EMPATHY GAPS FOR SOCIAL PAIN AND CHILDREN'S BYSTANDER

BEHAVIOR IN BULLYING EPISODES

by

Marissa A. Smith

A dissertation submitted to the Faculty of the University of Delaware in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Psychology

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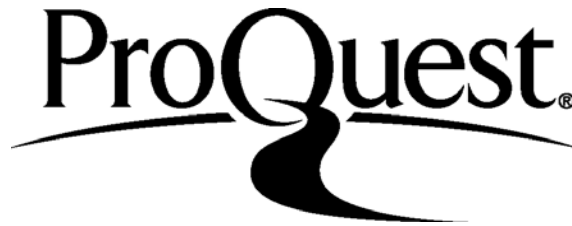
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TABLE OF CONTENTS

LIST OF TABLES

ABSTRACT

Individuals often underestimate the severity of painful events (whether physical or social) at both the interpersonal and intrapersonal level when they are in a "cold" state (pain-free). However, when individuals are in a "hot" state (experiencing pain), their pain judgments become much more accurate. This phenomenon is termed the *empathy gap*. The aims of this study were to: 1) examine whether the empathy gap phenomenon occurs in children and more specifically in bullying situations, 2) investigate whether the empathy gap phenomenon extends to children's observed prosocial behavioral responses (positive bystander behaviors to bullying) in addition to their self-reported helping behaviors, 3) examine the decay of the empathy gap phenomenon across time, and 4) investigate whether the experience of victimization (a chronic "hot" state) moderates the effects of the empathy gap phenomenon. Participants were 106 fourth- and fifth-grade children who were randomly assigned to one of three experimental conditions: 1) Included, 2) Excluded, and 3) Control. All children played an online ball tossing game designed either to put them in a "hot" state of social exclusion (Excluded), a "cold" state of social inclusion (Included), or a neutral non-social comparison (Control). Children in each group then completed a series of computer and vignette tasks to assess empathy for victims of bullying and bystander behavior in response to bullying. Data on victimization were collected via self-, peer-, and teacher-report. Results did not lend support for the empathy gap phenomenon outlined in each of these aims as expected. However, some unexpected

findings did emerge. These findings are discussed in terms of their implications for empathy gaps for social pain in children and directions for future research.

Chapter 1

INTRODUCTION

"I do not ask the wounded person how he feels, I myself become the wounded person." ― Walt Whitman, *Song of Myself*

The ability to understand and experience the pain of others is referred to as empathy (Davis, 1983). Growing evidence suggests that although people may think they fully understand the pain of others, they in fact routinely underestimate the severity of this pain unless they currently are in a similar state of pain. This *empathy gap phenomenon* has been shown to occur both for estimates of physical pain (Christensen-Szlanski, 1984) and for socially painful experiences such as ostracism (Nordgren, Banas, & MacDonald, 2011). To date, the empathy gap phenomenon has been demonstrated in the adult literature (e.g., Nordgren et al., 2011; Van Boven, Loewenstein, & Dunning, 2005); however, to our knowledge, it has not yet been examined in children.

In the present study, we examined whether this phenomenon extends to a child sample. Specifically, we investigated whether the empathy gap phenomenon would replicate when applied to children's bullying episodes. Bullying is a socially painful experience that can cause victims to feel excluded and disliked. Research suggests that empathy mediates bystanders' likelihood to help or intervene in bullying situations (Barhight, Hubbard, & Hyde, 2013), and several widely used bullying prevention programs include an empathy-building component for this reason (e.g.,

Kärnä et al., 2011). Our first aim in the present study was to examine whether children who recently experienced feelings of social exclusion would describe the pain of bullied children as more severe than children who had not recently experienced feelings of social exclusion. In our second aim, we investigated whether this phenomenon influences children's bystander behaviors in bullying situations. In our third aim, we examined the decay of the empathy gap phenomenon over time. Finally, in our fourth aim, we investigated children's level of peer victimization as a moderator of the empathy gap phenomenon.

Social Pain

Although it is widely accepted that individuals experience physical pain (e.g., injury, illness, labor pains), the concept of social pain is much more recent. Eisenberger & Lieberman (2004) defined social pain as "the pain experienced upon social injury when social relationships are threatened, damaged, or lost" (p. 294). Bereavement, forced separation, rejection, and ostracism are examples of events that can induce social pain (MacDonald & Leary, 2005). In contrast, physical pain involves the pain experienced as a result of actual tissue damage or bodily harm. Social pain and physical pain both involve feelings of emotional and sensory distress (Eisenberger & Lieberman, 2004).

Many linguistic similarities between words used to describe physical pain and social pain exist. For example, people describe *hurt* feelings, *burning* with shame, and having an *aching* heart. However, similarities between physical pain and social pain extend beyond linguistics. Panksepp (1998) was among the first to suggest that individuals can experience pain for social events. He suggested that social pain is adaptive because it promotes attachment and prevents social separation, especially

during infancy. Panksepp and colleagues (e.g., Herman & Panksepp, 1978; Nelson & Panksepp, 1998) further suggested that the system responsible for feelings of social pain built upon existing systems for physical pain and represents an evolutionary advancement that promotes survival among social species.

Growing evidence suggests that physical and emotional pain share many neurological, physiological, and psychological features (Eisenberger & Lieberman, 2004; MacDonald & Leary, 2005; Panksepp, 1998). The experience of both types of pain is related to activation of the dorsal anterior cingulate cortex, which is involved in the feelings of distress associated with painful events (dACC; Eisenberger & Lieberman, 2004). In addition, both types of pain relate to activation of the right ventral prefrontal cortex (RVPFC; Eisenberger & Lieberman, 2004). RVPFC activation displays a strong negative relationship to dACC activation, suggesting that RVPFC might help regulate distress associated with pain (Eisenberger & Lieberman, 2004). Acetaminophen (Tylenol) has also been shown to reduce pain for both physical and social events (DeWall et al., 2010). This evidence suggests considerable overlap between the systems for social and physical pain (DeWall et al., 2010).

The Empathy Gap Phenomenon

Although social pain theory is expanding rapidly, less is known about the ways in which people comprehend the experience of social pain both at the interpersonal and intrapersonal levels (Nordgren et al., 2011). Accurate estimates of social pain are important because, as with empathy in general, appraisals of social pain are linked to responding (Nordgren et al., 2011). Despite the importance of accurate appraisals, people routinely underestimate the severity of social pain (e.g., Nordgren et al., 2011) as well as physical pain (e.g., Christensen-Szlanski, 1984).

This tendency to underestimate the severity of pain has been termed a hot/cold empathy gap (Loewenstein, 1999; Van Boven, Dunning, & Loewenstein, 2000). Loewenstein (1996) explains that this phenomenon occurs because people in a "cold" visceral or emotional state (e.g., not experiencing pain, hunger, thirst) underestimate the impact that being in a "hot" visceral or emotional state (e.g., experiencing pain, hunger, thirst) will have on their preferences and behavior. In other words, people do not anticipate the extent to which emotional arousal will influence their appraisal of a situation (Nordgren, van der Plight, & van Harreveld, 2006; Van Boven et al., 2000; Van Boven et al., 2005). This phenomenon occurs both at the interpersonal and intrapersonal level (Nordgren et al., 2011).

This phenomenon has been well documented with regards to visceral states (e.g., hunger, arousal, drug cravings; Nordgren et al., 2006; Sayette, Loewenstein, Griffin, & Black, 2008) and physical pain (e.g., Christensen-Szalanski, 1984; Read & Lowenstein, 1999). For example, in a study by Christensen-Szalanski (1984), researchers asked pregnant women to decide (in a non-binding manner) whether they would like to use anesthesia during childbirth. This decision was made when in a "cold" state of pain, as these women were not actively in labor. At that time, many stated that they would not like to use anesthesia during labor. However, once actively in labor and experiencing labor pains (in a "hot" state of pain) most of the women who stated that they would not like anesthesia reversed this decision. Of note, this reversal occurred *after* the onset of labor and not beforehand, suggesting that it was the onset of pain that caused women to reverse their decisions and not simply that they had considered the option over time and had a change of heart. Additionally, this reversal occurred not only for women who were pregnant for the first time, but also for women

who had had prior pregnancies and thus had experienced labor and childbirth in the past. Thus, the past experience of childbirth appears to have little influence on one's appreciation of how painful the experience is in the moment. It appears that a "hot" state is necessary in order to fully appreciate the severity of pain.

More recently, research with adults has demonstrated that the empathy gap phenomenon extends to social pain as well (Nordgren et al., 2011). Individuals in "cold" states (social inclusion) underestimate the painfulness of "hot" states (social ostracism) for both interpersonal and intrapersonal social pain. This same effect has not been found to occur when people are simply given negative feedback and experience lowered esteem or affect (Nordgren et al., 2011). Thus, the violation of one's own standards (nonsocial) versus others' standards (social) appears to have different consequences.

Hot states appear to be transient, and their influence on judgment and decision-making diminishes relatively quickly. Nordgren and colleagues (2011) had university students play a computer ball-tossing game during which they either experienced inclusion or exclusion. Students then rated their overall experience playing the game and their mood following the game. One week later, students were asked to recall their initial appraisals on these items. Although students in the inclusion condition accurately recalled these items, students in the exclusion condition underestimated the negativity of their initial evaluation in terms of both overall experience and mood. Thus, only one week after being socially excluded, individuals struggled to recall the extent of the social pain they felt immediately following the game.

Bullying

In the proposed study, we applied this construct of the empathy gap to children's bullying episodes. School bullying is a widespread problem, with estimates suggesting that approximately ten percent of children are regularly victimized (Nansel et al., 2001). Children who are the victims of bullying experience negative outcomes across mental health, academic, and physical health domains. In terms of mental health, bullied children suffer from depression, anxiety, and suicidal ideation more than their peers (Borowsky, Taliaferro, & McMorris, 2013; Card & Hodges, 2008; Espelage & Holt, 2013). In the most tragic cases, peer victimization is linked to both suicide (Karch, Logan, McDaniel, Floyd, & Vagi, 2013; Kim & Leventhal, 2008) and school shootings (Reuter-Rice, 2008). Victimization has also been linked to serious academic concerns. Children who are bullied perform more poorly academically than their peers across both grades and standardized test scores. They are also more likely to miss school and avoid attending school (Kochenderfer & Ladd, 1996; Nakamoto & Schwartz, 2010). Finally, victims of bullying experience more frequent and severe health problems than their peers, including headaches, stomachaches, and sleep difficulties; they also visit health professionals more often (Biebl, DiLalla, Davis, Lynch, & Shinn, 2011; Knack, Jensen-Campbell, & Baum, 2011; Nixon, Linkie, Coleman, & Fitch, 2011).

Empathy, Prosocial Behavior, and Bullying

Across many studies, empathy displays a moderate positive correlation with prosocial behavior (for a review, see Eisenberg & Miller, 1987). Thus, appraisals of others' emotional pain are important because they influence the way individuals respond to social events. Furthermore, the belief that another person is experiencing

high emotional distress has been shown to make people more likely to try to help than the belief that another person is not experiencing emotional distress (Nordgren et al., 2011). In a study by Nordgren and colleagues (2011), teachers who perceived the emotional pain of bullying to be especially severe reported that they would advocate for more comprehensive help for victims and harsher punishment for bullies than teachers who perceived the emotional pain of bullying to be less severe. Thus, the consequences of our appraisals can have important consequences for our attitudes and may extend to actual behavior as well.

