

To cite this article:

Fischer, M., Kuppens, P., & Moors, A. (in press). When socially excluded people prefer moralizing to anti- and prosocial behavior: Support for a goal-directed account. *Motivation and Emotion*.

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20

When socially excluded people prefer moralizing to anti- and prosocial behavior: Support for a goal-directed account

Maja Fischer<sup>1,2</sup>, Peter Kuppens<sup>1</sup>, and Agnes Moors<sup>1,2</sup>

<sup>1</sup> Research Group of Quantitative Psychology and Individual Differences, KU Leuven, Belgium

<sup>2</sup> Centre for Social and Cultural Psychology, KU Leuven, Belgium

Acknowledgements: Preparation of this article was supported by Research Program G073317N of the Research Foundation - Flanders (FWO) and Grants C14/17/047 and GOA/15/003 of the Research Fund of KU Leuven. We thank Eva Ceulemans and Francis Tuerlinckx for statistical advice, Fleur Gaignard for helping with data collection, and Yannick Joye for feedback on an earlier version.

Correspondence: Maja Fischer, KU Leuven, Tiensestraat 102 – box 3727, 3000 Leuven, Belgium, [maja.fischer@kuleuven.be](mailto:maja.fischer@kuleuven.be)

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

## 1 Abstract

2 According to the temporal need-threat model, different responses toward social exclusion stem  
3 from the fact that different needs are threatened. Because evidence for this account is mixed, we  
4 tested a goal-directed account in which the chosen behavior depends not only on the threatened  
5 need but also on the behavior that has the highest expectancy of repairing that need. In two  
6 experiments, participants were excluded using the cyberball paradigm. They were then either  
7 assigned to a condition in which they could choose to send aggressive or prosocial messages to  
8 the other players or to a condition in which they could send aggressive, prosocial, or moralizing  
9 messages. We hypothesized that the expectancy to repair threatened needs would be higher for  
10 moralizing behavior than for aggressive and prosocial behavior, which would result in  
11 moralizing behavior in the second condition. Both experiments provided partial support for our  
12 hypothesis, suggesting that the reactions to social exclusion might be goal directed.

13

14

15 *Keywords:* social exclusion, temporal need-threat model, goal-directed, stimulus-driven

16

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

1 When socially excluded people prefer moralizing to anti- and prosocial behavior: Support for a  
2 goal-directed account

3 Remember the last time your colleagues ignored your suggestions in a meeting or your  
4 partner gave you the silent treatment after a dispute. While mild experiences of social exclusion  
5 can already elicit uncomfortable feelings and motivate behavior to change the situation, strong  
6 and repeated experiences of social exclusion have been associated with affective disorders  
7 (Ayduk, Downey, & Kim, 2001) and dramatic reactions such as school shootings, homicides,  
8 and sexual assaults (Leary, Twenge, & Quinlivan, 2006).

9 Social exclusion refers to situations in which people are physically or psychologically  
10 kept apart from others (Riva & Eck, 2016) and has been shown to elicit both antisocial and  
11 prosocial behavior. This holds true irrespective of the type of social exclusion studied or the  
12 experimental paradigm used (Gerber & Wheeler, 2009). In some studies, excluded participants  
13 delivered more aversive auditive stimuli (Buckley, Winkel, & Leary, 2004; Twenge, Baumeister,  
14 Tice, & Stucke, 2001), more hot sauce (Warburton, Williams, & Cairns, 2006), and more  
15 unappealing snacks (Chow, Tiedens, & Govan, 2008) to the perpetrator or an innocent bystander.  
16 In other studies, excluded participants conformed more to a subsequent request (Williams,  
17 Cheung, & Choi, 2000) and donated more money to social charity (Carter-Sowell, Chen, &  
18 Williams, 2008).

19 The temporal need-threat model of ostracism (e.g., Williams, 2009) explains both  
20 antisocial and prosocial behavior by proposing three consecutive stages. In the reflexive stage,  
21 social exclusion simultaneously threatens the fundamental needs for control (Williams, 2009),  
22 meaningful existence (Greenberg, Solomon, & Pyszczynski, 1997), self-esteem (Donnellan,  
23 Trzesniewski, & Robins, 2011), and belonging (Baumeister & Leary, 1995). In the reflective  
24 stage, efforts are made to repair these needs, and each need is repaired with a specific type of  
25 behavior: the needs for control and meaningful existence with antisocial behavior and the needs

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

1 for self-esteem and belonging with prosocial behavior. The relative strengths of the need threats  
2 determine whether antisocial or prosocial behavior is elicited. In the resignation stage, a person  
3 who is persistently socially excluded abandons the efforts to repair the threatened needs and  
4 experiences helplessness and despair (Wortman & Brehm, 1975).

5 Evidence in favor of the temporal need-threat model comes from experimental studies  
6 that manipulate the relative strength of the four need threats by adding an extra manipulation  
7 (after the exclusion manipulation) that satisfies one of these needs. For instance, studies found  
8 that satisfying the need for control decreased aggressive behavior (Warburton, Williams, &  
9 Cairns, 2006) whereas satisfying the need to belong reduced prosocial behavior (Knausenberger,  
10 Hellmann, & Echterhoff, 2015). Support also comes from correlational studies in which it was  
11 found that self-reported threats to the needs for self-esteem and belonging but not to the needs  
12 for control and meaningful existence mediated between social exclusion and affiliative behavior  
13 (Bernstein, Sacco, Brown, Young, & Claypool, 2010).

14 Evidence against the temporal need-threat model is provided by studies indicating that  
15 threats to the needs for self-esteem and belonging also lead to aggressive behavior (Baumeister,  
16 Smart, & Boden, 1996; Ernst & Cacioppo, 1999) and threats to the needs for meaningful  
17 existence and control also lead to prosocial behavior (Burke, Martens, & Faucher, 2010; Keltner,  
18 Gruenfeld, & Anderson, 2003). In addition, some studies showed that social exclusion also elicit  
19 behaviors beyond the antisocial-prosocial dichotomy such as increased withdrawal (Ren,  
20 Wesselmann, & Williams, 2016), ecological (Poon, Teng, Chow, & Chen, 2015), and gambling  
21 behavior (Pancani, Riva, & Sacchi, 2019).

22 In an attempt to bring these conflicting findings in line with the temporal need-threat  
23 model, investigators have searched for contextual factors and individual differences that  
24 moderate the reactions to social exclusion such as the unexpectedness of the rejection  
25 (Wesselmann, Butler, Williams, & Pickett, 2010), whether the target person was involved in the

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

1 exclusion as a perpetrator (Maner, DeWall, Baumeister, & Schaller, 2017), and the cultural  
2 context of the rejected person (Uskul & Over, 2017).

3         We propose an alternative way to explain these findings. In particular, we propose to  
4 explain behavioral reactions to social exclusion with a goal-directed process. In such a process,  
5 the expected utilities of different behaviors are compared and the behavior with the highest  
6 expected utility is selected. Expected utility is a function of the value of the outcome of the  
7 behavior (i.e., value of repairing a need) and the expectancy that the behavior will lead to this  
8 outcome (Savage, 1954/1972). Goal-directed processes are often contrasted with stimulus-driven  
9 processes (e.g., Heyes & Dickinson, 1990; Moors, 2017; Moors, Boddez, & De Houwer, 2017;  
10 Strack & Deutsch, 2004). In a stimulus-driven process, a behavior is elicited when a stimulus  
11 activates a mental association between the representation of the stimulus or stimulus features and  
12 the representation of the behavior. These stimulus features are not restricted to perceptual  
13 features, but can also refer to abstract features such as the type of need threat imposed by a  
14 stimulus. The crucial difference with the goal-directed process, however, is that the stimulus-  
15 response associations in a stimulus-driven process do not contain information about the outcome  
16 of the responses.

17         The mechanism proposed by the temporal need-threat model to explain anti- and  
18 prosocial behaviors takes the form of a stimulus-driven process. Here social exclusion threatens  
19 the needs for control, meaningful existence, self-esteem, and belonging. These threats count as  
20 abstract stimulus features that each give rise to a type of behavior: threats to the needs for control  
21 and meaningful existence (S) to antisocial behavior (R), and threats to the needs for self-esteem  
22 and belonging (S) to prosocial behavior (R). According to a goal-directed explanation, on the  
23 other hand, a socially excluded person evaluates different behavior options to repair the need  
24 threats and selects the behavior option with the highest expectancy for doing so. Here the same  
25 need threat can be repaired with antisocial or prosocial behavior if this behavior has the highest

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

1 expectancy for repairing the need. In contrast to the explanation of the temporal need-threat  
2 model, the goal-directed explanation does not associate specific threatened needs with specific  
3 behaviors and therefore can account for the findings that the same need threat can lead to  
4 different behaviors (e.g., Baumeister, Smart, & Boden, 1996; Burke, Martens, & Faucher, 2010)  
5 and that need threats can lead to other than antisocial and prosocial behaviors (see Pancani, Riva,  
6 & Sacchi, 2019; Poon, Teng, Chow, & Chen, 2015).

7         Theoretical and empirical support for the goal-directed nature of antisocial and prosocial  
8 behavior can be found outside the domain of social exclusion (e.g., Bushman & Anderson, 2001;  
9 Cherek, Spiga, Steinberg, & Kelly, 1990; Geçsiaz & Crockett, 2015; Kindt, Vansteenkiste, Cano,  
10 & Goubert, 2017; Rand & Nowak, 2013). For instance, Leander and Chartrand (2017) threatened  
11 participants' need for self-efficacy, by making them fail a cognitive task, and gave them the  
12 opportunity to engage in either active aggressive and passive prosocial behavior or in passive  
13 aggressive and active prosocial behavior. They found that participants preferred the active over  
14 the passive behavior irrespective of the aggressive or prosocial nature of the behavior. If one  
15 assumes that participants estimate the expectancy of active behavior as higher than passive  
16 behavior, these results suggest that participants selected the behavior with the highest expectancy  
17 to repair self-efficacy. These findings were further corroborated in a follow-up study showing  
18 that participants refrained from aggressive behavior only if they were told that they could  
19 improve their performance in a cognitive task at a later time and were thereby given a more  
20 effective means to repair self-efficacy than aggressive behavior.

21         Within the domain of social exclusion, the goal-directed nature of the antisocial and  
22 prosocial behavior has received less attention. The goal-directed explanation suggests that the  
23 behaviors elicited by social exclusion can be explained by their expected utilities. Ample  
24 evidence indicates that the strength of the need threat and accordingly the value of the outcome  
25 of repairing these needs influences the reactions to social exclusion (e.g., Knäusenberger,

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

1 Hellmann, & Echterhoff, 2015; Warburton, Williams, & Cairns, 2006). Much less is known  
2 about the role of expectancies that specific behaviors will lead to the valued outcomes. It is true  
3 that existing models of social exclusion have considered factors that are related to expectancy.  
4 For instance, the temporal need-threat model (Wesselmann & Williams, 2013) refers to the  
5 perceived likelihood of reinclusion, and the Multimotive model (Smart Richman, 2013) refers to  
6 expectations of relational repair. However, these factors refer to *general* expectations of attaining  
7 a specific valued outcome and not to the expectations that a *particular* behavior will lead to any  
8 valued outcome. In addition, in these models, the degree of these general expectations is linked  
9 in a fixed manner to specific behaviors. For instance, in the temporal need-threat model, high  
10 expectations of reinclusion lead to prosocial behavior whereas low expectations of reinclusion  
11 lead to antisocial behavior. Likewise, in the Multimotive model, high expectations of relational  
12 repair lead to prosocial behavior whereas low expectations of relational repair lead to antisocial  
13 behavior or avoidance. This differs from a goal-directed account, which predicts that a person  
14 will choose prosocial, antisocial, or any other behavior if this behavior has the highest  
15 expectancy to repair her needs.

16         Instead of pitting both models against each other as competing accounts, the temporal  
17 need-threat model could be considered as an incomplete goal-directed account in that it only  
18 focuses on the values of goals, but neglects the expectancies of specific behaviors for achieving  
19 these goals. Another way to frame the difference between both models is to consider the  
20 temporal need-threat model as a special case of the goal-directed model. Indeed, it could be  
21 argued that the associations between specific need threats and specific behaviors hypothesized in  
22 the temporal need-threat model describe preferential (i.e., typical but not necessary) relations.  
23 For instance, the hypothesis could be that a threat to the need for control is best repaired with  
24 antisocial behavior in many but not all cases. Another point of alignment is that the goal-directed



## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

1 model predicts inaction if the expected utilities of all behavior options are marginally low, which  
2 is consistent with the temporal need-threat model regarding the resignation stage.

3 The present studies tested the prediction that behavioral reactions to social exclusion are  
4 goal-directed. To this end, we manipulated the relative expectancies of various behaviors to  
5 repair threatened needs and examined whether socially excluded participants choose the behavior  
6 with the highest relative expectancy to do so. This would provide support for the goal-directed  
7 nature of behavioral reactions to social exclusion.

