

Ståhl et al. (2012)

If the study has a broad focus and this data extraction focuses on just one component of the study, please specify this here

☒ Not applicable (whole study is focus of data extraction)

Study aim(s) and rationale

Was the study informed by, or linked to, an existing body of empirical and/or theoretical research?

☒ Explicitly stated (please specify)

The study builds on previous research on stereotype threat, regulatory focus theory, and cognitive control. It aims to integrate self-regulation accounts and limited resource accounts of stereotype threat effects.

Do authors report how the study was funded?

☒ Explicitly stated (please specify)

The research was funded by a VIDI-grant from the Dutch National Science Foundation (NWO) awarded to Colette Van Laar.

Study research question(s) and its policy or practice focus

What is/are the topic focus/foci of the study?

The study focuses on how stereotype threat affects cognitive control and performance through regulatory focus.

What is/are the population focus/foci of the study?

The population focus is on students, particularly those in social sciences.

What is the relevant age group?

☒ 17 - 20

☐ 21 and over

What is the sex of the population focus/foci?

☒ Mixed sex

What is/are the educational setting(s) of the study?

- ☒ Higher education institution

In Which country or countries was the study carried out?

- ☒ Explicitly stated (please specify)

The Netherlands

Please describe in more detail the specific phenomena, factors, services, or interventions with which the study is concerned

The study examines how stereotype threat affects cognitive control and performance through regulatory focus. It looks at immediate and longer-term effects on cognitive control and math performance.

What are the study research questions and/or hypotheses?

- ☒ Explicitly stated (please specify)

The key hypotheses are: 1. Stereotype threat facilitates immediate cognitive control under a prevention focus. 2. This effect is due to recruitment of cognitive control resources in response to threat. 3. Over time, stereotype threat leads to impaired cognitive performance under a prevention focus due to depletion of resources. 4. These effects do not occur under a promotion focus.

Methods - Design***Which variables or concepts, if any, does the study aim to measure or examine?***

- ☒ Explicitly stated (please specify)

Key variables measured: - Stereotype threat (manipulated) - Regulatory focus (manipulated and measured)
- Cognitive control (measured via Stroop task) - Math performance (measured via modular arithmetic task)

Study timing

- ☒ Cross-sectional

If the study is an evaluation, when were measurements of the variable(s) used for outcome made, in relation to the intervention?

- ☒ Only after

Cognitive control and math performance were measured after the stereotype threat and regulatory focus manipulations.

Methods - Groups

If comparisons are being made between two or more groups, please specify the basis of any divisions made for making these comparisons.

- ☒ Prospective allocation into more than one group (e.g. allocation to different interventions, or allocation to intervention and control groups)

Participants were randomly assigned to stereotype threat vs control conditions and prevention vs promotion focus conditions.

How do the groups differ?

- ☒ Explicitly stated (please specify)

Groups differed based on the experimental manipulations of stereotype threat and regulatory focus.

Number of groups

- ☒ Four or more (please specify)

There were 4-6 groups depending on the study (2x2 or 2x3 design).

Was the assignment of participants to interventions randomised?

- ☒ Random

Where there was prospective allocation to more than one group, was the allocation sequence concealed from participants and those enrolling them until after enrolment?

- ☒ Not stated/unclear (please specify)

The paper does not specify if allocation was concealed.

Apart from the experimental intervention, did each study group receive the same level of care (that is, were they treated equally)?

- ☒ Yes

Study design summary

The study used experimental designs with random assignment to stereotype threat and regulatory focus conditions. Cognitive control and math performance were measured as outcomes. Study 1 had a 2-group design, Study 2 had a 2x3 design, and Study 3 had a 2x2x2 design.

Methods - Sampling strategy

Are the authors trying to produce findings that are representative of a given population?

- ☒ Implicit (please specify)

The authors seem to be aiming for findings generalizable to students, particularly social science students, but this is not explicitly stated.

Which methods does the study use to identify people or groups of people to sample from and what is the sampling frame?

☒ Explicitly stated (please specify)

Participants were social science students at Leiden University.

Which methods does the study use to select people or groups of people (from the sampling frame)?

☒ Not stated/unclear (please specify)

The specific sampling method is not described beyond recruiting social science students.