Empathy may be especially important in the social situation of bullying, because bullying is largely a social phenomenon, with bystanders present in approximately 85% of bullying incidents (Pepler & Craig, 1995). Furthermore, when a bystander expresses disapproval during a bullying incident, bullies stops about 50% of the time (Pepler & Craig, 1995). Given these ideas, it is essential to consider the greater social context of bullying and to incorporate bystander children into bullying interventions (e.g., Swearer & Espelage, 2004).

Children's ability to empathize with victims of bullying has been found to positively predict bystander intervention or support of victims (Barchia & Bussey, 2011; Barhight, Hubbard, & Hyde, 2013; Belacchi & Farina, 2012; Caravita, Di Blasio, & Salmivalli, 2009; Espelage, Green, & Polanin, 2012; Gini, Albiero, Benelli, & Altoè, 2007; Gini, Albiero, Benelli, & Altoè, 2008; Pöyhönen, Juvonen, & Salmivalli, 2010; Raskauskas, Gregory, Harvey, Rifshana, & Evans, 2010). In other words, children who are more likely to help, defend, intervene, or console the victim in bullying situations are those who display higher levels of empathy for these victims. However, empathy alone generally does not account for a large percentage of variance

in bystander behavior. Thus, more research is needed to better understand the nature of children's empathy in order to promote empathy for victims and increase bystander intervention.

Most studies on bystander empathy and defending behavior have examined the relation between dispositional empathy and positive bystander behavior in bullying episodes (e.g., Gini, Albiero, Benelli, & Altoè, 2007). However, there has been less focus on state empathy and its relation to bystander behavior. Research on the empathy gap phenomenon suggests that one's current emotional and visceral state is an important predictor of how one will evaluate and respond in a given situation. Therefore, the overarching goal of the proposed study was to extend the construct of the empathy gap to children's bullying incidents and bystander behaviors to examine how children's current emotional and visceral states may predict their feelings of empathy toward victims of bullying and their likelihood to intervene in bullying situations.

Study Aims and Hypotheses

First Aim

The first aim of the present study was to examine whether children would display the empathy gap phenomenon for social pain in bullying situations. To date, research on the empathy gap phenomenon has only been conducted with adult samples, and so the proposed study represents the first time that these principles have been extended to a child sample. Furthermore, this study represents the first time that empathy gaps have been investigated in the context of bullying.

To achieve this aim, all participants first listened to a bullying vignette and responded to a series of questions to assess baseline interpersonal empathy (appraisals of others' experiences) and intrapersonal empathy (appraisals of one's own experiences) for the variables of pain, positive affect, and negative affect. Children were then randomized into one of three experimental conditions (Included, Excluded, Control) for a computerized ball-tossing game. Following the game, children were asked questions to assess pain, positive affect, and negative affect. Next, children heard 10 bullying vignettes and answered a series of questions to assess interpersonal and intrapersonal empathy (pain, positive affect, negative affect) in response to the vignettes.

To establish that the empathy gap phenomenon occurs, we hypothesized that children in the Excluded group would have higher ratings on pain and negative affect and lower ratings on positive affect than children in the Included or Control groups following the manipulation, although no differences would emerge at baseline. Stated differently, we hypothesized that children in the Excluded condition would show increases in their ratings of pain and negative affect and decreases in their ratings of positive affect from the baseline questions to the questions following the manipulation, but that children in the Included and Control conditions would not show these changes in their ratings. Furthermore, we predicted that these effects would occur for both interpersonal and intrapersonal empathy and for ratings about both the ball-tossing game and the vignettes.

Second Aim

The second aim of the present study was to examine whether the empathy gap phenomenon would extend to children's hypothetical (self-reported) and actual

9

(observed behavior) positive bystander behaviors in bullying situations. That is, we wondered whether being in a "hot" state of social pain, compared to a "cold" state, would make children more likely to report that they would intervene in hypothetical bullying incidents and more likely to actually take behavioral action to include children whom they observe being excluded. Although previous studies have examined the effects of the empathy gap on responding behavior at the hypothetical level (e.g., Nordgren et al., 2011), to our knowledge, the proposed study represents the first time that these effects have been extended to observations of actual behavior. The examination of the effect of the empathy gap on actual observed responding behavior is a significant strength of the proposed study.

To examine this aim, children answered questions to assess how likely they would be to engage in positive bystander behaviors in bullying situations following the baseline vignette, participated in the experimentally-manipulated ball-tossing game, and then answered more questions about engaging in positive bystander behaviors following the ten additional bullying vignettes. In addition, they observed a child being excluded during a second computerized ball-tossing game; they then joined the game, during which behavioral data on their positive bystander behaviors was collected. We hypothesized that children in the Excluded condition, compared to children in the Included and Control conditions, would report more positive bystander behaviors in response to the bullying vignettes following the ball-tossing game, although we did not expect any group differences to emerge at baseline. Stated differently, we hypothesized that children in the Excluded condition would show increases in their positive bystander behaviors from baseline to after the manipulation, but that children in the Included and Control conditions would not show these changes

in their positive bystander behaviors. Furthermore, we predicted that children in the Excluded condition, compared to children in the Included and Control conditions, would display more positive bystander behaviors in the ball-tossing game following the manipulation.

<center>Third Aim</center>

The third aim of the proposed study was to examine whether the empathy gap phenomenon decays across time for children in the context of bullying. In other words, we wanted to explore how long the effects of a "hot" emotional state would persist and effectively close children's empathy gap for social pain and affect in bullying situations, as well as how long this effect would influence children's hypothetical positive bystander behaviors to bullying situations. Nordgren and colleagues (2011) found that the empathy gap for social pain in adults significantly diminished after one week. The proposed study will represent the first time the decay of the empathy gap has been examined in children in the context of bullying. Furthermore, this study included follow-up assessments after one day as well as one week to allow for a more detailed examination of how rapidly this decay occurs.

To address this aim, during one-day and one-week follow-up phone calls, children answered questions about their own experience during the first ball-tossing game to assess decay in intrapersonal empathy (pain, positive affect, negative affect). At the same time, they answered questions to assess decay in interpersonal empathy (pain, positive affect, negative affect), positive bystander behaviors, and intrapersonal empathy (pain, positive affect, negative affect) in response to one of the previously-administered bullying vignettes. Although we predicted that children in the Excluded condition would have higher ratings on pain, negative affect, and positive bystander

<center>11</center>

behaviors and lower ratings on positive affect than children in the Included or Control conditions immediately following the manipulation, we expected that these differences would have dissipated by the one-day and one-week follow-ups. Stated differently, we predicted that Excluded children would demonstrate higher ratings on pain, negative affect, and positive bystander behaviors and lower ratings on positive affect immediately following the manipulation than one day or one week later; however, we did not expect such differences to emerge across time for Included or Control children.

Final Aim

The final aim of the present study was to examine whether child victimization moderates the empathy gap phenomenon examined in the three previous aims. We wondered whether child victimization may act as an ongoing "hot" state making children generally more empathic toward their own and others' social pain and thus minimizing the effects of the experimental manipulation. For all three previous aims, we predicted that the hypothesized effects would emerge for children with average or low levels of victimization, but not for children at high levels of victimization.

Strengths of the Present Study

The present study has a number of strengths designed to build on and extend our knowledge of the empathy gap phenomenon. First, this study is the first to examine the empathy gap phenomenon in children and in the context of bullying. Second, this study represents the first time that the effect of the empathy gap for social pain on actual behavior, as opposed to hypothetical behavior, has been investigated. Third, the inclusion of both one-day and seven-day follow-up assessments allowed for a more detailed examination of how rapidly the empathy gap phenomenon decays.

12

Finally, this study is the first to examine whether a "chronic hot state" (the individual-difference variable of child level of victimization) moderates and minimizes the empathy gap phenomenon.

Chapter 2

METHOD

Data collection occurred in four phases: a classroom phase, a home-visit phase, a one-day follow-up phone call phase, and a seven-day follow-up phone call phase.

Classroom Data Collection

Overview

Classroom data collection occurred during April and May 2014 in 74 fourth- and fifth-grade classrooms in the Red Clay Consolidated School District in Delaware. This phase was designed to be as concurrent as possible with the home-visit phase. Children completed self- and peer-report measures of peer victimization. In addition, teachers completed two measures of peer victimization for each student in their class with parental permission. These self-, peer-, and teacher-reports of peer victimization were used to conduct moderation analyses for the final aim of the project.

Participants

The primary classroom sample included all children with parental permission and child assent in 74 fourth- and fifth-grade classrooms in nine elementary schools in the Red Clay Consolidated School District ($N = 1399$ children in total; see Appendix A for Classroom Parental Permission Form and Appendix B for Classroom Child Assent Form). Sixty percent of this sample identified as European American, 19% as African American, 8% as Asian American, >1% as American Indian or Alaska Native,

4% selected more than one race, and 8% did not indicate a race. Finally, 17% of the sample identified as Hispanic or Latino, 71% of the sample identified as Not Hispanic or Latino, and 12% did not indicate their ethnicity.

These classrooms were participating in a larger, ongoing study of the efficacy of the KiVa Bullying Prevention Program. All 74 classrooms were participating in the KiVa program, and all children had received KiVa lessons throughout the school year.

Procedures and Measures

A Graduate Research Assistant (GRA) and approximately three undergraduate research assistants (URAs) conducted 1-hour visits to each classroom. The GRA group-administered paper-and-pencil self- and peer-report measures to participating children. To protect the confidentiality of responses, children received a manila folder to stand upright on their desk as a "privacy shield." URAs circulated throughout the room to answer questions, keep children on task, and maintain privacy. In addition, URAs worked individually in a private setting with any children whom teachers identified as requiring assistance with reading.

During the classroom visit, we gave teachers a packet of measures for each participating child, along with a consent form (Appendix C). The packet for each child required approximately 5 minutes to complete. We returned two weeks later to pick up completed packets and to compensate teachers with $100 to be used for classroom supplies or activities.

Self-report measures of peer victimization

Children completed three measures to assess peer victimization. First, they completed the 6-item Peer Victimization Scale (PVS; Austin & Joseph, 1996;

15

Appendix D). This scale is designed in the same format as the Perceived Competence Scale for Children (Harter, 1982), in which each item contains two opposite statements (e.g., "Some kids are often teased by other children BUT Other children are not teased by other children"). The child chooses which statement better represents him/her, and then rates that statement as "really true" or "sort of true." Internal consistency of the scale in the current study was **α**= .90. For this measure and all subsequent self- and teacher-report measures, items were reverse-scored as needed and averaged.

Second, children completed the Global Victimization Item from the Revised Olweus Bully/Victim Questionnaire (Olweus, 1996; Appendix E). Kärnä and colleagues (2011) investigated the validity of this single item by calculating school-level correlations between the item and both multi-item self-report measures of victimization (rs = .65–.87, p < .001) and peer-report measures of victimization (rs = .46–.75, p < .001; Kärnä et al., 2011). In the present study, correlations were substantial and similar across grades (rs = .68–.80, p < .001).

Finally, children completed the 20-item Comprehensive Scales of Traditional Peer Victimization – Self-Report Version (CSTPV; Morrow, Hubbard, & Swift, 2014; Appendix F). The CSTPV is comprised of five four-item subscales that represent five subtypes of peer victimization: Social Rebuff, Verbal, Physical, Property Attack, and Social Manipulation. Each of these factors has been found to relate uniquely to increases in children's day-to-day negative affect (Morrow, Hubbard, Barhight, & Thompson, 2014). Internal consistency of the scale in the current study was very good (α= .95).

