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Marginalized Individuals and Extremism: The Role of Ostracism in Openness to Extreme Groups

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Does the experience of being socially ostracized increase interest in extreme groups? Drawing from the temporal need-threat model of ostracism, and uncertainty-identity theory, we conducted two experiments testing the hypothesis that compared to included individuals, ostracized individuals will show greater interest in extreme groups. In Study 1, following a recruitment attempt, ostracized participants expressed greater willingness to attend a meeting of an activist campus organization advocating reducing tuition. In Study 2, ostracized participants expressed greater openness towards gang membership. These findings emphasize the importance of leaders creating environments that minimize feelings of social exclusion, and suggest that approaches to international policy that exclude/marginalize (i.e., refusing to meet for negotiations) may produce greater extremity.

Ostracism is a painful experience that threatens humans’ need for belonging, self-esteem, control, and meaningful existence (Williams, 2009). Despite the negative consequences of social exclusion, it is a common experience for children and adults alike (e.g., Abrams & Killen, 2014). In this article, we consider ostracism as a form of marginalization and ask whether people who find themselves ostracized are subsequently more open to extreme groups.

Leadership within a group is a process of social influence (Hogg, 2010). According to the social identity theory of leadership (Hogg, 2001; Gaffney, Rast, & Hogg, 2018), people more positively evaluate leaders who are prototypical of

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the group; a phenomenon supported by meta-analysis (Barreto & Hogg, 2017). In this research, we examine the complementary side of this dynamic by studying group preferences of *marginalized*, rather than prototypical, individuals. This perspective contributes to burgeoning interest in leadership and social transformation by identifying a factor that contributes to interest in extreme groups, and also sheds light on how leaders with extreme views gain power.

We conceptualize extreme groups as those in which the beliefs, actions, or demands on members deviate from what most people would consider normal. This includes terrorist organizations (Kruglanski & Fishman, 2009), extreme political organizations (Hogg, Sherman, Dierselhuis, Maitner, & Moffitt, 2007), and extreme religious groups/new religious movements (Hogg, Adelman, & Blagg, 2010).

Gardner, Pickett, and Knowles (2005) used a food analogy to discuss ostracism; people are motivated to engage in *social snacking* when they are denied social connection. Here we argue that, just as people lower their thresholds for what they are willing to eat, they also lower their threshold for the types of groups they are interested in joining when they are ostracized. Drawing from Williams's (2009) temporal need-threat model of ostracism, and Hogg's (2007) uncertainty-identity theory, we predicted that ostracism increases interest in extreme groups.

According to the temporal need-threat model of ostracism (Williams, 2009), ostracism threatens four basic psychological needs, which individuals are motivated to fulfill. To restore these needs ostracized individuals become interested in being accepted by others (Maner, DeWall, Baumeister, & Schaller, 2007; Williams, 2009). Groups in general offer fortification of all needs. They provide a sense of belonging by being a part of an existing group, they can raise individual's self-esteem by being accepted and liked by others, they provide a sense of explanatory and predictive control by instilling a sense who one is and what one believes in, and they give meaning to one's existence through the knowledge and actions associated with the group's purpose. Extreme groups may be even more likely to fortify threatened needs. Belonging to an extreme group may seem more valuable and special because its membership roles are more selective or restrictive, which would also elevate one's self-esteem. Extreme groups may be associated with taking action and having an impact on society, which would further elevate a sense of control. Taking such actions would provoke acknowledgement from others, increasing a sense of meaningful existence.

Ostracized individuals fortify belonging and self-esteem by cognitively or behaviorally strengthening existing ties. For example, merely seeing a photo of one's close relationship partners diminishes the pain of ostracism (Karremans, Heslenfeld, van Dillen, & van Lange, 2011). Behaviorally, after being ostracized, individuals are more responsive to the three major types of social influence:

conformity, compliance, and obedience (Riva, Williams, Torstrick, & Montali, 2014), all responses that can strengthen one's ties with others.

Ostracized individuals can also fortify belonging and self-esteem through sensitive tuning of social information. For example, following ostracism people are better at remembering social information (Gardner, Pickett, & Brewer, 2000), and distinguishing genuine versus non-genuine smiles (Bernstein, Young, Brown, Sacco, & Claypool, 2008). Additionally, those who are ostracized also fortify belonging/self-esteem by actively seeking new affiliations.

