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Strides for Belonging Trump Strides for Superiority: Effects of Being Ostracized for Being Superior or Inferior to the Others

Adrienne R. Carter-Sowell, Eric D. Wesselmann, James H. Wirth, Alvin Ty Law, Zhansheng Chen, Michele Wydia Kosasih, Romy van der Lee, and Kipling D. Williams

Abstract

Ostracism—to ignore and exclude—is a painful experience for the target, and it happens to both superior and inferior performing group members. Across three studies, manipulations of status (superiority or inferiority compared to other group members) and inclusionary status (ranging from over-inclusion to ostracism) were manipulated. In Study 1 participants provided perceived measures for targets being observed. In Study 2 participants measured their direct experience. In Study 3 measures were collected at two time points (immediate and delayed). Our results indicate that being superior or inferior matters little when individuals are ostracized: Performing better than other group members does not serve as a buffer for ostracism, nor does performing worse than other group members intensify ostracism's effects.

Individuals rarely function in isolation, and connecting with others is sought in varying environments. Adler (1930/1970) recognized social interest or social feeling (*Gemeinschaftsgefühl*, also called “community feeling”) as one of the motivating forces for human behavior and experiences. Additionally, Adler proposed that striving for supremacy is a second basic motivation. Although Adler posited “striving for community/social belonging” and “striving for supremacy” as dual but competing motivations, he made clear that social interest is the fundamental and important motivation. Building on Adler's premise, researchers such as Maslow (1954) continued to examine how individuals consider the situation to help rank intrinsic motivations and address fundamental needs. In this research we were interested in what occurs when motivations for belonging and self-esteem are simultaneously challenged and satisfaction of these basic needs holds both benefits and costs.

According to Williams (1997, 2001, 2007a, 2007b, 2009), ostracism, being ignored and excluded by others, is a painful phenomenon that threatens four basic needs: belonging, self-esteem, control, and meaningful existence.

Additionally, ostracism may be a particularly unique experience in that it threatens all four basic needs simultaneously. Detecting ostracism is of inestimable value for the survival of the individual. By being ostracized, one is being restrained from social contact and from feeling belonging. Belonging contributes to psychological health and physiological survival (Kurzman & Leary, 2001; Smith, Murphy, & Coats, 1999). Being ostracized threatens the health and survival of the individual. From an individual perspective, immediately detecting ostracism and eliciting responses to cope with it increase the individual's likelihood of survival.

Striving for Social Belonging

As social animals, to feel belonging is a primary need of human beings. Researchers have confirmed the need to belong as a fundamental human motivation (e.g., Adler, 1930/1970; Baumeister & Leary, 1995; Bowlby, 1969; Maslow, 1954; Schachter, 1959; Pitman & Zeigler, 2007). Awareness that people need people is not a new phenomenon. In Maslow's (1954) hierarchy of needs, the need to belong ranks below only physiological needs (food and water) and safety needs. Baumeister and Leary (1995) include an evolutionary basis for an individual's desire to form and sustain bonds with a group. Social belonging provides mortal benefits, including sharing food to survive and providing support during child rearing (see Ainsworth, 1989; Axelrod & Hamilton, 1981; Barash, 1977; Bowlby, 1969; Buss, 1990, 1991; Hogan, Jones, & Cheek, 1985; Moreland, 1987). In accord with Adlerian theory (Ferguson, 2006), the primary need of all humans is a need to feel belonging, to have a place in the community. Moreover, Brewer (1979) confirmed that social bonds occur quickly in the most minimal intergroup situations. Given the importance of the need to belong, when individuals perceive deficits in their social belonging, it is expected that immediate negative psychological and emotional responses will occur.

Striving for superiority. Adler (1923/1971) proposed that every child craves power and importance. Ferguson (1989) clarified this perspective by stating “When Adler wrote that individuals strive for perfection and superiority, he meant accomplishments, growth, development, mastery over circumstances and tasks, not over other persons” (pp. 355–356). Subsequent researchers have interpreted these strides for superiority as strides for high self-esteem (Greenwald, 1980; Steele, 1988; Tesser, 1988). Self-esteem is considered to be an important human need (Bandura, 1997; Baumeister, 1994; Greenberg et al., 1992; Leary, Tambor, Tardal, & Downs, 1995). Additionally, self-esteem is judged to be adaptive because it buffers individuals from negative emotions and promotes goal achievement (see Leary, Cottrell,

& Phillips, 2001). In general, ostracism communicates to the targets that something about them is bad or unworthy. This message directly threatens an individual's sense of self-esteem.

Justified ostracism. Ostracism has a purpose. From an evolutionary perspective, ostracism is an adaptive tool. It is an effective way to protect the survival of the group (Gruter & Masters, 1986) because the ones who are ostracized are commonly deviating from group norms (Williams & Zadro, 2006). Whereas people derive part of their self-concept from their group membership, a superior or inferior group member can threaten the identity of the group and the self (Tajfel, 1978; Tajfel & Turner, 1979; Turner, 1999; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). When a group experiences threat to its identity, defensive reactions, such as downgrading the threatening individual, are the result (Branscombe, Ellemers, Spears, & Doosje, 1999). Ostracism can also be perceived as a group's defensive reaction, an aversive response to social norm violation with the purpose of protecting the group and securing its survival (Hogg, 2006).

The Present Research

The aim of our research was to examine what occurs when competing needs for belonging and self-esteem are simultaneously susceptible to threat. Additionally, we assessed how a person rates moods and levels of satisfaction of basic needs for another person compared to a person rating one's own moods and levels of needs threat. We conducted three studies in a 2 status (superiority or inferiority) compared to other group members) x 3 inclusionary status (inclusion, ostracism, over-inclusion) between-subjects design to test the following hypotheses.

