

CONFRONTATION: AN INTERPERSONAL RESPONSE TO OSTRACISM

A Dissertation

by

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ABSTRACT

Confrontation is defined as expressing displeasure with mistreatment and is a behavioral response to ostracism – being ignored and excluded by others. According to the temporal need-threat model of ostracism, targets' interpersonal behaviors following ostracism act to restore depleted need satisfaction and mood. The aims of this research were 1) to examine the use of confrontation in response to ostracism, and 2) to study its effectiveness as a coping method.

In sum, these studies established confrontation as a frequent response to ostracism that is influenced by both the targets' psychological response and the social context in which it occurs. Four experiments were conducted using participants from an introductory psychology subject pool. Study 1 manipulated ostracism to targets' attitudes towards contacting the sources of ostracism. Study 2 used a mixed design and behavioral measure of confrontation to examine how frequently people confront, and potential effects on need-satisfaction and mood over time. Study 3 manipulated the coping method used following ostracism to compare confrontation's effectiveness to a solo writing task and a distraction task. Study 4 examined individual differences and contextual factors that influence the likelihood of confrontation.

Study 1 found that while participants most preferred to take no action, public contact with the ostracism sources was preferred over other options. In Study 2, one in three ostracized participants chose to confront, more frequent than included participants. Study 3 found that confrontation was more effective for reducing anger than the writing

task. Distraction was more effective in increasing need-satisfaction compared to the confrontation task. Study 4 showed that male gender, need-depletion, and negative affect increased the likelihood of confrontation. However, these effects varied based on whether or not participants believed they were playing with members of their racial in-group or out-group.

In sum, confrontation was a common response to ostracism. The usage of confrontation was influenced by sadness as well as interactions between social context and psychological responses or individual differences.

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1. INTRODUCTION

As social animals, people are sensitive to cues indicating threat to inclusionary status (Kerr & Levine, 2008). Ostracism - being ignored and excluded by individuals or groups – is a powerful signal of inclusionary status. It is a universal experience, occurring almost daily according to diary studies (Nezlek, Wesselman, Wheeler, & Williams, 2012). The detrimental consequences of ostracism include reductions in fundamental needs of control, self-esteem, meaningful existence, and belonging (Williams, 2007). The present research examined how targets of ostracism cope with their experiences. Specifically, I studied the incidence and effects of confrontation – expressing displeasure with mistreatment – as an interpersonal response to ostracism.

Literature Review

Temporal Model of Ostracism

In a meta-analysis of over 100 studies, ostracism had large, negative effects on targets' psychological wellbeing (Hartergink, van Beest, Wicherts, & Williams, 2015). As seen in Appendix C, Williams' (2009) temporal model of ostracism states the detection of ostracism leads to an reflexive (immediate) reaction of social pain and negative affect. It also reduces fulfillment of belonging, self-esteem, control, and meaningful existence needs. This immediate response is thought to be resistant to moderation, and indeed, a recent meta-analysis of ostracism's psychological effects suggests that moderation occurs primarily in the delayed stage (Hartergink et al., 2015).

Following the initial response to ostracism, targets enter a reflective (delayed) stage. It is during this stage where they recover their depleted needs through coping

strategies (Williams, 2007; Williams, 2009 – see Appendix C). Recovery of need-satisfaction begins quickly – Wesselman et al. (2013) found changes in need-satisfaction following only 90 seconds of distraction. Zadro, Boland, and Richardson (2006) found that targets low in social anxiety were recovered by 45 minutes, though the effects persisted for those high in anxiety. It has been suggested that recovery generally occurs in 5-10 minutes (Hartergink et al., 2015). Similarly, targets experience a decline in positive affect during ostracism followed by a rebound later during the episode (Wesselman, Wirth, Mroczek, & Williams, 2012).

While recovery begins shortly following the end of an acute ostracism episode (Wesselman et al., 2012; Hartergink et al., 2015), chronic ostracism can lead to resignation – the third stage of the Temporal Need Threat model (Appendix C). During the resignation stage, Williams (2009) proposes that targets' ability to refortify their needs is exhausted, leading to detachment, depression, passivity, and feelings of worthlessness.

This link is supported by the results of experimental data, interviews, and survey research. Targets who attributed ostracism to a pervasive phenomenon (e.g., racial prejudice) had slower recovery of depleted needs than ostracism not attributed to prejudice (Goodwin, Williams, & Carter-Sowell, 2010). Zadro's (2004) interviews of targets of chronic ostracism support this model; many of the interviewees discussed suicidal ideation and described preferring physical abuse to ostracism. Chronically ostracized individuals reported higher levels of negative emotions, helplessness, depression, and alienation compared to a control group and chronic pain group (Riva et

al., 2016). Furthermore, these resignation stage outcomes were explained by depletion of overall need-fulfillment, supporting the Temporal Need Threat model.

The Reflexive (Immediate) Stage

The effects of ostracism on fundamental needs of belonging, self-esteem, meaningful existence, and control, by and large, are not moderated in the reflexive (immediate) stage (Hartgerink et al., 2015). There are some exceptions. Individual differences in cultural background (collectivism/individualism) reduce the initial pain of ostracism (Pfundmair et al., 2015). Similar effects have been seen with attachment avoidance (Yaakobi & Williams, 2015). Additionally, the “straightforwardness” item on the Five Factor Model Rating Form (Mullins-Sweatt, Jamerson, Samuel, Olsen, & Widiger, 2006) predicts weaker reflexive (immediate) responses to ostracism (Wirth, Lynam, & Williams, 2010).

Social-contextual factors also affect reflexive responses to ostracism. Ostracism by in-group members caused greater need-depletion, negative affect, and distress than ostracism by out-group members (Sacco, Bernstein, Young, and Hugenberg, 2014; Hayman, McIntyre, & Abbey, 2014). Similarly, ostracism by a mixed gender group was more threatening than ostracism by two sources of the opposite gender (Wittenbaum, Shulman, & Braz, 2010). Consistent with social identity theory (Tajfel & Turner, 1979), heightened responses to ostracism occur only for groups that are perceived as essential and therefore meaningful (Bernstein, Sacco, Young, Hugenberg, & Cook, 2010).

The Reflective (Delayed) Stage

While the immediate effects of ostracism are difficult to prevent, moderation of ostracism's effects occurs in the reflective stage. Self-affirmation, prayer, distraction, and an interdependent self-construal positively are associated with greater need-satisfaction in the reflective stage (e.g., Hales, Wesselman, & Williams, 2016; Ren, Wesselmann, & Williams, 2013). Recovery from ostracism was slowed by cognitive processes such as attributing treatment to discrimination or ruminating about the experience (Goodwin, Williams, & Carter-Sowell, 2010; Wesselman et al., 2013). Individual differences in social anxiety or prior ostracism experience also prolong need-depletion following ostracism (Zadro et al., 2006; Carter-Sowell, 2010).

Interpersonal Responses - Prosocial

Target responses to ostracism are typically categorized as prosocial, antisocial, or withdrawal. For example, targets behave prosocially following ostracism by working harder on collective tasks (Williams & Sommer, 1997) or by complying with requests by others (Carter-Sowell, Chen, & Williams, 2008; Riva, Williams, Torstrick, & Montali, 2014). Similarly, targets of ostracism may conform to the group following ostracism (Wolf et al., 2015) or mimic the behavior of others (Lakin, Chartrand, & Arkin, 2008). Social context may determine when prosocial behaviors are displayed; Lakin et al. (2008) found greater mimicry of in-group members compared to out-group members.

Wesselman, Ren, and Williams (2015) suggest that those high in need to belong should behave in a prosocial manner following ostracism. Prosocial behavior has been

positively associated with future goal orientation (Balliet & Ferris, 2013) and negatively associated with social anxiety (Mallott, Maner, DeWall, & Schmidt, 2009).

The Temporal Need-Threat model (Appendix C) proposes that reduced belonging or self-esteem is refortified through prosocial responses; however, more research is needed. Leiro and Zwolinski (2014) measured both reflective and reflexive needs as a determinant of prosocial behavior towards previously ostracizing confederate players and found no relationship. However, this study was confounded by granting targets inclusion in the second phase created a confound, which in and of itself increases need-fulfillment (Tang & Richardson, 2013). Similarly, browsing social networking sites to cope with ostracism had no effect on need-satisfaction (Schneider et al., 2017).

Interpersonal Responses – Antisocial and Withdrawal

Antisocial responses to ostracism include aggression, cheating, and social loafing. Targets of ostracism display increased aggression using noise-blast or hot sauce allocation paradigms (Twenge, Baumeister, Tice, & Stucke, 2001; Warburton, Williams, & Cairns, 2006; Wesselman, Butler, Williams, & Pickett, 2010; van Beest, Carter-Sowell, van Dijk, & Williams, 2012). Individual differences influence the use of aggression; rejection-sensitivity (Ayduk, Gyurak, & Luerssen, 2008) and narcissism (Twenge & Campbell, 2003) are associated with increases in aggressive behaviors, as are fixed (vs. incremental) theories of relationships (Chen, DeWall, Poon, & Chen, 2012).

In addition to aggression, ostracized individuals may engage in dishonest or immoral behavior. Ostracized individuals had greater intentions to engage in dishonest

behavior and were more likely to cheat (Poon, Chen, & DeWall, 2013). Similarly, Kouchaki and Wareham (2015) found greater engagement in unethical behavior (cheating, unethical workplace behaviors) among ostracized individuals in both laboratory and organizational settings. Social loafing, or choosing to not contribute to a group task, also occurs following ostracism (Williams & Sommer, 1997).

According to the Temporal Need-Threat Model (Williams, 2009), reductions in control or meaningful existence lead to aggressive or anti-social responses in order to refortify those needs (Williams, 2009). There is evidence for this link. Removing control over aversive experiences increased aggression in ostracized participants, as does experiencing unpredictable or counterintuitive social interaction (Warburton et al., 2006; Wesselman et al., 2010). Social loafing also relates to power and control – loafing was reduced when ostracized individuals attempted to control the Cyberball game, or when status relative to the confederate players was increased (Bozin & Yoder, 2008).

Withdrawing from the interaction is another response to ostracism. Ostracized individuals displayed increased lethargy and silence compared to non-ostracized participants (Zadro, Williams, & Richardson, 2005). Similarly, Ren, Wesselman, and Williams (2015) found that ostracized participants showed a greater preference for being alone, particularly among introverts. Ostracized participants also indicated less desire to interact with ostracizing group members (Wirth, Turchan, Zimmerman, & Bernstein, 2014).

Interpersonal Responses - Confrontation

There is some evidence that targets of ostracism engage in confrontation. Confrontation is commonly defined by researchers as expressing displeasure with mistreatment directly to the person responsible (Shelton, Richeson, Salvatore, & Hill, 2006). Three previous ostracism studies included a means of verbal confrontation. Williams et al. (2002) found that those ostracized in a chat-room were more likely to question confederates about their exclusion than those ostracized face-to-face. In Smith and Williams (2004), participants were included or excluded from a text message conversation on cell phones. They found that 12 of the 20 ostracized participants and two of the included participants sent messages intended to provoke further conversation, examples of which fit the operationalization of confrontation (e.g., “Are you people not speaking to me. I am being oppressed”, p. 297).

In another study, Yeager, Trzesniewski, and Dweck (2013) allowed adolescent participants to write paper notes to ostracizing players following Cyberball. Teens who had gone through an anti-bullying program had a greater proportion of prosocial notes than did teens in the other two conditions. These three studies provide initial evidence that confrontation occurs as an interpersonal response to ostracism.

The likelihood of confrontation is complicated by ostracism-related factors. For example, confrontation depends on a stable sense of belonging, which is threatened by ostracism. Mallett and Melchiori (2014) found that enhancing a sense of belonging lead to more assertive confrontation of sexism. O’Reilly et al. (2014) found that ostracism was viewed as more socially acceptable and less harmful than bullying behaviors (e.g.,

insults, ridicule, negative gossip). This may increase the potential social costs of confrontation and therefore reduce its likeliness or effectiveness.

Choosing Confrontation

The use of confrontation appears in literature covering various forms of interpersonal mistreatment. This includes bullying among children (Flanagan et al., 2013) or in the workplace (Karatuna, 2015), and stigmatization of mental illness (Moses, 2015). Confrontation of prejudice (e.g., sexism or racism) has also received much attention in recent years (see Glick, 2014). According to Ashburn-Nardo, Morris, and Goodwin (2008), confrontation occurs following a series of judgments and decisions. There first must be detection of mistreatment and judgments of severity - confrontation occurs when mistreatment is detected and subsequent correction is seen as necessary. There are also individual differences related to confrontation. Incremental theories of personality increase confrontation (Rattan & Dweck, 2010), as does optimism (Kaiser & Miller, 2004; Wellman, Czopp, & Geers, 2009) and desire for respect over liking (Mallet & Melchiori, 2014). Chaney, Young, and Sanchez (2015) also proposed that confrontation is predicted by sensitivity to mistreatment and subsequent anger.

Confrontation can take different forms, including both verbal and non-verbal forms - speaking out or rolling eyes, respectively (Dickter, 2012). Non-aggressive forms of confrontation are the most acceptable forms of confrontation for observers and those confronted (e.g., Czopp & Monteith, 2003). Aggressive confrontation methods, which include physical aggression, were less supported by observers than non-aggressive methods, e.g., direct verbal confrontation (Becker & Barreto, 2014). Similarly, Hyers'

(2010) study of confrontation of sexual prejudice found that targets and sources both preferred assertive, but not hostile, confrontation.

Consequences of Confrontation

Confrontation has positive effects for multiple actors in mistreatment situations. After confronting prejudiced statements, female targets reported higher competence, self-esteem, and empowerment (Gervais et al., 2010; Hyers, 2007). People who are confronted show less prejudiced behavior, leading to a more positive interaction between the source and the confronting target (Hyers, 2010; Mallet & Wagner, 2012). Similarly, individuals who were confronted about their use of racial stereotypes gave fewer prejudiced responses and report less prejudiced attitudes following confrontation (Czopp, Monteith, & Mark, 2006).