8 The expectancies (i.e., subjective probabilities) of a behavior can be manipulated by  
9 varying the objective probabilities that the behavior leads to certain outcomes and/or by  
10 informing participants about these probabilities. For instance, participants could be informed that  
11 prosocial behavior will lead to future re-inclusion. Such an approach, however, faces the major  
12 difficulty that participants may bring their own prior beliefs about the expectancies of behaviors  
13 to the lab, which are difficult to override in an experimental setting. We therefore opted for an  
14 alternative expectancy manipulation that does not suffer from this difficulty. This manipulation  
15 makes use of the prediction of the goal-directed account that the behavior with the *relatively*  
16 highest expectancy will be selected (irrespective of its absolute level). The behavior repertoire  
17 available to one group of participants consisted of the original options to behave aggressively  
18 (i.e., one type of antisocial behavior) and prosocially, whereas the behavior repertoire available  
19 to another group was extended with a behavior option that we assumed to have a higher  
20 expectancy for repairing the threatened needs than the original behaviors. In particular,  
21 participants of the latter group were presented with a moralizing behavior option, that is, they  
22 were given the opportunity to lecture the perpetrators. Assuming that moralizing behavior indeed  
23 has a higher expectancy than aggressive and prosocial behavior for repairing the needs  
24 threatened by social exclusion, we hypothesized that participants would prefer moralizing over  
25 aggressive and prosocial behavior if they receive the opportunity. This would indicate that the

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

1 expectancy (combined with the value of the threatened needs) rather than the specific need that is  
2 threatened determines behavior selection after social exclusion and hence that this behavior is  
3 goal directed.

4         In the present study, we only considered the two needs from the temporal need-threat  
5 model that received the strongest empirical support: the need for control and the need to belong  
6 (see Gerber & Wheeler, 2009). In addition, we also explored the role of two needs that were not  
7 part of the need-threat model: the need for social status and the need for fair treatment. We  
8 included these needs because previous research suggested that social exclusion also threatens  
9 these needs (see Chow, Tiedens, & Govan, 2008; DeBono & Muraven, 2014; Schoel, Eck, &  
10 Greifeneder, 2003).

11         We assumed that moralizing behavior is more effective to repair the selected needs  
12 because it has a smaller cost than aggressive and prosocial behavior. Aggressive behavior may  
13 be effective to repair the needs for control, status, and fairness, but imposes a cost to the need for  
14 belonging because it is condemned by society. Prosocial behavior may help a person to be  
15 reincluded in the group, but may impose a cost to the needs for status and fairness. Moralizing  
16 behavior, on the other hand, seems effective to repair all four needs in a societally acceptable  
17 way: It signals that a person defends him or herself (control and status), it makes the norms for  
18 fairness salient, and it communicates the desire to still belong to the group. Indirect evidence for  
19 these ideas comes from research showing that moralizing behavior is highly successful in  
20 motivating behavior adjustments in others (Bolderdijk, Steg, Geller, Lehman, & Postmes, 2013;  
21 Taeuber, van Zomeren, & Kutlaca, 2015). In sum, we assume that moralizing behavior has a  
22 higher overall expectancy to repair needs threatened by social exclusion than aggressive and  
23 prosocial behaviors and hence should be preferred over these other behaviors if available. The  
24 precise expectancies of the behaviors are subject to exploratory analyses.

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

1            In a first experiment, all participants were excluded by two other (ostensible) participants  
2 before they were asked to send them a message. In one condition, participants could choose from  
3 aggressive and prosocial sentences to compose their message (i.e., the response options typically  
4 offered in previous research). In the other condition, participants could choose from aggressive,  
5 prosocial, and moralizing sentences.<sup>1</sup> The second experiment was set up to extend the results of  
6 the first experiment and to improve some methodological aspects.

**Experiment 1****Method**

9            **Sample.** A total of 178 first-year psychology students participated in return for course  
10 credits. Participants were randomly assigned to a condition with or a condition without a  
11 moralizing behavior option. The data from 30 participants were discarded based on their  
12 responses to a debriefing question in which they indicated that they meant their message to the  
13 perpetrators sarcastically.<sup>2</sup> This resulted in a final sample of 146 participants ( $M_{age} = 18$  years,  
14 90% female). According to a sensitivity analysis using G\*Power (Faul, Erdfelder, Lang, &  
15 Buchner, 2007), this sample size allows detecting an effect with a minimal effect size of  $\eta^2 = .03$   
16 under standard criteria ( $\alpha = .05$  two-tailed,  $\beta = .80$ ,  $r_{corr} = .5$ , nonsphericity correction = 1). All  
17 participants gave written informed consent.

18            **Procedure.** Participants were socially excluded via the cyberball procedure (Williams &  
19 Jarvis, 2006), a virtual ball game in which two other (ostensible) participants toss the ball at  
20 them only two times in the beginning of the game before tossing the ball only to each other for  
21 another 28 times. After this, participants were asked to send a message to the perpetrators  
22 composed of five sentences that had to be selected from a list of 24 sentences. In the nonmoral  
23 condition, participants could choose from 12 aggressive sentences (e.g., “You’re pathetic”) and  
24 12 prosocial sentences (e.g., “I enjoyed playing with you”). In the moral condition, participants  
25 could choose from 8 aggressive, 8 prosocial, and 8 moralizing sentences (e.g., “It is wrong to

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

1 exclude other people.”). We counted the number of aggressive, prosocial, and moralizing  
2 sentences sent. Next, participants read two messages (in both conditions the same prosocial  
3 messages) that the perpetrators had allegedly sent to them. This was done to strengthen  
4 participants’ belief that they interacted with real people. The English translation of all the Dutch  
5 items used can be found in the Supplementary Materials.

6 Participants’ sentence choice served as the key measure for the hypothesis testing. In  
7 addition, we conducted several induction and manipulation checks. This was done after sentence  
8 choice to prevent a potential influence of the checks on sentence choice. First, participants rated  
9 the expectancies of each behavior available in their condition to repair the four needs (e.g., “If I  
10 express my anger to the other players then the likelihood is high that I restore control over the  
11 situation”) on a scale from 0 (“completely disagree”) to 4 (“completely agree”). We expected  
12 higher expectancy ratings for chosen than nonchosen behaviors but not necessarily a different  
13 absolute score between conditions.

14 Second, they rated the degree to which these four needs were threatened during the game  
15 (e.g., “I could influence the course of the game”; items adapted from Van Beest & Williams,  
16 2006) on a scale from 0 (“completely agree”) to 4 (“completely disagree”). The need threat  
17 measure served to verify whether the social exclusion induction was successful in threatening  
18 participants’ needs. Third, participants rated the importance of the need threats for those needs  
19 that participants had rated as being threatened during the game. This question was added because  
20 we envisaged the possibility that participants would only engage in repairing behavior when the  
21 threatened needs had a sufficiently high value. Thus, participants who indicated some threat to a  
22 need evaluated the importance of this need threat (e.g., “If you could not influence the course of  
23 the game, how bad was this?”) on a scale from 0 (“not bad at all”) to 4 (“very bad”). Importantly,  
24 all items pertaining to need threat and the importance of need threat explicitly referred to the  
25 cyberball game situation (i.e., the situation prior to the sentence selection).

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

1 Fourth, participants rated the aggressive/friendly meaning of the sentences on a scale  
2 from 1 to 7. This measure served to verify that the moralizing sentences were perceived as less  
3 aggressive than the aggressive sentences and as less friendly than the prosocial sentences. For  
4 exploratory purposes, we also included ratings on the dimensions of valence, arousal, and  
5 dominance. However, these ratings did not contribute to a better understanding of the findings  
6 and are therefore reported in the Supplementary Materials.

7 Fifth, participants rated how much they felt socially excluded (e.g., “To what extent did  
8 you feel you could take part in the game?”, and “Which percentage of the ball tosses were  
9 thrown at you?”; items adapted from Zadro, Williams, & Richardson, 2004) on a scale from 1  
10 (“not at all”) to 5 (“very well”). The social exclusion measure served to check whether social  
11 exclusion had been induced successfully in all participants.

12 After this, participants filled in additional personality questionnaires (Buss-Perry  
13 Aggression Questionnaire; Meesters, Muris, Bosma, Schouten & Beuving, 1996; Brief Prosocial  
14 Scale; Prot et al., 2014) and gave ratings on 15 feeling scales. Because these measures were only  
15 added for exploratory purposes, we report them in the Supplementary Materials. Then,  
16 participants wrote down their gender and age, their impression of the other two participants  
17 (which served as a suspicion check), and whether they intended some or all of the selected  
18 sentences sarcastically. For the latter, we asked participants whether they selected a positive  
19 statement such as “It was nice with you” but actually wanted to communicate that it was not  
20 nice, using a Likert scale ranging from 1 (Yes, all the statements in my message were meant  
21 sarcastically) over 2 (Yes, part of the statements were meant sarcastically) to 3 (No, none of the  
22 statements were meant sarcastically). Finally, participants were debriefed and thanked.

## 23 Results

24 **Induction of social exclusion.** Means, standard deviations, Cronbach’s alphas, and test  
25 statistics of the induction check measures are summarized in Table 1 (see Supplementary

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

1 Materials for statistics by condition). One sample *t*-tests revealed that the extent to which all  
2 participants felt included in the game was significantly lower than the midpoint of the inclusion  
3 scale and that participants also reported having received a lower percentage of throws than an  
4 equal number of throws (i.e., 33.33%). One sample *t*-tests showed further that the degree of need  
5 threat was significantly higher than the midpoint of the threat scale for all needs and that the  
6 importance of the need threats was significantly higher than the midpoint of the importance of  
7 threat scale for all needs except the need for control. Taken together, these results suggest that  
8 participants felt excluded, that social exclusion threatened all needs, and that participants cared  
9 about threats to the needs for status, fairness, and belonging (suggesting that they attached a high  
10 value to these needs).

11 **Manipulation check: Sentence perception and expectancy ratings.** A first set of  
12 analyses verified whether we had successfully manipulated the meaning of the sentences (see  
13 Table 2 for means, standard deviations, and Cronbach's alphas). The ratings of aggressive and  
14 prosocial sentences were analyzed across conditions. Prosocial sentences ( $M = 5.91$ ,  $SD = 0.53$ )  
15 were evaluated as significantly more friendly than aggressive sentences ( $M = 1.69$ ,  $SD = 0.43$ ) as  
16 indicated by a paired sample *t*-test,  $t(145) = -66.373$ ,  $p < .001$ ,  $d = -5.49$ . The ratings for  
17 moralizing sentences were analyzed only within the moral condition because this is the only  
18 condition in which these sentences were rated. A repeated measures ANOVA showed that  
19 ratings for aggressive, prosocial, and moralizing sentences differed significantly,  $F(2, 164) =$   
20  $1168.62$ ,  $p < .001$ ,  $\eta_p^2 = .93$ . Planned comparisons revealed that moralizing sentences were  
21 significantly less aggressive than aggressive sentences,  $F(1, 82) = 897.96$ ,  $p < .001$ ,  $\eta_p^2 = .92$ ,  
22 and significantly less friendly than prosocial sentences,  $F(1, 82) = 394.07$ ,  $p < .001$ ,  $\eta_p^2 = .83$ .  
23 These results were in line with our expectations.

24 A second set of analyses verified whether the expectancy of the chosen behaviors was  
25 higher than the expectancy of the nonchosen behaviors (see again Table 2 for means, standard

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

1 deviations, and Cronbach's alphas). We conducted separate analyses per condition (because  
 2 participants rated only the expectancy of the sentences provided in their own condition) and we  
 3 averaged the expectancy ratings over all needs (see Table 3 for expectancy ratings per needs). In  
 4 the moral condition, a repeated measures ANOVA (with a Huynh-Feldt correction for violation  
 5 of sphericity) revealed significantly different expectancies for aggressive, prosocial, and  
 6 moralizing behavior to repair the assessed needs,  $F(1.90, 156.06) = 56.45, p < .001, \eta_p^2 = .41$ .  
 7 Planned contrasts indicated a higher expectancy of moralizing than aggressive behavior,  $F(1, 82)$   
 8  $= 80.89, p < .001, \eta_p^2 = .50$ , but a higher expectancy of prosocial than moralizing behavior,  $F(1,$   
 9  $82) = 4.92, p = .029, \eta_p^2 = .06$ , and also a higher expectancy of prosocial than aggressive  
 10 behavior,  $F(1, 82) = 82.10, p < .001, \eta_p^2 = .50$ . In the nonmoral condition, a repeated measures  
 11 ANOVA indicated a higher expectancy of prosocial than aggressive behavior,  $F(1, 62) = 63.37,$   
 12  $p < .001, \eta_p^2 = .51$ . Taken together, participants in both conditions perceived the expectancy of  
 13 prosocial behavior as the highest, which is at variance with our expectations.