In Study 1, we examined how one person can make judgments about the levels of satisfaction of basic needs, such as "feeling of belonging," that another person has. We investigated how participants perceive an observed target's levels of basic need satisfaction and positive moods after being identified as superior or inferior to other group members and then being over-included, included, or ostracized in a group task. First, we hypothesized participants would perceive lower basic need satisfaction and positive moods when the observed target was inferior, compared to being superior, to the other group members on a collective task. Second, we hypothesized participants would perceive lower basic need satisfaction and positive moods when the observed target was ostracized as compared to included and over-included targets. Third, we expected that the perceived justification for the observed target's inclusionary status would alleviate or amplify the participants' judgments for the observed target. Specifically, we

hypothesized that participants would perceive lower levels of basic need satisfaction and positive moods when the observed target was ostracized and superior to the others, compared to when the target was ostracized and inferior to the others.

For Studies 2 and 3, we examined "Rating one's own feelings," which differs from "Rating another person's feelings," the focus of Study 1. The experimental design for Study 2 was similar to that in Study 1. First, we hypothesized participants would have lower basic need satisfaction and positive moods when they were inferior, compared to being superior, to the other group members on a collective task. Second, we hypothesized participants would have lower need satisfaction and higher negative moods when they were ostracized as compared to included in the chat room group task. Third, we expected that the perceived justification for the participant's inclusionary status would alleviate or amplify the satisfaction of needs and mood for the participant. We hypothesized that participants would report lower levels of basic need satisfaction and positive moods when ostracized and superior to the others compared to when participants were ostracized and inferior to the others.

Study 3 was similar to Study 2 in design, with the addition of a Time 2 measure to capture delayed levels of needs satisfaction and positive moods. We expected to replicate the findings of Study 2, so our initial hypotheses for these two studies were identical. Additionally, we hypothesized about how our manipulations would affect levels of need satisfaction and positive moods over time. We expected that ostracized participants' levels of need satisfaction and positive moods would be higher after a delay. We also hypothesized the status manipulation would have an effect on need satisfaction and moods after a delay: Participants who were ostracized and were superior to their group members would feel better than ostracized participants who were inferior to their group members.

Study 1

Participants and design. One-hundred and twelve elementary psychology students participated in this study in exchange for partial course credit. Data from one participant who had indicated participation in a previous study related to ostracism were removed from all analyses. The final sample was 111 participants (37 female, 74 male; $M_{age} = 19.56$ yrs, $SD = 1.22$). A 2 (Status: superiority or inferiority) compared to other group members) x 3 (Inclusionary Status: inclusion, ostracism, over-inclusion) between-subjects design was used. Participants were randomly assigned to one of these six conditions.

Procedure. Participants were brought to an ostensible mental visualization lab either as individuals or in groups of up to 8 people. In all cases, they were separated into cubicles. Participants were told they would be watching a recorded group task as a mental visualization exercise. (The video was of a group of three computer-programmed virtual confederates.) Participants were informed the group had engaged in an idea generation task before the mental visualization exercise. The purpose of the task was to brainstorm as many uses for a brick as possible in 5 minutes. Each virtual group member received feedback about his or her individual performance compared to the performance of the group. Participants were asked to use this feedback to visualize the virtual group members. This feedback was used to induce the status manipulation and was displayed to participants during the recorded virtual group task. In the *superiority condition*, the target group member (always referred to as Player 2) contributed 51% to the group's performance compared to 24% and 25% for the other two group members (i.e., Players 1 and 3 respectively). In the *inferiority condition*, Player 2 contributed 15% to the group's performance compared to 42% and 43% for the other group members. The feedback of status is bogus feedback regarding participant's performance on the brainstorming task. Participants never know how many ideas are generated in total by the group. Participants were told only that either they contributed 51% to induce a sense of superiority or that they contributed 15% to induce a sense of inferiority. Thus, status is orthogonal to the level of inclusion in our between-subjects design.

The virtual group task was called Cyberball, a programmed online ball toss game frequently used to manipulate ostracism (Williams, Cheung, & Choi, 2000). Participants were told the task involved mentally visualizing aspects of the virtual online ball-toss game. This was done so participants did not focus specifically on ball tossing behavior. The participants watched a 3-player Cyberball game and then provided the ratings for Player 2. Player 2 was the "target" player because in the exercise, Player 2 was labeled as superior or inferior on the prior brainstorming task as well as received the over-inclusion/inclusion/ostracism manipulation. So, in this study, the participant provides ratings based on Player 2, but the participant does not play the Cyberball game. During the game, three virtual confederates tossed around a ball between each other.

Participants viewed a 30-toss game of Cyberball between these three confederates. In the *inclusion condition*, Players 1 and 3 tossed the ball to Player 2 about 33% of the time; in the *ostracism condition*, Players 1 and 3 tossed the ball to Player 2 about 4% of the time. In the *over-inclusion condition*, Players 1 and 3 tossed the ball to Player 2 about 50% of the time. During the game, the group members' scores from the idea-generation task were visible to the participants.

Following the Cyberball game, participants were asked several questions about the Cyberball game-playing experience for each of the virtual group members. These measures included the manipulation checks and various dependent variables. Unless reported otherwise, all items were presented on a 5-point scale ranging from 1 (*Not at all*) to 5 (*Extremely*).

Manipulation checks. To assess the effectiveness of the status manipulation, participants indicated whether Player 2 (the target player) performed better than the other group members on the idea-generation task. To assess the effectiveness of the inclusionary status manipulation, participants indicated what percentage of tosses the target player received. They were informed that equality of group tosses would be 33%.

