

Supplemental Materials of

Questioning the preparatory function of counterfactual thinking

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1. Study 1a - Materials

Detail of the instructions provided to participants in the success vs. failure conditions.

If participants were assigned to the failure conditions:

Unfortunately, your performance on the word search puzzle game was not a high score.

Your score was slightly below the target, and you did not win the bonus 40 tickets. In any case, the 20 tickets you have earned will be entered into the prize draw.

If participants were assigned to the success conditions:

Well done! Your performance on the word search puzzle game was a high score. Your score was slightly above the target, and you have won the bonus 40 tickets. Thus, the 60 tickets you have earned will be entered into the prize draw.

2. Study 1b - Materials

For the actual task participants were provided with the following four statements:

Matt is shorter than Paul

Frank is shorter than Bob

Frank is taller than Paul

Tom is taller than Bob

After a 20 second time limit, the experiment automatically moved on to the next screen. In the counterfactual condition, if participants provided an incorrect word order or failed to complete the task in the allotted time, they were told:

Sorry, you failed the test. Thinking about what just happened, can you please complete the following sentence:

Things would have been better for me if...

(You can offer several possibilities if you want, putting one per line -- please copy the beginning of the sentence so that you have a complete sentence at every line)

If they succeeded they were told:

You have provided the right answer, congratulations!

Thinking about what just happened, can you please complete the following sentence:

Things would have been worse for me if...

(You can offer several possibilities if you want, putting one per line -- please copy the beginning of the sentence so that you have a complete sentence at every line)

In the prefactual condition, the equivalent requests were:

Sorry, you failed the test. On the next page, you will be given a novel problem that involves ordering 5 individuals according to their height (from tallest to shortest), based on 4 statements describing the height relations between pairs of individuals. Again, you will have 20 seconds to solve the problem.

Thinking about what WILL happen in this next game, can you please complete the following sentence:

Things WILL be better for me in the next game if...

(You can offer several possibilities if you want, putting one per line -- please copy the beginning of the sentence so that you have a complete sentence at every line)

You have provided the right answer, congratulations! On the next page, you will be given a novel problem that involves ordering 5 individuals according to their height (from tallest to shortest), based on 4 statements describing the height relations between pairs of individuals. Again, you will have 20 seconds to solve the problem

Thinking about what WILL happen in this next game, can you please complete the following sentence:

Things WILL be worse for me in the next game if...

(You can offer several possibilities if you want, putting one per line -- please copy the beginning of the sentence so that you have a complete sentence at every line)

3. Study 2 – Materials

Detail of the instructions provided to participants in the counterfactual advice-self and counterfactual advice-other conditions.

Advice-self:

Sorry, you failed the test. You are now given the opportunity to give some advice to another participant who will be confronted with exactly the same task: ranking 5 people, from tallest to shortest, based on 4 statements describing the height relations between pairs of individuals. That person will also have 15 seconds to solve the problem.

Thinking about just happened to you, can you please complete the following sentence, TRYING TO THINK OF ENDINGS THAT COULD HELP YOU IMPROVE YOUR PERFORMANCE IN THE NEXT GAME:

Things would have been better for me if...

(You can offer several possibilities if you want, putting one per line -- please copy the beginning of the sentence so that you have a complete sentence at every line)

Advice-other:

Sorry, you failed the test. You are now given the opportunity to give some advice to another participant who will be confronted with exactly the same task: ranking 5 people, from tallest to shortest, based on 4 statements describing the height relations between pairs of individuals. That person will also have 15 seconds to solve the problem.

Thinking about just happened to you, can you please complete the following sentence SO THAT IT IS USEFUL FOR THE NEXT PARTICIPANT:

Things would have been better for me if...

(You can offer several possibilities if you want, putting one per line -- please copy the beginning of the sentence so that you have a complete sentence at every line)

4 Supplementary coding

In order to provide readers with more information regarding the content of the uncontrollable thoughts generated by participants, one of the authors coded these thoughts mentioning factors that they could change in the future, even if not for the next task (hence their classification as uncontrollable thoughts; i.e., training-related modifications or modifications that referred to ability or behavior that participants can change in general, but not before the following game).

In Study 1a there were: no thoughts of this kind in success-prefactual, five thoughts in success-counterfactual (two in first position), three thoughts in failure-prefactual (one in first position), four thoughts in failure counterfactual (two in first position) conditions. In Study 1b there **was** only one thought of this kind in counterfactual success condition (first modification) and one in prefactual success (second modification). In Study 2, there **were** four thoughts of this kind in advice-self condition (two in first position). All the statistical analyses provide similar results to the ones reported in the article when these thoughts were treated as controllable.

Study 1a

- o Success conditions, prefactual vs. counterfactual: 60% vs. 27% of controllable modifications when we considered the first modifications, $\chi^2(1, N = 60) = 6.79, p = .01$, and 52% vs. 32% when we considered all modifications), Mann-Whitney $U = 317.00, p = .03$.

- o Failure conditions, prefactual vs. counterfactual: 80% vs. 42% of controllable modifications when we considered the first modifications, $\chi^2(1, N = 61) = 9.26, p = .002$, and 83% vs. 42% of controllable modifications when we considered all modifications, Mann-Whitney $U = 253.00, p = .001$

Study 1b

- o Success conditions, prefactual vs. counterfactual: 45% vs. 14% of controllable modifications when we considered the first modifications, $\chi^2(1, N = 61) = 6.86, p = .01$, and 45% vs. 17% when we considered all modifications, Mann-Whitney $U = 285.0, p = .003$.
- o Failure conditions, prefactual vs. counterfactual: the coding was the same as reported in the article.

Study 2

- o Advice-self vs. counterfactual: 77% vs. 15% of controllable modifications when we considered the first modifications, $\chi^2(1, N = 79) = 30.53, p < .001$, and 75% vs. 12% when we considered all modifications, Mann-Whitney $U = 252.5, p < .001$
- o Advice-self vs. prefactual: 77% vs. 79% of controllable modifications when we considered the first modifications, $\chi^2(1, N = 68) = 0.05, p = .81$, and 75% vs. 80% when we considered all modifications, Mann-Whitney $U = 530.5, p = .57$
- o Advice-self vs. Advice-other: 77% vs. 68% of controllable modifications when we considered the first modifications, $\chi^2(1, N = 70) = 0.74, p = .39$, and 75% vs. 60% when we considered all modifications, Mann-Whitney $U = 569.0, p = .60$