

WHO CARES? NEGATIVE PEER
EXPERIENCES AND EMPATHY
FOR REJECTED OTHERS

by

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ABSTRACT

The purpose of this study was to examine the differences in empathy and prosocial and aggressive behavior based on rejection experiences, both immediate and chronic. Adolescent participants ($N = 101$) were randomly accepted or rejected in an online game of catch. Adolescents watched a video of a sex- and race-matched peer being rejected in the same game. Adolescents who had been rejected in the game were not more empathic than those who had been accepted but rejected participants did behave more prosocially. A new measure of chronic rejection was developed and validated for this study. Chronic rejection was related to situational empathy but was not related to prosocial behavior. Sex differences, influences of trait empathy, and the properties of a novel measure of chronic rejection are also discussed.

DEDICATION

For my dad, the Dr. Gibson who made me want to be one.

Because of my mom, who helped me believe I could be.

LIST OF ABBREVIATIONS AND SYMBOLS

<i>a</i>	Cronbach's index of internal consistency
<i>df</i>	Degrees of freedom: number of values free to vary after certain restrictions have been placed on the data
<i>F</i>	Fisher's <i>F</i> ratio: the ratio of two variances
<i>SD</i>	Standard deviation
<i>M</i>	Mean: the sum of a set of measurements divided by the number of measurements in a set
<i>p</i>	Probability associated with the occurrence of the null hypothesis of a value as extreme as ore more extreme than the current value
<i>r</i>	Pearson product-moment correlation
<i>t</i>	Computed value of a <i>t</i> test
<	Less than
=	Equal to
β	Standardized beta coefficient, in regression analyses. Indicates the strength of the effect of each independent variable on the dependent variable
<i>z</i>	Computed value of a <i>z</i> test
χ^2	Pearson's chi squared test, a test of the differences between expected frequencies and observed frequencies in one or more categories

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INTRODUCTION

Research on bullying suggests that the most effective strategy to get a bullying episode to stop is to have a peer intervene on behalf of the victim (Sainio, Veenstra, Huitsing, & Salmivalli, 2011). However, less than 30% of adolescents report that they have the intention to intervene on behalf of someone being picked on by peers (e.g., Huitsing, Snijders, van Duijn, & Veenstra, 2014; Jeffrey, Miller, & Linn, 2001; Schrooten, Scholte, Cillessen, & Hymel, 2016). As intervention on a peer's behalf is effective but infrequent, it is important to better understand the factors that may increase the likelihood of a peer to help. One factor found to predict self-reported intervention intentions or prosocial behavior is an adolescent's trait level empathy (e.g., Nickerson, Mele, & Princiotta, 2008). However, the association between trait empathy and actual intervention on behalf of a victimized peer is rather small (Gini, Albiero, Benelli, & Altoè, 2007), suggesting there are other things that predict prosocial behavior on the behalf of another, such as situational factors or other individual differences. It is likely that an adolescents' own experiences with rejection, bullying, and victimization may determine whether they help a peer being rejected by peers. The current study addressed this question by investigating how situationally-experienced rejection, and adolescents' prior experiences with peer rejection, predicted their empathy and prosocial behavior for a peer rejected by others.

Although research has examined how situational features and individual differences may affect empathy and prosocial behavior in adults (e.g., Ruttan, McDonnell, & Nordgren 2015; Twenge, Baumeister, DeWall, Ciarocco, & Bartels, 2007), there has been very little research that

has examined these questions with adolescents (for an exception, see Coyne, Gunderson, Nelson, & Stockdale, 2011; Will, Crone, van den Bos, & Gūrođlu, 2013). Studying the effects of rejection on empathy for rejected others is particularly relevant for young adolescents because the opinions of peers are of vital importance, and the need for belonging and acceptance is an especially motivating force during this age period (e.g., Blakemore & Mills, 2014; Moor, van Leijenhorst, Rombouts, Crone, & van der Molen, 2010; Will et al., 2013). Additionally, empathic abilities have been shown to change and improve during adolescence (e.g., Allemand, Steiger, & Fend, 2015).

The current study examined contributors to situational empathy for a rejected other from two conflicting perspectives. Research with adults indicates that identifying with a person is a significant factor in increasing perspective-taking and concern (for a review, see Preston & DeWaal, 2002). However, research on rejection with adults (e.g., Twenge et al., 2007) as well as research on chronic peer rejection (e.g., Dodge et al., 2003; Ladd, 2006; Ladd & Troop-Gordon, 2003), suggests that rejection may disrupt empathy, prosocial behavior, and lead to later adjustment problems. Thus, the current study proposed to investigate the relationship between rejection and empathy, specifically how rejection, both situationally manipulated and chronic peer rejection, affects an individual's situational empathy and situational prosocial behavior toward a rejected peer.

Empathy

Broadly speaking, empathy is the ability to take on another's perspective of a situation (cognitive empathy) and to experience an emotional response pertinent to another person's well-being (affective empathy) (Borke, 1973; Eisenberg & Miller, 1987; Masten, Eisenberger, Pfeifer, & Dapretto, 2010). Empathy can include both a vicarious emotional experience in which

individuals experience similar emotions as another person (Vachon, Lynam, & Johnson, 2014) and/or feeling sympathetic emotions in which the focus is feeling badly for another (e.g. Eisenberg, 1986; Preston & de Waal, 2002).

As a multidimensional concept, empathy develops over the lifespan. Affective empathy has been observed early in infancy as emotional responses to others' emotional states (Dondi, Simion, & Caltran, 1999; Geangu, Hauf, Bhardwaj, & Bentz, 2011; Gerdes, Segal, & Lietz, 2010). In infancy, empathy is essentially emotional contagion rather than perceiving and understanding another's experience. In preschool years, as individuals develop more complex cognitive processes and language abilities, cognitive empathy develops (e.g., Rhee et al., 2013; Catherine & Schonert-Reichl, 2011). With age and better emotion regulation abilities comes the ability to separate one's own emotions from those of others, and empathy transitions from distress-based to concern-based (Losoya, Eisenberg, & Fabes, 1998).

Although empathy is tied to cognitive, language, and emotion regulation abilities, the development of empathy is also an inherently social process. First, a child's relationship with caregivers may affect empathy. For instance, more secure three-year-old children (as rated by their mothers) were more empathic (as rated by teachers and parents) and were observed to act more prosocially (i.e., helping to look for a lost object; Panfile & Laible, 2012). Additionally, parental use of harsh punishments and parent negative affect has been related to lower levels of trait empathy in preschool-aged children (Cornell & Frick, 2007), young adolescents (Krevans & Gibbs, 1996), and college students (Lopez, Bonenberger, & Schneider, 2001). Second, it has been suggested that empathy may also be affected by a child's friendships, since these relationships provide an environment for learning about the thoughts and emotions of others and appropriate reactions to others (Bollmer et al., 2005; Dekovic & Gerris, 1994; Ettekal & Ladd,

2015). Third, empathy is related to a child's relationships with other peers. Specifically, well-liked or accepted children have been found to have higher trait levels of empathy, as well as a higher sensitivity and better recognition of negative emotions compared to rejected children (Garaigordobil, 2009). Similarly, Oberle and colleagues (2010) found trait empathy was positively associated with peer acceptance in adolescence, particularly for girls. Finally, research has found that empathy in adolescence had long-term consequences for social competence, predicting perceived social integration at age 35 (Allemand et al., 2015).

Research has posited that one of the potential mechanisms for the relationship between empathy and peer acceptance is prosocial behavior. For instance, empathy may increase prosocial behavior (Malti, Gummerum, & Buchmann, 2007; Will et al., 2013), in turn, increasing how much peers like a child (Cillessen & Rose, 2005; Ostberg, 2003). Alternatively, negative experiences with peers may also detract from a child's empathic reactions to others. Research has found that peer victimization impairs emotional well-being and decreases empathy in the long term (Malti, Perren, & Buchmann, 2010). In addition to impairing an individual's own emotional well-being, individuals' ability to accurately assess other people's emotional states is also decreased in youth who experience peer victimization (Gleason, Jensen-Campbell, & Ickes, 2009). This may be an explanation, in part, for why rejected children and adolescents receive few prosocial nominations in sociometric studies (e.g., Coie, Dodge, & Coppotelli, 1982).

Empathy and Identification

As mentioned above, empathy-based research with infants, children, and adults suggests that identifying with someone should increase empathy for that person. Preston and de Waal's metaanalysis (2002) details the ways in which identification can affect empathy, which include familiarity, similarity, and past experiences with the situation of distress. For instance, research

has shown that empathy increases the more familiar the subject is with the target of empathy (e.g., Cialdini, Brown, Lewis, Luce, & Neuberg, 1997). Cialdini et al. asked participants to imagine they were helping a stranger, an acquaintance, a good friend, or a family member. Participants were given situations of various levels of need, and they were asked about the level of help they would be willing to give, the amount of empathic concern they felt, and the extent of oneness they felt with the target. All three variables were higher for close friends and family members compared to near strangers and acquaintances. The authors concluded that empathy is not inherently linked to altruism, since people seem to limit empathy and helping behavior based on closeness with the target.

Empathy also increases if the subject is more like the target (e.g., Batson, Duncan, Ackerman, Buckley, & Birch, 1981). Batson et al. manipulated similarity by showing participants the target's responses to a values questionnaire that was prepared in advance to match or not match the information participants provided about themselves. Though there was no difference in participants' perception of the target's distress between experimental conditions, participants in the similar-target condition were more likely to help the target than those in the dissimilar-target condition, suggesting that similarity is a component of prosocial acting, and perhaps empathy.

Additionally, adults have been found to be more empathic towards people in their in-group, compared to people in their out-group (e.g., Cikara, Brueau, Van Bavel, & Saxe, 2014; Gutsell & Inzlicht, 2010). Abrams, van de Vyver, and Cameron (2015) found that children were also more prosocial towards members of their in-group. Overall, the children showed a bias towards their in-group. This effect translated so that children indicated much less willingness to help or comfort a member of their outgroup. This willingness to help was even lower in groups

who felt like they were in competition with the out-group. Overall, these results indicate that group membership, perhaps facilitated by perceived similarity, increases empathy and prosocial behavior.

Third, research has also indicated that empathy increases when the subject has had similar past experiences to that of the target (e.g., Batson et al., 1996; for a full review, see Preston & de Waal, 2002). Batson et al. found that participants showed more empathy to peers if the participants had previously experienced or prepared for the same negative event. In one study, participants who had prepared for an uncomfortable electric shock reported more empathy towards a peer who was actually experiencing the shock. Additionally, Lim and DeSteno (2016) found that adults' experiences of past adversity were associated with heightened trait levels of empathic concern and perspective-taking. This was also associated with more prosocial behavior, perhaps indicating that empathy acts as a mediator between adverse life experiences and prosocial behavior.

Rejection-Specific Effects on Empathy

The current research investigated how being rejected (vs. accepted) affected empathy for a similarly rejected other. Based on literature about identification and empathy, one could assume that adolescents would be more empathic towards a rejected peer if they had also been rejected. In support of this idea, Ruttan et al. (2015) found that adults were more compassionate and thought more favorably of someone who was bullied when they had also been bullied at some point in the past. The differences in reported empathy were predicted by history of bullying, such that participants who reported experiencing bullying in childhood were more empathic than those who had not experienced bullying in childhood. Nordgren and colleagues (2011) have also found that the extent to which participants identified with the target influences

the estimation of a target's pain after rejection, such that participants who identified less with the rejected person underestimated the pain the target experienced. Participants who identified with the target, however, were more accurate in assessing the target's emotional state after rejection.

Additional support for the hypothesis that rejection may foster more empathy for another who has also been rejected comes from a study with college students by Gibson, McDonald, and Tullett (in revision). College students were either rejected or accepted in a game of Cyberball and then they watched a video of another person being rejected during the game. They found that college students who were rejected were more upset after playing Cyberball and that these negative emotions actually predicted increased empathy for the rejected other.

However, there is also evidence to suggest that the effects of identification may not matter when the experience with which individuals are asked to identify is rejection. Rejection is such an emotionally-dysregulating event that if someone has just experienced rejection and is then asked to empathize with another rejected person, then they may not empathize because their own pain is distracting or detracting from their empathic resources (e.g., DeWall & Baumeister, 2006; Silvers et al., 2012; Williams, 2009).

In support of this idea, research with adults has demonstrated that situational rejection negatively affects empathy and prosocial responding to others. Twenge et al. (2007) and DeWall and Baumeister (2006) looked at the effect of rejection, using the future alone paradigm, on feelings of empathic concern, measured by Batson's concern adjectives (Batson, 1987, 1991; Batson et al., 1987; Batson et al., 1995). In the future alone paradigm, "rejected" participants were told that they would not be able to form meaningful relationships. These participants were compared to participants who were told that they would be accident-prone (misfortune feedback) or participants who were told they would have meaningful future relationships (future belonging

feedback). As the empathy exercise, adult participants read an essay about a student's recent break-up with their significant other. In these studies, adult participants who received the future-alone feedback were less empathic towards the author than those who had received future-belonging or misfortune-control feedback. In addition to the future-alone manipulation, DeWall and Baumeister (2006) used a memory paradigm, where adult participants were asked to remember a particularly important and memorable instance when they had been rejected or excluded and then were asked to empathize with someone who wrote an essay about physical pain (the author had broken their leg playing intramural sports). Adult participants who had written about a rejection experience were less empathic towards the author than those who wrote about acceptance or something that had happened the previous day.

Twenge et al. (2007) also found that rejection negatively affected prosocial behaviors. To study prosocial behavior after rejection, researchers have used the "future alone" paradigm (described above) as well as other paradigms in which adult participants "mix and mingle" together and then pick other adult participants with whom they would like to work. Rejected participants were told that no one wanted to work with them, while accepted participants were told everyone wanted to work with them. Using these methods, Twenge et al. (2007) found that rejected participants donated less to a student emergency fund, were less helpful or willing to volunteer to help the experimenter, and cooperated less in the prisoner's dilemma game. These findings support the conclusion that social exclusion decreases prosocial behavior.

Twenge and colleagues (2007) also examined empathic concern as a mediator of the relation between social rejection and prosocial behaviors, finding similar results. In Twenge et al.'s experiments, rejected adult participants expressed less empathy for the author of an essay about a breakup and then were also less helpful, less giving, and less cooperative. However, it is

important to note that in these studies the empathy and prosocial events were directed at separate people; adult participants were not given the opportunity to act prosocially toward the target of empathy.

These studies show that prosocial behavior can be affected by situational rejection. In line with these findings, additional research has found that situational levels of empathy predict prosocial behavior towards the rejected other (e.g., Masten et al., 2010; Will et al., 2013; Padilla-Walker, Fraser, Black, & Bean, 2015). As such, situational empathy may be a better predictor of prosocial behavior than measures of trait empathy (e.g., Masten et al., 2010). Other situational components may influence prosocial behavior as well. For example, Abrams and colleagues (2015) found that group membership influenced how prosocial children were towards outgroup members and in-group members. Self-regulation skills are positively related to prosocial behaviors, while emotional reactivity is negatively related to prosocial behavior (Carlo, Crockett, Wolff, & Beal, 2012).

In summary, there is evidence that situational rejection disrupts subsequent empathy for others and may also decrease prosocial behavior. Based on these findings, it was hypothesized that adolescents who were experimentally rejected would be less empathic and less prosocial toward a rejected other than adolescents who were experimentally accepted. This directly contrasts with what might be predicted based on the identification literature. Although there is research to support the identification hypothesis (e.g. Gibson et al., in revision; Nordgren et al., 2011), research with adolescents indicates that decreased empathy after rejection seems more likely. Specifically, adolescents tend to be more affected by rejection than adults and may respond to their own rejection with more emotional reactivity (e.g., Kloep, 1999; Will et al., 2013).

Individual Differences in Peer Rejection Experiences

A great deal of research with children suggests that peer rejection may negatively affect a child's adjustment, including school involvement, academic performance, aggressive behavior, externalizing and internalizing problems, and prosocial behavior (e.g., Buhs, 2005; Buhs & Ladd, 2001; Coie, Christopoulos, Terry, Dodge, & Lochman, 1989; Newcomb, Bukowski, & Pattee 1993; for a review see Parker & Asher, 1987). Ettekal and Ladd (2015) hypothesized that the influence of peer rejection on adolescents may be particularly negative if it is a chronic or sustained influence, based largely on findings from research on stress (e.g., Lin & Ensel, 1989). Research supports this idea; chronic rejection experiences are related to decreases in prosocial behavior and increases in depression and aggressive behavior over time (Buhs et al., 2006; Coyne et al., 2011; Dodge et al., 2003; Malti et al., 2010; Slavich, O'Donovan, Epel, & Kemeny, 2010; Storch & Masia-Warner, 2004).

Rejection may be a unique experience that influences how children interpret social situations. The Social Information Processing Model (Crick & Dodge, 1994; Lemerise & Arsenio, 2000) showcases the variety of components that go into the interpretation of an interpersonal interaction, evaluations of potential responses, and behavior in social situations. Identification with a target could be considered as a factor that would influence the interpretation of cues. As stated above, identification can influence the accuracy with which someone identifies emotion and the degree to which they would like to help a target. The database, another component of the Social Information Processing Model (Crick & Dodge, 1994; Lemerise & Arsenio, 2000), is composed of beliefs and schema about social interaction and is shaped by a person's history of social experiences. One's history of experiences could possibly influence

behavior through these social schemata as much as situation-specific factors. For instance, numerous studies have found that previous experiences of peer rejection have influenced later aggressive behavior and later attributions of peer intentions (e.g., Dodge et al., 2003).

Additionally, there is evidence that children's environmental context and experiences with parents influence prosocial and aggressive behavior (Flouri & Sarmadi, 2016).

Chronic rejection may negatively affect how adolescents think about peer interactions. Adolescents who experience rejection tend to have more negative perceptions of peer relations, including less trust of peers and lower perceptions of peer support (Ladd, Ettekal, Kochenderfer-Ladd, Rudolph, & Andrews, 2014). Ladd and colleagues (2014) also found that these negative perceptions were consistent across adolescence (measured from fifth to eighth grades). Trust is an importance component of any successful relationship (North & Fiske, 2013). However, the consistent violation of basic needs (such as trust or belonging) as a result of peer rejection may create a sensitivity towards rejection or even more generally towards being a victim (Gollwitzer, Sussenbach, & Hannuschke, 2015). This sensitivity can then lead to less prosociality, empathy, or cooperativeness (Gollwitzer et al., 2015). However, how social schema may mediate how peer rejection affects empathy and prosocial behavior has been theorized about in recent articles, but has not yet been examined (e.g., Lansu, van Noorden, & Deutz, 2017).

Nevertheless, there is direct evidence that negative peer experiences, like peer rejection or victimization, detract from a child's empathic reactions to others. In a longitudinal study, Malti et al. (2010) showed that increases in peer victimization were related to decreases in trait empathy a year later. Additionally, research on the developmental trajectory for children who experience rejection in childhood shows that rejected children often have less exposure to prosocial forms of peer interaction (e.g., Buhs, Ladd, & Herald 2008; Ettekal & Ladd, 2015).

Consequently, they may not have the experience to practice empathy and prosocial behavior towards others.

Based on the research about the effects of chronic rejection, we expected that chronically rejected adolescents would be less empathic and prosocial than those who had not experienced chronically rejected. This hypothesis is further supported by research demonstrating that chronically rejected adolescents, as measured through repeated sociometric assessments, differ from highly accepted adolescents in their responses to rejection (Will et al., 2016a, 2016b; Will, van Lier, et al., 2016). First, chronically rejected adolescents responded more negatively and had higher activity in specific brain areas related to rejection sensitivity during a rejection experience (Will, van Lier, et al., 2016). Second, chronically rejected adolescents exhibited more activity in the dorsal striatum and the IPFC (areas traditionally associated with regulation) when forgiving players who had excluded them, suggesting that chronically rejected adolescents required more self-control in order to forgive (Will et al., 2016a). Third, chronically rejected adolescents tended not to be prosocial even in conditions of an allocation task where sharing equally did not cost them anything (Will et al., 2016b).

Another reason that chronic rejection was hypothesized to negatively affect empathy for a rejected other was because chronically rejected youth could discount other people's negative experiences. In other words, they may compare the severity of their own rejection when evaluating whether to empathize or how much to empathize with another individual experiencing rejection. It is possible that it may be easy to minimize another person's rejection experience if people perceive theirs as having been more severe. In support of this idea, Ruttan et al. (2015) showed that social comparison plays a role in empathy in that participants were not empathic towards others who failed at a task at which they themselves were successful. If a rejected

adolescent feels that they have successfully borne their experiences, they may be less likely to empathize with someone who is distressed by their rejection. Thus, it seems that previous experiences of success or failure at a task likely affect how people empathize with others' failure at the same task.

Thus, although identification literature may suggest that shared experiences of rejection would increase empathy for a rejected other, it was hypothesized that adolescents who perceived that they have been chronically rejected by peers would be less empathic for another peer who they observe being rejected compared to youth who have not been chronically rejected. The present study will also explore the interaction of experimentally-manipulated rejection and chronic rejection on empathy and prosocial behavior. The analysis of this interaction will be exploratory in nature because previous literature does not necessarily provide evidence for a prediction. However, based on the findings that chronic rejection predicts adjustment problems for youth (Ladd, 2006; Parker & Asher, 1987), we hypothesized that if an interaction was present it would be that adolescents high on chronic rejection would be more affected by the situational rejection than those not high on chronic rejection. In other words, chronic rejection may exacerbate the effects of situational rejection on empathy and prosocial behavior.