Four basic needs. We used the Four Basic Needs threat scale (Williams, 2001; Zadro, Williams, & Richardson, 2004) to assess the effects of ostracism on participants' perceived levels of need satisfaction for Player 2. Participants were asked the degree to which they thought Player 2 would agree with 8 statements indexing these need levels ($\alpha = .96$). Participants rated statements such as, "During Cyberball, Player 2 felt rejected (belonging)," "During Cyberball, Player 2 felt liked (self-esteem)," "During Cyberball, Player 2 felt powerful (control)," and "During Cyberball, Player 2 felt important (meaningful existence)." An overall index of need satisfaction was created by averaging the items together.

Positive moods. Each participant's mood was measured using 12 items in which they were asked to indicate the extent to which they experienced various positive and negative moods during the game. Example moods are "good," "pleasant," "tense," and "sad." These items were averaged and combined into an index of overall moods ($\alpha = .96$).

Results and discussion. Unless otherwise indicated, factorial ANOVAs were conducted on each of the dependent measures, using the status and inclusionary status manipulations as fixed factors. The manipulation checks items indicated our manipulations were effectively perceived by participants. For the status manipulation, participants in the superior conditions were more likely to perceive that Player 2 outperformed the other group members ($M = 4.02$, $SD = 1.17$) than did participants in the inferior conditions ($M = 1.87$, $SD = 1.12$), $F(1, 105) = 96.63$, $p < .01$, partial $\eta^2 = .48$. As expected, there was no effect of inclusionary status or interaction of the two fixed factors on status, F -values < 1.00 , p -values $> .70$, partial $\eta^2 < .01$.

For the inclusionary status manipulation, participants in the ostracism conditions perceived Player 2 received the ball less ($M = 17.80\%$, $SD = 20.59$) than in the inclusion ($M = 31.46\%$, $SD = 15.61$) and over-inclusion conditions ($M = 48.63\%$, $SD = 18.45$), $F(2, 104) = 28.56$, $p < .01$, partial $\eta^2 = .35$ (Bonferroni post hoc tests indicate each of these means are significantly different from each other, $\alpha = .01$). There was no effect of

being perceived as superior or inferior on participants' perceptions of the inclusionary status of Player 2 ($F(1, 104) < 1.00, p > .30$, partial $\eta^2 < .01$). Unexpectedly, there was an interaction of the two fixed factors on perception of inclusion ($F(2, 104) = 4.40, p < .05$, partial $\eta^2 = .08$). When Player 2 was superior to the group members, participants perceived Player 2 as being included more than when Player 2 was inferior in only the inclusion condition ($t(28.65) = -3.03, p < .01, d = .99$). However, in the ostracism and over-inclusion condition, there were no differences in perceptions between the superior and inferior Player 2 (t -values < 2.00 , p -values $> .09$, d -values $< .60$).

We had several hypotheses for how participants would perceive the effects of our two manipulations on Player 2's levels of need satisfaction and positive moods during the group interaction. First, we hypothesized that participants would perceive lower need satisfaction and positive moods in Player 2 when that player was inferior to the other group members. Second, we hypothesized that participants would perceive lower need satisfaction and positive moods when Player 2 was ostracized as compared to included and over-included players. Third, we hypothesized that participants would perceive lower levels of basic need satisfaction and positive moods when the observed target was ostracized and superior to the others, compared to when the target was ostracized and inferior to the others. Table 1 presents all descriptive statistics for these variables by each manipulation.

We first investigated the effects of status on perceptions of need satisfaction and positive moods. As expected, there was a significant effect of status on participants' perceptions of Player 2's overall level of need satisfaction ($F(1, 105) = 12.35, p < .01$, partial $\eta^2 = .11$). Participants who were told Player 2 was inferior to the other group members perceived lower levels of need satisfaction ($M = 2.48, SD = 1.10$) than participants who were told Player 2 was superior to the other members ($M = 2.98, SD = 1.38$). We also found this expected effect on perceptions of Player 2's positive moods ($F(1, 105) = 9.00, p < .01$, partial $\eta^2 = .08$). Participants who were told Player 2 was inferior to the other group members perceived lower positive moods ($M = 2.72, SD = .96$) than participants who were told Player 2 was superior to the other members ($M = 3.09, SD = 1.15$).

Next, we investigated the effects of inclusionary status on perceptions of need satisfaction and positive moods. As we expected, there was a significant effect of inclusionary status on participants' perceptions of Player 2's overall level of need satisfaction ($F(2, 105) = 72.78, p < .01$, partial $\eta^2 = .58$). Participants perceived lower need satisfaction when Player 2 was ostracized ($M = 1.45, SD = .47$) as compared to when Player 2 was included ($M = 3.03, SD = 1.02$) or over-included ($M = 3.70, SD = .98$; Bonferroni post hoc tests indicate each of these means are significantly

Table 1
Descriptive Statistics for Need Satisfaction and Positive Mood by Each Experimental Condition in Study 1

	Ostracized		Included		Over-included	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Need Satisfaction						
Inferiority	1.45	0.44	2.56	0.85	3.33	0.98
Superiority	1.46	0.51	3.48	0.99	4.08	0.88
Positive Mood						
Inferiority	1.86	0.65	2.88	0.69	3.32	0.91
Superiority	1.83	0.54	3.61	0.71	3.88	0.79

different from each other, p -values $< .01$). We also found this expected effect on perceptions of Player 2's positive moods ($F(2, 105) = 59.55, p < .01$, partial $\eta^2 = .53$). Participants perceived lower positive moods when Player 2 was ostracized ($M = 1.84, SD = .58$) as compared to when Player 2 was included ($M = 3.25, SD = .78$) or over-included ($M = 3.61, SD = .89$; Bonferroni post hoc tests indicate the ostracized conditions were different from the included and over-included conditions, $p < .01$).

