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The Effects of Group Membership on College Students' Social Exclusion of Peers and Bystander Behavior

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ABSTRACT

Bystanders represent one major avenue for reducing the incidence and severity of social exclusion, yet little research has examined behavioral measurement of bystander intervention. Utilizing the most common low risk form of exclusion, this study examined how group membership impacts college students' behavioral response to a peer's social exclusion through an Internet-based ball tossing game ($N = 121$). Participants played the game with three other virtual players, in which two of these players excluded the third player. Results demonstrated increased inclusive behavior towards the excluded peer across study conditions. This inclusion was strengthened when the excluded player was in the participant's in-group. Participants displayed an initial preference for in-group members, although attitudes towards all peers improved after the shared activity. Findings point to the interaction of social norms of inclusion, group membership, and changes in familiarity in determining bystander responses to social exclusion. In low-risk exclusion, group membership maintains an impact but does not provide sufficient motivation to counteract the social norm of inclusivity. The implication of bystander actions for promotion of community and future research are discussed.

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Social exclusion by peers is ubiquitous (Nezlek, Wesselmann, Wheeler, & Williams, 2012), emotionally painful, and can have a powerful, often negative impact on the excluded individual (e.g., Boyes & French, 2009; Chernyak & Zayas, 2010). Social exclusion's psychological impact can be severe among emerging and young adults, though emotional and interpersonal outcomes vary widely (Eisenberger, Lieberman, & Williams, 2003; Schoel, Eck, & Greifeneder, 2014; Warburton, Williams, & Cairns, 2006). College students who experience exclusion have reported lowered mood, as well as a reduction in self-esteem, feelings of belonging, perception of meaningful existence, and sense of control (Abrams, Weick, Thomas, Colbe, & Franklin, 2011; Bernstein, Sacco, Young, Hugenberg, & Cook, 2010; Carter-Sowell, Chen, & Williams, 2008; Twenge, Baumeister, DeWall, Ciarocco, & Bartels, 2007; Williams et al., 2002). Given this potential for distress (Boyes & French, 2009), much of the research on social exclusion has focused on the individual being excluded. In contrast, there has been little examination of bystanders who may choose to join in the exclusive behavior or respond

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in a manner that is inclusive of the person being rejected. Borrowing from the literature on peer victimization, which finds that bystander action can play an important role altering the course and outcome for those being victimized (DeSmet et al., 2014), the current research examines factors that influence bystander behavior and acts of inclusiveness when observing social exclusion.

Social exclusion has been identified as a familiar occurrence in daily life; in a prospective study, emerging and young adults (M = 25 years, SD = 7.7 years) reported an average of 35 episodes of being excluded or actively ignored over a period of 11 days (Nezlek et al., 2012). When queried about the context of this behavior, participants indicated that social exclusion was present in both established close relationships and less familiar acquaintance interactions. Similarly, social exclusion occurs across a variety of contexts from face-to-face social encounters to indirect communication, including online platforms (Gardner, Pickett, & Brewer, 2000). Given the prevalence of social exclusion, many daily interactions provide opportunities to witness and possibly intervene in situations where exclusion of others is present. The current study focuses on such an opportunity by examining bystander intervention within a college student online social interaction. It is notable that college is a period when socializing is critical for both emotional well-being and academic success, as evidenced by students reporting high reliance on peer groups for psychological support (Storch, Bagner, Geffken, & Baumeister, 2004; Li, Albert, & Dwelle, 2014). Given the heightened importance and salience of peer interactions during college, a better understanding of social exclusion and bystander behavior in this context is warranted.

In-group/out-group Preference and Bystander Behavior

Several research studies demonstrate that during social interactions, the presence of shared group membership between a bystander and excluded individual may affect bystander response (e.g. Salmivalli, Voeten, & Poskiparta, 2011; Levine & Crowther, 2008; Levine, Prosser, Evans, & Reicher, 2005). More specifically, being a member of an in-group or an out-group substantially impacts attitudes, with individuals experiencing more positive attitudes towards in- versus out-group members. This response has been shown to be pervasive across development with research showing in-group preference among children and adolescents (e.g., Abrams, Rutland, Ferrell, & Pelletier, 2008; Bigler, Jones, & Lobliner, 1997; Dunham, Baron, & Carey, 2011; Hartstone & Augoustinos, 1995; Nesdale, Durkin, Maass, Kiesner, & Griffiths, 2008), as well as college students and adults (e.g., Abrams, Marques, Bown, & Henson, 2000). Although there remains some debate about whether this in-group preference results from greater liking of the in-group or greater disliking of the out-group, the evidence is more consistent with the bias resulting from preference for the in-group (Bigler et al., 1997; Dunham et al., 2011; Nesdale et al., 2008; Rutland et al., 2007). Platow and colleagues (2012) behaviorally demonstrated that college students trusted an in-group member more than an out-group member when group membership information was known by participants; this held for well-established in-groups (e.g., college majors) and in-groups constructed based on random assignment (Platow, Foddy, Yamagishi, Lim, & Chow, 2012). Individuals have been shown to not only report more positive

attitudes towards their in-group, but also display more positive behaviors towards their in-group (Baldassarri & Grossman, 2013; Balliet, Wu, & De Deru, 2014; Chen & Li, 2009).

Along with group membership, the degree of familiarity people share can also impact their attitudes towards each other. The "familiarity principle of attraction" explains that repeated exposure to another person, known as familiarity, is correlated with increased liking of that person (Reis, Maniaci, Caprariello, Eastwick, & Finkel, 2011). This idea, studied extensively by Zajonc (e.g. Zajonc, 1980), posits that affective judgments, such as liking, are often made separately from cognitive ones, which are driven by how familiar or how much time has been spent with the person. This mere exposure hypothesis posits that familiarity drives liking and has been demonstrated in interpersonal relationships (e.g. romantic relationships, Pierce, Byrne, &Aguinis, 1996) with preferences (e.g. music, North & Hargreaves, 1995), and among other variables (e.g. Zajonc, 1968). The notion of familiarity becomes particularly relevant in instances of ongoing behavioral interactions. As the current investigation examines individuals' behavioral interactions in the presence of in- and out-groups, it is important to recognize the potential influence familiarity has on participant liking of others. As individuals engage with each other in a shared experience, their fondness towards one another likely grows. In this way, one's preference for others is influenced, in part, by their familiarity with that person. Given the strong effect of in-group preference on behavior, group membership is likely to affect bystander behavior during social exclusion situations. Due to the low risk, low severity nature of this paradigm, we believe that familiarity will increase liking for all players, even those who exclude. Of note, little to no research has examined the competing principals of familiarity increasing liking compared to exclusion in low risk exclusion scenarios. However, due to the low risk nature of this experiment, we hypothesize that the exclusion behavior observed by participants will not overpower the mere exposure effect (Zajonc, 1968). In the current study, the time spent online with all players is the same and thus, familiarity should drive an increase in liking for all players over time, while in-group and out-group behavior may still vary. In this way, although group membership varies, the participant's presence in the interaction remains constant and may impact familiarity. The current investigation examines the effects of group membership through shared behavioral interactions while also considering the impact of familiarity on participant self-reported feelings and attitudes towards others.

