental trials. Between the practice and experimental trials, participants were informed that they had now completed the practice trials and they should press the spacebar to proceed when they were ready for experimental trials. All trials were randomly presented to the participants. Graphical representation of the sequence of events is as follows:



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Generic Questionnaire

The same questions asked in Experiment 1 were repeated except for the color blindness questions and fear of negative evaluation scale.

Experiment 3 Method and Materials

Power Manipulation

We employed the same procedure outlined in Experiment 1 to manipulate power.

Affirmation Manipulation

No-Affirmation Condition

Please take a few minutes to recall the last time you did your laundry. Please write about this experience in the space provided below. Specifically, we would like you to recall the type of laundry you did, how you did them, and so forth.

Self-Affirmation Condition (Kindness)

Please take a few minutes to recall a time you helped another person. Please write about the act of kindness you committed towards another person in the space provided below. Specifically, write about what happened, who the person was (no need to mention names), and how you helped them.

Sense of Efficacy

After the affirmation manipulation and before participants were instructed to complete the Stroop task, participants' sense of efficacy was measured using Lachman and Weaver (1998). Participants had to indicate their agreement with each of the four items in this scale, which in essence captures the respondent's belief that he/she has the capability of attaining goals and shaping his/her own outcomes despite challenges.

	I can do just about anything I really set my mind to.						
1	2	3	4	5	6	7	
Strongly Disagree						Strongly Agree	
	Whatever happens in the future mostly depends on me.						
1	2	3	4	5	6	7	

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Strongly
Disagree

Strongly
Agree

When I really want to do something, I usually find a way to succeed.

1
Strongly
Disagree

2

3

4

5

6

7
Strongly
Agree

Whether or not I am able to get what I want is in my own hands.

1
Strongly
Disagree

2

3

4

5

6

7
Strongly
Agree

Note. Questions were presented in a random order.

Stroop Task

We employed the same procedure outlined in Experiment 1 of this document.

Generic Questionnaire

We employed the same measures outlined in Experiment 1 of this document, except for fear of negative evaluation scale.

SECTION 2: ADDITIONAL ANALYSES & RESULTS

Experiment 1: Stroop Task

Preliminary analysis of response latencies

Prior to testing our hypothesis, response latencies obtained from Stroop task were subjected to a preliminary analysis to (1) examine error rates, (2) remove outlying response latencies, and (3) explore latency effects specific to the Stroop task (e.g., facilitation and interference) in our sample. Analysis of Stroop errors revealed no evidence of modulation by power, affirmation, or their interaction (see section below for analyses of errors). We, therefore, proceeded to analyze response latencies, after removing incorrect responses (3.8% of all response latencies). Additionally, response latencies faster than 150 milliseconds or slower than 3SD of each participant's mean latency for each Stroop condition were excluded from the analyses (1.3% of all responses).

Following Jostmann and Koole (2007), we explored response latencies per Stroop condition across the entire sample to examine specific Stroop effects (i.e., facilitation and interference). On average, participants' responses on neutral trials ($M = 670.28$, $SD = 122.99$) were faster than their responses on incongruent trials, ($M = 744.09$, $SD = 145.66$; $F(1, 204) = 195.34$, $p < .001$, $\eta^2_p = .49$, 95% $CI_{Mean-Difference}[-84.22, -63.39]$), providing evidence for a *Stroop interference effect* in our data. Moreover, average responses on congruent trials ($M = 648.13$, $SD = 113.34$) were faster than responses on neutral trials ($M = 670.28$, $SD = 122.99$; $F(1, 204) = 30.61$, $p < .001$, $\eta^2_p = .13$, 95% $CI_{Mean-Difference}[-30.05, -14.26]$), providing evidence for a *Stroop facilitation effect* in our data. However, further analysis revealed that the observed facilitation effect was not predicted by the power and affirmation interaction ($F < 1$, $p = .34$). We therefore proceeded to test our hypothesis using Stroop interference, the key measure which taps into one's cognitive ability in inhibitory control (details of which are provided in the manuscript).