Finally, there were significant interactions between the two manipulations on participants' perceptions of need satisfaction and positive moods. The differences in perceptions for need satisfaction were for the inclusion and ostracism conditions ($F(2, 105) = 3.09, p = .05$, partial $\eta^2 = .06$). Whereas participants perceived a difference in need satisfaction for inclusion ($t(35) = -3.03, p < .01, d = 1.00$) and over-inclusion ($t(36) = -2.29, p < .05, d = .75$), they did not perceive a difference in these variables for the two ostracized conditions ($t(34) = -.07, p = .95, d = .02$). A similar pattern emerged for perceptions of positive moods ($F(2, 105) = 2.76, p = .07$, partial $\eta^2 = .05$). Participants perceived a difference in positive moods for inclusion ($t(35) = -3.12, p < .01, d = 1.04$) and over-inclusion ($t(36) = -2.03, p = .05, d = .66$) but did not perceive a difference in these variables for the two ostracized conditions ($t(34) = .20, p = .84, d = .05$).

Our first two hypotheses were confirmed: Participants perceived both threat to inclusionary status and inferior status on a group task decreased need satisfaction and positive moods. As for our third hypothesis, participants did not perceive a difference in levels of need satisfaction and positive

mood for Player 2, regardless of whether this player was identified as superior or inferior on the previous group task. In other words, participants did not perceive that Player 2 took solace from being superior to buffer ostracism's effects. Participants did perceive status had differing effects when Player 2 was either included or over-included—the more Player 2 was included the better participants thought he or she felt, and out-performing the group members only intensified those feelings. One curious finding was how the performance manipulation influenced participants' perceptions of Player 2's degree of inclusion. Participants perceived Player 2 was more included in the basic *inclusion* level (33%) when Player 2 also was superior to the group; this was not the case when Player 2 was identified as inferior to the group. Group behavior in each of these conditions was programmed to be equivalent so the actual number of tosses Player 2 received regardless of the status manipulation was equivalent. Perhaps under such ambiguous circumstances, participants expected the group members to favor a member who was superior and these expectations influenced their perceptions (cf. Darley & Gross, 1983).

Study 2

Study 1 demonstrated how participants perceived individuals' reacting to their degree of inclusionary status in a group, particularly when their performance was either superior or inferior to that of the other group members. The next stage of this research was to determine how participants themselves would feel in these same situations. Participants did not perceive other persons' receiving any protection from being ostracized from a group because of their superior performance. It is possible that when participants were in this situation themselves, they would feel quite different about taking solace from outperforming the individuals who ostracize them.

Participants and design. Forty-seven elementary psychology students participated in this study in exchange for partial course credit. Seven were removed from the analyses because of either computer failures or suspicion of our manipulations. The final sample was 40 participants (33 female, 7 male; ages 18–50, median = 19.00, $SD = 7.04$). A 2 (Status: superiority or inferiority compared to other group members) \times 2 (Inclusionary Status: inclusion or ostracism) between-subjects design was used. Participants were randomly assigned to one of these four conditions.

Procedure. Participants were brought to an ostensible mental visualization lab either as individuals or in groups of up to eight people. In all cases, they were separated into cubicles. Participants were told they would

be doing three tasks in a three-person group; the first task would be an idea-generation task, the second would be an Internet group discussion, and the third would be another idea-generation task. The purpose of the idea-generation task was for group members to come up with as many uses for an unattached doorknob as possible, individually in a 7.5-minute period. The group members received feedback about their individual performance compared to the performance of the other group members (these group members were virtual confederates). Participants were asked to use the performance feedback to visualize mentally the other group members and the group as a whole. This feedback was bogus and induced the Status manipulation. In the *superior condition*, the participant (always referred to as Player 2) performed in the 86th percentile compared to other college students, and specifically to the other two confederates (62% and 58% for Players 1 and 3 respectively). In the *inferior condition*, the participant performed in the 34th percentile, whereas the other two confederates were 62% and 58% respectively. This feedback was visible to the participants for 1 minute. Then participants completed a measure of various mood states.

The second group task was for the group members to chat among themselves while waiting for the next phase of the study to be set up. The purpose of this chat was to get accustomed to chat-room use and to get acquainted with one another for the upcoming final group task (which never actually happened). The confederates' dialogue was scripted for this interaction, and this is where the inclusion manipulation occurred. At the beginning of the chat, the confederates indicated knowledge of each others' performance scores (including the participant's score). In the *inclusion condition*, the confederates responded to participants and included them equally in the conversation; in the *ostracism condition*, the confederates ignored and excluded participants from the conversation after initially commenting on their performance scores. The experimenter pretended to be a confederate in each of the conditions. In this study, the participants were the target players because they were recipients of both manipulations: superior/inferior status on the prior brainstorming task as well as inclusion/ostracism during the chat room interaction.

Following the chat room interaction, participants were asked several questions about their levels of need satisfaction and mood levels. Unless reported otherwise, all items were presented on a scale ranging from 1 (*extremely untrue*) to 10 (*extremely true*). After answering these dependent measures, participants completed a final task. The goal of this task was for group members to solve several basic arithmetic problems individually in a 5-minute period. This task bolstered the cover story. After this task, participants answered manipulation checks and basic demographic questions.

Manipulation checks. To assess the effectiveness of the status manipulation, participants indicated how they performed on the idea-generation task, compared to their group members and university students in general on a scale ranging from 1 (*much better*) to 10 (*much worse*). These two items were averaged together to create an overall status check. To assess the effectiveness of the inclusionary status manipulation, participants indicated how equal they perceived the group chat room discussion was on a scale ranging from 1 (*very unequal*) to 10 (*very equal*).

Four Basic Needs. Similar to Study 1, we used a measure adapted from the Four Basic Needs threat scale (Williams, 2001; Zadro et al., 2004) to assess the effects of ostracism on participants' levels of need satisfaction. Participants were asked the degree to which they thought each of the 12 statements indexing these need levels applied to them at the current time. There were three items indexing each of the four needs, and an index of each need was created by averaging the relevant items together.