14 **Behavior: Sentence selection.** In line with expectations, our manipulation of the relative  
 15 expectancies of the behaviors via the manipulation of the available behavior repertoire yielded  
 16 highly significant differences in behavior choice, that is, sentence selection (see Figure 1). We  
 17 performed separate analyses for the moral and the nonmoral conditions because the sentences  
 18 available in each condition differed. In the moral condition, a repeated measures ANOVA (with  
 19 a Huynh-Feldt correction for violation of sphericity) revealed a highly significant difference in  
 20 the type of sentences selected,  $F(1.74, 142.63) = 198.27, p < .001, \eta_p^2 = .71$ . Planned contrasts  
 21 indicated that participants chose more moralizing sentences ( $M = 4.13, SD = 1.32$ ) than  
 22 aggressive ones ( $M = 0.51, SD = 0.92$ ),  $F(1, 82) = 276.76, p < .001, \eta_p^2 = .77$ , and more  
 23 moralizing sentences than prosocial ones ( $M = 0.36, SD = 1.11$ ),  $F(1, 82) = 230.09, p < .001, \eta_p^2$   
 24  $= .74$ . The number of chosen aggressive and prosocial sentences did not differ significantly from  
 25 each other,  $p > .40$ . In the nonmoral condition, participants selected more aggressive sentences

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

1 ( $M = 4.07$ ,  $SD = 1.75$ ) than prosocial sentences ( $M = 0.92$ ,  $SD = 1.75$ ). A one sample  $t$ -test  
2 revealed that the number of selected aggressive sentences was much higher than the number  
3 expected from an equal distribution of aggressive and prosocial sentences (i.e., 2.5),  $t(62) = 7.15$ ,  
4  $p < .001$ ,  $d = 0.90$ . Finally, to compare the number of aggressive sentences in both conditions  
5 and given that the number of aggressive sentences available in the two condition differed, we  
6 first subtracted the expected from the observed number of chosen aggressive sentences. An  
7 independent sample  $t$ -test (with degrees of freedom corrected for violation of homogeneity of  
8 variances) revealed that the weighed number of aggressive sentences was significantly lower in  
9 the moral ( $M = -1.16$ ,  $SD = 0.92$ ) than in the nonmoral condition ( $M = 1.58$ ,  $SD = 1.75$ ),  $t(87.49)$   
10  $= -11.29$ ,  $p < .001$ ,  $d = 1.96$ . These results allowed us to conclude that participants selected  
11 predominantly moralizing sentences if the moral option was available and aggressive sentences  
12 if this option was unavailable.

13       **Prediction of sentence selection by self-reported expectancy of the behavior.** We  
14 tested whether the expectancy of the behavior to repair the threatened needs predicted the  
15 number of selected aggressive, prosocial, and moralizing sentences in three multiple linear  
16 regression analyses (see Table 4). For aggressive and prosocial behavior, we added condition,  
17 expectancy of the respective behavior (averaged over all assessed needs), importance of need  
18 threat (averaged over all assessed needs), and the interactions between expectancy and  
19 importance of need threat and between expectancy and condition as predictors and we used the  
20 weighted number of aggressive/prosocial sentences as the criterion. For moralizing behavior, we  
21 only added expectancy, importance of need threat, and its interaction term as predictors because  
22 the expectancy of moralizing behavior was only rated in the moral condition. The criterion was  
23 the number of selected moralizing sentences. The regression analyses for all three behaviors  
24 showed that the expectancy to repair the threatened needs, the importance of the need threat, and  
25 the interaction between the expectancy and the importance of the need threat significantly



## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

1 predicted the number of selected sentences. Furthermore, condition was a significant predictor  
2 for aggressive behavior but not for prosocial behavior, and the interaction between condition and  
3 expectancy was not a significant predictor for aggressive or prosocial behavior. In sum, these  
4 results indicate a positive effect of expectancy on the number of selected sentences but this effect  
5 weakened with higher importance of the need threat.

### 6 **Discussion**

7         The first experiment examined whether the behavior of socially excluded people is  
8 influenced by the relative expectancies of the behavior options at their disposal to repair the  
9 threatened needs. Participants were asked to send a message to people who excluded them by  
10 choosing from lists of aggressive and prosocial sentences (in the nonmoral condition), or by  
11 choosing from lists of aggressive, prosocial, and moralizing sentences (in the moral condition).  
12 We assumed that participants would confer a higher expectancy to moralizing behavior than to  
13 aggressive and prosocial behavior for repairing the threatened needs, which should make them  
14 preferentially choose moralizing behavior if possible. We found that participants indeed chose  
15 the moralizing behavior in the moral condition and that the self-reported expectancy ratings  
16 predicted behavior choices. We also observed that the influence of self-reported expectancy  
17 became weaker with higher importance of the need threat. This is in line with a goal-directed  
18 account because it shows that expectancies and values are both involved in determining  
19 behavior. It also suggests, however, that expectancies and values can be weighted differently  
20 depending on their level (see also Sun, Vancouver, & Weinhardt, 2014; Tversky & Kahneman,  
21 1992). Furthermore, we found that the needs for belonging and control (two needs put forward  
22 by the temporal need-threat model) and the needs for status and fairness (two needs put forward  
23 by us) were all threatened by social exclusion. Interestingly, the degree of need threat did not  
24 correspond to the importance of the need threat. Participants indicated a threat to the need for  
25 control but did not attach much importance to this threat. This suggests that the importance of the

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

1 need threat should not be inferred from the degree of need threat, but should be measured  
2 independently.

3         Against the predictions of the goal-directed account, participants' self-reported  
4 expectancies of the behaviors to repair needs did not correspond to their actual behavior. The  
5 expectancy of prosocial behavior received surprisingly high ratings, although participants  
6 behaved aggressively or moralizing but not prosocially. To make sense of these unexpected  
7 findings, three methodological issues may be considered. First, participants received prosocial  
8 messages that were ostensibly sent by the perpetrators before completion of the expectancy  
9 measurement. This might have alleviated the social exclusion experience, leading participants to  
10 regret their own aggressive/moralizing behavior and subsequently favoring high expectancy  
11 ratings for prosocial behavior. Second, the items used in the expectancy measure were  
12 formulated at a generic level (e.g., "If I behave aggressively towards the other players, the  
13 likelihood is high that they will behave fairly."). Therefore, participants might have rated the  
14 expectancies of the three behaviors in general rather than for the situation at hand. This is also  
15 supported by the fact that many participants indicated that they intended the prosocial sentences  
16 sarcastically, which suggests that they indeed evaluated the expectancy of the specific prosocial  
17 sentences as low. Third, the behaviors were explicitly labeled in these items as aggressive,  
18 prosocial, and moralizing. This might have encouraged socially desirable responses.

19         Taken together, the behavioral findings of the first experiment suggest that the behavioral  
20 reactions to social exclusion are goal directed if the assumption holds that the manipulation of  
21 the behavior repertoire successfully changed the relative expectancies of the behaviors.

22         However, two possible scenarios are consistent with a goal-directed account: The behavior can  
23 either be directly elicited by a goal-directed process or it can be elicited by an initial stimulus-  
24 driven process, which is subsequently regulated by a goal-directed process (Moors, 2017; Moors  
25 et al., 2017). In the first scenario, moralizing behavior is immediately elicited by the goal to

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

1 repair the threatened needs and the expectancy that moralizing behavior will do so. In the second  
2 scenario, social exclusion first elicits an aggressive tendency via a stimulus-driven process. This  
3 tendency conflicts with the need for presenting oneself in a favorable way and therefore gives  
4 rise to a regulation process that replaces the aggressive tendency with a moralizing tendency.

### 5 **Experiment 2**

6 The aims of Experiment 2 were to replicate the main findings of Experiment 1 while  
7 resolving some of its methodological issues and to gain more insight into whether moralizing  
8 behavior was chosen immediately or only subsequently as a means to regulate aggressive  
9 behavior. For the first aim, we implemented the following adjustments to the procedure. The  
10 messages from the perpetrators were shown only at the end of the experiment to avoid an  
11 influence of these messages on participants' expectancy judgments. To avoid that participants  
12 would interpret the expectancy questions in a generic sense, we asked them to indicate for every  
13 specific sentence (both sent and nonsent ones) the degree to which they expected that sending it  
14 would threaten or repair their needs and we omitted the labels for the assessed behaviors  
15 (aggressive, prosocial, moralizing). Omitting these labels was also done to reduce the pressure to  
16 give socially desirable responses. To make this task more feasible, we reduced the total number  
17 of aggressive, prosocial, and moralizing sentences that participants could choose from.

18 For the second aim, we extended the set of assessed needs with the need for a favorable  
19 self-presentation (Leary & Kowalski, 1990). Self-presentation can be seen as an important  
20 motivation for people to regulate their aggressive behavior. If we would find that this need does  
21 not play a role in the choice for moralizing behavior, the interpretation that participants merely  
22 chose moralizing behavior in a later stage as a means to regulate their aggressive behavior would  
23 not be supported. In order to preserve the size of the questionnaire, we dropped the need for  
24 control as this was the need participants cared about least in Experiment 1.

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

1           We should mention two further procedural adjustments. First, we extended the  
2 expectancy questionnaire so that it not only measured the expectancy that behaviors would repair  
3 their needs, but also the expectancy that behaviors would further thwart their needs. We figured  
4 that this would yield additional insights into the expectancies of the assessed behaviors as  
5 especially aggressive behavior might be expected to further thwart certain needs (e.g., the need  
6 for belonging). Second, we discarded the exploratory measures on trait aggressiveness and  
7 prosociality and on the feelings elicited by social exclusion..

**8 Method**

9           **Sample.** A total of 101 people recruited through the experiment system of the university  
10 or through Prolific Academic participated online through Qualtrics in return for payment or for  
11 course credits.<sup>3</sup> They were randomly assigned to the moral or the nonmoral condition. Fifteen  
12 participants were discarded because they meant some of the selected sentences sarcastically.<sup>2</sup>  
13 The final sample consisted of 86 Dutch-speaking participants ( $M_{\text{age}} = 24$  years, 61% female). A  
14 sensitivity analysis indicated that this sample size could detect effects with a minimal effect size  
15 of  $\eta^2 = .05$ , under standard criteria ( $\alpha = .05$  two-tailed,  $\beta = .80$ ,  $r_{\text{corr.}} = .5$ , nonsphericity  
16 correction = 1).

17           **Procedure.** The procedure of the second experiment was the same as that of the first  
18 experiment with the following exceptions. First, we reduced the number of sentences in the list  
19 from 24 to 12 sentences and the number of sentences required to select for the message from five  
20 to three. Participants could choose from six aggressive and six prosocial sentences in the  
21 nonmoral condition and from four moralizing, four aggressive, and four prosocial sentences in  
22 the moral condition. Second, the messages of the perpetrators were presented only after the  
23 manipulation checks were administered. Third, the expectancy was measured by asking  
24 participants to indicate for each sentence available in their condition to which degree they  
25 expected that sending it had (or would have) increased or decreased satisfaction of the four needs

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

1 (e.g., “To which extent do you expect that by sending the sentence, the other players would take  
2 you less or more seriously than during the ball game) on a scale from -2 (“much less” / “much  
3 more negative”) to +2 (“much more” / “much more positive”). Fourth, the degree and  
4 importance of the need threat were measured for the needs for status, fairness, belonging, and  
5 self-presentation (e.g., “I presented myself at my best with my selection of sentences.”; “If you  
6 did not present yourself at your best, how bad was that?”) on scales from 0 (“completely agree” /  
7 “not bad at all”) to 4 (“completely disagree” / “very bad”). Fifth, social exclusion was measured  
8 with the item from Experiment 1 that asks about the extent to which they could take part in the  
9 game. Finally, we no longer asked about trait aggressiveness and prosociality and the feelings  
10 elicited by social exclusion, and we only assessed the meaning of the sentences on the  
11 dimensions of aggressiveness and friendliness.

12       **Data analysis.** We repeated the analyses conducted in Experiment 1 and we examined  
13 again whether the expectancy that a sentence repairs a need predicted the selection of this  
14 sentence and whether this influence of expectancy was affected by the importance of the need  
15 threat and the condition. In contrast to Experiment 1, we analyzed this with a multilevel logistic  
16 regression in Mplus 5.2 (Muthén & Muthén, 2010) because multiple observations (sentences)  
17 were nested within participant and because the outcome variable had a binary format (sentence  
18 sent = 1, sentence not sent = 0). We ran random intercept and slope models for each need  
19 separately containing the following predictors: on Level-1 (sentence level), the expectancy to  
20 repair or threaten a need; on Level-2 (participant level), the importance of the need threat and the  
21 condition of the participant; and across levels, the interaction between expectancy and  
22 importance of the need threat and the interaction between expectancy and condition. We person-  
23 mean centered the expectancy variable.

24 **Results**

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

1           **Induction of social exclusion.** Table 1 provides an overview of the means, standard  
2 deviations, Cronbach's alphas, and test statistics of the induction check measures (see  
3 Supplementary Materials for statistics by condition). One sample *t*-tests revealed that the  
4 perceived inclusion in the game was significantly lower than the midpoint of the inclusion scale  
5 and that the degree of need threat was significantly higher than the midpoint of the need threat  
6 scale for all needs except for the need for self-presentation. Further, one sample *t*-tests showed  
7 that a threat to the needs for status, fairness, and belonging were rated as more important than the  
8 midpoint of the importance of need threat scale, whereas a threat to the need for self-presentation  
9 was rated as less important than this midpoint. In sum, these results suggest that participants felt  
10 excluded, that the needs for status, fairness, and belonging, but not the need for self-presentation  
11 were threatened, and that participants cared about a threat to the needs for status, fairness, and  
12 belonging, but not about a threat to the need for self-presentation.