Although little research has examined bystander behavior within social exclusion behavioral paradigms, there is a growing body of research on bystander behavior and social groups. Bystander literature indicates differences in behavior when people are alone versus when people are aware of others' presence (Levine & Crowther, 2008). One important factor in acting as a bystander is being able to go against norms created by the group, or resist conforming to the exclusionary group norm. Extensive research has shown that individuals are likely to change their attitude and behavior to conform to the group (Bond, 2005). The tendency to conform may be influenced by the characteristics of the group and its members. When a group is comprised of in-group members, we can hypothesize that the presence of in-group members may serve as a characteristic that encourages conformity, as compared to a group comprised of out-group members. The influential nature of group membership may also implicate bystander response,

such that behaving inclusively or exclusively varies as a function of the excluded individual's group membership status. The current study directly examines bystander response in a behavioral paradigm when participants share either an in-group or out-group with an excluded individual.

A small group of studies suggest that when an in-group member is the aggressor, bystanders are less likely to intervene; on the other hand, when an in-group member is a victim, individuals are more likely to intervene (Abbott & Cameron, 2014; Espelage, Green, & Polanin, 2012; Levine, Cassidy, Brazier, & Reicher, 2002). Abbott and Cameron (2014) conducted a study utilizing hypothetical scenarios of immigrant bias and found that the more participants identified with the in-group, the less likely they were to intervene on behalf of the immigrant (out-group). Levine et al. (2002) showed college students a video of someone being physically victimized, and participants' self-reported likelihood of intervening was significantly higher when the victim was an in-group member as opposed to an out-group member (Levine et al., 2002). Contrary results were found in an investigation by Arpin and colleagues (2017), where participants observed an online chat-room conversation in which one individual was ostracized. Participants then reported how responsible they believed each group member was for the conversation outcome. Surprisingly, group membership did not influence participant's self-reported attribution of responsibility, and results showed an overall tendency to attribute responsibility for ostracism to the active ostracizing individuals rather than the targets of ostracism (Arpin, Froehlich, Lantian, Rudert, & Stelter, 2017). Until now, investigations have been limited to assessing hypothetical bystander responses using self-report methods, as opposed to behavioral ones. In contrast, the current investigation provides participants the opportunity to behaviorally intervene during instances of social exclusion.

Bystander Behavior and Assessment of Risk

Social exclusion is a broad behavior that may elicit various reactions. The intensity and negative valence of one's reaction to social exclusion is likely influenced by the intent, context (i.e. extent of familiarity), and interpretation of the social exclusion (i.e., reasons of status, power, group membership, and personal qualities) (Arpin et al., 2017). These factors influence how bystanders assess the cost associated with intervening, both in terms of personal risk and harm to the excluded individual. Thus, bystander intervention in a social exclusion situation may have varying levels of perceived risk, yet the majority of research examines social exclusion in the context of greatest and most severe risk. In the context of social exclusion scenarios, studies suggest that a bystander's risk of being excluded from their in-group may predict how they behave in a general sense and towards an excluded individual (Bellmore, Ma, You, & Hughes, 2012; DeSmet et al., 2014; Levine & Crowther, 2008). Although researchers have focused largely on high risk circumstances, most daily social situations typically involve low-risk scenarios. Thus, research examining those high social risk situations relate closely to extreme and infrequent scenarios rather than daily social interactions, which form the fabric of relationships and social experience.

Low risk social exclusion scenarios may lead to increased likelihood of bystander intervention due to social norms surrounding inclusion and fairness (Mendoza, Lane, & Amodio, 2014; Wesselmann et al., 2012). In situations evaluated as being low risk, the relative impact of inclusion and fairness compared to in-group bias and shared group membership is unclear. In the more common low risk scenarios, when distinct in- and out-groups exist, a bystander's decision to respond inclusively towards an excluded individual may be influenced by broader social norms as opposed to in-group membership norms. According to social norms of inclusion, it would stand that individuals are naturally inclined to behave inclusively towards others, unless they are given sufficient reason not to. In instances of social exclusion perceived as being low risk, bystanders may respond consistently with broader social norms. They may maintain a behavioral tendency towards inclusion, even if that inclusive response is inconsistent with the response of the in-group. Thus, even in situations where group membership is present, bystanders may demonstrate consistently inclusive behavior towards all peers, as long as there is no rationale for exclusion that would oppose the social norm of inclusion and fairness. However, social exclusion has neither been examined in low risk group membership situations, nor using a behavioral paradigm. As such, the current investigation aims to build this area of research by studying social exclusion with relevance to in- and out-group conditional bystander behavior in the context of low risk behavioral situations.

The Present Study

The aim of the current study is to examine the impact of group membership on participant behavior in response to observing the social exclusion of a peer. The present study extends prior work on social exclusion using the Cyberball paradigm (Williams & Jarvis, 2006), allowing for the direct assessment of the behavior of bystanders observing peer exclusion in a group activity. One of the most widely utilized virtual exclusion games, Cyberball, involves participants 'throwing' a virtual ball with two or three peers. The participants are led to believe that the game is occurring in real-time; in reality, the other 'participants' are virtual confederates and their throws have been preprogramed. The current investigation utilizes the Cyberball paradigm (Wesselmann et al., 2012) to evaluate individuals' behavior in situations that involve a peer being socially excluded through a lack of ball tosses. Group membership (i.e., being a member of the same group as the excluders or the same group as the excluded peer) is also manipulated using minimal group paradigm (MGP; Tajfel, Billig, Bundy, & Flament, 1971) methodology to determine if its influence on bystander behavior in peer exclusion scenarios is similar to its influence on bystander behavior during peer aggression. The MGP has been shown to reliably create in-group preference on a range of dependent measures (e.g., Bigler et al., 1997; Dunham et al., 2011).

