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Proposal: Preferences and inferences of personality traits following ostracism

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Declaration of scientific integrity

The author hereby declares that she/he has read and fully adhered the [Code for Good Practice in Research of the University of Basel](https://www.unibas.ch/dam/jcr:4439d7b2-f71c-457c-837d-44938163ce02/Code%20of%20good%20practice%20in%20research.pdf).

# Abstract

# Keywords

# 1. Introduction

Ostracism – being excluded and ignored – has been subject to an increasing amount of research in the last two decades (for a review, see Williams & Nida, 2011). The feeling of being excluded and ignored is known by everyone. Whether it be the exclusion from a game or a conversation. But most often, these experiences can be overcome rather quickly (Williams, 2009). But what helps us in doing so? And are their strategies or abilities we use in these situations? Within the body of ostracism research lays a topic that investigates the influence of ostracism on an affected individuals' perception of the world and other people.

## **1.1. Theory**

### 1.1.1. Perceptional differences in ostracized individuals

Humans have a universal need to belong, which is satisfied through social contact (Baumeister & Leary, 1995). When experiencing ostracism, the satisfaction of this need is reduced (Williams, 2009). The theory of the social monitoring system suggests that when the need to belong is thwarted, socially excluded people are particularly sensitive to social cues. And indeed, it has been found that social exclusion has a beneficial impact on the ability to identify facial expressions (Pickett et al., 2004), encode social cues (Kawamoto et al., 2014), concentrate on them (DeWall et al., 2009; Golubickis et al., 2018) and judge the authenticity of smiles (Bernstein et al., 2008). Socially excluded, according to theory, have a heightened perception because they strive for reintegration to satisfy their need to belong (Pickett & Gardner, 2005), and the heightened perception may help them in doing so. An important requirement for this is, however, an interaction partner who is approachable and open for social interaction. One aspect that could make a good interaction partner are his personality traits, which, among other things, indicate his social preferences and openness towards new experiences. Since ostracism leads to an alternated perception of social and facial cues (Kawamoto et al., 2014), could ostracism also increase the perceived distinctiveness of typical personality traits inferred from a face? And which personality traits do ostracized individuals prefer in a potential interaction partner when seeking reintegration?

### 1.1.2. Ostracism and facially communicated personality traits

Previous research revealed that there are associations between ostracism and personality traits in form of the Big Five (Costa & McCrae, 1992). For instance, one study showed that participants who received a description of a person with either a low or high expression of the trait agreeableness or conscientiousness, showed higher intension to ostracize the described person with lower trait expression (Rudert et al., 2021).

When only facial cues are available, individuals are relatively accurate in inferring personality traits of the person they see (Ambady et al., 2000; Kachur et al., 2020; Walker & Vetter, 2016). In this context of trait inference it has been found that low need to belong is related to a preference for more extraverted faces (Brown & Sacco, 2017). A study considering individuals’ general preferences for facially communicated personality traits showed a preference for higher values in extraversion and agreeableness as well as for lower values in neuroticism and conscientiousness (Sacco & Brown, 2018). No general preference emerged for openness; rather, the subject's openness partially predicted his preference for openness in other faces.

Moreover, social exclusion increased the categorical perception of social information (Sacco et al., 2011). Accordingly, personality traits inferred through facial cues may also be judged more extremely by socially excluded individuals. Together, these findings suggest that personality may be a relevant social cue when experiencing low belongingness. However, it remains unclear whether individuals with a thwarted need to belong compared to individuals with high need to belong hold further preferences for faces which suggest certain personality traits. Further, it is unclear whether they perceive these traits as more extreme than individuals with high need to belong.

### 1.1.3. Basel Face Database

The Basel face database (Walker et al., 2018) provides manipulated photographs of individuals in which the depicted individuals are perceived as having either a high or low expression of each Big Five personality trait. This resource allows to test the preferences of ostracized individuals for the Big Five personality traits and their accuracy in inferring these traits from prototypical photographs. In previous research (Brown & Sacco, 2017), a preference for extraverted faces has been found to be related to a low need to belong. This study aims at replicating this finding as well as extending it by examining whether excluded (as opposed to included) individuals hold preferences for agreeableness, conscientiousness, neuroticism, and openness. Hence, this study will include all Big Five personality traits and analyze the preferences of socially excluded for these traits as well as their inference from manipulated photographs.

## 1.2. Hypotheses

Based on the theory outlined above, six hypotheses are stated. The first five address preferences of socially excluded for faces of others with respect to personality traits. I expect socially excluded individuals to prefer more extraverted, more agreeable, less conscientious and less neurotic faces, as these general preferences were already found in a previous study (Sacco & Brown, 2018). Since there was no distinct preference found for openness, a prediction is made here: For the socially excluded, I expect a preference for more open faces, as this could convey a signal of responsiveness and, in theory, these people should be more open to new interactions. For conscientiousness, a similar prediction is made in that socially excluded individuals will have a stronger preference for more conscientious faces since they may convey more stability and less risk taking.

