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When Silence Is Not Golden: Why Acknowledgment Matters Even When Being Excluded

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Abstract

Following ostracism, individuals are highly sensitive to social cues. Here we investigate whether and when minimal acknowledgment can improve need satisfaction following an ostracism experience. In four studies, participants were either ostracized during Cyberball (Studies 1 and 2) or through a novel apartment-application paradigm (Studies 3 and 4). To signal acknowledgment following ostracism, participants were either thrown a ball a few times at the end of the Cyberball game, or received a message that was either friendly, neutral, or hostile in the apartment-application paradigm. Both forms of acknowledgment increased need satisfaction, even when the acknowledgment was hostile (Study 4), emphasizing the beneficial effect of any kind of acknowledgment following ostracism. Reinclusion buffered threat immediately, whereas acknowledgment without reinclusion primarily aided recovery. Our results suggest that minimal acknowledgment such as a few ball throws or even an unfriendly message can reduce the sting of ostracism.

Keywords

ostracism, rejection, social exclusion, acknowledgment

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Ostracism, social exclusion, and rejection[1] are highly aversive, though commonly occurring experiences. While some rejection experiences may be unnecessary or even cruel (Rudert, Reutner, Greifeneder, & Walker, 2017), others are inevitable, for instance, in selection procedures in which many individuals apply for a job or an apartment, but only one person can get accepted. Given the amount of pain and distress that often goes with these experiences (Williams, 2009), it is worthwhile to explore the boundary conditions that make an exclusion experience more bearable for the excluded person. Because ostracism threatens the existential need of acknowledgment (Williams, 2009), we predict that any kind of acknowledgment, even negative in tone, would aid in decreasing the negative experience of ostracism.

In line with both Sociometer Theory (Leary, Tambor, Terdal, & Downs, 1995) and research showing that social exclusion increases sensitivity to social cues (e.g., Pickett, Gardner, & Knowles, 2004), here we argue that an excluded individual's needs are highly reactive to even the most minimal inclusionary and existential cues. More specifically, we postulate that these minimal cues suffice to appreciably mend the sting of exclusion. Importantly, this does not only apply to cues signaling potential for reinclusion, but also to every sign of acknowledgment that shows the individual that she/he is unworthy of attention and invisible.

Being Excluded

A plethora of research has described individuals' high sensitivity to even the smallest signs of social exclusion (e.g., Gerber & Wheeler, 2009; Hartgerink, van Beest, Wicherts, & Williams, 2015; Leary & Downs, 1995; Leary et al., 1995; Pickett & Gardner, 2005; Pickett et al., 2004; Williams, 2009). This heightened sensitivity is theorized to be an evolutionarily adaptive response to detect the earliest and most minimal warning signs that indicate that an individual's inclusionary status in a group is threatened (Kerr & Levine, 2008; Williams, 2009). Immediate detection enables individuals to quickly adapt their behavior to be more compatible with the group's expectations or make corrections for norm violations (Kerr & Levine, 2008).

Many studies provide evidence that minimal forms of exclusion threaten individuals' fundamental needs of belongingness, self-esteem, control, and meaningful existence

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(Williams, 2009). Significant increases in need threat have been demonstrated when participants did not receive a ball during a virtual ball throwing game with strangers (Williams, Cheung, & Choi, 2000), when participants were left out-of-the-loop on information others shared (Iannone, Kelly, & Williams, 2016; Jones & Kelly, 2010), or even when participants felt that they were "being looked as at though air" by a stranger on the street (Wesselmann, Cardoso, Slater, & Williams, 2012).

Being (Re)included

Comparatively little research has focused on factors that make ostracized individuals feel *better*. As a notable exception, one study showed that aggression following ostracism was gradually reduced depending on the number of people who had previously included the participant (DeWall, Twenge, Bushman, Im, & Williams, 2010). Another study found that an episode of inclusion following a previous ostracism episode fully ameliorated the sting of ostracism (Tang & Richardson, 2013). This inclusion episode, however, lasted as long as the previous ostracism episode, so participants likely assumed that they were fully reincluded by the end of the game, or that there was some technical malfunction for the first half of the game. Thus, it seems that the sting of ostracism can be mended through a substantial amount of positive interaction. This is consistent with current theorizing; ostracized individuals are motivated to restore their threatened needs, and achieving full reinclusion is a possible way to do so (Williams, 2007).

In many real-life situations, however, ostracized individuals are not fully reincluded right away. Instead, individuals might be reincluded on probation, or still be formally excluded, but receive some signals that future reinclusion might be possible. This raises the question of how individuals react to such ambiguous and minimal cues. Are cues that signal a minimum of acknowledgment sufficient to improve individuals' need satisfaction after ostracism? Or, because ostracism is such a negative experience, does the experienced amount of exclusion needs to be matched by a substantial amount of inclusion? In the tradition of research that has aimed to identify *the minimal exclusionary cues* that make individuals feel threatened (Kassner, Wesselmann, Law, & Williams, 2012; Zadro, Williams, & Richardson, 2004), we investigate the *minimal inclusionary and existential cues* that can help repair or soften the blow of ostracism. Though it may not feel as if the ostracism had never occurred, such cues may nonetheless lead to a detectable improvement relative to being ignored altogether.

Sensitivity to Minimal Inclusionary Cues

After being ostracized, individuals are usually motivated to be reincluded and thus direct resources toward processes that facilitate this goal (Shilling & Brown, 2016). Whereas it is highly important for individuals to be sensitive to exclusionary cues that signal the presence of threat, it might also be important to be sensitive to *inclusionary cues* that signal how severe the threat is. An exclusion experience followed by many inclusionary cues might represent a relatively weak threat that individuals can easily deal with. In contrast, severe exclusion leaving the individual completely shut out might require more drastic measures, especially if individuals need to get others to even notice them in the first place. Being sensitive to these differences appears crucial, given that an excluded individual who desires reinclusion should behave as normatively as possible (Carter-Sowell, Chen, & Williams, 2008). Reacting to exclusion inappropriately (by either dismissing a severe exclusion or reacting with strong aggression to a slight exclusion) is likely to lower one's chances of getting reincluded. In line with this reasoning, literature such as Sociometer Theory (Leary & Downs, 1995; Leary et al., 1995) repeatedly emphasized the high sensitivity of individuals for all kinds of social information signaling changes to their inclusionary status.

Whereas Sociometer Theory focuses on negative changes to one's inclusionary status, several studies demonstrate that following an ostracism experience, sensitivity to positive social information is amplified (Pickett & Gardner, 2005). For instance, excluded individuals are better in detecting smiling faces (DeWall, Maner, & Rouby, 2009) and distinguishing between different types of facial expressions, vocal tones, and smiles (Bernstein, Young, Brown, Sacco, & Claypool, 2008; Pickett et al., 2004; Sacco, Wirth, Hugenberg, Chen, & Williams, 2011); moreover, they have a better memory for social events (Gardner, Pickett, & Brewer, 2000). This heightened sensitivity most likely occurs because excluded individuals are highly motivated to achieve future (re)inclusion and to avoid further exclusion experiences. Hence, we reasoned that individuals would be highly susceptible to even the smallest inclusionary cues during an ostracism episode.