Empathy and Prosocial Behavior

Finally, although we have similar hypotheses for how rejection will affect empathy and prosocial behavior, it is necessary to make the point that empathy is not universally sufficient for prosocial behavior (e.g., Eisenberg and Fabes, 1990; Malti, Gummerum, Keller, & Buchmann, 2009; Will et al., 2016b). Many studies that examine the relationship between empathy and prosocial behavior have used a measure of trait empathy and related it to situational prosocial behavior (though some do use a trait level measure of prosociality or altruism) (e.g., Masten et

al., 2010). Eisenberg and Fabes's metanalysis (1987) found that the relationship between trait empathy and prosocial behavior was moderate to low in strength, while more recent research has shown a non-significant relationship (Masten et al., 2010). These findings suggest it is important to study the relationship between situational empathy and situational prosocial behavior. The current study measured self-reported empathy for a target as well as prosocial behavior on behalf of the target. We expected that the relationship between situational empathy and prosocial behavior would be stronger than the relationship between trait empathy and prosocial behavior.

The Current Study

To summarize, the current study investigated how situational rejection and chronic rejection were related to empathy and prosocial behavior for a rejected other. Middle-school-aged adolescents were of particular interest because it is an age when one's social context is of ultimate importance (Blakemore & Mills, 2014). The need for belonging and acceptance is an especially motivating force during this period of life (e.g., Moor et al., 2010; Will et al., 2013). Thus, situational rejection and chronic peer rejection may be particularly influential in predicting empathic and prosocial behavior towards others during this time.

After completing measures about trait empathy and experiences with peer rejection, adolescents were randomly assigned to be either rejected or accepted during a Cyberball game. Then they watched a video in which another adolescent was rejected during Cyberball, and they were asked about their empathic reactions to this person and were given the opportunity to act prosocially toward this person. First, adolescents were asked to send messages to all three players in the observed game of Cyberball (one excluded player and two excluders). Their messages were coded for direct prosociality, as has been done in previous studies (e.g., Masten et al., 2010), but were also be coded for aggression, with the assumption that some adolescents may

feel more comfortable with aggressive behavior on behalf on the victim. Second, adolescents were asked to distribute a sum of money between the three players. This is a common paradigm that has been used in this type of research before (e.g., Will et al., 2013; Will, van Lier, et al., 2016).

To summarize, the hypotheses of the study are listed below:

H1: We expected less empathy and less prosocial behavior when adolescents were experimentally rejected compared to adolescents who have been accepted.

H2: We expected that chronically rejected adolescents would be less empathic for a rejected other than those not chronically rejected. Likewise, adolescents who indicated that they have been chronically rejected by peers would be less prosocial for another peer who they observed being rejected compared to adolescents not chronically rejected.

H3: The study also explored the interaction of chronic rejection and situational rejection. It was hypothesized that chronic peer rejection would exacerbate the effects of experimental rejection on empathy and prosocial behavior. In other words, the negative effects of rejection on empathy and prosocial behavior would be greater when adolescents reported that they have been chronically rejected by peers.

H4: We expected that situational empathy would be more related to prosocial behavior than would trait empathy.

Finally, analyses also considered sex as a predictor of situational empathy and prosocial behavior and how effects of rejection differed for boys and girls. Short-term longitudinal studies have found that girls tend to be higher in trait empathy than boys, across adolescence (Allemand et al., 2015; Garaigordobil, 2009). However, as there have been no studies on situational empathy in adolescence, it was difficult to predict whether there will be sex differences in this study.

METHODOLOGY

Participants

Prior to data collection, power analyses conducted using a series of Monte Carlo simulations in Mplus 7 (Muthén & Muthén, 2012) and G*Power (Faul, Erdfelder, Buchner, & Lang, 2009), indicated that a sample of 100 would be reasonable to maximize power and feasibility. When population regression coefficients are around .2, the power level approaches .8 with a sample size of 200. When the population parameters are around .4, the power level approaches .8 with a sample size of 60. A sensitivity analysis using G*Power indicated that a power level of 0.8 would find an effect size of 0.15 significant with 98 participants.

Over the course of one year, 125 adolescents were tested as a part of this study. Nine participants were removed because they did not see the experimental manipulation of rejection or the empathy exercise video due to internet difficulties at the testing site. Thirteen participants did not answer necessary questions and were thus excluded from analyses. This left 103 participants.

Two participants did not realize that the target was rejected. They answered that the target had received 30% or more of the throws in Cyberball and that the target had felt “not at all” rejected. These two participants were removed from analyses. Chi-square and t-test analyses indicated that youth removed did not significantly differ by race ($\chi^2 = 8.07, p = .09$), sex ($\chi^2 = .03, p = .87$), condition ($\chi^2 = 2.59, p = .11$), or by age ($t = -1.10, p = .27$).

The remaining participants were 101 adolescents in middle schools in Alabama and Louisiana, who were recruited through schools and other community organizations. Consent forms were sent home to parents, explaining the basic parameters of the study. Once consent had

been given, participants were tested either at their schools during a period approved by teachers and the administration or parents brought them to the University of Alabama after school or on weekends. The mean age of the sample was 12.34 ($SD = 1.16$). The sample was almost evenly male ($N = 50$; 49.5%) and female ($N = 51$; 50.5%). The sample was mostly white ($N = 72$; 71.3%), with African American/Black as the largest minority ($N = 22$; 21.8%).

Measures

Chronicity of rejection. A self-report questionnaire to assess peer rejection experiences and the chronicity of these experiences was developed for this study (Appendix A). The measure contains 18 statements (11 rejection-related items, 7 distractor items) and participants answered two questions for each. For the first question of each item, participants indicated how true the behavior or quality was of them. For instance, one item read “*Other people don’t think I’m fun to be with*” at one anchor while the other anchor read “*Other people think I’m fun to be with.*” Participants were presented with a bar and asked to place the pointer on the line to indicate their answer on the spectrum. The second question for each item asked participants to indicate how long they had felt this way with anchors on the ends of the spectrum bar (“*Not long at all*” to “*A very long time*”). Participants did not see a numerical rating as they answered the questions, but the testing platform, Qualtrics, converted the place on the line to a number for analysis. The first question was scored on a scale of -10 to 10 and the second question on a scale of 1 to 10. The two numbers were multiplied together to create the chronicity of rejection. Initially, large negative scores indicated chronic rejection, scores near 0 indicated neither high rejection nor high acceptance, and high positive scores indicated chronic acceptance. However, since this purpose of the measure in this study was to measure rejection, scores were multiplied by -1 so

that high positive scores indicated high chronic rejection and low scores indicated chronic acceptance.

In an effort to examine the reliability and validity of the new Chronic Rejection measure, it was given to 500 college students, along with the Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961), a self-report measure of aggression (Little, Jones, Henrich, & Hawley, 2003), Social Anxiety Scale for Adolescents (SAS-A; Inderbitzen-Nolan & Walters, 2000), Rejection Sensitivity Questionnaire (RSQ; Downey, Lebold, Rincón, & Freitas, 1998), Harter Self-Perception Profile for College Students (Harter's SPP; Neemann & Harter, 1986, 2012), and the Big Five Personality Inventory (John & Srivastava, 1999). The order of presentation for these measures was randomized.

Using the college student sample, reliability analyses were conducted on the items of the Chronic Rejection Measure. The items in the CRM were correlated so an Exploratory Factor Analysis using Principal Axis Factoring and a varimax rotation was conducted to whether the items were one unified construct. The EFA revealed only one factor (Eigenvalue = 6.27) that accounted for 57% of the variance. All of the items loaded onto this one, unrotated factor. A Confirmatory Factor Analysis in Mplus (Muthén & Muthén, 2012) confirmed this finding. The fit was adequate for the model. The factor loadings and fit statistics are presented in Table 1. Additionally, internal consistencies were high for the measure and highly consistent across our samples, indicating the CRM items measured a unified construct. In the adolescent sample, the measure also demonstrated excellent internal reliability. The multiplied items were internally reliable as a set for the college student sample ($\alpha = .910$) and the middle school sample ($\alpha = .925$).

To assess the validity of the Chronic Rejection Measure, Pearson product-moment correlation coefficients were calculated between the CRM and the BDI, aggression measure, SAS-A, RSQ, Harter's SPP, and the Big Five for the college student sample (see Table 2). The CRM total score was significantly and positively related to all three SAS-A subscales, the anxiety and rejection subscales of the RSQ, the Social Acceptance subscale of the Harter Self-Perception Profile, the neuroticism dimension of the Big Five, and the BDI. The total score was significantly and negatively associated with the extraversion dimension of the Big Five.

Trait empathy. The Interpersonal Reactivity Inventory (Davis, 1983) was used to measure trait empathy through 28 items answered on a 5-point Likert scale ("does not describe me well" to "describes me very well"). There are four subscales, each made up of 7 items: Perspective Taking, Fantasy, Empathic Concern, and Empathic Distress (see Appendix B for full measure). Perspective Taking ($\alpha = .69$) measured the tendency to take on the point of view of others (e.g., "I try to look at everybody's side of a disagreement before I make a decision"). The Fantasy subscale ($\alpha = .80$) measured the tendency to place oneself into the feelings and actions of fictional characters in books, movies, or television shows (e.g., "I really get involved with feelings of the characters in a book."). Empathic Concern ($\alpha = .75$) measured the "others-focused" feeling of sympathy and compassion (e.g., "I feel very sorry for other people when they are having problems."). Personal Distress ($\alpha = .76$) measured the "self-focused" feeling of personal anxiety (e.g., "When I see someone get hurt, I tend to get really upset."). Items in this measure have been used in an adolescent population (Hawk et al., 2013). Hawk and colleagues found the subscales to be internally reliable (alphas $> .67$ for young adolescents and alphas $> .74$ for older adolescents) and are moderately related to helping behavior, the personality traits of

openness and agreeableness, and are negatively related to aggression. In the current study, the subscales were internally reliable at similar alpha levels, with alphas between .69 and .80.

Situational rejection experience. Adolescent participants played Cyberball, a computerized game of catch, which has been used with both adults and children to simulate a rejection experience (Ruggieri, Bendixen, Gabriel, & Alsaker, 2013; Sebastian et al., 2010; Williams et al., 2000). Adolescents were logged on to a game screen where they saw two other players. A game of catch commenced, consisting of 30 total throws. The adolescents were randomly assigned to a rejected condition, where they only received the ball one time out of a possible 30 throws, or an accepted condition, where they received the ball an equal amount of times as the other “players” in the game (about 10-11 times). For a screenshot of the game, see Appendix C.

As a manipulation check after the game was complete, adolescents were asked how many times they received the ball relative to the other players and the degree to which they felt rejected. As another manipulation check, participants indicated their affective response to the game by responding to items from the Profile of Mood States (POMS; McNair, Lorr, & Droppleman, 1971; Shacham, 1983). Participants completed a shortened version, specifically for adolescents, the POMS-A (Terry et al., 1999). The anger and the depression subscales were used, each with 5 items. Adolescents answered the question “How are you feeling right now?” with ratings on a scale of 1 (not at all) to 5 (extremely) for each item. Both anger ($\alpha = .82$) and sadness ($\alpha = .84$) were internally reliable. See Appendices D and E for all questions asked following the Cyberball experience.

Distractor task. Participants watched a game-time screen recording of the video game *Mario Kart*. This game was chosen because it was age appropriate for teens aged 10 to 15.

Participants then answered some questions about the game play of the player, as well as some memory questions to determine whether they were paying attention. Some of the questions regarding the game play of the player are “Do you think this person was successful?” and “Would you want to play against this person?” For a full list of questions, see Appendix D.

Empathy exercise. After they completed the distractor task, adolescents then watched a video of another child playing Cyberball and being rejected. Adolescents watched a video depicting a sex- and race-matched peer. Three videos of each race and sex were filmed by the author to help ameliorate the effects of a single video on adolescent empathic reactions (for a total of 12 videos).¹ The adolescents in the videos participated in the pilot study and were filmed when they played Cyberball. Thus, the adolescents’ spontaneous reactions to rejection were filmed. Participants were randomly assigned to watch one of the videos that matched their race and sex. See Appendix G for screenshots from these videos.

Participants were told that they had been “randomly assigned” to watch Player 2 (the rejectee). After watching the video, participants were asked to indicate the number of times the target received the ball, compared to the other players, and whether the target was rejected. These questions indicated if participants were paying attention to the game. Adolescents then answered questions about their situational empathy for the child in the video (see below) and what they thought the child was feeling.

Situational empathy. Situational empathy was assessed with 12 items taken from Batson’s list of adjectives (Batson, 1987, 1991; Batson et al., 1987; Batson et al., 1995) that

¹ The pictures of the targets of the videos were rated by college students. There were some significant differences in ratings of perceived intelligence, attractiveness, warmth, happiness, sadness, sincerity, trustworthiness, niceness, and how much they “liked” the target adolescent. Thus, empathy ratings and prosocial behaviors were compared on the basis of the video seen by a participant. The specific video seen in the empathy exercise did not influence empathy or money given to the participant or prosocial or aggressive messages, controlling for sex (see Table 24 for the results).

describe how distressed (e.g., alarmed, upset, disturbed) and concerned (e.g., sympathetic, compassionate, warm) participants felt watching the other child be rejected. The distress and concern subscales each had 6 items. The items were rated on a scale from 1 (strongly disagree) to 5 (strongly agree). The items for these scales were internally reliable, with alphas of .92 (distress) and .92 (concern).

Participants also responded to items modified from the IRI (Davis, 1983) that assessed situational perspective-taking (5 items; e.g., “Before criticizing somebody, I try to imagine how I would feel if I were in their place” became “I imagined how I would feel if I were in the place of the person on the video”). The new four-item scale was moderately reliable ($\alpha = .596$). For all items asked following the empathy exercise video, see Appendix H.

Prosocial and aggressive actions. Following the empathy exercise, participants were asked to send messages to the three adolescents that they had watched in the game. These messages were rated for prosocial behavior and aggressive behavior using three questions from a Masten and colleagues study (2010) and two questions created to assess aggression in a similar way. For prosocial behaviors, raters indicated their agreement with the following items on a scale from 1 to 5: (1) Does it seem like they are trying to comfort this person?; (2) How supportive are they towards this person?; and (3) How much do they seem like they are trying to help this person?

Aggressive behavior toward the rejecting Cyberball players was also coded. Aggression toward the rejecters could be considered a form of prosocial behavior on behalf of the rejected target (Moor et al., 2012; Will et al., 2013), or altruistic aggression. Raters indicated their agreement with the following items on a scale from 1 to 5: (1) How much are they trying to hurt this person?; and (2) How much are they trying to hurt another person?.

Six research assistants unaware of the goals of this study and blind to the participant's exclusion condition coded the messages for aggression and prosocial behavior. Coders were trained on a few sample messages taken from Masten et al. (2010) and from the college student sample. As in Masten et al., coders were told that participants had observed a social interaction and were asked to write whatever they wanted in a message to the participants in the interaction. Two assistants coded all of the cases and four assistants coded 40 each. Every message was coded by three assistants. The intra-class correlation coefficients between the raters' responses to the prosocial questions, comfort (ICC = 0.661), support (ICC = 0.587), and help (0.738), were indicative of moderate to good reliability across all rater sets and messages to the rejecters and to the rejectee (Koo & Li, 2016). The intra-class correlation coefficients between the raters' responses to the aggressive questions, hurt this person (0.841) and hurt another person (0.864), were indicative of good reliability across all rater sets and messages to the rejecters and to the rejectee. For ICC values for each coder set, see Appendix J. After looking at the ICC values for all coders, ratings for each message rating item were averaged across the three coders for each participant.

In an effort to minimize the number of dependent variables present in the study, the message types were submitted to a factor analysis to see how they related to each other. The message variables (the message types per recipient) were submitted to an Exploratory Factor Analysis, with the exception of messages with aggression towards the rejectee. There was not enough variability for this item to warrant including it in future analyses. Using a Principal Axis Factoring and a varimax rotation, there were five factors with an Eigenvalue greater than 1. In total, these five factors explained 74.42% of the variance in the message ratings. Factor 1 encompassed the prosocial messages (comfort, support, and help) to the rejectee. Factor 2

encompassed the helpful messages to the rejecters. Comforting and supportive messages to the rejecters loaded onto Factors 3 and 4. Aggressive messages of both types for the rejecters loaded onto Factor 5. See Appendix K for the factor loadings for these items. In future analyses, prosocial messages to the rejectee, helpful messages to the rejecters, and prosocial messages to the rejecters were each entered as one variable. The messages to the rejecters often aggressed against them as a pair – calling them names, etc. – so these messages were not significantly different from each other on this dimension. The aggressive messages to the rejecters were averaged by type (Hurt This Player and Hurt Other Player; all were aggressive against rejecters) and then added together to form one variable. Messages to the rejectee that encouraged aggression against the rejecters were also kept as a separate variable.

Additionally, participants were asked to distribute \$30 between the three participants of the game. This number was chosen because participants were paid \$10 for their participation in the study, so it was believable that each person playing the game would receive \$10. This method has been used in previous studies, with the result that adolescents allocate more resources to rejected players (e.g., Will et al., 2013). (See Appendix I for prosocial interaction instructions). The amount of money given to the rejectee and the average amount of money given to the rejecters were directly inversely related ($r = -1.00, p < .01$). Thus, analyses only considered the amount of money given to the rejectee.

Identification. Though hypotheses about identification were not made in the original proposal, participants were asked how similar they felt towards the person in the video, how similar their experiences were, and how much they identified with the person in the video, as well as the Inclusion of Self in Other Scale (Aron, Aron, & Smollan, 1992). Participants indicated the degree to which they agreed with each statement on a Likert-type scale from 1 to 5.

For the Inclusion of Self in Other Scale, participants were presented with six Venn diagrams with varying overlapping areas (see Appendix H). All items were significantly positively correlated with each other and were internally reliable ($\alpha = .84$). Thus, items were averaged to create an identification scale.

Procedure

Consent forms were sent home to parents from adolescents' schools. Once parents had given consent, they were contacted to set up an appointment for a session. These adolescents came into a lab on the campus of the University of Alabama and participated in the session in small groups or alone. Adolescents from two schools were run at their school during elective classes in small groups. Participants were informed what they would be doing in the study and asked to sign an assent form to indicate they understood the procedure and their rights as participants. Participants were then told that they would play an online game with some other teenagers and that they would see pictures of these teens before playing. Their picture would be taken and uploaded to the server so that the other players could see them too. Pictures were immediately deleted at the end of each session.

Experimenters started the experimental procedure on computers. Adolescents were allowed to go through it at their own pace, but the experimenter was always available for questions. Adolescents entered some demographic information, then answered the Chronic Rejection Measure and the Interpersonal Reactivity Inventory. The questions within each measure were randomized but the order of the measures was the same. Then participants began Cyberball, in which they saw pictures of sex- and race-matched adolescents. Participants were randomly either included in the game or excluded and then answered questions about their experience (POMS-A, Post-Cyberball Basic Needs Questionnaire, and believability check

questions). Immediately following Cyberball, participants watched a game-play recording of a two-player *MarioKart* and answered questions about it. Following this, participants were told they would watch three teens play Cyberball and they would be randomly assigned to watch a video of one of them. Then they answered questions about the game and the specific person they had watched (empathy adjectives, POMS-A, Post-Cyberball Basic Needs Questionnaire, some questions about identification with the person in the video, and the prosocial behavior questions). Participants were given the option of sending messages to each of the three players. Following this, participants were asked to distribute \$30 between the three players. Finally, participants played one more round of Cyberball with sex- and race-matched teens. In this game, they were always included. Typically, children and adolescents are fully debriefed as to the purpose of the study and the nature of the deception necessary in Cyberball. However, in this case, data collection was slow, requiring multiple days in the same schools, classrooms, and perhaps friend groups. It is likely that word of the Cyberball deception would have spread among the students, weakening the study's ability to simulate rejection. Thus, in lieu of debriefing, all students experienced an acceptance condition of Cyberball at the end of the study, so that they ended the experience on a positive note.

RESULTS

Results are reported in five main sections. In the first section, descriptive statistics, manipulation check analyses, and sex differences are presented. The second section examines correlations between trait and situational empathy and prosocial/aggressive behaviors. The third section presents the results of regression analyses to examine the effects of chronic rejection on empathy and prosocial/aggressive behavior. The fourth section presents the results of MANOVA analyses to examine the effects of rejection condition on empathy and prosocial/aggressive behavior. Finally, the last section presents the exploratory analyses of the interaction between rejection condition and chronic rejection, and whether rejection condition moderates the effect of chronic rejection on empathy and prosocial/aggressive behavior. We also explored whether sex moderated the effects of chronic rejection or rejection condition on empathy and prosocial behavior. However, none of these interactions are significant so the results are not included here.

Preliminary Analyses

Believability Check. Participants answered a series of three questions after playing Cyberball and after watching the empathy exercise video: (1) What did you think about the game?, (2) Did anything surprise you?, and (3) What do you think this study is about? The author and two trained research assistants read through the answers to these questions. Fourteen participants thought that the study was about how adolescents respond to being mistreated or rejected in a game, but no one said that they thought this was manipulated or that the study was measuring empathy after being rejected. Thus, no participants were eliminated based on this check.