Planned sample size

☒ Not stated/unclear (please specify)

Planned sample sizes are not reported.

Methods - Recruitment and consent

Which methods are used to recruit people into the study?

☒ Not stated/unclear (please specify)

Specific recruitment methods are not described.

Were any incentives provided to recruit people into the study?

☒ Explicitly stated (please specify)

Participants received €2 or course credits for participation.

Was consent sought?

☒ Not stated/unclear (please specify)

The consent process is not described.

Are there any other details relevant to recruitment and consent?

☒ No

Methods - Actual sample

What was the total number of participants in the study (the actual sample)?

☒ Explicitly stated (please specify)

Study 1: 63 participants Study 2: 108 participants
Study 3: 164 participants

What is the proportion of those selected for the study who actually participated in the study?

☒ Not stated/unclear (please specify)

This information is not provided.

Which country/countries are the individuals in the actual sample from?

☒ Explicitly stated (please specify)

The Netherlands

What ages are covered by the actual sample?

☒ Not stated/unclear (please specify)

Exact age ranges are not provided, only mean ages (19-22 years).

What is the socio-economic status of the individuals within the actual sample?

☒ Not stated/unclear (please specify)

Socioeconomic status is not reported.

What is the ethnicity of the individuals within the actual sample?

☒ Not stated/unclear (please specify)

Ethnicity information is not provided.

What is known about the special educational needs of individuals within the actual sample?

☒ Not stated/unclear (please specify)

No information is provided about special educational needs.

Is there any other useful information about the study participants?

☒ Explicitly stated (please specify no/s.)

Participants were social science students at Leiden University.

How representative was the achieved sample (as recruited at the start of the study) in relation to the aims of the sampling frame?

☒ Unclear (please specify)

Representativeness is not discussed.

If the study involves studying samples prospectively over time, what proportion of the sample dropped out over the course of the study?

☒ Not applicable (not following samples prospectively over time)

For studies that involve following samples prospectively over time, do the authors provide any information on whether and/or how those who dropped out of the study differ from those who remained in the study?

☒ Not applicable (not following samples prospectively over time)

If the study involves following samples prospectively over time, do authors provide baseline values of key variables such as those being used as outcomes and relevant socio-demographic variables?

☒ Not applicable (not following samples prospectively over time)

Methods - Data collection

Please describe the main types of data collected and specify if they were used (a) to define the sample; (b) to measure aspects of the sample as findings of the study?

☒ Details

(b) The main data collected were measures of cognitive control (Stroop task) and math performance (modular arithmetic task) as outcome variables.

Which methods were used to collect the data?

☒ Self-completion questionnaire

☒ Psychological test

Details of data collection methods or tool(s).

☒ Explicitly stated (please specify)

Cognitive control was measured using a Stroop color-naming task. Math performance was measured using a modular arithmetic task.

Who collected the data?

☒ Not stated/unclear

Do the authors describe any ways they addressed the reliability of their data collection tools/methods?

☒ Details

The authors do not explicitly discuss reliability of measures.

Do the authors describe any ways they have addressed the validity of their data collection tools/methods?

☒ Details

The authors justify their choice of measures, noting the Stroop task is a domain-general measure of cognitive control and the modular arithmetic task relies on working memory.

Was there concealment of study allocation or other key factors from those carrying out measurement of outcome – if relevant?

☒ Not stated/unclear (please specify)

Concealment of allocation is not discussed.

Where were the data collected?

☒ Explicitly stated (please specify)

Data were collected in laboratory cubicles.

Are there other important features of data collection?

☒ Details

All data were collected via computer.

Methods - Data analysis

Which methods were used to analyse the data?

☒ Explicitly stated (please specify)

ANOVAs were used to analyze the data.

Which statistical methods, if any, were used in the analysis?

☒ Details

ANOVAs, t-tests, and contrast analyses were used.

What rationale do the authors give for the methods of analysis for the study?

☒ Details

The authors do not provide an explicit rationale for their analysis methods.

For evaluation studies that use prospective allocation, please specify the basis on which data analysis was carried out.

☒ Not stated/unclear (please specify)

The basis of analysis is not explicitly stated, but appears to be ‘intention to intervene’.

