social exclusion and willingness to self-disclose towards a robot (#39662)

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1) Have any data been collected for this study already?
No, no data have been collected for this study yet.

2) What's the main question being asked or hypothesis being tested in this study?
The primary aim of this experiment is to examine the influence of social exclusion and social inclusion on the willingness to self-disclose towards a humanoid robot. For this purpose, participants are instructed to remember a situation in which they felt socially excluded (exclusion condition) or a situation in which they were together with a familiar (inclusion condition) or to imagine what they did the day before (control group, previous day).
1. Participants in the exclusion condition will be more willing to engage in self-disclosure a) in comparison to participants in the inclusion condition and b) in comparison to participants in the control group.
Besides this main hypothesis, we will test the following secondary hypotheses:
2. Participants in the exclusion condition will attribute more warmth to the humanoid robot a) in comparison to participants in the inclusion condition and b) in comparison to participants in the control group.
3. Participants in the exclusion condition will attribute more Mind (Agency) to the humanoid robot a) in comparison to participants in the inclusion condition and b) in comparison to participants in the control group.
4. Participants in the exclusion condition will attribute more Mind (Experience) to the humanoid robot a) in comparison to participants in the inclusion condition and b) in comparison to participants in the control group.

3) Describe the key dependent variable(s) specifying how they will be measured.
Participants will rate willingness to self-disclose with a self-generated self-disclosure scale oriented towards the self-disclosure index (Miller, Berg, & Archer, 1983). Additionally, the preferred level of intimacy of the conversation will be assessed with one self-generated item. The attribution of warmth will be assessed with an adapted scale of the Bem Sex-Role Inventory (Bernotat, Eyssel, & Sachse, 2017; 2019; Eyssel & Hegel 2012; adapted from: Schneider-Düker & Kohler, 1988). Mind Agency and Mind Experience will be assessed with a previously used scale (Bernotat & Eyssel, 2018; Eyssel & Loughnan, 2013). The means of the scales will be used as dependent variables.
To collect participants' responses, 7-point Likert scales will be used.

4) How many and which conditions will participants be assigned to?
Participants will be randomly assigned to one of three conditions based on a 2 (exclusion vs. inclusion) x1 between-subjects design with a control group (previous day).

5) Specify exactly which analyses you will conduct to examine the main question/hypothesis.
A MANOVA will be conducted to test whether the participants differ between conditions in their willingness to self-disclose (rating of willingness to talk about personal conversation topics and intimacy rating), in their attribution of warmth and in their attribution of mind (agency and experience) to the humanoid robot. Additionally, a MANCOVA will be conducted with the same dependent variables and overall loneliness (now and before social distance measures due to corona pandemic, if there are differences in loneliness), social anxiety, acceptance and usage of new technologies and negative affect as covariates. Non-significant covariates will be stepwise excluded from analysis.

6) Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.
We will exclude participants who indicate that they did not follow the instructions of the remembrance task or did not read and honestly answer all questions of the survey. We will exclude participants who do not fulfill the requirements for the study (being alone on a quiet place). We will exclude participants with more than 5% of outliers - defined as three or more standard deviations away from the mean value - across all variables excluding demographic data. We will exclude participants who indicate inability to speak German fluently.

7) 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 will complete data collection once 129 valid responses of participants are collected within a timeframe until July 1st, 2020, so that each condition will be presented to at least 43 participants. To determine the sample size, we conducted a power analysis with G*Power (Faul, Erdfelder, Lang, & Buchner, 2007) using the
following parameters: $\alpha = .05$; power = .95; $f2 = 0.10$ (small to medium effect). If the participants are not evenly grouped in the three conditions, data collection will proceed till 43 participants per condition are reached.

8) Anything else you would like to pre-register? (e.g., secondary analyses, variables collected for exploratory purposes, unusual analyses planned?)
1. The success of the manipulation will be evaluated with six self-generated social exclusion items, which are mixed within ten PANAS items (Thompson,

2007). For the manipulation check, an ANOVA will be conducted.

Exploratory questions

For exploratory purposes, acceptance and usage of new technologies (Neyer et al., 2012), competence measured with an adaptation of the Bem Sex-Role Inventory (e.g. Bernotat, Eyssel, & Sachse, 2019), trait social anxiety (Heinemann, 1979) and a short scale for measuring overall loneliness (Hughes et al., 2004) will be collected. Moreover, the preferred length of a hypothetical personal conversation with the robot will be assessed via one item asking for the subjective length (1 = as short as possible to 7 = as long as possible) and via length of conversation request (in minutes) of conversation (one self-generated item), and the joyful anticipation of the conversation with the robot will be measured with three quantitative items. Additionally, an open question will be asked to identify topics the participants spontaneously want to talk about with the robot NAO, which will be rated by two raters regarding intimacy of the topic. Furthermore, the imagination quality of the imagined conversation with the robot will be assessed, as well as the estimated conversation capabilities of the robot and prior robot experiences.

An MANCOVA with the exclusion vs. inclusion, vs. control conditions as independent variable and with willingness to self-disclose, intimacy of conversation, intimacy of conversation topic, length of conversation (in minutes and subjective), warmth, competence, mind agency, mind experience, and joyful anticipation as dependent variables and gender, age, positive and negative affect, quality of imagination of the conversation, estimated conversation capabilities, robot experiences, acceptance and usage of new technologies, overall loneliness (now and before social distance measures due to corona pandemic, if there are differences in loneliness) and social anxiety as covariates will be conducted. Non-significant covariates will be stepwise excluded from the MANCOVA. Correlation analyses between all dependent variables and covariates will be conducted for exploratory purposes.

Furthermore, the self-disclosure scale will be divided into low intimate, high intimate positive and high intimate negative self-disclosure and a MANOVA will be conducted to explore if the exclusion vs. inclusion vs. control condition differ for this specific self-disclosure types. It will be checked through correlational analysis, if these types of self-disclosure differ in relation to other dependent variables and covariates.