Descriptive Statistics. All the subscales of the measures used in the study were checked for normality. All measures were determined to be within an acceptable range for skewness and kurtosis, with the exception of the Esteem subscale of the Post-Cyberball Needs Questionnaire and the variable that encouraged the rejectee to aggress against the rejecters. The descriptive statistics for these measures are in Table 3.

Manipulation Check. To examine whether the experimental manipulation of Cyberball worked, a series of t-tests was conducted. Participants in the rejection condition indicated that they received significantly fewer throws ($M = 31.33, SD = 12.58$) than participants in the acceptance condition ($M = 6.46, SD = 11.11$), $t(109) = 11.06, p < .01$. Rejected participants also indicated that they felt significantly more ignored ($M = 4.26, SD = 1.36$) and more excluded ($M = 4.31, SD = 1.30$) in the game than accepted participants ($M = 1.94, SD = 1.10$ & $M = 2.13, SD = 1.40$, respectively). Rejected participants also felt angrier and sadder and indicated less esteem, less meaning, less control, and less belonging than accepted participants (see Table 4).

As an additional manipulation check, the prosocial and aggressive behavior dependent variables were analyzed to ensure participants were more prosocial towards the rejectee than they were to the rejecters. The variables were submitted to a multivariate repeated measures ANOVA test. Participants gave significantly more money to the rejected target than the rejecters. There was not a significant difference between the money given to the rejecters. Thus, the money given to the rejecters was averaged and considered as one variable.

Similar analyses were done with the messages participants sent to the players. Participants wrote significantly more prosocial (a summation of comfort and support) messages to the rejectee than they wrote to the rejecters. Participants wrote significantly less hurtful/aggressive messages to the rejectee than to the rejecters. See Table 5 for means and

results of the repeated measures ANOVA. Finally, the length of participants' messages did not differ based on the recipient of the message.

Sex Differences. All dependent variables were analyzed to see if there were sex differences (see Table 6). There were no sex differences in chronic rejection. There were sex differences in trait perspective taking and trait empathic concern (as measured by the IRI), such that girls were higher in trait empathy than boys. Boys and girls did not differ significantly in their self-rated anger or sadness after Cyberball, nor did they differ in the amount of anger or sadness they attributed to the person they watched in the video. Boys and girls did not differ in situational distress, situational concern, or situational perspective taking.

There were some sex differences for the messages sent as well. Girls were more likely to try to "help" the rejecters understand what they had done wrong than were boys. Girls were also more prosocial in their messages to the rejectee than boys. Girls were more likely to encourage the rejectee to aggress against the rejecters than were boys. Finally, girls wrote significantly longer messages than boys. Due to these sex differences, participant sex was included as a covariate in future analyses.

Correlations of Empathy and Prosocial/Aggressive Behavior

To examine the correlations between trait empathy, situational empathy, prosocial and aggressive behaviors, Pearson's r coefficients were calculated. As seen in Table 7, the indicators of situational empathy were intercorrelated, as were the indicators of trait empathy. Trait perspective taking was not correlated with situational distress, but it was moderately correlated with situational concern and situational perspective taking. Trait concern was not correlated with situational distress, but it was moderately correlated with situational concern. Trait distress was not correlated with situational perspective taking, situational concern, or situational distress.

Since trait concern and trait perspective taking were correlated with situational concern and situational perspective taking, they were included as covariates in future analyses that examined those variables.

The prosocial and aggressive behavior variables were correlated with each other (see Table 7). Writing prosocial messages to the rejecters was negatively correlated with the amount of money given to the rejectee, but aggressive messages to the rejecters was positively correlated with the amount of money given to the rejectee and with prosocial messages to the rejectee. Prosocial messages to the rejecters were positively correlated with helpful messages to the rejecters, but negatively correlated with aggressive messages to the rejecters. Helpful messages to the rejecters was positively correlated with prosocial messages towards the rejectee, but negatively correlated with aggressive messages to the rejecters. Prosocial messages to the rejectee were also positively correlated with messages that encouraged aggression by the rejectee. Finally, aggressive messages to the rejecters were positively correlated with messages that encouraged aggression by the rejectee.

Next, analyses examined the correlations between empathy and prosocial and aggressive behaviors. Trait-level concern was moderately and positively related to the money given to the rejectee, prosocial messages to the rejectee, and messages that encouraged aggression by the rejectee. Trait-level distress was positively correlated with messages that encouraged aggression by the rejectee. Trait-level perspective taking was positively correlated with prosocial messages to the rejectee and messages that encouraged aggression by the rejectee. Situational concern was positively correlated with prosocial messages to the rejectee, aggressive messages to the rejecters, and messages that encouraged aggression by the rejectee. Situational distress was positively correlated with aggressive messages to the rejecters. Situational perspective taking

ability was positively correlated with prosocial messages to the rejectee and aggressive messages to the rejecters. See Table 7 for the Pearson r values.

To address the hypothesis that prosocial behavior would be more strongly related to situational empathy than to trait empathy, correlations were compared using Fisher r -to- z transformations. Results of these analyses are presented in Table 8. There were significant differences in how trait and situational empathy related to messages with aggression towards the rejecters. This aggressive behavior was significantly more correlated with situational empathy (concern, distress, and perspective taking) than trait empathy (concern, distress, and perspective taking). Additionally, prosocial messages to the rejecters were significantly more correlated with trait perspective taking than situational perspective taking. In contrast, the amount of money given to the rejectee was significantly more correlated with situational perspective taking than trait perspective taking.

Chronic Rejection, Empathy, and Prosociality

Next, to address the hypothesis that chronic rejection would be related to less empathy and prosocial behavior towards a rejected other, multivariate regression analyses were used to examine the relation between participants' chronic rejection with empathy and prosocial/aggressive behavior. Sex, trait concern, and trait perspective taking were entered as covariates. The multivariate test was significant for the effect of chronic rejection, $F(3, 95) = 4.782, p < .01$ (see Table 9). Follow-up univariate analyses indicated that chronic rejection had a significant effect on situational perspective taking, $F(1, 97) = 13.06, p < .01$, and on situational distress, $F(1, 97) = 5.23, p < .05$, such that the more chronic rejection participants described, the more distress and perspective-taking ability they expressed towards the rejectee. The effect of chronic rejection on situational concern was marginally significant, $F(1, 97) = 2.92, p = .091$,

again, such that the more chronic rejection described, the more concern expressed for the rejectee. There was not a significant interaction of chronic rejection and sex in predicting situational empathy.

Separate multivariate regression analyses were used to examine how chronic rejection was associated with participants' prosocial and aggressive behavior. See Tables 10 and 11 for the results of the multivariate regression analyses. Sex, trait concern, and trait perspective taking were entered as covariates in both analyses. There was not a significant multivariate effect of chronic rejection on prosocial behavior (money given to the rejectee, prosocial messages to the rejecters, helpful messages to the rejecters, and prosocial messages to the rejectee). Additionally, there was not a significant multivariate effect of chronic rejection on aggressive behavior (aggression towards rejecters and encouraged aggression). There was a marginally significant univariate effect of chronic rejection on aggressive messages towards the rejecters, $F(1, 97) = 3.78, p = .055$, such that as participants reported more chronic rejection, they wrote more aggressive messages to the rejecters. There was not a significant interaction of chronic rejection with sex in predicting prosocial/aggressive messages. There was a significant interaction between chronic rejection and sex for money given to the rejectee. The relationship between chronic rejection and money given was negative for girls, $\beta = -.24, t(95) = -2.26, p = .026$, but was not significant for boys, $\beta = .20, t(95) = 1.39, p = .17$.

Manipulated Rejection, Empathy, and Prosocial Behavior

It was hypothesized that adolescents who were experimentally rejected would be less empathic and prosocial towards a rejected other than adolescents who had been accepted. To address this hypothesis, the empathy ratings were analyzed using a Multivariate Analysis of Variance (MANOVA). Sex, trait concern, and trait perspective taking were entered as covariates.

See Table 12 for the means and standard deviations for each variable by the rejected and accepted conditions. The MANCOVA indicated no significant effect for rejection condition on situational perspective taking, situational concern, and situational distress, $F(3, 95) = 1.909, p = .133$ (see Table 13). However, univariate analyses revealed that condition had a marginally significant effect on situational concern, when sex, trait concern, and trait perspective taking are entered as covariates, $F(1, 97) = 2.83, p = .066$, such that rejected participants expressed less concern ($M = 12.63, SD = 7.47$) than accepted participants ($M = 14.45, SD = 7.04$). There was not a significant univariate effect of condition on situational distress or situational perspective taking.

The effect of rejection condition on prosocial behavior (money to the rejectee, prosocial messages to the rejecters, helpful messages to the rejecters, and prosocial messages to the rejectee) was analyzed using a MANOVA (see Table 14). Trait concern, trait perspective taking, and sex were entered as covariates. The MANCOVA indicated a significant multivariate effect on prosocial behavior, $F(4, 94) = 3.491, p < .01$. Follow-up univariate analyses indicated that there were significant univariate effects of condition on prosocial messages to the rejecters, helpful messages to the rejecters, and prosocial messages to the rejectee. Rejected participants sent more prosocial and more helpful messages than accepted participants. The univariate effect for money to the rejectee was also significant with accepted participants giving more money to the rejectee than rejected participants.

A second MANCOVA examined the effect of rejection condition on aggressive behavior. Trait concern, trait perspective taking, and sex were entered as covariates. There was not a significant multivariate effect of condition on aggressive behavior or any significant univariate effects (see Table 15).

Exploratory Analyses: Interaction between Condition and Chronic Rejection

To address the hypothesis that the chronic rejection would exacerbate the effect of rejection condition on empathy and prosocial/aggressive behavior, the interaction between condition and chronic rejection was explored. Regression analyses were used to examine the effect of the interaction on empathy. The multivariate analysis did not indicate a significant multivariate interaction (see Table 16); however the univariate effect of the interaction on situational concern was marginally significant, $F(1, 95) = 2.662, p = .106$. Though the multivariate and univariate regressions were not significant, the PROCESS macro (Muthén & Muthén, 2012) was used to probe the effect of the interaction on situational concern. The PROCESS macro produces estimates, with more reliable confidence intervals, by drawing random samples of participants and repeating this process 1,000 times. Final estimates and standard errors are derived from these bootstrapped samples, increasing confidence in the estimates. Using the PROCESS macro, including sex, trait concern and trait perspective taking as covariates, the interaction between condition and chronic rejection was significant for situational concern, $F(5, 95) = 6.60, p < .01$. Simple slope analyses indicated that for participants who were rejected in Cyberball, chronic rejection was positively related to situational concern, $\beta = .324, t(5, 95) = 2.57, p < .01$. There was not a significant relation between chronic rejection and situational concern for participants in the accepted condition, $\beta = -.005, t(5, 95) = -.037, p = .97$. See Table 19 and Figure 1 for the results of this analysis.

Separate multivariate regression analyses were used to examine the effect of the interaction on the prosocial and aggressive behavior variables. There was not a significant multivariate interaction on prosocial, $F(4, 91) = 1.352, p = .257$, or aggressive behavior, $F(2, 93) = 0.73, p = .485$ (see Tables 17 and 18). Though the multivariate effect was not significant,

the univariate effect of the interaction on helpful messages sent to the rejecters was significant, $F(1, 93) = 3.82, p = .05$. The PROCESS macro was used to probe the effect of the interaction on helpful messages to the rejecters. Using the PROCESS macro, including sex, trait concern, and trait perspective taking as covariates, the interaction between condition and chronic rejection was marginally significant for helpful messages to the rejecters, $t(94) = 1.87, p = .06$. Simple slope analyses indicated that for participants who were accepted in Cyberball, chronic rejection was positively related to helpful messages, $\beta = .26, t(94) = 1.74, p = .08$. There was not a significant relation between chronic rejection and helpful messages for participants in the rejected condition, $\beta = -.14, t(94) = -.96, p = .34$. See Table 20 and Figure 2 for the results of this analysis.

Exploratory Analyses: Identification as a Mediator

There were no hypotheses originally made for how identification might be related to prosocial or empathic behavior, however as part of the experiment participants were asked a series of questions about identification. We decided to explore how identification may explain, or mediate, when chronic rejection and rejection condition had effects on empathy and prosocial/aggressive behavior. We only explored identification as a mediator when prior analyses indicated a direct relationship between chronic rejection or condition on the outcomes of empathy and prosocial/aggressive behavior.

Prior to these mediation analyses, preliminary analyses looked at how identification was correlated with the dependent variables, as well as trait empathy levels and chronic rejection scores. As seen in Table 21, identification with the rejectee was positively correlated with trait perspective taking and trait concern, situational perspective taking, situational concern, and situational distress, prosocial messages to the rejectee, helpful messages to the rejecters, and chronic rejection scores. There was a marginally significant sex difference in identification, with

girls identifying more ($M = 3.43$, $SD = 1.43$) than boys ($M = 2.92$, $SD = 1.32$), $F(1, 99) = 3.36$, $p = .07$. Furthermore, rejected participants expressed significantly more identification ($M = 3.92$, $SD = 1.34$) than accepted participants ($M = 2.39$, $SD = 0.96$), $F(1, 99) = 42.96$, $p < .01$. The interaction between rejection condition and chronic rejection was not significantly related to identification.

As found above, rejection condition was significantly related to prosocial behaviors. Thus, we explored how identification may mediate these associations using the PROCESS macro in SPSS ((Muthén & Muthén, 2012)). Though bivariate correlations indicated that identification was related to money given to the rejectee, prosocial messages to the rejecters, or helpful messages to the rejecters, mediational analyses showed that identification did not explain how condition predicted money given to the rejectee (indirect effect: $\beta = -.08$, 95% CI = $-.21, .03$), prosocial messages to the rejecters (indirect effect: $\beta = .09$, 95% CI = $-.06, .26$), or helpful messages to the rejecters (indirect effect: $\beta = -.03$, 95% CI = $-.17, .09$). However, identification did mediate how condition predicted prosocial messages to the rejectee, such that rejected participants identified more with the rejectee, and identification levels were positively related to the prosocial behavior (indirect effect: $\beta = -.12$, 95% CI = $-.26, -.01$). See Table 22 and Figure 3 for this mediation model.

Previous analyses found that chronic rejection was positively related to situational perspective taking and situational distress. Identification was also correlated with situational perspective taking and situational distress. Mediational analyses using PROCESS found that identification partially mediated the relationship between chronic rejection and situational perspective taking (indirect effect: $\beta = .12$, 95% CI = $.05, .23$). See Table 23 and Figure 4 for this

mediation model. Identification did not significantly mediate how chronic rejection was related to situational distress (indirect effect: $\beta = .03$, 95% CI = -.03, .12).

Finally, we examined moderated mediation models to see if identification explained how the interaction of chronic rejection and rejection condition predicted situational concern and helpful messages sent to the rejecters. Identification did not significantly mediate either of these significant interactions.

DISCUSSION

The overall goal of this study was to examine how rejection experiences, both immediate and one's history of experiences, influence empathy and behavior towards others. There are two disparate areas of literature that address this question. Research on the effects of rejection finds that rejected adults are less empathic and less prosocial than accepted adults (DeWall & Baumeister, 2006; Twenge et al., 2007). On the other hand, research on the effects of identification finds that people empathize more with those with whom they identify (e.g., Batson et al., 1996; for a full review, see Preston & de Waal, 2002; Lim & DeSteno, 2016). Since shared rejection experiences or a perceived similarity in rejection history could be identifying factors, it would follow that rejected people would be more empathic towards a rejected other.

Research with adolescents, the participants in this particular study, shows that adolescence is especially interesting for studying this question. First, perspective taking, emotional regulation, and identity are developing during adolescence (e.g., Allemand, Steiger, & Fend, 2015). Adolescents are also prone to a certain amount of egocentrism, influencing how they think about other people's thoughts (Elkind, 1967; Frankenberger, 2000). Thus, we cannot assume that empathy will work in the same way in adolescence as it does in adulthood. Second, peer relationships are of utmost importance in adolescence (Blakemore & Mills, 2014; Moor, van Leijenhorst, Rombouts, Crone, & van der Molen, 2010; Will et al., 2013). As a result, threats to acceptance and belonging are taken seriously. How a situational rejection experience might affect adolescents' prosocial feelings and behavior towards peers is not clear.

In the following sections, results of the study are reviewed and discussed as they relate to the hypotheses of this study, as well as to existing research. The results of the study are discussed in the following order: (1) the effects of situational rejection on empathy and prosocial behavior, (2) the properties of the Chronic Rejection Measure and its association with empathy and prosocial behavior, (3) how situational rejection and chronic rejection may jointly affect empathy and prosocial behavior, (4) the comparison of trait and situational empathy in their relation to prosocial behavior, and (5) sex differences. Finally, the study's limitations and some suggestions for future research are discussed.

The Effects of Situational Rejection on Empathy and Prosocial Behavior toward a Rejected Other

One of the purposes of this study was to examine the effects of an experimentally manipulated instance of rejection on adolescents' empathic reactions and prosocial behavior to a similarly rejected peer. To examine this, adolescents played Cyberball and then watched a peer being rejected in Cyberball. They then reported on their empathy for the rejected other and had an opportunity to act prosocially toward the rejecters and the rejectee. Prosocial behavior was measured in two ways. Adolescents distributed \$30 between the three players in the game they watched. This method has been used in previous research, with the result that people give more money to the rejected individual (Will et al., 2013). We replicated that effect; our participants gave more money to the rejected individual than to the rejecters. However, we were also interested to see if being rejected influenced the distribution of money. There was not a significant difference in how rejected and accepted participants distributed the money. This suggests that all adolescents take rejection very seriously: punishing rejecters and rewarding the rejected, regardless of their own immediate circumstances. Will et al. (2013) found further

support for this idea, because adolescent participants in their study gave more to rejected others than adult and child participants.

We also had participants send messages to the three players in the game they watched. Sending messages to the rejected player is a method that has been used before (Masten et al., 2010), with the result that participants who were more distressed watching a peer be rejected wrote more prosocial messages. Novel to this study, was that we also offered participants the opportunity to send messages to the rejecters. It was possible that adolescents would act on their empathic concern and distress and send aggressive messages to the rejecters. In other words, they might act in an altruistically aggressive manner. Supplementary post hoc analyses found that adolescents were more likely to be prosocial towards the rejectee than they were to be aggressive towards the rejecters. Adolescents were also more likely to try to “help” the rejecters than they were to be aggressive towards them. Previous research has found that people react to rejection with aggression, even punishing rejecters if possible (Wesselmann, Butler, Williams, & Pickett, 2010; Will et al., 2013). As a result, the current study’s finding that adolescents were more likely to be prosocial towards rejecters is surprising.

With regard to condition differences, we found that experimental rejection did not influence empathy nor did it influence the amount of money given to the rejectee. There were, however, significant differences in the messages sent based on condition; experimentally rejected adolescents wrote more prosocial messages to the rejecters, more helpful/advice-giving messages to the rejecters, and more prosocial messages to the rejectee than did accepted participants. These findings are interesting given that previous research with adults has found significantly less empathy and less prosocial behavior from rejected participants in comparison with accepted participants (e.g., Twenge et al., 2007).

There are at least two potential reasons that our results do not match with those of Twenge et al. (2007). First, this study matched rejection experiences, asking participants to act prosocially toward someone who had had a similar rejection experience. Twenge et al. did not match experiences in type or significance, nor was the prosocial behavior directed at someone who had gone through a similar hardship. Second, our findings may reflect the developmental period of adolescence when it is particularly important to fit in to the larger peer group (Blakemore & Mills, 2014). Experimental rejection in adolescence may increase feelings of injustice and the need to help others who have experienced the same thing.

But why were the rejected participants more prosocial and not more empathic? It may be that all adolescents, no matter if they were just rejected or accepted, understand that the rejected other was upset by being excluded. However, only the experimentally rejected youth took action to help the rejectee and give advice to the rejecters. Could this be due to the rejection condition increasing identification with the rejected other? It may be that identification increases one's tendency to act prosocially (e.g., O'Reilly & Chatman, 1986). However, the rejection that youth experienced in Cyberball may be emotionally difficult to overcome and inhibit their reports of empathy for the rejected other. In essence, rejection could increase identification and emotional dysregulation and these processes could work against each other making the rejected group look no more empathic than the accepted group. Perhaps rejection experiences negatively influence adolescents' emotional responses towards the other's rejection (concern) but does not inhibit their desire to make people feel better after rejection (prosocial messages).

We also found that trait-level empathic concern was an important factor in the amount of situational concern participants expressed, suggesting that there is more to consider when analyzing a person's response to social interactions than just the content of the interaction. We

must also take into account individual characteristics of the individual, as well as their schema and beliefs about social interactions. In other words, it is important to consider the “database,” as well as the situational interpretations and goals from the interaction (Crick & Dodge, 1994; Lemerise & Arsenio, 2000).