Analysis of Stroop Interference in Errors

Following Jostmann and Koole's (2007) recommendation, along with the analysis of Stroop interference in *response latencies*, we also analyzed Stroop interference in *errors*. For

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each participant, *Stroop interference in errors* was calculated by subtracting errors in the neutral trials from errors in the incongruent trials. Stroop interference in errors were then subjected to a 2 (power: low-power vs. high-power) \times 2 (affirmation: self-affirmation vs. no-affirmation) between-subjects ANOVA. Results revealed no main effect of power, $F(1, 201) = 0.60, p = .44, \eta^2_p = .003$, no main effect of affirmation, $F(1, 201) = 0.04, p = .84, \eta^2_p < .001$, and no significant interaction between power and affirmation, $F(1, 201) = 1.02, p = .313, \eta^2_p = .005$.

These results, together with results of Study 1 on Stroop interference in response latencies, provided in the main text, suggest that the improved performance of the powerless in the Stroop task after self-affirmation is not merely attributable to providing speeded responses (a strategy that would have rendered more errors). Rather, these results suggest that self-affirmation has enabled the powerless to deploy their executive control more efficiently to override their impulses. Table 1 summarizes response latencies and errors in each trial type of the Stroop task, as a function of power and self-affirmation conditions in Study 1.

Table 1
Mean Response Latencies (in ms) and Errors in the Stroop Task as a Function of Power and Affirmation (Study 1)

Participant Group	Trial Type							
	Congruent		Neutral		Incongruent		SI	
	Latency	Errors	Latency	Errors	Latency	Errors	Latency	Errors
Low power								
No-affirmation ^a	674 (115)	0.02 (0.04)	680 (124)	0.04 (0.06)	796 (151)	0.07 (0.09)	116 (79)	0.03 (0.08)
Self-affirmation ^b	626 (92)	0.03 (0.05)	657 (105)	0.04 (0.05)	717 (127)	0.07 (0.07)	60 (64)	0.04 (0.05)
High power								
No-affirmation ^c	643 (119)	0.02 (0.02)	664 (133)	0.03 (0.03)	725 (143)	0.06 (0.06)	61 (69)	0.03 (0.05)
Self-affirmation ^d	650 (122)	0.02 (0.03)	680 (129)	0.03 (0.03)	739 (151)	0.05 (0.06)	59 (76)	0.03 (0.05)

Note. For ease of presentation, response latencies have been rounded to the nearest whole number. Standard deviations are provided in parentheses. SI = Stroop interference (Incongruent – Neutral).

^a $n = 51$. ^b $n = 51$. ^c $n = 51$. ^d $n = 52$.

Analyses of Affective States

The act of writing about one's core values has been advocated to reduce negative affect and to increase positive affect (Tesser et al., 2000). Nevertheless, evidence on the effect of affirmation interventions on affective states is inconsistent (for review, see McQueen & Klein, 2006). One potential explanation for our effect could be that self-affirmation might have increased (decreased) positive (negative) affect among the powerless, which in turn might have improved their executive functions.

To assess these possibilities, we separately subjected participants' self-report of positive and negative affect, as measured by the PANAS, to a 2 (power: low-power vs. high-power) \times 2 (affirmation: self-affirmation vs. no-affirmation) between-subjects ANOVA. Results revealed that these factors did not predict participants' positive affect, ($F_{power}(1, 201) = 1.00, p = .32, \eta^2_p = .005$; $F_{affirmation}(1, 201) = 1.74, p = .19, \eta^2_p = .009$; $F_{power \times affirmation}(1, 201) = 0.25, p = .62, \eta^2_p = .001$), nor their negative affect, ($F_{power}(1, 201) = 0.14, p = .71, \eta^2_p = .001$; $F_{affirmation}(1, 201) = 1.29, p = .26, \eta^2_p = .006$; $F_{power \times affirmation}(1, 201) = 0.06, p = .81, \eta^2_p < .001$). Further, when including participants' affective states as covariates in our main analysis, the interaction between power and affirmation on Stroop interference remained significant, $F(1, 199) = 7.65, p = .006, \eta^2_p = .04$. Together, these results suggest that it is unlikely that the reparative effects of self-affirmation on cognitive performance of the powerless can be explained by differences in affect.

Fear of Negative Evaluation

Similar to affect, an alternative explanation could have been that self-affirmation decreased apprehension regarding the group task that powerless presumably needed to complete under the control of the powerful. Therefore, we measured Fear of Negative Evaluation (FNE) at the end of this experiment, using the established scale by Leary (1983). We explored the possibility that the evaluative nature of the power manipulation may induce fear which subsequently leads to decrements in cognitive performance of the powerless. Self-affirmation would then extend its reparative effect on the cognitive performance of the powerless by attenuating the fear of negative evaluation. Therefore, we examined whether

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the fear of negative evaluation mediates the relation between power and self-affirmation on executive functioning.