Beyond Reinclusion: The Importance of Mere Acknowledgment

In the present research, we investigate two types of cues: (a) an individual being barely reincluded after an episode of ostracism and (b) an individual not being reincluded, but still receiving some minimal form of acknowledgment. We expect that both kinds of cues will aid in mending the sting of exclusion compared with being excluded and ignored altogether. This is because even the most minimal forms of acknowledgment signal that one's existence matters (Wesselmann et al., 2012). The idea that ignored individuals are motivated to reassure themselves of the importance of their own existence has repeatedly been emphasized in the ostracism literature (e.g., Williams, 2009), but also can be found in other theories, like Terror Management Theory (Pyszczynski, Greenberg, Solomon, Arndt, & Schimel, 2004) or the Meaning

Maintenance Model (Heine, Proulx, & Vohs, 2006). In general, these theories predict that threatening events cause anxiety because they threaten one's perception of being a valuable individual in a meaningful universe. Ostracism, also referred to as "social death," poses such an existential threat (Williams, 2009). As James eloquently wrote,

> If no one turned round when we entered, answered when we spoke, or minded what we did, but if every person we met "cut us dead," and acted as if we were non-existing things, a kind of rage and impotent despair would ere long well up in us, from which the cruelest bodily tortures would be a relief; for these would make us feel that, however bad might be our plight, we had not sunk to such a depth as to be unworthy of attention at all. (James, 1890, pp. 293-294)

We propose that minimal acknowledgment does not even have to be inherently positive to have a beneficial effect on an individual's need satisfaction. Any kind of acknowledgment implies that others, at the very least, recognize one's existence. There are some findings in previous literature indicating that this might be even true for highly negative forms of acknowledgment: For instance, correlational studies in the workplace and at schools have found self-reported ostracism episodes to have a stronger negative impact on participant's well-being than harassment or bullying episodes (O'Reilly, Robinson, Berdahl, & Banki, 2015; Saylor et al., 2012), and individuals who were ostracized reported worse need satisfaction than individuals who were insulted and argued with (Zadro, Williams, & Richardson, 2005). Interviews with victims of long-term ostracism indicate repeatedly that they would prefer physical abuse to being fully ostracized and ignored (Williams, 2009).

Additionally, we were interested how both minimal reinclusion as well as acknowledgment without reinclusion might affect different stages of ostracism. The temporal need threat model of ostracism (Williams, 2009) distinguishes between a *reflexive stage*—immediate threat reaction at the onset of ostracism, and a subsequent *reflective stage*—making sense, coping, and recovering from ostracism. Minimal inclusionary cues that offer immediate hope to inclusion may immediately affect reflexive reactions; mere acknowledgment might need more time to process and therefore affect recovery in the reflective stage.

We propose and test for the *Minimal Acknowledgment Hypothesis*: Even the most minimal inclusionary or existential cues that signal acknowledgment by others can help to mend the sting of an ostracism episode. We test this proposition in four studies, two investigating the effects of *acknowledgment through brief reinclusion* in the Cyberball game and two testing the effect of *minimal acknowledgment without reinclusion* in a newly developed paradigm of apartment-application.

Table 1. Schedule of Cyberball Throws for Each Condition in Study 1.

Condition	Throws 1-10	Throws 11-20	Throws 21-30
Full inclusion	3	3	3
Full ostracism	0	0	0
Reinclusion	0	0	3

Study 1

Participants

We randomly assigned 100 introductory psychology students (M_{age} = 19.69, SD = 1.22, 65% male) to one of four conditions: full inclusion, full ostracism, reinclusion (described below), and late ostracism.[2] We did not conduct an a priori power analysis; yet prior meta-analytic evidence suggested that 25 participants in each condition is an adequate number to start with (Hartgerink et al., 2015; VanVoorhis & Morgan, 2007).

Materials and Procedure

We manipulated ostracism with the Cyberball paradigm (Williams et al., 2000). Participants played a three-person, 30-throw online-ball tossing game with two other ostensible players, who were in fact computer programmed. In the *full-inclusion* condition, participants received one third of throws, spread throughout the game. In the *full-ostracism* condition, participants received no throws for the entire game. In the *reinclusion* condition, participants received none of the first 20 throws, but one third (three) of the final 10 throws (see Table 1). These three ball throws represent minimal reinclusion, because three throws neither provide inclusion proportionate to the amount of ostracism that occurred, nor provide an explanation or apology.

Following Cyberball, participants answered standard measures of *reflexive* basic need satisfaction of belongingness, self-esteem, control, and meaningful existence (12-item scale, α = .91), and mood (eight-item scale, α = .86), see Williams (2009). We also included three items about how (a) embarrassed, (b) uncomfortable, and (c) awkward participants felt during the game (1 = *not at all*, 5 = *extremely*). Following a nonrelated filler task (approximately 2-5 min), participants reported their *reflective* need satisfaction (α = .91), and mood (α = .90) using the same items as before, only this time oriented to how participants felt at that moment (e.g., "*right now* I feel rejected"). Finally, as a manipulation check, participants rated the extent to which they were ignored and excluded during the beginning, the middle, and the end of the game (all α = .98), and estimated the percentage of ball tosses that they received during the game.

Table 2. Means and Standard Deviations (in Parentheses) of Study 1.

	Full inclusion	Full ostracism	Reinclusion
Manipulation checks			
Ignored and excluded in beginning of game	2.00 (1.17)	4.72 (0.52)	4.40 (0.88)
Ignored and excluded in middle of game	1.90 (1.10)	4.72 (0.48)	3.54 (1.18)
Ignored and excluded in end of game	1.66 (1.06)	4.47 (0.48)	2.16 (1.10)
Estimated percent of throws received	29.48% (9.39)	0.28% (0.54)	12.48% (6.89)
Reflexive stage			
Need satisfaction	3.44 (0.70)	2.10 (0.54)	2.50 (0.70)
Mood	3.99 (0.60)	3.00 (0.75)	3.05 (0.79)
Embarrassment	1.08 (0.40)	2.56 (1.36)	2.28 (1.21)
Discomfort	1.48 (0.87)	2.72 (1.37)	2.64 (1.15)
Awkwardness	1.80 (1.04)	3.52 (1.30)	2.80 (1.16)
Reflective stage			
Need satisfaction	3.80 (0.47)	3.32 (0.72)	3.31 (0.84)
Mood	4.26 (0.57)	3.80 (0.94)	3.65 (0.83)

Note. Embarrassment, discomfort, and awkwardness were not measured in the reflective stage.

Results

Manipulation checks. At all three stages of the game, there were significant differences between the conditions on how excluded and ignored participants felt, smallest $F(2, 72) = 53.09$, $p < .001$, $\eta_p^2 = .60$. Tukey post hoc comparisons showed that reincluded participants reported being more ignored and excluded than fully included participants at the beginning and the middle of the game, smallest $t(72) = 6.07$, $p < .001$, $d = 1.39$, but not at the end of the game, $p = .140$. See Table 2 for means and standard deviations for manipulation checks and dependent variables.

Similarly, the manipulation affected the number of ball tosses participants estimated receiving, $F(2, 72) = 118.55$, $p < .001$, $\eta_\pi^2 = .77$, 90% confidence interval (CI) = [.68, .81]. Participants who were fully ostracized reported receiving fewer ball tosses than reincluded participants, $t(72) = -6.41$, $p < .001$, $d = -1.77$, who in turn reported receiving fewer tosses than included participants, $t(72) = -8.95$, $p < .001$, $d = -1.81$($M_{\text{Ostracism}} = .28$, $SD = .54$, $M_{\text{Reinclusion}} = 12.48$, $SD = 6.89$, $M_{\text{Inclusion}} = 29.48$, $SD = 9.39$).

Need satisfaction and affect. A 2 (stage: reflexive vs. reflective) × 3 (condition: full inclusion vs. full ostracism vs. reinclusion) multivariate analysis of variance (MANOVA) on need satisfaction and mood revealed a significant effect of stage, Wilks' $\lambda = .449$, $F(2, 71) = 43.51$, $p < .001$, $\eta_p^2 = .55$, 90% CI = [.45, .67], indicating that participants recovered during the delay. There was also a significant main effect of condition, Wilks' $\lambda = .639$, $F(4, 142) = 8.91$, $p < .001$, $\eta_p^2 = .20$, 90% CI = [.09, .28], which was qualified by the significant Stage × Condition interaction, Wilks' $\lambda = .808$, $F(4, 142) = 3.99$, $p = .004$, $\eta_p^2 = .10$, 90% CI = [.02, .16]. Follow-up univariate tests were conducted separately at the reflexive stage and the reflective stage (all means with standard errors are presented in Figure 1).

Reflexive stage. There was a significant effect of condition on reflexive need satisfaction, $F(2, 72) = 27.73$, $p < .001$, $\eta_p^2 = .44$, 90% CI = [.28, .54], and also on mood, $F(2, 72) = 15.17$, $p < .001$, $\eta_p^2 = .30$, 90% CI = [.14, .41]. Because our focal interest is on the effects of being reincluded, we conducted a planned contrast comparing reincluded participants to fully ostracized ones. Reinclusion significantly increased basic need satisfaction compared with full ostracism, $t(72) = 2.19$, $p = .032$, $d = .64$ ($M = 2.50$, $SD = .70$ and $M = 2.10$, $SD = .54$, respectively). However, reincluded participants still experienced lower needs satisfaction than fully included ones ($M = 3.44$, $SD = .70$), $t(72) = 5.07$, $p < .001$, $d = -1.34$.