Likelihood of Confrontation

Despite its potential benefits, confrontation can also be costly. Targets who confront mistreatment were viewed negatively by sources and seen as overreacting (Czopp & Monteith, 2003; Czopp et al., 2006). Similarly, confronters of benevolent but biased treatment were viewed as rude and less warm compared to confrontation of hostile bias (Wang, Silvermann, Gwinn, & Dovidio, 2014). Expectations of social costs and benefits affect the use of confrontation, such that those who perceived either high benefits or low social costs were more likely to confront (Good, Moss-Racusin, & Sanchez, 2012).

Overview of Present Studies

The purpose of the present research was to examine confrontation as behavioral response to ostracism. Study 1 examined attitudes confrontation of ostracism. Study 2 determined the frequency of confrontation and also provides preliminary evidence that confronting ostracism is beneficial for those who chose this response. Study 3 manipulated the coping method used following ostracism to compare confrontation's effectiveness to a solo writing task and a distraction task. Finally, Study 4 expanded on these studies by exploring contextual and individual difference factors that influence the frequency of confrontation.

2. STUDY ONE

The first study was designed to 1) identify attitudes towards contacting ostracism sources and 2) explore differences in contact preferences that were used to develop further research. This study compared attitudes towards contact between included, partially ostracized, and ostracized participants. Specifically, this study examined attitudes towards different forms of contact - contacting the other players publicly, anonymously, or contacting the principle investigator – in relation to inclusionary status.

Due to reduced potential for social costs, I hypothesized that ostracized participants will feel more positively about anonymous contact compared to public contact. Because of the exploratory nature of the study, no specific predictions were made for other comparisons.

Method

Participants and Design

To determine if ostracized individuals had different contact preferences than non-ostracized individuals, ostracism was manipulated using a computerized ball-toss task where participants were randomly assigned to be included, partially ostracized, or fully ostracized. Participants consisted of 158 undergraduate students (87 female and 71 male) recruited from a departmental subject pool in exchange for course credits. Participants were predominantly White (73.40%) or Hispanic (17.10%), along with 4.4% identifying as Asian, 3.20% as Black, and 1.90% as Native American, biracial, or other. The average age of the participants was 19.28 years ($SD=1.20$).

Measures and Procedure

Participants reported to the lab singly or in groups of up to 6 people. During the consent process, they were told that they were participating in a study that examined mental visualization abilities and group task performance. As part of a larger study, participants engaged in a virtual ball toss task displayed using Medialab (Cyberball, Jarvis & Williams, 2006; see Appendix D). Instructions on the computer screen told participants that the task was intended to invoke mental visualization skills, and connected them with other real participants over the internet. In actuality, the other two players in the game were computerized confederate players and participants were randomly assigned to be either included (receive 10 of 30 throws), partially excluded (7 of 30 throws), or ostracized (2 of 30 throws). Following completion of the game, participants completed the post-Cyberball questionnaire, indicating their need satisfaction and mood during the game (Zadro, Williams, & Richardson, 2005; Appendix F).

This was followed by manipulation check questions assessing the level of perceived exclusion (Appendix E) and a filler task that lasted for about 5 minutes. Participants then completed the post-Cyberball questionnaire again, indicating their feelings at the present moment as a measure of reflective (delayed) needs and mood (see Appendix F). Once this questionnaire was finished, participants completed the contact attitudes task. They were asked if they would like to send: "...a message to the players in the previous game", "...a message to the principle investigator of the study", or "...an anonymous message to the previous players". A fourth item was included asking if they

would like to make no comment. Participants indicated their agreement with each item on a 7-point scale, ranging from 1 (Strongly Disagree) to 7 (Strongly Agree). At the conclusion of the study, participants took part in a verbal suspicion check and debriefing.

Results

Manipulation checks

Analysis of manipulation checks indicated that the Cyberball manipulation was successful. There was a significant difference in feelings of exclusion between the three conditions, $F(2, 157)=101.56, p<.001$. As expected, included participants felt significantly less ignored and excluded ($M=1.92, SD=0.77$) than partially ostracized ($M=2.54, SD=1.51, p=.002$) and ostracized participants ($M=4.61, SD=0.57, p<.001$). Partially ostracized participants also felt less excluded than ostracized participants, $p<.001$.

Similarly, there were significant differences in the percentage of throws participants reported in each condition, $F(2, 157)=66.51, p<.001$. As expected, included participants reported receiving significantly more throws ($M=31.92\%, SD=8.82$) than partially ostracized ($M=27.36\%, SD=15.18, p=.04$) and ostracized participants ($M=8.59\%, SD=8.26, p<.001$). Partially ostracized participants reported a significantly higher number of throws than ostracized participants, $p<.001$.

Main Analysis

A repeated measures ANOVA was conducted to examine if there were differences in preference for the different forms of contact. Cyberball condition was included as a between-subjects factor. Due to violations of sphericity, the Greenhouse-

Geisser correction was used. There was a significant main effect for comment target, $F(1.74, 273.78)=113.35, p<.001, \eta^2=.42$. As seen in Figure 1, targets preferred sending a message to the previous players ($M=3.25, SD=1.79$) than sending a message to the principle investigator ($M=2.56, SD=1.51$) or sending an anonymous message ($M=2.58, SD=1.46$), $ps < .001$. However, leaving no comment at all was more preferred than any of the other options ($M=5.30, SD=1.65$) all $ps < .001$. No significant main effect for ostracism condition was found, nor was there a significant interaction between ostracism condition and confrontation method.

Discussion

Contrary to hypothesis, ostracized individuals did not have differing contact preferences from included or partially ostracized participants. Results showed that Cyberball participants are relatively neutral towards contacting the previous players, regardless of ostracism condition. The most preferred option was to not respond at all. According to Ashburn-Nardo, Morris, and Goodwin (2008), choosing to respond to mistreatment requires both noting that the event is occurring, and viewing it as necessitating a response. Participants accurately identified that ostracism occurred in the partial and full ostracism conditions, as indicated by the manipulation checks. However, the lack of action may be due to diminished psychological effects of ostracism over time. By the time participants reached the confrontation questions, there may have no longer been enough need-threat to necessitate an immediate response as the contact questions were at the end of a 50-minute study. Prior research (e.g., Zadro et al., 2006) indicates that individuals without social anxiety recover fully from ostracism within 45 minutes.

Additionally, there were more positive attitudes towards publicly contacting the previous players compared to leaving an anonymous message for the other players. This is particularly interesting for those who had been excluded during the Cyberball game, as it could be expected that ostracized participants would want to remain anonymous to avoid retaliation. As with the analysis of contact preferences by condition, the lack of preference for anonymity could be due to reduced threat following the passage of time. Alternatively, the indirect nature of sending messages through the computer may have reduced the need for anonymity to avoid social costs.

3. STUDY TWO

A key limitation of Study 1 was that participants were given the option to contact the other players more than 5 minutes following the Cyberball task. This allowed them time to recover from the aversive impact of a potentially ostracizing experience (Hartgerink, van Beest, Wicherts, & Williams, 2015), which may have reduced desire to contact the other players. Furthermore, it cannot be determined if contacting the other players might be beneficial in some way for ostracized individuals. Study 2 addresses these limitations to examine the frequency of confrontation behaviors and the psychological consequences of confronting ostracism.

Previous literature indicates the potential for increased sense of empowerment, self-esteem, and competence from confronting discrimination-based mistreatment (Gervais et al., 2010). I hypothesized that similar effects will be seen for confronting ostracism. Specifically, it was predicted that choosing to confront sources of ostracism would lead to greater recovery of need-satisfaction and reductions in anger and sadness between the immediate and delayed measurements.

In sum, this study had two primary aims: 1) to identify the incidence of confrontation in response to ostracism, and 2) to examine whether confrontation of ostracism influenced targets' self-reported recovery of basic needs and negative affect.

Method

Design and Participants

This study manipulated ostracism condition – inclusion or ostracism – to examine the occurrence of confrontation and its effects on need-satisfaction and negative

affect over time. Three hundred and eighty-six undergraduate students (51.60% White, 26.40% Hispanic, 13% Asian, 4.10% Black, 3.10% biracial, 1.80% other race/ethnicity) were recruited from a psychology subject pool in exchange for course credit. The final sample included 279 women and 107 men with an average age of 18.57 years ($SD=1.39$).

Measures and Procedure

Participants reported to the lab either singly or in groups of up to 6 people. After receiving and signing consent forms, participants first completed demographic questions. Following this, participants were randomly assigned to either an inclusion or ostracism condition using the Cyberball manipulation used previously (Jarvis & Williams, 2006; see Appendix D). However, for this and the following studies, the experiment was presented using Qualtrics instead of Medialab. Participants received either 10 of 30 throws (inclusion condition) or two out of 30 throws (ostracism condition) during the game.

Following the game, participants reported their Time 1 need satisfaction and mood, using the post-Cyberball questionnaire (Zadro et al., 2005; see Appendix F), followed by manipulation checks (Appendix E). Participants were then given the option to confront the other players. Similar to Study 1, they were asked if they would like to send a message to the other players, anonymously to the other players, or to the principle investigator. If they indicated that they would like to send a message, they were given a text box in which to write their comments before continuing with the study. If they indicated that they would not like to send a message, they proceeded to the next task.

After an unrelated task that took approximately 3 minutes, participants then reported their Time 2 levels of fundamental needs and mood, see Appendix F. At the conclusion of the study, participants were verbally probed for suspicion and debriefed.

Results

Manipulation Checks and Coding

Manipulation checks indicated that the ostracism manipulation was successful. Participants in the inclusion condition reported significantly lower perceptions of being ignored and excluded ($M=1.78$, $SD=0.85$) than those in the ostracism condition ($M=4.30$, $SD=1.06$), $F(1, 385)=673.39$, $p<.001$. Likewise, included participants reported receiving the ball significantly more often (28.13% of throws, $SD=8.33$) than those in the ostracism condition (8.98% of throws, $SD=8.93$), $F(1, 385)=474.79$, $p<.001$.

Messages were coded for confrontation - expressing displeasure with the Cyberball game - by two coders with high reliability (95.58% agreement, $\kappa=.91$) and discrepancies resolved by discussion. Of the 70 included participants who chose to write messages, 36 of the messages were coded as confrontational. For ostracized participants, 98 of 147 messages were coded as confrontational, a significantly larger proportion than what was seen for the included condition, $X(1)=13.64$, $p<.001$. Overall, 25.4% of all participants chose to send one or more confrontational messages, including 18% of included and 33% of ostracized participants, see Figure 2. Most confronters chose to send public confrontational messages to the other players (70 messages), followed by anonymous messages (33 messages). Sending a confrontational message to the principle investigator was the least selected option (5 messages)

Confrontation Usage by Ostracism Condition

A greater proportion of ostracized participants chose to send public confrontational messages to the other players (29.57%) than did included participants (7.50%), $\chi^2(1)=31.62, p<.001$. Similarly, more ostracized participants sent confrontational messages overall (33.33%) than included participants (18%), $\chi^2(1)=10.15, p=.001$. No other differences between conditions were found.

Need Satisfaction – Overall

Overall need satisfaction was calculated using aggregate scores from each of the need subscales – belonging, control, self-esteem, and meaningful existence (Cronbach's $\alpha = .81$). This was done due to the high correlation between items, and recent research suggesting that need satisfaction is in fact a single factor (Gerber, Chang, & Reimel, 2016). Because of the small number of confrontational responses sent anonymously or to the principle investigator, participants who wrote confrontational content in any one of the three responses (public, anonymous, or message to the principal investigator) were considered as confronters.

A mixed ANOVA was ran with need satisfaction at Time 1 (reflexive) and Time 2 (reflective) within subjects, and both confrontation choice and ostracism condition between subjects. Results from the mixed ANOVA indicate a significant main effect for time of measurement on need satisfaction, $F(1, 339)=84.09, p<.001, \eta^2=.20$. There was also a main effect for Cyberball condition, $F(1, 339)=256.14, p<.001, \eta^2=.43$. Confrontation choice had no significant main effect on need satisfaction, $F(1, 339)=2.97, p=.09$.

There was a significant interaction between Cyberball condition and time of measurement on need satisfaction, $F(1, 339)=319.61, p<.001, \eta^2=.49$. For included participants, there was a significant difference in need satisfaction between the reflexive ($M=3.70, SE=.05$) and reflective stages ($M=3.33, SE=.02$), such that overall need satisfaction dropped between measurements, $p<.001$. The opposite was seen for ostracized participants, who had lower need satisfaction ($M=2.22, SE=.06$) at the initial, reflexive stage compared to the reflective (delayed) stage ($M=3.26, SE=.02$), $p<.001$.

Time of measurement also interacted with confrontation choice on need satisfaction, $F(1, 339)=7.28, p=.01, \eta^2=.02$. During the initial, reflexive stage, those who sent confrontational messages had significantly lower need satisfaction ($M=2.78, SE=.10$) than those who did not send confrontational messages ($M=3.17, SE=.07$), $p=.001$. During the reflective (delayed) stage, there was no significant difference in need satisfaction between confronters and non-confronters, $p=.71$. There was no significant interaction between confrontation choice and Cyberball condition, $F(1, 339)=.46, p=.50$, nor was there a significant three-way interaction between time of measurement, Cyberball condition, and confrontation choice, $F(1, 339)=1.88, p=.17$.