Chronic Rejection

Another purpose of this study was to examine how one’s rejection history might impact empathy and prosocial behavior. Previous research that has found that adolescents who are rejected by their peers are lower in trait empathy and prosocial behavior than adolescents who are well-liked or accepted by their peers (Newcomb, Bukowski, & Pattee, 1993; Pakaslahti, Karjalainen, & Keltikangas-Järvinen, 2002). Instead of using sociometrics to measure participants’ rejection history, the current study developed a self-report measure of chronic rejection. Conceptualization and item generation were guided in part by Harter’s (Neeman & Harter, 1986; 2012) self-perception inventory, but the time dimension was novel. Additionally, the focus of the measure was how much rejection people have experienced, rather than how they feel about their rejection experiences.

In order to validate the measure, the Chronic Rejection Measure (CRM) was given to a college student sample, along with a battery of other measures. Factor analysis of the CRM items found that the items loaded on one single factor and the items were highly correlated with each other in both the college sample and in the adolescent sample. The items created a highly reliable scale.

The relation of the CRM to relevant measures was also examined with the college student sample, such as depression. Rejection and depression have been linked in psychological study dating back to Freud (called “interpersonal loss”; Freud, 1917/1957). Research has found that

rejection may increase the risk of depression at a greater rate than other stressful life events (Slavich, O'Donovan, Epel, & Kemeny, 2010). Additionally, research with developmental populations indicates that the relationship between rejection and depression begins early. Boivin and colleagues (1995) found that negative peer experiences predicted loneliness in children and young adolescents, which then predicted depressed mood. College students' responses to the CRM were positively related to their responses on the Beck Depression Inventory, suggesting that people higher in chronic rejection were also higher in depression, fitting with previous literature and supporting the validity of the CRM measure.

Additionally, chronic rejection was also positively correlated with social anxiety and rejection sensitivity. Perceived rejection is theorized to be one of the primary sources of anxiety (Baumeister & Tice, 1990; Leary, 1990). Indeed, Downey and colleagues' concept of rejection sensitivity is defined as the anxious expectation of rejection (e.g., Downey, Lebold, Rincon, & Frietas, 1998). Furthermore, recent drug trials suggest that anxiety medications may help alleviate some of the fear of rejection (Hsu et al., 2013). We measured social anxiety specifically in this study and found significant positive correlations between social anxiety and chronic rejection, such that people who were high in chronic rejection were also high in social anxiety. Additionally, college students who were high in chronic rejection were high in anxious rejection sensitivity, suggesting that those who have experienced rejection also anxiously expect it in interpersonal interactions.

Chronic rejection was not related to self-reported aggression in college students. Research with children indicates that some rejected children are also aggressive with peers (McDougall et al., 2001). However, not all rejected youth are aggressive; some are withdrawn instead (Asher & McDonald, 2009). Additionally, some forms of aggression in adolescence are

associated with perceived popularity (Ojanen & Findley-Van Nostrand, 2014). There is also evidence that some aggressive youth overestimate how much peers like them (e.g. Zimmer-Gembeck et al., 2013). Thus, perhaps it is not surprising that the chronic rejection was not associated with overt or relational aggression.

Chronic rejection was, however, associated with lower perceived social acceptance. Research has found that rejection can lead to a reduction in self-esteem and perceived competence (Boivin & Begin, 1989; Leary, 1990). Harter's Self-Perception Profile (Neeman & Harter, 1986, 2012) was an inspiration for the design of the current measure of chronic rejection. Harter's SPP measures several aspects of identity, from romantic competence to humor to athletic competence. Though we measured all of these subscales, we focused on the perception of social acceptance. Chronic rejection was negatively correlated with this subscale, indicating that people high in chronic rejection may also be low in perceived social acceptance. There is a difference between the CRM and this scale, however. Harter's scale measures how competent feel in social acceptance, but not how much rejection people have experienced. The CRM focuses on frequency and duration, rather than feelings about the state of being rejected. It makes sense that someone who is chronically rejected would also feel less competent in areas of social acceptance.

Personality was also included to see how it related to chronic rejection. In the college student sample, chronic rejection was positively related to neuroticism and negatively related to extraversion. Personality influences social interactions, and vice versa. It is not necessarily true that people low in extraversion or high in neuroticism would be rejected or high in chronic rejection, but it does make sense that people who are high in chronic rejection would be less extraverted or more neurotic. Rejected people have fewer opportunities to practice positive social

interactions and so might be more withdrawn, or more introverted, and be more prone towards negative emotions as a result.

Finally, a measure of trait empathy was included to see how it related to chronic rejection. Peer relations researchers have found that sociometrically rejected youth tend to be lower in empathy than their sociometrically accepted peers (Newcomb, Bukowski, & Pattee, 1993; Pakaslahti, Karjalainen, & Keltikangas-Järvinen, 2002). Laboratory manipulations of rejection experiences have been found to decrease situational empathy (Twenge et al., 2007). For college students, trait-level distress was the only subscale significantly correlated with chronic rejection. For adolescents, none of the trait level empathy measures were related to chronic rejection, but situational distress and situational perspective taking were related to chronic rejection. The implications of this finding are discussed below.

Overall, the Chronic Rejection Measure correlates in expected ways with other measures relevant to social interactions. Future research should examine how the measure is related to sociometric peer rejection. The measure may be particularly helpful in future peer relationship studies because this self-report measure is more feasible to include in a study than conducting sociometrics. Additionally, the CRM measures the subjective experience of rejection and how long they have felt this way, which may be more related to adjustment than peer reports of rejection. Ultimately, the CRM will be a helpful tool in examining the effects of chronic rejection when peer reports are not feasible.

Chronic Rejection Differences in Empathy

Using the newly developed measure of chronic rejection, a second major goal of the study was to examine how it predicted empathy for rejected others and prosocial behavior toward the rejectee. Chronic rejection did not predict prosocial behavior or aggressive behavior in our

study. This non-significant effect is interesting, given that in peer relations research, rejected youth are typically described as not being prosocial (e.g., Caprara, Barbaranelli, Pastorelli, Bandura, & Zimbardo, 2000; Newcomb et al., 1993). Also, research with adults has found that experimentally rejected participants are significantly less likely to be prosocial than accepted participants (Twenge et al., 2007). However, the adolescents in this study were not any more or less prosocial based on their chronic rejection status. Previous research with children has examined this question using peer nominations and teacher reports to assess prosocial behavior. Perhaps these peer and teacher reports are colored by the peer group's liking of this child or rejected children may act in prosocial ways that these parties do not observe.

Peer relations research has found that rejected youth (as classified by their peers) are lower in trait empathy than their accepted and well-liked peers (Caprara et al., 2000; Newcomb et al., 1993). In this study, rejection history, as measured by the CRM, was not related to trait empathy levels. However, as stated above, chronic rejection was positively related to situational distress and situational perspective taking. This suggests that people who have experienced chronic rejection are higher in negative emotions in response to hardship (distress), which is supported by the positive relationship between the CRM and neuroticism in the college population. The relationship to situational perspective taking suggests that identification may play a large role in empathizing after rejection.

It is noteworthy that chronic rejection was related to situational perspective taking and distress but did not relate to prosocial/aggressive behavior. It may be that chronically rejected youth are more likely to be distressed and take the perspective of a rejected peer, but they do not feel efficacious to act on that person's behalf. Wentzel and McNamara (1999) have argued that one reason that rejected youth are less prosocial is that they have fewer opportunities to practice

prosocial behavior with peers. If they have fewer opportunities, this could negatively affect their feelings of prosocial efficacy. Additionally, if they do not feel that their behavior would be accepted or influential, they may not act at all. This may be why rejected youth are rated as less prosocial by peers and teachers. Additionally, previous research has suggested that personal distress is negatively related to prosocial behavior (Eisenberg et al., 1989). Since chronic rejection was related to higher levels of situational distress, perhaps this distress may have inhibited prosocial behavior.

It is even more interesting to consider that chronic rejection was unrelated to prosocial behavior because the prosocial opportunities were in this study were offered and were relatively low in cost. The structured nature of this exercise gave them an opportunity to do something specific, took little effort, and was not socially risky. Additionally, the adolescents had no expectations of meeting the participants of the game they watched. There was no reason to believe that they would ever receive feedback on their prosocial behavior, or lack thereof. Clearly, more research is needed to understand why chronic rejection was linked to higher empathy but not more prosocial behavior.

Chronic Rejection and Situational Rejection

We also explored how chronic rejection interacted with condition to affect empathy and prosocial behavior. We hypothesized that rejection would exacerbate the effect of chronic rejection on empathy and prosocial behavior, leading to a decrease in both. There was not a significant interaction for prosocial behavior or aggressive behavior, but condition and chronic rejection did interact to predict situational concern. Chronic rejection was positively related to concern when people had just been rejected. For accepted participants, their chronic rejection was not related to their situational concern. Again, this suggests that empathy after rejection may

be positively affected by identification but negatively affected by emotional dysregulation. The adolescents who were rejected but did not report chronic rejection were the least empathic, suggesting that their emotions after rejection may have interfered with their concern for the rejectee. However, those that were chronically rejected and rejected experimentally reported levels of concern towards a participant that had been accepted.

It is interesting that the interaction between rejection condition and chronic rejection did not have an effect on other aspects of empathy. Previous research looking at empathy after rejection, or any other stressful event, has focused on empathic concern as descriptive of all empathy (e.g., DeWall & Baumeister, 2006; Twenge et al., 2007). It is possible that concern is the simplest definition for the overall concept of empathy, since it includes components of affective perspective taking and with emotion regulation, so as not to lead to distress. It is also possible that situational distress as measured in this study was too complicated for adolescents to comprehend. The words that adolescents rated to indicate distress were at a Grade 7 reading level and included words like “distressed,” “disturbed,” and “alarmed.” Anecdotally, it seemed as if some had trouble understanding these terms. Future research should perhaps make this assessment simpler.

Another possibility is that empathy processes may work in unique ways during the developmental period of adolescence. As described earlier, empathy develops gradually, starting with emotional contagion in infancy. It may be that the components of empathy work differently in adolescence when empathic capacities are still developing. Further research is needed to examine these effects.

Identification

Identification questions were included in the procedure to examine whether adolescents would express their similarity to the person in the video and to see whether this identification was related to empathy and prosocial behavior. We found that identification significantly differed based on rejection condition, such that people who had been rejected felt more similar to the rejectee. Additionally, there was moderate evidence that higher trait levels of concern and perspective taking were related to more identification, suggesting that people who typically find themselves thinking about someone else's situation were better able to find similarities between themselves and a unfamiliar peer.

Identification was also related to situational empathy; a positive correlation indicates that identification may play a role in how much one empathizes. These analyses are line with research on adults that finds that identification increases empathy (for a review, see Preston & DeWaal, 2002). Future research should examine this in detail, specifically to investigate other mechanisms of increasing identification in participants. In social psychology, participants have increased empathy and prosocial behavior towards strangers when told that they are on the same arbitrary team or group (i.e., the team has no purpose for the activity) (e.g., Brewer, 1979) or by making existing group identities more salient (i.e., fans of the same team: Levine, Prosser, & Evans, 2005; going to the same university: Batson et al., 1997). Perhaps similar methods could be used with adolescents to increase identification and thus empathy and prosocial behavior.

Research has shown that peer intervention can effectively end a bullying or victimization episode (Sainio, Veenstra, Huitsing, & Salmivalli, 2011). It is possible that the frequency of peer intervention could be increased through empathy training, identification, or increasing self-efficacy. The current study found that experimentally rejected adolescents were more prosocial to the rejectee than experimentally accepted adolescents, and that identification explained this

association. Additionally, chronic rejection was related to more perspective taking, and identification partially explained this association. It is possible that interventions designed to increase identification amongst peers may be instrumental in changing how youth respond to the negative interpersonal interactions of their peers. Perhaps we could encourage prosocial behavior toward victimized youth through getting peers to identify with them.

Empathy and Prosocial Behavior

The study also compared how trait and situational empathy were related to prosocial behavior toward a rejected other. Situational concern and perspective taking were positively correlated with the level of prosocial messages sent to the rejected peer, suggesting that the more empathy people felt towards the peer, the more prosocial messages they sent. When comparing the strength of the relationship between situational empathy and trait empathy with prosocial/aggressive behavior, situational empathy was more strongly related to aggressive messages to the rejecters and the amount of money given to the rejectee than was trait empathy. However, trait perspective taking was more correlated with being prosocial towards the rejecters. Findings support the idea that situational empathy is important to consider when understanding prosocial behavior. Researchers should not only rely on measures of trait empathy.

The fact that situational empathy was more related to aggressive behavior is also interesting. Aggressive behavior is more socially risky than prosocial behavior. There is a concept known as “altruistic punishment,” which is when people suffer a negative stimulus to punish non-cooperators (Fowler, 2005). Perhaps adolescents are willing to take the social risk to punish the rejecters. Additionally, adolescents may use situational interpretations (such as situational concern and perspective taking) to guide behavior more than their more stable personality characteristics like trait empathy.

Sex Differences

Previous research has found differences between male and female adolescents in trait levels of empathy. It was not clear whether boys and girls would differ in situational empathy levels. In line with previous research, girls in this study scored higher than the boys on trait empathy. There were not, however, sex differences in situational empathy. Thus, although boys do not describe themselves as being as empathetic as girls, they are similarly likely to empathize with others within a rejection situation. Perhaps, the sex differences that people have found using trait measures of empathy do not appear if you measure empathy in vivo. Future research should replicate this finding and consider what it means for the validity of trait measures of empathy.

There were also significant differences in the messages written by male and female adolescents. Girls wrote longer messages than boys and they tried to “help” the rejecters by teaching them what was appropriate in this type of situation. Girls also wrote more aggressive messages to the rejecters than did boys. This finding is surprising given that boys are more overtly aggressive than girls, but there are not sex differences in the use of indirect aggression (Card, Stucky, Sawalani, & Little, 2008). It is possible that the difference could be because of sex-typed behaviors. First, girls are encouraged to express their emotions more than boys, who are more likely to be encouraged to suppress their emotions (for a review, see Chaplin & Aldao, 2013). However, there was not a difference in the amount of anger and sadness boys and girls indicated after their rejection experience or in the anger or sadness they attributed to the rejectee. Still, perhaps the girls were acting on their emotions, while boys were not. Another possibility is that girls may be more predisposed to aggression under certain circumstances. Additionally, the type of provocation can affect the magnitude of sex differences in aggression (Bettencourt &

Miller, 1996). Perhaps, girls feel that retaliation is more justified for rejection than do boys. Future research should look into these sex differences in more detail.

Limitations and Future Directions

Overall, there were a few limitations in this study. Though a sample size of 100 was proposed, it is probable that the sample was too small to find significant smaller effects. Using the effect sizes from this data set, we will be better able to complete power analyses for similar projects in the future. Caution should be used in interpreting the results of the multivariate analyses, since the omnibus test was sometimes not significant.

Additionally, there may be issues with generalizability as the sample was mostly white and came from middle class backgrounds. Efforts were made to collect data with a more racially and economically diverse sample, but some of this data had to be removed due to intermittent internet signal losses and because data were collected after-school when adolescents had a difficult time attending to the study tasks. It may be that the typical ways that we structure studies for adolescents may not work for low income or traditionally disenfranchised groups. We need to do more to recruit underrepresented populations and make research studies accessible and pleasant for youth. For instance, materials should be at an easy reading level or adolescents should be able to listen to questions via headphones. There seems to be a cultural mismatch of what researchers expect from adolescent participants and what they want to do. Recruitment of underrepresented populations is necessary, and this is an ethical issue to consider when conducting future research.

One of the theoretical bases for this research was the Social Information Processing model (Crick & Dodge, 1994; Lemerise & Arsenio, 2000). Though the research described here mostly focused on the database and the behavior components of the SIP model, several of the

components should be examined in more detail. For example, we had adolescents send messages to the players in the game they watched and distribute a sum of money. It is unclear what their goals for their behaviors might have been, and how their interpretations of the situation might have influenced these goals and their behaviors. Might adolescents who are high in chronic rejection have different goals in situations like this compared to their accepted peers? Future research should examine the interpretations adolescents make of the rejection situation, what goals they have, and how that is related to their eventual empathy and behavior. Identification levels should also be examined as a possible attribution that adolescents make about interpersonal interactions and considered as a factor that might influence goals in a situation, as well as behavior.

In conclusion, the study found that chronic rejection was related to situational empathy for others who had been rejected, but it did not predict prosocial behavior. It will be important for future studies to understand why there is a disconnect between empathy and prosocial behavior for youth who have suffered through chronic rejection. We suggest that this research consider how chronic rejection affects feelings of self-efficacy around prosocial behavior. The study also found that being experimentally rejected influenced behavior but not empathy. Perhaps all adolescents empathize with rejected others to the same extent, but only those who have just experienced the same harsh treatment are motivated enough to act on the behalf of a rejected other. It will be important for future studies to examine motivation after rejection, as well as whether empathy predicts prosocial behavior. Overall, more research is needed to investigate the effects of rejection and empathy in adolescence. This is an important developmental period for identity, emotion regulation, and social cognition. Thus, it is a

developmentally significant period for understanding both general empathic processes, as well as situational empathy, and prosocial behaviors.

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TABLES

TABLE 1

Summary of Confirmatory Factor Analysis for Items of the Chronic Rejection Measure

Item	Standardized Estimates	
	College Sample (N = 544)	Adolescent Sample (N = 101)
Popular*Time	0.700	0.630
Play by Self*Time	0.429	0.393
Never Invited*Time	0.691	0.681
Outside of Class*Time	0.633	0.626
Not fun to be with*Time	0.777	0.629
Sit with at lunch*Time	0.789	0.672
Group Activities*Time	0.798	0.811
Dislike*Time	0.801	0.843
Don't Care*Time	0.790	0.797
Leader*Time	0.481	0.641
Not Part of a Group*Time	0.805	0.780
Model Fit Information		
Chi-Square Value (df)	247.77 (44)	93.469 (44)
RMSEA	0.091	0.106
CFI	0.939	0.911
SRMR	0.034	0.053

Note. All estimates are significant at a $p < .01$ level.

TABLE 2

Correlations between the CRM & Other Measures in a College Sample

Measure/Subscale	Pearson's <i>r</i> (with CRM)
IRI: Perspective Taking	-.003
IRI: Concern	-.023
IRI: Distress	.161**
IRI: Fantasy	.131**
Overt Aggression	.049
Relational Aggression	.081
SAS-A: Fear of Negative Evaluation	.382**
SAS-A: Social Anxiety - New	.470**
SAS-A: Social Anxiety - General	.509**
BDI	.351**
RSQ: Anger	.066
RSQ: Anxiety	.363**
RSQ: Expectation Rejection	.319**
Harter: Social Acceptance	-.227**
Big Five: Extraversion	-.183**
Big Five: Agreeable	-.059
Big Five: Conscientiousness	-.069
Big Five: Neuroticism	.152**
Big Five: Openness	-.047

Note. IRI = Interpersonal Reactivity Inventory; SAS-A = Social Anxiety Scale for Adolescents; BDI = Beck Depression Inventory; RSQ = Rejection Sensitivity Questionnaire. All correlations: * $p < .05$, ** $p < .01$

TABLE 3

Descriptive Statistics for All Major Measures

Measure	<i>M (SD)</i>	Skewness (SE)	Kurtosis (SE)	Min	Max.
Chronic Rejection	-375.56 (327.35)	.350 (.240)	-.110 (.476)	-1000	458
IRI - PT	3.00 (0.74)	.323 (.240)	.845 (.476)	1	5
IRI - Concern	3.73 (0.71)	-.816 (.240)	1.665 (.476)	1	5
IRI - Distress	2.78 (0.83)	-.024 (.240)	-.464 (.476)	1	5
IRI - Fantasy	3.37 (0.94)	-.196 (.240)	-.471 (.476)	1	5
POMS - Anger (self)	10.53 (5.25)	.798 (.240)	-.119 (.476)	4	25
POMS - Sadness (self)	11.60 (6.55)	1.05 (.240)	-.043 (.476)	5	30
POMS - Anger (other)	14.04 (5.31)	.404 (.240)	-.531 (.476)	5	25
POMS - Sadness (other)	18.72 (6.59)	-.114 (.240)	-.779 (.476)	6	30
Situational Concern	16.81 (7.47)	.001 (.240)	-1.112 (.476)	4	30
Situational PT	19.36 (3.57)	-.821 (.240)	.769 (.476)	9	25
Situational Distress	13.51 (7.29)	.748 (.240)	-.636 (.476)	6	30
Post- Cyberball Needs: Esteem (self)	13.68 (6.03)	.166 (.240)	-1.147 (.476)	4	25
Post- Cyberball Needs: Meaning (self)	13.84 (6.66)	-.052 (.240)	-1.464 (.476)	4	25
Post- Cyberball Needs: Control (self)	11.68 (5.62)	.579 (.240)	-.599 (.476)	5	25
Post- Cyberball Needs: Belonging (self)	13.72 (4.27)	.059 (.240)	-1.267 (.476)	5	21
Post- Cyberball Needs: Esteem (other)	8.57 (3.41)	2.198 (.240)	6.781 (.476)	4	25
Post- Cyberball Needs: Control (Other)	11.20 (2.58)	-.476 (.240)	.058 (.476)	5	17
Post- Cyberball Needs: Belonging (other)	14.90 (3.16)	-1.131 (.240)	1.376 (.476)	5	21
Post- Cyberball Needs: Meaning (Other)	9.67 (3.68)	.136 (.240)	-1.349 (.476)	5	16
Money to Rejectee	17.71 (7.02)	.313 (.240)	-.845 (.476)	0	30
Money to Rejecters	6.14 (3.51)	-.313 (.240)	-.845 (.476)	0	15
Message - Prosocial to Rejectee	8.39 (3.24)	-.049 (.240)	-.821 (.476)	3	15
Message - Prosocial to Rejecters	4.91 (1.36)	1.60 (.240)	1.67 (.476)	4	9.33
Message - Help to Rejecters	5.12 (1.90)	-.053 (.240)	-.945 (.476)	2	9.5
Message - Aggression to Rejecters	6.50 (2.08)	.927 (.240)	-.263 (.476)	4	11.67
Message - Encouraged Aggression	1.40 (0.73)	1.98 (.240)	3.11 (.476)	1	4.33

Note. N = 101. PT = Perspective Taking.