Similarly, ostracized participants reported more negative mood ($M = 3.00$, $SD = .75$) compared with included participants ($M = 3.99$, $SD = .60$), $t(72) = 5.07$, $p < .001$, $d = -1.47$. Reincluded participants and fully ostracized participants did not differ regarding mood, $p = .807$.

Reflective stage. Group differences for need satisfaction remained even after the delay, $F(2, 72) = 4.08$, $p = .021$, $\eta_p^2 = .10$, 90% CI = [.01, .20], and mood, $F(2, 72) = 3.84$, $p = .026$, $\eta_p^2 = .096$, 90% CI = [.01, .20]. Fully ostracized participants recovered enough that they no longer had lower need satisfaction and mood than reincluded participants, largest $t(72) = .18$ $p = .983$. Compared with fully included participants, reincluded participants remained lower on need satisfaction, $t(72) = -2.50$, $p = .039$, $d = -.66$ ($M = 3.31$, $SD = .84$ and $M = 3.80$, $SD = .47$), and mood, $t(72) = -2.66$, $p = .026$, $d = -.72$ ($M = 3.65$, $SD = .83$ and $M = 4.25$, $SD = .57$).[3]

Embarrassment, discomfort, and awkwardness. There were significant effects of condition on each of these three states, smallest $F(2, 72) = 9.12$, $p < .001$, $\eta_p^2 = .20$, 90% CI = [.07, .32]. Central to the current research question, reinclusion was insufficient to alleviate embarrassment and discomfort,

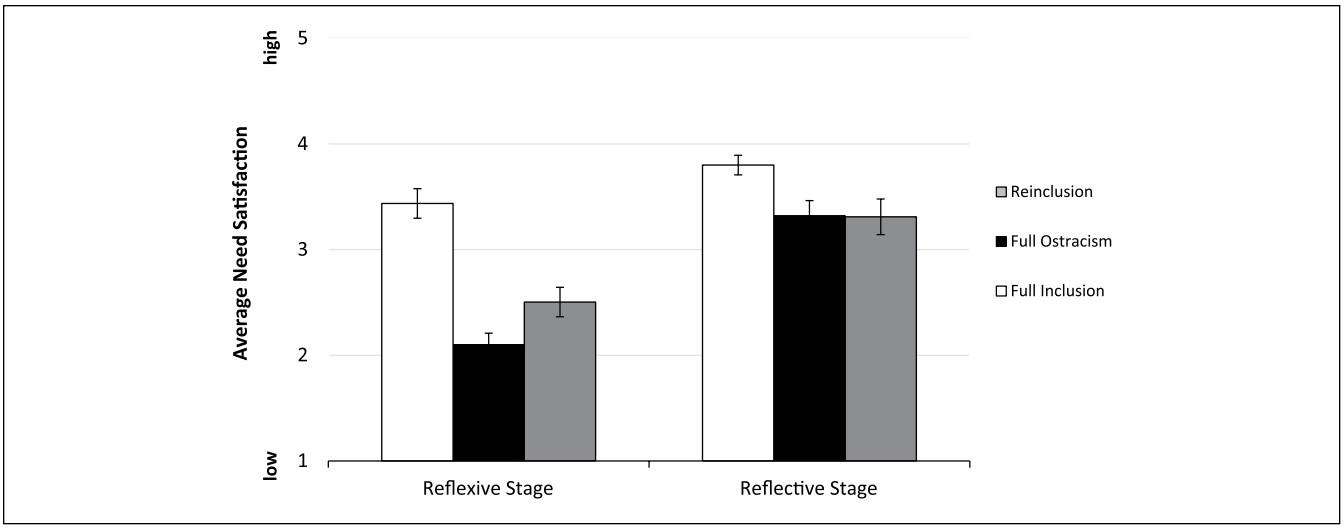

Figure 1. Reflexive and reflective basic needs satisfaction in fully included, fully ostracized, and reincluded participants in Study 1.
Note. Error bars represent standard errors of the mean.

relative to fully ostracized participants, largest $t(72) = -.92$, $p = .360$. Reinclusion significantly reduced feelings of awkwardness relative to fully ostracized participants, $t(72) = -2.18$, $p = .033$, $d = -.59$ ($M = 2.80$, $SD = 1.16$, $M = 3.52$, $SD = 1.30$, respectively).

Post hoc power analysis. A post hoc power analysis with G*Power (Faul, Erdfelder, Lang, & Buchner, 2007) for the main effect of the condition on need satisfaction yielded power of .99 for the reflexive stage, and power of .72 for the reflective stage. For the planned contrast comparing reflexive need satisfaction of reincluded to fully ostracized participants, the analysis yielded power of .60.

Discussion

Study 1 provides initial evidence for the minimal acknowledgment hypothesis by way of an inclusionary cue: relative to continuously ostracized participants, those who received three ball tosses in the end reported greater need satisfaction, and less awkwardness. These benefits were limited; reinclusion did not improve mood, or reduce embarrassment, or discomfort. The minor acknowledgment offered by the three throws was effective primarily in increasing basic needs. Additionally, the benefits of reinclusion occurred in the immediate reflexive stage, and had dissipated by the reflective stage, suggesting that reinclusion buffers especially the initial impact of ostracism.

Study 2

Study 2 is to replicate Study 1 and additionally test whether a more minimal form of acknowledgment, a single ball toss at the end, would be sufficiently reparative.

Table 3. Schedule of Cyberball Throws for Each Condition in Study 2.

Condition	Throws 1-10	Throws 11-20	Throws 21-30
Full inclusion	3	3	3
Full ostracism	0	0	0
Reinclusion	0	0	3
Minimal reinclusion	0	0	1 (out of the final three throws)

Participants

A total of 106 introductory psychology students ($M_{age} = 19.61$, $SD = 1.17$, 70.8% male) were randomly assigned to one of four conditions (see below). Given the effect sizes in Study 1, we would have liked to opt for a bigger sample. However, the study was conducted at the end of the semester and so we ran as many participants as was possible before the semester concluded.

Materials and Procedure

Materials and procedure were identical to Study 1, with two changes. First, we added a minimal-reinclusion condition, in which participants received only one of the final three throws, resulting in four conditions: *full inclusion*, *full ostracism*, *reinclusion*, *and minimal reinclusion* (see Table 3).

Second, in addition to need satisfaction (reflexive $\alpha = .92$, reflective $\alpha = .85$) and mood (reflexive $\alpha = .87$, reflective $\alpha = .89$), we assessed hostility and forgiveness toward the other players directly after the reflexive measures. Hostility was assessed with seven items (e.g., "I would like to insult the other players"; $\alpha = .80$) and forgiveness with 12 items (e.g.,

Table 4. Means and Standard Deviations (in Parentheses) of Study 2.

	Full inclusion	Full ostracism	Reinclusion	Minimal reinclusion
Manipulation checks				
Ignored and excluded in beginning of game	1.98 (0.91)	4.37 (1.03)	4.31 (0.91)	4.31 (1.04)
Ignored and excluded in middle of game	2.00 (0.94)	4.37 (0.98)	3.67 (0.99)	4.13 (1.02)
Ignored and excluded in end of game	1.69 (0.93)	4.37 (1.01)	2.09 (0.89)	2.57 (1.09)
Estimated percent of throws received	31.43 (8.30)	2.15 (4.19)	13.29 (7.33)	6.11 (4.64)
Reflexive stage				
Need satisfaction	3.68 (0.58)	1.97 (0.62)	2.56 (0.61)	2.27 (0.69)
Mood	4.03 (0.63)	2.89 (0.59)	3.12 (0.81)	3.15 (0.82)
Hostility	1.85 (0.68)	2.65 (0.76)	2.48 (0.82)	2.44 (0.82)
Forgiveness	4.24 (0.48)	3.55 (0.64)	3.66 (0.67)	3.85 (0.63)
Reflective stage				
Need satisfaction	4.04 (0.50)	3.72 (0.58)	3.57 (0.59)	3.86 (0.58)
Mood	4.47 (0.42)	4.18 (0.63)	3.97 (0.81)	4.15 (0.73)

Note. Hostility and forgiveness were not measured in the reflective stage.