A 2 (power: low-power vs. high-power) × 2 (affirmation: self-affirmation vs. no-affirmation) between-subjects ANOVA on fear of negative evaluation revealed no main effect of power, $F(1, 201) = 0.33, p = .57, \eta^2_p = .002$, no main effect of affirmation, $F(1, 201) = 0.05, p = .82, \eta^2_p < .001$, and no significant interaction between power and affirmation, $F(1, 201) = 0.09, p = .77, \eta^2_p < .001$. As these results suggest, it is unlikely that self-affirmation extends its reparative effects on executive functioning of the powerless by affecting fear of negative evaluation. Furthermore, including fear of negative evaluation as a covariate did not influence the significance or the pattern of our main findings, and the interaction between power and self-affirmation on Stroop interference remained significant $F(1, 200) = 7.19, p = .008, \eta^2_p = .04$.

Gender-Related Analyses

To explore whether gender influenced our results, we subjected participants' Stroop interference scores, to a 2 (power: low-power vs. high-power) × 2 (affirmation: self-affirmation vs. no-affirmation) × 2 (gender: male vs. female) between-subjects ANOVA. Results of the main effect, all two- and three-way interactions including gender revealed no significant effect (all $F < 1$, all $p > .55$), suggesting that gender does not play a role in our study. Importantly, our hypothesized two-way interaction between power and affirmation on Stroop interference remained significant, $F(1, 197) = 6.76, p = .010, \eta^2_p = .03$.

Experiment 2: Flanker Task

Preliminary Analysis of Response Latencies

Analysis of flanker errors (2.7% of all response latencies) revealed no evidence of modulation by power, affirmation, or their interaction (see section below for analyses of errors). Therefore, as in Study 1, we removed incorrect responses from the response-latency data. Furthermore, response latencies faster than 150 milliseconds or slower than 3SD of each participant's mean latency for each flanker condition were excluded from the analyses (1.4% of all response latencies). Next, to assess flanker performance, we calculated the *distractor interference* by subtracting average response latencies of neutral trials from average response latencies of incongruent trials. Lower distractor interference scores thus indicate greater ability in attentional control and in ignoring distracting and peripheral information (i.e., flanking arrows).

Analysis of Distractor Interference in Errors

For each participant, distractor interference in *errors* was calculated by subtracting their errors in the neutral trials from their errors in the incongruent trials in the Flanker task. These scores were then subjected to a 3 (power: low-power vs. high-power vs. control) \times 2 (affirmation: self-affirmation vs. no-affirmation) between-subjects ANOVA. Results revealed no main effect of power condition, $F(2, 370) = 2.06, p = .13, \eta^2_p = .01$, no main effect of affirmation condition, $F(1, 370) = 0.005, p = .94, \eta^2_p < .001$, and no interaction effect between power and affirmation, $F(2, 370) = 0.62, p = .54, \eta^2_p = .003$.

These results, together with results of Study 2 on Distractor interference in response latencies provided in the main text, suggest that the improved performance of the powerless in the Flanker task after self-affirmation is not merely attributable to providing speeded responses (a strategy that would have rendered more errors). Rather, these results suggest that self-affirmation has enabled the powerless to deploy their executive control more efficiently to inhibit peripheral and distracting information in service of goal pursuit. Table 2 summarizes response latency and errors in each trial type of the Flanker task, as a function of power and self-affirmation conditions in Study 2.

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Table 2

Mean Response Latencies (in ms) and Errors in Flanker Task as a Function of Power and Affirmation (Study 2)

Participant Group	Trial Type						DI	
	Congruent		Neutral		Incongruent		Latency	Errors
	Latency	Errors	Latency	Errors	Latency	Errors		
Low power								
No-affirmation ^a	473 (92)	0.01 (0.02)	467 (89)	0.02 (0.02)	543 (101)	0.05 (0.09)	76 (54)	0.04 (0.09)
Self-affirmation ^b	470 (128)	0.02 (0.03)	470 (131)	0.02 (0.04)	517 (128)	0.05 (0.08)	46 (40)	0.03 (0.07)
High power								
No-affirmation ^c	457 (94)	0.01 (0.02)	459 (94)	0.02 (0.02)	504 (99)	0.04 (0.04)	46 (37)	0.02 (0.04)
Self-affirmation ^d	449 (88)	0.02 (0.05)	450 (89)	0.02 (0.06)	490 (82)	0.05 (0.07)	40 (28)	0.02 (0.05)
Control								
No-affirmation ^e	436 (77)	0.01 (0.02)	438 (76)	0.02 (0.02)	482 (78)	0.05 (0.07)	45 (36)	0.04 (0.07)
Self-affirmation ^f	448 (94)	0.01 (0.03)	445 (93)	0.02 (0.02)	486 (92)	0.06 (0.08)	41 (33)	0.04 (0.07)

