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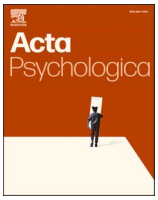

Do targets of ostracism truthfully communicate their emotional reactions to sources?

Erdem O. Meral [a,b,*], Dongning Ren [a], Yvette van Osch [c], Eric van Dijk [d], Ilja van Beest [a]

[a] Department of Social Psychology, Tilburg University, Tilburg, the Netherlands
[b] Department of Psychology, University of Amsterdam, Amsterdam, the Netherlands
[c] Netherlands Labor Authority, The Hague, the Netherlands
[d] Social, Economic and Organizational Psychology Unit, Institute of Psychology, Leiden University, Leiden, the Netherlands

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ABSTRACT

Ostracism triggers negative emotions such as sadness, anger, and hurt feelings. Do targets of ostracism truthfully share their emotions with the sources of ostracism? Drawing on past research on social-functional accounts of emotions and interpersonal emotion regulation, we investigated the possibility that targets may misrepresent their emotions (i.e., gaming emotions). We conducted three experiments ($N = 1058$; two pre-registered) using an online ball-tossing game, in which participants were randomly assigned to be included or ostracized. Consistent with the literature, we found that ostracized individuals were more hurt, sad, and angry than included individuals. However, we found little and inconsistent evidence that ostracized (vs included) individuals misrepresented their emotional reactions to the sources. Further, Bayesian analyses offered more support against misrepresentation of emotions. These findings suggest that targets of ostracism truthfully communicated their social pain to the sources.

1. Introduction

Imagine that you are playing Frisbee with two other people at a park. At one point, they stop throwing you the disk, excluding you from their game. You may feel hurt, sad, or even angry. If you had an opportunity to express your feelings to the two other players, what would you say? Would you disclose your feelings truthfully or intentionally misrepresent them? Ostracism, even brief and innocuous instances, can elicit painful feelings, sadness, anger, and threaten the basic human needs (Baumeister & Leary, 1995; Leary, 2015; Nezlek et al., 2012; Williams, 2007). The literature on ostracism has focused on the negative impact of the event on targets; yet relatively little is known about how targets subsequently communicate their emotions to the source of ostracism. Emotion communication following ostracism can be functional as signaling social pain to the source may influence sources' subsequent treatment of the targets (e.g., see social-functional accounts of emotions: van Kleef & Côté, 2018, 2022). In this research, we sought to examine this communication process. Specifically, we investigated the possibility that targets of ostracism may intentionally misrepresent their emotions (referred to as gaming emotions; Andrade & Ho, 2009) when they are given a chance to express their emotions to sources.

1.1. Interpersonal communication is a possible response to ostracism

People respond to being ostracized in various ways. Some responses are intrapersonal in nature such as prayer (Aydin et al., 2010), watching TV shows (Derrick et al., 2009) or eating comfort foods (Troisi & Gabriel, 2011). Other responses are interpersonal in nature such as aggression (Ren et al., 2018), seeking reaffiliation (Maner et al., 2007), or withdrawing from social interactions (Ren et al., 2016). Despite the extensive literature on people's responses to ostracism, there has been surprisingly little attention to target-source interpersonal communication as a viable option. Do targets of ostracism communicate their feelings to the sources of ostracism?

Importantly, within the context of social exclusion, there are several past studies suggesting that targets of social exclusion may engage in some form of interpersonal communication with the sources. For example, one study investigated how people responded to situations where they felt hurt (Leary et al., 1998). Common responses included assertive responses such as expressing anger or informing the source that one's feelings were hurt. In another study, targets who were excluded from a group conversation made effort to join the conversation at least during the initial stage (Zadro et al., 2005). Another study used text

* Corresponding author at: Psychology Department, University of Amsterdam, Postbus 15919, 1001 NK Amsterdam, the Netherlands.
E-mail address: e.o.meral@uva.nl (E.O. Meral).

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message conversations to exclude participants and recorded their responses (Smith & Williams, 2004). Results suggested that excluded participants tried to get others to message them by sending text messages more so than included participants – a behavior referred to as "virtual bravado" by the authors (Smith & Williams, 2004). Moreover, a recent study showed that when given the chance to communicate with other players, one third of the participants wrote messages communicating their unhappiness to the sources when they were ostracized in an online ball-tossing game (Zimmerman et al., 2021). In a similar vein, it has been recently demonstrated that targets of rejection have the urge to disclose their experience to others, yet they also feel reluctant to do so due to anticipated social costs – e.g., anticipating negative evaluation upon disclosure (Meral et al., 2021). Taken together, these findings suggest that interpersonal communication after ostracism is a potential response.

Ostracized individuals may communicate their emotions to sources for several reasons. Here we turn to some other research streams that highlight why and how individuals communicate emotions with others such as past work on support seeking (e.g., Nagai, 2015; Williams & Mickelson, 2008), self-disclosure (e.g., Pasupathi et al., 2009; Tamir & Mitchell, 2012) and social sharing of emotions (e.g., Gable & Reis, 2010; Rimé, 2009). People talk about their emotions for different reasons (e.g. to vent or warn others Duprez et al., 2015; or to get support in dealing with the emotion Pauw et al., 2018, 2019). One reason is interpersonal emotion regulation— the regulating of one's emotions through social contacts with or without an active response from their communication partner (e.g., Barthel et al., 2018; Williams et al., 2018; Zaki & Williams, 2013). These research areas provide evidence that people talk about their emotions during or after emotion eliciting events. It thus follows that ostracized people - people who experienced an emotion eliciting event - may also communicate their emotions to others. In the following sections we unpack how and why ostracized individuals may truthfully communicate or misrepresent their emotions while sharing them with the sources of ostracism.

1.2. People truthfully communicate emotions

How do targets of ostracism communicate their emotions? Sharers may be motivated to truthfully communicate their emotional states. For instance, if people communicate emotions with certain goals (e.g., eliciting support) then doing so truthfully can help one attain these goals. In fact, previous work shows that truthfully expressing one's emotions (instead of suppressing them) can help one receive support, help build new relationships and increase intimacy in existing relationships (Graham et al., 2008). People may be motivated to share their emotions truthfully if they feel that communicating a different message (e.g., suppressing one's emotion) would fail to communicate the apparent need, and thereby be ineffective (e.g., Larsen & English, 2014). Moreover, individuals may be motivated to communicate their emotions truthfully regardless of the outcome. For example, one may be internally motivated to respond to situations honestly (Murphy et al., 2020) or they may want to maintain a positive self-concept as someone who is honest (Mazar et al., 2008) also when communicating emotions. In sum, these studies suggest that ostracized individuals may be motivated to communicate their emotions to others truthfully.

1.3. People game emotions

At the same time, it is possible that individuals game emotions. Two lines of research support this possibility. First, previous research suggests that people intentionally misrepresent emotions to achieve instrumental goals. Social-functional accounts of emotions (e.g., Keltner & Haidt, 1999; Morris & Keltner, 2000; van Kleef, 2009; van Kleef & Côté, 2018) suggest that emotional expressions have social impacts. That is, a communicated or expressed emotion might impact the judgment or behaviors of the observers. To influence others, one may choose to communicate one's emotions truthfully. However, past studies have shown that people regularly engage in strategic communication of emotions – i.e., gaming emotions (English et al., 2018; Geddes & Lindebaum, 2020; Hayes & Metts, 2008), to either attain positive outcomes (e.g., Andrade & Ho, 2009; Sasse et al., 2018; van Dijk et al., 2018) or avoid negative outcomes (e.g., English et al., 2018; van Osch et al., 2019). For example, participants over-report their anger (reporting higher levels of anger than they initially report feeling) in order to receive better payoffs in a negotiation (Andrade & Ho, 2009). The participants in this study not only overreported their anger, but they also reported doing this strategically to obtain better payoffs when prompted about the reason for overreporting. Similarly, another study investigated how bargainers communicate anger and disappointment (van Dijk et al., 2018). Their findings revealed that participants overreported disappointment more so than anger when the other party was in a high-power position; and that they overreported anger when they were in a powerful position themselves. It was also investigated whether participants who express pride due to achievement in varying domains (e.g., academically or sports) would downplay their pride expressions strategically (van Osch et al., 2019). Results revealed that participants inhibited both verbal and nonverbal expressions of pride when the domain of the achievement was relevant to the audience. Another recent study revealed that participants downplayed their sadness and fear to an antagonistic outgroup in an intergroup conflict situation (Sasse et al., 2018). In this study, authors argue that participants may have downplayed to not lose face because expressing high levels of sadness and fear to an outgroup could be taken as an admission of weakness. Taken together, these findings suggest that across a variety of contexts people communicate emotions strategically -i.e., game emotions.