Mood. Participants' mood was measured using five items derived from Forgas, Bower, and Moylan's (1990) mood questionnaires. Participants were asked to rate each item on a scale from 1 (*extremely untrue*) to 10 (*extremely true*). Some example moods are "good," "friendly," "tense," and "sad." These items were averaged into an overall mood score.

Analysis. Unless otherwise indicated, factorial analyses of variances were conducted on each of the dependent measures, using the status and inclusionary status manipulations as our two fixed factors.

Results: Manipulation checks. The manipulation check items indicated our manipulations were effectively perceived by participants. For the status manipulation, participants in the superior conditions were more likely to perceive they outperformed the other group members ($M = 7.85$, $SD = .69$) than participants in the inferior conditions ($M = 2.83$, $SD = 1.00$; $F(1, 36) = 348.62$, $p < .01$). As we expected, there was no effect of inclusionary status or interaction of the two fixed factors on perception of status. For the inclusionary status manipulation, participants in the ostracism conditions perceived the chat room interaction was less equal ($M = 2.35$, $SD = 1.27$) than included participants ($M = 7.00$, $SD = 2.13$; $F(1, 36) = 68.10$, $p < .01$). As we expected, there was no effect of status or interaction of the two fixed factors on perception of inclusion.

Results: Inclusionary status and perceptions of superiority or inferiority. Our hypotheses for how participants would react to our two manipulations were similar to Study 1. We hypothesized participants would have higher negative moods when they were told they were inferior to their group members compared to participants who were told they were superior to their group. We also hypothesized participants would have higher levels of

Table 2
Descriptive Statistics for Need Threat by Each Experimental Condition in Study 2

	Ostracized		Included	
	M	SD	M	SD
Inferiority	5.76	1.37	4.12	0.87
Superiority	6.04	2.12	3.54	1.20

threatened needs and higher negative moods when they were ostracized as compared to included in the chat room interaction. Our final hypothesis was derived from participants' perceptions in Study 1: Ostracized participants would not have different levels of need satisfaction or negative moods, regardless of their status on the previous task. Table 2 presents all descriptive statistics for levels of threatened needs by each experimental condition.

We first investigated the effects of status on participants' levels of negative moods. As expected, there was a significant effect of status on participants' negative moods ($F(1, 38) = 10.82$, $p < .01$). Participants who were told they were inferior to the other group members had higher negative moods ($M = 4.94$, $SD = 1.55$) than participants who were told they were superior to the other members ($M = 3.46$, $SD = 1.28$).

Next, we investigated the effects of inclusionary status on participants' levels of need satisfaction and negative moods. As expected, there was a significant effect of inclusionary status on participants' levels of need satisfaction for each of the four basic needs (F -values between 6.00 and 80.57, p -values $< .05$); ostracized participants always had lower need satisfaction than included participants. A similar effect was found for participants' negative moods ($F(1, 36) = 11.79$, $p < .01$). Ostracized participants felt more negative moods ($M = 5.08$, $SD = 1.83$) than included participants ($M = 3.43$, $SD = 1.12$).

Finally, there were no significant interactions between the two manipulations on participants' levels of need satisfaction or negative moods, F -values < 6.00 , p -values $> .05$. These data suggest that regardless of being superior or inferior on a subsequent task, ostracism threatens levels of need satisfaction and increases negative moods. In this study, included participants did not receive a boost in need satisfaction or improved mood based on their status of superiority or inferiority.

Study 3

The data from Studies 1 and 2 suggest participants expect and experience the negative effects of ostracism unmitigated by being identified as superior or inferior to their group members. Any effects on performance were more likely to have an effect in situations involving inclusion. We decided to provide a stronger test of how the findings from Study 1 (expectations) compared to participants' actual experiences. We used the same design from Study 2 and added an over-inclusion level to the inclusion-any status manipulation. Williams (2001, 2007a) argues that ostracism may have various effects depending upon how much time has passed since the ostracism episode. For example, some people are more likely to recover faster from ostracism than others (cf. Zadro, Boland, & Richardson, 2006). Williams (2007a) speculated that part of this difference in recovery may have to do with the types of attributions individuals make about their ostracism, or other social cognitive processes. These processes are more likely to take place after deliberate reflection on the episode. We decided to assess the effects of ostracism on need satisfaction and positive moods both immediately after the episode and after a short delay to assess the effects of performance on recovery over time.

Participants and Design. In exchange for course credit, 111 elementary psychology students participated in this study. Five participants indicated participation in a previous study related to ostracism; these participants were removed from all analyses. The final sample was 106 participants (30 female, 76 male; $M_{\text{age}} = 19.47$ yrs, $SD = 1.38$). A 2 (Status: superiority or inferiority compared to other group members) \times 3 (Inclusionary Status: inclusion, ostracism, or over-inclusion) between-subjects design was used. Participants were randomly assigned to one of these six conditions.

Procedure. Participants were brought to an ostensible mental visualization lab either as individuals or in groups of up to eight people. In all cases, they were separated into cubicles. Participants were told they would be doing three tasks in a three-person group. The first task would be an idea-generation task, the second would be a mental visualization exercise, and the third would be another idea-generation task. The purpose of the idea-generation task was for group members to come up with as many uses for a brick as possible individually in a 5-minute period. The group members received feedback about their individual performance compared to the performance of the other group members (these group members were virtual confederates). Participants were asked to use the performance feedback to visualize the other group members and the group as a whole. This feedback was bogus and induced the status manipulation. In the *superiority condition*, the participant (always referred to as Player 2) contributed 51% to the

group's performance compared to 24% and 25% for the other two group members (i.e., Players 1 and 3 respectively). In the *inferiority condition*, the participant contributed 15% to the group's performance compared to 42% and 43% for the other two group members. This feedback was visible to the participants for 1 minute.