Thus far, the Cyberball paradigm has been used primarily to assess the impact of one's own exclusion from the group, as opposed to how an individual bystander reacts behaviorally to the exclusion of a peer (Hartgerink, van Beest, Wicherts, & Williams, 2015). Further, there is limited literature exploring the impact of group membership on social exclusion among bystanders in common, low risk social situations. The current

investigation aims to strengthen our understanding of the ways in which social factors influence the decision to socially exclude peers.

The current study randomly assigned participants to groups ostensibly based on a personality characteristic (MGP: over-estimator versus under-estimator). Following group assignment, participants played Cyberball in one of four experimental conditions based on MGP characteristic. Players 1 and 3 (the computer-generated excluders) were always assigned to be the over-estimators, and they always excluded Player 4 (the excluded peer). The participant and the excluded peer's group membership varied across the four experimental conditions. A control condition, in which there was no group membership assigned, was used to compare to the experimental conditions. The influence of group membership was assessed behaviorally (based on the percent of throws thrown by the research participant to the excluded player), and through self-report with open-ended questions.

Hypothesis 1: Based on research indicating that group members display a preference for in-group peers (e.g. Jetten et al., 1996), it was hypothesized that participant group membership and the group membership of the excluded peer would influence the number of times that the participant threw the ball to the excluded player (*between group differences*). More specifically, when the excluded player belongs to the participant's in-group, participants are expected to include the excluded player significantly more than when the excluded player is in the out-group, or when compared to the control condition. In this way, we will compare the four experimental groups and one control group to one another.

We further explore the impact of in-/out-group status by exploring participant behavior towards each player within each group separately (*within group differences*). This is intended to extend findings from hypothesis 1 by articulating participants' behavior towards excluders and the excluded across conditions.

Hypothesis II: Based on studies suggesting that individuals display a preference for their in-group peers (Abrams et al., 2008; Bigler et al., 1997; Dunham et al., 2011; Hartstone & Augoustinos, 1995; Nesdale et al., 2008; Nesdale et al., 2007), it was predicted that participants would display an initial greater preference for their in-group as compared to their out-group. However, over the course of game, participant preference of both in- and out-group players is expected to grow more positive due to increased familiarity and liking as a result of the shared group activity. In summary, due to the low-risk nature of this exclusion, liking is hypothesized to increase for *all* players as familiarity increases, however liking will increase differentially depending on group membership. That is, the shared activity of Cyberball is expected to impact participants reported liking of others after the activity. This analysis includes only conditions in which participants play Cyberball with members of their in-group and their out-group, not the control condition.

Methods

Study Population

Participants were recruited from a Northeastern university. The study was advertised to students via announcements in classes, bulletin board flyers, website postings with research study announcements, and an email sent to students. All participants were enrolled at the university and between the ages of 18-22. Participants were required to

Table 1. Participant Demographic Characteristics.

Characteristic	*N*	%
Gender		
Male	32	28.3%
Female	81	71.7%
Age		
18	25	22.1%
19	30	26.5%
20	18	15.9%
21	27	23.9%
22	13	11.5%
Ethnicity		
Caucasian	61	54.0%
African-American	9	8.0%
Latino/Hispanic	17	15.0%
Asian	17	15.0%
Biracial*	4	3.5%
Other	5	4.4%

*Biracial = 2 or more races.
**$n = 113$.

be fluent in English. For their participation, students received either course credit or a gift card. 121 students participated in this study, with eight participants excluded due to noncompletion of Cyberball ($N = 5$), researcher error ($N = 1$), technical error ($N = 1$), and not meeting age range inclusion criteria (18–22 years) ($N = 1$). Of the 113 participants included in analyses, 81 were women and 32 were men. The mean age of the sample was 19.76 years (SD = 1.35). The sample included 61 Caucasian, 9 African-American, 17 Latino/Hispanic, 17 Asian, and 4 Multiracial participants. Five participants indicated that they did not fit any of these racial and ethnic categories and manually entered their race/ethnicity. See Table 1 for additional participant characteristics. Participants were assigned to one of five conditions based on random assignment. Gender was controlled to ensure that equal numbers of men and women were placed in all five conditions. All measures, manipulations and exclusions in the current study are disclosed.

Procedure

The current study was approved by Suffolk University Institutional Review Board (IRB) before conducting any study procedures. Students scheduled a time to meet with one of four researchers (two graduate students and two undergraduate students). Individual consent was obtained before participants completed the computer-based task. During the experiment, participants sat in front of a computer where they were directed to a webpage. Only one participant was tested per session for each study visit in order to not confuse participants that they may be playing the game with other participants in the room. Participants were told that the other three participants were playing the game online in real time from other locations. They were asked demographic questions and subsequently completed the Dots Estimation Task (DiDonato, Ullrich, & Krueger, 2011).

The Dots Estimation Task asked participants to estimate the number of dots on 10 different screens (DiDonato et al., 2011). This task was used to create in-groups and out-groups (DiDonato et al., 2011; Eurich-Fulcer & Schofield, 1995). Participants viewed

Table 2. Condition Descriptions of Excluders and Excluded Players According to Group Membership.

Condition	Description
In-group Excluding In-group	All of the players are in the participant's in-group and one player is excluded
Out-group Excluding In-group	The excluders are in the participant's out-group, and the excluded player is in the participant's in-group
In-group Excluding Out-group	The excluders are in the participant's in-group, and the excluded player is in the out-group
Out-group Excluding Out-group	The excluders and the excluded player are in the participant's out-group
Control – Group and Exclusion	Players are not assigned a group membership and there is no exclusion

10 slides and were asked to estimate the number of dots on each slide. Each slide was shown for 500 milliseconds, and the dots on each slide varied in number and spatial arrangement. Participants reported their estimate of the number of dots by typing the number into the computer and pressing the Enter key.