Second, past studies suggest that individuals may try to alter how they feel before communicating their feelings. For example people may try to increase their level of anger before a confrontational interaction (Tamir et al., 2008; Tamir & Ford, 2012) or increase their level of fear when they are motivated by an avoidance goal (Tamir & Ford, 2009). Such contra-hedonic emotion regulation (i.e., increasing negative emotions or decreasing positive emotions) is a potential regulatory response and people engage in it to the extent that they think feeling that emotion would be useful (Eldesouky & English, 2019; Riediger et al., 2009; Tamir, 2016; Tamir et al., 2013). This prior work on instrumental emotion regulation focuses on the regulation of emotions that one feels. This literature suggests that if one believes in the utility of communicated emotions, they may try to regulate their emotions in the desired direction before communicating them. As a result, communicated emotions deviate from the actual emotional responses people experienced initially, supporting the possibility that people game emotions.

Similar to the abovementioned lines of work, we conceptualize communicating, sharing, or gaming of emotions in relation to the intensity of felt emotions. This is different than one feeling an emotion and sharing that they are feeling the said emotion without referring to how intensely they are feeling it. Rather, in the current project, we are interested in the varying levels of intensity in which individuals can communicate their emotions to others. That is, we are not focusing on whether a person is communicating that they felt sad or not. Rather, we are focusing on whether a person communicates that they felt very sad when they indeed felt very sad or just a little sad.

1.3.1. Exaggerating or downplaying?

We propose that ostracized individuals (relative to those that are included) may strategically misrepresent their emotions for various reasons. Concretely, targets of ostracism may exaggerate their emotions or downplay them (henceforth referred to as the exaggeration and downplaying hypotheses respectively). In the current research, we tested these two competing hypotheses by focusing on three specific emotions that are well-established outcomes of being ostracized: hurt-feelings (Leary, 2015; Leary et al., 1998), sadness, and anger (Çelik et al., 2013; Chow et al., 2008; Tuscherer et al., 2016).

1.3.1.1. The exaggeration hypothesis. To the extent that targets have instrumental motivations or believe that exaggerating their emotions would help goal attainment, they can exaggerate negative emotions (Tamir, 2009). For example, targets may exaggerate their anger. Displaying anger has been shown as a way to regain control (Lemay et al., 2012), make the other parties concede (van Kleef et al., 2004), be ascribed more power (Tiedens, 2001), signal that a certain outcome was unjustified (Wubben et al., 2011), or that such an outcome happened outside of one's control (Berkowitz & Harmon-Jones, 2004). Such functions of anger may be appealing to targets of ostracism who experience a low sense of control or wish to regulate the sources' behavior in the subsequent interaction.

Targets may also exaggerate their sadness and hurt feelings. These two emotions may elicit empathy and other-concern in the source (Batson et al., 2007; Lemay et al., 2012; Sinaceur et al., 2015) and subsequently increase the possibility of sources' inclusive behavior. Additionally, sadness signals that targets are in need of help (Graham et al., 2008; Small & Verrochi, 2009) and hurt feelings may evoke feelings of guilt in the sources (Overall et al., 2014); both functions may increase target's future chances of re-inclusion.

1.3.1.2. The downplaying hypothesis. It is also possible that targets of ostracism downplay their emotions to the sources. For example, targets may be concerned that sources might instigate reciprocal anger (Lelieveld et al., 2012; Lemay et al., 2012). Similarly, targets might fear that others might dislike and further ostracize them if they communicate their anger (van Beest et al., 2008). Additionally, targets may believe that communicating anger might negatively impact their already poor relationship with the sources (Sanford & Rowatt, 2004). Finally, if targets wish to avoid a social conflict, they may choose to downregulate their anger in service of this goal (English et al., 2018).

Turning to sadness and hurt, targets may downplay these two emotions to avoid appearing weak (Spokas et al., 2009). Similarly, targets may downplay their sadness to indicate that they do not want support (Sasse et al., 2018). Additionally, targets may downplay their sadness and hurt out of self-presentational concerns to "appear fine" (Bernstein et al., 2013). After all, targets may not want the other parties to think that they are weak and are again candidates for social ostracism in future interactions.

1.3.1.3. Gaming of threatened needs. Williams' Temporal Need Threat Model (TNT; Williams, 2009) suggests that individuals' basic needs pertaining to belonging are threatened following ostracism. More specifically, Williams (2009) suggests that ostracism threatens one's basic needs of belonging, meaningful existence, self-esteem and control. Similar to gaming of emotions, in the current project we also investigated if individuals would misrepresent or truthfully communicate their need levels to the sources of ostracism. Unlike the emotions, however, we did not have a priori hypotheses about the direction of the gaming for threatened needs. Instead, we explored if and how ostracized (vs included) individuals game their threatened needs to the sources.

Williams' TNT Model (Williams, 2009) also provides a temporal framework for how one reacts to being ostracized in which one's reaction to ostracism unfold in several stages. Central to the current project are the first two stages, namely the reflexive and the reflective stages. Reflexive stage, as the name suggests, is the stage in which one's immediate reactions to ostracism can be observed. Much like a reflex, the TNT Model suggests that the immediate reaction is sudden and rather impervious to moderation effects – that is most individuals feel a similar negative affect shortly after being ostracized. Following is the reflective stage – the stage in which the ostracized individual can look back, start appraising the situation, and may engage in coping behaviors. This temporal framework informed our study designs and research questions such that we explored gaming of emotions and needs at both the reflexive stage (i.e., right after individuals were ostracized) and at the reflective stage (i.e., following a short delay after ostracism).

2. Current research

We tested the two competing hypotheses regarding the effect of ostracism on gaming emotions in a series of three experiments. The gaming hypotheses (i.e., downplaying and exaggeration) concern the gaming of emotions for ostracized participants (compared to included participants) when they think that their answers are being communicated to other players (compared to reporting answers privately).

To manipulate ostracism, we used an online ball-tossing game: Cyberball (Williams et al., 2000; Williams & Jarvis, 2006) and another online ball-tossing game which is modeled after Cyberball but has improved visual features (in Study 3). In both games, participants played with two or three other players that were in fact computer-controlled avatars. Our reasons for choosing this paradigm are twofold. First, it is a well-validated experimental paradigm that has been widely adopted as a manipulation of ostracism (for a meta-analysis of Cyberball studies, see: Hartgerink et al., 2015) and has been successfully used in prior research involving communication between participants (Zimmerman et al., 2021). Second, past studies on gaming emotions used controlled experimental paradigms in which participants play multiple rounds of a computer game to simulate a social interaction (Andrade & Ho, 2009; van Dijk et al., 2018). Building on these past studies, we sought to test the possibility of gaming emotions using the well-controlled paradigm Cyberball.

We adapted the design used in past studies on gaming emotions in which participants communicated emotions to each other between rounds of computer games (Andrade & Ho, 2009; van Dijk et al., 2018) to an ostracism context. Specifically, in all studies participants were told that they would play two rounds of the online ball-tossing game with the same players. The first round of ball game served as the manipulation of ostracism: participants were included or ostracized from tossing the ball around. To support our cover story, all participants played a second round of the game in which they were all included in tossing the ball. Between the two rounds, we measured participants' actual emotional responses and the responses they provided to be shared with other players.

For outcome variables, we focused on the three negative emotions: anger (Studies 1–3), sadness (Studies 1–3), and hurt (Studies 2–3). We focused on these three emotions because all three are well established emotional responses to ostracism (e.g., Celik et al., 2016; Çelik et al., 2013; Leary, 2015; Leary et al., 1998).[1] We also explored the possibility that people game "needs" similarly as they would game emotions. Past work has established that ostracism lowers targets' satisfaction (or increases need threat) with four basic needs of belonging, control, self-esteem and meaningful existence (Williams, 2007, 2009). As these are the main outcome variables ostracism researchers assess, we explored whether people gamed their need threat to the sources of ostracism (vs. inclusion).

All three studies are methodologically similar; therefore, we report their methods together and highlight the differences where needed. For full set of items and a more detailed breakdown of all the procedures see Supplementary Materials. We report the results of each study separately. For each study in the project, we first clarify our research question and pre-registered predictions (if any); and then present the results of the (confirmatory) analyses. The results of any mentioned additional analyses can be found in the Supplementary Materials.

[1] In Study 1, we were only able to measure sadness and anger because the questionnaire that we implemented in this exploratory study only contained items measuring sadness and anger, but not hurt. Yet, in studies 2 and 3 we measured all three emotions.

3. Methods

3.1. Data accessibility statement

Studies 2 and 3 were pre-registered. Data, analysis scripts and study materials for all studies, and pre-registration documents for Studies 2 and 3 are available on the Open Science Framework (OSF, https://osf.io/7vpqu/). We report how we determined our sample size, all data exclusions (if any), all manipulations, and all measures in the study.

