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Preferences and Inferences of Personality Traits of Socially Excluded

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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

# Introduction

Ostracism – being excluded and ignored – has been subject to an increasing amount of research in the last two decades (Fayant et al., 2014; Gonsalkorale & Williams, 2007; Poon et al., 2020; Sacco et al., 2011; van Beest & Williams, 2006; Warburton et al., 2006; Williams et al., 2000). One topic in this pile of research is the influence of ostracism on an affected individuals' perception of the world and other people. We generally have a need to belong, which is satisfied through social contact (Baumeister & Leary, 1995). Ostracism reduces the satisfaction of this need (Williams, 2007). The theory of the social monitoring system suggests that when the need to belong is thwarted, socially excluded people are better at perceiving 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 need to reintegrate themselves into a new group to satisfy their need to belong (Pickett & Gardner, 2005), and the heightened perception helps them in doing so. One aspect that certainly matters in this context are the personality traits of the person being approached by our excluded individual. Can ostracism also enhance the ability to infer typical personality trait just from a face? And what personality traits do ostracized prefer in their interaction partner when seeking reintegration?

Personality traits in form of the big fives have already been studied in relation to ostracism. In one study, participants received a description of a person with either a low or high expression of the trait agreeableness or conscientiousness. These traits had an influence on the participants’ intension to ostracize the fictitious person (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). It has been found that low need to belong is related to a preference for more extraverted faces (Brown & Sacco, 2017). Moreover, social exclusion increased the categorical perception of social information (Sacco et al., 2011). Accordingly, personality traits inferred through facial cues should also be judged more extremely by socially excluded. Together, these findings suggest that personality may be a relevant social cue when experiencing low belongingness. However, it remains unclear whether individuals with thwarted need to belong have different preferences for facially communicated personality traits compared to individuals with high need to belong. Further, we do not know whether they infer these traits more extremely and, in case of manipulated photographs, to the according extreme.

In a study by Walker et al. (2018) photographs of subjects were manipulated in a way that they show a high or low expression of each big five personality trait, respectively. This sample allows to test the preferences of socially excluded people for the Big Five personality traits and their accuracy in inferring these traits from prototypical photographs. This has never been fully examined in other studies. Extraversion is the only trait of the Big Five that has been examined in a study in conjunction with social exclusion and personality assessment.

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.

## Hypotheses

Based on the theory outlined above, two hypotheses are stated. The first addresses preferences of socially excluded for faces of others with respect to personality traits. I expect socially excluded 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). No general preference emerged for openness; rather, the subject's openness partially predicted his preference for openness in other faces. Thus, high openness conditioned a preference for more open faces and vice versa. However, 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.

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

*H1A: Socially excluded people prefer faces with high scores in extraversion.*

*H1B: Socially excluded people prefer faces with high scores in agreeableness.*

*H1C: Socially excluded people prefer faces with high scores in openness.*

*H1D: Socially excluded people prefer faces with low scores in conscientiousness.*

*H1E: Socially excluded people prefer faces with low scores in neuroticism.*

Further, I expect socially excluded to make more extreme and thereby more accurate estimations when judging facially communicated traits, because the correct answer, meaning the trait expression a face shows, is always one of two extremes, eighter enhanced or reduced. This expectation mainly emerges from the more categorical perception of social information when the need to belong is thwarted, as well as the heightened ability of socially excluded 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).

The second hypothesis is as follows:

*H2: Socially excluded individuals make more extreme inferences toward the personality manipulation than included individuals when assessing them from a photograph.*

# Methods

## Participants

Power analysis…

Participants will be recruited on the website qualtrics/questback, where the study will be conducted. They receive …$ an hour/for completing the study.

## 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 introduced to the study and asked for their consent as well as their age, which is required to be 18 years. Then, they play Cyberball, an online ball-tossing game that induces feelings of ostracism (Williams & Jarvis, 2006). The exclusion group experiences social exclusion by other players during the game, while the inclusion group gets to interact normal and is included by the other players. Right after, they will fill out a short questionnaire on the four different needs related to ostracism: belonging, self-esteem, control, and meaningful existence (Williams, 2002). The questionnaire is an adapted version of the Need Threat Scale from Zadro et al. (2004). It verifies whether the ostracism manipulation was successful.