Peer-report measure of peer victimization

Children completed a single unlimited peer nomination to assess peer victimization (Who gets hit by other kids or has mean things said to them by other kids?). The nomination was printed at the top of a page followed by a class roster. The resulting variable was computed by dividing the number of nominations each child received by the number of children in the classroom completing the nominations.

Teacher-report measures of peer victimization

Teachers completed two measures of peer victimization for each child. First, teachers completed the 6-item teacher adaptation of the Peer Victimization Scale (PVS; Austin & Joseph, 1996; see Appendix G). This adaptation consisted of changing "I" to "This child" throughout the measure. Use of this adapted version within our own lab suggests that scores using the adapted teacher version of the PVS correlate significantly with self-report PVS scores, $r(146) = .33$, $p < .001$ (Swift, Hubbard, Bookhout, Smith, & Grassetti, 2013) and $r(1746) = .23$, $p < .001$ (Hubbard, Bookhout, Smith, Swift, & Grassetti, 2015). Internal consistency of the scale in the current study was good ($\alpha = .85$).

Second, teachers completed the 20-item CSTPV – Teacher Version (Morrow, Hubbard, & Swift, 2014; see Appendix H). This scale was also adapted for teacher use by changing "I" to "This child." When used in our lab previously, scores for the adapted teacher version correlated significantly with self-report CSTPV scores, $r(147) = .37$, $p < .001$. Finally, one-month test-retest reliability appears to be adequate, ($r(161) = .54$, $p < .001$; Swift et al., 2013). Internal consistency of the scale in the current study was very good ($\alpha = .95$).

Thus, six measures of peer victimization were collected in all. Correlations among these six measures are presented in Table 1 and were strong. Therefore, we standardized and averaged these six measures to create an aggregate variable, Aggregate Peer Victimization, which was used in all moderation analyses for the final aim of the study.

Table 1   Bivariate Correlations of Peer Victimization Variables

	1	2	3	4	5
1. Self-Report: Peer Victimization Scale					
2. Self-Report: Global Victimization Item	.68**				
3. Self-Report: CSTPV	.41**	.34**			
4. Peer-Report: Peer Nomination Item for Victimization	.34**	.33**	.42**		
5. Teacher-Report: Peer Victimization Scale	.49**	.42**	.53**	.33**	
6. Teacher-Report: CSTPV	.41**	.34**	.37**	.29**	.64**

Note. *$p < .05$; **$p < .01$; CSTPV = Comprehensive Scales of Traditional Peer Victimization

Home-Visit Data Collection

Overview

Home-visit data collection occurred from January through May 2014 and represents the core purpose of the present study. Home-visit participants included a subsample of 106 children who participated in classroom data collection, along with their caregiver.

During the home-visits, we randomized children into one of three experimental conditions: 1) Control, 2) Included, and 3) Excluded. Prior to undergoing the experimental manipulation, all children listened to a bullying vignette (termed the

target vignette because children heard this vignette again later in the home visit, as well as during each of the two follow-up phone calls). Then, we asked children a series of questions to assess interpersonal empathy (pain, positive affect, negative affect), intrapersonal empathy (pain, positive affect, negative affect), and positive bystander behaviors. This procedure allowed us to generate baseline ratings of these variables.

Next, children completed a ball-tossing task as an experimental manipulation. In the Control condition, children played a 5-minute computer game in which they clicked on a ball that changed position on the screen. This task was designed to be nonsocial in nature but to mimic the other two conditions as closely as possible in all other respects. In the Included and Excluded conditions, children played a 5-minute computer ball-tossing game called Cyberball (Williams, Cheung, & Choi, 2000; Williams, Yeager, Cheung, & Choi, 2012). Children in the Cyberball conditions were told they were playing with two other children, although actually these other children were virtual peers. In the Included condition, children were thrown the ball an equal number of times as the two virtual peer; in the Excluded condition, children were thrown the ball significantly less than the two virtual peers.

Following completion of the ball-tossing task, we asked children three questions to assess their own experience playing the ball-tossing game. One question assessed pain, one question assessed positive affect, and one question assessed negative affect. Next, we read children 10 bullying vignettes and asked them a series of questions after each one. These questions assessed interpersonal empathy (pain, positive affect, negative affect), positive bystander behaviors, and intrapersonal empathy (pain, positive affect, negative affect).

19

Children then played a final game of Cyberball in which they first observed three other virtual peers playing and then had the opportunity to join in the play. During the observation period, two of the three virtual peers tossed the ball to the third player significantly less than they tossed it to each other. When the child entered the game, he/she had the opportunity to decide whom he/she would like to throw the ball; this provided a behavioral measure of positive bystander behavior.

Participants

The home-visit sample included a subsample (N = 106) of fourth- and fifth-grade children from the classroom sample whose caregivers gave permission to be contacted about future studies. Fifty-two percent (n = 55) were female. Sixty percent of this sample identified as European American, 32% as African American, 2% as Asian American, 5% selected more than one race, and 1% declined to respond. Finally, 13% of the sample identified as Hispanic or Latino, 83% of the sample identified as Not Hispanic or Latino, and 4% declined to respond. Mean age at time of home visit was 10.5 years (*SD* = 0.62).

This subsample was recruited through a telephone call to the child's caregiver in which a GRA described the purpose and procedures of the study (see Appendix I for telephone recruiting script). Caregivers who indicated willingness to participate were scheduled for a two-hour home visit, during which the Home-Visit Parental Permission Form and Home-Visit Child Assent Form were completed (see Appendices J and K).

The home-visit sample was stratified by sex and self-reported peer victimization (low-, avg-, and high-victimization) visit using the Global Victimization Item from the Revised Olweus Bully/Victim Questionnaire (Olweus, 1996; Appendix

E), with a cutoff of +/-0.5 SD for low and high victimization. These data were taken from preliminary classroom visits that occurred in September and October 2013, rather than the primary classroom visits that occurred in April and May 2014. We stratified the home-visit sample in this way for two reasons. First, even with 100% participation, a random sample of children would have included only a few children with high levels of peer victimization. By stratifying the sample, we helped insure that children across the continuum on this construct would participate. Second, past experience in our laboratory suggests that "randomly" recruiting laboratory participants from a classroom sample actually results in an underrepresentation of children with negative characteristics; these children's families are often more difficult to contact, more likely to refuse participation, and more likely to no-show or cancel.

Home-visit procedures and measures

A GRA and URA conducted a two-hour home visit with each child and their caregiver. A second URA accompanied them if the caregiver requested babysitting for siblings. The GRA worked with the child to complete the Cyberball tasks and Bullying Vignettes described below, while the URA worked with the parent on other tasks unrelated to the current project. At the conclusion of the home visit, children and caregivers were debriefed and given the opportunity to ask questions (see Appendix L for initial debriefing script). Families were compensated with $50, and children received a small toy of their choosing from a collection of desirable toys. In addition, the GRA left a copy of the Faces of Pain Scale-Revised and Likert scales for the pain and affect questions with the family to be used for the one-day and seven day follow up phone calls.

21

Baseline vignette task

Following completion of parental consent and child assent, children heard the target bullying vignette and answer a series of questions assessing interpersonal empathy, positive bystander behaviors, and intrapersonal empathy. These responses served as baseline ratings.

The GRA first introduced the concept of Pain by telling the child, "Today I will be asking you some questions about how much things might hurt. Hurt can mean lots of things. For example, your body can get hurt, or your feelings can get hurt. For all the questions about hurt that I'm going to ask you, both of these kinds of hurt can count. So I want you to think about both of these kinds of hurt when you reply. Do you have any questions?" The child was instructed to respond to all Pain questions using the Faces of Pain Scale-Revised (Hicks, von Baeyer, Spafford, van Korlaar, & Goodenough, 2001; Appendix M).

Interpersonal Empathy

After the vignette, the GRA asked the child to indicate, "How much does this situation hurt [VICTIM'S NAME]?" using the Faces of Pain Scale-Revised (Hicks et al., 2001). In addition, the GRA asked the child "How good does this situation make [VICTIM'S NAME] feel?" and "How bad does this situation make [VICTIM'S NAME] feel?" Children responded using a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*a whole lot*). These responses formed the variables Victim Pain Baseline, Victim Positive Affect Baseline, and Victim Negative Affect Baseline.

Positive bystander behaviors

The GRA asked the child three questions to assess the likelihood that he/she would engage in positive bystander behaviors if he/she witnessed the situation

described in the vignette. First, the GRA asked the child to indicate "How likely would you be to try to stop [BULLY'S NAME]?" Second, the GRA asked the child to indicate "How likely would you be to try to help or comfort [VICTIM'S NAME]?" Third, the GRA asked the child to indicate "How likely would you be to try to get an adult to help?" Children responded to each of these items using a 5-point Likert scale ranging from 1 (*very unlikely*) to 5 (*very likely*). As correlations among these three responses were sufficiently strong (see Table 2), these responses were averaged to form the variable Positive Bystander Behaviors Vignettes Baseline.

Table 2   Bivariate Correlations of Positive Bystander Behaviors

	Correlations: Baseline	
	1	**2**
1. Stop Bully		
2. Help/Comfort Victim	.28**	
3. Get Adult	.24*	.31**
	Correlations: Time 1	
	1	**2**
1. Stop Bully		
2. Help/Comfort Victim	.52**	
3. Get Adult	.40**	.53**
	Correlations: Time 2	
	1	**2**
1. Stop Bully		
2. Help/Comfort Victim	.21*	
3. Get Adult	.23*	.25*
	Correlations: Time 3	
	1	**2**
1. Stop Bully		
2. Help/Comfort Victim	.33**	
3. Get Adult	.38**	.40**

Note. *$p < .05$; **$p < .0$

Intrapersonal empathy

Next, the GRA told the child, "Now imagine that you are [VICTIM'S NAME]." Next, the GRA asked children to indicate, "How much would this situation hurt you?" using the Faces of Pain Scale-Revised (Hicks et al., 2001). Then, the GRA asked the child, "Still imagining that you are [VICTIM'S NAME], how good would this situation make you feel?" and "How bad would this situation make you feel?" Children responded using a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*a whole lot*). These responses formed the variables Hypothetical Self Pain Baseline, Hypothetical Self Positive Affect Baseline, and Hypothetical Self Negative Affect Baseline. Of note, one child opted to "skip" all of these three items; another child opted to "skip" just the item assessing Hypothetical Self Positive Affect Baseline.

Experimental manipulation: Ball task

Children played one of three possible computerized ball tasks for five minutes. We randomized children into one of three experimental conditions: 1) Included, 2) Excluded, and 3) Control. In the Included and Excluded conditions, children played a social, computerized ball-tossing game called Cyberball (Williams et al., 2000) for five minutes. The GRA read instructions to the child about how to play the game prior to the start of play (Appendix N). Children were told that they were playing with two other children over the computer; however, in reality, children were playing with virtual peers. In the Included condition, the virtual peers tossed the ball to the participant child 33% of the time. In the Excluded condition, the virtual peers tossed the ball to the participant child twice at the beginning of the game but stopped tossing

stop tossing it to him/her thereafter for the remainder of the game. In the Control condition, children played a nonsocial, computerized ball game in which they clicked on a picture of a ball that changed position on the screen. This task also lasted for five minutes.

Manipulation check for Included and Excluded Cyberball conditions

Following the Cyberball game, the GRA asked the children in the Excluded and Included groups two questions as a manipulation check. First, children were asked to rate how much they agreed or disagreed with the statement *All the kids playing the Cyberball game got thrown the ball the same number of times*. Children responded verbally using a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) to form the variable Manipulation Check 1. Second, children were asked to respond verbally to the question, "How many times did you catch the ball?" to form the variable Manipulation Check 2.