3.2. Participants

Across all three studies there were 1094 complete responses. For Study 1, the survey link was distributed in the experimenters' social network. For Studies 2 and 3 we recruited first year psychology students who were compensated for their time with partial course credit. We pre-registered to exclude participants who indicated insufficient level of English to comprehend the study (Study 2) and who failed both attention checks implemented throughout the study (Studies 2 and 3). Out of the participants who had complete responses, we removed the data of 36 based on the exclusion criteria for indicating insufficient English ($n = 35$) or failing both attention checks ($n = 1$), more details can be found in the Supplementary Materials. Demographics of the final sample ($N = 1058$) are reported in Table 1.

The sample sizes in pre-registered studies were determined based on the availability of facilities (e.g., data collection for two weeks in a shared lab). We conducted a sensitivity analysis using G*Power 3.1 (Erdfelder et al., 2009) to identify the minimum effect size that we could detect. Results revealed that with an alpha significance criterion of 0.05, 80 % power for Study 2 ($N = 563$) a regression analysis with two predictors would detect a minimum effect size of $f^2 = 0.017$ ($R^2 = 0.017$) and for Study 3 ($N = 247$) it would detect a minimum effect size of $f^2 = 0.039$ ($R^2 = 0.038$). Additionally, for both studies 2 and 3 we conducted a sensitivity analysis by plotting the level of power we would have for varying effect sizes given our sample size at an alpha level 0.05 using the superpower package in R (Lakens & Caldwell, 2021). Investigation of these plots revealed that across both studies we have reasonable power (>80 %) to detect small to medium sized effects ($f = 0.18$) for the hypothesized interaction effects ($df = 1$). The obtained sample sizes across three studies provide us with sufficient power to detect effects that are of comparable size to previous work on gaming emotions (Andrade & Ho, 2009; van Dijk et al., 2018). More details about the procedure and the power plots can be found in the Supplementary Materials. The line of studies received ethical approval from the host university.

3.3. Design and procedure

The first two studies were conducted online, and the third study was conducted in a lab. The designs and procedures of all three studies are presented in Fig. 1. All participants across all studies were under the impression that they would play the game with the same group of participants for two rounds. Next, depending on the condition and experimental design of a study, participants were informed if and how they would be able to communicate their emotions to other players between the two rounds. In all three studies we manipulated belonging status (ostracism vs inclusion) and response type. We always manipulated the belonging status factor as between-subjects with half of the participants randomly being ostracized and the other half included. We manipulated the response type factor (if and how people were able to communicate with the sources) in both in a between- and a within-subjects manner which we provide more details about in the remainder of this section. In all three studies, the response type factor involved two conditions. In one condition, participants responded to the outcome measures regarding their experiences (as in a typical study). We refer to these responses as "actual responses." In the other condition, participants responded to the outcome measures while knowing that these responses would be shared with others. We refer to these responses as "shared responses.".

Table 1
Participant demographics for Studies 1, 2 and 3.

	Study 1	Study 2	Study 3
Age M(SD)	27.65 (11.61)	20.01 (2.99)	20.48 (3.05)
Women	142	462	204
Men	106	99	40
NA or other	2	2	3
Sample Size	248	563	247
Inclusion	132	Actual: 154 Shared: 133	Actual: 65 Shared: 65
Ostracism	116	Actual:136 Shared:140	Actual:57 Shared:60

3.3.1. Manipulation of response type

Study 1 adopted a 2 (belonging status: inclusion vs. ostracism) by 2 (response type: actual vs. shared) mixed design, with the latter being the within-subject factor. Participants were first randomly assigned to be included or ostracized in a Cyberball game. Next, participants reported how they felt during the game by completing measures of emotion and need satisfaction (actual responses). Then, participants were told that, before the second round of the game, the responses they just provided would be shared with the other players. Participants were then presented with their original responses and were provided an opportunity to freely alter them before these responses were communicated to the others. The altered responses they then submitted were recorded as "shared responses."

Study 2 and Study 3 used a similar design. However, this time the response factor was operationalized as a between-subjects factor. Specifically, after playing the first round of Cyberball (included vs. ostracized), participants were randomly assigned to complete the same measures we used in Study 1 in an actual-response condition or a shared-response condition. We moved away from the within-subjects response-type manipulation of Study 1 for two main reasons. One is demand characteristics. The within-subject design, in which participants went through both conditions (actual vs. shared condition) may have increased participants' awareness of the goal of our research. Our second consideration was that any difference between the actual vs. shared conditions could be due to the lag between these two assessments (the actual condition always preceded the shared condition). To address these two limitations of the within-subject design we used in Study 1, we adopted a between-subjects design in Studies 2 and 3.

In Study 3, we measured participants' responses to ostracism after a short delay. Following past studies assessing delayed responses at a reflective stage (e.g., Ren et al., 2013) we first asked participants to report their emotions and need satisfaction right after the game (immediate responses) followed by a filler task that lasted about three minutes.[2] After the filler task participants reported how they felt during the game (i.e., delayed responses; our key outcome variable). Similar to Study 2, participants were randomly assigned to provide either their actual (delayed) responses or shared (delayed) responses. We have measured delayed responses due to the postulation by the TNT model that that in the reflective stage targets look back and reflect on their experience (Williams, 2009). Previous research on reactions to ostracism shows that right after being ostracized participants are usually overwhelmed and show decreased cognitive capacity or self-regulatory capacities (Baumeister et al., 2005, 2002). We reasoned that these negative effects may potentially hinder any strategic considerations to communicate emotions with instrumental goals in mind. Thus, during a

[2] For the filler task participants answered questions about the game features (consistent with our cover story that we wanted feedback for a newly developed online game).

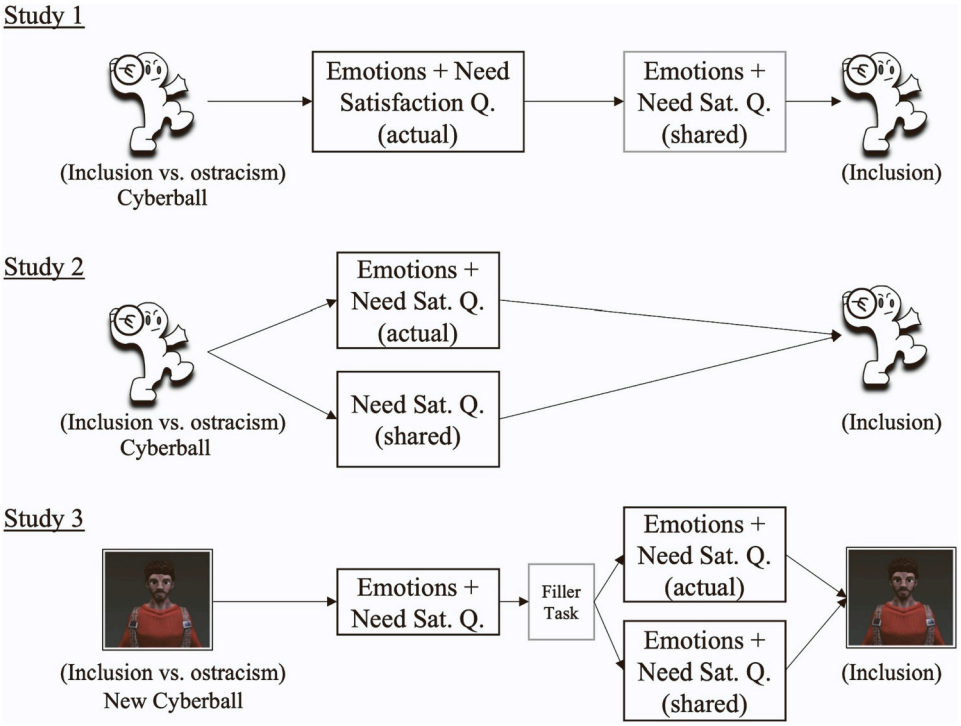


Fig. 1. The visual depiction of procedure for all three studies.

reflexive stage (introduced by a delay), participants would be more likely to make a strategic decision regarding how to communicate their emotions.

3.3.2. *Manipulation of belonging*

To manipulate belonging status, we used Cyberball for all three studies. Studies 1 and 2 used the original version of Cyberball (Williams et al., 2012). Cyberball is an online ball-tossing game where participants can toss the ball around by clicking on the avatar of other players. Participants were told that they would be playing this game for two rounds with the same participants. In reality, participants played the ball tossing game with computer-simulated players. Included participants received an equal amount of ball tosses as the other players (33 % percent if three players [Studies 1 and 2], 25 % if four players [Study 3]). Ostracized participants received a few tosses (< 10 %) in the beginning and none after.