Compared to moderate groups, extreme groups may be especially well suited to help restore basic need satisfaction. Extreme groups can amplify the benefits of achieving a sense of belonging because they may be viewed as more selective, so that when individuals are finally included, the satisfaction from belonging is more powerful. Also, by holding less common positions, extreme groups can provide a more distinct identity (Brewer, 1991), leading to increased self-esteem. This distinctiveness may be especially attractive to ostracized individuals who have been poorly treated by others. Groups that endorse extreme courses of action to achieve desired outcomes also likely offer a strong sense of control to potential members, since a wide range of actions are considered acceptable. Likewise, these groups may be perceived as more likely to succeed and impact others, thereby offering a greater sense of meaningful existence. We hypothesized that ostracism would increase interest in extreme groups, possibly by threatening basic needs satisfaction.

Recent research suggests that belonging to extreme groups leads to feelings of superiority, which may be beneficial in restoring satisfaction of basic needs, especially self-esteem and control. Toner, Leary, Asher, and Jongman-Sereno (2013) found that political extremism predicts the belief that one's political views are superior to the views of others. Because feeling superior entails positive feeling towards the self, this suggests that identification with extreme groups is an effective method of restoring feelings of self-esteem.

According to uncertainty-identity theory, people join and identify with groups to reduce self-uncertainty (Gaffney, Rast, & Hogg, 2018; Hogg, 2007). This theory holds that extreme groups are particularly effective in reducing self-uncertainty, conceptualized broadly as feelings of anxiety or ambiguity regarding one's identity or actions. Identifying with a group is thought to reduce self-uncertainty by placing the individual within a social category with prototypical characteristics and fellow members. Groups provide a prototype that can inform the individual about the appropriate thoughts, feelings, and actions in an otherwise uncertain situation. Belonging to social categories clarifies the way one should behave and provides numerous others to look to for information about the world (Hogg, 2007).

However, not all groups are equally effective at reducing uncertainty. Groups high in entitativity should be more effective at reducing uncertainty. Entitativity refers to the extent to which groups have clear boundaries, internal homogeneity,

frequent social interaction, clear structure, common goals, and common fate (Hamilton & Sherman, 1996). Groups characterized by clear behavioral prescriptions and boundaries are theorized to be more effective in reducing uncertainty relative to less entitative groups (Hogg, 2004), a phenomenon that can help explain the appeal of ideological extremism (Hogg, 2014).

Uncertainty has been shown to motivate identification with highly entitative groups. Hogg and colleagues (2007) showed that participants primed with self-uncertainty increased identification with their political party (in Study 1) and their temporary lab group (in Study 2). This effect was strongest for participants who considered the groups to be highly entitative. Subsequent research has shown that, relative to unprimed individuals, those primed to feel uncertain perceive their in-group as more entitative (Sherman, Hogg, & Maitner, 2009).

It is plausible that extreme groups tend to be perceived as being more entitative than moderate groups. Groups that are extreme are likely to have closed boundaries, and stress internal homogeneity (Hogg, 2004). To the extent that extreme groups are seen as entitative they should be particularly attractive to individuals motivated to reduce self-uncertainty. However, entitativity and extremity are conceptually orthogonal. For example, it is easy to imagine an accounting firm that has clear boundaries, internal homogeneity, and frequent social interaction, but it would be a mistake to characterize the firm as extreme. Hogg, Meehan, and Farquharson (2010) suggest that extreme groups have characteristics beyond entitativity that make them attractive to individuals who are experiencing self-uncertainty.

Extreme groups and leaders can be highly attractive to individuals experiencing uncertainty. Hogg, Adelman, and Blagg (2010) observe that strong ideology provides confidence in the group's actions and beliefs, discourages dissent and criticism from members, and provides certainty in a world that seems increasingly unpredictable. Accordingly, Hogg, Meehan, et al. (2010) found that uncertainty increased identification with a radical student organization that was protesting an unpopular tuition reform measure relative to a similar, but moderate, organization. Similarly, research finds that employees who are more uncertain about themselves support leaders who are more autocratic (i.e., those who make decisions without input from others; Rast, Hogg, & Giessner, 2013). Further, experimentally induced uncertainty can lead political conservatives in the United States to more favorably evaluate messages from a leader of the Tea Party (a far-right organization; Gaffney, Rast, Hackett, & Hogg, 2014). To the extent that extreme groups and leaders are uniquely effective in restoring certainty, they should be attractive to individuals who are feeling uncertain about themselves after being ostracized.