Questions assessing pain and affect

After playing the ball game, children responded to one question assessing pain and two questions assessing affect. The GRA reiterated the instructions for the Pain question by telling the child, "Remember, I will be asking you some questions about how much things might hurt. Hurt can mean lots of things. For example, your body can get hurt, or your feelings can get hurt. For all the questions about hurt that I'm going to ask you, both of these kinds of hurt can count. So I want you to think about both of these kinds of hurt when you reply." Then, the GRA asked the child to indicate "How much did playing [the ball game/Cyberball] hurt?" using the Faces of Pain Scale-Revised (Hicks et al., 2001). Second, the GRA asked the child two

25

questions to assess affect. To assess positive affect, the GRA asked the child, "How good did playing [the ball game/Cyberball] make you feel?" To assess negative affect, the GRA asked the child, "How bad did playing [the ball game/Cyberball] make you feel?" For both of these questions, children responded using a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*a whole lot*). These questions resulted in the variables Actual Self Pain Time 1, Actual Self Positive Affect Time 1, and Actual Self Negative Affect Time 1. Of note, one child (Included group) opted to "skip" the item for Actual Self Pain Time 1.

Bullying vignettes

Next, the GRA read the child 10 Bullying Vignettes (Appendix O) describing different types of bullying situations (physical, verbal, social manipulation, property attack, social rebuff). After each vignette, the GRA asked the child a series of questions assessing interpersonal empathy, positive bystander behaviors, and intrapersonal empathy.

Interpersonal empathy

After each vignette, the GRA asked the child to indicate, "How much does this situation hurt [VICTIM'S NAME]?" using the Faces of Pain Scale-Revised (Hicks et al., 2001). In addition, the GRA asked the child "How good does this situation make [VICTIM'S NAME] feel?" and "How bad does this situation make [VICTIM'S NAME] feel?" Children responded using a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*a whole lot*). Responses were averaged across the ten vignettes to form the variables Victim Pain Time 1, Victim Positive Affect Time 1, and Victim Negative Affect Time 1.

Positive bystander behaviors

The GRA asked the child three questions to assess the likelihood that he/she would engage in positive bystander behaviors if he/she witnessed the situation described in the vignette. First, the GRA asked the child to indicate "How likely would you be to try to stop [BULLY'S NAME]?" Second, the GRA asked the child to indicate "How likely would you be to try to help or comfort [VICTIM'S NAME]?" Third, the GRA asked the child to indicate "How likely would you be to try to get an adult to help?" Children responded to each of these items using a 5-point Likert scale ranging from 1 (*very unlikely*) to 5 (*very likely*). These responses were averaged across the ten vignettes to form the variables Stop Bully Vignettes Time 1, Help/Comfort Victim Vignettes Time 1, and Get Adult Vignettes Time 1. As correlations among these three responses were sufficiently strong (see Table 2), these responses were averaged to form the variable Positive Bystander Behaviors Vignettes Time 1, which was used in all subsequent analyses. The same approach to forming this variable was used at Time 2 (1-day follow-up phone call) and Time 3 (7-day follow-up phone call).

Intrapersonal empathy

Finally, the GRA told the child, "Now imagine that you are [VICTIM'S NAME]." Next, the GRA asked children to indicate, "How much would this situation hurt you?" using the Faces of Pain Scale-Revised (Hicks et al., 2001). Then, the GRA asked the child, "Still imagining that you are [VICTIM'S NAME], how good would this situation make you feel?" and "How bad would this situation make you feel?" Children responded using a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*a whole lot*). These responses were averaged across the ten vignettes to form the

variables Hypothetical Self Pain Time 1, Hypothetical Self Positive Affect Time 1, and Hypothetical Self Negative Affect Time 1.

Intervening tasks

Next, children completed a series of tasks for a separate study that is unrelated to the present one. These tasks included answering several questionnaires, as well as a task in which they heard bullying vignettes and had a discussion with their caregiver about what they would do in that particular situation. These tasks took approximately 30 minutes to complete.

Second ball task: Cyberball

All children then played another round of Cyberball for 5 minutes. This task was designed to provide a behavioral index of children's bystander behavior (including or excluding a victimized peer) in response to an observed bullying situation (e.g., social exclusion). Prior to playing this game, the GRA reminded children about how they reported feeling after playing the ball-tossing game the first time. This reminder was designed to induce the same affective state that children were experiencing immediately following the experimental manipulation. The GRA told the child, "Think back to the ball game that you played earlier today. When you played that game you said that it hurt you [re-read child's response to this item], made you feel good [re-read child's response to this item], and made you feel bad [re-read child's response to this item]. Now you are going to play Cyberball on this computer. *[For kids who were in the control condition, provide introduction to Cyberball here.]* First, you will watch three other children playing the game with each other. Then, you will have the chance to join the game and play with them."

Children observed three virtual peers playing Cyberball with each other for 2.5 minutes. Initially, the three virtual peers threw the ball to each other an equal number of times for 2 rounds. After that, however, two of the virtual peers (included peers) stopped throwing the ball to the third virtual peer (excluded peer) for the remainder of the game (includes observation period and 4-player game play). After 2.5 minutes of observation, the participant child entered the Cyberball game and had the opportunity to choose to whom he/she would like to throw the ball for the remaining 2.5 minutes. The three virtual peers threw the ball to the participant child 33% of the time during this period. The included virtual peers refrained from throwing the ball to the excluded virtual peer for the remainder of the game. The excluded virtual peer threw the ball to the other plays an equal number of times.

Actual positive bystander behaviors

The participant child's behavior during the final 2.5 minutes of the game was used to create variables assessing bystander behaviors in Cyberball. These variables included First Throw to Excluded Child (coded Y/N) and Percent of Throws to Excluded Child. Of note, we were unable to calculate Percent of Throws to Excluded Child for two participants (both in Excluded group) due to technical difficulties with the game after the game had started.

Interpersonal empathy

After the second Cyberball game, the GRA told child to "Think back to before you started playing the game. How much did this situation hurt [VICTIM'S NAME]?" Children responded using the Faces of Pain Scale-Revised (Hicks et al., 2001). In addition, the GRA asked the child "How good did the situation make [VICTIM'S

NAME] feel?" and "How bad did this situation make [VICTIM'S NAME] feel?"

Children responded using a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*a whole lot*). These responses formed the variables Victim Pain Game Time 1, Victim Positive Affect Game Time 1, and Victim Negative Affect Game Time 1.

Follow-up Phone Calls Procedures and Questions

Phone calls

Follow-up phone calls occurred approximately one and seven days after the home visit. For the one-day follow up calls, a total of 7 children did not participate (3 Excluded, 2 Included, 2 Control) due to an inability to reach the family. For the seven-day calls, a total of 11 children did not participate (6 Excluded, 2 Included, 3 Control) due to an inability to reach the family. A URA scheduled the date and time of these follow up calls with the family during the home visit. Families were contacted during this scheduled time. If this initial contact was unsuccessful, successive attempts were made to contact the family for up to three days following the target date.

A graduate research assistant (GRA) or advanced undergraduate research assistant (URA) called the child and asked a series of questions to assess the decay of the empathy gap phenomenon (see Appendix P for Follow-up Phone Script). First, the GRA/URA asked the child three questions about their own experience playing the ball game in order to assess decay in Intrapersonal Empathy. Second, the GRA/URA re-read the target bullying vignette and asked the same questions asked during the home visit to assess decay in interpersonal empathy (pain, positive affect, negative affect),

positive bystander behaviors, and intrapersonal empathy (pain, positive affect, negative affect).

First, children were prompted as follows: "[*Number of days since home visit*] ago you played the [ball game/Cyberball game] [with two other kids]. Think back to what it was like to play the game." To assess decay of Intrapersonal Empathy, children were asked to respond to the same three questions about the ball game asked during the home visit ("How much did playing [the ball game/Cyberball] hurt?", "How good did playing [the ball game/Cyberball] make you feel?", and "How bad did playing [the ball game/Cyberball] make you feel?"). These questions resulted in the variables Actual Self Pain Time 2(3), Actual Self Positive Affect Time 2(3), and Actual Self Negative Affect Time 2(3).

Second, the GRA/URA re-read the target bullying vignette and asked the same nine questions asked during the home visit to assess decay of intrapersonal empathy, interpersonal empathy, and positive bystander behaviors. Children responded verbally and the GRA/URA recorded each response. These responses formed the variables Victim Pain Time 2(3), Victim Positive Affect Time 2(3), Victim Negative Affect Time 2(3), Positive Bystander Behavior Vignettes Time 2(3), Hypothetical Self Pain Time 2(3), Hypothetical Self Positive Affect Time 2(3), and Hypothetical Self Negative Affect Time 2(3).

Third, the GRA/URA prompted the child to recall the second Cyberball game as follows: "[*Number of days since home visit]* ago you played a game of Cyberball in which you first watched three other kids playing and then you had the chance to join the game. Think back to what it was like to watch the game and then to play the game." To assess decay of Intrapersonal Empathy for this game, children were asked

to respond to the same three questions about the Second Ball Game asked during the home visit ("How much did this situation hurt [VICTIM'S NAME]?", "How good did the situation make [VICTIM'S NAME] feel?", and "How bad did this situation make [VICTIM'S NAME] feel?" These responses formed the variables Victim Pain Game Time 2(3), Victim Positive Affect Game Time 2(3), and Victim Negative Affect Game Time 2(3).

Final debriefing

We did not debrief children about the Cyberball task and virtual peers at the conclusion of the second phone call. We did, however, give parents the option to debrief their child themselves following the home visit procedure if they believed their child to be especially upset by the Cyberball experience. We debriefed children in a positive and developmentally appropriate way about the other tasks that they completed and the overall goal of the study (see Appendix Q for Final Debriefing Script and Appendix R for discussion of Human Subjects Issues).

Chapter 3

RESULTS

See Table 3 for a summary of variables collected during the home visit and follow-up calls. Descriptive statistics for each of these variables are listed in Table 4. For all variables, higher scores represent increased levels of the construct of interest. We identified skewed variables (using a cutoff of +/-0.5; Glass & Hopkins, 1996) and corrected them by performing log, square root, and inverse transformations; we reflected negatively skewed variables prior to transforming them. For each variable, the transformation that reduced skewness the most was noted for subsequent analyses.[1] Furthermore, we identified and addressed outliers in all analyses where appropriate.[2]

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[1] When running models, transformations that best reduced skewness for each variable included in the model were applied across all appropriate variables in that model. If more than one transformation was deemed to be appropriate for a single variable (e.g., reduced skewness below +/-0.5 or reduced skewness to a similar lowest level), these transformations were applied across all appropriate variables within a single model, the fit of each resulting model was examined, and the best-fitting model was selected. If two or more variables included in the model included skewed variables that were deemed to be best addressed by different transformations, these transformations were also applied across all appropriate variables within a single model, the fit of each resulting model was examined, and the best-fitting model was selected. We selected the best fitting overall model by comparing performance across several indicators, including Levene's homogeneity of variances, Box's test of equality of covariances, and tests of normality (e.g., Shapiro-Wilk test and examination of Q-Q Plots), and selecting the model with the overall best fit.

[2] Outliers first were examined prior to running each model by using box plots (1.5 box lengths from the edge of the box) and again after running each model through examination of Studentized Residuals (using a cutoff of +/-3.0). Outliers identified using these methods were addressed by changing their value to the next highest score plus one. If the resulting model displayed substantially improved performance (as evidenced by significant improvement across indicators – see above) this better-fitting model was kept. If performance did not improve substantially, we returned outliers to their original form and included them in analyses.

