**As predicted**

**1) Data collection.** Have any data been collected for this study already?

No, no data have been collected for this study yet.

**2) Hypothesis.** What's the main question being asked or hypothesis being tested in this study?

This study examines the consequences social exclusion has on the perception of one’s in- and outgroup. According to the actor-observer difference (Nisbett, Caputo, Legant, & Marecek, 1973), individuals tend to explain the behavior of others more in terms of stable characteristics, while they explain their own behavior more in terms of situational variation. In a previous study, we found that socially excluded individuals showed a larger actor-oberserver difference than included individuals. The aim of this study is to investigate whether this finding also applies to a group level. The ultimate attribution error (Pettigrew, 1979) - which was proposed to be an extension of the fundamental attribution error (Ross, 1977) - states that individuals explain negative behavior of a disliked outgroup member more in terms of stable characteristics. If the actor-observer difference also applies to the group level, individuals should also explain the behavior of ingroup members more in terms of situational influences.

One way of thinking about the actor-observer difference is consistent with the general tenets of Construal Level Theory (CLT; Trope & Liberman, 2010). According to CLT, an increased perceived distance goes along with an increased level of abstraction. A small distance is related to a low-level construal and consequently more concrete perception whereas a high-level construal is related to a more abstract perception. Perceived social distance has previously been linked to construal-level (Hess, Carnevale, & Rosario, 2018; Körner, Moritz, & Deutsch, 2019). Our interest lies in the consequences social exclusion has on the ingroup- and outgroup-perception for which we propose the following two hypotheses:

H1 and H2 are based on the findings from our previous experiment as well as other findings showing that abstract thinking functions as a buffer against negative psychological effects and therefore presents a beneficial strategy to cope with exclusion (Pfundmair, Lermer, Frey, & Aydin, 2015). Previous findings show that perceived distance to other individuals who showed rejecting behavior was overestimated by the targets (Knowles, Green, & Weidel, 2014).

H1. While in both conditions (exclusion and inclusion) the participants attribute the behavior of an outgroup member more to stable causes than the behavior of an ingroup member, this difference is greater in the exclusion condition.

H2. While in both conditions (exclusion and inclusion) the participants attribute the behavior of an outgroup member more to internal causes than the behavior of an ingroup member, this difference is greater in the exclusion condition.

**3) Dependent variable.** Describe the key dependent variable(s) specifying how they will be measured.

The key dependent variables stability and locus are assessed using the revised causal dimension scale (CDSII; McAuley, Duncan, & Russell, 1992). Participants will be asked to provide what they believe to be the main reasons for 5 positive and 5 negative hypothetical outcomes (Peterson et al., 1982) happening either to a member of their own group or to a member of an outgroup. After providing this cause, they are subsequently asked to rate this cause in terms of perceived stability (stable vs. variable) and locus (internal vs. external). For the analysis, we will only examine the negative outcomes as the actor-observer difference is found to be more stable in negative contexts (Malle, 2006). Two further dependent variables measuring perceived distance and the extent participants feel part of their own group are measured based on the inclusion of others in the self-scale (IOS) proposed by (Aron, Aron, & Smollan, 1992).

**4) Conditions.** How many and which conditions will participants be assigned to?

Participants will be randomly assigned to one out of four conditions. There will be a 2 (inclusion vs. exclusion) x 2 (ingroup- vs. outgroup-perception) between design. We manipulate exclusion with Cyberball, a virtual ball-tossing game in which participants receive either an equal share of ball-tosses (inclusion condition) or only two ball-tosses in the beginning (exclusion condition). In the ingroup-perception condition, participants are instructed to rate the causes for hypothetical outcomes happening to an ingroup member whereas in the outgroup-perception condition participants are asked to do the same task for outcomes happening to an outgroup-member.

**5) Analyses.** Specify exactly which analyses you will conduct to examine the main question/hypothesis.

In a first step, we will create for each outcome a separate mean value for stability and locus, using the four items assessing either stability or locus. To test our hypothesis, we will subject these 5 x 2 indices (stability and locus on negative trait items) to a repeated-measures MANOVA as well as planned follow-up mean comparisons.

Prior to running the MANOVA, we check how high the two dependent variables (stability and locus index) correlate per outcome. If the correlation is small for three or more outcomes (r < 0.3),we will conduct two independent repeated measure ANOVAs instead of the MANOVA. If the correlation is very large for three or more outcomes (r > 0.8), we will aggregate both dependent variables into one variable per outcome and conduct a repeated measure ANOVA.

We may alternatively run analyses using mixed effects modelling.

**6) Outliers and Exclusions.** Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.

After finishing Cyberball, we will ask participants to indicate what percentage of throws they received. If participants do not indicate an answer generally fitting to their condition, we will exclude them.

Moreover, we will exclude the data from all participants who indicate to have played Cyberball before.

Furthermore, we will ask participants after they finished the study if they answered the questions truthfully and consent to the use of their data. If participants negate at least one of both questions, we will exclude their data.

If there are technical problems during the study that result in an interruption of the study, we may exclude the data of involved participants depending on when data collection was interrupted.

Lastly, participants who take much longer than estimated (> 1 hour) will also be excluded as it is unclear wheter the effects of the manipulation persist for such a long time.

**7) Sample Size.** How many observations will be collected or what will determine sample size?  
No need to justify decision, but be precise about exactly how the number will be determined.

We base sample calculations on in the literature reported effect sizes of the CDSII (McAuley, Duncan, & Russell, 1992) which range from d = 0.22 (Thompson & O’Sullivan, 2017) to d = 0.66 (Körner et al., 2019) when investigating attribution changes with different distances. We use the mean of d = 0.44 for our sample calculation. The sample size is calculated with an a-priori power analysis using G\*Power 3.1 (Erdfelder, Faul, Buchner, & Lang, 2009) resulting in a sample size of 39 individuals per condition (N = 156), with alpha = 0.05 and power = 0.9. To ensure that an adequate number of participants will be part of the final data set, we will recruit slightly more (~10%; N = 172) participants than indicated by the power analysis.

**8) Other.** Anything else you would like to pre-register?  
(e.g., secondary analyses, variables collected for exploratory purposes, unusual analyses planned?)

After playing Cyberball, participants are asked to describe one of the two other groups indicating age, gender, and height. We will investigate if there are differences in the group-perception between the exclusion and inclusion groups.

**9) Name.** Give a title for this AsPredicted pre-registration  
Suggestion: use the name of the project, followed by study description.

*OST-CONSTRUAL-04*

Finally. For record keeping purposes, please tell us the type of study you are pre-registering.

**Online-Experiment**

PREVIEW