Study 3 used a new version of Cyberball called Social Ball (Meral et al., 2022). This version has the same structure as the original Cyberball, but a) allows people to choose their avatar and their nickname, and b) has improved visuals compared to the original version (Williams et al., 2000). These new features make the game more engaging and immersive overall (see Fig. 2). Participants in the original Cyberball game play with characters that resemble stick figures. In Social Ball, however, participants saw more realistic animations of persons with visual characteristics suggesting gender representation and race. All participants in Study 3 played the game with three players. Two of these players were female and one player was male. Moreover, one female player was Black and the other two players were White (See Fig. 2 to see these 3 players).

3.4. *Measures and materials*

3.4.1. *Emotions and need threat*

To measure emotion, we used two items in Study 1: "during the game, I felt angry" and "during the game, I felt sad" (1 = not at all, 5 = extremely; Williams, 2009). We used three items in Studies 2 and 3: "I felt hurt," "I felt sad," "I felt angry" (1 = not at all, 5 = extremely)[3].

To measure need threat, we used the Need Satisfaction Questionnaire (Williams, 2009). In Study 1 we used the full scale with 5 items per need (i.e., belonging, self-esteem, and meaningful existence and control, e.g., "I felt rejected (reversed)," "I felt invisible (reversed);" 1 = not at all, 5 = extremely). In Studies 2 and 3 we used a short version of the Need Satisfaction Questionnaire (Ren et al., 2016) that has 3 items per need (12 in total). All items were averaged to form a single need satisfaction score ($\alpha_{study1} = 0.96$; $\alpha_{study2} = 0.93$; $\alpha_{study3} = 0.93$). Need threat is the reverse coded version of need satisfaction. For ease of interpretation and visual inspection in the graphs we choose to report need threat rather than need satisfaction.

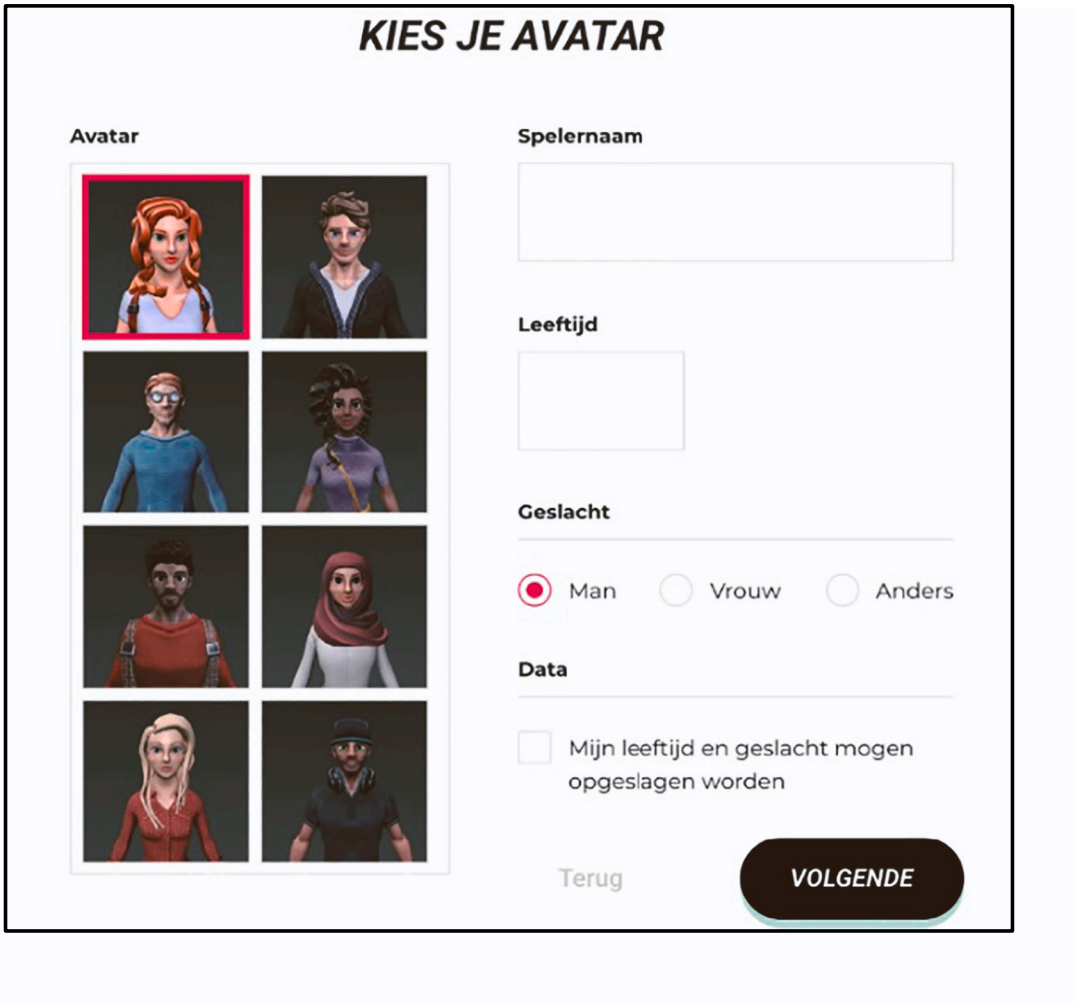
Note that we did not randomize the order of the items in Study 1, because we intended for participants to receive their original responses in the same order as they completed them the first time. In Studies 2 and 3, the order of the emotion items was randomized. The order of the subscales of the Need Satisfaction Questionnaire was randomized; and the items within each need was randomized.

3.4.2. *Manipulation check*

Across all studies, we used three manipulation check items (Williams, 2009). The first two items ("I was ignored," "I was excluded" 1 = not at all, 5 = extremely) were combined ($r_{spearman\text{-}brown} = 0.86$–90). The third item asked participants to estimate the percentage of the ball-throws that they thought they received during the game.

[3] We did not report the reliability scores for our measures of emotion, because these items (angry, sad, hurt) were single-item indicators of distinct emotions.

A.



B.

Fig. 2. Visuals from the game used in Study 3.
Note. Visuals from Social Ball used in Study 3. Fig. A is the avatar selection screen. Participants can select one of the eight avatars as their avatar. Fig. B is a screenshot from a game with 4 players. In the game, the participant sees their chosen avatar from the back in the center of the screen and the computer-simulated players are facing the participant.

4. Results

First, we report the results of the manipulation checks. We do so together for all three studies. Next, we report the main results from each study separately. To test our main questions, we used two analytic approaches. First, we ran regression analyses for each outcome variable separately (i.e., sadness, anger, hurt feelings, need). Unless otherwise specified, the predictors in each model were: belonging status (ostracism = −0.5, inclusion = 0.5), response type (actual = −0.5, shared = 0.5), and their interaction term. Second, we used Bayesian tests. For each study, we tested whether the observed data was more probable under the alternative hypothesis (i.e., that targets game their emotions) or the null hypothesis (i.e., that targets do not game their emotions).

All regression analyses were conducted using R with packages lme4 (Bates et al., 2015) and jTools (Long, 2020), for the Bayesian analyses we used bayestestR (Makowski et al., 2019) and the rstanarm (Gabry et al., 2020) packages.

4.1. Manipulation checks across all studies

In all three studies participants in the ostracism condition felt more excluded and ignored than included participants, $B_{study1} = -2.09$, $B_{study2} = -2.46$, $B_{study3} = -2.68$, $ps < 0.001$. Moreover, in Studies 2 and 3, neither the main effect of nor the interaction with the response type had a significant effect on the feelings of exclusion, $-0.002 < Bs < 0.01$, $ps > 0.53$.

Similarly, the ostracized participants reported receiving fewer ball tosses than the included participants across all three studies, $B_{study1} = 19.00$, $B_{study2} = 21.44$, $B_{study3} = 14.80$. In Study 2, unexpectedly, participants in the actual response condition reported a higher percentage of received ball tosses than the participants in the shared response condition, $B = -1.71$, $p = .02$. The interaction term was not significant, $B = 0.29$, $p = .84$. We will return to this finding in our general discussion section. In Study 3, neither the response type nor the interaction term were significant predictors of perceived amount of ball tosses, $-0.002 < Bs < 0.91$, $ps > 0.77$. For a full set of statistics with regards to manipulation checks, see Section 4 in the Supplementary Materials.

4.2. Study 1 results

Study 1 was exploratory. Our goal was to explore whether targets of ostracism would misrepresent their emotions to the sources more so than the included participants.