To date ostracism has been shown to affect specific needs of belonging, self-esteem, control, and meaningful existence. There are good reasons to expect ostracism to also threaten self-certainty. Theories of ostracism emphasize that it is an inherently ambiguous experience because it often occurs without warning or explanation, and may last an uncertain amount of time (Chen, Law, & Williams, 2010;

Williams, 1997). Additionally, because ignoring and excluding are in essence *non-behaviors*, ambiguity often surrounds judgments of *whether* one is being ostracized. Once detected, ostracism also increases feelings that life is meaningless, and reduces feelings of control and competence (Jones, Carter-Sowell, Kelly, & Williams, 2009; Twenge, Catanese, & Baumeister, 2003; Williams, 2009). Ambiguity, meaninglessness, lack of control, and incompetence are important components of uncertainty. Thus, we hypothesize that ostracism will induce immediate feelings of self-uncertainty.

According to the temporal need-threat model of ostracism (Williams, 2009), when people detect ostracism they enter an initial *reflexive* stage in which they experience threat to basic needs and affect, followed by a *reflective* stage, in which they make sense of the event and recover needs and affect. Accordingly, in both Study 1 and Study 2, in addition to extreme group interest, we measured both immediate/reflexive responses, and delayed/reflective responses.

Study 1

Method

Participants and design. Fifty-one introductory psychology students reported to the laboratory to complete a study ostensibly interested in the effects of mental visualization and how people work in pairs to solve problems. They were randomly assigned to be ostracized ($n = 28$) or included ($n = 23$). Three participants were familiar with the ostracism manipulation, and one expressed suspicion of the confederate, leaving 47 participants in the final analysis (22 males, 27 females $M_{\text{Age}} = 19.02$, $SD = 1.19$; 33 white, 10 Asian, and 4 Black/African American).¹

Procedure. Participants arrived at the laboratory at the same time as a male confederate and were informed that they would engage in a short getting-acquainted task. According to the cover story, participants were to spend ten minutes chatting to get to know each other so that the experiment would be a more realistically represent work relationships in which people who work together are already acquainted. Before leaving the pair together to get acquainted, the experimenter gave them a list of 10 questions to guide the conversation. The eighth question asked, "Are you involved in any campus groups?" The confederate took this opportunity to share that he is involved in the group *PARTI: Purdue Students Advocating Reducing Tuition Immediately*. The confederate explained that *PARTI*

¹The pattern of significant results is identical when these four cases are included.

was conducting a recruitment drive and offered to tell the participant more about the group, and went on to say:

Our group believes that the cost of tuition has become outrageously high, and we are committed to doing whatever it takes to reduce tuition. The current administration has placed a freeze on tuition, but we believe that this is not enough. So we do things like blockade campus with loud rallies, organize lecture walkouts, and we even disrupt classes in protest.²

Beyond just fighting to lower tuition, we are also a very welcoming community that meets for fun social events. We usually meet two or three times a week, and people often hang out outside of formal meetings. Everyone is welcome in our club. We always start the semester with an ice cream social so we can all get to know each other. It is really a good time.

This description of the group was purposefully crafted to present the club as an extreme group, but one that would be likely to fortify need satisfaction if threatened (i.e., the group is welcoming and social).

Following the get-acquainted period, the experimenter returned and asked participants to engage in an online mental visualization exercise, Cyberball. It was made clear that participants were playing other players hooked up through our network rather than each other. Before starting the game, the experimenter explained that they needed to make copies of the forms needed to complete the working in pairs task, and that they would not return until several minutes after the mental visualization exercise ends. Participants were told that they were free to “chat or kill time however you want after you finish the questions following the game.” This aspect of the cover story created an opportunity for the confederate to collect measures of interest in *PARTI*.

After the experimenter left the room, ostensibly to go make copies, participants played Cyberball, in which they were randomly assigned to be either included or ostracized (Williams, Cheung, & Choi, 2000). Cyberball was played with two virtual confederates that were programmed to either include the participant fairly (included condition), or to throw the participant the ball twice in the beginning of the game, but ignore them thereafter (ostracized condition). The game lasted 30 throws (approximately two minutes). The participant and confederate played Cyberball at adjacent computers separated by a divider so that they could not see each other’s screens. Immediately following Cyberball, participants completed the manipulation check, and measures of reflexive need satisfaction, positive affect, negative affect, and self-uncertainty.

After the participant completed these measures, and before the experimenter returned, the confederate reminded the participant that *PARTI* was doing a

²These three acts were pretested and found to be the most extreme out of a list of 16 acts that a campus group could engage in to promote its message (e.g., submitting letters to the newspaper, making phone calls to students, distributing pamphlets, etc.).

recruitment drive, and asked the participant to complete a short survey asking about their perceptions of PARTI based on the confederate's description. All participants agreed to complete the survey.