Note. For ease of presentation, response latencies have been rounded to the nearest whole number. Standard deviations are provided in parentheses. DI = distractor interference (Incongruent – Neutral).

^a $n = 65$. ^b $n = 63$. ^c $n = 64$. ^d $n = 60$. ^e $n = 62$. ^f $n = 62$.

Power Manipulation Check

As in Study 1, using two 9-point scales, participants indicated the extent to which they felt *a) themselves*, and *b) their group member* to have control over outcomes. Results of a 3 (power: low-power vs. high-power vs. control; between-subjects) \times 2 (affirmation: self-affirmation vs. no-affirmation; between-subject) \times 2 (target: self vs. other; within-subjects) mixed-design ANOVA revealed only a significant main effect of target, $F(1, 370) = 7.12, p = .008, \eta^2_p = .02$, and the expected interaction between power and target, $F(2, 370) = 122.26, p < .001, \eta^2_p = .40$, such that high-power participants felt to have more control over outcomes ($M_{self} = 6.70, SD = 1.85$), than their group member ($M_{other} = 3.77, SD = 2.24; F(1, 370) = 158.56, p < .001, \eta^2_p = .30, 95\% CI_{Mean-Difference}[2.48,3.40]$). Conversely, low-power participants felt to have less control over outcomes ($M_{self} = 3.96, SD = 2.20$) than their group member ($M_{other} = 6.14, SD = 2.21; F(1, 370) = 90.20, p < .001, \eta^2_p = .20, 95\% CI_{Mean-Difference}[-2.63,-1.73]$). Finally, participants in the control condition perceived themselves ($M_{self} = 5.83, SD = 1.95$) and their group members ($M_{other} = 5.52, SD = 2.07; F(1, 370) = 1.82, p = .18, \eta^2_p = .005, 95\% CI_{Mean-Difference}[-0.14,0.77]$), to be equally in control of outcomes. These results show that power has

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been successfully induced among participants through asymmetrical control over resources and that self-affirmation did not influence participants' relative feeling of power.

Analyses of Affective States

Participants' self-report measures of positive and negative affect were separately subjected to a 3 (power: low-power vs. high-power vs. control) \times 2 (affirmation: self-affirmation vs. no-affirmation) ANOVA. Results revealed that these factors did not predict participants' positive affect, ($F_{\text{power}}(2, 370) = 1.29, p = .28, \eta^2_p = .007$; $F_{\text{affirmation}}(1, 370) = 0.51, p = .47, \eta^2_p = .001$; $F_{\text{interaction}}(2, 370) = 0.49, p = .61, \eta^2_p = .003$), nor their negative affect, ($F_{\text{power}}(2, 370) = 1.04, p = .35, \eta^2_p = .006$; $F_{\text{affirmation}}(1, 370) = 2.9, p = .09, \eta^2_p = .008$; $F_{\text{interaction}}(2, 370) = 0.02, p = .98, \eta^2_p < .001$). Further, when including participants' affective states as covariates in our main analysis, the interaction between power and affirmation on distractor interference remained significant, $F(2, 368) = 4.40, p = .013, \eta^2_p = .02$. Together, these results suggest that it is unlikely that the reparative effects of self-affirmation on cognitive performance of the powerless can be explained by differences in affect.

Gender-Related Analyses

We subjected participants' distractor interference scores, to a 2 (power: low-power vs. high-power) \times 2 (affirmation: self-affirmation vs. no-affirmation) \times 2 (gender: male vs. female) between-subjects ANOVA. Results of the main effect, all two- and three-way interactions including gender revealed no significant effect (all $F < 1.15$, all $p > .32$), suggesting that gender does not play a role in our results. Importantly, the hypothesized two-way interaction between power and affirmation on distractor interference remained significant, $F(2, 364) = 3.83, p = .023, \eta^2_p = .02$.

Experiment 3: Stroop Task

Preliminary analysis of response latencies.