"I harbor a grudge"; α = .86; McCullough, Worthington, & Rachal, 1997); all items were 5-point scaled (1 = *strongly disagree*; 5 = *strongly agree*).

Results

Manipulation checks. Condition significantly affected the perception of being ostracized at all three stages of the game, smallest $F(3, 102) = 30.63$, $p < .001$, $\eta_p^2 = .47$. Relative to fully ostracized participants, reincluded participants reported being less ignored and excluded at the end of the game, $M_{\text{FullOstracism}} = 4.37$, $SD = 1.03$, $M_{\text{Reinclusion}} = 2.09$, $SD = .89$, $t(102) = -8.43$, $p < .001$, $d = -2.26$, and marginally in the middle, $M_{\text{FullOstracism}} = 4.37$, $SD = .98$, $M_{\text{Reinclusion}} = 3.67$, $SD = .99$, $t(102) = -2.51$, $p = .064$, $d = -.69$, but not in the beginning of the game, $M_{\text{FullOstracism}} = 4.37$, $SD = 1.01$, $M_{\text{Reinclusion}} = 4.31$, $SD = .91$, $p = .998$. Minimally-reincluded participants showed a similar pattern; compared with those who were fully ostracized, they reported being less ignored and excluded at the end of the game, ($M = 2.57$, $SD = 1.09$), $t(102) = -6.64$, $p < .001$, $d = -1.64$, but not the middle ($M = 4.13$, $SD = 1.02$) or beginning ($M = 4.31$, $SD = 1.05$), largest $t(102) = -.87$, $p = .821$. Reinclusion and minimal reinclusion did not differ from each other at any stage of the game, largest $t(102) = -1.80$, $p = .278$. Examining the estimated percentage of ball tosses received, included participants ($M_{\text{Inclusion}} = 31.42$, $SD = 8.30$) estimated receiving more tosses than reincluded ones ($M_{\text{Reinclusion}} = 13.29$, $SD = 7.33$), $t(102) = 10.42$, $p < .001$, $d = 2.18$, who in turn estimated receiving more tosses than minimally-reincluded participants ($M_{\text{MinReinclusion}} = 6.11$, $SD = 4.64$), $t(102) = 4.15$, $p < .001$, $d = .98$. Minimally-reincluded participants did not report receiving significantly more tosses than fully ostracized participants ($M_{\text{FullOstracism}} = 2.15$, $SD = 4.19$, $p = .113$). See Table 4 for means and standard deviations for manipulation checks and dependent variables.

Need satisfaction and affect. A 2 (stage: reflexive vs. reflective) × 4 (schedule of throws: full inclusion vs. full ostracism vs. reinclusion vs. minimal reinclusion) MANOVA revealed a main effect of stage, Wilks' $\lambda = .223$, $F(2, 101) = 176.07$, $p < .001$, $\eta_p^2 = .77$, 90% CI = [.71, .82], and condition, Wilks' $\lambda = .603$, $F(6, 202) = 9.70$, $p < .001$, $\eta_p^2 = .22$, 90% CI = [.13, .28]. These main effects were qualified by an interaction indicating recovery in the ostracism conditions, Wilks' $\lambda = .556$, $F(6, 202) = 11.47$, $p < .001$, $\eta_p^2 = .25$, 90% CI = [.15, .31]. All means with standard errors are displayed in Figure 2.

Reflexive stage. In the reflexive stage, we found overall effects of condition on need satisfaction, $F(3, 102) = 36.97$, $p < .001$, $\eta_p^2 = .52$, 90% CI = [.40, .59], and mood, $F(3, 102) = 12.61$, $p < .001$, $\eta_p^2 = .27$, 90% CI = [.14, .36]. Because our primary interest was in the effects of reinclusion, we conducted a set of planned contrasts comparing the pooled means of the reinclusion condition and minimal-reinclusion condition against the fully ostracized condition (contrast weights: .5 .5 −1). Reinclusion significantly improved need satisfaction $t(102) = 2.98$, $p = .004$, $d = .70$, but not mood, $p = .163$. Compared with full ostracism, receiving three throws significantly improved need satisfaction, $t(102) = 3.45$, $p = .001$, $d = .95$, and receiving a single throw improved need satisfaction, although the effect did not reach statistical significance, $t(102) = 1.72$, $p = .088$, $d = .45$ ($M_{\text{Reinclusion}} = 2.56$, $SD = .61$, $M_{\text{MinReinclusion}} = 2.27$, $SD = .69$, $M_{\text{FullOstracism}} = 1.97$, $SD = .62$). However, relative to fully included participants ($M_{\text{Inclusion}} = 3.68$, $SD = .58$), both reinclusion groups reported lower need satisfaction, smaller $t(102) = -6.47$, $p < .001$, $d = 1.87$, indicating that reinclusion led to a detectable but incomplete boost to basic needs.

Reflective stage. Similar to Study 1, in the reflective stage group differences remained for both need satisfaction, $F(3, 102) = 3.42$, $p = .02$, $\eta_p^2 = .09$, 90% CI = [.01, .17], and mood,

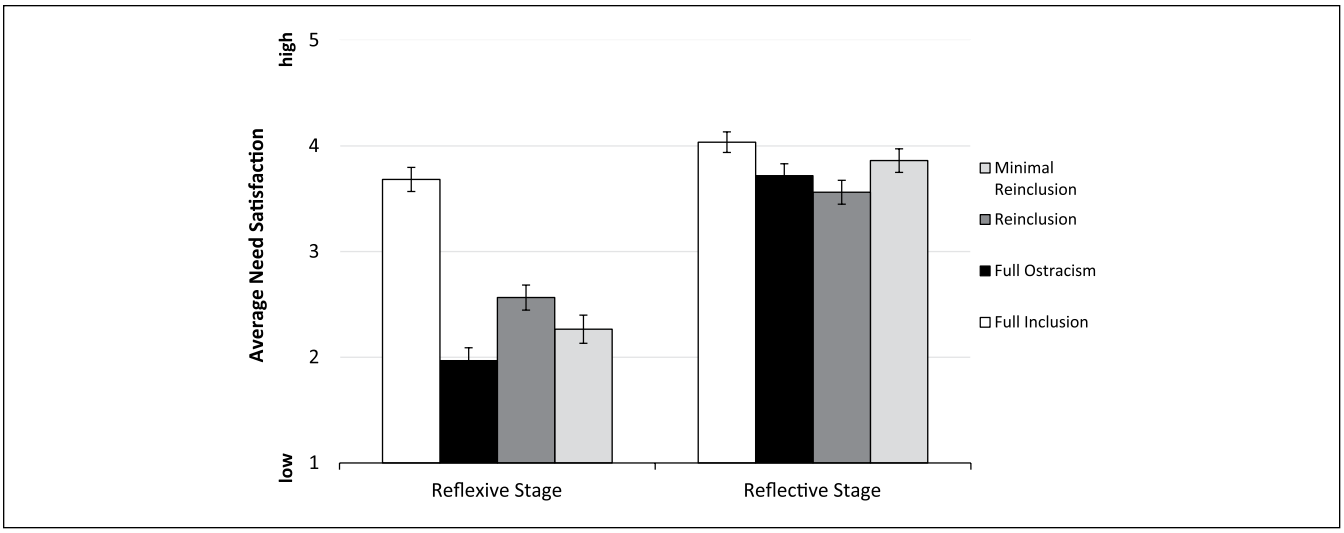

Figure 2. Reflexive and reflective basic needs satisfaction in fully included, fully ostracized, reincluded, and minimally reincluded participants in Study 2.
Note. Error bars represent standard errors of the mean.