The second group task was a task called Cyberball, an online ball toss game frequently used to manipulate ostracism (Williams et al., 2000). Participants were told the task involved mentally visualizing aspects of the virtual online ball-toss game. This was done so participants did not focus on their ball tossing behavior. During the game, participants tossed around a virtual ball with two other Cyberball players (supposedly the group members from the first task). Participants played a 30-toss game of Cyberball with two computer-programmed confederates. In the *inclusion condition*, the confederates tossed the ball to the participant about 33% of the time; in the *ostracism condition*, the confederates tossed the ball to the participant about 4% of the time. In the *over-inclusion condition*, the confederates tossed the ball to the participant about 50% of the time. During the game, the feedback of the group members from the idea-generation task was again visible to the participants. In this study, the participants again were the target players because they were recipients of both manipulations: superior/inferior status on the prior brainstorming task as well as over-inclusion/inclusion/ostracism during the Cyberball game.

Following the Cyberball game, participants were asked several questions about their Cyberball game-playing experience and their perceptions of the other players. These measures included the manipulation checks and various dependent variables. Unless reported otherwise, all items were presented on a scale ranging from 1 (*not at all*) to 5 (*extremely*). After answering the various dependent measures, participants completed a final idea-generation task. The goal of this idea-generation task was for group members individually to come up with as many uses for a knife as possible in a 5-minute period, and this activity was predominately used to bolster the cover story.

Manipulation Checks. To assess the effectiveness of the status manipulation, participants indicated whether they performed better than the other group members on the idea-generation task. To assess the effectiveness of the inclusionary status manipulation, participants indicated what percentage of tosses they received; they were informed equality of group tosses would be 33%.

Four Basic Needs. We used the Four Basic Needs threat scale (Williams, 2001; Zadro et al., 2004) to assess the effects of ostracism on participants' levels of need satisfaction. Participants were asked the degree to which they agreed with 21 statements indexing these need levels ($\alpha = .96$).

Participants rated statements such as, "During Cyberball, I felt rejected (belonging)," "During Cyberball, I felt liked (self-esteem)," "During Cyberball, I felt powerful (control)," and "During Cyberball, I felt important (meaningful existence)." An overall index of need satisfaction was created by averaging the items together. Participants also answered these items a second time after a 1-minute delay; this second round of questions assessed how the participants felt at that moment, rather than during the game ($\alpha = .94$).

Mood. Participants' mood was measured using 14 items in which they were asked to indicate the extent to which they experience various positive and negative moods during the game. Some example moods are "good," "pleasant," "tense," and "sad." These items were averaged and combined into an overall mood score ($\alpha = .90$). Participants also answered these items a second time after a 1-minute delay; this second round of questions assessed how the participants felt at that moment, rather than during the game ($\alpha = .89$).

Analysis. Unless otherwise indicated, factorial analyses of variances were conducted on each of the dependent measures, using the deviance and inclusionary status manipulations as our two fixed factors.

Results: Manipulation checks. The manipulation check items indicated our manipulations were effectively perceived by participants. For the status manipulation, participants in the superior conditions were more likely to perceive they outperformed the other group member ($M = 3.50$, $SD = 1.30$) than participants in the inferior conditions ($M = 1.85$, $SD = 1.14$; $F(1, 100) = 47.40$, $p < .01$, partial $\eta^2 = .32$). As expected, there was no effect of inclusionary status or interaction of the two fixed factors on perception of status (F -values < 1.00 , p -values $> .50$, partial η^2 -values $< .02$).

For the inclusionary status manipulation, participants in the ostracism conditions perceived they received the ball less often ($M = 7.30\%$, $SD = 5.97$) than in the inclusion ($M = 31.80\%$, $SD = 8.66$) and over-inclusion conditions ($M = 63.69\%$, $SD = 19.63$; $F(2, 94) = 148.29$, $p < .01$, partial $\eta^2 = .76$; Bonferroni post hoc tests indicate each of these means are significantly different from each other, p -values $< .01$). There was no effect of superior or inferior status or interaction of the two fixed factors on perception of inclusionary status (F -values < 1.00 , p -values $> .55$, partial η^2 -values $< .01$).

Results: Inclusionary status and perceptions of superiority or inferiority. Our hypotheses for how participants would react to our two manipulations were similar to those of Studies 1 and 2. We hypothesized that participants would have lower positive moods when they were told they performed inferior to their group members compared to participants who were told they were superior to their group. We also hypothesized that participants would have lower need satisfaction and lower positive moods when they were ostracized as compared to included in the Cyberball game. Our next

Table 3
Descriptive Statistics for Need Satisfaction and Positive Mood by Each Experimental Condition in Study 3

	Ostracized		Included		Over-included	
	M	SD	M	SD	M	SD
Need Satisfaction						
Inferiority						
Time 1	1.88	0.64	3.14	0.53	3.55	0.62
Time 2	2.39	0.63	3.38	0.60	3.68	0.65
Superiority						
Time 1	1.98	0.58	3.62	0.57	3.79	0.68
Time 2	2.52	0.61	3.75	0.43	3.82	0.60
Positive Mood						
Inferiority						
Time 1	2.57	0.81	3.35	0.41	3.71	0.47
Time 2	3.15	0.60	3.48	0.55	3.74	0.50
Superiority						
Time 1	3.15	0.60	3.48	0.55	3.74	0.50
Time 2	3.24	0.73	3.95	0.47	4.04	0.46

hypothesis was derived from participant reactions in Study 2: Ostracized participants would not have different levels of immediate need satisfaction or positive moods, regardless of their status identified in the previous task. We also had hypotheses about how our manipulations would affect levels of need satisfaction and positive moods over time. We hypothesized that ostracized participants' levels of need satisfaction and positive moods would be higher after a delay. We also hypothesized that the status manipulation would have an effect on need satisfaction and moods after a delay: Participants who were ostracized and outperformed their group members would feel better than ostracized participants who performed worse than their group. Table 3 presents all descriptive statistics for these variables by each manipulation.

