Replication of Vacharkulksemsuk et al., 2016
"Dominant, open nonverbal displays are attractive at zero-acquaintance"
PNAS 113(15), 4009-4014.
https://www.pnas.org/content/113/15/4009

The original paper includes three studies but only one on MTurk. In this experiment (Study 2b), each participant is presented with one of twelve photograph collages. Each collage contains four photographs from one of six targets (three female and three male) and each target is represented in two collages: one expansive version (widespread limbs and enlargement of occupied space) and one contractive version (limbs held close to the torso and minimization of occupied space by collapsing the body inward). Participants are randomized to view one collage and are randomized to rate it on either dominance or openness. Expansive postures are rated as more dominant on a 5 point Likert scale (1 "strongly disagree" … 5 "strongly agree") than contracted postures.

Hypothesis to replicate and bet on: People rate men and women in expansive postures in photographs as more dominant than men and women in contracted postures photographs. To evaluate this hypothesis, the authors perform an independent-samples t-test; $t(424) = 18.02$, $p < 0.0001$, 95% CI (1.19, 1.48); p. 4012.

Criteria for replication: The criterion 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 853 participants (after exclusions) who were randomly asked to rate the photograph on either dominance or openness. The original sample involves 426 ratings on dominance, and 427 ratings on openness. The relevant sample size for the replication experiment, thus, is $n = 426$. The standardized effect size (Cohen's d) was $d = 1.75$. To have 90% power to detect 67% of the original effect size, a sample size of $n = 32$ is required. Since we require the replication sample size to be at least as large as in the original study, the replication experiment will use a sample size of $n = 426$ and the power will thus be >90% to detect 67% of the original effect size.

Sample: Only participants from the US were allowed to participate in the original study. Moreover, workers were required to have a HIT approval rate of 95% or higher and 500 HITs approved. Moreover, the original study required participants to complete an attention check. The replication experiment will implement the same criteria and the originally used attention check (kindly shared by the original authors) will be used. 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 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 *Qualtrics* survey, including the twelve photographs of six targets featured in the original study. All targets provided permission for their photo to be *"shown to subjects in other experiments."*

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 (pp. 4011–4012) and the section "Study 2b" (p. 2) of the SI Materials and Methods. Additionally, we will closely follow the specifications provided through our direct communication with the original authors.

Participants will be recruited for an online study using Amazon Mechanical Turk. 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. Then, each participant will be presented with one of 12 photograph collages. Each photograph collage will be comprised of the four photographs from each of the six targets (three female and three male). Thus, there will be two photograph collages representing each target: one expanded version (widespread limbs and enlargement of occupied space) and one contracted version (limbs held close to the torso and minimization of occupied space by collapsing the body inward).

Participants will be randomly assigned to view one collage (either expansive or contractive) of one target and to rate the amount of trait dominance using a scale from 1 ("strongly disagree") to 5 ("strongly agree"). Assessments for dominance will be made using the eight-item social dominance subscale of the Trait Dominance Measure (Kalma et al., 1991); the answers to the eight questions are averaged. The order of questions will be randomized across participants.

Analysis: The analysis will be performed as in the original paper. In particular, the means of the trait dominance measure between expensive and contractive collages will be compared using an 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.