4.2.1. Outcome variables

See Fig. 3 for a bar graph visualizing the group means for the outcomes of interest in Study 1. For both anger and need threat the main effect of belonging status was significant, such that ostracized participants reported higher levels of anger and need threat than included participants. Importantly, the interaction term between belonging status and response type was significant for both variables as well. We followed up the interaction by conducting two separate contrast analyses with simple contrasts that looked at the effect of response type (*actual* = −0.5, *shared* = 0.5) on both levels of belonging status. While checking for the effect of response type on ostracism condition, the weights of the inclusion condition (for both actual and shared responses) were set to 0, and vice versa. Actual and shared responses did not significantly differ from each other in the inclusion conditions (anger: $B < 0.001$, $SE = 0.012$, $t = -0.007$, $p > .99$; need threat: $B = -0.001$, $SE = 0.013$, $t = -0.12$, $p = .91$, 95 % CI [−0.024, −0.021]). Shared responses were significantly less severe than actual responses in the ostracism conditions (anger: $B = -0.04$, $SE = 0.013$, $t = -3.32$, $p = .001$, 95 % CI

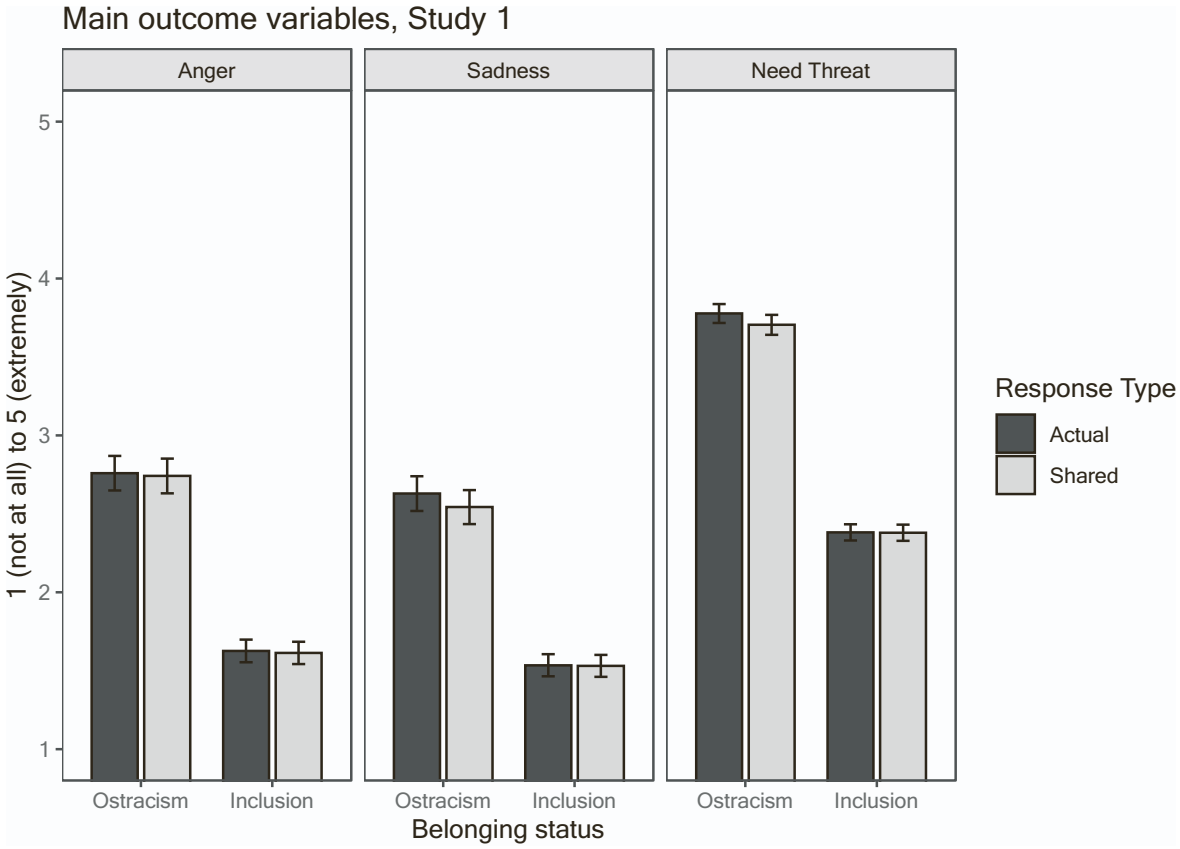


Fig. 3. Bar graph of the group means of all outcome variables in Study 1.
Note. The error bars represent one standard error from the mean. To see the relevant unstandardized regression coefficients for all the outcomes, one can see Tables 2, 3, 4 for Studies 1, 2, and 3 respectively.

[−0.069, −0.018], need threat: $B = -0.036$, $SE = 0.012$, $t = -2.99$, $p = .003$, 95 % CI [−0.060, −0.012]).

We did not find the same pattern of results for sadness: only the belonging status manipulation had a significant effect; the interaction term was not a significant predictor. The full set of results pertaining to the key dependent variables can be found in Table 2.

4.3. Study 1 discussion

The results of Study 1 provided some, albeit inconsistent, evidence for the downplaying hypothesis. Specifically, although ostracized (vs included) participants downgraded their anger and need threat reports while communicating them to the sources of their ostracism, we did not observe such a pattern for sadness ratings. In Study 1, we asked participants if they wanted to change their initial answers and presented them with their actual responses. To overcome any experimenter demand effects this decision may have introduced, in the subsequent studies we manipulated the response type with a between-subject design.

4.4. Study 2 results

We predicted a significant interaction effect between belonging status (ostracism vs inclusion) and response type (actual vs shared) term. More specifically, we predicted that ostracized participants in the shared response condition (vs actual response condition) would either exaggerate or downplay their emotional responses. We had no a priori reasoning about which of these two hypotheses would be supported. We expected no significant difference between actual versus shared response type condition for included participants. This study's design, hypotheses, and analysis plan were pre-registered.

Table 2
Results of regression analyses for the main dependent variables in Study 1.

Outcome & predictor	*b*	*b* 95 % CI [LL, UL]	*t*	*SE*	Fit
Anger					
(Intercept)	2.06***	[1.94, 2.19]	45.80	0.06	
Belonging	−1.05***	[−1.30, −0.81]	−11.72	0.13	
Response	−0.04*	[−0.08, −0.01]	−0.50	0.02	
Belonging *Response	0.09*	[0.02, 0.16]	0.46	0.04	
					Pseudo-R^2 (fixed effects) = 0.22
Sadness					
(Intercept)	2.18***	[2.06, 2.31]	48.01	0.06	
Belonging	−1.13***	[−1.38, −0.88]	−12.42	0.13	
Response	−0.01	[−0.05, 0.03]	−0.16	0.02	
Belonging *Response	0.01	[−0.07, 0.09]	0.03	0.04	
					Pseudo-R^2 (fixed effects) = 0.24
Need threat					
(Intercept)	3.06***	[2.99, 3.14]	78.113	0.04	
Belonging	−1.36***	[−1.51, −1.21]	−17.33	0.08	
Response	−0.04*	[−0.07, 0.01]	−2.25	0.02	
Belonging *Response	0.07*	[0.01,0.14]	2.09	0.03	
					Pseudo-R^2 (fixed effects) = 0.54

Note. *b* represents unstandardized regression weights. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively.
* $p < .05$.
*** $p < .001$.

4.4.1. Outcome variables

See Fig. 4 for a bar graph of the group means for each condition on all the outcome variables in Study 2. Both belonging status and response type had a significant main effect on reported anger. Ostracized participants reported feeling angrier than the included participants. Moreover, participants in the actual response condition reported feeling angrier than the participants in the shared response condition. The interaction term was not significant.

For reports of sadness, only the main effect of belonging status was significant. Ostracized participants reported feeling sadder, than the included participants. The main effect of response type and the interaction term were not significant.

Concerning hurt feelings, the main effects of belonging status and response type were significant. Ostracized participants reported feeling more hurt than the included participants. Moreover, participants in the actual response condition reported feeling more hurt than the participants in the shared response condition. The interaction term was not significant.

Ostracized (compared to included) participants reported higher need threat. Neither the main effect of response type nor the interaction term had a significant effect on reported need threat. For a full set of results with regards to the key outcome variables, see Table 3.

4.5. Study 2 discussion

Results of Study 2 offered no support for the gaming hypothesis. Participants in the ostracism conditions did not engage in more/less gaming than the participants in the inclusion conditions. As we briefly touched upon in the Design and Procedure section, being ostracized reduces cognitive and self-regulatory capacities (Baumeister et al., 2005, 2002). Thus, asking participants to communicate their feelings to the sources right after being ostracized may have hindered their ability to consider strategic alternatives. This may explain why ostracized participants were similar to included participants in communicating their emotions. To rule out this explanation, in the following study we introduced a delay between the first round of ball-tossing and responding to questionnaires (thus, both actual and shared responses were delayed).