Do the authors describe any ways they have addressed the reliability of data analysis?

☒ Details

The authors do not explicitly discuss reliability of data analysis.

Do the authors describe any ways they have addressed the validity of data analysis?

☒ Details

The authors do not explicitly discuss validity of data analysis.

Do the authors describe strategies used in the analysis to control for bias from confounding variables?

☒ Details

The authors control for speed-accuracy tradeoffs in their analyses.

Please describe any other important features of the analysis.

☒ Details

No other notable features.

Please comment on any other analytic or statistical issues if relevant.

☒ Details

No other notable issues.

Results and Conclusions

How are the results of the study presented?

☒ Details

Results are presented in text and figures showing mean differences between conditions.

What are the results of the study as reported by authors?

☒ Details

Key results: - Stereotype threat facilitated immediate cognitive control under prevention focus - This effect did not occur under promotion focus - Stereotype threat improved short-term math performance under prevention focus - Stereotype threat impaired longer-term math performance under prevention focus - No effects were found under promotion focus

Was the precision of the estimate of the intervention or treatment effect reported?

- CONSIDER:
 - Were confidence intervals (CIs) reported?

☒ No

Are there any obvious shortcomings in the reporting of the data?

☒ No

Do the authors report on all variables they aimed to study as specified in their aims/research questions?

☒ Yes (please specify)

The authors report on all key variables related to their hypotheses.

Do the authors state where the full original data are stored?

☒ No

What do the author(s) conclude about the findings of the study?

☒ Details

The authors conclude that stereotype threat induces a prevention focus, leading to immediate recruitment of cognitive control resources as an adaptive short-term response. However, this depletes resources over time, impairing performance. These effects do not occur under promotion focus.

Quality of the study - Reporting

Is the context of the study adequately described?

☒ Yes (please specify)

The theoretical context and rationale are thoroughly described.

Are the aims of the study clearly reported?

☒ Yes (please specify)

The aims and hypotheses are clearly stated.

Is there an adequate description of the sample used in the study and how the sample was identified and recruited?

☒ No (please specify)

Limited information is provided about sampling and recruitment.

Is there an adequate description of the methods used in the study to collect data?

☒ Yes (please specify)

The experimental procedures and measures are described in detail.

Is there an adequate description of the methods of data analysis?

☒ Yes (please specify)

The statistical analyses are adequately described.

Is the study replicable from this report?

☒ Yes (please specify)

The key procedures and measures are described in sufficient detail to allow replication.

Do the authors avoid selective reporting bias?

☒ Yes (please specify)

The authors report on all key variables related to their hypotheses.

Quality of the study - Methods and data***Are there ethical concerns about the way the study was done?***

☒ No concerns

Were students and/or parents appropriately involved in the design or conduct of the study?

☒ No (please specify)

There is no indication of student/parent involvement in the design.

Is there sufficient justification for why the study was done the way it was?

☒ Yes (please specify)

The authors provide a clear rationale for their approach and methods.

Was the choice of research design appropriate for addressing the research question(s) posed?

☒ Yes (please specify)

The experimental design was appropriate for testing causal hypotheses about stereotype threat and regulatory focus effects.

To what extent are the research design and methods employed able to rule out any other sources of error/bias which would lead to alternative explanations for the findings of the study?

☒ A lot (please specify)

The experimental design with random assignment helps rule out many alternative explanations.

How generalisable are the study results?

☒ Details

The results may generalize to university students, but broader generalizability is unclear.

Weight of evidence - A: Taking account of all quality assessment issues, can the study findings be trusted in answering the study question(s)?

☒ Medium trustworthiness (please specify)

The experimental design and measures are strong, but limited sample information reduces trustworthiness somewhat.

Have sufficient attempts been made to justify the conclusions drawn from the findings so that the conclusions are trustworthy?

☒ High trustworthiness

The authors thoroughly discuss their findings in relation to theory and previous research.

References

Ståhl, T., Van Laar, C., & Ellemers, N. (2012). The role of prevention focus under stereotype threat: Initial cognitive mobilization is followed by depletion. *Journal of Personality and Social Psychology*, 102(6), 1239–1251. <https://doi.org/10.1037/a0027678>