Table 3   Summary of Variables and Procedures

Time Points Assessed	Variable Name	Description	Empathy Subtype	Reference Stimulus	Response Scale
B, T1, T2, T3	Victim Pain	"How much does this situation hurt [VICTIM'S NAME]?"	Interpersonal	Vignettes*	Faces of Pain
B, T1, T2, T3	Victim PA	"How good does this situation make [VICTIM'S NAME] feel?"	Interpersonal	Vignettes	5-point Likert scale: 1 (*not at all*) to 5 (*a whole lot*)
B, T1, T2, T3	Victim NA	"How bad does this situation make [VICTIM'S NAME] feel?"	Interpersonal	Vignettes	5-point Likert scale: 1 (*not at all*) to 5 (*a whole lot*)
B, T1, T2, T3	Hypothetical Self Pain	"How much would this situation hurt you?"	Intrapersonal	Vignettes	Faces of Pain
B, T1, T2, T3	Hypothetical Self PA	"How good would this situation make you feel?"	Intrapersonal	Vignettes	5-point Likert scale: 1 (*not at all*) to 5 (*a whole lot*)
B, T1, T2, T3	Hypothetical Self NA	"How bad would this situation make you feel?"	Intrapersonal	Vignettes	5-point Likert scale: 1 (*not at all*) to 5 (*a whole lot*)
B, T1, T2, T3	PBB Vignettes	"How likely would you be to try to stop bully/help or comfort victim/get an adult?"	PBB	Vignettes	5-point Likert scale: 1 (very unlikely) to 5 (very likely)
T1	First Throw to Excluded Child	Player to whom the participant throws the ball to first during Cyberball	Actual PBB	2nd Cyberball Game	Data collected from Cyberball game

34

Table 3 – Continued

Time Points Assessed	Variable Name	Description	Empathy Subtype	Reference Stimulus	Response Scale
T1	Percent Throws to Excluded Child	Number of times participant throws the ball to excluded child during Cyberball	Actual PBB	2nd Cyberball Game	Data collected from Cyberball game
T1, T2, T3	Victim Pain Game	"How much did this situation hurt [VICTIM'S NAME]?"	Interpersonal	2nd Cyberball Game	Faces of Pain
T1, T2, T3	Victim PA Game	"How good did the situation make [VICTIM'S NAME] feel?"	Interpersonal	2nd Cyberball Game	5-point Likert scale: 1 (*not at all*) to 5 (*a whole lot*)
T1, T2, T3	Victim NA Game	"How bad did the situation make [VICTIM'S NAME] feel?"	Interpersonal	2nd Cyberball Game	5-point Likert scale: 1 (*not at all*) to 5 (*a whole lot*)
T1, T2, T3	Actual Self Pain	"How much did playing [the ball game/Cyberball] hurt?"	Intrapersonal	1st Cyberball Game	Faces of Pain
T1, T2, T3	Actual Self PA	"How good did playing [the ball game/Cyberball] make you feel?"	Intrapersonal	1st Cyberball Game	5-point Likert scale: 1 (*not at all*) to 5 (*a whole lot*)
T1, T2, T3	Actual Self NA	"How bad did playing [the ball game/Cyberball] make you feel?"	Intrapersonal	1st Cyberball Game	5-point Likert scale: 1 (*not at all*) to 5 (*a whole lot*)

Note. PA = Positive Affect; NA = Negative Affect; B = Baseline; T1 = Time 1; T2 = Time 2; T3 = Time 3; PBB = Positive Bystander Behaviors.
*Vignettes include the Target Vignette from Baseline, Time 2, and Time 3, and Vignettes 1-10 at Time 1.

Table 4   Descriptive Statistics for Final Variables

Measure	N	Min.	Max.	*M*	*SD*	Skewness
Classroom Visit Variables						
Aggregate Peer Victimization	106	-0.74	4.4	0.81	0.76	1.51
Home Visit: Baseline						
Victim Pain Baseline	106	2	10	7.08	2.14	-0.27
Victim PA Baseline	106	1	5	1.36	0.89	2.58
Victim NA Baseline	106	2	5	4.23	0.94	-1.1
PBB Vignettes	106	2.33	5	4.34	0.61	-1.21
Hypothetical Self Pain Baseline	105	0	10	6.40	2.93	-0.52
Hypothetical Self PA Baseline	104	1	5	1.36	0.76	2.25
Hypothetical Self NA Baseline	105	1	5	3.78	1.25	-0.72
Manipulation Check						
Manipulation Check 1	71	1	5	2.68	1.23	0.37
Manipulation Check 2	71	2	30	8.62	6.52	1.41
Home Visit: Time 1						
Actual Self Pain Time 1	105	0	10	1.62	2.44	1.74
Actual Self PA Time 1	106	1	5	3.20	1.3	-0.19
Actual Self NA Time 1	106	1	5	1.60	0.99	1.7
Victim Pain Time 1	106	4.6	10	8.18	1.3	-0.64
Victim PA Time 1	106	1	3.86	1.16	0.45	4.13
Victim NA Time 1	106	1.2	5.29	4.47	0.7	-2.37
PBB Time 1	106	1.96	2.24	2.18	0.05	-1.14
Hypothetical Self Pain Time 1	106	0.2	10	7.15	2.03	-0.94
Hypothetical Self PA Time 1	106	1	4.29	1.22	0.44	3.97
Hypothetical Self NA Time 1	106	1.1	5	4.18	0.89	-1.67
First Throw to Excluded Child	106	0	1	0.75	0.432	-1.201
Percent of Throws to Excluded Child	104	0	0.91	0.49	0.14	-0.02
Victim Pain Game Time 1	106	0	10	4.75	3.25	0.07
Victim PA Game Time 1	106	1	5	2.23	1.32	0.89
Victim NA Game Time 1	106	1	5	3.18	1.44	-0.18

Table 4 – Continued

Measure	N	Min.	Max.	*M*	*SD*	Skewness
Follow-up Phone Calls: Time 2						
Actual Self Pain Time 2	99	0	10	1.31	2.31	1.89
Actual Self PA Time 2	99	1	5	3.62	1.27	-0.65
Actual Self NA Time 2	99	1	5	1.53	1.04	2.00
Victim Pain Time 2	99	2	10	7.70	1.99	-0.58
Victim PA Time 2	99	1	5	1.17	0.66	4.69
Victim NA Time 2	99	1	5	4.35	0.94	-2.05
PBB Vignettes	99	2.33	5	4.45	0.57	-1.17
Hypothetical Self Pain Time 2	99	0	10	6.59	2.65	-0.59
Hypothetical Self PA Time 2	99	1	5	1.22	0.71	3.88
Hypothetical Self NA Time 2	99	1	5	4.04	1.12	-1.05
Victim Pain Game Time 2	99	0	10	5.25	3.14	-0.17
Victim PA Game Time 2	99	1	5	2.08	1.34	1.08
Victim NA Game Time 2	99	1	5	3.24	1.38	-0.35
Follow-Up Phone Calls: Time 3						
Actual Self Pain Time 3	95	0	10	1.37	2.39	1.97
Actual Self PA Time 3	95	1	5	3.48	1.25	-0.52
Actual Self NA Time 3	95	1	5	1.49	0.91	1.97
Victim Pain Time 3	95	0	10	7.56	2.03	-0.80
Victim PA Time 3	95	1	5	1.18	0.65	4.75
Victim NA Time 3	95	1	5	4.25	0.91	-1.82
PBB Vignettes	95	2	5	4.23	0.71	-0.98
Hypothetical Self Pain Time 3	95	0	10	6.57	2.79	-0.50
Hypothetical Self PA Time 3	95	1	5	1.17	0.58	4.40
Hypothetical Self NA Time 3	95	1	5	4.02	1.09	-1.05
Victim Pain Game Time 3	95	0	10	4.72	2.99	0.20
Victim PA Game Time 3	95	1	5	1.96	1.30	1.29
Victim NA Game Time 3	95	1	5	3.22	1.35	-0.26

Note. PA = Positive Affect; NA = Negative Affect; B = Baseline; T1 = Time 1; T2 = Time 2; T3 = Time 3; PBB = Positive Bystander Behaviors.

Manipulation Check Analyses

To determine whether the Cyberball manipulation was effective, we conducted separate independent samples *t*-tests to compare the means of the Included and Excluded groups on the two manipulation check variables (Manipulation Check 1 and Manipulation Check 2). We anticipated that children in the Excluded group would score lower than children in the Included group for both of these variables. As expected, for Manipulation Check 1, the Excluded group (*M* = 2.14, *SD* = 1.24) scored significantly lower than the Included group (*M* = 3.27, *SD* = 1.07), *t*(70) = 4.14, *p*<.0005. Similarly, for Manipulation Check 2, the Excluded group (*M* = 4.09, *SD* = 1.91) scored significantly lower than the Included group (*M* = 12.78, *SD* = 6.48), *t*(42.74) = 7.80, *p*<.0005.[3] Thus, children in the Excluded group reported being thrown the ball an unequal and fewer number of times than children in the Included group.

First Aim: Do Children Display the Empathy Gap Phenomenon for Social Pain and Affect in Bullying Situations?

To address these hypotheses, we conducted a series of 3 x 2 (Group x Time) Mixed ANOVAs to examine whether children displayed the empathy gap phenomenon for social pain and affect in bullying situations. For interpersonal empathy, we used the variables Victim Pain Baseline and Victim Pain Time 1 (pain), Victim Positive Affect Baseline and Victim Positive Affect Time 1 (positive affect), and Victim Negative Affect Baseline and Victim Negative Affect Time 1 (negative affect). For intrapersonal empathy we used the variables Hypothetical Self Pain

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[3] The assumption of homogeneity of variances was violated, as assessed by Levene's test for equality of variances (*p* < .005). Therefore, the unequal variances, or Welch, t-test is reported here.

Baseline and Hypothetical Self Pain Time 1, Hypothetical Self Positive Affect Baseline and Hypothetical Self Positive Affect Time 1, and Hypothetical Self Negative Affect Baseline and Hypothetical Self Negative Affect Time 1. We hypothesized that the Group x Time interaction would be significant for all variables. When examining simple effects at each level of Time, we predicted that no Group differences would emerge at Baseline, but that at Time 1, children in the Excluded group would have higher ratings of pain and negative affect and lower ratings of positive affect than children in the Included and Control groups. When examining simple effects at each level of Group, we predicted that a Time effect would emerge for the Excluded children, such that they would show higher ratings of pain and negative affect and lower ratings of positive affect at Time 1 than at Baseline; however, we hypothesized that these scores would not differ between Baseline and Time 1 for children in the Included and Control groups.