Analysis of response latencies followed the steps taken in Study 1. First, incorrect responses (3.8% of all responses) were removed from the analysis (see section below for analyses of errors). Subsequently, response latencies faster than 150 milliseconds or slower than 3SD of each participant's mean latency for each Stroop condition were excluded from the analyses (approximately 2% of the total data). Next, analysis of response latencies within each Stroop condition revealed that on average, participants' responses on *neutral* trials ($M = 659.24$, $SD = 125.38$) were faster than their responses on *incongruent* trials, ($M = 741.08$, $SD = 162.61$; $F(1, 220) = 260.41$, $p < .001$, $\eta^2_p = .54$, 95% $CI_{Mean-Difference}[-91.83, -71.84]$). Moreover, average responses on *congruent* trials ($M = 646.18$, $SD = 125.27$) were faster than responses on *neutral* trials ($M = 659.24$, $SD = 125.38$; $F(1, 220) = 11.37$, $p = .001$, $\eta^2_p = .05$, 95% $CI_{Mean-Difference}[-20.70, -5.43]$). Therefore, as in Study 1, analysis of response latencies provided evidence for both *Stroop interference* and *facilitation* effects in our data. However, as in Study 1, further analysis revealed that Stroop facilitation was not predicted by power and affirmation interaction ($F < 1$, $p = .50$). We, therefore, proceeded to test our hypothesis using Stroop interference scores, the key measure which signifies one's cognitive ability to inhibit impulses.

Analysis of Stroop Interference in Errors

Like in Study 1, Stroop interference in *errors* were subjected to a 2 (power: low-power vs. high-power) \times 2 (affirmation: self-affirmation vs. no-affirmation) between-subjects ANOVA. Results revealed no main effect of power condition, $F(1, 217) = 0.30$, $p = .58$, $\eta^2_p = .001$, no main effect of affirmation condition, $F(1, 217) = 0.82$, $p = .37$, $\eta^2_p = .004$ and no significant interaction between power and affirmation, $F(1,217) = 2.26$, $p = .13$, $\eta^2_p = .010$.

These results together with results of Study 3 on Stroop interference in response latencies, provided in the main text, suggest that the improved performance of the powerless in the Stroop task after self-affirmation is not merely attributable to providing speeded responses (a strategy that would have rendered more errors). Rather, these results suggest

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that self-affirmation has enabled the powerless to deploy their executive functions more efficiently in the service of inhibitory control. Table 3 summarizes response latency and errors in each trial type of the Stroop task, as a function of power and self-affirmation conditions in Study 3.

Table 3

Mean Response Latencies (in ms) and Errors in the Stroop Task as a Function of Power and Affirmation (Study 3)

Participant Group	Trial Type							
	Congruent		Neutral		Incongruent		SI	
	Latency	Errors	Latency	Errors	Latency	Errors	Latency	Errors
Low power								
No-affirmation ^a	670 (131)	0.03 (0.04)	672 (131)	0.04 (0.04)	791 (171)	0.08 (0.13)	120 (86)	0.04 (0.13)
Self-affirmation ^b	625 (114)	0.02 (0.04)	630 (115)	0.03 (0.02)	702 (137)	0.04 (0.04)	72 (61)	0.01 (0.04)
High power								
No-affirmation ^c	645 (132)	0.02 (0.03)	671 (129)	0.03 (0.03)	730 (164)	0.05 (0.05)	59 (64)	0.02 (0.04)
Self-affirmation ^d	644 (123)	0.03 (0.09)	664 (125)	0.04 (0.07)	739 (168)	0.06 (0.09)	76 (76)	0.02 (0.05)

Note. For ease of presentation, response latencies have been rounded to the nearest whole number. Standard deviations are provided in parentheses. SI = Stroop interference (Incongruent – Neutral).

^a $n = 56$. ^b $n = 55$. ^c $n = 54$. ^d $n = 56$.