Finally, the experimenter returned and informed the participants that they were unable to find the forms needed to complete the working in pairs task. The experimenter then asked participants to complete a final set of questions assessing reflective need satisfaction, positive affect, negative affect, and self-uncertainty. After these measures were completed the experimenter returned and conducted a thorough debriefing, probing participants for suspicion and explaining the true nature of the study.

Manipulation checks. The Cyberball manipulation was checked by asking participants to rate agreement with the following two statements: "During the game I was ignored" and "During the game I was excluded" (averaged; $r = .90$). They were also asked to estimate the percentage of throws they received.

Responses to ostracism measures. Immediately following Cyberball (and prior to the confederate asking participants to rate PARTI), participants completed a questionnaire designed to assess need satisfaction, positive affect, negative affect, and self-uncertainty experienced during the game, as potential mediators of the effect of ostracism on interest in the extreme group. These measures were intended to assess reflexive responses to ostracism. Needs satisfaction was measured with 12 items assessing the four basic needs: belonging (e.g., "I felt like an outsider," reverse scored), self-esteem (e.g., "I felt good about myself"), control (e.g., "I felt I had control"), and meaningful existence (e.g., "I felt invisible," reverse scored). These 12 items were averaged to form a composite need satisfaction index ($\alpha = .96$). Positive and negative affect were measured by asking participants to rate how much they felt each of eight adjectives during the game (positive affect: good, friendly, pleasant, and happy; $\alpha = .91$; negative affect: bad, unfriendly, angry, and sad; $\alpha = .89$). Participants also reported the amount of self-uncertainty experienced during the game by responding to six items developed to assess how uncertain participants felt about their actions and identity (e.g., "I felt uncertain about myself"; $\alpha = .85$). Responses on all items were made on a scale from 1 (not at all) to 5 (extremely).

Following the waiting period, during which participants completed the interest in extreme group survey (described next), participants responded again to the same set of questions measuring need satisfaction, positive and negative affect, and self-uncertainty, only this time they responded in reference to how they felt at that moment (all α s $> .82$). This reflective measure allows a test of whether expressing interest in an extreme group facilitates recovery.

Interest in extreme group measures. Interest in the group was assessed with a survey that the confederate asked the participant to complete before the experimenter returned. The survey had six questions and displayed a PARTI logo at the top. The first question asked, "Right now do you feel like you would enjoy being a member of PARTI?" and assesses participant's judgments of how much they would enjoy membership *if* they were included in the group. The second question asked, "How willing would you be to come to a meeting?" and assesses openness to *investigation*, the first step in a socialization process (Moreland & Levine, 1982). Ratings were from 1 (not at all) to 10 (very much). The next two questions asked whether the group representative (confederate) made the group's (a) position and (b) intended actions clear (yes/no). These questions were included to bolster the cover story that the confederate was interested in determining how others perceive the group. All participants responded "yes" to both questions. Participants were also asked to report how extreme they think the group is from 1 (not at all) to 10 (very much). The final question served as a behavioral measure of interest in joining the group and read "Can we contact you?" followed by a line to write their email address.

Results

Manipulation checks. Ostracized participants reported being more ignored and excluded ($M = 4.50$, $SD = .95$) than included participants ($M = 1.72$, $SD = .78$), $t(45) = -11.05$, $p < .001$, $d = 2.94$. Ostracized participants reported receiving fewer ball tosses ($M = 6.15$, $SD = 3.39$) than included participants ($M = 34.89$, $SD = 10.70$), $t(45) = 11.56$, $p < .001$, $d = 3.62$.

Responses to ostracism. Responses to ostracism were analyzed with a series of 2 (inclusion status: ostracized vs. included) \times 2 (stage: immediate vs. delayed) mixed model analyses of variance, with stage as a within subjects factor. There was a main effect of inclusion status on need satisfaction, $F(1, 45) = 34.40$, $p < .001$, $\eta_p^2 = .45$, positive affect, $F(1, 45) = 7.79$, $p = .008$, $\eta_p^2 = .15$, and negative affect $F(1, 45) = 20.60$, $p < .001$, $\eta_p^2 = .31$ (see Table 1). The interaction between inclusion status and time of measurement was also significant for needs satisfaction, $F(1, 45) = 31.30$, $p < .001$, $\eta_p^2 = .41$, positive affect, $F(1, 45) = 16.83$, $p < .001$, $\eta_p^2 = .27$, and negative affect, $F(1, 45) = 8.23$, $p = .006$, $\eta_p^2 = .16$, indicating that ostracized participants improved more between measurements than included participants.