TABLE 4

Rejection Manipulation Check Mean Differences

Item	<i>M (SD)</i>		<i>F (1, 99)</i>
	Rejected (<i>n</i> = 52)	Accepted (<i>n</i> = 49)	
Percent Throws	5.04 (8.09)	31.86 (12.16)	172.20**
“I felt excluded.”	4.29 (1.35)	1.92 (1.22)	105.12**
“I felt ignored.”	4.21 (1.40)	1.80 (0.89)	85.37**
POMS – Anger	12.98 (5.26)	7.94 (3.83)	29.98**
POMS – Sadness	14.98 (7.04)	8.02 (3.37)	39.39**
Post-Cyberball Needs: Esteem	10.21 (5.07)	17.37 (4.64)	54.51**
Post-Cyberball Needs: Meaning	9.06 (5.16)	18.92 (3.67)	122.49**
Post-Cyberball Needs: Control	8.11 (3.99)	15.47 (4.51)	75.39**
Post-Cyberball Needs: Belonging	10.48 (2.93)	17.16 (2.35)	158.95**

Note. *N* = 101. ***p* < .01.

TABLE 5

Within-person Comparison on Treatment of Rejecters and Rejectees

Item	<i>M (SD)</i>		<i>F</i> (1, 100)
	Rejectee	Rejecters	
Money Distribution	17.71 (7.02)	6.14 (3.51)	121.81**
Prosocial Messages	5.83 (2.26)	4.91 (1.36)	13.30**
Help Messages	2.56 (1.12)	2.56 (0.95)	.0002
Aggressive Messages	1.08 (0.35)	2.17 (0.96)	108.95**
Length of Message	12.14 (9.81)	11.25 (11.28)	1.46

Note. $N = 101$. ** $p < .01$.

TABLE 6

Means, Standard Deviations, and t-Tests Examining Sex Differences

Measure	Boys <i>M (SD)</i>	Girls <i>M (SD)</i>	<i>t</i> (99)
Chronic Rejection	-346.47 (317.07)	-404.07 (337.82)	.883
Trait PT	2.85 (0.71)	3.15 (0.74)	-2.09*
Trait Concern	3.55 (0.71)	3.91 (0.67)	-2.61**
Trait Distress	2.64 (0.82)	2.92 (0.83)	-1.68+
Ignored (self)	2.92 (1.74)	3.16 (1.65)	-.702
Excluded (self)	2.94 (1.82)	3.33 (1.67)	-1.13
Post-Cyberball Needs: Esteem (self)	14.72 (6.02)	12.67 (5.93)	1.73+
Post-Cyberball Needs: Meaning (self)	14.52 (7.08)	13.18 (6.21)	1.01
Post-Cyberball Needs: Control (self)	12.48 (5.24)	10.90 (5.91)	1.41
Post-Cyberball Needs: Belonging (self)	14.28 (4.11)	13.18 (4.40)	1.30
POMS: Anger (self)	10.24 (5.56)	10.82 (4.97)	-.556
POMS: Sadness (self)	11.72 (6.85)	11.49 (6.31)	.175
Excluded (other)	4.22 (1.25)	4.33 (1.18)	-.436
Ignored (other)	4.32 (1.04)	4.38 (0.99)	-.296
POMS: Anger (other)	13.4 (4.84)	14.67 (5.71)	-1.20
POMS: Sadness (other)	18.82 (6.94)	18.63 (6.29)	.146
Post- Cyberball Needs: Esteem (other)	8.64 (4.19)	8.51 (2.45)	.191
Post- Cyberball Needs: Meaning (other)	9.84 (3.88)	9.51 (3.51)	.449
Post- Cyberball Needs: Control (other)	11.72 (2.52)	10.69 (2.56)	2.04*
Post- Cyberball Needs: Belonging (other)	15.02 (3.38)	14.78 (2.96)	.373
Situational Distress	13.94 (7.31)	13.10 (7.34)	.578
Situational Concern	15.94 (7.47)	17.67 (7.45)	-1.16
Situational PT	19.20 (3.71)	19.51 (3.46)	-.434
Messages: Prosocial Rejecters	4.96 (1.23)	4.87 (1.49)	.319
Messages: Help Rejecters	2.30 (0.90)	2.81 (0.94)	-2.74**
Messages: Aggression towards Rejecters	2.18 (1.01)	2.17 (0.91)	.437
Messages: Number of Words (Avg.)	8.57 (6.77)	14.46 (12.12)	-3.01**
Messages: Prosocial Rejectee	7.56 (2.98)	9.21 (3.30)	-2.65**
Messages: Encouraged Aggression	1.23 (0.51)	1.57 (0.86)	-2.45*
Money to the Rejectee	18.42 (7.92)	17.02 (6.02)	1.00
Money to Rejecters	5.79 (3.96)	6.49 (3.01)	-1.00

Note. ** $p < .01$, * $p < .05$, + $p < .10$. Controlling for length of message negates the significant sex difference for helpful messages to the rejecters and prosocial messages to the rejectee.

Controlling for the length of the message made sex a marginally significant predictor for messages of encouraged aggression, but sex was still a better predictor than message length.

TABLE 7

Correlations of Empathy and Prosocial/Aggressive Behaviors

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Trait Concern	1											
2. Trait Distress	-.204*	1										
3. Trait PT	.619**	-.314**	1									
4. Situational Concern	.406**	-.140	.342**	1								
5. Situational Distress	.110	.159	.107	.454**	1							
6. Situational PT	.347**	.099	.344**	.440**	.374**	1						
7. Money to Rejectee	.225*	.029	-.071	.211*	.124	.122	1					
8. Prosocial to Rejecters	.015	-.076	.169	-.161	-.116	-.036	-.382**	1				
9. Help to Rejecters	.057	.001	.046	-.046	-.138	.012	-.093	.296**	1			
10. Prosocial Rejectee	.219*	-.106	.226*	.264**	.062	.294**	.112	.087	.434**	1		
11. Aggression to Rejecters	.058	.122	.012	.379**	.363**	.308**	.355**	-.418**	-.291**	.274**	1	
12. Encouraged Aggression	.318**	.247*	.195*	.216*	.153	.190+	.092	-.071	.072	.258**	.273**	1
13. Chronic Rejection	.061	-.001	.014	.176+	.229*	.334**	.001	.026	.020	.158	.197*	-.046

Note. $N = 101$. ** $p < .01$, * $p < .05$, + $p < .10$.

TABLE 8

Correlation Comparisons for Prosocial and Aggressive Behavior with Situational and Trait Empathy

Z-Score from Comparison	Concern	Distress	PT
Money to Rejectee	-.125	.729	1.674*
Prosocial Rejecters	-1.528	-.307	-1.783*
Help Rejecters	-.89	-1.066	-.294
Prosocial Rejectee	0.404	1.286+	.616
Aggression Rejecters	2.894**	1.934*	2.625**
Encouraged Aggression	-.926	-.739	-.044

Note. N = 101. ** $p < .01$, * $p < .05$, + $p < .10$. All comparisons were done situational → trait. Thus negative numbers indicate a stronger correlation for trait empathy. PT = Perspective Taking.

TABLE 9

Multivariate Effects and Standardized Regression Coefficients from Univariate Analyses Examining the Effects of Chronic Rejection on Situational Empathy

	Multivariate Test		Univariate Results: β		
	Value	$F(3, 94)$	Situational Concern	Situational Distress	Situational PT
Chronic Rejection	.872	4.579**	.158+	.218*	.316**
Trait Concern	.923	2.608+	.296*	.067	.195+
Trait Perspective Taking	.955	1.486	.151	.077	.224*
Sex (Boys)	.991	.290	.047	-.143	-.048

Note. ** $p < .01$, * $p < .05$, + $p < .10$. For the multivariate test, the statistic presented is Wilks' Lambda.

TABLE 10

*Multivariate Effects and Standardized Regression Coefficients from Univariate Analyses
Examining the Effects of Chronic Rejection on Prosocial Behavior*

	Multivariate Test		Univariate Results: β			
	Value	$F(4, 93)$	Money to Rejectee	Prosocial Message to Rejecters	Help Message to Rejecters	Prosocial Message to Rejectee
Chronic Rejection	.962	.927	-.037	.027	.046	.173+
Trait Concern	.865	3.631**	.471**	-.137	-.014	.067
Trait Perspective	.886	2.982*	-.330**	.263*	-.002	.136
Taking Sex (Boys)	.856	3.912**	-.309	-.097	.545**	.453*

Note. ** $p < .01$, * $p < .05$. For the multivariate test, the statistic presented is Wilks' Lambda.

TABLE 11

Multivariate Effects and Standardized Regression Coefficients from Univariate Analyses Examining the Effects of Chronic Rejection on Aggressive Behavior

	Multivariate Test		Univariate Results: β	
	Value	$F(2, 95)$	Aggression towards Rejecters	Encouraged Aggression
Chronic Rejection	.951	2.463+	.194+	-.049
Trait Concern	.945	2.763+	.066	.290*
Trait Perspective Taking	.999	.034	-.032	-.018
Sex (Boys)	.970	1.480	.008	.328+

Note. ** $p < .01$, * $p < .05$, + $p < .10$. For the multivariate test, the statistic presented is Wilks' Lambda.

TABLE 12

Means, Standard Deviations, and t-Tests Examining Condition Differences

Variable	<i>M</i> (SD)		<i>t</i> (99)
	Rejected	Accepted	
Chronic Rejection	-337.83 (353.61)	-415.6 (295.32)	1.19
Ignored (self)	4.21 (1.40)	1.8 (0.89)	10.25**
Excluded (self)	4.29 (1.35)	1.92 (1.22)	9.24**
Percent Throws (self)	5.04 (8.09)	31.86 (12.16)	13.12**
Esteem (self)	10.21 (5.07)	17.37 (4.64)	7.38**
Meaning (self)	9.06 (5.12)	18.92 (3.67)	11.07**
Control (self)	8.11 (3.99)	15.47 (4.51)	8.68**
Belonging (self)	10.48 (2.93)	17.16 (2.35)	12.61**
Anger (self)	12.98 (5.26)	7.94 (3.83)	5.47**
Sad (self)	14.98 (7.04)	8.02 (3.37)	6.28**
Ignored (other)	4.49 (0.81)	4.2 (1.17)	1.42
Excluded (other)	4.35 (1.18)	4.19 (1.25)	0.6775
Percent Throws (other)	2.68 (3.72)	4.802 (4.32)	2.61**
Situational Distress	12.63 (7.47)	14.45 (7.04)	1.25
Situational Concern	16.02 (7.61)	17.65 (7.32)	1.10
Situational PT	19.67 (3.43)	19.02 (3.72)	0.9165
Anger (other)	13.5 (5.11)	14.61 (5.51)	1.05
Sad (other)	18.21 (6.82)	19.26 (6.36)	0.8019
Esteem (other)	8.44 (3.43)	8.71 (3.41)	0.3987
Meaning (other)	9.11 (3.38)	10.26 (3.92)	1.58
Control (other)	10.46 (2.70)	11.98 (2.22)	3.08**
Belonging (other)	14.75 (3.46)	15.06 (2.84)	0.4919
Average Length of Message	13.05 (11.25)	9.94 (8.86)	1.54
Messages: Prosocial Rejecters	5.21 (1.62)	7.60 (2.93)	2.28**
Messages: Help Rejecters	2.82 (0.98)	2.29 (0.85)	2.89**
Messages: Aggression to Rejecters	2.09 (0.87)	2.26 (1.04)	0.8871
Messages: Prosocial Rejectee	9.14 (3.36)	7.60 (2.93)	2.44*
Messages: Encouraged Aggression	1.41 (0.73)	1.40 (0.72)	0.0707
Identification: Similar Experiences	4.35 (1.20)	2.12 (1.20)	9.30**
Identification: Identified	3.1 (1.57)	2.21 (1.03)	3.31**
Identification: Overlapping Circles	4.85 (2.25)	2.8 (1.63)	5.21**

Note. N = 101; ** $p < .01$; * $p < .05$; PT = perspective taking.

TABLE 13

Multivariate and Univariate Results for the Effect of Condition on Situational Empathy

	Multivariate Test		Univariate Parameter Estimates		
	Value	<i>F</i> (3, 93)	Situational Concern	Situational Distress	Situational PT
Condition	.943	1.868	.273	.243	.041
Trait Concern	.913	2.967*	.327**	.102	.229+
Trait PT	.961	1.273	.150	.075	.220+
Sex (Boys)	.986	.425	-.040	-.216	.005
		Rejected <i>M</i> (<i>SD</i>)	12.63 (7.47)	16.02 (7.61)	19.67 (3.43)
		Accepted <i>M</i> (<i>SD</i>)	14.45 (7.04)	17.65 (7.32)	19.02 (3.72)

Note. ** $p < .01$, * $p < .05$, + $p < .10$. For the multivariate test, the statistic presented is Wilks' Lambda. For the condition variable, rejection is coded as -1 and acceptance is coded as 1.

TABLE 14

Multivariate and Univariate Results for the Effect of Condition on Prosocial Behavior

	Multivariate Test		Univariate Parameter Estimates			
	Value	<i>F</i> (4, 93)	Money to Rejectee	Prosocial Message to Rejecters	Help Message to Rejecters	Prosocial Message to Rejectee
Condition	.867	3.532**	.351+	-.438*	-.532**	-.403*
Trait Concern	.854	3.951**	.483**	-.155	-.034	.066
Trait PT	.889	2.921*	-.321**	.253*	-.015	.122
Sex (Boys)	.858	3.747**	-.288	-.119	.516**	.400*
		Rejected <i>M</i> (<i>SD</i>)	16.63 (6.99)	5.21 (1.62)	2.82 (0.98)	9.14 (3.36)
		Accepted <i>M</i> (<i>SD</i>)	18.86 (6.94)	4.60 (0.95)	2.29 (0.85)	7.60 (2.93)

Note. ** $p < .01$, * $p < .05$, + $p < .10$. For the multivariate test, the statistic presented is Wilks' Lambda. For the condition variable, rejection is coded as -1 and acceptance is coded as 1.

TABLE 15

Multivariate and Univariate Results for the Effect of Condition on Aggressive Behavior

	Multivariate Test		Univariate Parameter Estimates	
	Value	<i>F</i> (2, 95)	Aggressive Message to Rejecters	Encouraged Aggression
Condition	.991	.455	.192	.082
Trait Concern	.946	2.723+	.095	.289*
Trait PT	.999	.035	-.034	-.015
Sex (Boys)	.965	1.699	-.027	.342+
		Rejected <i>M</i> (<i>SD</i>)	2.09 (0.87)	1.41 (0.73)
		Accepted <i>M</i> (<i>SD</i>)	2.26 (1.04)	1.40 (0.72)

Note. ** $p < .01$, * $p < .05$, + $p < .10$. For the multivariate test, the statistic presented is Wilks' Lambda. For the condition variable, rejection is coded as -1 and acceptance is coded as 1.

TABLE 16

Multivariate and Univariate Results for the Effect of the Interaction between Condition and Chronic Rejection on Situational Empathy

	Multivariate Test		Univariate Parameter Estimates		
	Value	<i>F</i> (3, 92)	Situational Concern	Situational Distress	Situational PT
Condition	.938	2.022	.378*	.335+	-.011
Chronic Rejection	.872	4.487**	-.001	.207	.361*
Interaction	.963	1.170	-.300	-.050	.074
Trait Concern	.918	2.738*	.307**	.079	.196+
Trait PT	.951	1.570	.191+	.090	.216+
Sex (Boys)	.992	.260	.054	-.128	-.046

Note. ** $p < .01$, * $p < .05$, + $p < .10$. For the multivariate test, the statistic presented is Wilks' Lambda. For the condition variable, rejection is coded as -1 and acceptance is coded as 1.

TABLE 17

Multivariate and Univariate Results for the Effect of the Interaction between Condition and Chronic Rejection on Prosocial Behavior

	Multivariate Test		Univariate Parameter Estimates			
	Value	<i>F</i> (4, 91)	Money to Rejectee	Prosocial Message to Rejecters	Help Message to Rejecters	Prosocial Message to Rejectee
Condition	.874	3.269*	-.347+	-.438*	-.523**	-.367+
Chronic Rejection	.971	.674	-.042	-.020	.257+	.162
Interaction	.944	1.352	.042	-.034	.402*	.019
Trait Concern	.854	3.875**	.484**	-.156	-.030	.052
Trait PT	.881	3.070*	-.317**	.256*	-.055	.125
Sex (Boys)	.849	4.060**	.294	-.120	.534**	.435*

Note. ** $p < .01$, * $p < .05$, + $p < .10$. For the multivariate test, the statistic presented is Wilks' Lambda. For the condition variable, rejection is coded as -1 and acceptance is coded as 1.

TABLE 18

Multivariate and Univariate Results for the Effect of the Interaction between Condition and Chronic Rejection on Aggressive Behavior

	Univariate Parameter Estimates			
	Multivariate Test		Aggressive Message to Rejecters	Encouraged Aggression
	Value	<i>F</i> (2, 96)		
Condition	.985	.692	.238	.071
Chronic Rejection	.958	2.054	.063	-.041
Interaction	.985	.730	-.240	.005
Trait Concern	.944	2.742+	.072	.293*
Trait PT	1.00	.009	-.002	-.017
Sex (Boys)	.969	1.472	.011	.332+

Note. ** $p < .01$, * $p < .05$, + $p < .10$. For the multivariate test, the statistic presented is Wilks' Lambda. For the condition variable, rejection is coded as -1 and acceptance is coded as 1.

TABLE 19

Standardized Regression Coefficients for the Moderation Model: Condition, Chronic Rejection, and Situational Concern (from PROCESS macro)

		Situational Concern		
		β	SE	95% CI
Condition		.188	.091	-.0298, .3302
Chronic Rejection		.150	.090	.0101, .3666
Condition x CR		-.152	.093	-.3363, .0329
Trait PT		.193	.114	-.0339, .4197
Trait Concern		.313	.113	.0883, .5378
Sex		.027	.093	-.1568, .2114
	R^2		.258	
	F		6.60	
	p		.01	

Note. ** $p < .01$, * $p < .05$, + $p < .10$. For the condition variable, rejection is coded as -1 and acceptance is coded as 1.

TABLE 20

Standardized Regression Coefficients for the Moderation Model: Condition, Chronic Rejection, and Helpful Messages to Rejecters (from PROCESS macro)

		Helpful Messages to Rejecters		
		β	SE	95% CI
Condition		-.26**	.101	-.464, -.061
Chronic Rejection		.056	.102	-.147, .258
Condition x CR		.199+	.104	-.008, .405
Trait PT		-.05	.129	-.307, .204
Trait Concern		-.03	.135	-.294, .242
Sex		.27**	.098	.074, .462
	R^2		.178	
	F		3.24	
	p		.01	

Note. ** $p < .01$, * $p < .05$, + $p < .10$. For the condition variable, rejection is coded as -1 and acceptance is coded as 1.

TABLE 21

Correlations between Identification, Empathy, and Prosocial/Aggressive Behavior

Item	Identification
Trait PT	.212*
Trait Concern	.244*
Trait Distress	0.099
Situational Distress	0.164+
Situational Concern	0.161+
Situational PT	.499**
Money to Rejectee	0.031
Messages: Prosocial to Rejectee	0.345**
Messages: Prosocial to Rejecters	0.012
Messages: Help to Rejecters	.218*
Messages: Aggression towards Rejecters	0.157
Messages: Encouraged Aggression	0.082
Chronic Rejection	.295**

*Note, *** $p < .01$, * $p < .05$, + $p < .10$. PT = perspective taking.

TABLE 22

Standardized Regression Coefficients for the Mediation Model: Condition, Identification, and Prosocial/Aggressive Behavior (from PROCESS macro)

	Identification			Prosocial to Rejectee		
	β	SE	95% CI	β	SE	95% CI
Condition	-.52**	.08	-.69, -.35	-.08	.12	-.32, .16
Identification				.24*	.12	.003, .47
Trait Perspective Taking	.07	.12	-.17, .30	.11	.16	-.21, .42
Trait Concern	.11	.13	-.14, .36	.04	.14	-.24, .32
Sex	.10	.09	-.07, .30	.18+	.10	-.02, .37
	R^2	.35			.18	
	F	12.68			4.13	
	p	.001			.002	

Note. ** $p < .01$, * $p < .05$, + $p < .10$. For the condition variable, rejection is coded as -1 and acceptance is coded as 1.