Negative Mood - Anger

A mixed ANOVA was ran with anger at Time 1 (reflexive) and Time 2 (reflective) within subjects, and both confrontation choice and ostracism condition between subjects. Analyses indicate a significant main effect for time of measurement on anger, $F(1, 339) = 95.51, p<.001, \eta^2=.22$. There was also a significant main effect for

Cyberball condition, $F(1, 339) = 116.85, p < .001, \eta^2 = .26$, and for confrontation choice, $F(1, 339) = 13.63, p < .001, \eta^2 = .04$.

These main effects were qualified by a significant two way interaction between the Cyberball condition and confrontation choice, $F(1, 339) = 4.19, p = .04, \eta^2 = .01$. In the included condition, there was no significant difference in anger between confronters and non-confronters, $p = .24$. However, among ostracized participants, those who did not send confrontational messages had lower levels of anger ($M = 2.10, SE = .08$) than those who did send confrontational messages ($M = 2.58, SE = .09$), $p < .001$.

There was also a significant interaction between time of measurement and Cyberball condition, $F(1, 339) = 100.81, p < .001, \eta^2 = .23$. Included participants did not differ in self-reported anger between the reflective and reflexive stages, $p = .85$. However, ostracized participants had significantly more anger during the immediate reflexive stage ($M = 3.00, SE = .08$) compared to the delayed reflexive stage ($M = 1.69, SE = .07$), $p < .001$.

A significant interaction occurred between time of measurement and confrontation choice on anger, $F(1, 339) = 5.42, p = .02, \eta^2 = .02$. During the immediate reflexive stage, those who sent confrontational messages had significantly higher levels of anger ($M = 2.44, SE = .10$) than those who did not ($M = 1.98, SE = .07$), $p < .001$. In the delayed reflexive stage, there was no difference in anger between confronters and non-confronters, $p = .10$.

There was no significant three-way interaction between time of measurement, Cyberball condition and the confrontation choice, $F(1, 339) = 2.21, p = .14$.

Negative Mood - Sadness

A mixed ANOVA was ran with sadness at Time 1 (reflexive) and Time 2 (reflective) within subjects, and both confrontation choice and ostracism condition between subjects. The mixed ANOVA found a significant main effect for time of measurement, $F(1, 339) = 44.21, p < .001, \eta^2 = .12$. There was also a significant main effect for condition, $F(1, 339) = 83.85, p < .001, \eta^2 = .20$, and for confrontation choice, $F(1, 339) = 15.15, p < .001, \eta^2 = .04$.

The main effects for condition and time of measurement are qualified by a significant interaction, $F(1, 339) = 80.58, p < .001, \eta^2 = .19$. There is no significant interaction between time of measurement and confrontation choice, $F(1, 339) = 2.52, p = .11$, nor between time of measurement and confrontation choice, $F(1, 339) = 1.06, p = .30$. Shown in Figure 3, the three-way interaction between time of measurement, Cyberball condition, and confrontation choice on sadness was significant, $F(1, 339) = 4.27, p = .04, \eta^2 = .01$.

For included participants, there was a main effect for time of measurement, $F(1, 188) = 4.31, p = .04, \eta^2 = .02$. Sadness was significantly lower in the reflexive (immediate) stage ($M = 1.42, SE = .06$) than the delayed reflective stage ($M = 1.58, SE = .07$). There was no significant interaction between time of measurement and confrontation choice, $F(1, 188) = .18, p = .67$. For ostracized participants, there was a significant main effect for time of measurement on sadness, $F(1, 151) = 82.71, p < .001$. This was qualified by an interaction between time of measurement and confrontation choice, $F(1, 151) = 4.42, p = .04, \eta^2 = .03$. Ostracized confronters had higher levels of sadness compared to non-

confronters during the reflexive stage ($p=.002$) but not the reflective (delayed) stage ($p=.23$).

Supplemental Analyses

Chi-square analyses showed no main effect of gender in frequency of confrontation. However, due to prior research on gender differences in responses to ostracism (e.g., Williams & Sommer, 1997), the interaction between participant gender and ostracism condition was examined.

Ostracism condition was a significant predictor of confrontation likelihood ($\beta = 1.34$, $Wald=8.94$, $p=.003$), indicating that those in the ostracism condition were 3.80 times more likely to confront than those in the included condition. Participant gender was not a significant predictor of confrontation, $p=.07$. The interaction between ostracism condition and participant gender on confrontation in any message was significant, $\beta=-.58$, $Wald=5.39$, $p=.02$. Follow-up analyses indicated that there were no significant differences in confrontation likelihood between included men and women, $p=.20$. However, the odds of ostracized women sending confrontational messages were half than those of ostracized men, $\beta=-0.68$, $p=.04$, $\exp(b)=0.51$.

Finally, an analysis was conducted to see if participant gender influenced recovery of need-satisfaction or mood in ostracized participants. Participant gender was not significantly related to need-satisfaction $F(1, 149)=3.07$, $p=.08$, nor did it interact with time of measurement, $F(1, 149)= 2.28$, $p=.13$, or confrontation choice, $F(1, 149)=0.22$, $p=.64$. The three-way interaction between time of measurement, gender, and

confrontation choice was also non-significant, $F(1, 149) = 0.23, p = .63$. Similar non-significant results were found for anger and sadness.

Discussion

The results of this study indicated that, as expected, confrontation was more frequent in ostracized individuals than in included individuals. I found that, when given the option to confront the other players, 18% of included and 33.33% of ostracized participants chose to do so. When looking at individual targets of confrontation, this difference was seen when comparing the two groups on the amount of public (non-anonymous) messages sent, which was the most frequent choice. There were no significant differences in the use of anonymous messages or messages to the principle investigator. However, the rates of these responses were low overall, which can affect the accuracy of statistical comparisons.

It was predicted that confrontation would lead to greater recovery from ostracism, as measured using the delayed need-satisfaction and mood questionnaires. However, there were no differences in need-satisfaction, anger, or sadness at Time 2. This is contrary to Gervais et al. (2010), which found psychological benefits of confrontation for those that chose to confront sexist remarks. Specifically, they found increases in self-esteem, empowerment, and sense of competence, which are relevant to the fundamental needs depleted by ostracism – particularly self-esteem and control. A potential explanation for the lack of effect could be that the period of time between measurements was too long to capture effects of confrontation before complete recovery. Supporting this explanation, additional analysis indicated that need-satisfaction did not

differ significantly at Time 2 between included participants and ostracized participants in either condition. However, further investigation is needed to determine if an even shorter delay between measurements of need-satisfaction would find differences in recovery between ostracized confronters and non-confronters.

Despite the lack of differences between groups in the delayed stage, the interaction between measurement time, ostracism condition, and confrontation choice was significant for level of sadness. This is due to differences in sadness between ostracized confronters and non-confronters in their immediate responses to ostracism. Ostracized individuals who went on to confront the sources of ostracism had higher levels of sadness than those who did not confront. This reflects Ashburn-Nardo et al.'s (2008) proposition that confrontation occurs when mistreatment is perceived as harmful. Perceptions of severity may be based on the amount of psychological distress that follows ostracism.

For need-satisfaction and anger, there were unexpected interactions between time of measurement and confrontation choice. Need-satisfaction during the reflexive stage, before confrontation, was significantly lower in confronters than for non-confronters across the Cyberball conditions. The same pattern occurred for anger - anger was higher at the immediate stage for confronters and by the delayed stage, recovered to the same level as non-confronters. This may also suggest that confronters act in response to psychological distress.

Though it was not expected that included participants might view negatively, 18% of included participants still sent messages expressing unhappiness with the

Cyberball game. Post-hoc analyses suggest this is not due to feeling more ignored and excluded - while ostracized confronters felt more ignored and excluded and reported receiving marginally fewer throws than ostracized non-confronters, the same pattern was not seen for included confronters and non-confronters. Future research should examine individual differences such as social anxiety (Wesselman et al., 2012) to determine why some participants respond less positively to inclusion during the Cyberball game.

Another predictor of confronting ostracism was gender, such that men were more likely to confront ostracism than women. While gender had no main effect on confrontation likelihood, the interaction between gender and ostracism condition indicated gendered differences in behavior for ostracized individuals. This reflects past ostracism literature which found gender differences in social loafing and social compensation (Bozin & Yoder, 2008; Williams & Sommer, 1997).

4. STUDY THREE

The results of Study 2 found that confronters – who have a stronger initial reaction to ostracism than non-confronters – show similar levels of need-satisfaction and anger as non-confronters in the delayed stage. Additionally, while ostracized confronters had greater levels of sadness than non-confronters immediately following Cyberball, there was no difference in sadness in the delayed stage (after confrontation). These results suggest that confrontation is initiated when psychological wellbeing (i.e., need-satisfaction and negative affect) is especially threatened. However, it cannot be determined if confrontation improved psychological recovery, or if the lack of differences in the delayed stage reflects recovery due to the passage of time. The purpose of this study is to further clarify the effect of confrontation on recovery from ostracism. In order to determine if confrontation affects recovery, the use of confrontation or another coping method was manipulated. Furthermore, directions for messages were manipulated to indicate that it would or would not be seen by the confederate to determine if the act of writing about the event alone would lead to the same reaction. A non-social distraction change blindness task modeled after Wesselmann, Ren, Swim, and Williams (2013) was used as a non-social control.

Furthermore, the time between measurement of immediate and delayed need-satisfaction was reduced. Study 3 used a shorter task between measurement of need satisfaction and mood (1.5 minutes vs. 3 minutes in Study 2), in accordance with Wirth and Williams (2009). As recovery from ostracism begins minutes following ostracism

(Wirth & Williams, 2009), this provided a more sensitive test of the effects of confrontation.

Method

Design and Participants

This study manipulated both confrontation (confront, writing, or distraction) and ostracism, with 75% of participants in the ostracism condition and 25% of participants in the inclusion condition to serve as a control. Included participants only completed the distraction task, while those in the ostracism condition were randomly assigned to the confrontation, writing, or distraction condition. One hundred and eighty-five participants from the Psychology subject pool completed the study. Sixty-four percent of participants were female, with an average age of 18.54 years ($SD=0.73$). They identified predominantly as non-Hispanic White (64.30%) or Hispanic/Latino (14.50%), with 7% identifying as African-American/Black, 7% as bi- or multiracial, 5.40% as Asian, and 1.60% identifying as Native American or other ethnicity. In exchange for their participation, participants were granted credit to be used for their courses.

Measures and Procedure

Participants reported to the lab in groups of up to 6 people. They were told that they were participating in a study examining the influence of personality and individual differences on mental visualization skills. Following consent procedures, participants completed demographic information before engaging in the Cyberball task used in Studies 1 and 2 (Appendix D); however, rather than an equal ratio of participants being randomly assigned to the inclusion and ostracism conditions, only 25% of participants

were assigned to the inclusion condition. Following Cyberball, they were asked to answer the post-Cyberball questionnaire (see Appendix F) to measure need-satisfaction during the game, negative affect, and the effectiveness of the manipulation.

Next, ostracized participants were randomly assigned to a coping condition, where they were instructed to write a message regarding the number of tosses received to be sent to the other players (confrontation condition), to write a message regarding the number of tosses received that would not be sent to the other players (writing condition), or to complete a distraction task using change blindness videos (distraction condition). In the inclusion condition, all participants completed the distraction task. For those in the confrontation and writing conditions, participants were given 90 seconds to write their messages.

In the distraction condition, participants were asked to watch a three change blindness videos and indicate if they saw what had changed in the videos (see Appendix K for an example), based off earlier work by Wesselman et al. (2013). To avoid influence of viewing images of people in social settings, the three videos used contained no images of people. Instead, they showed an empty carousel, a farmhouse in a field, and a trio of wooden posts and signs. The distraction task was approximately 90 seconds long.

For those in the message conditions (confrontation or unseen messages) this was followed by a single item manipulation check for those in the message conditions (confrontation and unsent messages). They were asked to indicate if their message would or would not be seen by the other players. Participants in all conditions ended with a

post-Cyberball questionnaire, during which participants were instructed to indicate how they feel right now (see Appendix F). To conclude the study, participants completed a suspicion check and debriefing.

Results

Manipulation Checks and Coding

Ten participants were dropped from analysis for failing the manipulation check on message status (sent to other players v. not sent to other players). Messages were coded for confrontation - expressing displeasure with the Cyberball game - by two coders, with discrepancies resolved by discussion. Prior to resolving the discrepancies, intercoder reliability was high (94.12% agreement, $\kappa = .87$). Analysis of coded responses indicated that the confrontation manipulation was largely successful; 87.60% of written responses were categorized as containing confrontational messages. Chi-square analysis found no significant difference between the two message conditions on confrontation coding, $X^2(1)=0.25, p=.62$. Analysis of the Cyberball manipulation check using contrast coding indicates that the manipulation was successful; the mean percentage of throws perceived by included participants (32.61%) was significantly different from the three ostracism conditions (all $ps <.001$). There were no differences in percentage of perceived throws between the ostracism conditions (all $ps >.58$).

Main Analyses

Participants in the writing and confrontation conditions who failed to correctly identify whether their message would be seen by others or who failed to write messages

expressing displeasure with treatment were filtered from the dataset prior to analysis ($N=21$). Analysis of the full dataset showed no differences in the pattern of results.

Mixed ANOVAs were conducted to examine the effect of condition on need-recovery following Cyberball (Cronbach's $\alpha = .93$ for immediate and $.91$ for delayed measurement). Analysis indicated a significant main effect for time of measurement, $F(1, 169) = 35.95, p < .001, \eta^2 = .18$ and for condition, $F(1, 169) = 26.31, p < .001, \eta^2 = .32$. This was qualified by a significant interaction between time of measurement and condition on need recovery, $F(3, 169) = 17.34, p < .001, \eta^2 = .24$.

Pairwise comparisons indicate that, in the reflexive (immediate) stage, those in the inclusion condition had significantly higher need satisfaction than those in the ostracism conditions, all $ps < .001$. There were no significant differences in need-satisfaction between the ostracism conditions, see Figure 4.

