

Replication of Rai et al. 2017

“Dehumanization increases instrumental violence, but not moral violence”

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<http://www.pnas.org/content/114/32/8511>

The original paper includes several studies. We randomly chose study 3. In this between-subject experiment, the authors investigate whether describing a stranger in humanized or dehumanized terms affect participants' willingness to harm the stranger. Participants are randomized to one of four conditions in a hypothetical vignette-based experiment (2x2 design): the authors manipulate whether the stranger is described in humanized or dehumanized terms, and whether the motives to harm are instrumental or moral. We focus on the comparison between humanized and dehumanized when the motives are instrumental. Participants are more willing to harm a stranger when he has been described in dehumanized terms rather than humanized terms when the motives are instrumental.

Hypothesis to replicate and bet on: People are more willing to harm a stranger when he has been described in dehumanized terms rather than humanized terms when the motives are instrumental. To evaluate this hypothesis, the authors perform a *t*-test comparing the share of participants reporting that they would break the stranger's thumb for money in dehumanized treatment versus the humanized treatment. The willingness to harm a stranger is higher in the dehumanized treatment compared to the humanized treatment ($t = 2.26, p = 0.025$); p. 8513.

Criteria for replication: The criteria for replication is 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 363 participants in four conditions, but for our replication test we focus on the comparison between the humanized and dehumanized conditions when the motives are instrumental. The original study had 182 participants in these two conditions (assuming that the sample was split equally between the four conditions in the original study). The standardized effect size (Cohen's *d*) was $d = 0.335$. To have 90% power to detect 67% of the original effect size, a sample size of $n = 843$ is required. For exploratory purposes, the two additional conditions from the original study will also be included in the data collection. Therefore, the overall sample size is doubled, resulting in $n = 1686$.

Sample: Only participants from the US were allowed to participate in the original study. Moreover, participants were required to have a HIT approval rate of 98% or higher, and at least 100 HITs completed. The replication experiment will implement the same criteria. We will make sure that participants can only participate once from the same account in this specific study. 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 code the experiment to match the original study as close as possible, using the material provided in the Supplementary Information.

Procedure: We will closely follow the procedure of the original experiment. We will replicate the whole of study 3, but focus on the dehumanized and humanized treatments when motives are instrumental – these are the two treatments we describe below. The following summary of

the experimental procedure is therefore largely based on the description of the experiment in the article (p. 8513).

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. Participants will be paid a show-up fee and a bonus for completing the survey. After they are randomly sorted into four groups (the two treatments that we focus on in the replication plus the other two treatments that are not described below), participants will be presented with the following prompt:

There are times, both now and in the past, both in the United States and abroad, where violent practices have been performed. And in our own lives, there are times when we feel the urge to physically harm someone, even if we choose not to or if it is not allowed by current law. On the page that follows, you will be presented with a series of questions. For each question, we would like you to think about the situation described, whether or not and to what extent you would support violence, and the mental states of the people who would be harmed in each case. The questions are not either/or, likely you will not completely favor non-violence or completely favor violence in any question. Rather, in each question we are asking you to consider the extent to which you would endorse violence. Please think carefully and answer the questions as best as you can.

Next, participants will be shown a vignette in which they are told to imagine they have an opportunity to anonymously break a stranger's thumb. The vignette for participants in the dehumanized treatment will read:

Imagine for a moment that you are in a position to physically break a man's thumb. The man is blindfolded and tied to a chair, and you have been assured that you will not get in any trouble. The reason you are considering it is because you have been offered \$2 million dollars to do it.

The vignette for participants in the humanized treatment will read:

John is a 29 year old man with brown hair and brown eyes. People who know him would describe him as ambitious and imaginative, but also high-strung and insecure. Imagine for a moment that you are in a position to physically break John's thumb. John is blindfolded and tied to a chair, and you have been assured that you will not get in any trouble. The reason you are considering it is because you have been offered \$2 million dollars to do it.

The main outcome measure (motives to aggress) will be measured with the following question: "Please rate your willingness to physically break the man's thumb." Participants will be asked to choose from a seven-point Likert scale ranging from 1 (not willing at all) to 7 (completely willing).

Afterwards, participants will be asked to answer the following questions on the stranger's mental states on a five-point Likert scale ranging from 1 (not capable at all) to 5 (completely capable): (i) *To what extent do you think the man is capable of engaging in thought processes such as planning, reasoning, and remembering?*, (ii) *To what extent do you think the man is capable of experiencing sensations such as hunger, fear, pain, and pleasure?*, (iii) *To what extent do you think the man is capable of love and compassion?*, and (iv) *To what extent do you*

think the man is capable of anger and hatred? The answers to these questions will not be analyzed in the replication study.

Analysis: The analysis will be performed as in the original paper. In particular, the motives to aggress between the humanized treatment and the dehumanized treatment will be compared using 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.