TABLE 23

Standardized Regression Coefficients for the Mediation Model: Condition, Identification, Empathy, and Prosocial/Aggressive Behavior (from PROCESS macro)

	Identification			Situational Perspective Taking		
	β	SE	95% CI	β	SE	95% CI
Chronic Rejection	.30**	.09	.11, .49	.19*	.08	.02, .35
Identification				.38**	.08	.22, .55
Trait Perspective Taking	.10	.12	-.14, .34	.19	.13	-.07, .44
Trait Concern	.13	.13	-.12, .38	.15	.13	-.11, .41
Sex	.15+	.09	-.03, .34	-.09	.09	-.26, .09
R^2		.17			.36	
F		5.96			10.70	
p		.001			.001	

Note. ** $p < .01$, * $p < .05$, + $p < .10$. For the condition variable, rejection is coded as -1 and acceptance is coded as 1.

TABLE 24

ANOVA: Effect of Video on Empathy & Prosocial Behavior

Item	<i>F</i>	<i>p</i>
Situational Concern	.872	.570
Situational Perspective Taking	.836	.605
Situational Distress	.953	.495
Money to Rejectee	.872	.570
Prosocial to Rejecters	.787	.653
Help to Rejecters	2.009	.037
Prosocial Rejectee	1.038	.421
Aggression to Rejecters	.736	.701
Encouraged Aggression	2.771	.004

Note. When sex is controlled, the significant effects disappear.

FIGURES

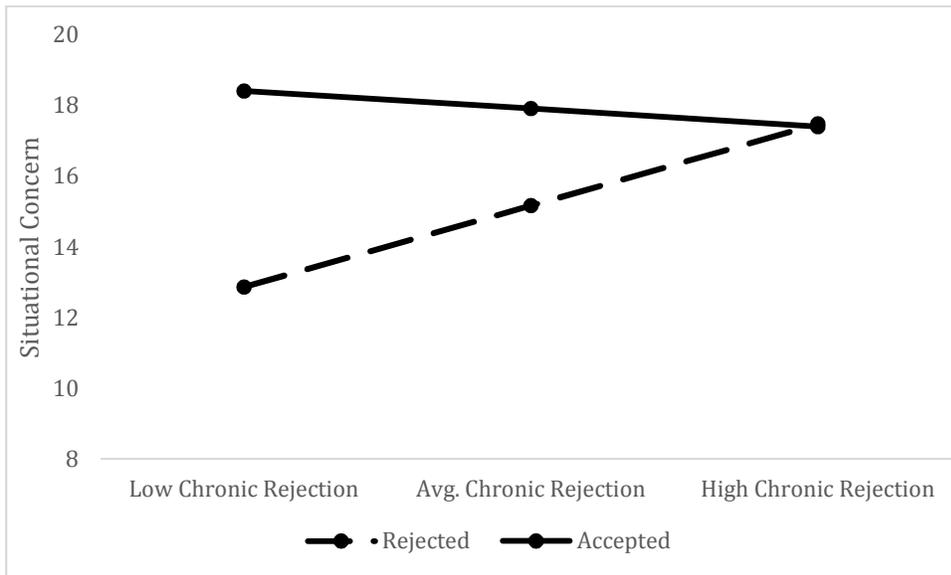


Figure 1. Moderation Model (Chronic Rejection on Condition) for Empathic Concern.

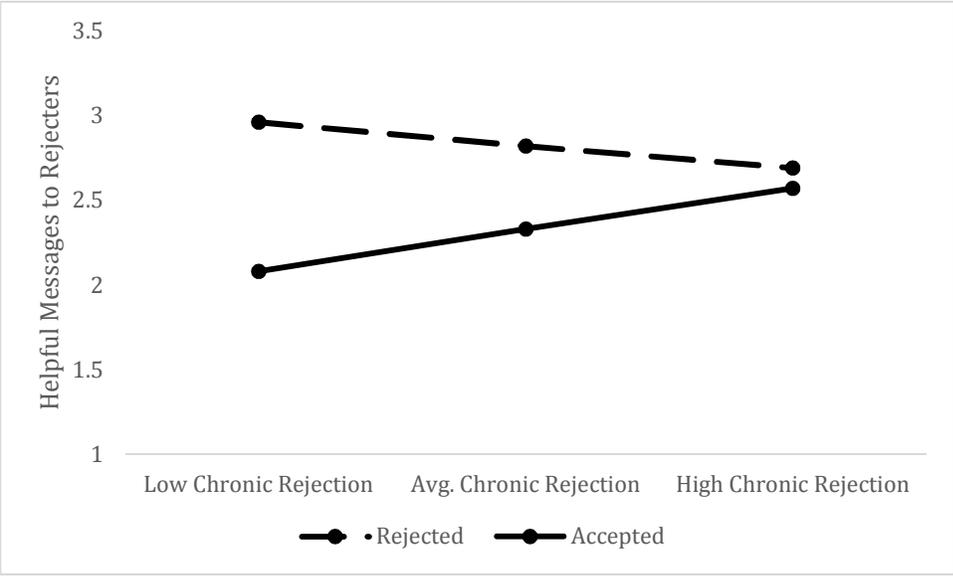


Figure 2. Moderation Model (Chronic Rejection on Condition) for Helpful Messages to Rejecters.

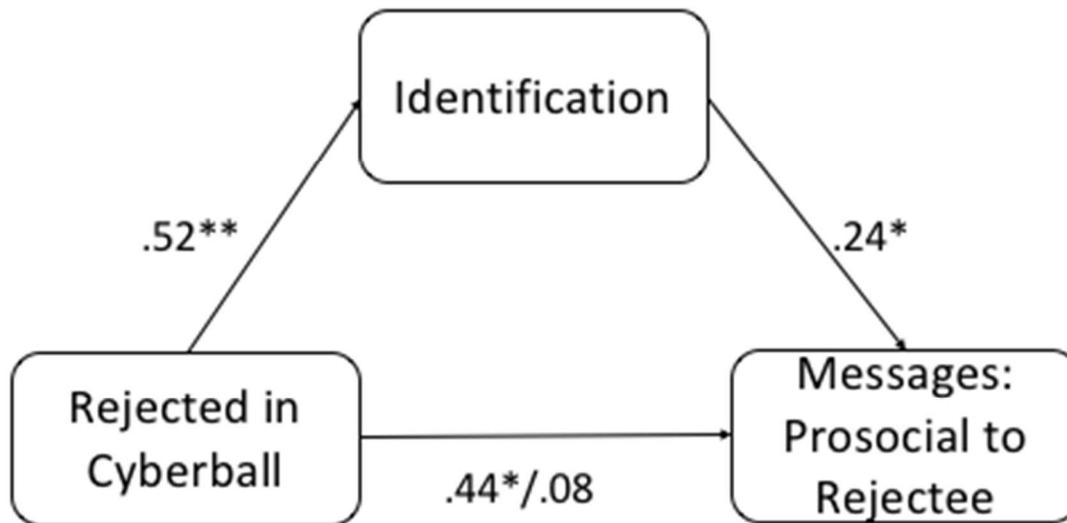


Figure 3. Mediation Model: Rejection Condition, Identification, and Prosocial Messages to the Rejectee.

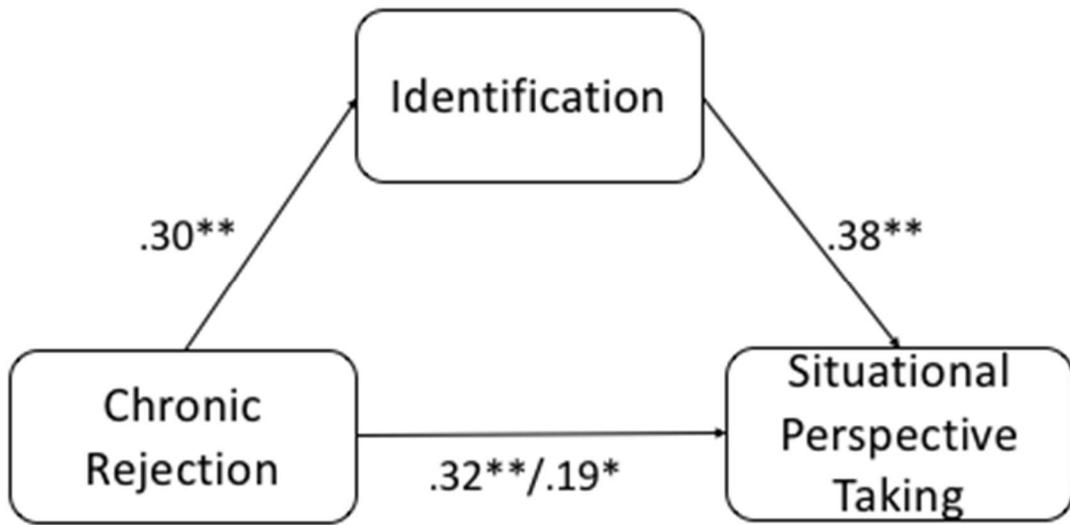


Figure 4. Mediation Model: Chronic Rejection, Identification, and Situational Perspective Taking.

APPENDICES

APPENDIX A

Chronic Rejection Measure

Instructions: We're interested in the way kids treat you at school. The following sentences refer to ways people describe themselves. For each sentence, you will answer two questions.

First, you will make a mark on a line to say how true the statement is of you. So, for the first question (How true is this of you?), you might answer "I ride the bus to school" or you might answer "I do not ride the bus to school," depending on how you get to school.

The second question you will answer is how long this situation has been this way. So, if you've ridden the bus for as long as you can remember, you would answer "a very long time." But if you only started riding the bus this year, you might answer "not long at all."

You can mark anywhere on the line you want – you don't have to only use the ends of the line. So, if you think the question is kinda like you, you might mark somewhere in the middle.

Let's practice before we get started. These 3 questions describe a certain activities and we want to know how much you do this and how long you have been doing this.

(a) How true is this of you **currently** (now)?

I'm not very good at video games.

I'm really good at video games.

How long has it been this way?

Not long at all

A very long time

(b) How true is this of you **currently** (now)?

People don't laugh at my jokes.

When I tell a joke, people laugh and say I'm funny.

How long has it been this way?

Not long at all

A very long time

(c) How true is this of you **currently** (now)?

I don't like pizza.	I really like pizza.
------------------------	-------------------------

How long has it been this way?

Not long at all

A very long time

Those questions were just for practice. Do you understand how to respond to the questions? If you don't have any questions, you may complete the questions below. Make sure to ask the researcher if you do have any questions.

1. How true is this of you **currently** (now)?

I'm not popular with others my age at all.	I'm really popular with others my age.
---	---

How long has it been this way?

Not long at all

A very long time

2. How true is this of you **currently** (now)?

I'm really not good at sports.	I am really good at sports.
-----------------------------------	--------------------------------

How long has it been this way?

Not long at all

A very long time

3. How true is this of you **currently** (now)?

I often play by myself.	I never play by myself.
----------------------------	----------------------------

How long has it been this way?

Not long at all

A very long time

4. How true is this of you **currently** (now)?

Kids in my class never
invite me to parties.

Kids in my class
always invite me to
parties.

How long has it been this way?

Not long at all

A very long time

5. How true is this of you **currently** (now)?

I am really bad
at telling stories.

I am really good
at telling stories.

How long has it been this way?

Not long at all

A very long time

6. How true is this of you **currently** (now)?

I never do things
outside of school with
kids from my class.

I do things outside of
school with kids from
my class all the time.

How long has it been this way?

Not long at all

A very long time

7. How true is this of you **currently** (now)?

Other kids don't think
I'm fun to be with at all.

Other kids think I'm
really fun to be with.

How long has it been this way?

Not long at all

A very long time

8. How true is this of you **currently** (now)?

I do not enjoy
reading books at all.

I really enjoy
reading books.

How long has it been this way?

Not long at all

A very long time

9. How true is this of you **currently** (now)?

I can never find a group of kids to hang out with at school or sit with at lunch.

I can always find a group of kids to hang out with at school or sit with at lunch.

How long has it been this way?

Not long at all

A very long time

10. How true is this of you **currently** (now)?

I am always left out of group activities.

I am never left out of group activities.

How long has it been this way?

Not long at all

A very long time

11. How true is this of you **currently** (now)?

I never get along with my siblings.

I always get along well with my siblings.

How long has it been this way?

Not long at all

A very long time

12. How true is this of you **currently** (now)?

I never like to do nice things for people.

I always like to do nice things for people.

How long has it been this way?

Not long at all

A very long time

13. How true is this of you **currently** (now)?

I always get bad grades.

I always get good grades.

How long has it been this way?

Not long at all

A very long time

14. How true is this of you **currently** (now)?

Other kids don't like me at all.

Other kids like me a lot.

How long has it been this way?

Not long at all

A very long time

15. How true is this of you **currently** (now)?

I never get along with my parents.

I always get along well with my parents.

How long has it been this way?

Not long at all

A very long time

16. How true is this of you **currently** (now)?

Other kids don't care about me at all.

Other kids care about me a lot.

How long has it been this way?

Not long at all

A very long time

17. How true is this of you **currently** (now)?

I am never
picked to be a
leader of a
group.

I am always
picked to be the
leader of a
group.

How long has it been this way?

Not long at all

A very long time

18. How true is this of you **currently** (now)?

I never feel like
I'm part of a
group.

I always feel like
I'm a part of a
group.

How long has it been this way?

Not long at all

A very long time

APPENDIX B

Interpersonal Reactivity Index

The following statements inquire about your thoughts and feelings in a variety of situations. For each item, indicate how well it describes you by choosing the appropriate letter on the scale at the top of the page: A, B, C, D, or E. When you have decided on your answer, fill in the letter next to the item number. READ EACH ITEM CAREFULLY BEFORE RESPONDING. Answer as honestly as you can. Thank you.

ANSWER SCALE:

A	B	C	D	E
Not at all like me	A little like me	Moderate	Quite a bit like me	Extremely like me

1. I daydream and fantasize, a lot of the time, about things that might happen to me. (FS)
2. I often have kind, concerned feelings for people less fortunate than me. (EC)
3. I sometimes find it difficult to see things from the "other guy's" point of view. (PT) (-)
4. Sometimes I don't feel very sorry for other people when they are having problems. (EC) (-)
5. I really get involved with the feelings of the characters in a book or story. (FS)
6. In emergency situations, I feel anxious and uncomfortable. (PD)
7. I am usually neutral when I watch a movie or play, and I don't often get completely caught up in it. (FS) (-)
8. I try to look at everybody's side of an argument before I make a decision. (PT)
9. When I see someone being taken advantage of, I feel kind of protective towards them. (EC)
10. I sometimes feel helpless when I am in the middle of a very emotional situation. (PD)
11. I sometimes try to understand my friends better by imagining how things look from their perspective. (PT)

12. Becoming extremely involved in a good book or movie is rare for me. (FS) (-)
13. When I see someone get hurt, I tend to remain calm. (PD) (-)
14. Other people's problems do not usually disturb me a great deal. (EC) (-)
15. If I'm sure I'm right about something, I don't waste much time listening to other people's arguments. (PT) (-)
16. After seeing a play or movie, I have felt as though I were one of the characters. (FS)
17. Being in a tense emotional situation scares me. (PD)
18. When I see someone being treated unfairly, I sometimes don't feel very much pity for them. (EC) (-)
19. I am usually really good at dealing with emergencies. (PD) (-)
20. Things that I see happen to other people have a strong impact on me. (EC)
21. I believe that there are two sides to every question and try to look at them both. (PT)
22. I would describe myself as a pretty compassionate person. (EC)
23. When I watch a good movie, I can very easily put myself in the place of a leading character. (FS)
24. I tend to lose control during emergencies. (PD)
25. When I'm upset at someone, I usually try to "put myself in his shoes" for a while. (PT)
26. When I am reading an interesting story or book, I imagine how I would feel if the events in the story were happening to me. (FS)
27. When I see someone who badly needs help in an emergency, I freak out. (PD)
28. Before talking bad about somebody, I try to imagine how I would feel if I were in their place. (PT)

APPENDIX C

Laboratory Peer Interaction Paradigm

Cyberball	
Including the Participant	Excluding the Participant

Tom



Jazz



Daisy



You

APPENDIX D

Profile of Mood States

Please indicate how much you felt each emotion while you were playing the game.

	1 – Not at all	2 – A little	3 – Moderate	4 – Quite a bit	5 - Extremely
Good	1	2	3	4	5
Bad	1	2	3	4	5
Friendly	1	2	3	4	5
Unfriendly	1	2	3	4	5
Angry	1	2	3	4	5
Pleasant	1	2	3	4	5
Happy	1	2	3	4	5
Sad	1	2	3	4	5
Unhappy	1	2	3	4	5
Confused	1	2	3	4	5
Depressed	1	2	3	4	5
Unworthy	1	2	3	4	5
Downhearted	1	2	3	4	5
Annoyed	1	2	3	4	5
Bitter	1	2	3	4	5
Anxious	1	2	3	4	5
Worried	1	2	3	4	5
Miserable	1	2	3	4	5
Ready to fight	1	2	3	4	5
Muddled	1	2	3	4	5
Nervous	1	2	3	4	5
Tired	1	2	3	4	5
Helpless	1	2	3	4	5
Bad- tempered	1	2	3	4	5
Uncertain	1	2	3	4	5
Worthless	1	2	3	4	5

APPENDIX E

Post-Cyberball Questions

Assuming the ball should be thrown to each person equally (33% of the throws to each person), what percentage of throws did you receive? (put a number between 1 and 100). _____

For each question, please indicate the number that best represents the feelings you were experiencing during the game. _____

	Not at all	A little	Moderate	Quite a Bit	Extremely
I felt good about myself.	1	2	3	4	5
My self-esteem was high.	1	2	3	4	5
I felt liked.	1	2	3	4	5
I felt insecure.	1	2	3	4	5
I felt satisfied.	1	2	3	4	5
I felt invisible.	1	2	3	4	5
I felt meaningless.	1	2	3	4	5
I felt non-existent.	1	2	3	4	5
I felt important.	1	2	3	4	5
I felt useful.	1	2	3	4	5
I felt powerful.	1	2	3	4	5
I felt I had control over the course of the game.	1	2	3	4	5
I felt I had the ability to significantly alter events.	1	2	3	4	5
I felt I was unable to influence the actions of others.	1	2	3	4	5
I felt the other players decided everything.	1	2	3	4	5
I felt “disconnected.”	1	2	3	4	5
I felt rejected.	1	2	3	4	5
I felt like an outsider.	1	2	3	4	5
I felt like I belonged to the group.	1	2	3	4	5
I felt the other players interacted with me a lot.	1	2	3	4	5
I was ignored.	1	2	3	4	5
I was excluded.	1	2	3	4	5

APPENDIX F

Online Gaming Exercise

Mario Kart Link: https://www.youtube.com/watch?v=_9HmpqZLH8E

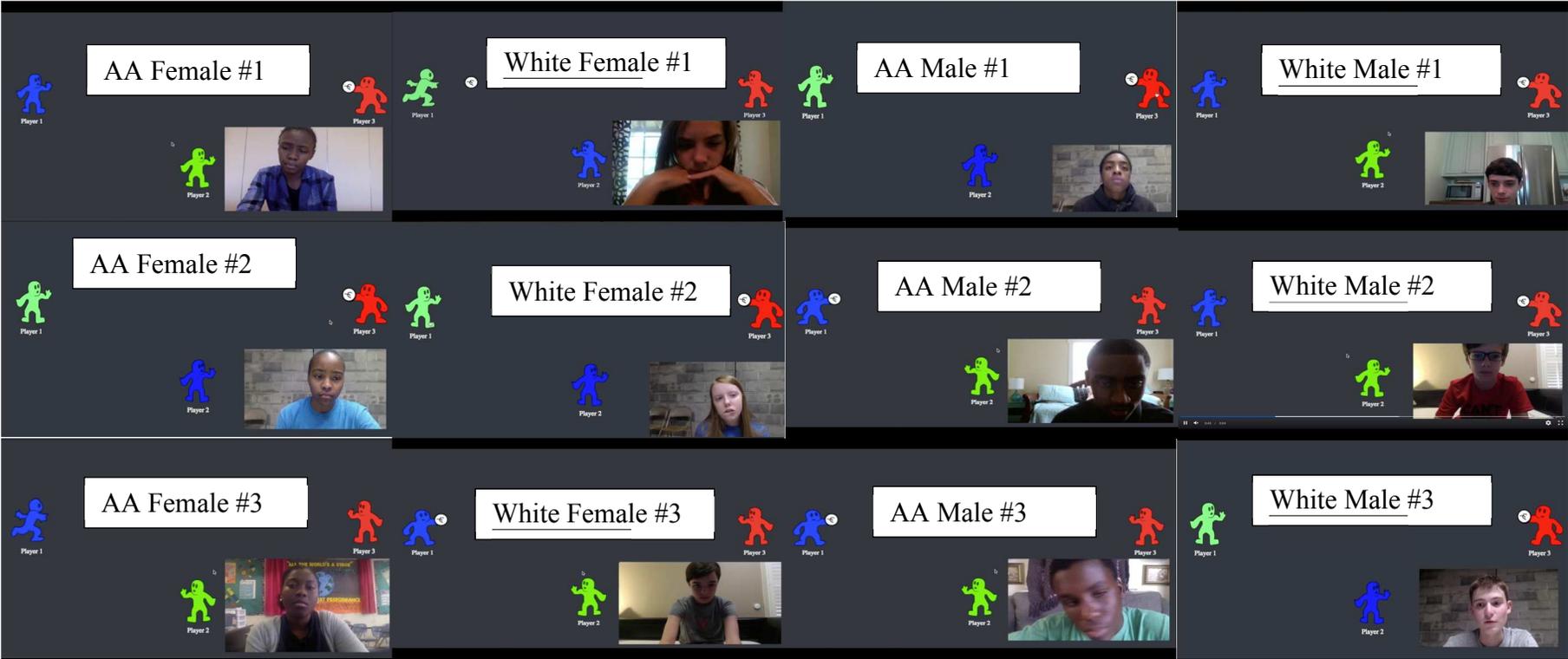
Questions:

1. Have you played this game before?
 - a. Yes
 - b. No
2. What do you think the player in this game-play video is feeling?
 - a. Happy
 - b. Sad
 - c. Angry
 - d. Aggressive
 - e. Excited
3. Would you want to play against this person?
 - a. Yes
 - b. No
4. Do you think this player was successful in this game?
 - a. Yes
 - b. No
5. How much do you identify with this person?
 - a. Not at all
 - b. A little
 - c. Some
 - d. A lot



APPENDIX G

Screenshots from Empathy Videos (full videos can be accessed here: <https://tinyurl.com/gibsondissertationvideos>)



APPENDIX H

Empathy Assessment

Now, we want to know what you thought about that video. Did you have any feelings for the person in video? Specifically, did you feel...?