In the reflective (delayed) stage, the inclusion condition again had significantly higher need satisfaction than the three ostracism conditions, see Figure 5. The distraction condition had significantly higher need satisfaction in the delayed stage than both the writing and confrontation conditions, $p < .001$ and $p = .002$, respectively. There were no significant differences in need satisfaction between the writing and confrontation conditions. Looking within the ostracism conditions, pairwise comparisons indicate that the confrontation task resulted in lower need-satisfaction in the reflective stage ($M=2.84, SD=.77$) than the distraction task ($M=3.33, SD=.79$), $p = .01$. There was no difference in need-satisfaction between those in the confrontation task and the writing only task ($M=2.72, SD=.79$), $p = .41$.

For anger, analyses indicated a significant main effect for time of measurement, $F(1, 168) = 8.07, p = .01, \eta^2 = .05$ and for condition, $F(1, 168) = 14.60, p < .001, \eta^2 = .21$. This was qualified by a significant interaction between time of measurement and condition on need recovery, $F(3, 168) = 3.68, p = .01, \eta^2 = .06$. Pairwise comparisons indicate that, in the reflexive (immediate) stage, those in the inclusion condition had significantly lower anger ($M = 1.23, SD = .48$) than those in the ostracism conditions, all $ps < .001$. There were no significant differences in need-satisfaction between the distraction ($M = 2.39, SD = 1.28$), writing ($M = 2.56, SD = 1.23$), or confrontation conditions ($M = 2.21, SD = 1.18$).

In the reflective (delayed) stage, the inclusion condition again had significantly lower anger ($M = 1.30, SD = 0.67$) than the three ostracism conditions, all $ps < .02$. The distraction ($M = 1.80, SD = 0.93$) and confrontation conditions ($M = 2.02, SD = 1.08$) had significantly lower anger in the delayed stage than the writing condition ($M = 2.44, SD = 1.10$), $ps = .002$ and $.048$, respectively. There were no significant differences in anger between the distraction and confrontation conditions.

The analysis for sadness showed a significant main effect for time of measurement, $F(1, 169) = 11.89, p = .001, \eta^2 = .07$, as well as for condition, $F(3, 169) = 7.42, p < .001, \eta^2 = .12$. This was qualified by a significant interaction between time of measurement and coping condition, $F(3, 169) = 3.21, p = .02, \eta^2 = .05$.

Pairwise comparisons reveal that, similar to the previous results, during the reflexive (immediate) stage, the inclusion control condition had significantly lower sadness ($M = 1.50, SD = 0.85$) than the three ostracism conditions (confrontation $M = 2.28$,

$SD=1.18$; distraction $M=2.52$, $SD=1.23$; writing $M=2.36$, $SD=1.19$), all $ps \leq .001$. No differences in sadness were seen between the ostracism conditions during the reflexive (immediate) stage, all $ps \geq .21$.

The pattern of results for the delayed, reflexive stage was similar. The inclusion condition was again lower in sadness ($M=1.41$, $SD=0.69$) than the three ostracism conditions, all $ps \leq .02$. Between the three ostracism conditions, the confrontation condition did not significantly differ in sadness ($M=2.02$, $SD=1.04$) from either the distraction ($M=1.91$, $SD=1.10$, $p=.20$) or writing conditions ($M=2.31$, $SD=1.22$, $p=.61$). The distraction condition had marginally less sadness than the writing condition, $p=.07$.

Discussion

Contrary to hypothesis, confrontation did not predict better need-fulfillment in the reflective (delayed) stage than the non-social writing task. In fact, the non-social control – distraction - led to the most recovery, though it did not restore ostracized participants to the same level of need satisfaction as included participants. This is likely due to the shorter span of time between measurements of need satisfaction; Hartergink et al. (2015) report that full recovery can be seen between 5-10 minutes following ostracism. Therefore, with such a short delay between immediate and delayed need satisfaction (90 seconds), there may have not been enough time for ostracized participants to fully recover, even when using an effective coping method.

The results of this study did not support the hypothesis that confrontation would be more effective than writing or distraction in recovering from ostracism. In fact, distraction seems to have the greatest effect, influencing both need recovery and anger.

Confrontation also reduces anger compared to writing, but not need satisfaction or sadness. A potential explanation lies in previous findings that distraction works better than rumination in recovering need-satisfaction (Wesselman et al., 2013). As writing messages about the Cyberball experience requires ruminating on the experience itself, coping methods which avoid rumination altogether may be more effective in short term recovery.

While confrontation was not particularly effective for need satisfaction, those in the confrontation and distraction conditions showed less anger in the reflective stage than those who had written messages without expecting them to be seen by others. However, sadness following ostracism was not different between the ostracism conditions. The different effects of coping method on affect could be understood as relating to the underlying characteristics of each affective state. For example, anger is thought to be specifically related to goal frustration (Carver, 2004). Ostracized participants can be seen as threatened not only in their need to belong, but also in their ability to exert control over the interaction. Confrontation provides a means of interacting, potentially reinforcing control and reducing subsequent anger. The distraction task, on the other hand, works specifically by reducing rumination (Wesselmann et al., 2013) and has been shown in other areas to reduce levels of anger (Denson, Moulds, & Grisham, 2012).

An interesting finding is the effectiveness of the distraction task. Wesselman et al. (2013) suggest that the effectiveness of their distraction task may have been influenced by the social nature of their change blindness videos. As the present study did

not use change blindness videos containing people, these results support research suggesting that distraction may be an effective method of coping with short-term ostracism. However, Denson et al. (2012) caution that distraction may not be effective in coping with repeated instances of mistreatment. Future research examining coping with negative affect following ostracism may want to consider other forms of emotion regulation strategies, such as cognitive reappraisal.

5. STUDY FOUR

Study 2 suggests that, in accordance with Ashburn-Nardo et al. (2008), confrontation occurs when individuals perceive the experience as especially threatening. This study was conducted to identify individual differences and contextual factors that affect the likelihood of confronting ostracism.

Individual differences of interest were selected based on their relationship to both the ostracism and confrontation literatures. Collectivism is an influence on ostracism recovery and, due to its relationship to communal relationship orientation, may be related to confrontation choice (Pfundmair et al., 2015; Gervais et al., 2010). Because sensitivity to mistreatment can affect confrontation (Chaney et al., 2015), measures of rejection-sensitivity and prior ostracism experience were included. Implicit theories of relationships (Chen, DeWall, Poon, & Chen, 2012) and personality (Rattan & Dweck, 2010) are also associated with confrontation and aggression.

A second aim of this study is to examine how the group composition of ostracism sources affects confrontation. The in-group or out-group membership of others influences both psychological reactions to ostracism and behaviors that follow (Sacco et al., 2014; Hayman et al., 2014; Wittenbaum et al., 2010; Lakin et al., 2008). Therefore, I also predicted that confrontation would be more likely when directed towards in-group members than out-group members.

Method

Design and Participants

This study used Cyberball to induce ostracism; however, unlike the previous studies, all participants were ostracized during the game. Within Cyberball, I manipulated group composition (in-group or out-group confederate players) between-subjects by adding gender and racial identification information below the player label. To avoid influence due to cross-gender interactions, confederate gender was always the same as the participant's self-identified gender.

A sample of 531 participants from the Psychology subject pool was prescreened for racial identification to obtain a sample of White (65.60%) and Hispanic/Latino students (34.40%). Of the 531 recruited, 480 completed both parts of the study. A single participant was dropped for inconsistent racial identification between the two parts of the study. The final sample of 479 participants was predominantly female (79.30%) with an average age of 18.66 years ($SD=1.28$).

Measures

Chronic ostracism experiences was measured using 12 items from the Ostracism Experiences Scale (Carter-Sowell, 2010), see Appendix G. This scale contained items such as, "In general, others treat me as though I am invisible" and was rated on a Likert scale from 1 (Never) to 5 (Always). Due to experimenter error, only 11 of the 12 items were presented to participants. Reliability analysis of the 11 items indicated a Cronbach's α of .91.

Need satisfaction and mood was measured using a 12-item scale of basic needs, with 3 items each for belonging, control, self-esteem, and meaningful existence. Single items were used for anger and sadness (Zadro, Williams, & Richardson, 2005; Appendix F).

Cultural identity (individualism/collectivism) was assessed using the cultural orientation scale (Triandis & Gelfand, 1998) used in prior research by Yaakobi and Williams (2015). It contained four items each for horizontal and vertical individualism (e.g., “I’d rather depend on myself than others”; “Winning is everything,” respectively) and horizontal and vertical collectivism (e.g., “If a coworker got a prize, I would feel proud”; “It is important to me that I respect the decisions made by my group,” respectively). Each of these scales were rated on a 7-point Likert scale with responses ranging from 1 (Never or definitely no) to 9 (Always or definitely yes), see Appendix H. Reliability analysis for these subscales indicated somewhat low reliability; Cronbach’s α = .63 for horizontal individualism, .65 for vertical individualism, .73 for horizontal collectivism, and .58 for vertical collectivism.

Rejection sensitivity was measured using the 8-item version of the Rejection Sensitivity Questionnaire (Appendix I). This scale assessed both rejection concern and acceptance expectancy to calculate an overall score of rejection-sensitivity (Downey & Feldman, 1996). For each item, participants were presented with a short scenario (e.g., “You ask your parents for help in deciding what programs to apply to”) and then rated how anxious or concerned they would feel in the scenario (rejection concern) and whether they would expect to receive help in the scenario (acceptance expectancy).

Implicit theories of relationships were measured using items developed by Knee (1998). This included four items assessing fixed, destiny views of relationships (e.g., “Struggles at the beginning of a relationship are a sure sign that the relationship will fail” and four items assessing growth views of relationships (e.g., “The ideal relationship evolves gradually over time”). These items were rated on a 9-point Likert scale, ranging from 1 (Strongly Disagree) to 9 (Strongly Agree), see Appendix J.

Procedure

Prior to the study, participants completed a prescreening questionnaire that assessed racial identification, chronic ostracism experiences (Carter-Sowell, 2010), and rejection-sensitivity (Downey & Feldman, 1996). Following the prescreening, eligible participants registered for the study and received a link to an online survey. This survey contained questionnaires regarding baseline need satisfaction (Zadro et al., 2005), implicit theories of relationships (Knee, 1998), and cultural orientation (Triandis and Gelfand, 1998).

In the second part of the study, participants came to the lab singly or in groups of up to 6 people. They were told that they were taking part in a study examining the influence of mental visualization on performance in online group tasks. The study began with consent procedures, followed by demographic questionnaires. Next, participants were asked to engage in a modified version of Cyberball.

They were first told that Cyberball was a mental visualization task, and that they and their co-players would be provided with basic information about each other to assist in visualization. During Cyberball, participants were all ostracized, receiving two of 30

throws. Additionally, the demographic characteristics of the computerized confederate players were manipulated by adding text below the player name indicating confederate gender and racial identification. Confederate gender was programmed to match the gender indicated by the participant earlier in the study. Participants were randomly assigned to play with racial in-group or out-group members. For example, a White male participant in the out-group condition would see the left-hand co-player labeled as “Player 1 (Hispanic, Male), and the right-hand co-player labeled as “Player 3 (Hispanic, Male). Under their own avatar would be the label “Player 2 (White, Male)”

The Cyberball game was followed by need-satisfaction measures and manipulation checks (see Appendices E and F). Next, participants were asked if they would like to send a message to the other players. If they indicated that they wished to do so, they were provided with a text box in which to type their message. Finally, participants completed suspicion checks before being debriefed.

Results

Manipulation Checks and Coding

Messages were coded for confrontation - expressing displeasure with the Cyberball game - by two coders, with discrepancies resolved by discussion. Prior to resolving the discrepancies, intercoder reliability was high (91.58% agreement, $\kappa = .74$). The overall percentage of participants who chose to confront was 14.4%; this included 14.3% of participants in the in-group condition and 14.5% in the out-group condition. There were no significant differences in the percentage of confronters between the in-group and out-group conditions, $p = .96$.

Descriptive statistics for the manipulation checks suggest that the ostracism manipulation was successful; the mean for feeling ignored and excluded was 4.24 out of 5 (very much so), $SD=0.98$. Similarly, participants reported receiving an average of 7.43% of throws ($SD=5.67$) during the Cyberball game, indicating that the perceived amount of throws was near to the programmed amount (6.67%).

Contrary to prior research on the consequences of in-group v. out-group ostracism, there were no significant differences between conditions in need-satisfaction, anger, or sadness (all $ps > .12$).

Gender

As seen in Table 1, logistic regression analysis indicated a negative association between gender and the likelihood of confrontation, $B=-1.03$, $Wald=13.44$, $p<.001$, $\exp(b)=0.36$. The odds of a target sending a confrontational message was 2.78 times less likely for female participants than male participants. Based on these results, subsequent analyses included participant gender as a control variable. Unless noted, there was no difference in statistical significance between analyses that controlled for gender and those that did not.

Need Satisfaction and Mood

Summary statistics for logistic regression analyses on need-satisfaction and mood are presented in Table 1. Logistic regression analysis indicated a significant association between need satisfaction immediately following Cyberball (Cronbach's $\alpha=.94$) and the likelihood of confrontation, controlling for gender, $B=-0.32$, $Wald=4.83$ $p=.03$, $\exp(b)=0.73$. The odds of confrontation were 1.37 times lower for each unit increase in

immediate need satisfaction. However, this effect was only marginal ($p=.08$) when gender was not included as a control. Analysis of the mood items indicated that the odds of confrontation are 1.35 times higher for each unit increase in anger, $B=0.30$, $Wald=8.17$, $p=.004$, $\exp(b)=1.35$. When controlling for gender, there was a significant effect of sadness on odds of confrontation, $B=0.24$, $Wald=4.89$, $p=.03$, $\exp(b)=1.27$, indicating 1.27 times higher odds of confrontation with each unit increase in sadness. However, the same effect was not seen when gender was excluded, $p=.75$. There was no significant effect of baseline need satisfaction (prior to ostracism experience) on confrontation likelihood ($p=.85$).