Moving on, participants will be presented with two photographs of the same person, but they are oppositely manipulated to show enhanced and reduced amounts of one of the five big traits, respectively. Participants will have to choose the face that they would prefer to interact with. After making 20 decisions, they continue with the next task, in which they see a photograph of a face that shows either enhanced or reduced characteristics of one of the big five traits. They are asked to rate on a 7-point Likert-type scale (e.g., *not at all neurotic – extremely neurotic*) how they would rate the person they see in respect to the trait the photo is manipulated in. Participants will make these decisions for 20 pairs of faces. In both tasks, participants will see different pictures so that they will not make multiple decisions for the same pair of pictures. 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 ten items to record their own trait expressions of the Big Five (Rammstedt & John, 2007). This offers the option to test whether their own traits have an influence on their preferences for facially communicated traits.

## Statistical Analysis

For the analysis of preferences, a pairwise t-test will be calculated for every trait to compare the preferences of the inclusion group to the exclusion group. In total, this will add up to five t-tests, one for each trait. If the parameter of a normal distribution is not given, a Welch-test will be chosen as alternative.

To compare the personality inferences of the exclusion and the inclusion group, the items are first inverted to be comparable. Then, a t-test is conducted to calculate if the difference between the groups is significant. Again, if a normal distribution is missing, a Welch-test is applied to account for a non-parametric distribution.

An ANOVA can alternatively be calculated to look for a general effect across all traits.

Preference analysis in other studies:

Brown & Sacco 2017

To determine if participants' dispositional NTB was related to preferences for extraverted faces, we conducted a 2 (Participant Sex: Male, Female) × 2 (Target Sex: Male, Female) mixed-model custom ANCOVA, with repeated measures over the second factor and NTB as a covariate. This analysis revealed participants demonstrated stronger extraversion preferences for female targets (MAdjusted=0.61, SD = 0.12) compared to male (MAdjusted=0.51, SD=0.09), p b 0.001, ηp 2 =0.193. Interestingly, one-sample t-tests revealed participants' extraversion preferences were significantly greater-than-chance for female targets, t(148) = 8.86, p b 0.001, d = 0.54, but not male, t(148) = 0.89, p = 0.371, d = 0.15. Importantly, this analysis also yielded the predicted main effect of participants' NTB, F(1, 145)=4.75, p=0.031, ηp 2 =0.032.We correlated participants' NTB scores with their extraversion preferences to understand this relation's direction; consistent with our primary hypothesis, greater dispositional NTB was associated with a stronger preference for extraverted faces, r(147) = 0.160, p = 0.051, [95% CI: 0.00, 0.31]. No Participant Sex effect emerged; neither Participant Sex nor Target Sex interacted with any other study variable (all ps N 0.34).

Bernstein et al. 2010

For each participant, we averaged (separately) their preference scores for targets with real smiles and those with fake smiles. These averages were subjected to a 3 (social experience: exclusion, control, inclusion) \_ 2 (smile: Duchenne, non-Duchenne) mixed-model ANOVA, with repeated measures on the latter.

Sacco & Brown 2018

Prior to the omnibus analysis, we conducted 5 one-sample t-tests to test for categorical preferences. Tests were weighted against 0.5 (i.e., no preference) for each trait, collapsed across target sex. We controlled for family-wise error rates with a 2 (Participant Sex:

Male vs. Female)×2 (Target Sex: Male vs. Female)×5 (Target Personality: Extraversion, Agreeableness, Conscientiousness, Openness, Neuroticism) custom mixed ANCOVA, with repeated measures over the latter two factors, and participants' self-reported Big Five Personality Traits as covariates. While independent regression models would have been equally appropriate for testing the impact of participant personality, target sex, and the interactions, a custom mixed ANCOVA similarly afforded such analyses while also having the advantage of testing for effects of target personality trait, target sex, and their interactions with predictor variables in a single, parsimonious model. Below, we report significant effects to emerge from the omnibus analysis due its complexity; data are available upon request.

# Results

# Discussion

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