4.6. Study 3 results

For Study 3, we predicted either a main effect of response type or an interaction between response type and belonging status. More specifically, based on the results of Study 2, in Study 3 we predicted that targets would downplay their emotions instead of exaggerating them. This study's design and hypotheses were pre-registered.[4]

4.6.1. Outcome variables

See Fig. 5 for a bar graph of the group means for each condition on all the outcome variables in Study 3. As in Study 1 and Study 2 we again observed main effects of belonging on all our outcomes variables. Ostracized participants reported feeling more anger, more sadness, and more hurt feelings compared to included participants. However, we observed no evidence that actual and shared responses significantly

[4] In Study 3 we pre-registered using a MANCOVA or an ANOVA to test our hypotheses. However, in order to be more consistent with Study 2 we report multiple linear regression analyses. Results of a mixed ANOVA yields similar results.

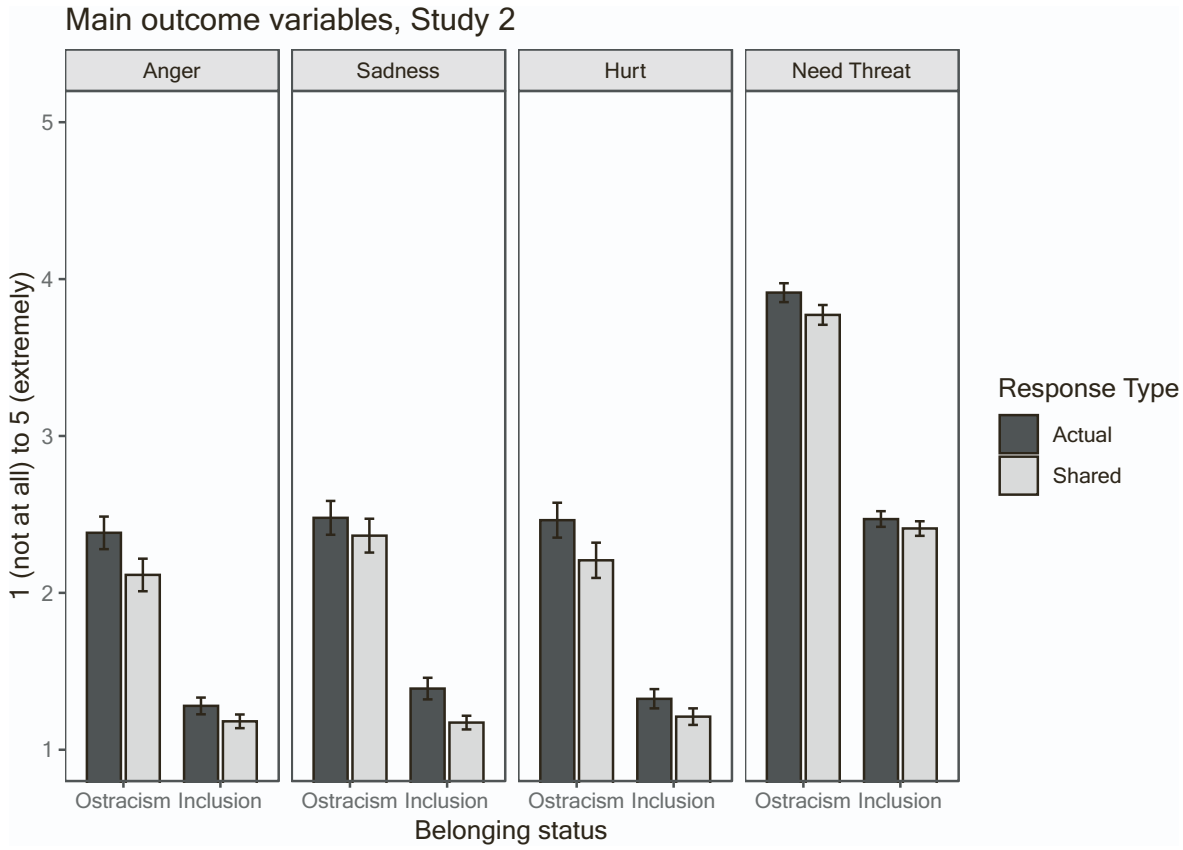


Fig. 4. Bar graph of the group means of all outcome variables in Study 2.
Note. The error bars represent one standard error from the mean.

differed. That is, after a delay, ostracized participants still felt more negatively than included participants, but they did not strategically communicate this to others.

Replicating the effects of ostracism, ostracized participants reported higher need threat than included participants. However, there was no evidence that actual and shared responses significantly differed. Full set of results pertaining to the regression analyses can be seen in Table 4.

4.7. Study 3 discussion

Findings of Study 3 did not offer support for any of the gaming hypotheses. Participants in the ostracism condition were not more likely to exaggerate or downgrade their emotions when communicating to the sources. This pattern of results is similar to the results obtained in Study 2. This pattern rules out the alternative explanation that ostracized participants in Study 2 truthfully communicated only because they experienced dampened cognitive or self-regulatory capacities after experiencing ostracism. Put differently, ostracized participants were not more likely to downgrade or exaggerate their emotions when communicating it to the sources both in the reflexive stage (observed in Study 2) and in the reflective stage (observed in Study 3).

4.8. Bayesian analyses

The results of the three studies offered little evidence for the idea that targets would game their emotions to the sources. A visual summary of all the frequentist regression analysis conducted in Studies 1 to 3 can be seen in Fig. 6. A visual inspection of this figure makes it clear that ostracized participants were not more or less likely to downplay or exaggerate their emotions compared to included participants (no significant interaction effect). However, the frequentist statistics approach did not allow us to conclude whether the data offers support for the null hypothesis (i.e., no gaming) or not. Therefore, we conducted a set of Bayesian analyses. We investigated under which model (i.e., one with or one without response type as a predictor) the observed data would be more probable. To quantify support for our model comparison we relied on the Bayesian information criterion (BIC) approximation that is used for comparing frequentist models (Wagenmakers, 2007). This method enabled us to acquire Bayes Factors (*BF*) indicating which model is favored more based on the observed data. The result of this analysis indicates whether the data is more probable under one model over the other and, thus, provides more information on how to interpret the null results of the frequentist approach. For each study we compared the model with only belonging status (M_0) with the model with belonging status, response type and their interaction term (M_1). The resulting Bayes Factor (BF_{10}) from this analysis informs whether the data is more probable under the latter model including the response type as a predictor or not. BF_{10} values higher than 1 offers more support for M_1 (i.e., support against M_0), and values smaller than 1, offers more support for M_0 (i.e., support against M_1). If the results reveal more support against M_1 (or more support in favor of M_0), this means that the observed data was more probable for when the participants did not game their emotions (i.e., no effect of response type on how participants reported their emotions).

For Study 1, results revealed more support against the model with the response type for anger $BF_{10} = 0.002$, sadness, $BF_{10} < 0.001$, and for need threat, $BF_{10} < 0.001$. For Study 2, the results similarly revealed more support against the model with the response type for anger, $BF_{10} = 0.04$, for sadness, $BF_{10} = 0.014$, for hurt feelings, $BF_{10} = 0.022$, and for need threat, $BF_{10} = 0.012$. For Study 3, the results revealed that more support against the model with the response type for anger, $BF_{10} = 0.008$, for sadness, $BF_{10} = 0.009$, for hurt feelings, $BF_{10} = 0.014$, and for need threat, $BF_{10} = 0.011$. Taken together, the results of these tests across all three studies provide more support against Model 1 – i.e., the

Table 3
Results of regression analyses for dependent variables of interest in Study 2.

Outcome & predictor	*b*	*b* 95 % CI [LL, UL]	t	*SE*	Fit
Anger					
(Intercept)	1.74***	[1.66, 1.82]	43.18	0.04	
Belonging	−1.02***	[−1.18, −0.86]	−12.64	0.08	
Response	−0.18*	[−0.34, −0.03]	−2.28	0.08	
Belonging *Response	0.17	[−0.15, 0.49]	1.05	0.16	
					$R^2 = 0.23$, $F(3,559) = 54.92$**
Sadness					
(Intercept)	1.85***	[1.77, 1.94]	42.98	0.04	
Belonging	−1.14***	[−1.31, −0.97]	−13.23	0.09	
Response	−0.17	[−0.33, 0.00]	−1.92	0.09	
Belonging *Response	−0.10	[−0.44, 0.24]	−0.60	0.17	
					$R^2 = 0.24$, $F(3,559) = 58.99$**
Hurt					
(Intercept)	1.80***	[1.71, 1.89]	40.83	0.04	
Belonging	−1.07***	[−1.24, −0.89]	−12.10	0.09	
Response	−0.19*	[−0.36, −0.01]	−2.10	0.09	
Belonging *Response	0.14	[−0.20, 0.49]	0.80	0.18	
					$R^2 = 0.21$, $F(3,559) = 50.04$***
Need threat					
(Intercept)	3.14***	[3.09, 3.20]	113.61	0.03	
Belonging	−1.43***	[−1.51, −1.29]	−25.36	0.06	
Response	−0.10*	[−0.21, 0.01]	−1.83	0.06	
Belonging *Response	0.08	[−0.14, 0.30]	0.74	0.11	
					$R^2 = 0.53$, $F(3,559) = 215.28$***

Note. *b* represents unstandardized regression weights. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively.
* $p < .05$.
** $p < .01$.
*** $p < .001$.

model that includes the response type as a predictor, and more support for model 0 – i.e. the model that only included belonging as a predictor. Therefore, we take this as evidence for the observed data being more probable for when the participants did not game their emotions as a function of belonging status.[5]

[5] We conducted an additional set of Bayesian analyses in which we ran the Bayesian alternative of the regression analyses reported in each study. Results of these analyses also offered more support for the conclusion that participants did not game their emotions. More details and full set of results can be found in the supplementary materials.