Individual Differences

Table 1 contains summary statistics for the logistic regression analyses of individual differences. Logistic regression analysis indicated no association between growth (Cronbach's $\alpha=.68$) or destiny (Cronbach's $\alpha=.76$) views of relationships and the likelihood of confrontation ($ps=.51$ and $.76$, respectively). For the collectivism scales, vertical collectivism had no influence on the likelihood of confrontation ($p=.51$), nor did horizontal collectivism ($p=.59$). Rejection-sensitivity had no significant effect on the likelihood of confrontation, ($p=.84$). Similarly, there was no significant effect on the likelihood of confrontation due to prior ostracism experiences ($p=.45$).

Group Status and Interactions with Need Satisfaction and Mood

Summary statistics for all logistic regression analyses on the interaction between need satisfaction or mood measures are presented in Table 1. The in-group/out-group manipulation had no influence on the likelihood of confrontation, $p=.62$. Logistic

regression analysis indicated no significant main effects or interactions between baseline need satisfaction and the group manipulation on the likelihood of confrontation, all p s $\geq .40$.

However, a logistic regression analysis of group manipulation and reflexive (immediate) needs on the likelihood of confrontation indicated a significant interaction between group manipulation and reflexive needs on the likelihood of confrontation, $B=0.65$, $Wald=4.96$, $p=.03$, $\exp(b)=1.92$. Follow-up analyses indicate that in the in-group condition, reflexive needs had a significant, negative effect on likelihood of confrontation, $B=-0.63$, $Wald=8.78$, $p=.003$, $\exp(b)=0.53$. This indicates that those in the in-group condition were 1.89 times less likely to confront with each unit increase in need satisfaction. In the out-group condition, no relationship between reflexive need satisfaction and odds of confrontation was seen, $p=.99$, see Figure 6.

The effect of group manipulation and anger on the likelihood of confrontation yielded a similar pattern. There was a significant interaction between anger and group status on the likelihood of confrontation, $B=-.63$, $Wald=8.40$, $p=.004$, $\exp(b)=.53$, see Figure 7. Follow-up analyses indicate that in the in-group condition, anger had a significant, positive effect on likelihood of confrontation, $B=0.64$, $Wald=15.81$, $p<.001$. No effect of anger on confrontation was seen for the out-group condition, $p=.89$. For sadness, there was no significant interactions with group condition, $p=.18$.

Group Interactions with Demographic Characteristics

Despite the significant main effect of participant gender on the likelihood of confrontation, a logistic regression of participant gender and group status on

confrontation indicated no significant main effects or interactions, all $p \geq .12$ (see Table 1). Analysis of participant ethnicity and group status on confrontation indicated no significant interaction between ethnicity and group status, $p = .12$.

Group Interactions with Individual Differences

Table 1 presents summary statistics for logistic regression analyses of group condition interactions with individual differences. There was a significant interaction between group condition and destiny views, $B = 0.48$, $Wald = 3.92$, $p = .048$, $\exp(b) = 1.62$. In the in-group condition, destiny views of relationships had no significant effect on the odds of confrontation, $p = .21$. In the out-group condition, there was a marginal effect of destiny views on the odds of confrontation, $B = 0.28$, $Wald = 2.77$, $p = .096$, $\exp(b) = 1.33$. As seen in Figure 8, the stronger participants' beliefs that relationships are destined to be positive or negative, the greater the odds of confrontation. However, no significant effects on confrontation odds were seen between group status and growth views ($p = .48$).

For collectivism, horizontal collectivism and group condition had no significant interaction on the likelihood of confrontation, $p = .92$, nor did group condition and vertical collectivism, $p = .99$. Rejection-sensitivity had no significant interaction with group condition on the likelihood of confrontation, $p = .18$. Similarly, there was no significant interaction in the regression of prior ostracism experiences and group condition on the likelihood of confrontation, $p = .32$.

Discussion

Contrary to hypothesis, collectivism alone did not influence the likelihood of confrontation, despite previous research indicating an effect on reflexive need-

satisfaction (Yaakobi & Williams, 2015). Neither rejection sensitivity or destiny/growth views of relationships had main effects, contrary to previous research (Ayduk, Gyurak, & Luerksen, 2008; Chen et al., 2012). Finally, prior ostracism experiences did not have an effect.

However, reflexive measurements of need-satisfaction, anger, and sadness had significant influence on the use of confrontation. While the effects of need-satisfaction and anger were modified by group condition, levels of sadness immediately following confrontation had a main effect on confrontation likelihood. This finding supports Ashburn-Nardo et al.'s (2008) assertion that confrontation occurs when the mistreatment is seen as harmful. It is also reflective of the results of Study 2, which found that ostracized confronters had greater levels of sadness immediately following Cyberball than ostracized non-confronters.

Contextual factors alone did not affect confrontation, in that the group status manipulation did not influence the likelihood of confrontation. Despite the general lack of main effects for context and individual differences, interesting interactions between individual differences and social context were found. First, reflexive (immediate) need-satisfaction interacted with group condition to predict likelihood of confrontation – reflexive need-satisfaction only predicted confrontation in the in-group condition, not the out-group condition. Similarly, anger had a stronger effect on confrontation likelihood in the in-group condition compared to the out-group condition.

Confrontation may be driven by psychological and affective responses to ostracism and moderated by context. These contextual differences could be understood

as reflecting differences in construal of in-group versus out-group ostracism. Smart Richman and Leary's (2009) multi-motive model indicates that reactions to rejection are influenced by multiple factors, including alternative relationships and perceived costs of rejection. Alternatives to essential in-groups are difficult, thus making in-group ostracism more urgent and requiring a response (in the form of confrontation). However, ostracism by out-group members still leaves in-group members as relationship alternatives, and the costs of rejection by out-group members are likely not perceived to be as high.

An unexpected finding is the interaction between destiny views and group condition. Previous research has shown that fixed, destiny views of relationships are associated with greater aggression (measured via noise blasts and negative evaluations) as well as aggressive affect (anger, frustration, irritability) following ostracism (Chen et al., 2012). While need-satisfaction and anger predicted confrontation of in-group members but not out-group members, destiny views predicted confrontation of out-group members, but not in-group members. This may again reflect differing construals of in-group and out-group ostracism; as out-group ostracism is less urgent, individuals may take a more assertive approach because the social costs of doing so are of less concern.

Another unexpected finding was the similar levels of need-satisfaction, anger, and sadness between the in-group and out-group conditions. Ostracism by essential in-group members (e.g., racial groups) has previously been shown to hold higher psychological costs than out-group ostracism (Sacco et al., 2014; Bernstein et al., 2010; Hayman et al., 2015). However, these studies have solely used interactions between

Black and White Cyberball players. The use of Hispanic/Latino participants and co-players at a university where nearly a quarter (22%) of students identify as Hispanic/Latino may relate to the lack of replication of previous work.

In sum, Study 4 found that negative psychological responses to ostracism increased the likelihood of confrontation. Similar to Study 2, target gender also influenced the likelihood of confrontation, such that men were more likely to confront than women. While the contextual manipulation did not show main effects on the likelihood of confrontation, results indicated that need satisfaction and anger predicting in-group, but not out-group, confrontation. Thus, while psychological responses to ostracism are critical for confrontation, whether or not the behavior is enacted depends on social-contextual factors.

6. SUMMARY AND CONCLUSIONS

The purpose of the present research was to examine the occurrence and intrapersonal consequences of confronting ostracism. Across four studies, I examined confrontation as a behavioral response to ostracism. In Study 1, I found that participants reported fairly neutral feelings towards confrontation, but preferred to contact other players directly rather than sending an anonymous message or contacting a higher authority. In Study 2, I allowed participants the chance to message their ostracizers, and found that one-third chose to send confrontational messages. This rate of confrontation mirrors that seen in Smith and Williams (2004). Study 3 manipulated the coping method used between a confrontation, writing, or distraction task. Results indicated that confrontation did not significantly increase need satisfaction compared to the writing task, although it did reduce anger. Compared to Study 2, Study 4 found a much lower rate of confrontation – approximately 20%, which is similar to the confrontation rates seen in the prejudice literature (e.g., Swim & Hyers, 1999).

There were two major differences between Studies 2 and 4 that may explain the differences in confrontation rate. First, Study 2 provided more options for confrontation and participants were informed of these options before indicating whom they would like to message. This is unlikely to have greatly influenced the rate of confrontation, however, as most participants in Study 2 chose to send non-anonymous messages to the other players. The second difference between the two studies lies within the Cyberball game. Study 2 provided no additional information about the Cyberball participants, while Study 4 included both race and gender identification of the confederate players

and the participant themselves. Both race and gender are essential group identities, which have been shown to affect the psychological consequences of ostracism (e.g., Bernstein et al., 2010; Sacco, Bernstein, Young, & Hugenberg, 2014). This may have, in turn, influenced behavioral responses by making these essential identities salient. Alternatively, the presence of this information may have influenced how participants behaved. Williams et al. (2002) noted “virtual bravado” in chat room based ostracism, without an equivalent in face-to-face ostracism. Their chat room manipulation, like the standard Cyberball study used in Study 2, contained no identifying information regarding the participants. However, face-to-face ostracism necessarily involved targets receiving information regarding the other participants and vice versa. The greater amount of confrontation seen in Study 2 compared to Study 4 may be due to the relative reduction in anonymity of both target and sources, similar to Williams et al.’s (2002) chat room manipulation.

Occurrence of Confrontation

The high frequency of confrontation seen in Study 2 is particularly interesting when compared to research on confrontation of other forms of interpersonal mistreatment. For example, diary studies found that targets were unlikely to actually confront racism or sexism (Brinkman, Garcia, & Rickard, 2011). Similarly, Swim and Hyers (1999) found that only 16% of participants confronted sexist remarks. There are several aspects of the experimental design that may account for this difference. First is the relative neutrality of the ostracism situation. Goodwin et al. (2010) found that when targets associate ostracism with prejudice, recovery of the fundamental needs is slower

compared to those who do not attribute their ostracism to prejudice. The social pain of experiencing prejudice and discrimination may affect participants and their subsequent responses in a different manner than experiencing ostracism for an undetermined reason.

A second factor that may explain these differences is the method of confrontation. In this set of studies, all interaction took place on computers, in relative anonymity. Research has shown that people's behavior online is less subject to concerns of social norms compared to in person behavior (Suler, 2004). Thus, this indirect confrontation may be more likely as compared to confrontation in face-to-face interactions, similar to the results of Williams et al.'s (2002) chat room manipulation. This may also explain why participants did not show greater preference for indirect (e.g., anonymous) messaging of the other players as predicted – as the experimental setup already created an indirect method of contact, anonymous messaging may not have been deemed necessary.

Confrontation was more likely to be used by male targets of ostracism compared to female targets. This reflects past literature which found gender differences in social loafing or compensation following ostracism (Bozin & Yoder, 2008; Williams & Sommer, 1997). Though Gervais et al. (2010) found no gender differences in confrontation, male participants were not direct targets of mistreatment. Why these gender differences occur requires further study; gender differences in social behavior following ostracism may reflect gendered status characteristics (Bozin & Yoder, 2008) or be due to differences in socialization and norms for men and women (Williams &

Sommer, 1997). Adherence to these norms is particularly strong when examining same-gender interactions, as used in Study 4 (Keener, Strough, & DiDonato, 2012).

Consequences of Confrontation

A second aim of the present research is to examine the psychological consequences of confrontation. Study 2 found no significant differences in delayed measures of need-satisfaction or anger between ostracized individuals who chose to confront compared to those who did not. Study 3 found that a confrontation manipulation performed equally well on need-satisfaction as a similar writing task that did not involve interaction with ostracism sources. In fact,, distraction was the superior form of dealing with the immediate consequences of an acute episode of ostracism. As the confrontation manipulation did not improve recovery of need satisfaction, future research should investigate factors that influence the effectiveness of particular coping strategies.

An interesting finding in Study 2 was the lower level of need satisfaction and higher negative mood in confronters, which occurs across conditions. Similarly, Study 4 found that sadness immediately following Cyberball was positively associated with confrontation likelihood. This may suggest that psychological responses are indeed driving particular behaviors; perhaps only those whose needs are especially depleted and whose moods are especially negative are willing to risk the potential social costs of confrontation in order to restore their depleted needs/mood. According to the Ashburn-Nardo, Morris, and Goodwin's (2008) confrontation only occurs, in part, if the target views the event as serious enough to warrant action; in the context of Cyberball, this

determination may be based on how much need depletion or negative mood occurs for both included and ostracized participants. The analysis of manipulation checks in Study 2 suggests that ostracized individuals may also confront when they feel especially excluded or treated unfairly.

Implications

The current studies contribute to the understanding of confrontation and ostracism in multiple ways. This is the first study to extend examination of confrontation from the literature on bullying or prejudice to ostracism. Additionally, Studies 2 and 4 provide support for models of confrontation that propose a link between psychological responses to mistreatment and the use of confrontation. Studies 2 and 4 suggest that greater levels of sadness increase the use of confrontation. This provides support for Ashburn-Nardo et al.'s (2008) Confronting Prejudiced Responses model, which proposes that confrontation occurs if mistreatment is detected and if it is perceived as harmful enough to warrant action. Similarly, Chaney et al. (2015) proposed that confrontation results from sensitivity to mistreatment.

