

## **Replication of Hofstetter et al. 2017**

**“Temporary sharing prompts unrestrained disclosures that leave lasting negative impressions”**

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<http://www.pnas.org/content/114/45/11902>

*The original paper includes several experiments. We randomly chose Study 2. In this between-subject experiment, the authors test if temporary sharing of photographs dampens privacy concerns. Participants are asked to make a selfie with their webcam and to share it. Before taking a selfie, participants are informed that others from the same population will rate them based on their selfie. Participants are randomized and told that the photograph is either available temporarily or available permanently. More specifically, participants receive a description of either temporary or permanent sharing that notes either that the raters can view their photograph “only once, for a maximum of 10 seconds,” or “for as long as they want.” Additionally, before participants take a selfie, they also report their privacy concerns on a 7-point scale. Finally, they take and share the selfie. Participants under the “temporary” condition exhibit significantly decreased privacy concerns compared to participants under the “permanent” condition.*

**Hypothesis to replicate and bet on:** Temporariness decreases privacy concerns about sharing a selfie. To evaluate this hypothesis, the authors perform an ordinary least squares regression of subjects’ privacy concerns on an indicator variable for the “temporary” condition;  $\beta_{\text{temporary}} = -0.70$ ,  $SE = 0.22$ ,  $p < 0.005$ ; p. 11903.

**Criteria for replication:** The criteria for replication are an effect in the same direction as in the original study and a  $p$ -value  $< 0.05$  in a  $t$ -test of the coefficient of the treatment indicator in an ordinary least squares regression.

**Power analysis:** The original study had 323 participants after exclusion. The standardized effect size (Cohen’s  $d$ ) was  $d = 0.347$ . To have 90% power to detect 67% of the original effect size, a sample size of  $n = 785$  is required.

**Sample:** Except of the necessity of having an active and accessible webcam and a compatible browser, the original paper and the provided materials mention no restrictions on who could participate. As in the original study, the effect of temporariness on privacy concerns is only tested for those participants who actually share their selfie. Moreover, we will make sure that participants only participate once in this study, and we will only recruit participants with a HIT approval rate of 95% or above. 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  $\geq 85$ ; 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 implemented in *Qualtrics* and PHP based on the original instructions provided by the original authors in textual form.

**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. 11903), the section “Materials and Methods” (p. 11906), and the descriptions provided in section “Additional Details of Studies in the Main Text” in the

Supporting Information (p. 1). Furthermore, it is based on the original instructions and PHP files kindly provided by the original authors.

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. To induce high compliance, participants are informed during recruitment that they will need a webcam. Additionally, at the beginning of the experiment, participants will be told immediately if their webcam is accessible/active and, thus, if they can participate or not. Then, participants will be told that others from the same population will rate them based on their selfies, and that they could earn a bonus payment of up to \$1.00 based on how others rated their photograph. More specifically, they will receive the following description: “If you choose to share a photo of yourself, however, you may qualify for a bonus payment up to \$1.00 in addition to your regular *MTurk* payment. Out of all respondents who share a photo, 25% will randomly be selected for the bonus payment. The amount of your bonus varies between \$0.20 and \$1.00, depending on how your photo is evaluated (1 – 5 Stars) by another Turker. You can receive \$1.00 if your photo receives a 5 star rating, \$0.80 if it receives a 4 star rating, \$0.60 if it receives a 3 star rating, \$0.40 if it receives a 2 star rating, and \$0.20 if it receives a 1 star rating. You may take any type of photo of yourself with your webcam. To increase your chances for a high star rating you can be creative, your photo can be e.g., funny, racy, revealing etc.”

Then, participants will randomly receive one of the following two descriptions about temporary or permanent sharing:

*Temporary:* “Your photo will only temporarily be stored On the next page we will ask you to take a photo of yourself. When you take your photo, please be aware that this photo will not be stored permanently on our servers. It will only be temporarily available and deleted afterwards. The Turkers rating your photo may view it only once, for a maximum of 10 s. They cannot download the photo. Nobody will be able to access the photo once this study is completed. Please consider this information when taking and sharing your photo in this study. Hence, there are no long term consequences of your sharing behavior. The photo you take and share today will be gone shortly. Please take 1-2 minutes to think about the type of photo you would be willing to take and share, given the above information.”

*Permanent:* “Your photo will be stored permanently. On the next page we will ask you to take a photo of yourself. When you take your photo, please be aware that this photo will be stored permanently on our servers. That is, the photo will be stored for at least 10 y on our servers. The Turkers rating your photo may view it for as long as they want and as many times as they want. They may also download the photo and review it even after the study is completed, even after 10 y from now. Please consider this information when taking and sharing your photo in this study. Hence, please consider the possible long-term consequences of your sharing behavior. The photo you take and share today will remain permanently. Please take 1-2 minutes to think about the type of photo you would be willing to take and share, given the above information.”

Next, participants report their privacy concerns – “In thinking about what kind of photo to upload, I am concerned about my privacy” – on a scale from 1 (strongly disagree) to 7 (strongly agree) and then take and share a selfie. Participants’ responses to this question serves as the dependent variable in the analysis.

To determine participants' bonuses, we will recruit additional Turkers who will be asked to rate the a randomly assigned set of selfies. In the original study, 71 raters rated 1,124 selfies, i.e., 15.83 photographs on average. Each rater could evaluate the same photograph only once and photographs were evaluated by 3.48 raters on average. Additionally, the photographs were randomly allocated to raters, whereby those photographs with fewer ratings had a higher chance of being picked (weighted random selection). We will recruit 175 raters to have approximately the same average number of ratings per participant and approximately the same average number of raters per photograph. Selfies including at least one of the following will be coded as uninhibited and excluded from the rating: a silly or unusual face (e.g., sticking out the tongue); a hand gesture (e.g., a strangehold); using an object as a prop (e.g., "attacking" the camera with an umbrella); unrestrained action shots (e.g., jumping); nudity; or drug use (smoking, drinking). For determining the bonus payment, we take the average of raters' assessments of each photo.

**Analysis:** The analysis will be performed as in the original paper. In particular, we will compare participants' privacy concerns in the "temporary" condition with those in the "permanent" condition using an ordinary least squares regression.

**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.