The resulting hypothesis is split up into five similar hypotheses that are as follows:

*H1A: On average, socially excluded (vs. included) individuals prefer faces manipulated to display high (vs. low) extraversion by choosing these extremes more often when choosing a potential interaction partner.*

*H1B: On average, socially excluded (vs. included) individuals prefer faces manipulated to display high (vs. low) agreeableness by choosing these extremes more often when choosing a potential interaction partner.*

*H1C: On average, socially excluded (vs. included) individuals prefer faces manipulated to display high (vs. low) openness by choosing these extremes more often when choosing a potential interaction partner.*

*H1D: On average, socially excluded (vs. included) individuals prefer faces manipulated to display low (vs. high) conscientiousness by choosing these extremes more often when choosing a potential interaction partner.*

*H1E: On average, socially excluded (vs. included) individuals prefer faces manipulated to display low (vs. high) neuroticism by choosing these extremes more often when choosing a potential interaction partner.*

Further, I expect socially excluded individuals to make more extreme ratings when judging pictures of individuals with respect to a perceived personality trait. Because the trait expressions on the presented faces are meant to be either high or low, excluded participants may make their ratings more based on categorical perceptions of social information. This argument is further supported by findings that individuals with a thwarted need to belong have a more categorical perception of social information (Sacco et al., 2011). A greater need to belong was also associated with more precision in identifying facial expressions (Pickett et al., 2004), encoding social cues (Kawamoto et al., 2014), concentrating on them (DeWall et al., 2009; Golubickis et al., 2018) and judging the authenticity of smiles (Bernstein et al., 2008).

The second hypothesis is as follows:

*H2: Socially excluded (vs. included) individuals make more extreme personality ratings of the manipulated pictures.*

# 2. Methods

## 2.1. Participants

The required sample size was calculated using G\*Power (Faul et al., 2007) using a medium effect size (*d* = 0.5). A t-test with independent means, given α = 0.05, power 1-β = 0.8 yielded a sample size of 102 participants in total. To ensure that the final sample size will have enough participants, the sample size is slightly increased (~10%, *N* = 114, 57 in each condition).

Participants will be recruited on the website prolific.

## 2.2. Design and Procedure

To compare the effects of social exclusion on preferences for personality traits and their inference from photographs, participants will be randomly assigned to one of two conditions: inclusion and exclusion. Both groups are asked for their consent and introduced to the study. Then, they play Cyberball, an online ball-tossing game where participants are either included or excluded (Williams & Jarvis, 2006). Participants in the inclusion condition get to interact with the other players by receiving an equal share of ball tosses (around 30%), while the exclusion group experiences social exclusion by the other players (they receive the ball only twice in the beginning). Right after, they will report their need satisfaction of the four basic needs: belonging, self-esteem, control, and meaningful existence (Williams, 2009). Need satisfaction will be measured using a short Need Threat Scale (Rudert & Greifeneder, 2016). It indicates whether the ostracism manipulation was successful.

Thereafter, participants will be presented with 40 different pairs of photographs, each pair displaying the same person. Importantly, the pairs of photographs are manipulated so that they display the same person once enhanced and one reduced on the personality trait of interest. Participants will be asked to choose the picture of the person that they would prefer to interact with. Participants will make in total 40 decisions (40 pairs for five personality traits, resulting in eight pairs per trait). Afterwards, they are presented with 20 individual photographs, each showing a face with either enhanced or reduced characteristics of one of the big five traits. They are asked to rate the depicted individuals on the photograph with respect to the manipulated personality trait (e.g., *not at all neurotic – extremely neurotic*) using a 7-point Likert scale. Participants will make these decisions for 20 faces. The photos presented in both tasks will be shown in a randomized order. The preference task is chosen to come first because there is no mention of personality traits in it, which could otherwise influence the answers in the following task.

Finally, participants answer a short questionnaire with 10 items to record their own trait expressions of the Big Five (Rammstedt & John, 2007). This offers the option to investigate whether their own traits have an influence on their preferences for facially communicated traits in an exploratory manner, since this association has already been found in an previous study (Sacco & Brown, 2018).

## 2.3. Statistical Analysis

To compare preferences for a high or low trait expression among included and excluded individuals, the mean preference for both groups will be calculated as a number between 0 and 1 (each participant choosing one of two photos representing the values 0 and 1, respectively). A mean of 0.5 would therefore mean that a participant is indifferent between low or high manipulation on the according trait. With this mean value, an independent t-test can be calculated for each trait. If the parameter of a normal distribution is not given, a Welch-test will be chosen as alternative. The Holm-Bonferroni method is used to control for family-wise error rates following the calculations of t-tests. Afterwards, the moderating effect of participants’ own personality traits will be controlled for with a linear regression model.

To compare the personality inferences of the exclusion and the inclusion group, the items displaying a low trait expression first will be inverted to be included into the analysis of the high trait expression items. Then, an independent t-test is conducted for every trait rating to calculate if the difference in the average rating of both groups is significant. Again, if a normal distribution is missing, a Welch-test is applied to account for a non-parametric distribution.

Additionally, we will first run an ANOVA including one factor for the direction of trait manipulation to account for differences in the direction of trait expression.

# 3. Results

# 4. Discussion

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