There are also significant contributions to ostracism literature. First, these studies provide a close examination of the use of confrontation by coding qualitative responses for expressions of displeasure with mistreatment. Second, I identified the rates of confrontation in both standard and modified (in-group/out-group) versions of Cyberball. An unexpected finding in Study 4 was the superiority of the distraction task for recovery from ostracism compared to the other writing tasks. This supports prior research by Wesselman et al. (2013) on the effectiveness of distraction as a means of coping with

ostracism. Results also indicated that distraction holds benefits compared to confrontation or writing about the experience. Additionally, Study 4 used change blindness videos that did not contain images of people, unlike Wesselman et al. (2013).. The success of the distraction condition suggests that the change blindness task works not because it contained images of people, but due to cognitive processes like reducing rumination.

The use of both immediate and delayed measures of need-satisfaction provided further insight into the time needed to recover from ostracism. In Study 2, both included and ostracized individuals had the same level of need-satisfaction at about 3 minutes following ostracism. In Study 4, however, ostracized individuals had not fully recovered compared to included participants at about 1.5 minutes. Thus, we see that while recovery from ostracism occurs quickly, it does so in a gradual manner over time.

These studies also contribute to understanding the experience of ostracism. First, while very few moderators of immediate need-threat have been determined, the results of Study 2 indicate that there are, in fact, differences in immediate responses to ostracism that subsequently influence behavior. Future research examining moderators of ostracism's immediate effects may want to investigate factors that influence the use of different coping methods. Second, the in-group condition of Study 4 provides partial support for the link between need-depletion and interpersonal responses. Confrontational responses were positively associated with need-depletion, as well as anger and sadness.

The need-fortification hypothesis (Williams, 2009) proposes that targets of ostracism act in ways to fortify their needs. This is contradicted by the results of Study 2

and Study 4, in that confrontation did not improve recovery of need-satisfaction. It is possible that examination of individual needs may have supported this hypothesis – confrontation necessarily involves interaction with others (belonging) in an assertive manner (control) to call attention to how one was mistreated (meaningful existence). However, the questionnaire used to measure need-satisfaction shows high correlations between need-subscales, and recent work (Gerber et al., 2016) suggests that these are not in fact four separate concepts. Additionally, other studies have found that interpersonal responses that should fortify threatened needs had little effect above the passage of time (e.g., prosocial behavior – Leiro and Zwolinski, 2014; social network site usage – Schneider et al., 2017). While there is support for the link between need-depletion and interpersonal responses to ostracism, it does not appear that interpersonal responses influence need-fortification.

Study 2 and Study 4 measured the frequency of voluntary confrontation and found it to be somewhat common. This information could be helpful for the development of interventions to reduce ostracism. While there were no effects on psychological recovery, confrontation could potentially reduce the chance of future ostracism. More research is needed, however; while confrontation may reduce future ostracism for some groups, the chance of behaving counter to gender norms, or in such a way that it fulfills stereotypes based on ethnicity/race and gender, could mean detrimental consequences for marginalized groups.

Limitations

A crucial limitation in terms of real-world application of the present studies is the minimal groups paradigm employed in Cyberball. As Study 4 illustrates, contextual factors such as the social identities of targets and sources influence responses to ostracism. Therefore, the frequency, antecedents, and consequences of confrontation may not accurately reflect real-world processes in which identities and relationships are known. Confrontation frequency in Study 2 was higher than overall confrontation for Study 4, further illustrating that social identity and group dynamics can influence the use of confrontation. However, Study 4 found rates of confrontation similar to those found in face to face confrontation of prejudice, e.g., Swim and Hyers (1999).

Relatedly, when context was added to Cyberball, as in Study 4, the identities of confederates were restricted to the same gender as the participant. This reduces applicability to cross-gender interactions. Furthermore, only White and Hispanic/Latino students were recruited for Study 4, making generalizations for other cultural groups or other types of intergroup interactions difficult. In addition to a lack of context within the experiments, the larger social context outside of the lab may have influenced confrontation in Study 4. Data was collected immediately prior to the 2016 United States Presidential Election, following months of media coverage of racist and sexist statements by the Republican presidential nominee. As a result, interracial tensions were likely increased, which may have affected willingness to confront mistreatment by out-group members.

Future Directions

Future research should examine how ostracized individuals choose a particular behavioral response. This may be related to individual differences in coping methods, e.g., preferences for assertive responses to interpersonal conflict. The present studies would suggest that reflexive need-satisfaction and negative affect influence the use of confrontation, but a more direct examination is warranted. Another direction for future study is comparing confrontation to other behavioral responses to ostracism in order to determine how targets decide to use specific responses (e.g., confrontation, distraction, aggression, prosocial behaviors, or withdrawal). Although distraction worked better than confrontation, it may not be effective in coping with repeated instances of mistreatment Denson et al. (2012). Future research on coping with ostracism may want to consider other forms of emotion regulation strategies, such as cognitive reappraisal.

Finally, future studies should examine the interpersonal consequences of confronting ostracism. While confrontation of prejudice may reduce subsequent prejudicial interactions (Hyers, 2010; Mallett & Wagner, 2012; Czopp, Monteith, & Mark, 2006), it is possible that confrontation of ostracism may not have the same effects. There are social norms against the explicit display of prejudice, so confrontation can be effective in reducing further negative interactions. However, for other forms of interpersonal mistreatment (e.g., workplace bullying), confrontation may be ineffective or actually worsen the situation (Karatuna, 2015).

In sum, the results of these studies illustrate that confrontation is an interpersonal response to ostracism preceded by greater sadness compared to non-confronters.

However, confrontation did not appear to improve recovery from ostracism above normal recovery due to the passage of time. Despite this, these studies add to the body of literature on interpersonal responses following ostracism and warrant further study of confrontation of ostracism.

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<http://dx.doi.org/10.1177/1368430205051062>

APPENDIX A

TABLE

Table 1. Summary of logistic regression analyses for Study 4

Variable	Main Effects				Interactions with Group Condition			
	Odds Ratio	95% CI	P		Odds Ratio	95% CI	P	
Control								
Gender	0.35	.20 - .61	≤.001					
Group Condition	0.87	.52 - 1.48	.26					
Need-Satisfaction and Mood								
Baseline Need-Satisfaction	1.05	.70 - 1.58	.81		1.38	.62 - 3.07	.43	
Post-Cyberball Need-Satisfaction	0.73	.55 - .97	.03		1.92	1.08 - 3.41	.03	
Post-Cyberball Anger	1.35	1.10 - 1.66	.004		0.53	.35 - .82	.004	
Post-Cyberball Sadness	1.28	1.03 - 1.58	.03		0.75	.49 - 1.15	.19	
Individual Differences								
Growth Theory of Relationships	1.13	.79 - 1.62	.51		1.30	.63 - 2.67	.48	
Destiny Theories of Relationships	1.04	.82 - 1.31	.77		1.62	1.00 - 2.60	.049	
Vertical Collectivism	0.93	.75 - 1.16	.51		1.00	.65 - 1.56	.98	
Horizontal Collectivism	0.94	.76 - 1.17	.60		0.98	.63 - 1.52	.93	
Rejection-Sensitivity	1.01	.94 - 1.08	.84		1.10	.96 - 1.26	.18	
Ostracism Experiences Scale	0.88	.64 - 1.21	.43		0.71	.38 - 1.36	.31	

APPENDIX B

FIGURES

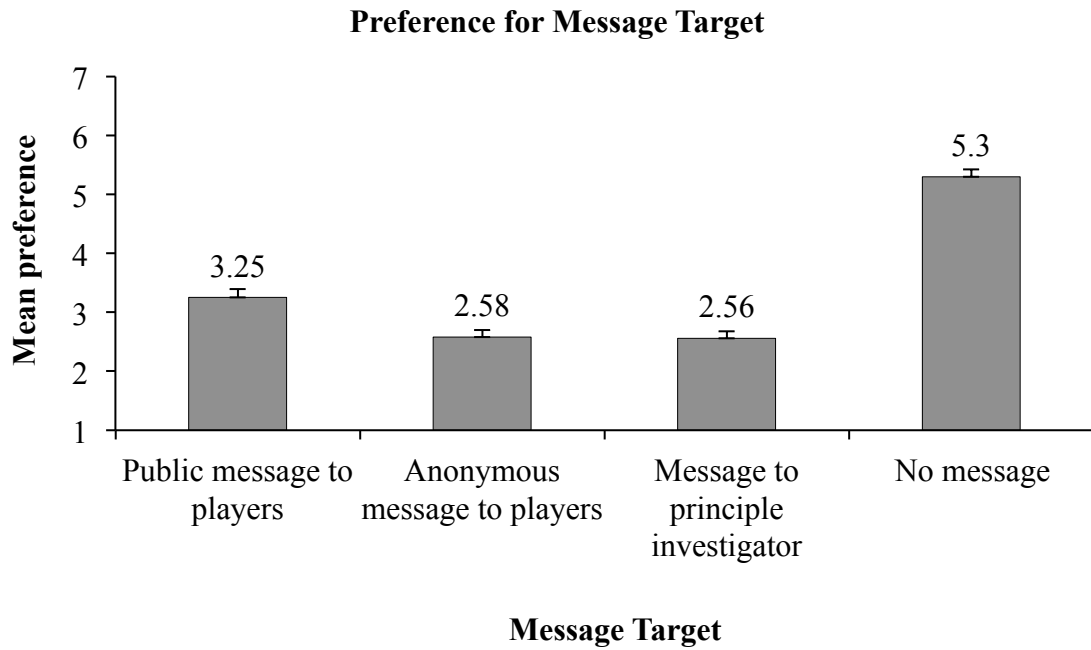


Figure 1. Message choices for both conditions (Study 1). Error bars represent standard errors.

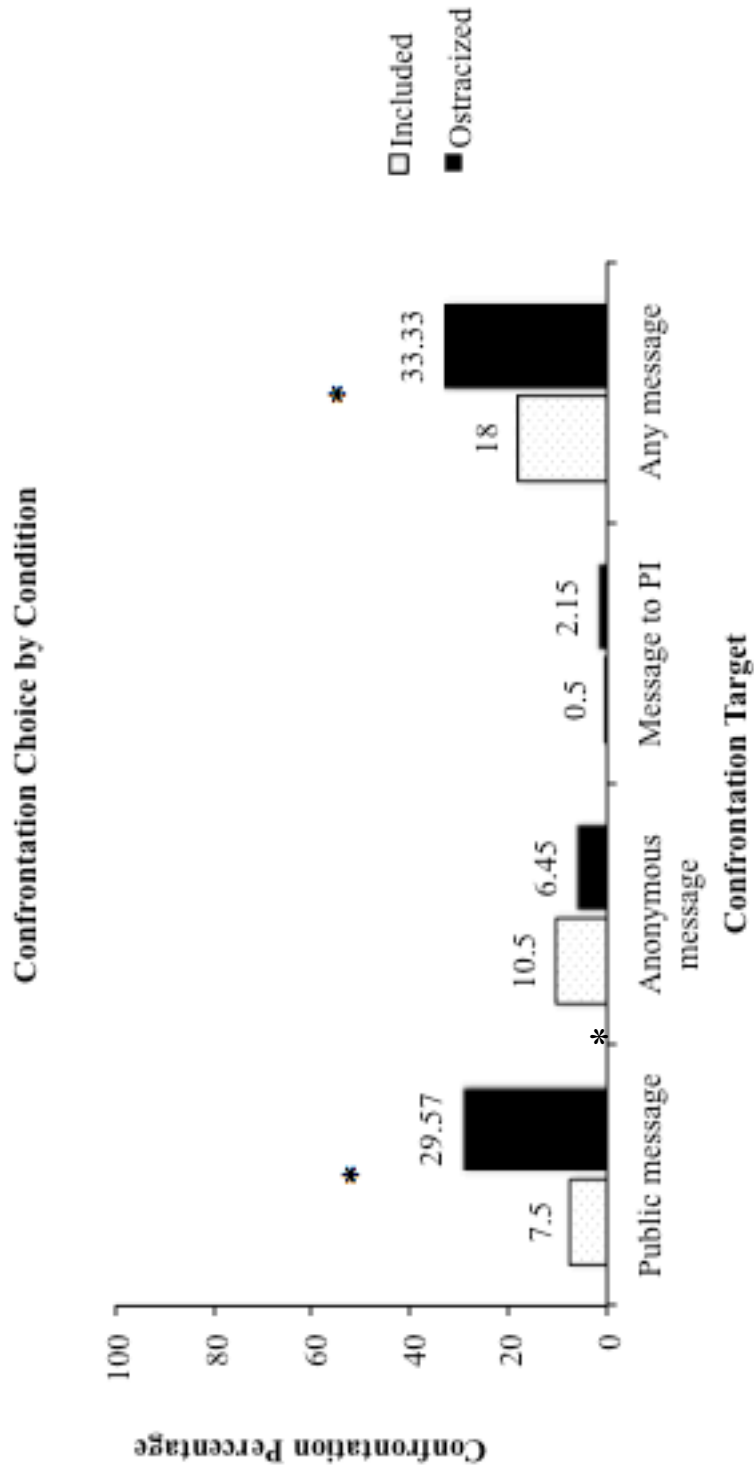


Figure 2. Message choices for both conditions (Study 2). Participants could select more than one option.