Previous studies have used the dots estimation task as a way of classifying subjects into groups. Findings suggest that participants who are randomly placed in groups demonstrate a greater preference for their assigned group (Abele et al., 1998; Eurich-Fulcer & Schofield, 1995). This is especially notable in laboratory studies where participants endorse believing that others in their 'in-group' will act similarly when compared to the out-group (Krueger, 2007; Robbins & Krueger, 2005). Participants were randomly assigned to 'over- estimators' or 'under-estimators' groups ostensibly, based on their performance on the Dots Estimation Task. This was a minor deception, as participant assignment to the over-estimator or under-estimator group was done randomly, regardless of performance on the Dots Estimation Task. Participants were told that their Dot Estimation Task performance provided researchers with information about their personality, and that over- and under-estimators have been found to be associated with certain personality characteristics (McCaslin, Petty, & Wegener, 2010). Participants were told that people tend be over-estimators or under-estimators, and that being one or the other is neither good nor bad, but rather indicative of shared personality traits with fellow over- or under-estimators. As a result, over-estimators are similar to each other and under-estimators are similar to each other. No particular qualities were associated with being an over-estimator or under-estimator. Accepting that all terms have the potential for individual biases, we hoped to provide a condition for group membership that invoked the least social stereotype, which we believe was achieved by using the over- and under-estimator group categories. Group assignment was controlled to yield equal distribution of gender.

Participants were then asked several questions regarding their perceptions of over- and under-estimators. These questions served as a manipulation check to ensure that participants preferred their assigned group over the other group. Following the manipulation check, they were asked to play a virtual game of Cyberball (Williams & Jarvis, 2006) with three virtual players; Player 1 and Player 3 (the excluders) were always identified as over-estimators. Player 4 (the excluded player) and the participant were assigned to either the over-estimators or the under-estimators. See Table 2 for a detailed description of player exclusion status according to group membership in each condition. The same number of throws was given to each participant. The opportunity for the participant to throw the ball was the same throughout the game. While they could throw to an excluded player or excluder, all participants had the same number of tosses to distribute to other players and additionally it was standardized when the participant

received the ball after the other players' throws across participants. The lag time was standardized between participants so that the participant always got the ball after a certain number of passes between the other players. Thus, the program ensured both that the participants all had the same chances to throw the ball (N = 15) and the same amount of time between receiving the ball.

Of note, participants were randomized to either four experimental groups or one control group. Rather than assuming that all ball tosses would be equally distributed throughout the three groups (33.3% across all players) by chance, a control group provided a more "real" chance condition as it recorded actually data of participants playing the game. In the control condition, there was no in-group or out-group membership. This condition was revealed to be a more conservative estimate of ball tosses than an equally distributed chance condition as the percentage of ball tosses to each player was more varied and thus experimental conditions had a higher and more stringent threshold in order to reach significance. This use of a control group represents a strength of the study's analyses.

To enhance commitment to their in-group membership, researchers provided participants with information about their assigned group (e.g., Nesdale et al., 2008; Nesdale et al., 2007). The same information was provided to all participants regardless of group assignment. This has been found to elicit greater commitment to and identification with one's group, as well as stronger preference for this group. Players 1, 3, and 4 were matched in gender to the gender of the participant and provided with a generic male or female name to minimize bias by ethnicity. Male player names were Mike, Steve and John. Names for female players were Lisa, Michelle and Nicole.

In all of the exclusion conditions, Player 1 started with the ball and threw it to the participant. At the beginning of the exclusion condition games, all virtual players were preprogramed to throw once to each of the other players. Then, Players 1 and 3 (the excluders) distributed their remaining throws equally between each other and the participant; they excluded Player 4. Excluded player 4 distributed their remaining throws equally among Players 1, 3 and the participant. In the experimental conditions, this established the participant as a player observing exclusion. In the control condition, Player 1 started with the ball and, by random choice, threw the ball to another player; subsequent throws by the virtual players were distributed equally among the other players. In all conditions, the game continued for a total of 60 throws (Wesselmann et al., 2012).

Following the Cyberball task, participants completed the Cyberball Experiences Questionnaire, which was developed for the purpose of this study to measure participant feelings and attitudes throughout the game towards other players.

After completing questionnaires, participants played another brief game of Cyberball that did not involve exclusion. This game was intended to alleviate any negative feelings that might have been elicited by observing a peer's exclusion during the first game of Cyberball. Subsequently, participants were debriefed and thanked for their participation.

Measures

Demographics Questionnaire

Questionnaire of participants birth date, grade, gender, race and ethnicity.

Cyberball

A virtual ball-tossing paradigm assessed participants' peer exclusion behavior (Williams & Jarvis, 2006). While this design has primarily been used to assess the feelings induced by an experience of exclusion, this study used the paradigm to assess participants' behavior and attitudes towards an excluded peer. The participant received instructions to play a virtual game of catch with three peers matched in gender to the participant; however, unbeknownst to the participant, the peers were computer generated. The participant's behavior during the game was assessed to identify how frequently (if at all) the participant included the excluded player. Exclusion was assessed by calculating the percentage of times the participant threw the ball to the excluded player over their total number of throws.

Cyberball Experiences Questionnaire

The Cyberball Experiences Questionnaire was constructed for the purpose of this study to measure outcomes of participant liking and preference for in-group members. Participant liking, trust, and desire to spend time with in- and out-group members were combined to create a composite attitude score, measured before participants played Cyberball (initial attitudes) and again after they played (final attitudes). These domains were measured using a 5-point Likert-scale with anchors at 1 and 5. Items measuring liking asked participants how much they liked students in their group/the other group, with options ranging from 1, '*I don't like them at all*' to 5, '*I like them a lot*'. Subsequent trust and desire to hang items followed similarly in structure and response choices. Participant initial and final attitudes were calculated by summing items related to liking, trust and desire to spend time with other players. Participants were asked which group they felt more similar to, with answers ranging from 1-9, with 1 being over-estimator, 5 being 'A little bit of both' and 9 being under-estimator. Participants answered additional questions about how important each player was to the group, how much they liked each player, how much they trusted each player, and how similar they felt to each player.