5. General discussion

In the current paper, we investigated whether ostracized targets game their emotions to sources more than included individuals. We proposed that people might exaggerate or downplay their emotions to the sources. We tested these two competing hypotheses in a series of three experiments using a well-validated experimental paradigm of ostracism (Williams & Jarvis, 2006), study designs for researching gaming emotions (Andrade & Ho, 2009), and widely used measures of the outcome variables (Williams, 2009). Our results replicated the large body of work on ostracism: Social ostracism hurts more than social inclusion. Moreover, we found some encouraging evidence, albeit inconsistent, for our predictions in our exploratory Study 1. Next, we conducted two confirmatory studies. Study 2 provided evidence that people may change their communication but did not provide any evidence that this is more or less the case as a function of belonging. Study 3 did not provide evidence that people may change their communication, and thus also not as a function of belonging. Importantly, a quick look at Fig. 6 reveals that the interaction effects (of belonging status and response type) across three studies are consistently around zero. This suggests that the interaction effect is trivial and has no practical meaning. Further supporting this conclusion, Bayesian approaches across all three studies converge in that participants did not game their emotions when communicating with sources.

We measured the gaming of emotions both at the immediate (Studies 1 and 2) and the delayed stage (Study 3). The results of the three studies converged to a large extent in that participants did not game their emotions, regardless of the stage in which they were given the possibility to do so. This pattern of results rules out the explanation that targets did not game their emotions in Studies 1 and 2 because they were still dealing with the initial hurt of ostracism and could not focus on instrumental or social motives that could help them communicate a certain message to the sources. Rather, these patterns of results further support the conclusion that participants in this online ball-tossing game did not choose to game their emotions and instead communicated to the sources truthfully.

We also conducted a set of Bayesian analyses. Results of these analyses provided strong evidence against the model that incorporates response type as a predictor. That is, the current data is more probable under the assumption that participants just communicated how they felt after being ostracized (vs included) to the sources (or privately) without strategically misrepresenting their emotions and needs regardless of how (between- versus within-subject) or when (immediate or delayed) they were asked to do so. We think that the combination of the frequentist and Bayesian approaches provides evidence that targets of ostracism choose to communicate their emotions and needs truthfully.

As an additional test of the gaming of emotions hypotheses, we investigated the idea that participants may have engaged in differentiated patterns of gaming. This is the idea that some participants might have exaggerated their feelings while others downplayed them (i.e., differentiated gaming), hence cancelling each other out in the aggregate level. We explored this possibility using the data from Study 3 but found no evidence in support of differentiated gaming (see section on exploratory analyses in the Supplementary Materials for the results of this analysis). These exploratory analyses provided more evidence that participants did not game their emotions and needs but choose to communicate them truthfully.

5.1. Possible reasons why ostracized people do not game emotions

What does the evidence against gaming emotions mean for emotion communication in this context? We speculate this may have happen for at least three different reasons. First, participants may have thought that the sources would be unresponsive and not be concerned about the targets emotional state. That is, even if participants think gaming emotions is useful in general, they may have thought that the sources

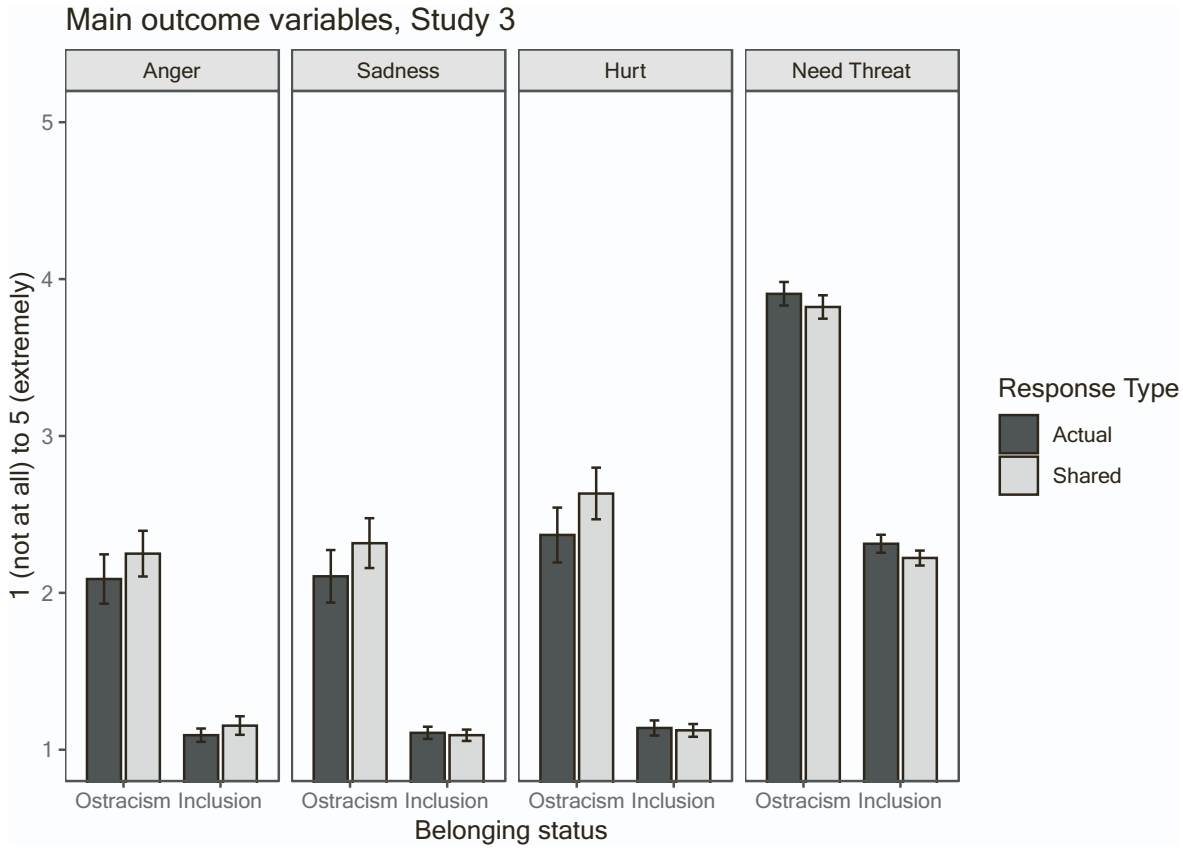


Fig. 5. Bar graph of the group means of all outcome variables in Study 3.
Note. The error bars represent one standard error from the mean.

would be unresponsive to their communication. This may have diminished their motivation to increase the effectiveness of communicated emotion by gaming it. Second, participants themselves may have been less concerned about the social outcomes of shared emotions. Previous research suggests that individuals tend to inhibit less and self-disclose more when online compared to in-person social interactions (e.g., Suler, 2004). Finally, a third possibility is that participants may have felt that they would be able to convey whatever they wanted to convey without gaming their emotions. That is, they may have thought that the level of emotion they experienced would be enough to signal what they think about the situation to the sources. Put differently, they may have seen truthful communication as a viable option. Future work can investigate these various possibilities further by incorporating measures that tap into people's beliefs surrounding the impact of communicated emotions on the desired outcomes (e.g., the belief whether they would be re-included if they the sources would believe that they were not hurt).

Our design choices with regards to communication of emotions paralleled previous work on gaming emotions that showed that people game their emotions to attain better financial payoffs (Andrade & Ho, 2009; van Dijk et al., 2018). One main difference between these prior studies and the current study is that while these prior studies focus on people's financial standing (i.e., not being satisfied with the payoff and trying to attain a better financial payoff), the current study focuses on people's social standing (i.e., not being satisfied with one's inclusion status and potentially trying to attain a better social outcome – inclusion). It is possible that the financial incentive inherent in negotiation studies may be the motivating factor for observed gaming of emotions in such studies. The incentive of inclusion in the online ball-tossing game may not be enough for people to engage in strategic considerations with regards to how they express their emotions. Future work can test this possibility by incorporating financial incentives in this online ball-tossing game (for example by using Cyberball: van Beest & Williams, 2006).