None of the interactions were significant (see Table 5). In addition, there were no significant Group effects (see Table 6). However, significant Time effects (see Table 7) emerged for all interpersonal variables. For interpersonal pain (Victim Pain), children across all groups judged the bullying vignettes to be more painful for the victim at Time 1 than at Baseline. For interpersonal affect, children across all groups judged the victim to experience less positive affect (Victim Positive Affect) at Time 1 than at Baseline, and more negative affect (Victim Negative Affect) at Time 1 than at Baseline.

| Table 5 | Group (Excluded, Included, Control) x Time (Baseline, Time 1) Interaction Results from Aim 1 |

Variable of Interest	df	F	p	partial η²	Excluded	Included	Control
Victim Pain	2, 103	1.05	.35	.02			
B					7.66	6.97	6.76
					(2.09)	(2.09)	(1.84)
T1					8.31	8.18	8.04
					(1.15)	(1.49)	(1.26)
Victim PA	2, 103	0.31	.71	.01			
B					1.34	1.49	1.24
					(0.84)	(1.02)	(0.79)
T1					1.11	1.24	1.14
					(0.24)	(0.55)	(0.50)
Victim NA[a]	2, 103	0.06	.94	.00			
B					0.71	0.68	0.74
					(0.31)	(0.31)	(0.27)
T1					0.62	0.58	0.62
					(0.15)	(0.16)	(0.16)
Hypothetical Self Pain	2, 102	0.64	.53	.01			
B					6.69	6.11	6.42
					(2.95)	(3.20)	(2.63)
T1					7.29	7.19	7.05
					(2.15)	(2.05)	(1.91)
Hypothetical Self PA[a]	2, 101	0.19	.67	.00			
B					0.89	0.80	0.93
					(0.25)	(0.29)	(0.20)
T1					0.89	0.86	0.91
					(0.18)	(0.19)	(0.13)
Hypothetical Self NA	2, 102	0.46	.63	.01			
B					3.83	3.62	3.91
					(1.27)	(1.28)	(1.21)
T1					4.20	4.16	4.19
					(0.84)	(0.98)	(0.88)

Note. PA = Positive Affect; NA = Negative Affect; B = Baseline; T1 = Time 1.
[a] Indicates models to which inverse transformations were applied.

Table 6   Group (Excluded, Included, Control) Effects from Aim 1

Variables	df	F	p	partial η^2	Excluded	Included	Control
Victim Pain	2, 103	1.62	.20	.03	7.99 (0.24)	7.58 (0.23)	7.40 (0.24)
Victim PA	2, 103	0.93	.40	.02	1.23 (0.10)	1.36 (0.09)	1.19 (0.01)
Victim NA[a]	2, 103	0.56	.58	.01	0.67 (0.03)	0.63 (0.03)	0.68 (0.03)
Hypothetical Self Pain	2, 102	0.20	.82	.004	6.99 (0.39)	6.65 (0.38)	6.74 (0.40)
Hypothetical Self PA[a]	2, 101	2.39	.10	.05	0.89 (0.03)	0.83 (0.03)	0.92 (0.03)
Hypothetical Self NA	2, 102	0.29	.75	.01	4.02 (0.16)	3.89 (0.16)	4.05 (0.16)

Note. PA = Positive Affect; NA = Negative Affect.
[a] Indicates models to which inverse transformations were applied.

Table 7   Time (Baseline, Time 1) Effects from Aim 1

Variables	df	F	p	partial η^2	Baseline	Time 1
Victim Pain	1, 103	30.26	<.0005	.23	7.13 (2.03)	8.18 (1.30)
Victim PA	1, 103	5.75	<.05	.05	1.36 (0.89)	1.16 (0.45)
Victim NA[a]	1, 103	14.03	<.0005	.12	0.61 (0.16)	0.71 (0.30)
Hypothetical Self Pain	1, 102	14.94	< .005	.13	6.40 (2.02)	7.12 (2.02)
Hypothetical Self PA[a]	1, 102	0.94	.39	.02	0.87 (0.25)	0.88 (0.17)
Hypothetical Self NA	1, 102	13.62	<.0005	.12	3.78 (1.25)	4.18 (0.90)

Note. PA = Positive Affect; NA = Negative Affect.
[a] Indicates models to which inverse transformations were applied.

41

Statistically significant main effects for Time also emerged for the intrapersonal variables for Hypothetical Self Pain and Hypothetical Self Negative Affect. For intrapersonal pain (Hypothetical Self Pain), children across Groups judged the bullying vignettes to induce more pain at Time 1 than at Baseline. For intrapersonal affect, children across all Groups judged the bullying vignettes to induce more negative affect (Hypothetical Self Negative Affect) at Time 1 than at Baseline. Time effects for Hypothetical Self Positive Affect were non-significant.[4]

Second Aim: Does the Empathy Gap Phenomenon Extend to Children's Hypothetical and Actual Positive Bystander Behaviors in Bullying Situations?

To examine whether the empathy gap phenomenon extends to children's hypothetical positive bystander behaviors, we ran a 3 x 2 (Group x Time) ANOVA using the variables Positive Bystander Behaviors Vignettes Baseline and Positive Bystander Behaviors Vignettes Time 1. We hypothesized that the interaction would be significant. When examining simple effects at each level of Time, we predicted that no Group differences would emerge at Baseline, but that at Time 1, children in the Excluded group would have higher ratings of positive bystander behaviors than children in the Included and Control groups. When examining simple effects at each level of Group, we predicted that a Time effect would emerge for the Excluded

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[4] We also ran these same Mixed ANOVA models using a Time 1 variable consisting only of responses from the Target Vignette (Vignette 7) to determine if the Time effects reported above remain when the variable used at Time 1 exactly matched the variable used at Baseline. We took this approach to determine whether the Time effects could be the result of measurement differences between the two time points, rather than the result of the passage of Time. Results for all interpersonal empathy models (Victim Pain, Victim Positive Affect, Victim Negative Affect) and the intrapersonal empathy model for positive affect and negative affect (Hypothetical Self Positive Affect, Hypothetical Self Negative Affect) did not differ from those of the original models. For the intrapersonal empathy model for Hypothetical Self Pain, no significant main effects or interactions emerged. Thus, the only result that differed between these models and the original models was the loss of a significant Time effect for Hypothetical Self Pain.

42

children, such that they would show higher ratings of positive bystander behaviors at Time 1 than at Baseline; however, we hypothesized that these scores will not differ between Baseline and Time 1 for children in the Included and Control groups.

Contrary to our prediction, there was no statistically significant interaction between Group and Time on Positive Bystander Behaviors Vignettes, $F(2, 103) = 0.03$, $p = .97$, partial $\eta^2 = .001$. However, a significant main effect for Time emerged such that children across all Groups indicated that they would engage in significantly fewer positive bystander behaviors at Time 1 ($M = 2.18$, $SD = 0.05$) than at Baseline ($M = 4.34$, $SD = 0.61$), $F(1, 103) = 1495.33$, $p < .0005$, partial $\eta^2 = .94$.[5] Effects for Group were non-significant, $F(2, 103)=0.04$, $p = .94$, partial $\eta^2 = .001$.

We also examined whether children in the Excluded condition differed significantly from children in the Included or Control conditions on behaviorally observed positive bystander behaviors during the second ball task, when participants joined an ongoing Cyberball game after first observing one virtual child being excluded by two other virtual children in the game. First, we compared the three groups on First Throw to Excluded Child (coded Y/N) using a chi-square analysis. We hypothesized that when children first entered the game, children in the Excluded group would be significantly more likely than children in the Included and Control

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[5] We ran this same model using a Time 1 variable consisting only of responses from the Target Vignette (Vignette 7) to determine if the Time effect reported above remained when the variable used at Time 1 exactly matched the variable used at Baseline. We took this approach to determine whether the Time effects could be the result of measurement differences between the two time points, rather than the result of the passage of Time. There was not a statistically significant effect of Time in this alternative model, suggesting that the Time effect in the original model may be due to measurement differences between the two time points. In other words, children appear to be less likely to report that they would engage in positive bystander behaviors when witnessing social exclusion as compared to other types of bullying (e.g., property attack, physical, verbal).

groups to throw the ball to the child who had been left out of the game. The chi-square test indicated that the participant to whom children threw the ball first was not significantly different among the three experimental groups ($\chi^2(2) = 0.58$, $p = .75$). Eighty percent of children in the Excluded group threw the ball to the excluded child on the first throw, 73% of children in the Included group threw the ball to the excluded child on the first throw, and 73.5% of children in the Control group the ball to the excluded child on the first throw.

Second, we conducted a one-way between-subjects ANOVA with three levels (Group: Included, Excluded, Control) on the dependent variable Percent of Throws to Excluded Child. We hypothesized that children in the Excluded condition would score higher on this variable than children in the Included and Control conditions. Contrary to our prediction, there was no difference among children in the Control ($M = 0.47$; $SD = .13$), Included ($M = 0.53$; $SD = .15$), and Excluded ($M = 0.47$; $SD = .15$) groups on Percent of Throws to Excluded Child, $F(2, 101) = 1.89$, $p = .16$ partial $\eta^2 = .04$. These results suggest that the empathy gap phenomenon did not extend to children's hypothetical behavioral responses as expected.

Third Aim: How Long do the Effects of a "Hot" Emotional State Persist and Effectively Close Children's Empathy Gap for Social Pain and Affect in Bullying Situations? How Long does this Effect Influence Children's Hypothetical Positive Bystander Behaviors to Bullying Situations?

We conducted 3 x 3 Group (Excluded, Included, Control) x Time (Time 1, Time 2, Time 3) Mixed ANOVAs to examine the decay of the empathy gap phenomenon and its associated effects on bystander behaviors. Of note, although findings did not support the empathy gap phenomenon in Aims 1 and 2 as expected,

we nonetheless conducted analyses for Aim 3 to gain a better understanding of how children's interpersonal and intrapersonal empathy may change over time.

To examine interpersonal empathy, we used the variables Victim Pain Time 1(2,3), Victim Positive Affect Time 1(2,3), and Victim Negative Affect Time 1(2,3) from the administration of the hypothetical vignettes during the home visit (ten vignettes) and the one-day and seven-day follow-up phone calls (target vignette only), as well as the variables Victim Pain Game Time 1(2,3), Victim Positive Affect Game Time 1(2,3), and Victim Negative Affect Game Time 1(2,3) from the questions following the second Cyberball game and the questions about this game in the follow-up phone calls. To examine intrapersonal empathy, we used the variables Hypothetical Self Pain Time 1(2,3), Hypothetical Self Positive Affect Time 1(2,3), and Hypothetical Self Negative Affect Time 1(2,3) from the administration of the vignettes during the home visit (ten vignettes) and the follow-up phone calls (target vignette only). We were also interested in how children's reported positive bystander behaviors may change over time. To examine this phenomenon, we used the variables Positive Bystander Behaviors Vignettes Time 1 (2,3) from the administration of the vignettes during the home visit and follow-up phone calls.

In addition, we examined the empathy gap phenomenon and decay of intrapersonal empathy over time using variables assessing children's reports of their own *actual* experiences in social situations (as compared to hypothetical reports). Specifically, we used the variables Actual Self Pain 1(2,3), Actual Self Positive Affect Time 1(2,3), and Actual Self Negative Affect Time 1(2,3) from the questions following the first Cyberball game and the questions about this game in the follow-up phone calls. We were interested in whether these variables indexing children's actual

experiences would support the empathy gap phenomenon and whether this phenomenon would decay over time.

For all variables, we predicted that a significant Group x Time interaction would emerge. When examining simple effects at each level of Time, we predicted that no Group differences would emerge at Times 2 or 3, but that at Time 1, children in the Excluded group would have higher ratings on pain, negative affect, and positive bystander behaviors and lower ratings on positive affect than children in the Included or Control groups. When examining simple effects at each level of Group, we predicted that a Time effect would emerge for the Excluded children, such that they would show higher ratings of pain, negative affect, and positive bystander behaviors and lower ratings of positive affect at Time 1 than Times 2 or 3; however we hypothesized that these scores would not differ between time points for children in the Included or Control conditions.