Results

Data were first examined for accuracy, missing values, univariate outliers, skewness, kurtosis, and normality. Accuracy was assessed by evaluating the range of scores for each scale to identify values outside of the scale range. The Cyberball game and Cyberball Experiences Questionnaire were examined for missing data. All participants completed the entire Cyberball game. No item on the Cyberball Experiences Questionnaire had greater than 3% missing data. Univariate outliers were identified by evaluating histograms, normal probability plots, and box plots. Identified outliers were changed to the next highest or lowest score on the particular variable of interest. Sample size was determined before any data analysis. Participants' knowledge of the of whether they believed the peers they were playing with to be real people versus computer generated confederates was assessed following the study. No participant indicated

awareness of the deception prior to completing the study; thus, participants were not removed from the dataset due to knowledge of the deception.

Means, standard deviations, observed ranges, and coefficient alphas for continuous variables are presented in tables throughout the text. All continuous variables were evaluated for normality; as the variable 'percent of throws' was grouped data, this variable was evaluated for normality by condition. Normality was assessed by reviewing histograms as well as the skewness and kurtosis of each continuous variable. No variables examined had unacceptable skewness or kurtosis. Most continuous variables had acceptable coefficient alphas that ranged from .75 to .83. The initial attitudes towards one's in-group and out-group had slightly lower alphas (.65 and .67, respectively), so these results should be interpreted with caution.

Historically, race is a major factor that is often in play and highly salient with in-group out-group behavior. All items on the *Cyberball Experiences Questionnaire* were examined to assess whether there were significant differences between racial groups using MANOVAs and race as the grouping variable. In order to investigate if these differences appeared in our data, all Cyberball Experiences Pre-Questions were entered as dependent variables with race as the grouping variable. The same analysis was run with the post-Cyberball Experiences Questionnaire. No individual items were revealed as significant when race was used as the grouping variable. As no significant differences were found, race was not controlled for or examined separately in analyses.

Manipulation Check

Dependent samples t-tests were conducted to evaluate participants' initial liking, trusting, and desire to hang out with their in-group and out-group to ensure that the Dots Estimation Task created sufficient preference for participants' in-group membership before playing Cyberball. As the methodology of establishing group identity was based on prior research (e.g., Abele, et al., 1998), participants were expected to report greater liking, trust, and desire to hang out with their in-group compared with their out-group. Results indicated significantly greater participant liking, trust, and desire to hang out with in-group members than out-group members. These results are examined further in results related to participant initial and final attitudes. An independent samples t-test evaluating participants' similarity with their in-group indicated a significant difference, such that over-estimators indicated that they were more similar to other over-estimators ($M = 3.92$, $SD = 1.16$) and under-estimators reported that they were more similar to other under-estimators ($M = 5.59$, $SD = 1.17$), (t (132) = -8.3, $p < .001$), Cohen's $d = 1.43$. It should be noted that the similarity scale ranged from 1-9 with 5 corresponding to 'I am both an over- and an under-estimator'. Therefore, under-estimators seem to have felt less similar to other under-estimators than over-estimators felt similar to other over-estimators. The degree of connection will be further explored in the discussion.

Data Analyses

Data analyses were conducted according to the hypotheses outlined previously. Given our predictions and the nature of the data, a between groups and within groups

ANOVA was performed. Separate analyses were conducted, as opposed to an omnibus test, because the control condition was not included in the within group hypothesis testing done for hypothesis II.

A sensitivity power analysis conducted with G*Power (Faul, Erdfelder, Lang, & Buchner, 2007) showed that our sample was able to detect a medium to strong minimum effect size of $f = .33$, in the one-way between-subjects ANOVAs that tested participant interaction with excluders and whether group membership influenced participant inclusive behavior. A similar medium to strong effect size was found when a sensitivity power analysis was conducted for within group, repeated measures ANOVAs ($f = .31$). All sensitivity power analyses conducted used an alpha level of .05 and power of .80.

Overall Inclusivity

A one way, between groups ANOVA was conducted to determine whether participants across conditions interacted with the two *excluders* differently. Findings indicated that across the five conditions, there were no differences in the percent of throws to the excluders within any condition. In terms of the *excluded* participant, bystanders did not exclude the excluded player across conditions (which would be indicated by less throws to the excluded player than the excluders). In fact, participants showed increased inclusivity of the excluded player in certain conditions, i.e. when they shared an in-group with the excluded player. The consistent inclusion of the excluded player remains consistent with previous evidence that supports more inclusive behavior in a low-risk situation (Mendoza, Lane, & Amodio, 2014; Wesselmann et al., 2012). See Table 3 for participant percent of throws to the excluded player across conditions.

A one way, between groups ANOVA was conducted to examine the effect of being in a group without the manipulation of group status or the presence of exclusion, i.e. throwing behavior in the control condition. Descriptive results showed that in the control condition, where neither group status nor exclusion was present, participants did not distribute their throws equally amongst the other 3 players (see Table 4 for average throws to each player). This is noteworthy as assuming equal distribution across conditions is often used as an alternative to creating a control condition; however, in this case, that would have been incorrect given the unequal ball toss behavior observed in those participants in the control condition with no manipulation of group status or exclusion. In this way, the presence of a control condition to reveal participants' behavior in the absence of group status and exclusionary manipulation strengthens the investigation and was used as a comparison group to experimental conditions.

Table 3. Participant Average Percent of Throws to Excluded Players in All Conditions.

Condition	N	*M (%)*	*SD*
1. In-group excluding in-group	24	41.23	9.06
2. Out-group excluding in-group	25	44.28	8.03
3. In-group excluding out-group	22	36.83	8.52
4. Out-group excluding out-group	20	41.87	5.9
5. Control – group and exclusion	22	35.82	7.06
Total	113	40.11	8.36

Table 4. Descriptive Statistics of Throws to the Excluded Player by Condition.

Condition		*M (%)*	*SD*	Observed Range
1.	In-group Excluding In-group	41.23	9.06	27.78-55.56
2.	Out-group Excluding In-group	44.28[a]	8.02	31.58-61.11
3.	In-group Excluding Out-group	36.83[a]	8.52	16.67-50
4.	Out-group Excluding Out-group	41.87	5.90	31.58-50
5.	Control – Group and Exclusion	35.82[a]	7.06	26.67-50

[a]Significance at the .05 level.

Table 5. Mean Percent of Throws to Each Player Within Experimental Conditions.

Condition	% throws to Player 1 (excluder)	% throws to Player 3 (excluder)	% throws to Player 4 (excluded)
In-group Excluding In- group (Condition 1)	28.72	29.88	41.41[a]
Out-group Excluding In- group (Condition 2)	26.05	30.46	43.48[b]
In-group Excluded Out-group (Condition 3)	31.84	30.58	37.59
Out-group Excluding Out-group (Condition 4)	28.40	28.34	43.26[b]

[a]Significance at the .01 level.
[b]Significance at the .001 level.