13           **Manipulation check: Sentence perception and expectancy ratings.** A first set of  
14 analyses checked whether we successfully manipulated the meanings of the sentences (see Table  
15 2 for means, standard deviations, and Cronbach's alphas). The ratings for aggressive and  
16 prosocial sentences were analyzed across conditions. Participants evaluated the prosocial  
17 sentences ( $M = 6.16, SD = 0.67$ ) as significantly more friendly than the aggressive ones ( $M =$   
18  $1.99, SD = 0.57$ ), as shown by a paired sample *t*-test,  $t(85) = -40.53, p < .001, d = -4.37$ . The  
19 ratings for moralizing sentences were analyzed only within the moral condition because this is  
20 the only conditions in which these sentences were rated. A repeated measures ANOVA revealed  
21 a significant main effect of type of sentence,  $F(2, 88) = 427.92, p < .001, \eta_p^2 = 0.91$ . As in  
22 Experiment 1, planned contrasts indicated that the moralizing sentences were significantly less  
23 aggressive than the aggressive sentences and significantly less friendly than the prosocial  
24 sentences,  $F_{moralizing-aggressive}(1, 44) = 310.13, p < .001, \eta_p^2 = .88$ ;  $F_{moralizing-prosocial}(1, 44) = 159.26,$   
25  $p < .001, \eta_p^2 = .78$ . These results were in line with our expectations.

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

1           A second set of analyses checked whether the ratings for the expectancies of the provided  
2 sentences were higher for the chosen than for the non-chosen sentences (see again Table 2 for  
3 means, standard deviations, and Cronbach's alphas). We analyzed the expectancy ratings for  
4 aggressive, prosocial, and moralizing sentences separately per condition (because participants  
5 rated only the expectancies of the sentences provided in their own condition) and we averaged  
6 the expectancy ratings over all assessed needs (means and standard deviations for the ratings per  
7 need are reported in Table 3).

8           In the moral condition, a repeated measures ANOVA revealed that the expectancies of  
9 the aggressive, prosocial, and moralizing sentences to repair or further threaten the assessed  
10 needs were evaluated differently,  $F(2, 88) = 108.90, p < .001, \eta_p^2 = .71$ . Planned contrasts  
11 indicated that the expectancy of moralizing sentences was significantly higher than the  
12 expectancy of aggressive ones,  $F(1, 44) = 211.26, p < .001, \eta_p^2 = .83$ , and than the expectancy of  
13 prosocial ones,  $F(1, 44) = 8.23, p = .006, \eta_p^2 = .16$ . Furthermore, the expectancy of prosocial  
14 sentences was also significantly higher than the expectancy of aggressive ones,  $F(1, 44) =$   
15  $100.11, p < .001, \eta_p^2 = .70$ . In the nonmoral condition, a repeated measures ANOVA revealed  
16 that the expectancy of prosocial sentences was higher than the expectancy of aggressive ones,  
17  $F(1, 40) = 91.98, p < .001, \eta_p^2 = .70$ . Taken together, these results indicate that participants in the  
18 moral condition evaluated the expectancy of moral behavior as the highest, which is in line with  
19 our expectations, but that participants in the nonmoral condition evaluated the expectancy of  
20 prosocial behavior as the highest, which goes against our expectations.

21           **Behavior: Sentence selection.** As in Experiment 1, we found strong effects of the  
22 availability of sentences—and hence their relative expectancy—on the selection of the sentences  
23 (see Figure 2). In the moral condition, a repeated measures ANOVA (with Huynh-Feldt  
24 correction for violation of sphericity) yielded a highly significant main effect in the moral  
25 condition,  $F(1.76, 77.41) = 161.10, p < .001, \eta_p^2 = .79$ . Planned contrasts revealed that these

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

1 participants chose more moralizing sentences ( $M = 2.56$ ,  $SD = 0.69$ ) than aggressive ones ( $M =$   
2  $0.24$ ,  $SD = 0.53$ ),  $F(1, 44) = 190.06$ ,  $p < .001$ ,  $\eta_p^2 = .81$ , and than prosocial ones ( $M = 0.20$ ,  $SD =$   
3  $0.50$ ),  $F(1, 44) = 210.02$ ,  $p < .001$ ,  $\eta_p^2 = .83$ . The number of chosen aggressive and prosocial  
4 sentences did not differ significantly from each other,  $p > .70$ . In the nonmoral condition,  
5 participants selected more aggressive sentences ( $M = 2.34$ ,  $SD = 1.09$ ) than prosocial ones ( $M =$   
6  $0.66$ ,  $SD = 1.09$ ). The number of selected aggressive sentences differed significantly from an  
7 equal distribution of aggressive and prosocial sentences (i.e., 1.5) as revealed by a one sample  $t$ -  
8 test,  $t(41) = 4.96$ ,  $p < .001$ ,  $d = 0.77$ . Similar to Experiment 1, we compared the number of  
9 selected aggressive sentences between the conditions in independent sample  $t$ -tests using the  
10 same correction method and degrees of freedom corrected for violation of homogeneity of  
11 variances. The number of selected aggressive sentences was again significantly lower in the  
12 moral ( $M = -0.76$ ,  $SD = 0.53$ ) than in the nonmoral condition ( $M = 0.84$ ,  $SD = 1.09$ ),  $t(56.74) =$   
13  $8.54$ ,  $p < .001$ ,  $d = 1.87$ . Again, we can conclude that moralizing sentences were chosen if they  
14 were available and aggressive sentences if they were not.

15 **Prediction of sentence selection by self-reported expectancy of the sentence.** We  
16 analyzed whether the expectancy that a sentence repairs/threatens a need predicted the selection  
17 of a sentence in multilevel logistic regression analyses. We also included the factors condition  
18 and importance of the need threat in the analyses. From the predictors in all full models, only  
19 condition and the importance of need threat correlated significantly ( $0.07 < \text{all } r_s < .16$ ). The full  
20 models for the needs for status, fairness, and belonging revealed significant effects of the Level-  
21 1 predictor expectancy and of the cross-level interaction between expectancy and condition on  
22 the log-odds of the sentence selection. The model for the need for fairness additionally indicated  
23 a significant effect of condition. This suggests that the probability of selecting a sentence rose  
24 with an increasing expectancy that this sentence repaired a need, but that the influence of  
25 expectancy was only observed in the moral and not in the nonmoral condition (see Table 5). For



## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

1 these three needs, no other predictors had a significant effect. For the need for self-  
2 representation, only the cross-level interaction effect between expectancy and condition  
3 predicted the selection of the sentences significantly. The influence of the expectancy was  
4 slightly positive in the moral condition, but slightly negative in the nonmoral condition.

**5 Discussion**

6       The first aim of Experiment 2 was to replicate the main findings of Experiment 1 while  
7 resolving some of its methodological problems. To this end, we presented the messages from the  
8 ostensible other participants only at the end of the experiment, we tailored the expectancy  
9 questions to the specific sentences, and we changed the content of some of the aggressive  
10 sentences. We replicated the finding that participants moralized if they could moralize, but that  
11 they aggressed if they could not moralize. We also replicated the finding that social exclusion led  
12 to a strong threat to the needs for status, fairness, and belonging. The results further showed that  
13 sending any message led to an average threat to the need for self-presentation. Participants also  
14 cared about threats to the needs for status, fairness, and belonging but they cared little about a  
15 threat to the need for self-presentation. Furthermore, using the more specific expectancy  
16 questions, we found that participants in the moral condition rated the expectancy of the  
17 moralizing sentences as higher than the expectancy of other sentences, whereas participants in  
18 the nonmoral condition rated the expectancy of prosocial sentences as higher than the expectancy  
19 of aggressive sentences. This suggests that by providing moralizing sentences we indeed added a  
20 behavior option with a higher expectancy, but that participants in the nonmoral condition did not  
21 rate the expectancies in line with their behavior. The results of the multilevel logistic regressions  
22 were similar to the results in Experiment 1. The expectancy of a sentence to repair the need for  
23 status, fairness, or belonging predicted the selection of the sentence, but this influence was only  
24 strong for the moral and not for the nonmoral condition. In contrast to Experiment 1, the effect of  
25 the expectancy did not depend on the importance of the need threat in Experiment 2. In sum,

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

1 these findings provide preliminary support that expectancies influence the behavioral reactions to  
2 social exclusion and that these reactions are therefore goal directed. This is more pronounced in  
3 the behavioral effects resulting from the experimental manipulation than in the manipulation  
4 check. The evidence in the self-reports is further stronger for the moral than for the nonmoral  
5 condition and hence stronger for moralizing than for aggressive behavior.

6 The second aim of Experiment 2 was to investigate whether the goal-directedness of the  
7 behavior stems from an immediate or a subsequent regulatory goal-directed process. Participants  
8 indicated that they cared least about the threat to the need for self-presentation and the  
9 expectancy to repair this need did not predict the selection of the sentences in the multilevel  
10 logistic regressions. Although still preliminary, these findings are more in line with a scenario in  
11 which the goal-directed process is immediately recruited than a scenario in which the goal-  
12 directed process is merely invoked to regulate an initial aggressive tendency.

### **General Discussion**

14 The temporal need-threat model (Williams, 2007, 2009) stated that the type of needs that  
15 are threatened by social exclusion determine the types of behaviors that occur: antisocial  
16 behavior when the needs for control and meaningful existence are threatened, prosocial behavior  
17 when the needs for self-esteem and belonging are threatened. We tested a goal-directed  
18 extension of this model, which holds that behavioral reactions to social exclusion are based on  
19 the values of the outcomes of the behaviors and the expectancies that the behaviors will lead to  
20 these outcomes. Previous research has provided considerable evidence for the role of the values  
21 of the outcomes of behaviors (i.e., the value of the repaired needs). The present research goes  
22 beyond previous research by investigating also the role of expectancies of the available behavior  
23 options. More specifically, we examined whether socially excluded participants engaged in the  
24 behavior with the highest expectancy to repair the threatened needs.

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

1           In two experiments, we manipulated the availability of behavior options in order to  
2           manipulate the relative expectancies of aggressive, prosocial, and moralizing behavior and we  
3           registered the behaviors participants engaged in. The behavioral results of both experiments  
4           supported our hypothesis that the availability manipulation determined the respective behaviors:  
5           Participants in the nonmoral condition most often behaved in an aggressive way whereas those in  
6           the moral condition behaved most often in a moralizing way. The questionnaire results were  
7           more mixed. The regression analyses in both experiments suggested that the expectancy that a  
8           behavior repairs the threatened needs predicted the behavior choice. This influence became  
9           weaker with higher importance of need threat in Experiment 1 but not in Experiment 2, and held  
10          only for the moral condition in Experiment 2. Furthermore, only in Experiment 2, participants in  
11          the moral condition evaluated the expectancies in line with their behavior choice.

12          A further finding is that social exclusion threatened several needs: the need for control in  
13          Experiment 1 and the needs for status, fairness, and belonging in both experiments. In both  
14          experiments, participants also indicated that they cared about the threats to the needs for status,  
15          fairness, and belonging. Interestingly, the degree of need threat differed from the importance of  
16          need threat in Experiment 1. Participants reported a threat to the need for control but attached  
17          little importance to this.

18          Finally, in Experiment 2, we found that participants evaluated a threat to the need for  
19          self-presentation as less important than a threat to the other needs, and that the expectancy of the  
20          sentences to satisfy this need did not predict the selection of the sentences in the multilevel  
21          logistic regression models. These findings fit better with a scenario in which the behaviors were  
22          elicited directly by a goal-directed process than with a scenario in which a stimulus-driven  
23          process first elicited an aggressive tendency that was subsequently regulated by a goal-directed  
24          process for reasons of self-presentation. Caution is due, however, because regulation may still  
25          have occurred for other reasons than self-presentation.

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

1           A potential limitation of our studies might be that the induction and manipulation checks  
2 for expectancy, need threat, and social exclusion were assessed only after the sentence selection  
3 took place. This choice was guided by the concern that these measures could otherwise  
4 contaminate the sentence choice. One downside is that we cannot exclude that answers to the  
5 manipulation checks reflected a post-hoc justification of the behavior to some extent. Another  
6 downside is that the degree and importance of the need threat could have been underestimated  
7 because the behavior could have partly repaired the need threat. A first reply is that the questions  
8 explicitly referred to the social exclusion situation and not to the momentary situation. A second  
9 reply is that the results show that the need threat was still substantial. Therefore, we believe that  
10 our conclusion regarding the importance of the expectancies in the choice of the behavior still  
11 holds.

12           A further potential limitation concerns the specific sentences provided to the participants.  
13 First, these sentences might have differed on more dimensions than the manipulated one, such as  
14 valence: The moralizing sentences may have been more neutral than the aggressive and prosocial  
15 ones. Second, the prosocial sentences might have been perceived as exaggerated or not  
16 applicable to the situation at hand, which could have lowered their expectancy. This possibility is  
17 further suggested by the fact that many participants indicated that they intended the prosocial  
18 sentences sarcastically. In future research we could, for instance, provide prosocial sentences that  
19 are more applicable, such as sentences that express the desire to be included again. The challenge  
20 remains, however, to make sure that the sentences do not become neutral or partly moralizing (or  
21 even inculcating or passive aggressive).