As hypothesized, ostracized participants felt more uncertain during the game ($M = 2.75$, $SD = 1.24$) than included participants ($M = 2.01$, $SD = .65$), $t(45) = -2.67$, $p = .01$, $d = .75$. However they recovered their certainty by the time of the reflective measure $t(45) = -.45$, $p = .65$, $d = .13$. Inclusion status interacted with stage, indicating that ostracized participants showed a greater

Table 1. Means and Standard Deviations for Dependent Variables in Study 2

	Included <i>M (SD)</i>	Ostracized <i>M (SD)</i>	<i>t</i> (45)	<i>p</i>	Cohen's <i>d</i>
<i>Reflexive stage</i>					
Needs satisfaction	3.70 (.61)	1.97 (.82)	8.30	<.001	2.10
Positive affect	3.34 (.66)	2.23 (1.05)	4.47	<.001	1.06
Negative affect	1.63 (.64)	2.83 (.98)	-5.04	<.001	1.22
Uncertainty	2.01 (.65)	2.75 (1.24)	-2.67	.01	.60
<i>Interest in extreme group</i>					
Desired membership	5.65 (1.79)	5.30 (1.75)	-.68	.50	.20
Willingness to attend meeting	4.63 (2.02)	6.00 (2.07)	-2.27	.03	.67
Perceived Extremity	6.22 (2.39)	4.74 (1.88)	2.26	.03	.69
<i>Reflective stage</i>					
Needs satisfaction	3.99 (.51)	3.62 (1.00)	1.67	.10	.37
Positive affect	3.68 (.75)	3.60 (.95)	.33	.74	.09
Negative affect	1.36 (.49)	1.83 (.92)	-2.23	.03	.50
Uncertainty	1.99 (.50)	2.09 (1.03)	-.46	.65	.13

Note. Standard deviations appear in parentheses.

decrease in self-uncertainty than included participants, $F(1, 45) = 6.33, p = .02, \eta_p^2 = .12$.

Interest in extreme groups. Ostracized participants' reports of how much they would enjoy being a member of PARTI ($M = 5.65, SD = 1.79$) were not significantly greater than included participants ($M = 5.30, SD = 1.75$), $t(45) = -.68, p = .50, d = .20$. However, ostracized participants did report a greater willingness to attend a meeting ($M = 6.00, SD = 2.07$) than included participants ($M = 4.63, SD = 2.02$), $t(45) = -2.27, p = .03, d = .67$. Additionally, ostracized participants rated PARTI as less extreme ($M = 4.74, SD = 1.88$) than included participants ($M = 6.22, SD = 2.39$), $t(44) = 2.26, p = .03, d = .69$. Ostracized participants were not significantly more likely to provide their contact information (80.00%) than included participants (70.37%), $\chi^2 (N = 45) = .56, p = .45$.

To test which, if any, variables can best account for the effect of ostracism on interest in attending a PARTI meeting, we ran a multiple mediation model with inclusion status predicting the mediating variables of reflexive ratings of need satisfaction, positive affect, negative affect, uncertainty, and perceptions of extremity predicting willingness to attend a meeting (see Figure 1). All five mediating variables were significantly affected by ostracism, however none predicted willingness to attend a meeting. The total indirect effect was not significant, with

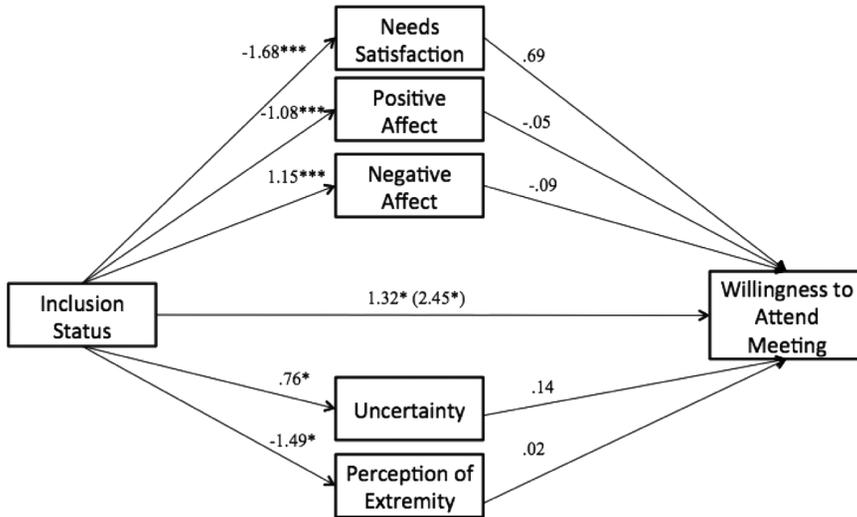


Fig. 1. Multiple mediation model testing the indirect effects of ostracism on willingness to attend an extreme group meeting in Study 1. The coefficient in parentheses represents the direct effect of inclusion status on willingness to attend a meeting. The adjacent coefficient represents the effect when the mediators are added to the model. * $p \leq .05$, *** $p \leq .001$.

the 95% confidence interval based on 5000 bootstrapping samples including zero (indirect effect = -1.19 , $SE = 1.02$, 95% bias corrected CI [-3.41 , $.83$]).