5.2. Implications of not gaming emotions after ostracism

Across three studies we observed no consistent evidence of gaming for ostracized participants. That is, the targets of ostracism (vs included participants) were not more likely to exaggerate or downplay their emotions when they thought this would be communicated to the other players. One potential interpretation of this finding is that participants did not feel the need to alter their emotions and that they wanted to communicate truthfully. This would mean that when people are ostracized in a setting such as Cyberball, they might want to tell the others, truthfully, how they felt during the game. This has implications for how targets of ostracism are perceived and treated when they talk about their experience. People tend to think that ostracism is less harmful than other types of mistreatment (e.g., O'Reilly et al., 2014) and underestimate the social pain of the targets (Nordgren et al., 2011). Our results, then, might suggest the plight of the target to be taken as truthful and not as a misrepresentation of their emotional state.

While designing our studies we paid close attention to incorporating previously established paradigms and measures. We aimed to test the established gaming emotions hypothesis as a response to not financial but social outcomes. To that end, we modeled our design based on previous work on gaming emotions (Andrade & Ho, 2009; van Dijk et al., 2018) and used a well-established ostracism paradigm with associated measures (Williams, 2009; Williams & Jarvis, 2006). By doing so, we ensured that our design and paradigm were similar to previous work that investigated gaming emotions and social ostracism. This ensured that the findings we obtained are valid and relevant to researchers who rely on these typical operationalization and methods of ostracism and gaming emotions. Nevertheless, we feel future research might also benefit from studying emotional communication after ostracism in other

Table 4
Results of regression analyses for dependent variables of interest in Study 3.

Outcome & predictor	*b*	*b* 95 % CI [LL, UL]	*t*	*SE*	Fit
Anger					
(Intercept)	1.65***	[1.54, 1.75]	30.37	0.05	
Belonging	−1.05***	[−1.26, −0.83]	−9.65	0.11	
Response	0.11	[−0.10, 0.33]	1.03	0.11	
Belonging *Response	−0.10	[−0.53, 0.33]	0.46	0.22	
					$R^2 = 0.28$, F (3,243) = 31.58***
Sadness					
(Intercept)	1.66***	[1.54, 1.77]	29.37	0.06	
Belonging	−1.11***	[−1.33, −0.89]	−9.86	0.11	
Response	0.10	[−0.12, 0.32]	0.87	0.11	
Belonging *Response	−0.23	[−0.67, 0.22]	−1.01	0.23	
					$R^2 = 0.29$ F (3,243) = 33.11***
Hurt					
(Intercept)	1.82***	[1.70, 1.93]	30.65	0.06	
Belonging	−1.37***	[−1.60, −1.14]	−11.56	0.12	
Response	0.12	[−0.11, 0.36]	1.05	0.12	
Belonging *Response	−0.28	[−0.75, 0.19]	−1.18	0.24	
					$R^2 = 0.36$ F (3,243) = 45.61***
Need threat					
(Intercept)	3.07***	[3.00, 3.13]	96.46	0.03	
Belonging	−1.60***	[−1.72, −1.47]	−25.12	0.06	
Response	−0.09	[−0.21, 0.04]	−1.38	0.06	
Belonging *Response	−0.01	[−0.26, 0.24]	−0.05	0.13	
					$R^2 = 0.73$, F (3.243) = 210.83***

Note. Here, we report the regression analyses on the delayed measures of reported emotions and need satisfactions. *b* represents unstandardized regression weights. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively.
*** $p < .001$.

settings as discussed above. Additionally, although using single-item measures of distinct emotions is not uncommon in ostracism research (Çelik et al., 2013; Petsnik & Vorauer, 2020), future research could also benefit from relying on multiple-item measures of distinct emotions (for example, see: Harmon-Jones et al., 2016) to increase the reliability of measured emotions.

5.3. Limitations and additional future directions

One limitation is that we focused on how targets communicated with sources. Even though targets of ostracism might be motivated to game their emotions, they might not be motivated to do so to the sources of their suffering. If participants do not think that the others will care, they might just be unwilling to engage in any emotional communication (Von Culin et al., 2018). Would, then, the targets of ostracism be more likely to game their emotions to people other than the sources –i.e., an innocent bystander, or their therapist? Future research can investigate this question by including an observer in the Cyberball paradigm (i.e., a player that is present during the game but is not expected to participate in the game).

Another limitation is that we studied ostracism by strangers. In all studies participants played the game with other randomly selected participants whom they had no chance of meaningful face-to-face interaction. This meant that they played the game and were ostracized by total strangers which targets may not see as likely affiliation partners (Dewall & Richman, 2011). However, people also get ostracized by people they know, i.e., their friends, family members, and their colleagues. Would people be more motivated to misrepresent their emotions to people whom they know beforehand? For example, if a target exaggerates how sad they feel about being ostracized to their friend would be more likely to instill empathetic concern (Batson et al., 2007). On the other hand, would targets be more likely to downplay their sadness so as not to appear weak (Spokas et al., 2009) if it is their friend with whom they are sharing their hurt? Future research can investigate this question using paradigms that allow for observing daily interactions (e.g., a diary study) to gain further insights into the various audiences and how they impact the target's motivation to communicate their emotions.

We want to end this section with a word of caution for those who would seek to replicate our current approach using a substantially larger sample. While this can be a possibility, we do not believe this is a fruitful direction. A quick look at Fig. 6 reveals that the interaction effects we observed across three studies are constantly around zero. This suggests that the interaction effect is trivial and has no practical meaning. We thus caution researchers against investing a substantial amount of research resources on detecting such a trivial effect.

6. Conclusion

Past work shows that people game their emotions to improve their outcomes in a variety of contexts (e.g., in a financial negotiation, at work, or during social interactions in daily life). In the current paper, we evaluated the possibility of gaming emotions in the context of ostracism. Using well-established paradigms and measures in ostracism research, we conducted three studies investigated whether targets of ostracism would game their emotions to those who are responsible for the fact that they are ostracized. Across studies, we found little evidence that people game their emotions to the sources after being socially ostracized, suggesting that people truthfully communicate their emotions with the sources.

Declaration of competing interest

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors. The authors indicate no conflict of interest. The line of studies received ethical approval from the Ethical Review Board of Tilburg University, The Netherlands (reference number: EC-2018.2017.103a). All data, analysis scripts and pre-registration files are available online in a publicly accessible online repository (https://osf.io/7vpqu/).

Data availability

I have shared a link to my data/code/preg files within the manuscript.

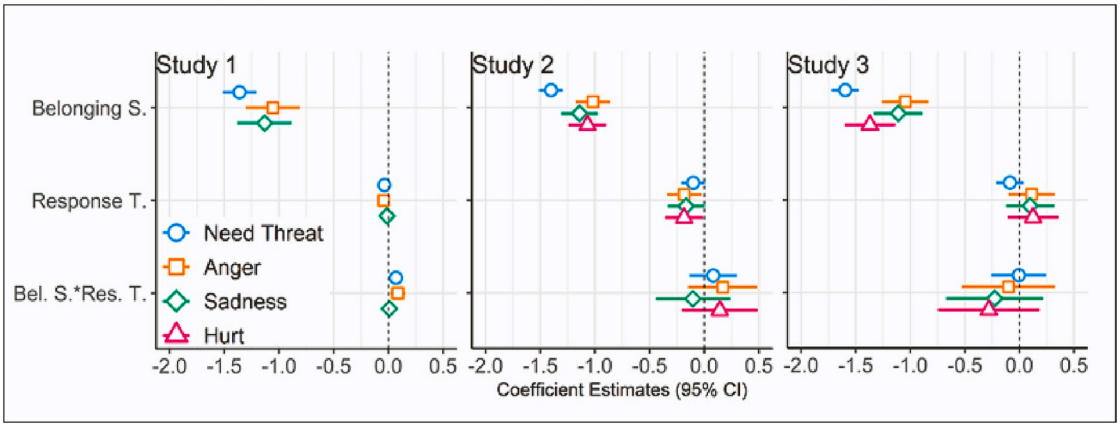


Fig. 6. Visual summary of the regression analysis results of main outcome variables in Studies 1, 2, and 3.
Note. Visual summary of regression coefficients and associated 95%CI for the regression analyses investigating the effect of belonging status and response type on reported emotions and need threat (Studies 1, 2, and 3).

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.actpsy.2023.103956.

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