For interpersonal empathy, we first examined decay for children's estimates of the victim's pain, positive affect, and negative affect for the hypothetical bullying vignettes. Contrary to our prediction, there was not a statistically significant Group x Time interaction for any of these variables (see Table 8). However, main effects for Time (see Table 9) did emerge for Victim Pain and Victim Negative Affect, but not for Victim Positive Affect. For Victim Pain, children across all Groups judged the bullying vignettes to be more painful for the victim at Time 1 than at Time 2 ($SE = 0.17$, $p < .005$) and Time 3 ($SE = 0.18$, $p < .005$); there was not a statistically significant difference between Time 2 and Time 3 ($SE = 0.21$, $p = 1.00$). For Victim Negative Affect, children across all Groups judged victims in the vignettes to experience more negative affect at Time 1 than at Time 2 ($SE = 0.03$, $p < .005$) and

Time 3 ($SE = 0.03$, $p < .005$); there was not a statistically significant difference

between Time 2 and Time 3 ($SE = 0.03$, $p = .25$). [6] Main effects for Group were non-

significant for all three of these interpersonal empathy variables (see Table 10).

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[6] We also ran these same Mixed ANOVA models using a Time 1 variable consisting only of responses from the Target Vignette (Vignette 7) to determine if the Time effects reported above remain when the variable used at Time 1 exactly matched the variable used at Time 2 and Time 3. We took this approach to determine whether the Time effects could be the result of measurement differences between these time points, rather than the result of the passage of Time. For both Victim Pain and Victim Negative Affect, children judged the bullying vignettes to be more painful at Time 1 than at Time 3; however, judgments of pain at Time 2 did not differ significantly from either of the other two time points. Results for Victim PA did not differ from the original model.

Table 8   Group (Excluded, Included, Control) x Time (Baseline, Time 1) Interaction Results for Aim 3

Variable of Interest	df	F	p	partial η^2	Excluded	Included	Control
Victim Pain	4, 178	0.76	.55	.02			
T1					8.46	8.26	8.00
					(1.10)	(1.50)	(1.25)
T2					7.86	7.59	7.59
					(1.77)	(2.01)	(2.10)
T3					7.86	7.18	7.66
					(2.00)	(2.32)	(1.70)
Victim PA	4, 178	1.48	.21	.03			
T1					1.10	1.21	1.14
					(0.23)	(0.52)	(0.53)
T2					1.10	1.24	1.00
					(0.31)	(0.78)	(0.00)
T3					1.03	1.38	1.10
					(0.19)	(1.02)	(0.31)
Victim NA[a]	4, 178	1.16	.33	.03			
T1					0.61	0.59	0.62
					(0.15)	(0.16)	(0.17)
T2					0.73	0.78	0.73
					(0.27)	(0.29)	(0.29)
T3					0.70	0.65	0.74
					(0.26)	(0.29)	(0.28)
Victim Pain Game	4, 178	.21	.93	.01			
T1					4.00	4.35	5.38
					(3.42)	(3.28)	(3.03)
T2					4.34	4.88	6.07
					(3.51)	(2.96)	(2.90)
T3					4.21	4.24	5.72
					(2.90)	(3.03)	(2.81)
Victim PA Game	3, 149[d]	.95	.43	.02			
T1					2.48	2.32	2.03
					(1.50)	(1.45)	(1.09)
T2					2.31	2.09	1.76
					(1.56)	(1.31)	(1.09)
T3					1.93	2.21	1.62
					(1.44)	(1.34)	(0.90)

Table 8 - Continued

Variable of Interest	df	F	p	partial η^2	Excluded	Included	Control
Victim NA Game	4, 178	.24	.92	.01			
T1					2.97	3.00	3.24
					(1.50)	(1.52)	(1.41)
T2					2.97	3.26	3.28
					(1.55)	(1.42)	(1.19)
Hypothetical Self Pain	4, 178	2.00	.10	.04			
T1					7.50	7.28	6.95
					(1.98)	(2.04)	(2.00)
T2					6.83	6.12	6.69
					(2.65)	(2.95)	(2.29)
T3					6.48	6.88	6.28
					(3.15)	(2.66)	(2.66)
Hypothetical Self PA[a]	4, 178	.66	.62	.02			
T1					0.91	0.86	0.89
					(0.17)	(0.18)	(0.18)
T2					0.92	0.89	0.96
					(0.21)	(0.25)	(0.15)
T3					0.93	0.91	0.98
					(0.19)	(0.23)	(0.09)
Hypothetical Self NA[c]	4, 178	1.22	.29	.03			
T1					0.21	0.21	0.22
					(0.18)	(0.19)	(0.18)
T2					0.26	0.19	0.24
					(0.22)	(0.24)	(0.22)
T3					0.23	0.21	0.28
					(0.24)	(0.21)	(0.23)
Actual Self Pain	4, 160[e]	1.59	.19	.04			
T1					2.90	0.61	1.10
					(2.81)	(1.62)	(1.82)
T2					2.34	0.91	0.97
					(2.73)	(2.07)	(2.11)
T3					2.41	1.09	0.83
					(2.59)	(2.45)	(1.97)

Table 8 – Continued

Variable of Interest	df	F	p	partial η^2	Excluded	Included	Control
Actual Self PA	4, 157[f]	0.89	.46	.02			
T1					2.45	3.65	3.38
					(1.06)	(1.18)	(1.24)
T2					3.14	4.00	3.59
					(1.43)	(1.13)	(1.18)
T3					2.79	4.00	3.52
					(1.29)	(1.07)	(1.15)
Actual Self NA	4, 152	2.20	.08	.05			
T1					2.41	1.29	1.10
					(1.24)	(0.68)	(0.41)
T2					2.00	1.38	1.24
					(1.25)	(1.10)	(0.58)
T3					2.14	1.18	1.28
					(1.19)	(0.58)	(0.59)
PBB Vignettes	4, 153[h]	.39	.79	.01			
T1					2.18	2.18	2.18
					(0.05)	(0.05)	(0.04)
T2					4.48	4.41	4.41
					(0.64)	(0.62)	(0.47)
T3					4.34	4.25	4.16
					(0.72)	(0.64)	(0.72)

Note. PA = Positive Affect; NA = Negative Affect; T1 = Time 1; T2 = Time 2; T3 = Time 3; PBB = Positive Bystander Behaviors.

[a] Indicates models to which inverse transformations were applied.

[c] Indicates models to which log10 transformations were applied.

[d] Mauchly's test of sphericity indicated that the assumption of sphericity had been violated for this model, $\chi^2(2) = 19.15$, $p < .005$. Therefore, the Greenhouse-Geisser correction was applied to this model to correct for potential bias.

[e] Mauchly's test of sphericity indicated that the assumption of sphericity had been violated for this model, $\chi^2(2) = 9.74$, $p = .008$. Therefore, the Greenhouse-Geisser correction was applied to this model to correct for potential bias.

[f] Mauchly's test of sphericity indicated that the assumption of sphericity had been violated for this model, $\chi^2(2) = 12.70$, p = .002. Therefore, the Greenhouse-Geisser correction was applied to this model to correct for potential bias.

[g] Mauchly's test of sphericity indicated that the assumption of sphericity had been violated, $\chi^2(2) = 16.80$, $p < .005$. Therefore, the Greenhouse-Geisser correction was applied to this model to correct for potential bias.

^hMauchly's test of sphericity indicated that the assumption of sphericity had been
violated, $\chi^2(2) = 16.08$, $p < .005$. Therefore, the Greenhouse-Geisser correction was
applied to this model to correct for potential bias.

Table 9   Time (Time 1, Time 2, Time 3) Effects for Aim 3

Variable	df	F	p	partial η^2	Excluded	Included	Control
Victim Pain	2, 89	0.57	.57	.01	8.06 (0.28)	7.68 (0.26)	7.75 (0.28)
Victim PA	2, 89	1.99	.14	.04	1.08 (0.09)	1.28 (0.08)	1.08 (0.09)
Victim NA[a]	2, 89	0.17	.89	.00	0.68 (0.04)	0.68 (0.03)	0.70 (0.04)
Victim Pain Game	2, 89	2.76	.07	.06	4.18 (0.49)	4.49 (0.46)	5.72 (0.49)
Victim PA Game	2, 89	1.31	.28	.03	2.24 (0.22)	2.21 (0.20)	1.81 (0.22)
Victim NA Game	2, 89	0.33	.72	.01	3.02 (0.22)	3.16 (0.21)	3.28 (0.22)
Hypothetical Self Pain	2, 89	0.13	.89	.003	6.94 (0.42)	6.76 (0.39)	6.64 (0.42)
Hypothetical Self PA[a]	2, 89	1.10	.34	.02	0.92 (0.03)	0.89 (0.03)	0.95 (0.03)
Hypothetical Self NA[c]	2, 89	.50	.61	.01	0.23 (0.04)	0.20 (0.03)	0.25 (0.04)
Actual Self Pain	2, 88[d]	6.46	<.005	.17	2.55 (0.38)	0.87 (0.35)	0.97 (0.38)
Actual Self PA	2, 88[e]	9.24	<.0005	.17	2.79 (0.19)	3.88 (0.17)	3.49 (0.19)
Actual Self NA	2, 89	16.03	<.0005	.27	2.18 (0.14)	1.28 (0.13)	1.21 (0.14)
PBB Vignettes	2, 89	0.34	.71	.01	3.67 (0.08)	3.61 (0.07)	3.58 (0.08)

Note. PA = Positive Affect; NA = Negative Affect; T1 = Time 1; T2 = Time 2; T3 =
Time 3; PBB = Positive Bystander Behaviors.
[a] Indicates models to which inverse transformations were applied.
[b] Indicates models to which log10 transformations were applied.
[c,d,e,f] The Greenhouse-Geisser correction was applied to this model (see note in Table
8 for additional details).

Table 10   Group (Excluded, Included, Control) Effects for Aim 3

Variable	df	F	p	partial η²	Excluded	Included	Control
Victim Pain	2, 89	0.57	.57	.01	8.06	7.68	7.75
					(0.28)	(0.26)	(0.28)
Victim PA	2, 89	1.99	.14	.04	1.08	1.28	1.08
					(0.09)	(0.08)	(0.09)
Victim NA[a]	2, 89	0.17	.89	.00	0.68	0.68	0.70
					(0.04)	(0.03)	(0.04)
Victim Pain Game	2, 89	2.76	.07	.06	4.18	4.49	5.72
					(0.49)	(0.46)	(0.49)
Victim PA Game	2, 89	1.31	.28	.03	2.24	2.21	1.81
					(0.22)	(0.20)	(0.22)
Victim NA Game	2, 89	0.33	.72	.01	3.02	3.16	3.28
					(0.22)	(0.21)	(0.22)
Hypothetical Self Pain	2, 89	0.13	.89	.003	6.94	6.76	6.64
					(0.42)	(0.39)	(0.42)
Hypothetical Self PA[a]	2, 89	1.10	.34	.02	0.92	0.89	0.95
					(0.03)	(0.03)	(0.03)
Hypothetical Self NA[c]	2, 89	.50	.61	.01	0.23	0.20	0.25
					(0.04)	(0.03)	(0.04)
Actual Self Pain	2, 88[d]	6.46	<.005	.17	2.55	0.87	0.97
					(0.38)	(0.35)	(0.38)
Actual Self PA	2, 88[e]	9.24	<.0005	.17	2.79	3.88	3.49
					(0.19)	(0.17)	(0.19)
Actual Self NA	2, 89	16.03	<.0005	.27	2.18	1.28	1.21
					(0.14)	(0.13)	(0.14)
PBB Vignettes	2, 89	0.34	.71	.01	3.67	3.61	3.58
					(0.08)	(0.07)	(0.08)

Note. PA = Positive Affect; NA = Negative Affect; T1 = Time 1; T2 = Time 2; T3 = Time 3; PBB = Positive Bystander Behaviors.
[a] Indicates models to which inverse transformations were applied.
[b] Indicates models to which square root transformations were applied.
[c] Indicates models to which log10 transformations were applied.