Note: Asterisks indicate significant differences between included and ostracized participants

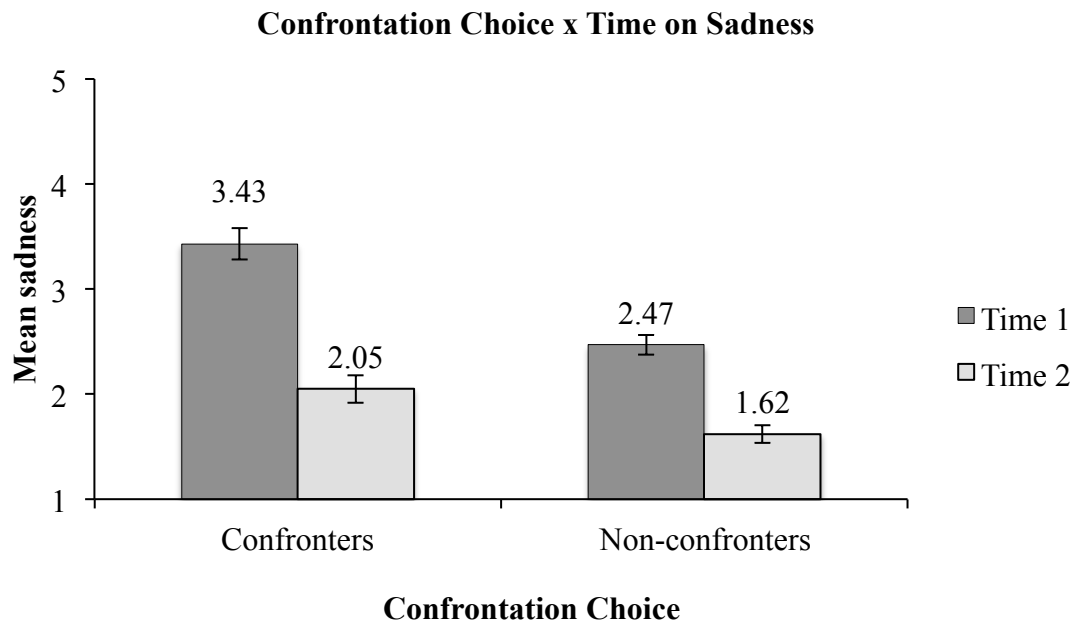


Figure 3. Sadness in ostracized participants by message choice and time of measurement (Study 2). Error bars represent standard errors.

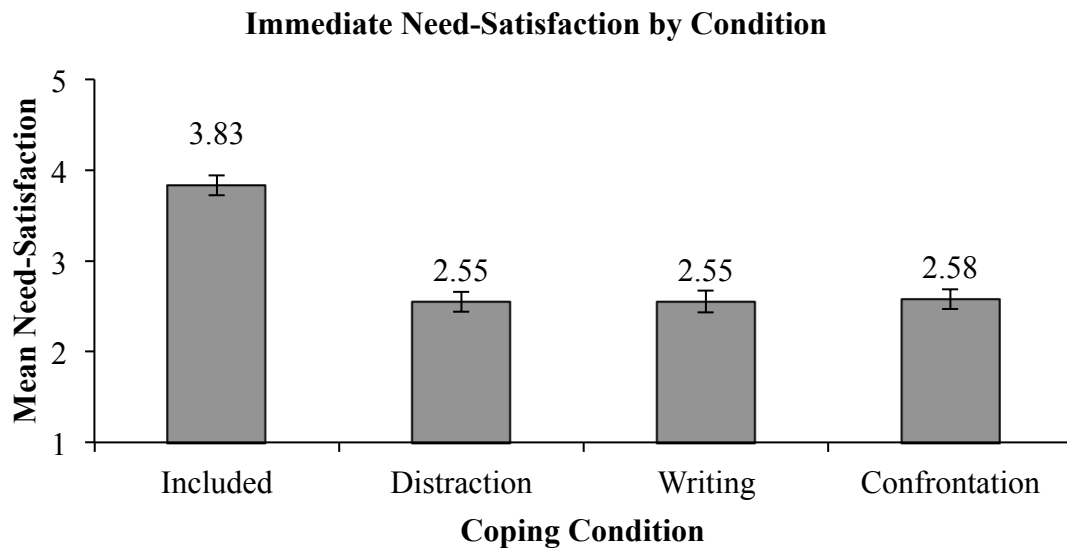


Figure 4. Average need satisfaction in reflexive (immediate) stage by coping condition (Study 3). Error bars represent standard errors.

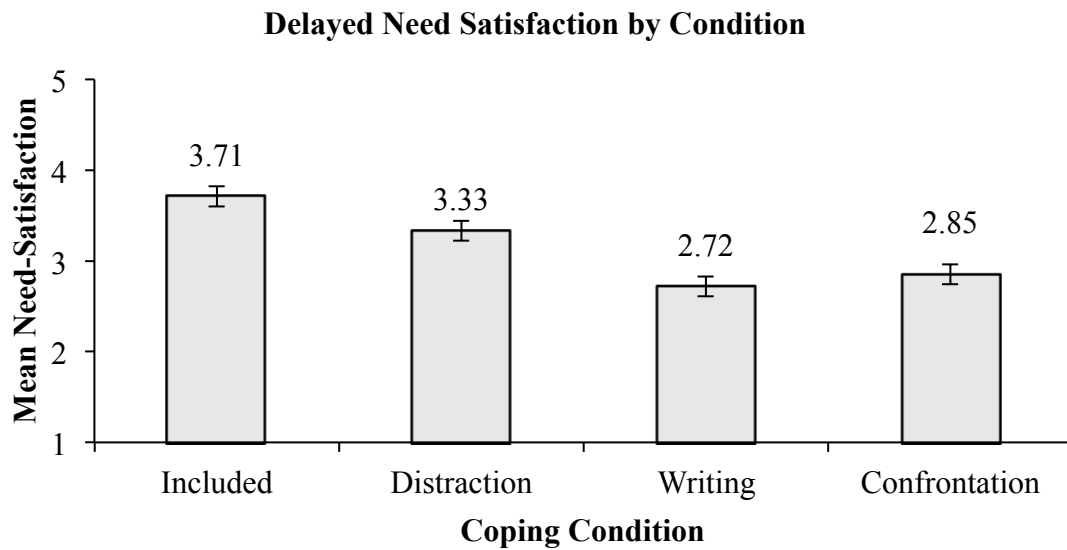


Figure 5. Average need satisfaction in reflective (delayed) stage by coping condition (Study 3). Error bars represent standard errors.

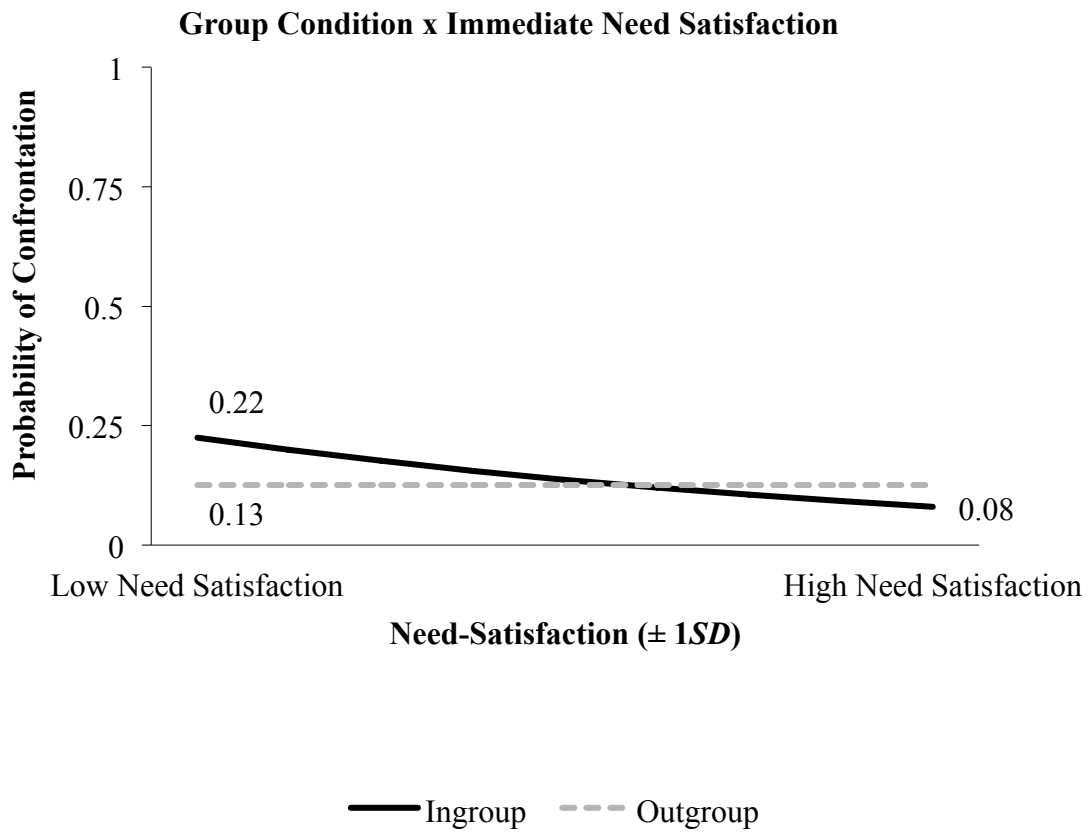


Figure 6. Interaction between reflexive (immediate) need satisfaction and group condition on confrontation likelihood (Study 4)

Group Condition x Anger on Confrontation

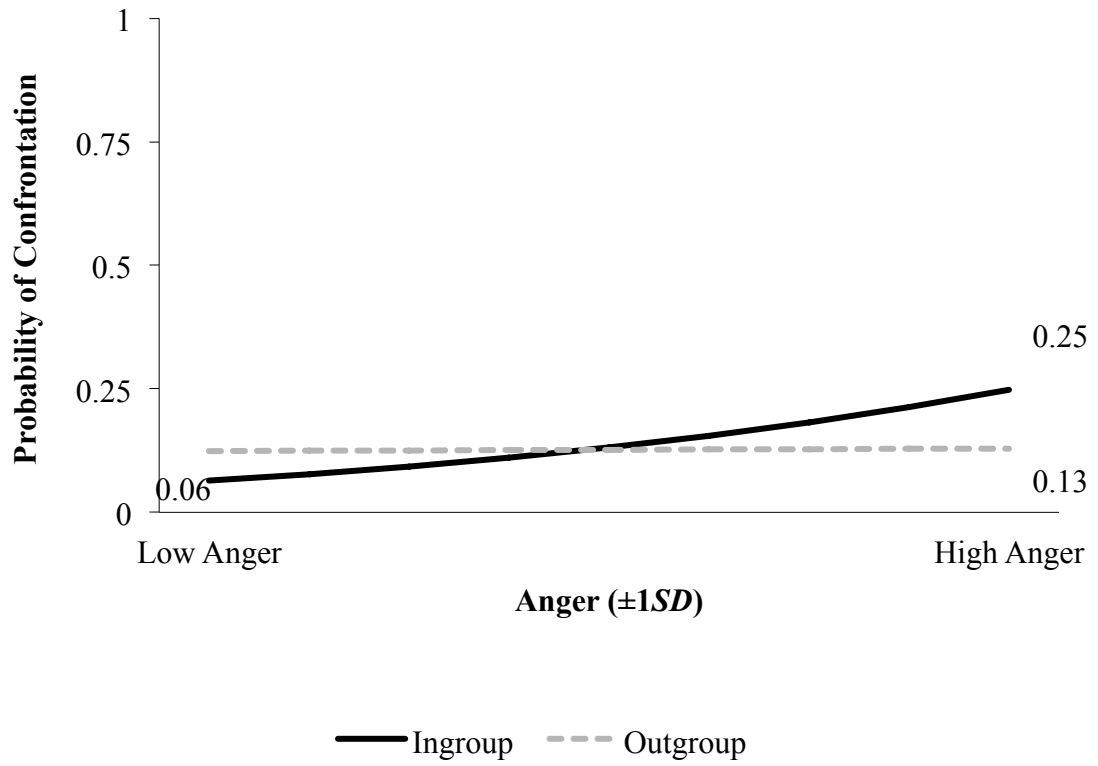


Figure 7. Interaction between reflexive (immediate) anger and group condition on confrontation likelihood (Study 4)

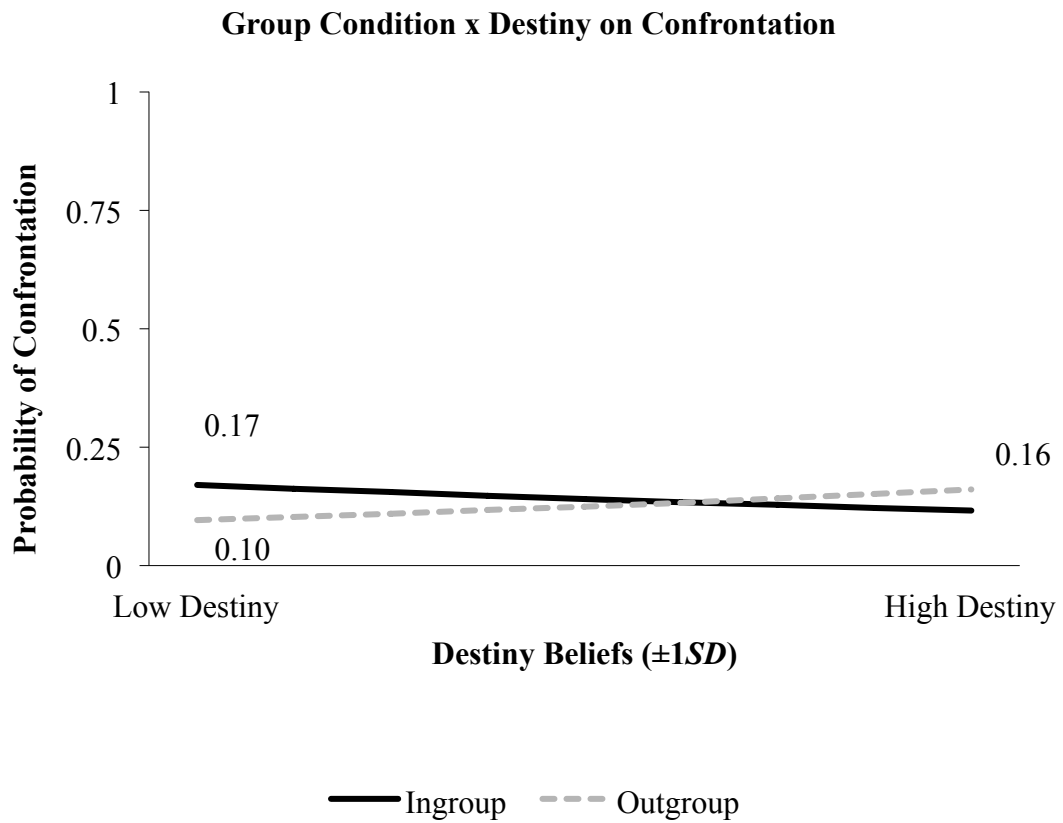


Figure 8. Interaction between destiny views of relationships and group condition on confrontation likelihood (Study 4)