22           Another potential limitation are the mixed results of the questionnaire data. A first post-  
23 hoc interpretation is that the questionnaire did not accurately capture the expectancies.  
24 Participants might have had more insight into the expectancies for moralizing behavior than into  
25 those for aggressive behavior, and/or social desirability concerns might have affected the

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

1 responses. A second possible interpretation is that we did not assess the most relevant needs that  
2 participants aimed to repair with aggressive behavior. Aggressive behavior might have served,  
3 for instance, to receive acknowledgment from the perpetrators (see Rudert, Hales, Greifeneder,  
4 & Williams, 2017; Wesselmann, Ren, & Williams, 2015), a need that may only partially overlap  
5 with the need for status that we measured. A third possible interpretation is that moralizing  
6 behavior (the most chosen behavior in the moral condition) is more goal-directed than aggressive  
7 behavior (the most chosen behavior in the nonmoral condition). Aggressive behavior might have  
8 been determined by a weak goal-directed process or by a combination of a stimulus-driven and a  
9 goal-directed process. If a stimulus-driven process would have been at play in our study,  
10 however, it must have been rather weak as our results showed that it was trumped by a goal-  
11 directed process eliciting moralizing behavior.

12       Taken together, our findings have important theoretical, methodological, and practical  
13 implications. On the theoretical side, they show that the type of need threatened does not suffice  
14 to explain the behavior elicited by social exclusion as existing versions of the temporal need-  
15 threat model suggest (Williams, 2007, 2009). Indeed, according to such versions, the behavior  
16 should have been the same in both conditions as all needs were threatened to a similar degree.  
17 The finding that participants with similarly threatened needs preferred moralizing behavior  
18 except when this option was not available is more in line with a goal-directed extension of the  
19 temporal need-threat model. This conclusion is based on our reasoning that the manipulation of  
20 the behavior repertoire changed the relative expectancies of the behaviors, even if it was only  
21 partly supported by the expectancy ratings. Furthermore, the results also suggest that existing  
22 models should incorporate more needs such as the needs for fairness and for status. On the other  
23 hand, in a goal-directed model, every need should be capable of producing any behavior as long  
24 as the value of this need and the expectancy of the behavior to repair the need are high enough  
25 (for other examples of alternative behaviors, see Eck, Schoel, & Greifeneder, 2016). If future

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

1 studies corroborate our findings, theorists should consider giving more weight to goal-directed  
2 processes in their explanations of emotional behavior. This would fit with a recent dual process  
3 model developed by Moors (2017; Moors et al., 2017) which proposes that most emotional  
4 behavior is caused by a goal-directed process and only exceptionally by a stimulus-driven  
5 process.

6         The present studies also have implications for the methods used in social exclusion  
7 research. In the lion share of this research, participants can only choose between aggressive and  
8 prosocial behavior (see Gerber & Wheeler, 2009). Our studies show that a restriction of the  
9 available behavior options crucially influences the behavior and that it might lead to the  
10 erroneous conclusion that social exclusion predominantly elicits these behaviors. In addition, our  
11 studies show that the degree of need threat does not necessarily overlap with the importance of  
12 the need threat. This is a good reason to include a measure of the importance of need threat in  
13 future studies. In terms of practical implications, our findings suggest that changing the  
14 expectancies of desired and undesired behaviors can help prevent undesired reactions to social  
15 exclusion (e.g., excessive aggression).

16         One avenue for future research would be to use different methods for manipulation and  
17 measurement. As mentioned in the introduction, expectancies can be manipulated by varying the  
18 objective probabilities that the behavior leads to certain outcomes and/or by informing  
19 participants about these probabilities. The first option would require repeated experience of  
20 social exclusion, which would make the experimental design more complex, and both options  
21 face issues of credibility. Another option would to inform participants about expectancies when  
22 participants interact with avatars (instead of real people), assuming that the experimenter has  
23 knowledge about the avatars' reactions to the participants' behavior (e.g., whether the avatars  
24 will include the participant again after prosocial behavior or not). A further option would be to  
25 use implicit methods to measure values, expectancies, and action tendencies such as reaction

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

1 times tasks (Bossuyt, Moors, & De Houwer, 2014) and neuroscientific methods (TMS/MEP;  
2 Moors et al., 2019). Another avenue for future research would be to investigate the factors that  
3 influence values and expectancies. Promising candidates are moderators proposed in prior  
4 research on social exclusion such as whether the target person was one of the perpetrators  
5 responsible for the exclusion (Maner, DeWall, Baumeister, & Schaller, 2017) and the cultural  
6 context of the rejected person (Uskul & Over, 2017). Several of these factors can be reinterpreted  
7 within a goal-directed framework. To illustrate, after social exclusion, people in individualistic  
8 cultures reported stronger antisocial behavior intentions than people in collectivistic cultures  
9 (Pfundmaier, Graupmann, Frey, & Aydin, 2015). In a goal-directed framework, cultural  
10 differences might have two effects. First, the importance of needs may differ between cultures,  
11 which may influence the need that has the highest priority to be repaired. Second, different  
12 behaviors may have different expectancies for repairing these needs in different cultures,  
13 resulting in different behavioral responses to social exclusion even if need importance would be  
14 the same.

15         In conclusion, the present studies provide preliminary evidence that the behavioral  
16 reactions to social exclusion are goal directed and that social exclusion threatens also the needs  
17 for status and for fairness. Indeed, socially excluded participants alter their behavior if the  
18 provided behavior options change.

19

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

1 Compliance with Ethical Standards

2 Funding

3 This study was funded by Research Program G073317N of the Research Foundation -  
4 Flanders (FWO) and Grants C14/17/047 of the Research Fund of KU Leuven.

5 Ethical approval

6 All procedures performed in studies involving human participants were in accordance  
7 with the ethical standards of the institutional and/or national research committee and with the  
8 1964 Helsinki declaration and its later amendments or comparable ethical standards.

9 Informed consent

10 Informed consent was obtained from all individual participants in the study.

11



## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

## References

- 1  
2 Ayduk, O., Downey, G., & Kim, M. (2001). Rejection sensitivity and depressive symptoms in  
3 women. *Personality and Social Psychology Bulletin*, *27*, 868-877.
- 4 Baumeister, R., & Leary, M. (1995). The need to belong: desire for interpersonal attachments  
5 as a fundamental human motivation. *Psychological Bulletin*, *117*, 497-529.
- 6 Baumeister, R., Smart, L., & Boden, J. (1996). Relation of threatened egotism to violence and  
7 aggression: the dark side of high self-esteem. *Psychological Review*, *103*, 5-33.
- 8 Berkowitz, L., & Harmon-Jones, E. (2004). Toward an understanding of the determinants of  
9 anger. *Emotion*, *4*(2), 107-130.
- 10 Bereczkei, T., Birkas, B., & Kerekes, Z. (2010). Altruism towards strangers in need: costly  
11 signaling in an industrial society. *Evolution and Human Behavior*, *31*(2), 95-103.
- 12 Bernstein, M., Sacco, D., Brown, C., Young, S., & Claypool, H. (2010). A preference for  
13 genuine smiles following social exclusion. *Journal of Experimental Social Psychology*,  
14 *46*, 196-199.
- 15 Bó, P. D. (2005). Cooperation under the shadow of the future: experimental evidence from  
16 infinitely repeated games. *American economic review*, *95*(5), 1591-1604.
- 17 Bolderdijk, J. W., Steg, L., Geller, E. S., Lehman, P. K., & Postmes, T. (2013). Comparing the  
18 effectiveness of monetary versus moral motives in environmental campaigning. *Nature*  
19 *Climate Change*, *3*(4), 413-416.
- 20 Bossuyt, E., Moors, A., & De Houwer, J. (2014). On angry approach and fearful avoidance: The  
21 goal-dependent nature of emotional approach and avoidance tendencies. *Journal of*  
22 *Experimental Social Psychology*, *50*, 118-124. doi:10.1016/j.jesp.2013.09.009
- 23 Buckley, K., Winkel, R., & Leary, M. (2004). Reactions to acceptance and rejection: Effects  
24 of level and sequence of relational evaluation. *Journal of Experimental Social*  
25 *Psychology*, *40*, 14-28.

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

- 1 Burke, B, Martens, A., & Faucher, E. (2010). Two decades of terror management theory: A  
2 meta-analysis of mortality salience research. *Personality and Social Psychology Review*,  
3 *14*, 155-195.
- 4 Bushman, B. J., & Anderson, C. A. (2001). Is it time to pull the plug on hostile versus  
5 instrumental aggression dichotomy? *Psychological review*, *108* (1), 273- 279.
- 6 Carter-Sowell, A., Chen, Z., & Williams, K. (2008). Ostracism increases social susceptibility.  
7 *Social Influence*, *3*, 143-153.
- 8 Cherek, D. R., Spiga, R., Steinberg, J. L., & Kelly, T. H. (1990). Human aggressive responses  
9 maintained by avoidance or escape from point loss. *Journal of the experimental analysis*  
10 *of behavior*, *53*(2), 293-303.
- 11 Chow, R., Tiedens, L., & Govan, C. (2008). Excluded emotions: The role of anger in  
12 antisocial responses to ostracism. *Journal of Experimental Social Psychology*, *44*, 896-  
13 903.
- 14 DeBono, A., & Muraven, M. (2014). Rejection perceptions: Feeling disrespected leads to  
15 greater aggression than feeling disliked. *Journal of Experimental Social Psychology*, *55*,  
16 43-52.
- 17 Donnellan, M. B., Trzesniewski, K. H., & Robins, R. W. (2011). Self-esteem: Enduring issues  
18 and controversies. In T. Chamorro-Premuzic, S. von Stumm & A. Furnham (Eds.), *The*  
19 *Wiley-Blackwell handbook of individual differences* (pp. 718-746). Chichester, UK:  
20 Wiley-Blackwell.
- 21 Eck, J., Schoel, C., & Greifeneder, R. (2016). Coping with or buffering against the negative  
22 impact of social exclusion on basic needs: A review of strategies. In P. Riva, & J. Eck  
23 (Eds.), *Social exclusion: Psychological approaches to understanding and reducing its*  
24 *impact* (pp. ix-xv). New York: Springer.
- 25 Ernst, J. & Cacioppo, J. (1999). Psychological perspectives on loneliness. *Applied &*

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

- 1            *Preventive Psychology*, 8, 1-22.
- 2    Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G\* Power 3: A flexible statistical  
3            power analysis program for the social, behavioral, and biomedical sciences. *Behavior*  
4            *research methods*, 39(2), 175-191.
- 5    Gerber, J., & Wheeler, L. (2009). On being rejected: A meta-analysis of experimental  
6            research on rejection. *Perspective on Psychological Science*, 4, 468-488.
- 7    Gęsiarz, F., & Crockett, M. J. (2015). Goal-directed, habitual and Pavlovian prosocial behavior.  
8            *Frontiers in behavioral neuroscience*, 9, 135.
- 9    Greenberg, J., Solomon, S., & Pyszczynski, T. (1997). Terror management theory of self-  
10            esteem and social behavior: Empirical assessments and conceptual refinements. In M. P.  
11            Zanna (Ed.), *Advances in experimental social psychology* (Vol. 29, pp. 61-139). New  
12            York: Academic Press.
- 13    Heyes, C., & Dickinson, A. (1990). The intentionality of animal action. *Mind & Language*, 5(1),  
14            87-103.
- 15    Keltner, D., Gruenfeld, D. H., & Anderson, C. (2003). Power, approach, and inhibition.  
16            *Psychological review*, 110(2), 265-284.
- 17    Kindt, S., Vansteenkiste, M., Cano, A., & Goubert, L. (2017). When is your partner willing to  
18            help you? The role of daily goal conflict and perceived gratitude. *Motivation and*  
19            *Emotion*, 41(6), 671-682.
- 20    Knausenberger, J., Hellmann, J., & Echterhoff, G. (2015). When virtual contact is all you  
21            need: Subtle reminders of Facebook preempt social-contact restoration after exclusion.  
22            *European Journal of Social Psychology*, 45, 279-284.
- 23    Leander, N. P., & Chartrand, T. L. (2017). On thwarted goals and displaced aggression: A  
24            compensatory competence model. *Journal of Experimental Social Psychology*, 72, 88-  
25            100.