The same procedure was used to test whether expressing interest in attending an extreme group meeting mediates the effect of inclusion status on need satisfaction recovery. Ostracism increased willingness to attend a meeting, which predicted higher need satisfaction in the reflective stage, $b = .18$, $t(45) = 3.60$, $p < .001$. The indirect effect was significant (indirect effect = $.24$, $SE = .13$, 95% CI [$.05$, $.60$]).

Discussion

These findings support the hypothesis that ostracism increases interest in extreme groups. Ostracism did not cause participants to feel that they would enjoy being a member of the group more, but it did make them more willing to attend a meeting. Being willing to attend a meeting represents an attempt at investigation, an important first step in a sequence of socialization stages (Moreland & Levine, 1982).

Unexpectedly, ostracized participants perceived the group as less extreme. Importantly, mediation analyses indicated that reports of extremity do not explain the effect of ostracism on interest in attending an extreme group meeting. Although

not predicted, this finding is consistent with research showing that ostracism, in the service of facilitating interaction with potential sources of affiliation, causes people to exaggerate differences *between* social categories (Sacco, Wirth, Hugenberg, Chen, & Williams, 2011).

This study is also the first reported in the published literature to demonstrate that ostracism induces a temporary state of self-uncertainty. This uncertainty does not appear to mediate the effect of ostracism on interest in an extreme group. Likewise, despite hypothesizing to the contrary, threatened need satisfaction did not mediate the relationship. Further, the effect could not be explained by increases in positive affect or decreases in negative affect. The process whereby ostracism increases interest in extreme groups remains unidentified.

Within groups, leaders are agents of social influence (Hogg, 2001). One important implication of this study is that leaders should consider using their influence to discourage behaviors that are socially exclusive, as ostracism can increase openness to extreme groups.

Consistent with the temporal need-threat model of ostracism, expressing willingness to attend an extreme group meeting facilitated recovery of basic need satisfaction. Combined with the failure to detect mediation by basic need satisfaction, these findings raise the possibility that ostracism causes a force other than need-threat to lead to interest in joining an extreme group.

Study 1 involved assessing interest in a group whose cause has appeal to students (reducing tuition). In Study 2, we sought to conceptually replicate and extend this finding by assessing interest in groups whose cause and purpose is more clearly negative: gangs.

Study 2

Method

Participants and design. Participants were recruited from public areas on the Purdue University campus and completed the study on an iPad provided by the experimenter. A total of 117 Individuals were approached by a female experimenter and invited to participate in a brief study of mental visualization. Seventy-five agreed to participate (participation rate = 64.10%). Nine participants were excluded from the analysis because they were familiar with Cyberball, leaving a total sample of 66 (34 males, 32 females $M_{Age} = 23.59$, $SD = 6.65$; 31 white, 18 Asian, 9 Hispanic/Latin, 7 Black/African American, and 1 Pacific Islander). The data were examined after 55 responses, and the effect of ostracism in interest in gangs was suggestive but not significant, $t(53) = 1.67$, $p = .10$, $d = .45$). We added a second interval of data collection giving a final sample of 66. As in Study 1, participants were randomly assigned to be ostracized or included.

Procedure. After consenting, participants played an abbreviated Cyberball game on an iPad, consisting of 21 throws, lasting approximately 2 minutes. They then completed the reflexive needs satisfaction and affect measures and manipulation checks, followed by the interest in extreme group measure, followed by reflexive needs satisfaction and affect measures.

Responses to ostracism measures. Participants reported needs satisfaction on an abbreviated 8-item version of the scale used in Study 1 (immediate $\alpha = .81$, delayed $\alpha = .84$). They reported positive affect by rating agreement with the single item “felt [feel] like I was [am] in a good mood,” and negative affect with the item “I felt [feel] like I was [am] in a bad mood.” As in Study 2, reflexive measures were taken immediately after the game, asking participants how they felt “during the game,” and reflective measure were taken later, in reference to how participants feel “right now.” The manipulation checks were the same as Study 1.