We first investigated the effects of status on participants' levels of need satisfaction and positive moods. There was a significant effect of performance

on participants' overall level of need satisfaction ($F(1, 100) = 7.28, p < .01$, partial $\eta^2 = .07$). Participants who were told they were inferior to the other group members had lower levels of need satisfaction ($M = 2.97, SD = .54$) than participants who were told they were superior to the other members ($M = 3.25, SD = .54$). We also found this expected effect on participants' positive moods ($F(1, 100) = 6.74, p < .05$, partial $\eta^2 = .06$). Participants who were told they were inferior to the other group members experienced lower positive moods ($M = 3.36, SD = .53$) than participants who were told they were superior to the other members ($M = 3.63, SD = .52$).

Next, we investigated the effects of inclusionary status on participants' levels of need satisfaction and positive moods. There was a significant effect of inclusionary status on participants' overall level of need satisfaction ($F(2, 100) = 77.85, p < .01$, partial $\eta^2 = .61$). Participants experienced lower need satisfaction when they were ostracized ($M = 2.19, SD = .54$) as compared to when they were included ($M = 3.44, SD = .54$) or over-included ($M = 3.69, SD = .54$; Bonferroni post hoc tests indicated the ostracism conditions are significantly different from the included and over-included conditions, $p < .01$). We also found this expected effect on participants' positive moods ($F(2, 100) = 27.48, p < .01$, partial $\eta^2 = .36$). Participants experienced lower positive moods when they were ostracized ($M = 2.97, SD = .52$) as compared to when they were included ($M = 3.65, SD = .52$) or over-included ($M = 3.86, SD = .52$; Bonferroni post hoc tests indicate the ostracized conditions were different from the included and over-included conditions, $p < .01$).

As expected, there were no significant interactions between the two manipulations on participants' levels of need satisfaction and positive moods (F -values < 1.50 , p -values $> .20$, partial η^2 -values $< .03$). We then examined the influences of our manipulations on changes in levels of need satisfaction and positive moods over time. As expected, there was an interaction between inclusionary status and need satisfaction over time ($F(2, 100) = 10.77, p < .01$, partial $\eta^2 = .18$). Participants who were over-included did not have a significant increase in need satisfaction over time ($t < .50, p = .70$), and included participants only had a marginal increase in need satisfaction ($t(35) = -1.84, p = .07, d = .21$). The predicted increase in need satisfaction was for the ostracized participants: Their need satisfaction immediately after ostracism ($M = 1.93, SD = .61$) significantly increased after the delay ($M = 2.46, SD = .62$; $t(34) = -5.36, p < .01, d = .86$). A similar pattern of effects was found for the interaction between inclusionary status and positive mood change over time ($F(2, 100) = 6.03, p < .01$, partial $\eta^2 = .11$). Neither over-included nor included participants had a significant increase in positive moods over time (t -values $< .50, p$ -values $> .08$). The predicted increase in positive moods was for the ostracized participants: Their

levels of positive moods immediately after ostracism ($M = 2.75, SD = .77$) significantly increased after the delay ($M = 3.20, SD = .67$; $t(34) = -4.38, p < .01, d = .62$). Contrary to our hypotheses, the status manipulation had no effects on changes in the levels of need satisfaction or positive moods for ostracized participants over time (F -values $< 1.00, p$ -values $> .90$, partial η^2 -values $< .01$).

The data from this third study support the conclusions from the previous two studies: Both inferiority and ostracism negatively affect levels of need satisfaction and positive moods. Being superior or inferior matters little when individuals are ostracized. Outperforming other group members does not serve as a buffer for ostracism, nor does performing worse than the sources of ostracism intensify the ostracism's effects. Individuals do begin to recover levels of need satisfaction and experience improved mood over a period of time (Williams 2001, 2007a); having outperformed or performed worse than the other group members did not affect this recovery process.

General Discussion

We conducted three studies to investigate what occurs when competing needs for belonging and self-esteem are simultaneously susceptible to threat. Study 1 was unprecedented in examining the impact of ostracism for observed targets; participants provided expected measures for group members in which the ostracism manipulations took place. We predicted that ostracism would be perceived as fair when it concerns an inferior group member and unfair when it concerns a superior group member. Moreover, we predicted that when ostracism would be perceived as fair, it would alleviate the negative impact. The hypotheses were not supported by the results. Ostracism was never judged as fair, not when observing a superior or inferior group member getting ostracized (Study 1), not when experiencing ostracism (Study 2 and Study 3), and regardless of the direction in which the target of ostracism is deviating from the group norm. For all three studies, the identified performances on the group tasks provided the group members' averages (group norms) from the targets' statuses (superior or inferior). Our findings suggest that awareness of and comparison to a group norm does not sway one's judgment of fairness in being ostracized. In particular, the fairness of ostracism does not directly affect the responses: the level of need satisfaction and mood. Without fail, ostracism leads to lower levels of need satisfaction and lowered mood, both as a perceived measure of serving someone being ostracized and as a direct measure of one's own experiences of ostracism. These responses are amplified because ostracism is consistently considered to be an unfair treatment.