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

- 1 Leary, M. R., & Kowalski, R. M. (1990). Impression management: A literature review and two-  
2 component model. *Psychological bulletin*, *107*(1), 34-47.
- 3 Leary, M., Twenge, J., & Quinlivan, E. (2006). Interpersonal rejection as a determinant of  
4 anger and aggression. *Personality and Social Psychology Review*, *10*, 111-132.
- 5 Maner, J. K., DeWall, C. N., Baumeister, R. F., & Schaller, M. (2007). Does social exclusion  
6 motivate interpersonal reconnection? Resolving the "porcupine problem.". *Journal of*  
7 *personality and social psychology*, *92*(1), 42.
- 8 Meesters, C., Muris, P., Bosma, H., Schouten, E., & Beuving, S. (1996). Psychometric  
9 evaluation of the Dutch version of the Aggression Questionnaire. *Behaviour research and*  
10 *therapy*, *34*(10), 839-843.
- 11 Moors, A. (2017). Integration of Two Skeptical Emotion Theories: Dimensional Appraisal  
12 Theory and Russell's Psychological Construction Theory. *Psychological Inquiry*, *28*(1),  
13 1-19.
- 14 Moors, A., Boddez, Y., & De Houwer, J. (2017). The power of goal-directed processes in the  
15 causation of emotional and other actions. *Emotion Review*, *9*(4), 310-318.
- 16 Moors, A., Fini, C., Everaert, T., Bardi, L., Bossuyt, E., Kuppens, P., & Brass, M. (2019). The  
17 role of stimulus-driven versus goal-directed processes in fight and flight tendencies  
18 measured with motor evoked potentials induced by Transcranial Magnetic  
19 Stimulation. *PloS one*, *14*(5): e0217266.
- 20 Muthén, L. K., & Muthén, B. O. (2010). Mplus user's guide (6th ed.). Los Angeles, CA:  
21 Muthén & Muthén.
- 22 Pancani, L., Riva, P. & Sacchi, S. (2019). Connecting with a slot machine: Social exclusion  
23 and anthropomorphization increase gambling. *Journal of Gambling Studies*, *35*(2), 689-  
24 707.
- 25 Pfundmair, M., Graupmann, V., Frey, D., & Aydin, N. (2015). The different behavioral

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

- 1 intentions of collectivists and individualists in response to social exclusion. *Personality*  
2 *and Social Psychology Bulletin*, 41(3), 363-378.
- 3 Poon, K., Teng, F., Chow, J. & Chen, Z. (2015). Desiring to connect to nature: The effect of  
4 ostracism on ecological behavior. *Journal of Environmental Psychology*, 42, 116-112.
- 5 Prot, S., Gentile, D. A., Anderson, C. A., Suzuki, K., Swing, E., Lim, K. M., ... & Liao, A. K.  
6 (2014). Long-term relations among prosocial-media use, empathy, and prosocial  
7 behavior. *Psychological science*, 25(2), 358-368.
- 8 Rand, D. G., & Nowak, M. A. (2013). Human cooperation. *Trends in cognitive sciences*, 17(8),  
9 413-425.
- 10 Ren, D., Wesselmann, E., & Williams, K. D. (2016). Evidence for another response to ostracism:  
11 Solitude seeking. *Social Psychological and Personality Science*, 7(3), 204-212.
- 12 Riva, P., & Eck, J. (2016). The many faces of social exclusion. In P. Riva, & J. Eck (Eds.),  
13 *Social exclusion: Psychological approaches to understanding and reducing its impact*  
14 (pp. ix-xv). New York: Springer.
- 15 Rudert, S. C., Hales, A. H., Greifeneder, R., & Williams, K. D. (2017). When silence is not  
16 golden: Why acknowledgment matters even when being excluded. *Personality and Social*  
17 *Psychology Bulletin*, 43(5), 678-692.
- 18 Savage, L. J. (1972). *The foundations of statistics*. New York, NY: Dover. (Original work  
19 published 1954)
- 20 Smart Richman, L. (2013). The multi-motive model of responses to rejection-related  
21 experiences. In C. N. DeWall (Ed.), *The Oxford Handbook of Social Exclusion* (pp. 43-  
22 51). New York: Oxford University Press.
- 23 Strack, F., & Deutsch, R. (2004). Reflective and impulsive determinants of social behavior.  
24 *Personality and social psychology review*, 8(3), 220-247.
- 25 Sun, S., Vancouver, J. B., & Weinhardt, J. M. (2014). Goal choices and planning: Distinct

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

- 1           expectancy and value effects in two goal processes. *Organizational Behavior and Human*  
2           *Decision Processes*, 125(2), 220-233.
- 3 Täuber, S., van Zomeren, M., & Kutlaca, M. (2015). Should the moral core of climate issues be  
4           emphasized or downplayed in public discourse? Three ways to successfully manage the  
5           double-edged sword of moral communication. *Climatic Change*, 130(3), 453-464.
- 6 Tversky, A., & Kahneman, D. (1992). Advances in prospect theory: Cumulative representation  
7           of uncertainty. *Journal of Risk and Uncertainty*, 5(4), 297-323.
- 8 Twenge, J.M., Baumeister, R., Tice, D., & Stucke, T. (2001). If you can't join them, beat them:  
9           Effects of social exclusion on aggressive behavior. *Journal of Personality and Social*  
10           *Psychology*, 81, 1058-1069.
- 11 Uskul, A., & Over, H. (2017). Culture, social interdependence, and ostracism. *Current*  
12           *Directions in Psychological Science*, 26, 371- 376.
- 13 Van Beest, I., & Williams, K. D. (2006). When inclusion costs and ostracism pays, ostracism  
14           still hurts. *Journal of Personality and Social Psychology*, 91(5), 918 – 928.
- 15 Warburton, W., Williams, K., & Cairns, D. (2006). When ostracism leads to aggression: The  
16           moderating effects of control deprivation. *Journal of Experimental Social Psychology*,  
17           42, 213-220.
- 18 Wesselmann, E. D., Butler, F. A., Williams, K. D., & Pickett, C. L. (2010). Adding injury to  
19           insult: Unexpected rejection leads to more aggressive responses. *Aggressive Behavior*,  
20           36(4), 232-237.
- 21 Wesselmann, E. D., Ren, D., & Williams, K. D. (2015). Motivations for responses to ostracism.  
22           *Frontiers in psychology*, 6, Article 40.
- 23 Wesselmann, E. D., & Williams, K. D. (2013). Ostracism and stages of coping. In C. N. DeWall  
24           (Ed.), *The Oxford Handbook of Social Exclusion* (pp. 20-30). New York: Oxford  
25           University Press.

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

- 1 Williams, K. D. (2007). Ostracism. *Annual Review of Psychology*, 58, 425-452.
- 2 Williams, K. D. (2009). Ostracism: A temporal need-threat model. In M. P. Zanna (Ed.),  
3 *Advances in experimental social psychology* (Vol. 41, pp. 275–314). San Diego, CA:  
4 Elsevier Academic Press.
- 5 Williams, K.D., Cheung, C., & Choi, W. (2000). Cyberostracism: Effects of being ignored over  
6 the internet. *Journal of Personality and Social Psychology*, 79, 748-762.
- 7 Williams, K. D., & Jarvis, B. (2006). Cyberball: A program for use in research on interpersonal  
8 ostracism and acceptance. *Behavior research methods*, 38(1), 174-180.
- 9 Wortman, C. B., & Brehm, J. W. (1975). Responses to uncontrollable outcomes: An  
10 integration of reactance theory and the learned helplessness model. In L. Berkowitz  
11 (Ed.), *Advances in experimental social psychology* (Vol. 8, pp. 278-336). New  
12 York: Academic Press.
- 13 Zadro, L., Williams, K. D., & Richardson, R. (2004). How low can you go? Ostracism by a  
14 computer is sufficient to lower self-reported levels of belonging, control, self-esteem, and  
15 meaningful existence. *Journal of Experimental Social Psychology*, 40(4), 560-567.
- 16

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

## 1 Footnotes

2 <sup>1</sup>Our studies aim to test whether differences in behavior after need threat are determined  
3 by differences in the expectancies of behaviors to repair need threats. Based on previous  
4 research, we assumed that social exclusion would indeed lead to need threats and we also  
5 verified this with manipulation checks. However, it was not our aim to show that it was the  
6 social exclusion that led to the threatened needs. Our research question can still be answered if  
7 the needs would have been threatened by another event (e.g., an event that happened prior to the  
8 experiment). Therefore, it was not essential for the present studies to add an inclusion condition.

9 <sup>2</sup>Participants who indicated doubts about playing against real participants were included  
10 in the analyses in both experiments because a previous research from Zadro, Williams, and  
11 Richardson (2004) showed that rejection still works when the co-players are not real. As such  
12 data are not yet available for sarcasm, however, we decided to still exclude the participants who  
13 indicated that they had meant parts or all of the selected sentences sarcastically. Analyses yielded  
14 descriptively similar results in the full sample and the sample without the sarcastic participants  
15 (for more details on these analyses see the Supplementary Materials).

16 <sup>3</sup>The Prolific Academic sample and the university sample did not differ on relevant  
17 features. Analyses comparing the two samples are reported in the Supplementary Materials.

18



## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

1 TABLES

2

Table 1

*Means, standard deviations, Cronbach's alphas and test statistics of the induction check measures of Experiment 1 and 2*

	Experiment 1				Experiment 2			
	<i>M</i> ( <i>SD</i> )	Cron- bach's $\alpha$	<i>t</i> ( <i>df</i> )	<i>d</i>	<i>M</i> ( <i>SD</i> )	Cron- bach's $\alpha$	<i>t</i> ( <i>df</i> )	<i>d</i>
Social exclusion								
Perceived Inclusion in the Game	1.65 (0.58)		-27.99*** (145)	-2.32	1.94 (0.94)		-10.47*** (85)	-1.13
Percentage of Received Throws	7.19 (4.61)		-68.30*** (144)	-5.67				
Degree of Need Threat								
Control	3.78 (0.42)	.44	50.96*** (145)	4.24				
Status	3.18 (0.75)	.86	19.16*** (145)	1.57	3.25 (0.72)	.70	16.14*** (85)	1.73
Fairness	3.35 (0.75)	.78	21.86*** (145)	1.80	3.26 (0.75)	.64	15.44*** (85)	1.68
Belonging	3.41 (0.78)	.44	21.78*** (145)	1.81	3.41 (0.86)	.64	15.15*** (85)	1.64
Self-presentation					2.16 (1.02)	.77	1.48 (85)	0.16
Importance of Need Threat								
Control	2.16 (1.04)	.86	1.87 (145)	0.15				
Status	2.70 (0.84)	.88	9.94** (143)	0.83	2.37 (1.06)	.92	3.21** (84)	0.35
Fairness	2.32 (1.02)	.89	3.80** (144)	0.31	2.37 (1.12)	.94	3.06** (84)	0.33
Belonging	2.63 (1.03)	.91	7.40*** (144)	0.61	2.31 (1.14)	.93	2.50* (84)	0.27
Self-presentation					1.46 (0.97)	.92	-4.97*** (77)	-0.56

*Note.* \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

Table 2

*Means, standard deviations (in parenthesis) and Cronbach's alphas of the manipulation check measures by condition in Experiment 1 and Experiment 2*

	Experiment 1			Experiment 2		
	Moral condition	Nonmoral condition	Cronbach's alpha	Moral condition	Nonmoral condition	Cronbach's alpha
	<i>M</i> ( <i>SD</i> )	<i>M</i> ( <i>SD</i> )		<i>M</i> ( <i>SD</i> )	<i>M</i> ( <i>SD</i> )	
Meaning of sentences						
Aggressive sentences	1.58 (0.46)	1.82 (0.35)	.84 <sup>a</sup> / .81 <sup>b</sup>	1.87 (0.56)	2.07 (0.56)	.68 <sup>a</sup> / .78 <sup>b</sup>
Prosocial sentences	5.88 (0.55)	5.95 (0.52)	.86 <sup>a</sup> / .89 <sup>b</sup>	6.19 (0.74)	6.14 (0.59)	.63 <sup>a</sup> / .72 <sup>b</sup>
Moralizing sentences	4.04 (0.74)		.88 <sup>a</sup>	4.09 (0.91)		.87 <sup>a</sup>
Expectancy ratings						
Aggressive behavior/ sentences	1.24 (0.75)	1.13 (0.70)	.81	-1.32 (0.56)	-1.08 (0.61)	.91 <sup>a</sup> / .92 <sup>b</sup>
Prosocial behavior/ sentences	2.47 (0.79)	2.45 (0.91)	.93	0.05 (0.61)	0.52 (0.62)	.84 <sup>a</sup> / .93 <sup>b</sup>
Moralizing behavior/ sentences	2.20 (0.72)		.90	0.36 (0.51)		.80 <sup>a</sup>

*Note.* Cronbach's alpha were calculated per condition if the items differed between conditions, <sup>a</sup> moral condition, <sup>b</sup> nonmoral condition.