$F(3, 102) = 2.55$, $p = .06$, $\eta_p^2 = .07$, 90% CI = [.00, .14]. Compared with fully included participants, reincluded participants' need satisfaction remained lower, $t(102) = -3.07$, $p = .014$, $d = -.59$ ($M_{\text{Inclusion}} = 4.04$, $SD = .50$; $M_{\text{Reinclusion}} = 3.57$, $SD = .59$, respectively) as did mood, $t(102) = -2.73$, $p = .037$, $d = -.54$ ($M_{\text{Inclusion}} = 4.47$, $SD = .42$; $M_{\text{Reinclusion}} = 3.97$, $SD = .81$, respectively).[4] Even though reinclusion led to an immediate boost in basic need satisfaction, overall recovery was still not achieved after a delay. The differences between reincluded and fully ostracized participants were no longer apparent for need satisfaction or mood, larger $t(102) = 1.01$, $p = .743$.

Hostility and forgiveness. Overall, there were significant mean differences between conditions in ratings of hostility toward the other players, $F(3, 102) = 5.31$, $p = .002$, $\eta_p^2 = .14$, 90% CI = [.03, .22], and forgiveness toward the other players, $F(3, 102) = 6.37$, $p = .001$, $\eta_p^2 = .16$, 90% CI = [.05, .25]. Ratings of hostility were higher for all three of the ostracism conditions relative to the included group; smallest $t(102) = 2.76$, $p = .034$, $d = .79$. Neither reinclusion nor minimal reinclusion led to reduced hostility compared with full ostracism, largest $t(102) = 1.01$, $p = .743$. Similarly, included participants expressed greater forgiveness relative to fully ostracized, $t(102) = 4.03$, $p = .001$, $d = 1.22$, and reincluded, $t(102) = 3.47$, $p = .004$, $d = 1.00$, but not significantly to minimally-reincluded ones, $p = .107$. Critically, however, neither reinclusion nor the minimal reinclusion produced greater forgiveness relative to full ostracism, largest $t(102) = 1.78$, $p > .287$.

Post hoc power analysis. A post hoc power analysis for the main effect of the condition on need satisfaction yielded power of 1.00 for the reflexive stage and power of .77 for the reflective stage. For the planned contrast comparing reflexive need satisfaction of reincluded participants to fully ostracized ones, the analysis yielded power of .83.

Discussion

Replicating and extending Study 1, Study 2 showed that a relatively minor form of acknowledgment suffices to improve basic needs following ostracism. Receiving some ball throws at the end of the game significantly improved participants' need satisfaction during the reflexive stage, though again, it did not speed up recovery during the reflective stage. Moreover, this effect is neither due to reduced hostility nor increased feelings of forgiveness toward the ostracizers.

Interestingly, though this minor form of reinclusion improves participants' need satisfaction, it does not ameliorate the effects of ostracism completely, as it has been demonstrated for an episode of full inclusion (Tang & Richardson, 2013). Perhaps the positive effect of receiving acknowledgment in form of ball tosses increases gradually with the amount of received ball tosses. Supporting this explanation, three throws significantly increased need satisfaction, while a single throw only produced a descriptive increase in need satisfaction but missed conventional significance ($p = .088$). As an alternative explanation, one should note that the two reinclusion conditions differed both quantitatively (three throws > one throw) and qualitatively: Participants who received three throws were included at least once by each of the other players. In contrast, those who received only a single throw were completely ostracized by one of the two other players. In Study 3, we attempted to tease apart the effect of minimal acknowledgment and the number of ostracizers.

Studies 1 and 2 provide preliminary support for our hypothesis that minimal inclusionary cues can mend the sting of exclusion. However, the obtained results could potentially also be due to reincluded participants experiencing ostracism for an objectively shorter time, or concluding that reinclusion signals the end of ostracism. Therefore, in Study 3, using a novel apartment-hunting paradigm, we investigated effects of minimal acknowledgment without (re)including the participant.

Study 3

Participants

We randomly assigned 140 U.S. participants (74 female; M_{age} = 34.58, SD = 10.70) from Amazon Mechanical Turk to one of two conditions. Because of the novelty of the utilized paradigm, we calculated the sample size such as to detect medium-sized effects (f = .25, power = .80, required n = 122).

Design

To investigate the effect of minimal acknowledgment without reinclusion, we created a game in which participants' goal is to apply for apartment units and get accepted by one of the units. In the game, all alleged players rejected the participants. Minimal acknowledgment was operationalized by a nice message that one player sent along with her/his rejection.

To disentangle the effect of received acknowledgment from the number of excluding persons, we based our design loosely on a study in which participants completed two cold water trials, a long and a short one (Kahneman, Fredrickson, Schreiber, & Redelmeier, 1993). In this study, participants preferred the objectively longer trial to the shorter one because pain decreased at the end of the longer trial, thus "adding a better end."

Analogously, participants in the present study applied for two apartments in total. In each application trial, they received three rejections without comment. Within the longer trial, they received an additional fourth rejection that was accompanied by a friendly message. We assumed that participants would experience less negative affect and prefer a trial with objectively more rejections to an objectively shorter trial (four compared with three rejections in total), if the fourth rejection is accompanied by a friendly message, and thus social pain decreases in the end. Additionally, we manipulated the position of the message within the trial (first or last), resulting in a 2 (trial: four vs. three rejections) × 2 (position: message first vs. last) factorial design with the first factor as repeated measure. We further counterbalanced between participants whether the message was presented in the first or the second trial.

Material and Procedure

Participants were told that they would play an apartment-hunting game with other participants who were online at the same time. Allegedly, participants would be divided into the roles of potential tenants and current apartment members. In reality, all participants were assigned to the role of a *potential new tenant* who is searching for an apartment.

Participants created a short profile and were subsequently presented with the descriptions of several apartment complexes that had apartment units on offer. Each apartment description included a picture and basic information about the room amenities and the other people who live in the complex. Participants could apply for one of the apartments by writing a short message to the current apartment complex members (their alleged coplayers). Participants were told that their applications would be read and evaluated by other participants who had been assigned to the role of "apartment complex members." Allegedly, they needed the approval of at least half of the current "complex members" to be accepted and would have to compete with other participants in the role of "potential tenants."

Participants applied for two apartment units in total and were rejected by all alleged coplayers in both trials. In the "*three rejections trial*," participants received three rejections without any additional comments, for example: "*Kim has rejected your request. Kim did not send a message.*" In the "*four-rejections trial*," participants also received three rejections without messages, plus one additional rejection with a message, which read as follows:

> "Hi! Thank you for your request. You seem to be a nice person, though I am very sorry to tell you that I have to reject you, since I am personally hoping to find someone who is interested in [interest the participant did not share]. Good luck with your search! Best regards, Danny."

The position of the message (first or last in the respective trial) was manipulated between participants. After each trial, as a filler activity, participants worked on an anagram-unscrambling task for 1 min before they answered the dependent variables: need threat/fulfillment, hurt, discomfort, and comfort. Need threat/fulfillment was assessed by a short scale (Rudert & Greifeneder, 2016) using 9-point semantic differentials (Cronbach's α = .88-.91) with the adjectives *rejected–accepted* (belongingness), *devalued–valued* (self-esteem), *powerless–powerful* (control), and *invisible–recognized* (meaningful existence). Hurt was assessed with two items (1 = *not at all*, 9 = *very much*): "*The behavior of the members of Apartment X hurt me*," and "*The members of Apartment X were mean to me*" (Cronbach's α = .84). Moreover, participants rated their experience while applying for the apartments (1 = *no discomfort*, 9 = *strong discomfort*; 1 = *no comfort, 9 = strong comfort*). After applying for (and

Table 5. Means and Standard Deviations (in Parentheses) of Study 3.

	Four rejections	Three rejections
Need satisfaction		
Message first	2.74 (1.48)	2.30 (1.45)
Message last	2.62 (1.54)	2.61 (1.69)
Hurt		
Message first	5.04 (2.27)	5.51 (2.43)
Message last	5.01 (2.54)	5.55 (2.60)
Discomfort		
Message first	5.97 (2.15)	6.23 (2.14)
Message last	6.03 (2.43)	6.11 (2.62)
Comfort		
Message first	3.57 (1.76)	3.30 (1.96)
Message last	3.07 (2.06)	2.73 (2.04)

being rejected by) both apartment complexes, participants were asked to compare the two apartments directly on four scales assessing which apartment complex they would rather join, and which application process felt more comfortable, annoyed them most, and was tougher to cope with (1 = *Apartment A*, 9 = *Apartment B*). Finally, participants were asked how often they had been rejected, how many messages they had received, and when they had received them. After providing demographics, participants were debriefed and provided with a code to get paid.

