

Replication of Genschow et al. 2017

“Belief in free will affects causal attributions when judging others’ behavior”

PNAS 114(38), 10071-10076.

<http://www.pnas.org/content/114/38/10071>

The original paper includes several studies. We randomly chose study 3b. In this between-subject experiment, participants are randomized to either read a passage of a book by Francis Crick that is supposed to reduce the readers’ belief in free will or to read another passage from the same book that does not mention free will. Thereafter, participants are asked to read four stories in which a protagonist engages in a certain behavior. For each story, the participants report whether they agree with four statements on a 7 point rating scale. Two of these statements attribute behavior in the stories to internal factors (e.g., personality of the protagonist) and two to external factors (e.g., the situation surrounding the protagonist). The difference of average agreement with internal and external attributions of behavior constitutes the measure of participants’ correspondence bias (“which reflects people’s automatic tendency to overestimate the influence of internal as compared to external factors when interpreting others’ behavior”). Participants who read the anti-free will passage show a smaller correspondence bias than control participants.

Hypothesis to replicate and bet on: Participants who read a book passage that reduces belief in free will show a smaller correspondence bias than control participants who read a book passage unrelated to free will. The authors test the above hypothesis in an independent samples t -test ($t(502) = 2.10, p = 0.036, d = 0.19$); p. 10073.

Criteria for replication: The criteria for replication are an effect in the same direction as the original study and a p -value < 0.05 in a two-sided independent samples t -test.

Power analysis: The original study had a sample size of 504 after exclusions (254 in Anti-free Will and 250 in Control). The standardized effect size (Cohen’s d) was $d = 0.187$. To have 90% power to detect 67% of the original effect size, a sample size of $n = 2702$ is required.

Sample: Only participants from the US were allowed to participate in the original study. Participants were only included in the analyses if they spent at least 45 s on the page where the Crick text was displayed. In addition, participants needed to successfully complete a reading check in the form of a multiple-choice question. For every excluded participant, a new participant was recruited. Based on the selection criteria, 202 participants were discarded. We will apply the same exclusion criteria, including collecting a new participant for each excluded participant. We will make sure that participants can only participate once from the same account in this specific study, and we will only recruit participants with a HIT approval rate of 95% or higher. We will also check all IP addresses via <https://www.ipqualityscore.com/>; and we will remove any participants where one or more of the following is true: fraud score ≥ 85 ; TOR = True; VPN = True; Bot = True; abuse velocity = high. The replication sample size is the sample size after any exclusions of participants.

Materials: We will use the same material as in the original study, kindly provided by the original authors. In particular, the experiment will be conducted using the original *Sosci Survey* provided by the original authors.

Procedure: We will closely follow the procedure of the original experiment. The following summary of the experimental procedure is therefore largely based on the description of the experiment in the article (p. 10072-10073).

Participants will first be shown a Captcha, and will thereafter provide informed consent. After this we will include an attention check that participants will need to pass to continue to the study. This attention check is in addition to any other potential attention check(s) used in the original study. In a between subjects design, participants will be randomized to read one of two different passages of the book *The Astonishing Hypothesis: The Scientific Search for the Soul* written by Francis Crick. While participants in the anti-free-will group will read a text claiming that scientists now recognize that free will is an illusion, participants in the control group will read a passage from the same book that does not mention free will. After participants read the scientific text, they will be asked to read four stories, with each story featuring a protagonist engaging in a certain behavior. After reading each of the four stories, participants will indicate their agreement/disagreement with four statements on seven-point rating scales (1 = strongly disagree; 7 = strongly agree). Two statements will measure the attribution to external factors, whereas the other two statements will measure the attribution to internal factors. Afterward, participants will complete the Free-Will-Inventory (FWI) that contains 15 items measuring the strength of their belief in free will and related constructs such as dualism/nonreductionism and determinism on seven-point scales.

Participants will need to successfully complete a reading check in the form of a multiple-choice question. That is, participants who do not select the correct answer to the following multiple-choice question will be excluded:

For the anti-free-will text, the question is, “What was the core theme of the text that you read in the beginning of this study?” with the following choice options (the correct answer is the last answer): “In the postscript, Francis Crick argues that men have more free will than women,” “In the postscript, Francis Crick argues that science demonstrates that free will exists,” “In the postscript, Francis Crick details how the concept of free will develops during childhood,” “In the postscript, Francis Crick argues that not only humans, but also animals have free will,” and “In the postscript, Francis Crick argues that free will is an illusion.”

For the control text, the same question will be asked with the following choice options (the correct answer is the last answer): “In the postscript, Francis Crick argues that men and women differ in their visual consciousness,” “In the postscript, Francis Crick describes how consciousness evolves during childhood,” “In the postscript, Francis Crick argues that animals have as much consciousness as humans,” “In the postscript, Francis Crick argues that consciousness is an illusion,” and “In the postscript, Francis Crick outlines the difficulties involved in the scientific investigation of consciousness.”

Analysis: The analysis will be performed as in the original paper, with a two-sided independent samples *t*-test.

Subject payments: We are standardizing payments across all replications so that studies have a certain show-up fee depending on the expected length of the study, with an hourly wage from the

show-up fee of \$8 and a minimum payment of \$1 (for studies with incentive payment we use the same incentive payment as in the original study; and this payment is paid in addition to the show-up fee). If we have problems recruiting, we will increase the show-up fee.