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

Table 3

*Means and standard deviations (in parenthesis) for expectancy measures by condition and type of need in Experiment 1 and Experiment 2*

Expectancy of aggressive/prosocial/moralizing behavior to repair or further threaten ( <i>only Exp 2</i> ) the need for	Experiment 1		Experiment 2	
	Moral condition	Nonmoral condition	Moral condition	Nonmoral condition
<b>aggressive</b> behavior				
... control	1.34 (0.95)	1.21 ( 0.88)		
... status	1.22 (0.88)	1.01 (0.79)	-0.97 (0.93)	-0.63 (0.97)
... fairness	1.30 (0.84)	1.19 ( 0.82)	-1.13 (0.85)	-0.91 (0.91)
... belonging	1.21 (0.89)	1.10 (0.90)	-1.48 (0.58)	-1.20 (0.71)
... self-presentation			-1.69 (0.42)	-1.57 (0.44)
<b>prosocial</b> behavior				
... control	2.19 (0.91)	2.25 (0.99)		
... status	2.60 (0.90)	2.52 (1.04)	-0.52 (0.81)	-0.06 (0.94)
... fairness	2.45 (0.85)	2.48 ( 0.96)	-0.16 (0.82)	0.39 (0.68)
... belonging	2.63 (0.79)	2.55 (0.99)	0.00 (0.73)	0.62 (0.80)
... self-presentation			0.87 (0.96)	1.13 (0.59)
<b>moralizing</b> behavior				
... control	2.21 (0.83)			
... status	2.04 (0.79)		0.53 (0.68)	
... fairness	2.34 (0.78)		0.53 (0.62)	
... belonging	2.20 (0.79)		0.43 (0.67)	
... self-presentation			-0.04 (0.76)	

*Note.* The Likert scale ranged from 0 (“completely disagree”) to 4 (“completely agree”) in Experiment 1 and from -2 (“much less” / “much more negative”) to +2 (“much more” / “much more positive”) in Experiment 2.

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

Table 4

*Multiple regression analysis predicting the number of selected aggressive, prosocial, and moralizing sentences in Experiment 1*

Predictors and statistics	Aggressive behavior		Prosocial behavior		Moralizing behavior	
	$\beta$	$t$	$\beta$	$t$	$\beta$	$t$
Condition (0 = moral condition)	.64	6.30***	-.35	-1.71		
Expectancy of aggressive/prosocial/moralizing behavior	.46	3.06**	.79	4.28***	.68	2.52*
Importance of need threat	.47	5.45***	.22	1.07	.87	3.13**
Expectancy * Importance of need threat	-.52	-3.18**	-.92	-3.69***	-.84	-2.20*
Condition * Expectancy	.10	0.92	.27	1.25		
$F$	45.43		19.30		5.13	
$R^2$	0.62		.41		.16	
Adjusted $R^2$	0.61		.39		.13	

*Note.* \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

Table 5

*Multilevel logistic regression results predicting the decision to send a sentence in Experiment 2*

Predictors and statistics	Estimate	95% CI of estimate	SE	z-score	p
<b>Model: need for status</b>					
<i>Fixed effects</i>					
Threshold	1.46	1.02 – 1.90	0.23	6.43	< .001
Condition (0 = moral condition)	0.25	-0.09 – 0.60	0.17	1.46	.146
Status	-0.01	-0.17 – 0.15	0.08	-0.12	.904
<i>Random effects</i>					
Expectancy	1.26	0.69 – 1.74	0.29	4.30	< .001
Expectancy * Condition	-0.83	-1.27 – -0.40	0.22	-3.75	< .001
Expectancy * Status	-0.05	-0.25 – 0.16	0.10	-0.46	.644
-2LogL		1016.64			
BIC		1072.06			
<b>Model: need for fairness</b>					
<i>Fixed effects</i>					
Threshold	1.59	1.15 – 2.03	0.22	7.13	< .001
Condition (0 = moral condition)	0.36	0.01 – 0.72	0.18	1.97	.05
Fairness	0.01	-0.15 - 0.16	0.08	0.04	.967
<i>Random effects</i>					
Expectancy	1.33	0.83 – 1.84	0.26	7.13	< .001
Expectancy * Condition	-1.23	-1.66 – -0.81	0.22	-5.71	< .001
Expectancy*Fairness	-0.01	-.17 – 0.17	0.09	-0.30	.976
-2LogL		998.898			
BIC		1054.32			
<b>Model: need for belonging</b>					
<i>Fixed effects</i>					
Threshold	1.55	1.12 – 1.98	0.22	7.08	<.001
Condition (0 = moral condition)	0.23	-0.12 – 0.58	0.18	1.31	.191
Belonging	0.02	-0.12 – 0.17	0.08	0.31	.757
<i>Random effects</i>					
Expectancy	1.30	0.81 – 1.80	0.26	5.12	<.001
Expectancy * Condition	-1.15	-1.56 – -0.74	0.21	-5.47	<.001
Expectancy*Belonging	-0.08	-.25 – 0.09	0.09	-0.97	.330
-2LogL		1016.59			
BIC		1072.01			

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

---

Model: need for self-presentation

---

<i>Fixed effects</i>					
Threshold	1.21	0.89 – 1.54	0.17	7.32	< .001
Condition (0 = moral condition)	-0.12	-0.45 – 0.21	0.17	-0.70	.482
Self-presentation	0.01	-0.16 – 0.19	0.09	0.15	.881
<i>Random effects</i>					
Expectancy	0.25	-0.07 – 0.56	0.16	1.55	.122
Expectancy * Condition	-0.64	-0.97 – -0.32	0.17	-3.892	< .001
Expectancy*Self-presentation	0.01	-0.15 – 0.17	0.08	0.12	.903
-2LogL		1004.26			
BIC		1058.99			

---

FIGURES

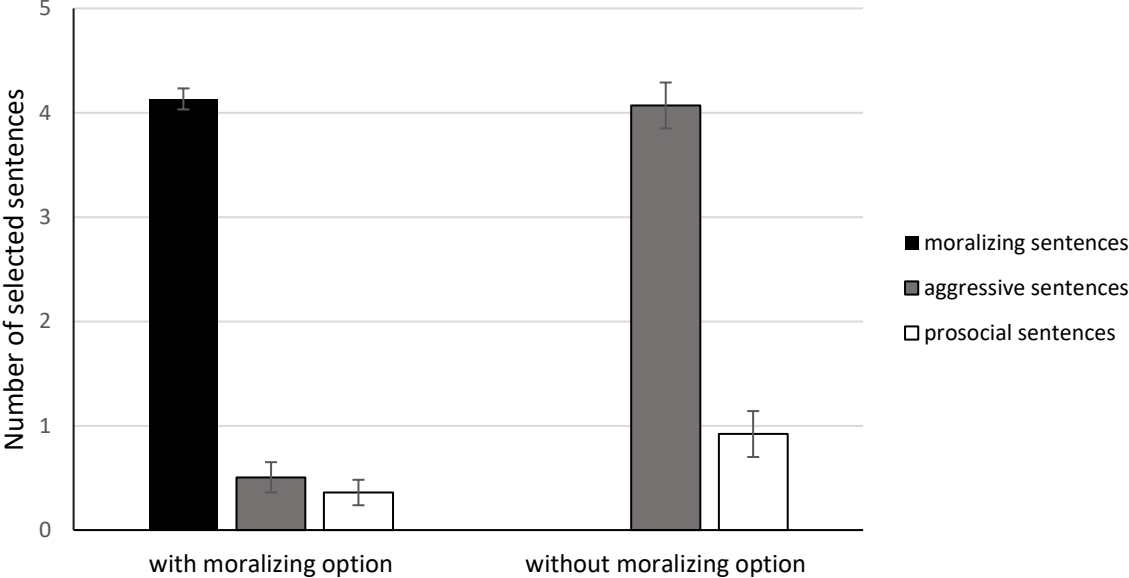
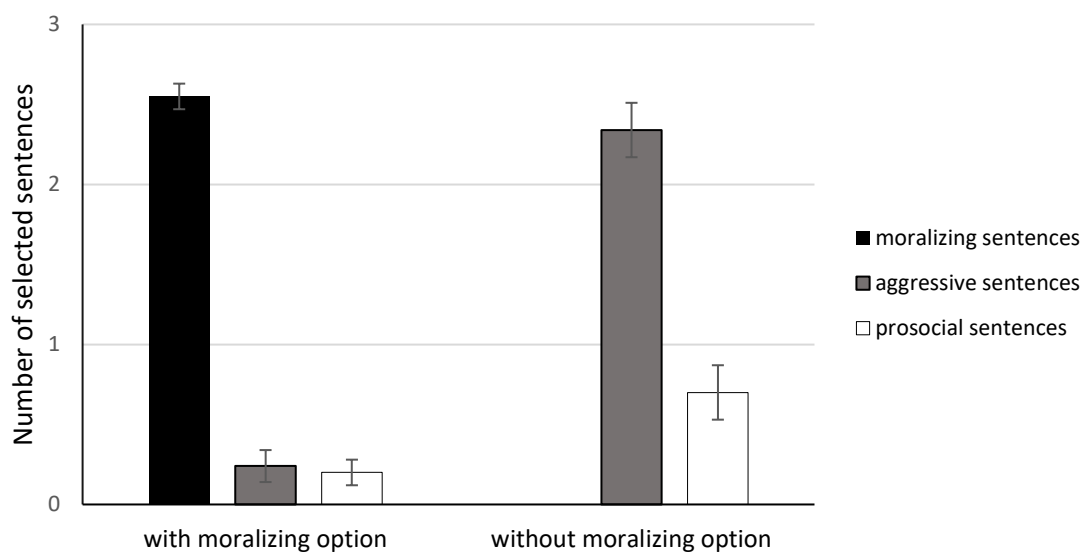


Figure 1. The number of selected aggressive, prosocial and moralizing sentences as a function of the experimental condition in Experiment 1 (error bars represent standard errors)



## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED



*Figure 2.* The number of selected aggressive, prosocial and moralizing sentences as a function of the experimental condition in Experiment 2 (error bars represent standard errors)

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

## Online Supplementary Materials

- Sentence list (used for behavior measure), expectancy scale, degree and importance of need threat scale (translated from Dutch)
- Means and standard deviations (in parenthesis) for induction check measures and for meaning of sentences by condition in Experiment 1 and Experiment 2
- Additional measures Experiment 1
- Analyses of the sentence selection with the full sample of Experiment 1 and 2
- Descriptive statistics and comparison of the Prolific Academic and the university sample in Experiment 2

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

*Sentence list (used for behavior measure), expectancy scale, degree and importance of need threat scale (translated from Dutch)*

*Aggressive, prosocial, and moralizing sentences provided to participants (used for behavior measure)*

1. **You are really mean.** [Exp 1 & 2]
2. **Bugger off!** [Exp 1 & 2]
3. **It was horrible playing with you.** [Exp 1 & 2]
4. **Screw you!** [Exp 1] / **You are no big deal.** [Exp 2]
5. **Bunch of idiots!** [Exp 1]
6. **I could hit you.** [Exp 1]
7. **I hate you!** [Exp 1]
8. **Go to hell!** [Exp 1]
9. You're pathetic. [Exp 1 & 2]
10. You really mean nothing. [Exp 1] / Screw you! [Exp 2]
11. **Morrns!** [Exp 1]
12. I would never want to play with you again. [Exp 1]
  
13. **I enjoyed playing with you.** [Exp 1 & 2]
14. **I would like to play with you again.** [Exp 1 & 2]
15. **You seem nice people to me.** [Exp 1] / **I wish I could do something to make you happy.** [Exp 2]
16. **It was pleasant to play with you.** [Exp 1] / **I am really glad that I got to play with you.** [Exp 2]
17. **It was fun with you.** [Exp 1]
18. **The atmosphere was pleasant.** [Exp 1]
19. **It was enjoyable with you.** [Exp 1]
20. **Thanks for the nice game.** [Exp 1]
21. It was nice with you. [Exp 1]
22. You were cool players. [Exp 1]
23. We did this well. [Exp 1]
24. We were a fun group. [Exp 1]
  
25. It is wrong to exclude other people. [Exp 1 & 2]
26. A game is only fun when playing fair. [Exp 1 & 2]
27. In a game you let everyone play along. [Exp 1 & 2]
28. It is a sign of maturity if you let everyone play along. [Exp 1 & 2]
29. Genuinely empathic people try not to hurt others. [Exp 1]
30. The group is more important than the individual. [Exp 1]
31. It is a pity that we were not one group. [Exp 1]
32. Together we would be stronger. [Exp 1]

*Note: Sentences in bold were provided in both conditions.*

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

### *Expectancy scale (Experiment 1)*

If I express my anger to the other players then the likelihood is high that...

1. I restore control over the situation.
2. they will nevertheless respect me.
3. they will nevertheless behave fairly towards me.
4. they will nevertheless include me in the group.

If I behave aggressively towards the other players then the likelihood is high that ...

5. I get a grip on the situation again.
6. they will nevertheless appreciate me.
7. they will nevertheless treat me right.
8. they will nevertheless involve me in the group.

If I am friendly to the other players then the likelihood is high that ...

9. I restore control over the situation.
10. they will nevertheless respect me.
11. they will nevertheless behave fairly towards me.
12. they will nevertheless include me in the group.

If I am nice to the other players then the likelihood is high that ...

13. I get a grip on the situation again.
14. they will nevertheless appreciate me.
15. they will nevertheless treat me right.
16. they will nevertheless involve me in the group.

If I point out the moral mistakes of the other players then the likelihood is high that ...

17. I restore control over the situation.
18. they will nevertheless respect me.
19. they will nevertheless behave fairly towards me.
20. they will nevertheless include me in the group.

If I show the other players that they are making a mistake then the likelihood is high that ...

21. I get a grip on the situation again.
22. they will nevertheless appreciate me.
23. they will nevertheless treat me right.
24. they will nevertheless involve me in the group.