Results

Manipulation checks. Ten participants answered one or more manipulation checks incorrectly. Excluding these participants from the analysis did not change the pattern of results, thus the analysis is based on the full sample of 140 participants.

Dependent variables. A 2 (trial: four vs. three rejections) × 2 (position: message at the beginning vs. end) × 2 (order: message trial first vs. last) MANOVA on need satisfaction, hurt, comfort, and discomfort revealed a significant effect of the trial, Wilks' $\lambda = .887$, $F(4, 133) = 4.25$, $p = .003$, $\eta^2 = .11$, 90% CI = [.02, .18], indicating that participants felt better in the four-rejections trial with the nice message compared with the three-rejection trial. Looking at each variable separately, the effect was significant for comfort, $F(1, 136) = 7.02$, $p = .009$, $\eta^2 = .05$, 90% CI = [.01, .12]; ($M_{Four} = 3.31$, $SD = 1.93$ and $M_{Three} = 3.01$, $SD = 2.01$) and hurt, $F(1, 136) = 14.39$, $p < .001$, $\eta^2 = .10$, 90% CI = [.03, .18]; ($M_{Four} = 5.03$, $SD = 2.40$ and $M_{Three} = 5.53$, $SD = 2.51$), but nonsignificant for need satisfaction, $p = .061$ ($M_{Four} = 2.68$, $SD = 1.50$ and $M_{Three} = 2.46$, $SD = 1.58$) and for discomfort, $p = .152$. Neither the position of the message nor the interaction were significant, smallest $p = .296$, see Table 5 for the descriptive data. Unexpectedly, there was an interaction between trial and order of the trials, $F(4, 133) = 3.27$, $p = .014$, $\eta^2 = .09$, 90% CI = [.01, .15]. This indicates that the positive effects of receiving a message were stronger when the message was placed in the second trial compared with in the first one.

Table 6. Means and Standard Deviations (in Parentheses) of Study 3.

	Independent variables	
Dependent variables	Message first	Message last
Choice	6.28 (2.36)	5.42 (2.67)
Application comfortable	6.19 (2.30)	5.58 (2.39)
Application annoying	3.84 (3.44)	3.44 (2.67)
Application tougher	4.52 (2.58)	4.17 (2.46)

Note. The dependent variables were measured as semantic differentials with the two apartment options as scale ends. Higher values (> 5) indicate a response tendency toward the trial with the message, lower values (< 5) a response tendency toward the trial without the message.

To analyze the direct comparisons between the two trials, we recoded the variables so that higher values indicate a preference for the four-rejection trial, and tested them against the natural scale mean of 5. On average, participants indicated that they preferred the apartment from the four-rejection trial more, found the application process more comfortable, less annoying, and less tough to cope with, all $p < .001$ (see Table 6). There was no significant influence of the position of the message, Wilks' $\lambda = .948$, $F(4, 133) = 1.83$, $p = .127$.

Discussion

Study 3 provides further support for our hypothesis that minimal acknowledgment can make individuals feel better after rejection: Receiving a friendly message significantly reduced the sting of rejection. This was the case even though the message came with an additional rejection (four vs. three rejections in total). In other words, the presence of minimal acknowledgment in the form of a nice message seemed to matter more to participants than the absolute *amount* of rejection that they received. This finding is in line with previous research indicating that social exclusion experiences strongly depend on individuals' subjective representation and interpretation of these experiences (Rudert & Greifeneder, 2016) and also with the results of Kahneman and colleagues (1993).[5]

Different from the physical pain study, there was no effect of whether the message was placed first or last *within* the message trial. However, the positive effects of the message were stronger when it was placed in the second trial, that is, toward the end of the experiment. It is possible that because of the final majority decision whether the participant is accepted or not, a single trial is perceived as one rejection experience in total and thus the "better end" effect can only

be observed throughout the entire study, rather than within each specific trial.

According to our theorizing, receiving a nice message reduces threat and hurt because it represents a form of minimal acknowledgment. Thus, a message should help even if the content of the message is not genuinely positive (i.e., the person is rejected nevertheless). Alternatively, one could assume that participants perceived receiving no message at all as rude and unfriendly behavior and thus, it is not acknowledgment but the friendliness of the message which drives the effect. If acknowledgment is driving the postulated effect, then being rejected without receiving a message (i.e., to be rejected *and* ostracized) should be worse than being rejected and receiving a message of *any* content. We test the mere acknowledgment versus friendliness explanation in Study 4.

Moreover, whereas Studies 1 and 2 showed evidence for a direct effect of reinclusion in the immediate, reflexive stage, acknowledgment in Study 3 was conceptualized in a way that would make additional cognitive processing and (re-) attribution necessary, which represent processes that are typical for the subsequent, reflective stage according to Williams's (2009) temporal need threat model. Accordingly, in Study 4, we were particularly interested in the difference between reflexive and reflective reactions to rejection.

Study 4

Participants

We randomly assigned 249 U.S. citizens (124 female, M_{age} = 34.28, SD = 11.18) from Amazon Mechanical Turk to one of the conditions (see below). We calculated the sample size such as to detect medium-sized effects (f = .25, power = .90, required n = 231).

Design

We used the same paradigm as in Study 3 but varied the messages that participants received. In addition to the friendly message, we created a neutral message and a hostile message. Moreover, we manipulated the number of rejections independent of the message, so that participants received either two or four rejections in total. This resulted in a 2 (stage: reflexive vs. reflective) × 2 (number of rejections: four vs. two) × 4 (message: friendly vs. neutral vs. hostile vs. none) mixed-factorial design with repeated measures on the first factor.

Material and Procedure

We created three messages supposed to represent a friendly, a neutral, and a hostile rejection, see Appendix. In a pretest, 60 participants (29 female, M_{age} = 33.20, SD = 11.04) rated the messages on friendliness (1 = *very unfriendly*, 7 = *very friendly*) and ambiguity (1 = *very unclear*, 7 = *very clear*). While messages differed markedly in friendliness in the expected directions, $F(2, 57) = 13.22$, $p < .001$, $\eta^2 = .32$, 90% CI = [.14, .44] ($M_{friendly}$ = 3.45, SD = 1.39, $M_{neutral}$ = 2.50, SD = 1.28, $M_{hostile}$ = 1.40, SD = 1.10), they were not significantly different in ambiguity, p = .095.

The procedure was similar as in Study 3, except that participants completed only one trial. Participants either received two or four rejections combined with either a friendly, neutral, or hostile message from one of the apartment complex members, or they received no message at all. The message was always presented together with the last rejection (that is, the second or the fourth).

Immediately after being rejected, participants answered questions about experienced need satisfaction, mood (9-point scales, see Studies 1 and 2), and pain (0 = *no pain*, 10 = *worst pain imaginable*). Subsequently, participants answered four questions assessing whether they understood the manipulations and instructions correctly (see Study 3). In addition, they rated the friendliness of the apartment members' communication, and also the friendliness of the apartment members themselves (1 = *very unfriendly*, 9 = *very friendly)*. They also rated how clear the reason for each of the member's decision was (1 = *not clear at all*, 9 = *very clear).*

To assess recovery, participants worked on an anagram-unscrambling task for a minute before again rating their need satisfaction, mood, and pain. After providing final demographics, participants were debriefed and provided with a code to get paid.

Results

Manipulation checks. Thirty-four participants answered one or more manipulation checks incorrectly. Excluding these participants from the analysis did not change the general pattern of results; therefore, the analyses are based on the full 249 participants. Because of the high correlation between friendliness of the person and friendliness of the communication (r = .88), both measures were collapsed to a single friendliness score. The type of message had a significant effect on friendliness, $F(3, 245) = 60.06$, $p < .001$, $\eta^2 = .42$, 90% CI = [.34, .48], and all types of messages significantly differed from each other ($M_{friendly}$ = 4.23, SD = 1.83; $M_{neutral}$ = 3.09, SD = 1.55; M_{none} = 2.17, SD = 1.16; $M_{hostile}$ = 1.04, SD = 0.22). There was a significant effect of ambiguity, too, $F(3, 245) = 39.45$, $p < .001$, $\eta^2 = .33$, 90% CI = [.24, .39]. Receiving any message led to less ambiguity than receiving no message at all ($M_{friendly}$ = 4.74, SD = 2.05; $M_{neutral}$ = 3.56, SD = 2.16, $M_{hostile}$ = 4.18, SD = 2.59, M_{none} = 1.16, SD = 0.90); moreover, the friendly message resulted in less ambiguity than the neutral one.