Interest in gangs measure. Participants were then provided written instructions to “please take a moment to imagine what it would be like to be in a gang.” They were provided with the definition of a gang as “a group of people who spend a lot of time together, normally engaged in delinquent acts. They have a strong sense of identity and are affiliated with a specific cause.” They were told that “the following questions refer to how you would feel about being in a gang at the present moment.” Participants then reported interest in gangs by rating agreement with 8 statements (e.g., “right now I can see the appeal of being part of a gang”; $\alpha = .90$).

Results

Manipulation checks. Ostracized participants reported being more ignored and excluded ($M = 3.67$, $SD = 1.34$) than included participants ($M = 2.18$, $SD = 1.04$), $t(64) = -5.01$, $p < .001$, $d = 1.10$. Ostracized participants also reported receiving fewer ball tosses ($M = 13.81$, $SD = 10.90$) than included participants ($M = 29.29$, $SD = 7.59$), $t(64) = 6.49$, $p < .001$, $d = 1.65$.

Responses to ostracism. Replicating Study 2, there were significant main effects of inclusion status on needs satisfaction, $F(1, 64) = 16.11$, $p < .001$, $\eta_p^2 = .20$, positive affect, $F(1, 64) = 13.43$, $p < .001$, $\eta_p^2 = .17$, and negative affect, $F(1, 64) = 24.03$, $p < .001$, $\eta_p^2 = .27$ (see Table 2). Also replicating Study 2, the interaction between inclusion status and stage was significant for positive affect, $F(1, 64) = 7.41$, $p = .008$, $\eta_p^2 = .10$, and negative affect, $F(1, 64) = 10.88$, $p = .002$, $\eta_p^2 = .15$, and marginally significant for needs satisfaction, $F(1, 64) = 3.12$, $p = .073$, $\eta_p^2 = .05$, indicating trends towards recovering from the ostracism experience.

Table 2. Means and Standard Deviations for Dependent Variables in Study 2

	Included <i>M (SD)</i>	Ostracized <i>M (SD)</i>	<i>t</i> (64)	<i>p</i>	Cohen's <i>d</i>
<i>Reflexive stage</i>					
Needs satisfaction	3.15 (.43)	2.52 (.50)	5.52	<.001	1.26
Positive affect	3.33 (.78)	2.33 (.89)	4.86	<.001	1.12
Negative affect	1.85 (.94)	3.24 (1.00)	-5.83	<.001	1.39
Interest in Gangs	1.90 (.90)	2.39 (.91)	-2.10	.03	.54
<i>Reflective stage</i>					
Needs satisfaction	3.69 (.65)	3.37 (.75)	1.82	.07	.42
Positive affect	3.73 (.76)	3.45 (1.09)	1.18	.24	1.12
Negative affect	1.76 (.79)	2.36 (1.08)	2.59	.01	1.39

Note. Standard deviations appear in parentheses.

Interest in gangs. Ostracized participants were more interested in gangs ($M = 2.39, SD = .90$) than included participants ($M = 1.90, SD = .91$), $t(64) = -2.10, p = .031, d = .54$.³

Mediators of ostracism's effect on interest in gangs. We tested needs satisfaction, positive affect, and negative affect as mediators in a model similar to Study 2. Needs satisfaction, positive affect, and negative affect were all affected by ostracism, however, none predicted gang-interest. The total indirect effect was not significant (indirect effect = .30, $SE = .24$, CI [-.15, .79]).

Expressed group interest as a mediator of need satisfaction recovery. Expressing interest in gangs mediated the effect of inclusion status on needs satisfaction recovery (indirect effect = -.22, $SE = .11$, CI [-.49, -.05]). Inclusion status predicted increased interest in gangs, which predicted reduced reflective needs satisfaction, $b = -.44, t(63) = -5.42, p < .001$.

Discussion

Study 2 found that ostracism increases interest in extreme groups, even those that are indisputably negative. As in Study 1, there was a significant indirect

³Following recommendations of Sagarin, Ambler, and Lee (2014), to account for optional stopping we calculated adjusted alpha levels, $p_{\text{augmented}} = [.052, .069]$. The first number represents the adjusted alpha level given that collection would have stopped if the initial p value had been any less promising. The second number represents the adjusted alpha given that data collection would have continued regardless of the initial p value.

pathway from ostracism to delayed needs satisfaction through interest in joining a gang. However, unlike Study 1, gang interest *negatively* predicted delayed needs satisfaction. There are two main difference between Studies 1 and 2 that might account for this difference. First, the target group in Study 2 promoted a cause that is generally supported by participants (tuition reduction), whereas the target group in Study 2 did not support a specific cause, and any cause that might have been inferred would be negative. Second, in Study 1 participants had an opportunity to interact face-to-face with a member of the extreme group, and may have therefore had more positive expectations about what group membership would entail, which would have led reflective needs satisfaction to increase with greater intentions to attend a meeting. Together, the mediation analyses from Studies 1 and 2 suggest that expressing interest in an extreme group *promotes* recovery when the individual believes in the group's cause or has had positive interactions with members of the group, but *hinders* recovery when the individual does not believe in the cause, or has not had positive interactions with members of the group.