Power manipulation check

Similar to Study 1, using two 9-point scales, participants indicated the extent to which they felt *a) themselves*, and *b) their group members* were in control of outcomes in the upcoming group task. A 2 (power: low-power vs. high-power; between-subjects) \times 2 (affirmation: self-affirmation vs. no-affirmation; between-subjects) \times 2 (target: self vs. other; within-subjects) mixed-design ANOVA revealed only a significant interaction between power and target, $F(1, 217) = 121.77, p < .001, \eta^2_p = .36$, such that high-power participants felt to have more control over outcomes ($M_{self} = 6.56, SD = 1.86$), than they did their group member to have ($M_{other} = 4.36, SD = 2.38; F(1, 217) = 61.55, p < .001, \eta^2_p = .22, 95\% CI_{Mean-Difference}[1.65, 2.75]$). Conversely, low-power participants felt to have less control over outcomes ($M_{self} = 4.05, SD = 2.26$) than they did their group member to have ($M_{other} = 6.22, SD = 2.26; F(1, 217) = 60.21, p < .001, \eta^2_p = .22, 95\% CI_{Mean-Difference}[-2.71, -1.61]$). No other

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main or interaction effect was significant in the mixed-design ANOVA (all $F < 1$, all $p > .44$). These results show that power has been successfully induced among participants through asymmetrical control over resources and that self-affirmation did not influence participant's relative feeling of power in our experiment.

Analyses of Affective States

Participants' self-report measures of positive and negative affect were separately subjected to a 2 (power: low-power vs. high-power) \times 2 (affirmation: self-affirmation vs. no-affirmation) ANOVA. Results revealed that these factors did not predict participants' positive affect, $F_{power}(1,217) = 0.79, p = .38, \eta^2_p = .004$; $F_{affirmation}(1, 217) = 0.22, p = .64, \eta^2_p = .001$; $F_{interaction}(1, 217) = 0.10, p = .76, \eta^2_p < .001$), nor their negative affect, $F_{power}(1, 217) = 0.001, p = .97, \eta^2_p < .001$; $F_{affirmation}(1, 217) = 0.03, p = .86, \eta^2_p < .001$; $F_{interaction}(1, 217) = 0.34, p = .56, \eta^2_p = .002$). Further, when including participants' affective states as covariates in our main analysis, the interaction between power and affirmation on Stroop interference scores remained significant, $F(1, 215) = 10.92, p = .001, \eta^2_p = .05$. Together, these results suggest that it is unlikely that the reparative effects of self-affirmation on cognitive performance of the powerless can be explained by differences in affect.

Gender-Related Analyses

We subjected participants' Stroop interference scores, to a 2 (power: low-power vs. high-power) \times 2 (affirmation: self-affirmation vs. no-affirmation) \times 2 (gender: male vs. female) between-subjects ANOVA. Results of the main effect, all two- and three-way interactions including gender revealed no significant effect (all $F < 1.56$, all $p > .21$), suggesting that gender does not play a role in our findings. Importantly, the hypothesized two-way interaction between power and affirmation on Stroop interference remained significant, $F(1, 213) = 11.09, p = .001, \eta^2_p = .05$.

Table 4
 Additional Statistics on Conditional Indirect Effect: Power × Affirmation Interaction on Stroop Interference via Sense of Efficacy.

Mediator Variable Model: Sense of Efficacy				
	β	<i>SE</i>	<i>t</i>	<i>p</i>
Power on Sense of Efficacy	0.98	0.20	4.94	< .001
Affirmation on Sense of Efficacy	0.92	0.20	4.69	< .001
Power × Affirmation on Sense of Efficacy	-1.24	0.28	-4.46	< .001

Dependent Variable Model: Stroop Interference				
	β	<i>SE</i>	<i>t</i>	<i>p</i>
Sense of Efficacy (centered) on Stroop Interference	-24.50	4.45	-5.51	< .001
Power on Stroop Interference	-36.44	13.65	-2.67	.008
Affirmation on Stroop Interference	-25.15	13.52	-1.86	.060
Power × Affirmation on Stroop Interference	33.52	19.08	1.76	.080

Conditional Indirect Effects of Affirmation on Stroop Interference via Sense of Efficacy at Different Levels of Power				
Power Conditions	β	Boot <i>SE</i>	95% CI	
			Boot LL	Boot UL
Low Power	-22.60	6.93	-37.47	-10.26
High Power	7.85	4.89	-0.50	18.82

Moderated-Mediation Effect (Index)				
	β	Boot <i>SE</i>	95% CI	
			Boot LL	Boot UL
	30.45	9.51	13.99	51.03

Note. Level of confidence = 95%. Bootstrap sample size for percentile bootstrap = 5,000. The affirmation condition was coded “1” in the self-affirmation and “0” in the no-affirmation condition. The power condition was coded “1” in the high-power and “0” in the low-power conditions. CI = confidence interval; LL = lower limit; UL = upper limit; Boot = Bootstrapped.

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