Rate the following items on a scale of 1 to 5.

1	2	3	4	5
Not at all	A little	Moderate	Quite a bit	Extremely

1. Upset
2. Disturbed
3. Alarmed
4. Worried
5. Distressed
6. Troubled
7. Sympathetic
8. Moved
9. Compassionate
10. Tender
11. Warm
12. Soft-hearted
13. I found it difficult to see things from the person in the video's point of view.
14. I looked at each player's position in the game before I made any decisions.
15. I understood what the person in the video was going through because I imagined how things looked from their perspective.
16. I did not waste much time thinking about the person in the video's point of view.
17. I imagined how I would feel if I were in the place of the person in the video.
18. This person's experience wasn't that bad.
19. Their experience was nothing compared to mine
20. I've been through worse.
21. What happened to them wasn't a big deal.
22. Their experience was really bad.
23. I feel like our experiences were similar.
24. I know what they feel because I've been there. I've been through the same thing.
25. I feel like I am similar to this person.
26. People are mean.
27. Getting left out happens to everyone
28. Playing this game makes kids mean.
29. People are really nice in this game.
30. This person's experience wasn't that bad.
31. I identified with this person.

Indicate the extent to which you think the person in the video felt...

	Not At All	A little	Moderate	Quite a bit	Extremely
Good	1	2	3	4	5
Bad	1	2	3	4	5
Friendly	1	2	3	4	5
Unfriendly	1	2	3	4	5
Angry	1	2	3	4	5
Pleasant	1	2	3	4	5
Happy	1	2	3	4	5
Sad	1	2	3	4	5
Unhappy	1	2	3	4	5
Confused	1	2	3	4	5
Depressed	1	2	3	4	5
Unworthy	1	2	3	4	5
Downhearted	1	2	3	4	5
Annoyed	1	2	3	4	5
Bitter	1	2	3	4	5
Anxious	1	2	3	4	5
Worried	1	2	3	4	5
Miserable	1	2	3	4	5
Ready to fight	1	2	3	4	5
Muddled	1	2	3	4	5
Nervous	1	2	3	4	5
Helpless	1	2	3	4	5
Tired	1	2	3	4	5
Bad-tempered	1	2	3	4	5
Uncertain	1	2	3	4	5
Worthless	1	2	3	4	5

Post-Cyberball Questions about the Rejectee

Assuming the ball should be thrown to each person equally (33% of the throws to each person), what percentage of throws did the person in the video receive? (put a number from 1 and 100)

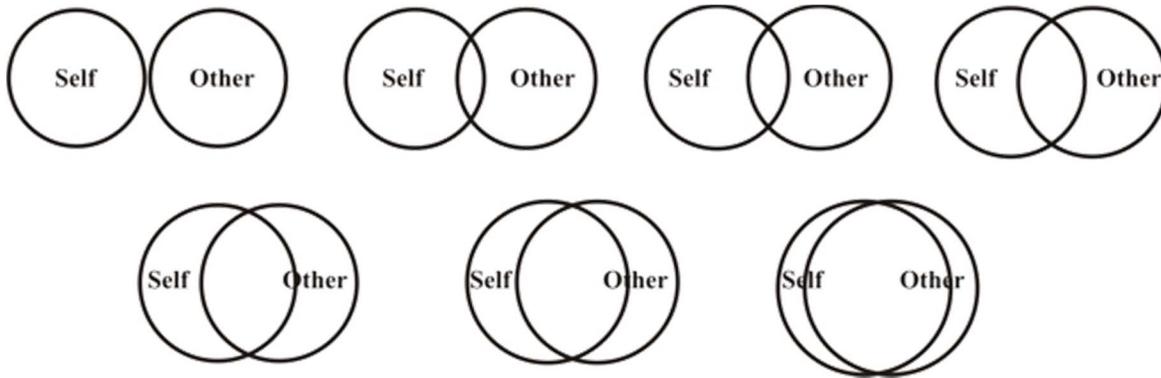
For each question, please indicate the number that best represents the feelings you think the person in the video experienced during the game.

	Not at all	A little	Moderate	Quite a bit	Extremely
He/She felt good about him/herself.	1	2	3	4	5
His/her self-esteem was high.	1	2	3	4	5
He/she felt liked.	1	2	3	4	5
He/she felt insecure.	1	2	3	4	5
He/she felt satisfied.	1	2	3	4	5
He/she felt invisible.	1	2	3	4	5
He/she felt meaningless.	1	2	3	4	5
He/she felt non-existent.	1	2	3	4	5
He/she felt important.	1	2	3	4	5
He/she felt useful.	1	2	3	4	5
He/she felt powerful.	1	2	3	4	5
He/she felt he/she had control over the course of the game.	1	2	3	4	5
He/she felt he/she had the ability to significantly alter events.	1	2	3	4	5
He/she felt he/she was unable to influence the actions of others.	1	2	3	4	5
He/she felt the other players decided everything.	1	2	3	4	5
He/she felt "disconnected."	1	2	3	4	5
He/she felt rejected.	1	2	3	4	5
He/she felt like an outsider.	1	2	3	4	5
He/she felt like he/she belonged to the group.	1	2	3	4	5
He/she felt the other players interacted with him/her a lot.	1	2	3	4	5
He/she was ignored.	1	2	3	4	5
He/she was excluded.	1	2	3	4	5

The Inclusion of Other in the Self scale (IOS)

Aron, Aron, & Smollan, 1992

Instructions: Please select the picture that best describes how you feel like you relate to the person in the video.



APPENDIX I

Prosocial Interaction

The teenagers you just watched were playing this game just a few minutes ago. They are still at their computers. We would like for you to enter a message to send to each player.

1. **Send a message to Player 1.**
2. **Send a message to Player 2.**
3. **Send a message to Player 3.**

Coding Questions for Messages

Indicate the extent of your agreement with the following questions on a scale of 1 (not at all) to 5 (extremely). If the message is blank, put a 0.

- (1) Does it seem like they are trying to comfort this person?*
- (2) How supportive are they towards this person?*
- (3) How much do they seem like they are trying to help this person (includes teaching)?*
- (4) Does it seem like they are trying to hurt this person?*
- (5) Does it seem like they are trying to hurt another person?*

Pretend you have \$30 and you have to give it away. How much of the \$30 would you give to each person in the game you just watched? Please divide the \$30 between the three players. You only have \$30, so if you give one person \$15, you only have \$15 to divide between the other two players. If you give someone \$30, you automatically give the other two \$0. Beside each player's name, you can slide the bar to indicate the number of dollars you think that person should get.



APPENDIX J

Reliability between Raters for Messages to Player 1 (Rejecter)

Coding Set	Statistic	Comfort	Support	Help	Hurt this person	Hurt other person	Average ICC for coding set
1-20 (RCAH)	<i>Cronbach's Alpha</i>	0.705	0.646	0.685	0.864	No variance for at least 2 coders.	0.647
	<i>Mean</i>	1.105	1.184	2.487	1.816		
	<i>ICC</i>	0.633*	0.545*	0.555*	0.857**		
	<i>CI</i>	.065, .857	-.157, .824	.111, .809	.715, .939		
20-40 (RCF)	<i>Cronbach's Alpha</i>	0.441	0.7	0.848	0.847	0.969	0.723
	<i>Mean</i>	1.065	1.049	2.821	2.13	1.057	
	<i>ICC</i>	0.455**	0.632**	0.751**	0.834**	0.941**	
	<i>CI</i>	.088, .691	.384, .791	.583, .859	.722, .906	.901, .966	
40-60 (RCMG)	<i>Cronbach's Alpha</i>	0.726	0.648	0.881	0.927	0.975	0.747
	<i>Mean</i>	1.31	1.492	2.542	2.036	1.056	
	<i>ICC</i>	0.553**	0.56**	0.747**	0.902**	0.973**	
	<i>CI</i>	.284, .739	.268, .748	.595, .852	.844, .943	.955, .984	
60-80 (RCAF)	<i>Cronbach's Alpha</i>	0.319	0.872	0.948	0.879	0.958	0.787
	<i>Mean</i>	1.091	1.136	2.682	1.92	1.091	
	<i>ICC</i>	0.367+	0.861**	0.912**	0.837**	0.958**	
	<i>CI</i>	-.205, .708	.720, .938	.833, .960	.690, .925	.921, .981	
80-100 (RCGM)	<i>Cronbach's Alpha</i>	0.726	0.648	0.881	0.927	0.975	0.747
	<i>Mean</i>	1.31	1.492	2.542	2.036	1.056	
	<i>ICC</i>	0.553**	0.56**	0.747**	0.902**	0.973**	
	<i>CI</i>	.284, .739	.268, .748	.595, .852	.844, .943	.955, .984	
100-116 (RCH)	<i>Cronbach's Alpha</i>	0.789	0.73	0.756	0.81	No variance for at least 2 coders.	0.711
	<i>Mean</i>	1.231	1.333	2.512	1.991		
	<i>ICC</i>	0.782**	0.698**	0.561**	0.803**		
	<i>CI</i>	.622, .881	.476, .835	.240, .761	.659, .893		
	<i>Average ICC for question type</i>	0.557	0.643	0.712	0.856	0.961	

Note. ** $p < .01$, * $p < .05$, + $p < .10$.

Reliability between Raters for Messages to Player 2 (Rejectee)

Coding Set	Statistic	Comfort	Support	Help	Hurt this person	Hurt other person	Average ICC for coding set
1-20 (RCA)	<i>Cronbach's Alpha</i>	0.893	0.707	0.657	0.841	0.764	0.687
	<i>Mean</i>	2.854	2.309	2.098	1.13	1.22	
	<i>ICC</i>	0.829**	0.552**	0.545**	0.842**	0.668**	
	<i>CI</i>	.714, .903	.251, .746	.238, .742	.735, .910	.445, .812	
20-40 (RCF)	<i>Cronbach's Alpha</i>	0.887	0.732	0.692	0.844	0.773	0.748
	<i>Mean</i>	3.333	2.967	2.967	1.146	1.366	
	<i>ICC</i>	0.878**	0.629**	0.64**	0.834**	0.758**	
	<i>CI</i>	.795, .931	.379, .789	.397, .796	.723, .906	.595, .863	
40-60 (RCMG)	<i>Cronbach's Alpha</i>	0.904	0.866	0.806	0.941	0.949	0.865
	<i>Mean</i>	2.56	2.375	2.125	0.988	1.274	
	<i>ICC</i>	0.886**	0.828**	0.775**	0.891**	0.945**	
	<i>CI</i>	.818, .933	.724, .899	.639, .868	.825, .936	.911, .968	
60-80 (RCAF)	<i>Cronbach's Alpha</i>	0.913	0.843	0.734	0.939	0.955	0.824
	<i>Mean</i>	3.023	2.67	2.534	1.205	1.182	
	<i>ICC</i>	0.891**	0.797**	0.647**	0.918**	0.869**	
	<i>CI</i>	.792, .950	.613, .906	.327, .837	.844, .962	.735, .941	
80-100 (RCGM)	<i>Cronbach's Alpha</i>	0.904	0.866	0.806	0.941	0.949	0.865
	<i>Mean</i>	2.56	2.375	2.125	0.988	1.274	
	<i>ICC</i>	0.886**	0.828**	0.775**	0.891**	0.945**	
	<i>CI</i>	.818, .933	.724, .899	.639, .868	.825, .936	.911, .968	
100-116 (RCH)	<i>Cronbach's Alpha</i>	0.838	0.629	0.772	0.617	0.775	0.640
	<i>Mean</i>	3.306	3.027	2.685	1.09	1.568	
	<i>ICC</i>	0.812**	0.434*	0.724**	0.5**	0.732**	
	<i>CI</i>	.677, .897	.027, .689	.525, .848	.140, .725	.539, .853	
	<i>Average ICC for question type</i>	0.864	0.678	0.684	0.813	0.819	

Note. ** $p < .01$, * $p < .05$, + $p < .10$.

Reliability between Raters for Messages to Player 3 (Rejecter)

Coding Set	Statistic	Comfort	Support	Help	Hurt this person	Hurt other person	Average ICC for coding set
1-20 (RCAH)	<i>Cronbach's Alpha</i>	0.471	0.357	0.818	0.843	0.923	0.632
	<i>Mean</i>	1.089	1.081	2.415	2.22	1.065	
	<i>ICC</i>	0.391*	0.34	0.746**	0.787**	0.898**	
	<i>CI</i>	-.019, .655	-.105, .625	.574, .856	.643, .879	.830, .942	
20-40 (RCF)	<i>Cronbach's Alpha</i>	0.765	0.621	0.838	0.904	0.758	0.728
	<i>Mean</i>	1.106	1.081	2.667	2.374	1.033	
	<i>ICC</i>	0.752**	0.508**	0.798**	0.88**	0.703**	
	<i>CI</i>	.584, .859	.176, .721	.662, .885	.800, .932	.504, .832	
40-60 (RCMG)	<i>Cronbach's Alpha</i>	0.833	0.77	0.893	0.926	0.796	0.718
	<i>Mean</i>	1.25	1.351	2.399	2.00	1.167	
	<i>ICC</i>	0.42*	0.6178**	0.885**	0.886**	0.784**	
	<i>CI</i>	.070, .661	.387, .776	.815, .932	.817, .933	.641, .877**	
60-80 (RCAF)	<i>Cronbach's Alpha</i>	0.709	0.571	0.898	0.941	No variance for at least 2 coders	0.721
	<i>Mean</i>	1.148	1.136	2.625	2.045		
	<i>ICC</i>	0.669**	0.468*	0.842**	0.906**		
	<i>CI</i>	.369, .847	-.014, .755	.698, .927	.821, .957		
80-100 (RCGM)	<i>Cronbach's Alpha</i>	0.833	0.77	0.893	0.926	0.796	0.718
	<i>Mean</i>	1.25	1.351	2.399	2.00	1.167	
	<i>ICC</i>	0.42*	0.617**	0.885**	0.886**	0.784**	
	<i>CI</i>	.070, .661	.387, .776	.815, .932	.817, .933	.641, .877	
100-116 (RCH)	<i>Cronbach's Alpha</i>	0.748	0.301	0.797	0.809	0.91	0.646
	<i>Mean</i>	1.144	1.171	2.36	2.432	1.09	
	<i>ICC</i>	0.716**	0.097	0.751**	0.781**	0.886**	
	<i>CI</i>	.511, .844	-.553, .504	.572, .863	.624, .880	.804, .937	
	<i>Average ICC for question type</i>	0.561	0.441	0.818	0.854	0.811	

Note. ** $p < .01$, * $p < .05$, + $p < .10$.

APPENDIX K
Ratings of Videos by College Students

Means & Standard Deviations for Ratings of Videos by College Sample

	Mean (SD)								
	Intelligent	Attractive	Warmth	Trustworthy	Sincere	Happy	Sad	Nice	Like
White Male #1 (non-target)	3.42 (1.094)	3.13 (1.173)	3.02 (1.047)	3.31 (1.138)	3.19 (1.159)	2.51 (1.072)	5.21 (1.254)	3.27 (1.119)	3.38 (1.162)
White Male #2 (non-target)	3.48 (1.121)	4.26 (1.154)	3.48 (1.053)	3.7 (1.173)	3.52 (1.166)	2.98 (1.093)	4.97 (1.198)	3.8 (1.141)	3.01 (1.123)
White Male #3 (non-target)	3.29 (1.248)	4.67 (1.231)	3.42 (1.056)	3.44 (1.135)	3.36 (1.134)	3.05 (1.138)	4.91 (1.217)	3.82 (1.185)	3.26 (1.217)
White Male #4 (non-target)	3.88 (1.080)	4.23 (1.178)	3.41 (1.064)	3.62 (1.137)	3.51 (1.144)	3.00 (1.079)	4.98 (1.195)	3.75 (1.123)	3.38 (1.113)
White Male #5 (target)	3.63 (1.223)	4.71 (1.13)	3.72 (1.066)	3.77 (1.086)	3.68 (1.105)	3.5 (1.118)	4.57 (1.22)	3.99 (1.13)	3.45 (1.08)
White Male #6 (target)	3.93 (1.101)	4.36 (1.129)	4.39 (1.133)	4.3 (1.133)	4.21 (1.144)	4.39 (1.227)	3.93 (1.256)	4.2 (1.121)	4.07 (1.127)
White Male #7 (target)	3.9 (1.216)	4.84 (1.117)	4.45 (1.084)	4.26 (1.123)	4.17 (1.167)	4.58 (1.215)	3.77 (1.323)	4.32 (1.123)	4.03 (1.1)
White Female #1 (non-target)	3.18 (1.162)	4.2 (1.126)	4.52 (1.113)	4.09 (1.142)	4.15 (1.18)	4.57 (1.155)	3.75 (1.22)	4.3 (1.141)	4.26 (1.22)
White Female #2 (non-target)	3.14 (1.194)	4.79 (1.217)	3.29 (1.057)	3.17 (1.055)	3.14 (1.119)	3.25 (1.159)	4.7 (1.233)	3.78 (1.091)	3.1 (1.175)
White Female #3 (target)	3.72 (1.109)	4.17 (1.183)	3.56 (1.077)	3.54 (1.09)	3.48 (1.113)	3.31 (1.128)	4.75 (1.202)	3.76 (1.106)	3.38 (1.163)
White Female #4 (target)	4.09 (1.274)	4.96 (1.211)	3.96 (1.105)	3.79 (1.093)	3.75 (1.12)	4.00 (1.126)	4.25 (1.217)	4.1 (1.101)	3.63 (1.138)
White Female #5 (target)	3.14 (1.158)	4.48 (1.227)	3.5 (1.084)	3.4 (1.063)	3.29 (1.124)	3.44 (1.133)	4.56 (1.294)	3.84 (1.095)	3.27 (1.139)
White Female #6 (non-target)	2.81 (1.081)	3.17 (1.161)	2.67 (1.101)	2.85 (1.143)	2.76 (1.151)	2.34 (1.145)	5.28 (1.308)	3.18 (1.195)	2.69 (1.216)

White Female #7 (non-target)	3.09 (1.092)	4.09 (1.22)	2.96 (1.007)	3.06 (1.116)	2.99 (1.142)	2.69 (1.142)	5.15 (1.269)	3.5 (1.128)	2.89 (1.163)
AA Male #1 (non-target)	3.18 (1.144)	3.9 (1.159)	3.02 (1.143)	3.21 (1.164)	3.08 (1.162)	2.97 (1.172)	4.87 (1.259)	3.26 (1.23)	2.99 (1.177)
AA Male #2 (non-target)	3.56 (1.113)	3.83 (1.196)	2.91 (1.073)	3.1 (1.087)	2.96 (1.069)	2.58 (1.097)	5.16 (1.263)	3.34 (1.183)	2.88 (1.167)
AA Male #3 (target)	4.12 (1.07)	4.21 (1.149)	4.63 (1.151)	4.34 (1.162)	4.27 (1.177)	4.66 (1.216)	3.7 (1.28)	4.09 (1.107)	4.13 (1.151)
AA Male #4 (target)	3.03 (1.11)	4.19 (1.116)	3.25 (0.968)	3.28 (1.075)	3.19 (1.065)	3.2 (1.007)	4.76 (1.125)	3.55 (1.095)	3.1 (1.073)
AA Male #5 (target)	4.19 (1.17)	4.4 (1.183)	4.11 (1.113)	4.19 (1.2)	4.08 (1.212)	3.92 (1.138)	4.36 (1.196)	4.11 (1.181)	3.93 (1.153)
AA Male #6 (non-target)	3.78 (1.07)	4.12 (1.162)	3.95 (1.133)	3.98 (1.145)	3.9 (1.123)	3.79 (1.112)	4.43 (1.156)	3.91 (1.08)	3.73 (1.126)
AA Male #7 (non-target)	3.39 (1.103)	3.57 (1.2)	3.05 (1.108)	3.19 (1.127)	3.08 (1.119)	2.81 (1.133)	4.99 (1.258)	3.32 (1.183)	2.94 (1.162)
AA Female #1 (target)	3.99 (1.114)	4.54 (1.082)	4.33 (1.137)	4.13 (1.14)	4.06 (1.191)	4.53 (1.206)	3.7 (1.266)	3.98 (1.152)	4.14 (1.085)
AA Female #2 (target)	4.09 (1.103)	4.51 (1.096)	4.4 (1.164)	4.2 (1.134)	4.14 (1.189)	4.59 (1.177)	3.74 (1.259)	4.07 (1.118)	4.2 (1.075)
AA Female #3 (target)	3.7 (1.115)	4.01 (1.129)	4.54 (1.194)	4.08 (1.167)	4.17 (1.229)	4.67 (1.253)	3.79 (1.228)	4.23 (1.218)	4.11 (1.133)
AA Female #4 (non-target)	3.46 (1.213)	4.32 (1.389)	2.46 (1.243)	2.78 (1.261)	2.56 (1.234)	1.98 (1.173)	5.58 (1.367)	2.53 (1.252)	3.11 (1.331)
AA Female #5 (non-target)	3.88 (1.159)	4.02 (1.202)	4.43 (1.156)	4.24 (1.156)	4.16 (1.171)	4.44 (1.188)	3.9 (1.218)	4.12 (1.175)	4.13 (1.156)
AA Female #6 (non-target)	3.28 (1.09)	3.11 (1.245)	2.81 (1.043)	3.03 (1.098)	2.98 (1.114)	2.6 (1.113)	5.11 (1.261)	2.78 (1.094)	3.21 (1.151)
AA Female #7 (non-target)	3.02 (1.167)	3.39 (1.178)	2.82 (1.087)	2.99 (1.104)	2.96 (1.202)	2.48 (1.088)	5.21 (1.256)	2.85 (1.185)	3.24 (1.211)