Hypothesis 1: A 2x2 between subject ANOVA was conducted to examine whether participants' group membership influenced their level of inclusive behavior. Specifically, the group status of the excluded player (in- or out-group) and the group status of the players doing the excluding (in- or out-group) were examined to identify main effects and interactions between the in-group out-group statuses, and their effect on participant throws to the excluded player. The analysis was conducted on all experimental conditions. The hypothesis that in-group/out-group differences would affect the percentage of throws to the excluded individual was supported. Results revealed a significant main effect for the group status of the excluded player $F(1,87) = 4.06$, $p = .05$, such that participants threw the ball to the excluded player 3.41% more on average when they were in the participants in-group compared to their out-group. A significant main effect was also found for the excluders group status $F(1,87) = 5.72$, $p < .05$, indicating that on average, participants threw to the excluded player 4.04% less when they shared an in-group with the excluders. The excluders group status accounted for more of the variance in participant throwing behavior (*partial* $\eta^2 = .06$) than the group status of the excluded player (*partial* $\eta^2 = .05$). The interaction of excluded player group status and excluders group status on participants throws to the excluded player was not significant.

To further elaborate upon findings from hypothesis 1, within group analyses of ball throwing behavior were conducted to explore the nature of in-group and out-group behavior *within* each experimental condition. Within conditions, the ball throwing behavior towards each player is dependent. That is, if participants throw to the excluded player more, they are also throwing to the excluders less, as the amount of throws a participant can make it limited. The following repeated measure ANOVAs are intended to extend findings from hypothesis 1 by articulating participants' behavior towards excluders and the excluded across conditions.

Four repeated measures ANOVAs for each experimental condition were conducted and findings were consistent with related results reported in hypothesis 1. We found that participants threw the ball significantly more to the excluded player across all conditions except for Condition 3, where the participant was in the excluders' in-group and the excluded player was in the participant's out-group. See Table 5 for the throws to each Cyberball player by condition.

In condition 1 (in-group excluding in-group) when excluders were in the participant's in-group, Mauchley's test indicated that the assumption of sphericity was violated, $\chi^2(2, N=24) = 21.46$, $p < .001$ and degrees of freedom were corrected using the Greenhouse-Geiser estimate of sphericity. There was a significant effect for throws, Wilks' Lambda = .65, $F(1.23, 28.34) = 8.71$, $p < .01$, with a medium effect size (multivariate partial eta squared = .28). Pair-wise Bonferroni comparisons indicated that the percent of throws by the participant to the in-group excluded player was significantly greater than the percent of throws by the participant to the excluders.

When the *excluders* were in the research participant's *out-group*, i.e. Condition 2 and Condition 4, significant effects were also found. When comparing the percent of throws to each player within the out-group excluding in-group (Condition 2), Mauchly's Test of Sphericity was not significant; therefore, sphericity was assumed for the test of within-subjects effects. There was a significant effect for throws, Wilks' Lambda = .43, $F(2, 48) = 18.27$, $p < .001$, with a medium effect size (multivariate partial eta squared = .43). Pair-wise Bonferroni comparisons indicated that the percent of throws by the participant to the in-group excluded player was significantly greater than the percent of throws by the participant to the excluders. In the repeated measures ANOVA conducted on Condition 4 (out-group excluders excluding player in participant's out-group), Mauchley's test indicated that the assumption of sphericity was violated, $\chi^2(2, N=20) = 7.04$ $p < .05$, and degrees of freedom were corrected using the Greenhouse-Geiser estimate of sphericity. There was a significant effect for throws, Wilks' Lambda = .40, $F(1.51, 28.71) = 18.87$, $p < .001$, with a large effect size (multivariate partial eta squared = .50). However, while it was hypothesized that the percent of throws by the participant to the out-group excluded player would be significantly lower than the percent of throws to the excluders, pair-wise Bonferroni comparisons indicated that the percent of throws to the out-group excluded player was significantly greater than the percent of throws to the excluders. Thus, the participant actively included the excluded player significantly more than the excluders even when all three other players were in the participant's out-group.

The only condition in which comparing the percent of throws to each player was not found to be significant was Condition 3, in which the participant shared group membership with the two excluders and the excluded player was the only player in the out-group. Mauchley's test indicated that the assumption of sphericity was violated, $\chi^2(2, N=22) = 7.21$ $p < .05$, therefore degrees of freedom were corrected using the Greenhouse-Geiser estimate of sphericity. There was no significant effect for throws, Wilks Lambda =.76, $F(1.54, 32.24) = 2.30$, p =.13. Thus, the participant made no additional effort to include out-group player beyond and equitable distribution of tosses.

Hypothesis II: The second hypothesis predicted that group membership would affect liking and attitudes towards the players. The analysis compared participants' report of initial liking, trusting, and desire to hang out with their in-group and out- group. These ratings were assessed after participants had received their group membership and prior to playing Cyberball. As the methodology of establishing group identity was based on prior research (e.g., Abele, et al., 1998), it was expected that participants would report greater liking, trusting, and desire to hang out with their in-group compared with their out-group. Sensitivity power analysis determined that our sample was able to discern a medium effect size ($dz = .27$), for dependent samples t tests conducted within groups. For the independent samples t-test, sensitivity power analysis demonstrated that our sample was sufficient in detecting a minimum effect size of $d = .53$, a medium-large effect size.

Dependent samples t-tests were conducted to evaluate participants' liking, trust, and desire to hang out with their in-group and out-group. Results indicated significant differences in the expected direction on all three comparisons. Participants reported liking their in-group ($M = 3.29$, $SD = .83$) significantly more than they liked their out-group ($M = 2.88$, $SD = .80$), $t(132) = 4.36$, $p < .001$, $d = .50$. Participants reported trusting their in-group ($M = 3.18$, $SD = .94$) significantly more than they trusted their out-group ($M = 2.83$, $SD = .91$), $t(131) = 3.11$, $p < .01$, $d = .38$. Participants reported wanting to hang out with their in-group ($M = 3.38$, $SD = .84$) significantly more than they wanted to hang out with their out-group ($M = 3.02$, $SD = .85$), $t(131) = 3.46$, $p < .01$, $d = .43$.