APPENDIX C

WILLIAMS' (2009) TEMPORAL NEED-THREAT MODEL OF OSTRACISM

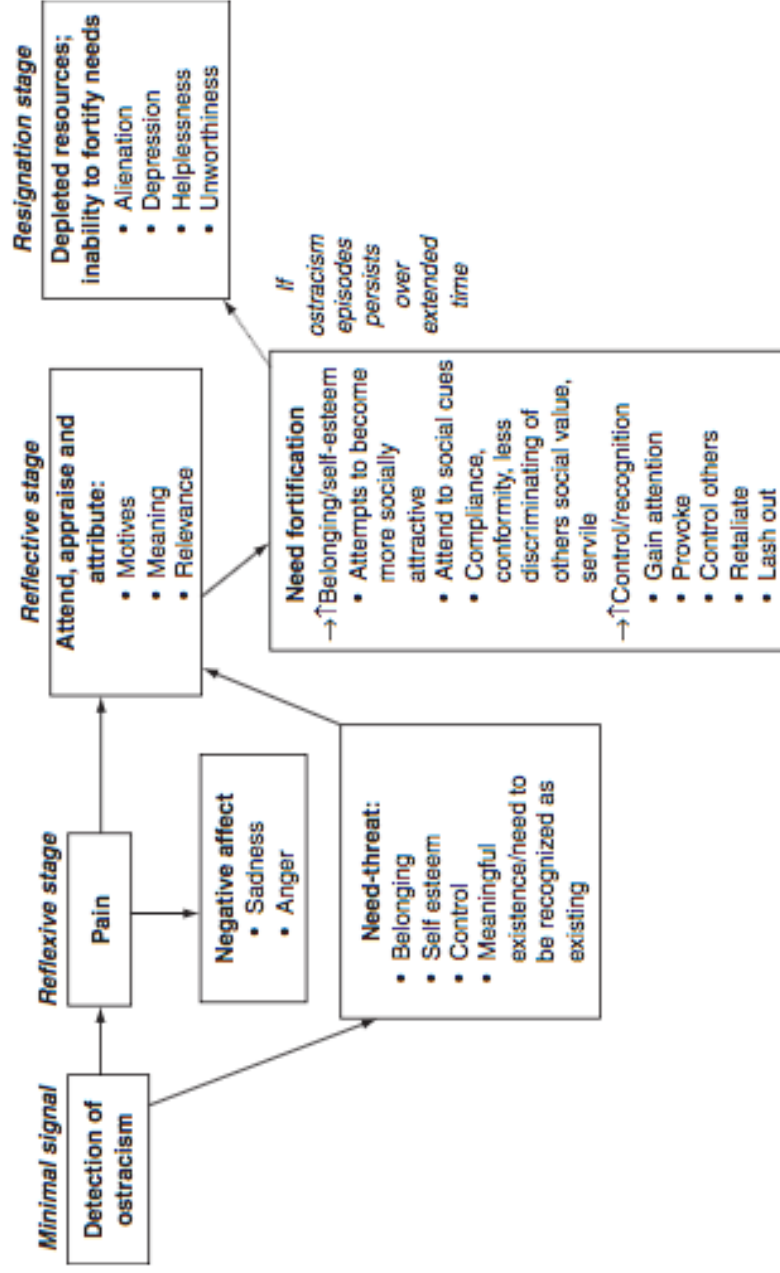


Figure 9. The Temporal Model of Ostracism. Confrontation, like other behavioral responses, would occur during the reflective stage. Reprinted from Advances in Experimental Psychology, Kipling D. Williams, Figure 6.1, 275-314, Copyright (2017), with permission from Elsevier.

APPENDIX D

EXAMPLE OF CYBERBALL TASK



Player 1



Player 3



You

Figure 10. Example of Cyberball task screen

APPENDIX E

CYBERBALL MANIPULATION CHECKS

Instructions: For the next three questions, please select the number that best represents the thought you had during the game.

Use the scale: 1 = Not at all to 5 = Extremely.

	Not at all	Very little	Unsure	Somewhat	Extremely
1. I was ignored	1	2	3	4	5
2. I was excluded	1	2	3	4	5
3. Assuming that the ball should be thrown to each person equally (33% if three people; 25% if four people), what percentage of the throws was directed at you?	1	2	3	4	5

APPENDIX F

POST-CYBERBALL QUESTIONNAIRE

Post-Cyberball Basic
Needs/Moods Questionnaire -
Feelings During Game
(Zadro, Williams, &
Richardson, 2004)

Instructions: For each question, please select the number that best represents the feelings you were experiencing during the game.

	Not at all	Very little	Unsure	Somewhat	Extremely
--	------------------	----------------	--------	----------	-----------

Use the scale: 1 = Not at all to 5 = Extremely.

1. I felt “disconnected”	1	2	3	4	5
2. I felt rejected	1	2	3	4	5
3. I felt like an outsider	1	2	3	4	5
4. I felt good about myself	1	2	3	4	5
5. My self-esteem was high	1	2	3	4	5
6. I felt liked	1	2	3	4	5
7. I felt invisible	1	2	3	4	5
8. I felt meaningless	1	2	3	4	5
9. I felt non-existent	1	2	3	4	5
10. I felt powerful	1	2	3	4	5
11. I felt I had control over the course of the interaction	1	2	3	4	5
12. I felt superior	1	2	3	4	5
13. Angry	1	2	3	4	5
14. Sad	1	2	3	4	5

Post-Cyberball Basic Needs/Moods
Questionnaire –
Feelings After Game
(Zadro, Williams, & Richardson,
2004)

Instructions: For each question,
please select the number that best
represents the feelings you were
experiencing during the game.

Not at all Very little Unsure Somewhat Extremely

Use the scale: 1 = Not at all to 5 =
Extremely.

1.	I felt “disconnected”	1	2	3	4	5
2.	I felt rejected	1	2	3	4	5
3.	I felt like an outsider	1	2	3	4	5
4.	I felt good about myself	1	2	3	4	5
5.	My self-esteem was high	1	2	3	4	5
6.	I felt liked	1	2	3	4	5
7.	I felt invisible	1	2	3	4	5
8.	I felt meaningless	1	2	3	4	5
9.	I felt non-existent	1	2	3	4	5
10.	I felt powerful	1	2	3	4	5
11.	I felt I had control over the course of the interaction	1	2	3	4	5
12.	I felt superior	1	2	3	4	5
13.	Angry	1	2	3	4	5
14.	Sad	1	2	3	4	5

APPENDIX G

OSTRACISM EXPERIENCES SCALE (CARTER-SOWELL, 2010)

Instructions: For each of the statements below, please consider your personal feelings. Determine how often, in general, the following experiences happen to you. Just give your gut response. Please read each statement carefully.

Use the scale: 1 = Hardly ever to 7 = Almost always.

	Hardly ever			Some of the time			Almost always
	1	2	3	4	5	6	7
1. In general, others ignore me.	1	2	3	4	5	6	7
2. In general, others treat me as if I am invisible.	1	2	3	4	5	6	7
3. In general, when I am around others, they look through me as if I do not exist.	1	2	3	4	5	6	7
4. In general, others give me the silent treatment.	1	2	3	4	5	6	7
5. In general, others ignore me during conversation.	1	2	3	4	5	6	7
6. In general, others exclude me during conversation.	1	2	3	4	5	6	7
7. In general, others physically turn their backs to me when in my presence.	1	2	3	4	5	6	7
8. In general, others keep me out-of-the-loop on information that is important.	1	2	3	4	5	6	7
9. In general, others give me the cold shoulder.	1	2	3	4	5	6	7
10. In general, others treat me as if I'm in solitary confinement.	1	2	3	4	5	6	7
11. In general, others pick me to be on their team.	1	2	3	4	5	6	7
12. In general, others invite me to go out to eat with them.	1	2	3	4	5	6	7

Note. Due to experimenter error, question 6 was not presented to participants

APPENDIX H

CULTURAL ORIENTATION SCALE, TRIANDIS & GELFAND (1998)

Instructions: For the following questions, select the bubble that most accurately reflects your thoughts

Rating: 1 = Never or definitely no – 9 = Always or definitely yes.

	Never or definitely no	1	2	3	4	5	6	7	8	9	Always or definitely yes
1. I'd rather depend on myself than others.	1	2	3	4	5	6	7	8	9		
2. I rely on myself most of the time; I rarely rely on others.	1	2	3	4	5	6	7	8	9		
3. I often do "my own thing."	1	2	3	4	5	6	7	8	9		
4. My personal identity, independent of others, is very important to me.	1	2	3	4	5	6	7	8	9		
5. It is important that I do my job better than others.	1	2	3	4	5	6	7	8	9		
6. Winning is everything.	1	2	3	4	5	6	7	8	9		
7. Competition is the law of nature.	1	2	3	4	5	6	7	8	9		
8. When another person does better than I do, I get tense and aroused.	1	2	3	4	5	6	7	8	9		
9. If a coworker gets a prize, I would feel proud.	1	2	3	4	5	6	7	8	9		
10. The well-being of my coworkers is important to me.	1	2	3	4	5	6	7	8	9		
11. To me, pleasure is spending time with others.	1	2	3	4	5	6	7	8	9		
12. I feel good when I cooperate with others.	1	2	3	4	5	6	7	8	9		
13. Parents and children must stay together as much as possible	1	2	3	4	5	6	7	8	9		
14. It is my duty to take care of my family, even when I have to sacrifice what I want	1	2	3	4	5	6	7	8	9		
15. Family members should stick together, no matter what sacrifices are required	1	2	3	4	5	6	7	8	9		
16. It is important to me that I respect the decisions made by my group.	1	2	3	4	5	6	7	8	9		

APPENDIX I

8-ITEM REJECTION-SENSITIVITY (PERSONAL), DOWNEY & FELDMAN (1998)

Instructions: Each of the items below describes things college students sometimes ask of other people. Please imagine that you are in each situation. You will be asked to answer the following questions:

- 1) How concerned or anxious would you be about how the other person would respond?
- 2) How do you think the other person would be likely to respond?

Use the following rating scales: 1= Very unlikely/Very unconcerned to 6 = Very likely/Very concerned

1. You ask your parents for help in deciding what programs to apply to.

- How concerned or anxious would you be over whether or not your parents would want to help you? 1 2 3 4 5 6
- I would expect that they would want to help me. 1 2 3 4 5 6

2. You approach a close friend to talk after doing or saying something that seriously upset him/her.

- How concerned or anxious would you be over whether or not your friend would want to talk with you? 1 2 3 4 5 6
- I would expect that he/she would want to talk with me very unlikely very likely to try to work things out. 1 2 3 4 5 6

3. After graduation, you can't find a job and ask your parents if you can live at home for a while.

- How concerned or anxious would you be over whether or not your parents would want you to come home 1 2 3 4 5 6
- I would expect I would be welcome at home. 1 2 3 4 5 6

4. You call your boyfriend/girlfriend after a bitter argument and tell him/her you want to see him/her.

- How concerned or anxious would you be over whether or not your boyfriend/girlfriend would want to see you? 1 2 3 4 5 6
- I would expect that he/she would want to see me. 1 2 3 4 5 6

5. You ask your parents to come to an occasion important to you.
- How concerned or anxious would you be over whether or not your parents would want to come? 1 2 3 4 5 6
 - I would expect that my parents would want to come. 1 2 3 4 5 6
6. You ask a friend to do you a big favor.
- How concerned or anxious would you be over whether or not your friend would do this favor? 1 2 3 4 5 6
 - I would expect that he/she would willingly do very unlikely very likely this favor for me. 1 2 3 4 5 6
7. You ask your boyfriend/girlfriend if he/she really loves you.
- How concerned or anxious would you be over whether or not your boyfriend/girlfriend would say yes? 1 2 3 4 5 6
 - I would expect that he/she would answer yes sincerely. 1 2 3 4 5 6
8. You go to a party and notice someone on the other side of the room and then you ask them to dance.
- How concerned or anxious would you be over whether or not the person would want to dance with you? 1 2 3 4 5 6
 - I would expect that he/she would want to dance with me. 1 2 3 4 5 6

APPENDIX J

GROWTH/FIXED THEORIES OF RELATIONSHIPS, KNEE (1998)

Instructions: Please indicate your agreement with the following statements using the scale: 1 – Strongly Disagree to 7 – Strongly Agree

	Strongly Disagree						Strongly Agree
1. Potential relationship partners are either compatible or they are not	1	2	3	4	5	6	7
2. A successful relationship is mostly a matter of finding a compatible partner	1	2	3	4	5	6	7
3. Potential relationship partners are either destined to get along or they are not	1	2	3	4	5	6	7
4. Relationships that do not start off well inevitably fail.	1	2	3	4	5	6	7
5. The ideal relationship develops gradually over time	1	2	3	4	5	6	7
6. Challenges and obstacles in a relationship can make love even stronger	1	2	3	4	5	6	7
7. A successful relationship is mostly a matter of learning to resolve conflicts with a partner	1	2	3	4	5	6	7
8. A successful relationship evolves through hard work and resolution of incompatibilities	1	2	3	4	5	6	7

APPENDIX K

CHANGE BLINDNESS TASK EXAMPLE

Timestamp - 0:00



Timestamp – 0:12

A flattened row gradually appeared on the lower right side of the image



Figure 11. Example of change blindness task video