Dependent variables. A 2 (stage: reflexive vs. reflective) × 2 (number of rejections: two vs. four) × 4 (message: friendly vs. neutral vs. hostile vs. none) MANOVA on need

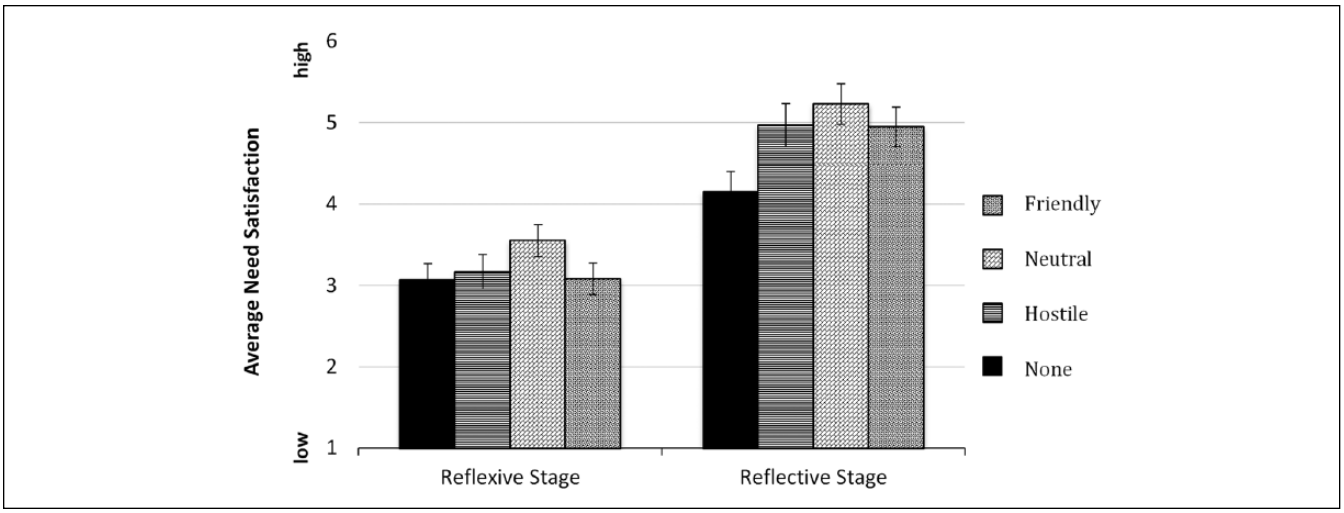

Figure 3. Reflexive and reflective basic needs satisfaction receiving a friendly, neutral, hostile, or no message in Study 4.
Note. Error bars represent standard errors of the mean.

satisfaction, mood, and pain revealed a significant effect of the stage, Wilks' $\lambda = .408$, $F(3, 239) = 115.60$, $p < .001$, $\eta^2 = .59$, 90% CI = [.53, .64], indicating that overall participants recovered during the delay. The effect of the message and the two-way interaction Stage × Message were not significant, largest $p = .088$, but the three-way interaction between Stage × Number of rejections × Message was significant, Wilks' $\lambda = .928$, $F(9, 581.81) = 2.01$, $p = .036$, $\eta^2 = .03$, 90% CI = [.00, .04]. All other possible effects and interactions were not significant (all $p > .221$). To deconstruct the interaction, we analyzed the two stages separately.

Reflexive stage. In the reflexive stage, there were no significant effects of either the message or the number of rejections for any of the dependent variables (all $p > .295$).

Reflective stage. In the reflective stage, there was a significant effect of the message on both need satisfaction and mood—need satisfaction: $F(3, 241) = 3.36$, $p = .020$, $\eta^2 = .04$, 90% CI = [.00, .08]; mood: $F(3, 241) = 3.29$, $p = .021$, $\eta^2 = .04$, 90% CI = [.00, .08]—and a significant interaction between Message × Number of rejections—need satisfaction: $F(3, 241) = 3.26$, $p = .022$, $\eta^2 = .04$, 90% CI = [.00, .08]; mood: $F(3, 241) = 3.61$, $p = .014$, $\eta^2 = .04$, 90% CI = [.00, .08]. For pain, the effect and the interaction missed conventional significance, largest $p = .088$, though the pattern of results was in line with the results described below.

Effect of the message. To test the hypothesis that receiving any message compared with no message would result in more need satisfaction and positive mood, we specified a contrast testing the no-message condition against the other three message conditions (contrast weights: 1 1 1 –3). The contrast was significant for both need satisfaction, $t(245) = 3.06$, $p = .002$, $d = .39$, and mood, $t(245) = 2.86$, $p = .005$, $d = .37$. Receiving no message at all resulted in lower need satisfaction compared with the average of the other groups ($M_{none} = 4.15$, $SD = 1.88$ vs. $M_{friendly} = 4.95$, $SD = 1.95$; $M_{neutral} = 5.23$, $SD = 2.04$; $M_{hostile} = 4.97$, $SD = 2.18$). It also led to decreased mood ($M_{none} = 4.70$, $SD = 1.97$ vs. $M_{friendly} = 5.30$, $SD = 2.18$, $M_{neutral} = 5.71$, $SD = 2.02$, $M_{hostile} = 5.72$, $SD = 2.20$). Means with standard errors are displayed in Figure 3.

Message × Number of rejections. We obtained an unexpected interaction between the message and the number of rejections and thus conducted an exploratory analysis. In most message conditions, there was no significant difference between receiving four or two rejections (all $p > .138$). However, participants who received a friendly message reported significantly more need satisfaction ($M_{Four} = 5.61$, $SD = 1.84$, $M_{Two} = 4.24$, $SD = 1.83$), better mood ($M_{Four} = 5.98$, $SD = 2.11$, $M_{Two} = 4.58$, $SD = 2.04$), and less pain ($M_{Four} = 2.91$, $SD = 2.28$, $M_{Two} = 4.34$, $SD = 2.44$) when they had received four compared with two rejections, $F(3, 239) = 2.94$, $p = .034$, $\eta^2 = .04$.

Discussion

Study 4 further supports our assumption that it is in fact acknowledgment that moderates recovery after being rejected. After a delay, participants reported significantly more need satisfaction and better mood if they had received any message compared with none. Though not significant, the results for pain showed a similar pattern. In all conditions in which participants received a message, need satisfaction was higher compared with the conditions in which participants received no message. This was even the case when participants were explicitly told that they were disliked and therefore rejected. The respective patterns did not emerge in the reflexive stage, which is a typical finding when investigating processes that involve higher cognitive processing or reattribution (Williams, 2009).

One possible alternative interpretation of our data is that it is not minimal acknowledgment per se, but rather the reduction of uncertainty or ambiguity that causes the increase in need satisfaction. After all, participants in the no-message condition rated the reason for the members' decision as more ambiguous than participants in the message conditions. However, the link between ambiguity and need satisfaction is not consistent across the different message types (friendly, neutral, hostile). Examining the descriptive pattern of means, the neutral message also resulted in more ambiguity than the hostile and the friendly message, but in the neutral message condition participants reported the highest level of need satisfaction. This suggests that ambiguity should not mediate the effect of the message on need satisfaction, which is consistent with an exploratory mediation analysis (indirect effect of ambiguity = .03, 95% CI = [−.06, .12]).

One could also speculate whether receiving a negative message provided a coping mechanism: Individuals who were rejected in a very hostile way might find it easier to come up with an external attribution for ostracism due to the character of the rejecting persons (i.e., "I was rejected because the other people are mean"), which may facilitate discarding the rejection. However, while the hostile rejection was rated as the unfriendliest one, being rejected without receiving a message was also rated as highly unfriendly (M = 2.17 on a 9-point scale). Thus, it appears likely that participants in the no-message condition also tended to blame the ostracizers rather than themselves for being excluded. Against this background and in line with other research, which emphasizes the importance of being acknowledged for individuals' well-being (O'Reilly et al., 2015; Saylor et al., 2012; Wesselmann et al., 2012; Zadro et al., 2005), we believe that a positive effect of mere acknowledgment remains the most plausible explanation for the reported results. However, future research should examine this mechanism further as well as investigate the effect of different types of acknowledgment on recovery.