General Discussion

This research presents evidence that ostracism increases interest in joining extreme groups. In Study 1, ostracism caused people to be more interested in attending meetings of an extreme group. These findings are consistent with predictions of the temporal need-threat model of ostracism (Williams, 2009), and self-uncertainty theory (Hogg, 2007). Study 2 found that this is the case even for gangs; groups that are unambiguously negative.

The social identity theory of leadership (Hogg, 2001) conceptualizes leaders as both highly influential, and highly prototypical. In the present work we considered the perspective of individuals who, far from being prototypical, find themselves marginalized. By wielding their influence to promote inclusive environments leaders can take an important step in discouraging social transformations towards extremism and fundamentalism more broadly.

Ostracism research has identified negative consequences of being ignored and excluded ranging from threatened basic needs and feelings of pain to aggression and hostility. The present research expands this list to include vulnerability to extreme group recruitment. This possibility has been theoretically predicted (Knaption, 2014; Wesselmann & Williams, 2010), but not empirically demonstrated until now. Previous research has shown that ostracism increases the desire to affiliate and join groups (Maner et al., 2007), but the current research is the first to show that this desire extends to groups that are extreme in nature.

A second noteworthy contribution of this research is the finding that ostracism undermines individuals' self-certainty. Uncertainty is a meaningful negative outcome of ostracism that could potentially lead to other maladaptive behaviors to reaffirm one's sense of identity. Early ostracism theorizing outlined the potential

role of uncertainty, especially surrounding the ostracism event (Williams, 1997), however, the role of uncertainty in reactions to ostracism has received relatively little empirical attention. Future research may explore the conditions under which ostracism produces uncertainty, and whether this uncertainty leads to unique outcomes not seen in other forms of interpersonal conflict.

Policy Implications

Based on these findings, leaders would be well advised to foster environments of welcoming and inclusion. Leaders enjoy greater license to deviate from group norms (Abrams, Travaglino, Marques, Pinto, & Levine, 2018), and are thus uniquely positioned to create norms of inclusion. In doing so they not only benefit the potentially marginalized group members, but also the group at large, which benefits from avoiding ostracism and subsequent openness to extremity. This applies to those who find themselves leading small work groups, and also those who contend for national leadership. Understood alternatively, it may be that being ostracized produces a preference not only for groups that are themselves extreme, but also leaders who espouse extreme views. For example, Donald Trump ran as a candidate who is known for his anti-immigration platform. Many commentators explained his popularity as a result of white United States voters who perceive themselves to have been marginalized. Election cycles such as this could contribute to the growing political polarization in the United States. Similarly, this work suggests that feelings of ostracism/marginalization may be an important factor precipitating interest in terrorist organizations.

Second, these findings have implications for international relations. Based on the observation that ostracism can give way to extremism, leaders would be wise to avoid diplomatic strategies that deny attention and voice to nations that may perceive themselves as marginalized. Refusing to engage countries in trade, meet for negotiations, or even recognize statehood, could counterproductively produce greater feelings of marginalization and thus greater extremity.

Limitations

Here we defined extreme groups as those that have extreme beliefs, actions, or requirements of members. Future research may consider a more theoretically nuanced approach to the concept of extremity as it relates to groups. In Study 1 it was operationalized as a group with extreme actions, and in Study 2 as a group that presumably includes all three characteristics. However, the current research did not explore the relative appeal of each of these types of extremity following ostracism. It is possible that ostracized individuals are drawn to groups with extreme actions and beliefs, but more skeptical of groups that have extreme

membership requirements, as those may represent potential sources of further rejections.

Finally, the processes whereby ostracism increases interest in extreme groups remains unidentified. Future research should test mechanisms other than threat to basic need satisfaction and self-uncertainty. For example, ostracized individuals may experience anger or psychological reactance that expresses itself through a desire to join groups that are anti-social or extreme.

It is well known that ostracism is a painful experience that interferes with the fundamental need to belong. The insight that ostracism also leads to openness to extreme groups helps explain the success of radical groups.

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