A composite score of liking, trust, and desire to hang out with in- and out-group members was created to assess participant initial and final attitudes. Liking, trust, and desire to hangout with items demonstrated significant correlation ($p < .001$), which supported the creation of a composite score containing these items. Independently, these items represent conceptually distinct yet highly assocated variables, which combine to produce an overall attitude towards other players. Averages across these subscales towards in-group members were consistently above a rating of 3, indicating greater than neutral liking, trust, and desire to hang out with these in-group members. For out-group members, averages were slightly below 3, indicating more negative liking, trust and desire to hang out with. Composite attitude scores above 9 were indicative of more positive while scores below 9 demonstrated more negative attitudes across one or more of the attitude subscales. A 2 (in-group: Initial attitudes, Final attitudes) x 2 (out-group: Initial attitudes, Final attitudes) repeated measures ANOVA was conducted to measure the differences between participants' initial and final attitudes towards their in-group and out-group. A sensitivity power analysis showed that our sample was sufficient in identifying a small minimum effect size of $f = .11$, for the within-between interaction ANOVA conducted on initial and final attitudes towards in- and out-group members. Only conditions in which Cyberball players were assigned a group membership and participants viewed a peer's exclusion were included in this analysis. This analysis was designed to evaluate changes in participants' attitudes towards their in-group and out-group after engaging in a game together, therefore changing the familiarity participants felt towards their peers. Results indicated a significant effect, with participants' final attitudes towards their in-group significantly more positive than their initial attitudes towards their in-group, (Wilks' Lambda $= .83$, $F(1, 87) = 17.28$, $p < .001$), partial eta squared .06, a small effect size. Participants initial attitudes towards their in-group were consistently more positive than neutral or negative based on the liking, trust and desire to hang out with subscales. Conversely, initial attitudes towards out-group members were more neutral or negative on average. Based on the combined subscales, the initial attitudes, which were already more positive than neutral, grew even more positive across liking, trusting and wanting to hang out with in-group members after playing the game. This is meaningful given the already high initial attitudes reported by participants towards other in-group members.

Further, participants' final attitudes towards their out-group were significantly greater than their initial attitudes towards their out-group, Wilks' Lambda $= .95$, $F(1, 87) = 5.06$, $p < .05$), partial eta squared $= .17$, a medium effect size. In this way, initial attitudes towards out-group members, which were more negative than neutral, grew more

Table 6. Descriptive Statistics for Initial and Final Attitudes Towards the In-group and Out-group.

Variable	*M*	*SD*	Observed Range	Possible Range	Coefficient Alpha
Initial attitudes towards in- group	9.64	2.00	5.00-14.00	3.00-15.00	0.65
Initial attitudes towards out-group	8.70	1.97	4.00-14.00	3.00-15.00	0.67
Final attitudes towards in- group	9.84	1.95	5.00-15.00	3.00-15.00	0.77
Final attitudes towards out-group	9.03	2.09	5.00-15.00	3.00-15.00	0.83

Note. Higher numbers correspond with more positive feelings .

positive after playing the game, resulting in final average attitudes towards out-group members being more neutral, if not slightly positive. Attitudes towards both groups improved at time two after having the opportunity to spend time playing with the other players, supporting our hypothesis that increased familiarity will enhance likability between players. See Table 6 for a detailed description of Participant Initial and Final Attitudes Towards in-group and out-group members.

Discussion

This study extends the research on bystander behavior in response to social exclusion by examining the impact of in- versus out-group membership. In a low risk game situation, the current study found that inclusion was operative regardless of group membership, but in-group membership increased the inclusion behavior. Utilizing the Cyberball paradigm, this is the first study to behaviorally evaluate how group membership impacts social exclusion in an ongoing interaction. Results showed that bystanders did not exclude the excluded player in any condition and in addition to this lack of exclusion, participants were even more inclusivity to the excluded player when they shared an in-group with them. The first result shows that there was no evidence of exclusion on behalf of the participant towards the excluded player, and the second extends the first results in describing even more inclusive behavior demonstrated by participants in a certain condition. The bystander's attempt to include the excluded player across conditions is consistent with previous research on social norms surrounding inclusion and fairness. Wesselmann and colleagues indicated that when a bystander observes a peer being undeservedly excluded, bystanders will 'over-compensate' for this exclusion by including this excluded peer (Wesselmann et al., 2012). The current study did not provide a clear rationale for exclusion or a context that would support peer exclusion; rather, it occurred without explanation or basis. Participants in the current study may have perceived the exclusion as undeserved and therefore unfair, which may have promoted inclusion behavior toward the excluded peer.

Participants' inclusive behavior towards the excluded player in this study is consistent with classic research on bystander intervention; however, this study is the first to examine this topic in a behavioral online paradigm. Substantial research supports the idea that the fewer bystanders who observe an incident, the greater the likelihood that a bystander will intervene (e.g., Latane & Darley, 1968). Multiple mechanisms have been hypothesized to explain this finding. Diffusion of responsibility reflects the idea that any individual will feel less responsible for the outcome of a situation as the number of bystanders increases; therefore, the burden of not intervening is allocated equally among all bystanders. In the current study, participants were the sole bystanders; the others

present either engaged in the exclusion (i.e., the excluders) or experienced the exclusion (i.e., the excluded). Therefore, bystanders may have felt greater responsibility to intervene, or include the excluded player in the game. Unlike the majority of prior bystander literature, participants were active players, faced with the decision to either exclude, include, or compensating for peers they believed to be real. This active participation is consistent with many real-life scenarios, in which individuals are involved in deciding how to behave towards others rather than watching exclusion happen from afar.