Ferguson (1989) explained that in his final formulation, Adler considered social interest as far more fundamental than was striving for superiority. Adler further posited that a person's sense of belonging and place in society forms the central basis for the kinds of goals the person sets. Hence, Ferguson (2006) concluded that Adlerians believe when one feels belonging, one strives to contribute to group welfare and one does not strive to achieve superior social status. The findings from our studies endorse this belief in purposive behavior as well as support the robustness of the negative impacts of ostracism. As of yet, no moderation with any personality factors (e.g., rejection sensitivity), attributions (e.g., internal versus external) or social and situational context factors (e.g., sharing the experience with others) have been identified. For instance, Carter-Sowell, Chen, and Williams (2006) found that loneliness, self-monitoring, and need for belonging did not moderate reflexive reactions to ostracism. Essentially, the initial reaction to ostracism is unmitigated distress and pain (Chen & Williams, 2007). Indeed, based on cumulative findings, the impact of ostracism is immediate, strong, and robust.

Additionally, we found the impact of ostracism even permeates to outside observers. As shown in Study 1, a target being ostracized is perceived to have lower levels of need satisfaction and positive moods. This implies that merely observing ostracism activates the early detection system and elicits similar coping responses as when one experiences ostracism directly. Williams (2007b) proposed the detection of ostracism to be crude but adaptive. According to our current research, this cognitive awareness adapts from being a target to being an outside observer who perceives the negative outcomes for an ostracized individual.

Limitations

Several limitations associated with this research need to be addressed. To ensure participants felt the appropriate deviance response after being told how they performed compared to their group mates on a use generation task, measures ensuring participants felt they were superior or inferior compared to their group members needed to be included. Without measures of status perception, our lack of a significant difference between superior and inferior participants coming up with more uses of a doorknob than fellow group members could be attributed to a weak manipulation. The tasks designed to make participants feel superior or inferior also present a limitation. Participants may have found being successful on the thought generation task to be unimportant. Excelling at a thought generation task may have less significance for an individual compared to excelling at a task that reflects important aspects of an individual, such as his or her intelligence.

This research is limited by a lack of attribution measurement. For example, potential thought processes as, "they are ostracizing me because I am too good," were not captured. Finally, additional ostracism conditions were needed. A partial ostracism condition, one in which participants receive the ball about 17% (splitting the differences between the ostracism and inclusion condition) would have been beneficial. Jones, Carter-Sowell, Kelly, and Williams (2009) have examined partial ostracism or being "out of the loop," where people perceive being uninformed of information that is mutually known by others. Findings indicate that compared to in-the-loop participants, out-of-the-loop participants, even without significant costs for being uninformed, experienced a variety of deleterious social and psychological effects (e.g., depleted fundamental needs). The use of partial ostracism conditions has demonstrated greater sensitivity to moderating effects (Williams & Chen, 2008).

Future Directions

Current findings raise numerous questions warranting further investigation. The focus of our research was the satisfaction of the fundamental need of human belonging. Ostracism thwarts belonging satisfaction. Nevertheless, how else might ostracism affect more fundamental needs on Maslow's (1954) hierarchy? Recent research has found ostracized individuals, compared to included individuals, reported feeling physically colder (Zhong & Leonardelli, 2008). Ostracized individuals may desire to fulfill needs lower on Maslow's hierarchy than included participants. Carter-Sowell, Chen, and Williams (2008) tested whether ostracized individuals are more socially susceptible to a subsequent influence attempt and found that ostracism, compared to inclusion, induced increased compliance. Individuals who are rejected, discriminated against, or who experience other negative exclusionary treatment may be especially vulnerable to ostracism-induced social susceptibility in order to satisfy their basic need of belonging.

Two interesting questions that resulted from our studies are as follows. How accurate are we in predicting how others will feel when we observe a social interaction? Why would participants have expected the observed superior group member to be ostracized by the others in the group? For this study, participants were informed that an individual's performance on a group task was superior or inferior to the group norm and then the target individual was observed to be included to varying degrees in a follow-up group interaction. Participants in Study 1 correctly perceived the ostracized individual would feel worse than the included individual regardless of identified performance status. Perhaps participants from Study 1 expected the superior and inferior group members would be ostracized solely for being different

from the group, regardless of their performance status. We know individuals will ostracize an inferior group member (Van Leeuwen, Van den Bosch, Castano, & Hopman, 2006), particularly one that presents a burden to the group (Wirth, Wesselmann, Williams, Pryor, & Reeder, 2009). Wesselmann, Bagg, and Williams (2009) found not only that participants recognize that an individual feels lower basic need satisfaction after watching the individual be ostracized but also that the participants observing the individual being ostracized self-report similar lower basic need satisfaction. This expectation may be why participants knew ostracized individuals would feel bad despite having a superior performance compared to the group members.

Conclusion

Adler (1930/1970) anticipated the findings of these three studies when he stated that

social feeling represents a view that the human is dependent on the group, while striving for supremacy represents the view that the individual can do without the group. There is no doubt that the social feeling is superior to the individualistic striving. (p. 116)

These three studies of reactions to ostracism contribute to the literature by empirically examining the unique experience of simultaneously susceptible basic human needs of belonging and self-esteem. Our research confirms Adler's initial assertion and illustrates that the impact of ostracism is unaffected by the potential moderation of status. The presence of legitimate reasons does not buffer or intensify responses to ostracism. In this research, ostracism was never perceived as fair, regardless of the direction in which the target was deviating from the group norm. Whereas attributions are a necessity to make sense of the world, they are not beneficial when coping with ostracism at the outset.

Our research was directed by a model of ostracism (see Williams, 1997; 2001; 2009) that has shown the immediate negative psychological consequences occurring despite individual differences or situational factors that should mitigate initial reactions. Ostracism serves as a useful tool for groups in maintaining a group norm, and it provides an effective means to address threats to the group image, yet it is not perceived as a fair treatment for targets whether superior or inferior to other group members.

Ostracism due to superiority versus inferiority is a fascinating and multifaceted area that warrants further examination. The possibilities for future research offer a more complete picture of how needs for belonging and self-esteem interact on a variety of dimensions.

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