### *Expectancy scale (Experiment 2)*

Below you see the sentences you have sent to the other players.

1. To which extent do you expect that by sending this sentence, the other players take you less or more seriously than during the ball game?

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

2. To which extent do you expect that by sending this sentence, the other players are less or more inclined to behave fairly in an upcoming task than during the ball game?
3. To which extent do you expect that by sending this sentence, the other players are less or more inclined to involve you in a upcoming task than during the ball game?
4. To which extent do you expect that sending this sentences makes you come across as more negative or more positive?

Below you see the sentences you have not sent to the other players.

5. If you had sent this sentence, to which extent do you expect that the other players would take you less or more seriously than during the ball game?
6. If you had sent this sentence, to which extent do you expect that the other players would be less or more inclined to behave fairly in an upcoming task than during the ball game?
7. If you had sent this sentence, to which extent do you expect that the other players would be less or more inclined to involve you in a upcoming task than during the ball game?
8. If you had sent this sentence, to which extent do you expect that sending this sentences would make you come across as more negative or more positive?

### *Degree and importance of need threat scale*

1. I could influence the course of the game.
2. If you could not influence the course of the game, how bad was this?
3. During the game, I could throw the ball as often as I wanted.
4. If you could not throw the ball as often as you wanted, how bad was this?
5. The other players treated me with respect during the game.
6. If the other players did not treat you with respect during the game, how bad was this?
7. I had the feeling that the others took me seriously during the game.
8. If you had the feeling that the other players did not take you seriously during the game, how bad was this?
9. The other players treated me right.
10. If the other players did not treat you right, how bad was this?
11. The other players played fairly.
12. If the other players did not play fairly, how bad was this?
13. I felt being part of the group during the game.
14. If you did not feel part of the group, how bad was this?
15. I felt like an outsider during the game. (*reverse coded*)
16. If you did feel like an outsider during the game, how bad was this?
17. I presented myself at my best with my selection of sentences.

**REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED**

18. If you did not present yourself at your best, how bad was this?
19. I have shown my ideal self with my selection of sentences.
20. If you have not shown your ideal self, how bad was this?

*Note:* Items 1-4 were only assessed in Experiment 1, items 17 – 19 were only assessed in Experiment 2.

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

*Means and standard deviations (in parenthesis) for induction check measures by condition in Experiment 1 and Experiment 2*

	Experiment 1				Experiment 2			
	Moral		Nonmoral		Moral		Nonmoral	
	<i>M</i> ( <i>SD</i> )	<i>n</i>	<i>M</i> ( <i>SD</i> )	<i>n</i>	<i>M</i> ( <i>SD</i> )	<i>n</i>	<i>M</i> ( <i>SD</i> )	<i>n</i>
<b>Social Exclusion</b>								
Perceived Inclusion in the Game	1.66 (0.52)	83	1.63 (0.66)	63	2.02 (0.99)	45	1.85 (0.88)	41
Percentage of Received Throws	6.45 (3.76)	83	8.17 (5.43)	62				
<b>Degree of Need Threat</b>								
Control	3.77 (0.44)	83	3.80 (0.41)	63				
Status	3.20 (0.70)	83	3.16 (0.81)	63	3.18 (0.76)	45	3.33 (0.67)	41
Fairness	3.40 (0.60)	83	3.29 (0.90)	63	3.27 (0.76)	45	3.24 (0.76)	41
Belonging	3.40 (0.75)	83	3.43 (0.83)	63	3.32 (0.97)	45	3.51 (0.74)	41
Self-presentation					1.64 (0.86)	45	2.73 (0.87)	41
<b>Importance of Need Threat</b>								
Control	2.14 (1.06)	83	2.19 (1.01)	63				
Status	2.66 (0.90)	83	2.75 (0.77)	61	2.30 (1.05)	44	2.45 (1.08)	41
Fairness	2.20 (1.09)	83	2.48 (0.89)	62	2.20 (1.02)	44	2.55 (1.20)	41
Belonging	2.61 (1.06)	83	2.65 (0.99)	62	2.23 (1.04)	44	2.40 (1.26)	41
Self-presentation					1.33 (0.81)	38	1.58 (1.10)	40

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

### *Additional measures Experiment 1*

In addition to the measures reported in the main text, we also assessed feelings elicited by social exclusion, trait aggressiveness and –prosociality, and the meaning of the sentences on the dimensions of valence, arousal, and dominance for exploratory purposes.

Feelings elicited by social exclusion were measured by asking participants to indicate the extent to which they felt happiness, sadness, upset, guilt, relaxation, shame, anger, disgust, irritation, distress, surprise, fear, frustration, calmness, and pride on a scale from 1 (“very little”) to 5 (“very much”).

Trait aggressiveness was recorded with the Dutch version of the Buss-Perry Aggression Questionnaire (Meesters, Muris, Bosma, Schouten & Beuving, 1996), of which we made a shorter version. The questionnaire comprised nine items (e.g., “I have trouble controlling my temper”, “When people are especially nice, I wonder what they want”). Participants indicated for every item the degree to which it described their personality on a scale from 1 (“completely disagree”) to 5 (“completely agree”). Trait prosociality was assessed with the 9-item Brief Prosocial Scale (Prot et al., 2014). A native Dutch speaker translated this scale to Dutch for the purpose of this study. Participants rated the extent to which statements were characteristic of them (e.g., “I feel bad when the opportunity for me to be helpful arises and I do not help”, “When someone is upset, I comfort them”) on a scale from 1 (“extremely uncharacteristic of me”) to 7 (“extremely characteristic of me”). The order of both scales and the items within a scale were presented in randomized order. The internal consistency of the shortened Dutch Version of the Buss-Perry Aggression Questionnaire (Cronbach’s alpha = .75) and of the Brief Prosocial Scale (Cronbach’s alpha = .72) was acceptable.

The meaning of the sentences were additionally also rated on the dimensions of valence, arousal, and dominance. All sentences were rated as negative/unpleasant vs. positive/pleasant, passive/calm vs. active/aroused, and weak/submissive vs. strong/dominant, on a scale from 1 to 7. Paired-sample *t*-tests revealed that aggressive sentences were evaluated as significantly more negative ( $M = 1.44$ ,  $SD = 0.40$ ) than prosocial sentences ( $M = 5.92$ ,  $SD = 0.64$ ),  $t(145) = -59.95$ ,  $p < .001$ ,  $d = -4.96$ . Aggressive sentences ( $M = 6.41$ ,  $SD = 1.17$ ) were also evaluated as significantly more active compared to prosocial sentences ( $M = 3.54$ ,  $SD = 1.32$ ),  $t(145) = 17.50$ ,  $p < .001$ ,  $d = 1.45$ , while they ( $M = 4.81$ ,  $SD = 1.93$ ) were not evaluated as significantly more dominant than prosocial sentences ( $M = 4.40$ ,  $SD = 0.94$ ),  $t(120) = 1.94$ ,  $p = .054$ ,  $d = 0.16$ .

*Means and standard deviations (in parenthesis) for experienced feelings, trait aggressiveness, and trait prosociality by condition*

	Moral condition	Nonmoral condition
Feelings		
Anger	2.30 (1.13)	2.43 (1.19)
Frustration	3.07 (1.17)	3.35 (1.22)
Irritation	3.33 (1.20)	3.51 (1.23)
Fear	1.37 (0.64)	1.56 (0.89)
Sadness	2.45 (1.26)	2.62 (1.22)



## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

Happiness	1.87 (0.84)	1.97 (1.03)
Surprise	2.47 (1.18)	2.86 (1.24)
Pride	1.33 (0.59)	1.38 (0.63)
Disgust	2.06 (1.12)	2.10 (1.12)
Shame	1.83 (1.06)	2.00 (1.19)
Upset	2.28 (1.21)	2.32 (1.16)
Distress	1.93 (1.08)	2.14 (1.09)
Calmness	3.17 (1.08)	3.14 (1.09)
Relaxation	2.78 (1.15)	2.67 (1.24)
Guilt	1.25 (0.51)	1.41 (0.75)
Trait aggressiveness	24.99 (6.05)	22.71 (4.73)
Trait prosociality	39.16 (3.97)	39.05 (4.90)

---

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

### *Analyses of the sentence selection with the full sample of Experiment 1 and 2*

Analyses of the sentence selection in Experiment 1 and 2 revealed the same outcomes when conducted with the full sample and when conducted with the full sample without participants meaning the chosen messages sarcastically.

#### Experiment 1:

- In the moral condition ( $n = 89$ ), participants selected on average 0.52 ( $SD = .97$ ) aggressive sentences, 0.43 ( $SD = 1.12$ ) prosocial sentences, and 4.06 ( $SD = 1.33$ ) moralizing sentences. In the nonmoral condition ( $n = 89$ ), participants selected on average 3.51 ( $SD = 1.97$ ) aggressive sentences, and 0.43 ( $SD = 1.12$ ) prosocial sentences.
- In the moral condition, a repeated measures ANOVA (with a Huynh-Feldt correction for violation of sphericity) revealed a highly significant difference in the type of selected sentences,  $F(1.79, 157.28) = 192.45, p < .001, \eta_p^2 = .69$ . Planned contrasts indicated that participants chose more moralizing sentences than aggressive ones,  $F(1, 88) = 266.52, p < .001, \eta_p^2 = .75$ , and more moralizing sentences than prosocial ones,  $F(1, 88) = 228.85, p < .001, \eta_p^2 = .72$ .
- In the nonmoral condition, a one sample  $t$ -test indicated that the number of selected aggressive sentences was much higher than the number expected from an equal distribution of aggressive and prosocial sentences (i.e., 2.5),  $t(88) = 4.81, p < .001, d = 0.51$ .
- An independent sample  $t$ -test (with degrees of freedom corrected for violation of homogeneity of variances) comparing the (corrected) number of aggressive sentences between the moral and the nonmoral condition indicated that participants in the moral condition ( $M = -1.15, SD = .97$ ) selected significantly less aggressive sentences than participants in the nonmoral condition ( $M = 1.01, SD = 1.97$ ),  $t(127.98) = -9.26, p < .001, d = 1.39$ .

#### Experiment 2:

- In the moral condition ( $n = 50$ ), participants chose on average 0.32 ( $SD = .62$ ) aggressive sentences, 0.24 ( $SD = .52$ ) prosocial sentences, and 2.44 ( $SD = 0.84$ ) moralizing sentences. In the nonmoral condition ( $n = 51$ ), participants selected on average 2.10 ( $SD = 1.17$ ) aggressive sentences, and .90 ( $SD = 1.17$ ) prosocial sentences.
- The type of selected sentences differed significantly in the moral condition as revealed by a repeated measures ANOVA (with a Huynh-Feldt correction for violation of sphericity),  $F(1.54, 75.63) = 115.02, p < .001, \eta_p^2 = .70$ . Planned contrasts indicated that participants chose more moralizing sentences than aggressive ones,  $F(1, 49) = 118.04, p < .001, \eta_p^2 = .71$ , and more moralizing sentences than prosocial ones,  $F(1, 49) = 156.03, p < .001, \eta_p^2 = .76$ .
- A one sample  $t$ -test in the nonmoral condition revealed that the number of selected aggressive sentences was considerably higher than the expected number from an equal distribution of aggressive and prosocial sentences (i.e., 1.5),  $t(50) = 3.65, p = .001, d = 0.51$ .
- A comparison of the corrected number of selected aggressive sentences with an independent sample  $t$ -test (with degrees of freedom corrected for violation of homogeneity of variances) revealed that participants in the moral condition ( $M = -0.68, SD = .62$ )

**REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED**

selected significantly less aggressive sentences than participants in the non-moral condition ( $M = 0.60$ ,  $SD = 1.17$ ),  $t(76.38) = -6.87$ ,  $p < .001$ ,  $d = 1.37$ .

## REACTIONS TO SOCIAL EXCLUSION ARE GOAL-DIRECTED

*Descriptive statistics and comparison of the Prolific Academic and the university sample in Experiment 2*

	Prolific Academic ( <i>n</i> = 33)		University ( <i>n</i> = 52)		Independent sample <i>t</i> -tests/chi-square test
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Age	29.27	9.53	20.43	2.43	$t(34.61) = 5.23, p < .001, d = 1.27$
Importance of need threat					
Status	2.52	1.07	2.28	1.06	$t(83) = -1.00, p = .321, d = 0.22$
Fairness	2.45	1.03	2.32	1.18	$t(83) = -0.55, p = .584, d = 0.12$
Belonging	2.36	1.11	2.28	1.18	$t(83) = -0.33, p = .742, d = 0.07$
Self-presentation	1.48	1.03	1.43	0.93	$t(76) = -0.22, p = .825, d = 0.05$
Perceived inclusion in the game	1.85	0.71	2.00	1.06	$t(84) = 0.73, p = .469, d = 0.17$
	<i>n</i> <sub>women</sub>	<i>n</i> <sub>men</sub>	<i>n</i> <sub>women</sub>	<i>n</i> <sub>men</sub>	
Gender	10	23	42	10	$\chi^2(1, N = 85) = 21.65, p < .001, \phi = .51$