Bystanders did not demonstrate differences in their interaction with each of the excluders. Treating the excluders similarly allowed bystanders to be fair towards them, which is likely the least cognitively and emotionally challenging position for a bystander. This finding suggests that in low-risk situations, group membership alone may not provide a sufficient motivation or rationale for joining in social exclusion in situations where participating in social exclusion would counteract the socially normative behavior of inclusion. However, group membership did affect *how much* participants shared with the excluded player. Bystanders in three of the four experimental conditions included the excluded peer significantly more than they included the excluders; however, the only condition in which bystanders distributed the ball to the excluded peer significantly more than bystanders in the control group was the out-group excluding in-group condition, or Condition 2 (hypothesis I). In this condition, bystanders shared a group membership with the excluded peer but not the excluders. In this group, participants seemed to compensate in efforts to include by passing the ball more to the excluded player than the excluders. Of note, this group was also significantly different than Condition 3, or in-group excluding out-group. These findings suggest that social group membership strengthens the social norm of inclusion when individuals share a group membership with an unjustly excluded peer while the excluders belong to the out-group. This preference is likely attributed to a preference for one's in-group, as opposed to disliking one's out-group, and supports prior research highlighting the importance of liking one's in-group versus disliking the out-group (Levine et al., 2002). In comparison, when a bystander shares an in-group with the excluders and the excluded player is in the out-group (Condition 3), results suggest that individuals are less likely to compensate and share above and beyond more to the excluded individual, as seen in hypothesis I.

Bystanders who shared an in-group with the excluders in contrast to the excluded out-group (Condition 3) displayed inclusion but at significantly lower rates than when the excluders were in their out-group. The inclusion during this condition is likely shaped by the often-promoted norm of social inclusion as there is little cost in choosing this action. However, it may be that due to their shared group membership with the excluders, participants may have perceived the excluders' actions as less offensive than bystanders in other conditions. This interpretation is consistent with previous research on inter-group aggression indicating that sharing an in-group with bullies or aggressors causes individuals to perceive them and their actions as less offensive (Gordijn, Yzerbyt, Wigboldus, & Dumont, 2006; Guroglu, Will, & Klapwijk, 2013). This suggests that when bystanders share a group membership with the excluders but not the excluded, the norm of social inclusion continues to influence their behavior, but this norm is weakened due to group membership information. In this way, individuals appear more

tolerant of exclusion when they share group membership with the excluders, thus diminishing the power of the typical efforts towards inclusivity.

This study also examined the initial and final attitudes towards one's in-group and out-group. It was hypothesized that when participants did not share a group membership with the excluded player, they would report greater differences between initial and final attitudes than when participants did share a group membership with the excluded player. Findings indicated that across conditions final attitudes towards both in-group and out-group peers were significantly more positive than initial attitudes towards in- and out-group peers. These results suggest that playing the game and thereby having repeated contact with the individual group members promoted an overall increase in positive feelings across groups when involved in a low risk game. This finding related to familiarity, in conjunction with the ball tossing results, supports research indicating an overarching social norm of inclusivity and liking during low risk small group scenarios (Reis, Maniaci, Caprariello, Eastwick, & Finkel, 2011). Although peer exclusion is also quite common and emotionally painful (Nezlek et al., 2012), these pro-inclusion findings suggestthat interaction in small group low risk activities are likely to promote group connectedness and reduce the countervailing in- out-group pressures to exclude. Of note, the mere exposure effect (Zajonc, 1968) is one possible explanation for this change in liking. Participants were not directly asked about reasons behind their increased liking and thus other future studies should further elaborate on the mechanisms behind this change.

Participants in this study explicitly reported increased liking of all players over the course of the game. However, there was an implicit influence of group membership status on participant behavior in terms of who was in their in-group and who was in their out-group. A strength of this study is the use of behavioral measures to observe actions associated with inclusion, rather than relying on self-report. Research demonstrates the unreliability of self-report on prosocial behavior compared to behavioral reports in part due to social desirability (e.g. Krumpal, 2013). The distinction between reported attitudes and behavioral responses is indicative of implicit and explicit processes, that are not necessarily tied to each other. Thus, methods that capture both attitudinal and behavioral responses to exclusion provide a more thorough understanding of group dynamics and in-group/out-group behavior.

Of note, this investigation did not examine bystander behavior across multiple levels of risk. Future studies should assess how participants bystander behavior changes towards others across varying levels of risk (e.g. the participant may risk being ostracized themselves). Researchers have found that bystander intervention may place bystanders at risk for bullying or exclusion (e.g., DeSmet et al., 2014; Thau, Derfler-Rozin, Pitesa, Mitchell, & Pillutla, 2015) and bystanders in the current study may have perceived minimal risk to themselves to behave in an inclusive manner given that this is an Internet-based game with no long-term cost identified. Given the absence of evidence that the exclusion was deserved coupled with the minimal personal cost for inclusion behavior, the social norm of inclusion may have been most salient to participants and thus promoted inclusive behavior. Future studies should examine higher social cost situations to further evaluate bystander behavior. Future studies should also examine other in- and out-groups. One of the strengths of this study was its demonstration of the ease and alacrity that in- and out-

groups can be created and influence behavior. However, other more salient in- and out-groups and their effect on behavior especially in higher risk situations should be examined. Additionally, future research may wish to examine specific populations to elucidate the specificity and generalizability of these findings.

Bystander intervention has been shown to reduce prevalence of exclusionary and bullying behavior (Salmivalli et al., 2011). This study suggests that in low-risk situations and especially when the excluded person is framed as an in-group member, individuals tend to act in an inclusive manner. This has implications for activities which aim to promote inclusivity and belonging, such as college orientations, work team building retreats, and institutional group or club activities. Of note, these organizations should consider the possibility that emphasizing in-group membership strengthens inclusivity, as was seen in Condition 2. Emphasizing similarities between peers, minimizing risks involved in intervening, and increasing feelings of responsibility may reflect an avenue for increasing bystander intervention. Additionally, simply playing a game with others may enhance attitudes of liking and therefore encourage inclusivity and bystander acts of support. Activities involving sharing and engagement with others in low risk contexts may reduce social exclusion. This could be used in creating climates of inclusivity and belonging in contexts from schools to the workplace. Risk can also have multiple angles depending on the context in which it is examined: risk of ostracism from inclusion in social settings, risk in including others that could weaken your own outcome in performance settings, etc. There are a multitude of avenues to pursue in in terms of examining risk across diverse contexts.

Overall, this study supports that social norms, group membership, and changes in familiarity interact in determining bystander responses for social exclusion. In frequently occurring, low risk common exclusion type of situations, an individual's actions are inclusive, and the current results suggest that inclusive behavior is enhanced when the excluded peer shares group membership with the bystander. Bystander attitudes about both in- and out-group members are also influenced by shifting familiarity as interaction around a task occurs. This confluence of factors provides evidence of a positive bias in thought and action for group inclusion.

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