Regression Analyses of Preference Ratings on Empathy (by video)

a. White Male #5

	Situational Concern			Situational Distress			Situational Perspective Taking		
	β	t	<i>p</i>	β	t	<i>p</i>	β	t	<i>p</i>
Intelligent	0.396*	2.196	0.035	-0.004	-0.024	0.981	0.004	0.023	0.982
Attractive	-0.174	-0.813	0.422	0.157	0.713	0.481	-0.143	-0.606	0.549
Warm	-0.023	-0.089	0.929	-0.122	-0.47	0.642	-0.25	-0.902	0.374
Trust	-0.378	-1.418	0.166	-0.374	-1.365	0.182	-0.153	-0.524	0.604
Sincere	-0.397	-1.341	0.189	0.235	0.772	0.445	-0.168	-0.517	0.609
Happy	0.383	1.592	0.121	0.236	0.952	0.348	0.189	0.714	0.48
Sad	0.314	1.655	0.108	-0.04	-0.203	0.841	0.088	0.423	0.675
Like	0.491+	1.85	0.074	0.174	0.639	0.528	0.122	0.417	0.679
Nice	-0.144	-0.507	0.616	0.183	0.624	0.537	0.087	0.277	0.783
<i>R</i> ²		.096			.044			-.093	
<i>F</i>		1.482			1.211			.613	
<i>p</i>		.197			.323			.777	

b. White Male #6

	Situational Concern			Situational Distress			Situational Perspective Taking		
	β	t	<i>p</i>	β	t	<i>p</i>	β	t	<i>p</i>
Intelligent	-0.268	-1.354	0.185	0.166	0.884	0.383	-0.197	-0.986	0.331
Attractive	0.019	0.093	0.926	-0.283	-1.489	0.146	-0.159	-0.79	0.435
Warm	0.015	0.069	0.945	-0.082	-0.396	0.694	0.355	1.631	0.112
Trust	0.189	0.829	0.413	0.365+	1.685	0.101	0.03	0.129	0.898
Sincere	0.065	0.24	0.811	-0.441	-1.699	0.098	-0.047	-0.173	0.864
Happy	0.124	0.6	0.553	0.074	0.374	0.711	0.24	1.147	0.259
Sad	-0.3+	-1.717	0.095	-0.071	-0.424	0.674	0.092	0.521	0.606
Like	-0.244	-1.096	0.281	0.051	0.241	0.811	-0.066	-0.295	0.77
Nice	0.198	0.863	0.394	0.396	1.815	0.078	0.027	0.115	0.909
<i>R</i> ²		-.034			.064			-.049	
<i>F</i>		.845			1.326			.778	
<i>p</i>		.581			.260			.638	

Note. ***p* < .01, **p* < .05, +*p* < .10.

c. White Male #7

	Situational Concern			Situational Distress			Situational Perspective Taking		
	β	t	p	β	t	p	β	t	p
Intelligent	-0.201	-1.21	0.234	-0.085	-0.433	0.667	0.053	0.278	0.783
Attractive	0.036	0.164	0.87	-0.027	-0.105	0.917	-0.334	-1.328	0.193
Warm	-0.131	-0.546	0.589	0.203	0.718	0.477	0.019	0.07	0.945
Trust	0.085	0.261	0.795	0.082	0.213	0.833	-0.381	-1.013	0.318
Sincere	-0.174	-0.693	0.493	-0.082	-0.279	0.782	-0.015	-0.051	0.959
Happy	0.35+	1.865	0.071	0.014	0.066	0.948	0.161	0.742	0.463
Sad	0.2	1.176	0.248	-0.257	-1.286	0.207	-0.051	-0.26	0.796
Like	-0.066	-0.276	0.784	-0.334	-1.188	0.243	0.285	1.033	0.309
Nice	-0.405+	-1.84	0.074	0.191	0.738	0.466	-0.117	-0.461	0.647
R^2		.231			-.062			-.023	
F		2.273*			.713			.892	
p		.027			.693			.542	

Note. ** $p < .01$, * $p < .05$, + $p < .10$.

d. White Female #3

	Situational Concern			Situational Distress			Situational Perspective Taking		
	β	t	p	β	t	p	β	t	p
Intelligent	0.117	0.563	0.577	0.554*	2.559	0.015	0.195	0.884	0.382
Attractive	-0.282	-1.351	0.185	-0.337	-1.553	0.129	-0.18	-0.812	0.422
Warm	-0.055	-0.166	0.869	0.211	0.608	0.547	-0.059	-0.167	0.868
Trust	0.035	0.123	0.903	0.131	0.44	0.662	-0.406	-1.337	0.189
Sincere	0.215	0.857	0.397	-0.021	-0.082	0.935	0.532+	2	0.053
Happy	-0.198	-0.901	0.373	-0.07	-0.306	0.762	-0.49	-2.108	0.042
Sad	0.005	0.034	0.973	0.121	0.759	0.453	-0.19	-1.165	0.251
Like	-0.44	-1.601	0.118	-0.28	-0.981	0.333	-0.02	-0.069	0.945
Nice	0.35	1.535	0.133	-0.144	-0.608	0.547	0.38	1.57	0.125
R^2		.141			.073			.034	
F		1.836+			1.400			1.181	
p		.094			.224			.336	

Note. ** $p < .01$, * $p < .05$, + $p < .10$.

e. White Female #4

	Situational Concern			Situational Distress			Situational Perspective Taking		
	β	t	p	β	t	p	β	t	p
Intelligent	-0.303	-1.278	0.21	-0.092	-0.375	0.71	-0.423+	-1.92	0.063
Attractive	0.157	0.758	0.453	-0.133	-0.621	0.538	-0.022	-0.116	0.908
Warm	0.064	0.183	0.856	0.39	1.079	0.288	0.348	1.069	0.293
Trust	-0.063	-0.14	0.89	-0.339	-0.736	0.467	0.731+	1.76	0.087
Sincere	-0.045	-0.145	0.886	0.206	0.64	0.526	-0.095	-0.327	0.745
Happy	-0.033	-0.143	0.887	0.443+	1.851	0.073	-0.222	-1.029	0.311
Sad	0.046	0.241	0.811	0.183	0.931	0.358	0.136	0.765	0.449
Like	-0.26	-0.663	0.512	-0.432	-1.07	0.292	-0.34	-0.935	0.356
Nice	0.04	0.107	0.915	-0.003	-0.007	0.995	-0.171	-0.493	0.625
R^2		-.012			-.075			.127	
F		.943			.659			1.711	
p		.501			.740			.123	

Note. ** $p < .01$, * $p < .05$, + $p < .10$.

f. White Female #5

	Situational Concern			Situational Distress			Situational Perspective Taking		
	β	t	p	β	t	p	β	t	p
Intelligent	-0.187	-0.866	0.392	0.118	0.608	0.547	0.016	0.075	0.94
Attractive	-0.042	-0.196	0.846	0.36+	1.877	0.069	0.206	0.983	0.332
Warm	0.416	1.366	0.181	0.086	0.312	0.757	0.04	0.133	0.895
Trust	0.107	0.26	0.797	0.456	1.23	0.227	0.067	0.166	0.869
Sincere	-0.17	-0.348	0.73	-0.362	-0.823	0.416	-0.09	-0.188	0.852
Happy	0.143	0.622	0.538	0.01	0.049	0.961	-0.051	-0.225	0.823
Sad	0.056	0.325	0.747	-0.06	-0.389	0.7	0.059	0.351	0.727
Like	-0.07	-0.273	0.786	0.236	1.019	0.315	0.503+	1.989	0.055
Nice	-0.347	-0.854	0.399	-0.615+	-1.68	0.102	-0.603	-1.511	0.14
R^2		-.037			.157			.001	
F		.827			1.912+			1.005	
p		.596			.083			.455	

Note. ** $p < .01$, * $p < .05$, + $p < .10$.

g. AA Male #3

	Situational Concern			Situational Distress			Situational Perspective Taking		
	β	t	p	β	t	p	β	t	p
Intelligent	0.249	1.131	0.266	0.077	0.329	0.744	-0.161	-0.651	0.52
Attractive	-0.315	-1.346	0.187	0.094	0.378	0.708	0.284	1.077	0.289
Warm	-0.264	-0.869	0.391	-0.3	-0.93	0.359	-0.053	-0.155	0.877
Trust	0.643	1.617	0.115	0.588	1.393	0.173	0.272	0.607	0.548
Sincere	-0.279	-1.061	0.296	0.239	0.858	0.397	-0.052	-0.175	0.862
Happy	0.151	0.636	0.529	0.101	0.402	0.691	0.074	0.278	0.783
Sad	-0.226	-1.117	0.272	-0.071	-0.332	0.742	-0.096	-0.423	0.675
Like	-0.293	-0.878	0.386	-0.658	-1.855+	0.072	-0.053	-0.139	0.89
Nice	-0.05	-0.151	0.881	-0.101	-0.285	0.777	-0.152	-0.405	0.688
R^2		.107			-.006			-.135	
F		1.57			.970			.431	
p		.164			.482			.909	

Note. ** $p < .01$, * $p < .05$, + $p < .10$.

h. AA Male #4

	Situational Concern			Situational Distress			Situational Perspective Taking		
	β	t	p	β	t	p	β	t	p
Intelligent	-0.155	-0.65	0.521	0.235	0.974	0.338	-0.016	-0.063	0.95
Attractive	0.021	0.117	0.908	0.094	0.513	0.612	-0.284	-1.441	0.16
Warm	-0.403	-1.589	0.123	-0.441	-1.719	0.096	-0.588*	-2.135	0.041
Trust	0.741*	2.39	0.024	0.546+	1.739	0.093	0.221	0.656	0.517
Sincere	-0.343	-1.154	0.258	-0.517+	-1.721	0.096	0.127	0.392	0.698
Happy	0.207	0.942	0.354	0.201	0.901	0.375	-0.087	-0.362	0.72
Sad	0.205	1.161	0.255	-0.219	-1.221	0.232	0.01	0.051	0.959
Like	0.046	0.229	0.821	0.04	0.193	0.848	0.217	0.988	0.331
Nice	-0.195	-0.762	0.452	0.136	0.524	0.604	0.222	0.798	0.431
R^2		.099			.076			-.065	
F		1.463			1.348			.743	
p		.208			.257			.667	

Note. ** $p < .01$, * $p < .05$, + $p < .10$.

i. AA Male #5

	Situational Concern			Situational Distress			Situational Perspective Taking		
	β	t	p	β	t	p	β	t	p
Intelligent	0.22	1.217	0.232	0.211	1.094	0.282	-0.191	-0.971	0.339
Attractive	-0.19	-0.992	0.328	-0.03	-0.149	0.882	0.124	0.597	0.555
Warm	-0.157	-0.608	0.547	-0.057	-0.209	0.836	-0.12	-0.429	0.671
Trust	0.553+	1.838	0.075	-0.029	-0.092	0.927	-0.017	-0.051	0.96
Sincere	-0.329	-1.085	0.286	0.092	0.285	0.778	0.222	0.674	0.505
Happy	-0.016	-0.058	0.954	-0.079	-0.276	0.784	0.202	0.691	0.494
Sad	0.022	0.121	0.905	0.233	1.214	0.234	0.127	0.646	0.523
Like	-0.119	-0.427	0.672	0.289	0.975	0.337	-0.221	-0.731	0.47
Nice	-0.152	-0.666	0.51	-0.072	-0.299	0.767	-0.126	-0.511	0.613
R^2		.04			-.088			-.130	
F		1.19			.632			.475	
p		.334			.761			.880	

Note. ** $p < .01$, * $p < .05$, + $p < .10$.

j. AA Female #1

	Situational Concern			Situational Distress			Situational Perspective Taking		
	β	t	p	β	t	p	β	t	p
Intelligent	-0.424	-1.528	0.135	-0.014	-0.052	0.959	-0.308	-1.174	0.248
Attractive	0.035	0.192	0.849	0.048	0.271	0.788	0.046	0.263	0.794
Warm	-0.124	-0.517	0.608	-0.34	-1.494	0.144	-0.214	-0.944	0.352
Trust	0.261	1.239	0.223	0.156	0.778	0.442	-0.095	-0.479	0.635
Sincere	0.355	1.278	0.21	0.175	0.662	0.512	0.438+	1.668	0.104
Happy	-0.098	-0.412	0.683	0.035	0.156	0.877	-0.305	-1.356	0.184
Sad	0.015	0.073	0.942	-0.04	-0.206	0.838	-0.311	-1.599	0.119
Like	0.175	0.781	0.44	0.352	1.656	0.107	0.261	1.231	0.226
Nice	-0.244	-1.138	0.263	-0.358	-1.755+	0.088	-0.239	-1.176	0.248
R^2		-.050			.006			.026	
F		.768			1.030			1.130	
p		.646			.437			.369	

Note. ** $p < .01$, * $p < .05$, + $p < .10$.

k. AA Female #2

	Situational Concern			Situational Distress			Situational Perspective Taking		
	β	t	p	β	t	p	β	t	p
Intelligent	-0.466*	-2.127	0.041	-0.328	-1.353	0.186	-0.433*	-2.082	0.045
Attractive	0.52*	2.378	0.024	-0.005	-0.02	0.984	0.089	0.427	0.672
Warm	0.072	0.275	0.785	-0.087	-0.301	0.766	0.243	0.983	0.333
Trust	0.148	0.54	0.593	0.489	1.616	0.116	0.169	0.652	0.519
Sincere	0.426	1.204	0.237	0.08	0.205	0.839	-0.311	-0.926	0.361
Happy	0.054	0.291	0.773	-0.02	-0.1	0.921	0.489**	2.801	0.009
Sad	-0.027	-0.158	0.876	0.097	0.509	0.614	0.097	0.596	0.555
Like	-0.199	-0.745	0.462	0.253	0.856	0.398	0.183	0.72	0.477
Nice	-0.429	-1.536	0.134	-0.291	-0.94	0.354	0.055	0.206	0.838
R^2		.142			-.051			.226	
F		1.756			.778			2.332	
p		.116			.638			.038*	

Note. ** $p < .01$, * $p < .05$, + $p < .10$.

l. AA Female #3

	Situational Concern			Situational Distress			Situational Perspective Taking		
	β	t	p	β	t	p	β	t	p
Intelligent	0.241	0.916	0.366	-0.014	-0.052	0.958	-0.022	-0.094	0.926
Attractive	-0.065	-0.273	0.786	0.128	0.518	0.608	-0.089	-0.421	0.676
Warm	-0.245	-0.72	0.476	0.583	1.642	0.11	-0.437	-1.44	0.159
Trust	-0.127	-0.294	0.771	-0.349	-0.772	0.445	0.533	1.379	0.177
Sincere	0.487	1.36	0.183	0.235	0.629	0.534	0.026	0.081	0.936
Happy	-0.393	-1.311	0.198	-0.233	-0.744	0.462	-0.53	-1.979	0.056
Sad	-0.412*	-2.18	0.036	-0.226	-1.142	0.261	-0.66**	-3.907	0.01
Like	-0.409	-1.337	0.19	-0.058	-0.183	0.856	-0.074	-0.272	0.788
Nice	0.12	0.404	0.688	-0.342	-1.102	0.278	0.27	1.018	0.316
R^2		.029			-.063			.224	
F		1.147			.712			2.409*	
p		.358			.694			.03	

Note. ** $p < .01$, * $p < .05$, + $p < .10$.

MANOVA Results for Overall Empathy Ratings by Video

Variable	Pillai's Trace	<i>F</i>	df	Error df	<i>p</i>
Video Watched on Average Empathy	.056	.920	33	1587	.712
Distress		1.313	11	529	.213
Concern		1.269	11	529	.239
Perspective Taking		.409	11	529	.932

Note. ***p* < .01, **p* < .05, +*p* < .10.

APPENDIX L

Experimenter Script

Thank you for giving us some time today. We really appreciate your help in this project. Today you're going to participate in a study about teenager's interactions in gaming situations. You're going to answer some questions about yourself and your friendships. Then you're going to play a game created for this study called Cyberball. It's a simple online game. You'll be playing with two other kids around your age. We've made sure none of them go to your school. We're really interested in hearing what you think about while you're playing the game. You'll answer some questions about that game. Then you will watch some kids play some other games and answer some questions about those. It should take less than an hour. At the end, you will get \$10! Any questions?

I'd like you to read through this paper. It basically lays out the specifics of everything I just said. If you have any questions about what anything means, please ask. If you don't want to answer anything, don't feel like you have to.

[have them sign assent document when finished]

Ready to get started? Okay. I'm going to take your picture now. Then I'll upload it to our server so that the other kids can see what you look like. You will see their pictures before the beginning of the game too. [take picture and act like you are uploading it]

Okay – you can start whenever you are ready! Let me know if you have any questions.

Script for Ending the Session

How did that go? Do you have any questions? In this study, we want to understand how kids interact with their peers. You've helped us get closer to that goal. We really appreciate your help today!

And, if you know someone else that is participating in this study, please don't tell them what happens. We want every teen who participates to have the same experience.

If you have questions, concerns, or complaints about your rights as a participant in this research study, you may contact Ms. Tanta Myles, the Research Compliance Officer at UA, at 205-348-8461 or toll-free at 1-877-820-3066. And that information is on the piece of paper you have with you.

I'm going to have you sign this piece of paper (receipt) so that we have a record that we gave you the gift card. Thanks again for your help! [dismiss back to class/parent/etc.]

APPENDIX M

IRB Approval Certificate



July 12, 2017

Carolyn E. Gibson
Dept. of Psychology
College of Arts & Sciences
Box 870348

Re: IRB Application #: 17-004
Application Title: "Adolescent Social Interactions"

Dear Ms. Gibson:

The University of Alabama IRB has received the revisions requested by the full board on 4/20/17. The board has reviewed the revisions and your protocol is now approved for a one-year period. Please be advised that your protocol will expire one year from the date of approval, 4/20/17.

If your research will continue beyond this date, complete the IRB Renewal Application by the 15th of the month prior to project expiration. If you need to modify the study, please submit the Modification of An Approved Protocol Form. Changes in this study cannot be initiated without IRB approval, except when necessary to eliminate apparent immediate hazards to participants. When the study closes, please complete the Request for Study Closure Form.

Please use reproductions of the IRB approved stamped consent/assent forms to provide to your participants.

Should you need to submit any further correspondence regarding this proposal, please include the assigned IRB application number.

Good luck with your research.

Sincerely,



Stuart Usdan, PhD
Chair, Non-Medical Institutional Review Board

358 Rose Administration Building | Box 870127 | Tuscaloosa, AL 35487-0127
205-348-8461 | Fax 205-348-7189 | Toll Free 1-877-820-3066

APPENDIX N

IRB Renewal Approval Certificate

THE UNIVERSITY OF ALABAMA® | Office of the Vice President for
Research & Economic Development
Office for Research Compliance

April 20, 2018

Carolyn Gibson
Dept. of Psychology
College of Arts & Sciences
Box 870348

Re: IRB Application #: 17-004-R1 "Adolescent Social Interactions"

Dear Ms. Gibson:

The University of Alabama IRB has received the revisions requested by the full board on 4/19/18. The board has reviewed the revisions and your protocol is now approved for a one-year period. Please be advised that your protocol will expire one year from the date of approval, 4/19/18.

If your research will continue beyond this date, complete the IRB Renewal Application by the 15th of the month prior to project expiration. If you need to modify the study, please submit the Modification of An Approved Protocol Form. Changes in this study cannot be initiated without IRB approval, except when necessary to eliminate apparent immediate hazards to participants. When the study closes, please complete the Request for Study Closure Form.

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Sincerely,



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