The total number of rejections did not influence results, with one exception: In the friendly message condition, participants who had received two rejections reported significantly less need satisfaction and worse mood than participants who had received four rejections. We believe that this unexpected result might have been due to counterfactual thinking (Roese, 1997): In the rules of the game it was established that half of the members of an apartment complex had to agree with the participant moving in, that is, participants in the two rejections conditions only needed one positive answer. Accordingly, participants in the friendly/two-rejections condition might have felt that they were very close to getting accepted and might have ruminated more about possible reasons why they were not, which might have interfered with recovery. Additionally, they might have perceived their coplayers as rather positive on average, which is why it might have been especially disappointing to get rejected by them.

An alternative explanation for this finding might be that after receiving three rejections without a message, a norm of silence has been established, which is why the last message may come as a pleasant surprise in the four message condition but represents little surprise in the two message condition. However, while prevailing social norms can attenuate threat and hurt following exclusion, Rudert and Greifeneder (2016) showed that this is only the case if the social norm is endorsed by the excluded individual. Given the low ratings of the participants on friendliness of the persons and the communication, it appears unlikely that participants agreed with the way they were treated by the group. Future research can replicate and explain this unexpected finding.

General Discussion

Research on ostracism has repeatedly demonstrated that excluded individuals are highly sensitive to social cues, which is possibly motivated by their need to reaffiliate. In the present research, we investigate the effects of experiencing minimal acknowledgment during an exclusion episode. Four studies show that even minimal inclusionary and existential cues, such as receiving a few ball tosses at the end of Cyberball (minimal reinclusion), or an acknowledging message, can mend the sting of exclusion. In Study 4, even receiving a hostile message resulted in an improved recovery compared with being rejected without comment. The studies highlight the importance of receiving even a minimum of acknowledgment in the face of ostracism.

The Importance of Being Acknowledged

One important finding is that in our studies the nature of the acknowledgment seemed to be almost irrelevant (one exception being whether the beneficial effect occurred in the reflexive or in the reflective stage, see below). Especially in Study 4, we find that participants recovered better from ostracism after receiving acknowledgment of any kind compared with participants who were ignored altogether. Whether the received message was nice or nasty did not seem to affect recovery. From our perspective, this finding emphasizes the strong importance of individuals' need to be acknowledged in some way in social situations. This interpretation is also in line with findings from Wesselmann and colleagues (2012), who showed that individuals experienced more need satisfaction when they were looked at by a stranger instead of being "looked at as though air"; however, an additional friendly smile by the stranger did not improve need satisfaction any further. Metaphorically, one might thus think of minimal acknowledgment as a bandage that is applied following the sting of ostracism: It may not heal the wound itself, but it may stop the bleeding and thereby aid recovery.

Reflexive and Reflective Reactions to Acknowledgment

Studies 1 and 2 found effects of being reincluded during the reflexive stage, whereas the effects of receiving a message in

Studies 3 and 4 occurred after some time had passed (reflective stage). We believe that this is due to the differences between the received cues: While Studies 1 and 2 investigate minimal reinclusion after an ostracism episode, Studies 3 and 4 operationalize minimal acknowledgment in the form of a message that is independent of the group's decision to reject the participant. It is possible that such a form of verbal acknowledgment, that does not alter the exclusion per se, takes more time and cognitive resources to process. Still, if individuals feel that they understand why they were ostracized, they might be able to complete recovery more quickly than if they are unsure of the reason.

In contrast, minimal reinclusion might act as an immediate relief. However, following an initial bump in need satisfaction, individuals might start to ruminate about why they were excluded in the first place and whether it might happen again. Consequently, it is possible that even if individuals are reincluded after an ostracism episode, they might still suffer from negative long-term effects that delay recovery. It should be noted, however, that lower power in the reflective stage (.72 in Study 1 and .77 in Study 2) might be a potential alternative explanation about why the effect of minimal reinclusion could not be detected in the reflective stage.

Practical Implications

There are several practical implications that can be derived from the critical role of acknowledgment. First, it stresses the important role of acknowledgment during selection procedures that necessarily contain rejections. To make these as painless as possible, human resource executives, universities, landlords, or institutions dealing with selection might be advised to grant rejected candidates at least minimal acknowledgment, for instance in the form of a letter or email. The same goes for the use of (justified) criticism, for instance in the workplace: Although individuals might initially dislike being criticized, in the long run they might be more satisfied having received this negative acknowledgment compared with receiving no feedback at all. This is especially important given that individuals can possibly also learn better from well-phrased criticism than from dead silence.

Second, offices which attend to bullying in the workplace or at schools would do well to pay more attention to the more inconspicuous act of "ignoring" others. This is also in line with other research that has found ostracism to have more severe effects on victims than active aggression or bullying (O'Reilly et al., 2015; Saylor et al., 2012; van Beest & Williams, 2006; Williams & Nida, 2009). Unfortunately, ostracism is not only harder to detect than bullying, but also harder to punish; additionally, ostracism might also happen involuntarily and without negative intent. Inclusionary measures that prompt people to pay more attention to one another and acknowledge each other's actions might be a promising alternative to punishments for ostracizers.

Conclusion

Taken together, the present contribution indicates that while humans are quick to notice and react to exclusionary threats, they also quickly react to minimal inclusionary and existential cues. Additionally, our research provides evidence that *mere acknowledgment* is a highly important factor that can start to restore an excluded individual's fundamental needs and that can be conveyed by minor things such as a single ball throw, eye gaze, or even an unfriendly message.

Appendix

Messages in Study 4

Friendly message

Hi [Participant's nickname],
I received your request to become a member of our apartment unit. I have read you bio and interests, and you seem to be a nice person. Anyways, I prefer another person who has applied.
I feel bad about this, but you need to continue your search, because I will reject you.
I hope you'll find something soon.
Best, Pat

Neutral message

Hi [Participant's nickname],
I received your request to become a member of our apartment unit. I have read you bio and interests. Anyways, I prefer another person who has applied.
I feel mixed about this, but you need to continue your search, because I will reject you.
There are other available housing options.
Bye, Pat

Hostile message

Hi [Participant's nickname],
I received your request to become a member of our apartment unit. I have read you bio and interest, and you seem to be an awful person. Anyways, I prefer another person who has applied.
It pleases me that you need to continue your search, because I will reject you.
Really don't care where you live, but not here.
Pat

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Notes

1. Whereas ostracism, social exclusion, and rejection denote separate constructs (see Leary, 2005, for a discussion), they have more in common than they have differences and are often referred to interchangeably. Because our considerations apply to all three constructs alike, we will respectively use the term that is more appropriate throughout the manuscript.
2. In a *late ostracism* condition, participants received six of the first 20 throws, but none of the final 10 throws. This condition was included for exploratory purposes and does not address our primary research question (which concerns the effects of inclusion following ostracism, rather than ostracism following inclusion). Reflexive needs scores in this condition (M = 2.84, SD = .71) were significantly lower than the full inclusion condition, $t(96) = -3.17$, $p = .011$, $d = -.84$, and higher than the full ostracism condition, $t(96) = 3.93$, $p = .001$, $d = 1.05$. However, despite receiving twice as many throws, participants did not report significantly higher needs than those in the reinclusion condition, $p = .284$. Reflective needs scores ($M = 3.58$, $SD = .76$) did not differ from any other condition, smallest $p = .536$.
3. This difference appears to be primarily the result of differences in negative, $t(72) = 2.88$, $p = .014$, $d = -.81$, rather than positive affect, $p = .219$.
4. As in Study 1, this effect is driven by negative, $t(102) = 3.12$, $p = .012$, $d = -.67$, but not positive affect, $p = .381$.
5. A discussion on the comparability of social and physical pain can be found elsewhere (Eisenberger & Lieberman, 2004; Eisenberger, Lieberman, & Williams, 2003; MacDonald & Leary, 2005; Riva, Wirth, & Williams, 2011).

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