Second, we examined the decay of interpersonal empathy for children's estimates of the victim's pain, positive affect, and negative affect during the Cyberball game. Once again, there was not a statistically significant Group x Time interaction for any of these variables (see Table 8). A significant Time effect did emerge for Victim Positive Affect Game, but not for Victim Pain Game and Victim Negative Affect Game (see Table 9). For Victim Positive Affect Game, children rated the excluded child in the Cyberball game to have experienced more Positive Affect at Time 1 than at Time 3 ($SE = 0.12$, $p < .05$) but not at Time 2 ($SE = 0.13$, $p = .28$); there also was not a statistically significant difference between Time 2 and Time 3 ($SE = 0.09$, $p = .41$). Effects for Group for all three variables were non-significant (see Table 10).

For intrapersonal empathy, we first examined decay for children's judgments of their own hypothetical pain, positive affect, and negative affect in the bullying vignettes. Contrary to our prediction, there was not a statistically significant Group x Time interaction for Hypothetical Self Pain, Hypothetical Self Positive Affect, or Hypothetical Self Negative Affect (see Table 8). However, statistically significant Time effects did emerge for Hypothetical Self Pain and for Hypothetical Self Positive Affect, but not Hypothetical Self Negative Affect (see Table 9). For Hypothetical Self Pain, children estimated pain to be higher at Time 1 than at Time 2 ($SE = 0.18$, $p = .001$) and Time 3 ($SE = 0.20$, $p = .002$); there was not a statistically significant difference between Time 2 and Time 3 ($SE = 0.23$, $p = 1.00$). For Hypothetical Self Positive Affect, children reported their hypothetical positive affect to be lower at Time 1 than at Time 3 ($SE = 0.02$, $p = .02$) but not at Time 2 ($SE = 0.02$, $p - .28$); there was not a statistically significant difference between Time 2 and Time 3 ($SE = 0.02$, $p =$

1.00). [7] Effects for Group were not statistically significant for any of the three variables (see Table 10).

Second, we examined decay of intrapersonal empathy for children's estimates of their own *actual* pain, positive affect, and negative affect experienced during the Cyberball game. Contrary to our prediction, there was not a statistically significant Group x Time interaction for Actual Self Pain, Actual Self Positive Affect, and Actual Self Negative Affect (see Table 8). A significant effect of Time emerged for Actual Self Positive Affect, but not Actual Self Pain or Actual Self Negative Affect (see Table 9). Children reported experiencing significantly less Positive Affect at Time 1 than at Time 2 ($SE = 0.13$, $p < .05$) and at Time 3 ($SE = 0.11$, $p < .05$); however, there was not a statistically significant difference between Time 2 and Time 3 ($SE = 0.10$, $p = .47$). Significant effects for Group emerged across all three variables (see Table 10). For Actual Self Pain, children in the Excluded group reported experiencing more pain during the first Cyberball game than did children in the Included ($SE = 0.55$, $p = .009$) and Control ($SE = 0.56$, $p < .05$) groups. There was not a significant difference in reported pain between the Control and Included groups ($SE = 0.47$, $p = .98$). For Actual Self Negative Affect, children in the Excluded group reported experiencing more negative affect during the first Cyberball game than did children in the Included ($SE = 0.19$, $p < .0005$) and Control ($SE = 0.19$, $p < .0005$) groups. There was not a

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[7] We also ran these same Mixed ANOVA models using a Time 1 variable consisting only of responses from the Target Vignette (Vignette 7) to determine if the Time effects reported above remain when the variable used at Time 1 exactly matched the variable used at Time 2 and Time 3. We took this approach to determine whether the Time effects could be the result of measurement differences between these time points, rather than the result of the passage of Time. For both Hypothetical Self Pain and Hypothetical Self Positive Affect, a significant effect for Time did not emerge when we took this approach. This suggests that these observed Time effects may be due to differences in measurement at Time 1 as compared to Times 2 and 3.

significant difference in reported negative affect between the Control and Included groups ($SE = 0.19$, $p = 1.00$). For Actual Self Positive Affect, children in the Excluded group reported experiencing less positive affect while playing the first Cyberball game than children in the Included ($SE = 0.25$, $p < .0005$) and Control ($SE = 0.28$, $p < .05$) groups. There was not a significant different in reported positive affect between the Control and Included groups ($SE = 0.25$, $p = .29$).

Finally, we examined decay of Positive Bystander Behaviors. Contrary to our prediction, there was not a significant Group x Time interaction (see Table 8). However, a significant Time effect did emerge (see Table 9), such that children's reported Positive Bystander Behaviors were significantly different from each other across all three time points. Children reported that they would engage in fewer positive bystander behaviors at Time 1 ($M = 2.18$, $SD = .05$) than at Time 2 ($M = 4.43$, $SD = 0.58$; $SE = 0.06$, $p < .0005$) or at Time 3 ($M = 4.25$, $SD = 0.69$; $SE = 0.07$, $p < .0005$); children also indicated that they would engage in more positive bystander behaviors at Time 2 than at Time 3 ($SE = 0.05$, $p = .001$). [8] Effects for Group were non-significant (see Table 10).

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[8] We also ran this same Mixed ANOVA models using a Time 1 variable consisting only of responses from the Target Vignette (Vignette 7) to determine if the Time effects reported above remain when the variable used at Time 1 exactly matched the variable used at Time 2 and Time 3. We took this approach to determine whether the Time effects could be the result of the measurement differences between these time points, rather than the result of the passage of Time. Results matched the original analyses for both the lack of a Group x Time interaction and the lack of a Group effect. A significant Time effect did emerge, such that children reported that they would engage in more positive bystander behaviors at Time 2 than at Time 3, although Time 1 did not differ from Times 2 or 3 in this analysis.

Final Aim: Does Child Victimization Moderate the Empathy Gap Phenomenon?

We re-conducted all of the analyses described above to examine whether the effects were moderated by the child's level of victimization. We divided children into High, Average, and Low Victimization groups based on the variable Aggregate Peer Victimization. Children were divided into three equal groups based on their Aggregate Peer Victimization score. Children with Aggregate Peer Victimization scores lower than 0.49 were considered Low victimization and those with scores higher than .86 were considered High victimization; children in between these two cutoffs were considered Average victimization. We then re-ran all analyses with the addition of Aggregate Peer Victimization as a between-subjects independent variable. For all three aims, we predicted significant Group (Excluded, Included, Control) x Time (Baseline, Time 1; Time 1, Time 2, Time 3) x Victimization (Low, Average, High) interactions, such that the hypothesized effects would emerge for children in the Average and Low Victimization groups, but not for children in the High Victimization group.

The 3-way Group x Time x Victimization interaction was non-significant for all models (see Table 11), with the exception of Victim Pain Game Time 1 (2, 3). When simple effects were examined for Time, the Group x Victimization interaction was significant at Time 1, $F(4, 97) = 4.65$, $p = .002$, but not at Time 2, $F(4, 90) = 1.40$, $p = .24$ or Time 3 $F(4, 86) = 0.87$, $p = .49$. Within Time 1, simple effects for Victimization revealed a significant effect for Group for High Victimization children, $F(2, 97) = 6.77$, $p = .002$, but not for Low Victimization children, $F(2, 97) = 1.54$, $p = .22$, or Average Victimization children $F(2, 97) = 2.99$, $p = .06$. Adjusted p-values using Bonferroni corrections are reported. Within Time 1 for High Victimization children, mean Victim Pain Game ratings were lower for children in the Included

group ($M = 2.18$, $SD = 3.52$) than children in the Excluded group ($M = 6.89$, $SD =$ 3.33; $SE = 1.36$, $p = .002$) and the Control group ($M = 5.60$, $SD = 3.04$; $SE = 1.20$, $p = .02$). There was not a significant difference in Victim Pain Game ratings between children in the Excluded and Control groups ($SE = 1.28$, $p = .95$).

Table 11   Three-way Interactions between Group (Excluded, Included, Control), Time (Baseline, Time 1, Time 2, Time 3), and Peer Victimization (High, Average, Low) for Aim 4

Variable of Interest	df	F	p	partial η²	Excluded High PV	Included High PV	Control High PV	Excluded Avg PV	Included Avg PV	Control Avg PV	Excluded Low PV	Included Low PV	Control Low PV
Victim Pain	4, 97	0.97	.43	.04									
Baseline					7.33 (2.24)	7.64 (2.16)	6.27 (1.83)	7.73 (2.12)	6.62 (2.06)	7.00 (1.85)	7.82 (2.09)	6.77 (2.09)	7.27 (1.85)
T1					8.22 (1.29)	8.18 (1.66)	8.04 (1.41)	8.31 (1.07)	7.95 (1.55)	7.54 (1.07)	8.40 (1.23)	8.40 (1.34)	8.40 (1.15)
Victim PA	4, 97	2.30	.06	.09									
Baseline					1.00 (0.00)	1.55 (0.93)	1.20 (0.56)	1.27 (0.80)	1.85 (1.41)	1.63 (1.41)	1.73 (1.10)	1.08 (0.28)	1.00 (0.00)
T1					1.09 (0.27)	1.51 (0.85)	1.06 (0.17)	1.17 (0.30)	1.18 (0.44)	1.46 (0.98)	1.04 (0.08)	1.06 (0.10)	1.01 (0.03)
Victim NA	4, 97	2.17	.08	.08									
Baseline					4.44 (0.73)	4.09 (1.22)	4.20 (1.01)	3.80 (1.15)	4.23 (0.93)	4.38 (0.52)	4.55 (0.82)	4.00 (1.00)	4.64 (0.51)
T1					4.63 (0.48)	3.98 (1.31)	4.55 (0.66)	4.45 (0.58)	4.32 (0.66)	4.47 (0.37)	4.64 (0.57)	4.70 (0.35)	4.51 (0.84)
Hypothetical Self Pain	4, 96	1.42	.23	.06									
Baseline					6.44 (3.28)	6.91 (3.39)	7.20 (2.48)	6.93 (2.17)	6.15 (3.21)	6.29 (2.43)	6.55 (3.24)	5.38 (3.10)	5.45 (2.84)
T1					7.73 (1.45)	7.24 (2.37)	7.09 (1.73)	7.44 (1.48)	7.38 (1.98)	7.57 (1.04)	6.71 (3.22)	6.95 (1.95)	6.65 (2.55)
Hypothetical Self PA	4, 95	1.19	.32	.05									
Baseline					1.00 (0.00)	1.82 (1.33)	1.40 (0.74)	1.33 (0.72)	1.38 (0.51)	1.00 (0.00)	1.55 (0.93)	1.50 (0.91)	1.00 (0.00)
T1					1.06 (0.13)	1.44 (0.57)	1.11 (0.17)	1.35 (0.44)	1.20 (0.37)	1.14 (0.21)	1.08 (0.14)	1.13 (0.21)	1.16 (0.27)

58

Table 11 – Continued

Variable of Interest	df	F	p	partial η²	Excluded High PV	Included High PV	Control High PV	Excluded Avg PV	Included Avg PV	Control Avg PV	Excluded Low PV	Included Low PV	Control Low PV
Hypothetical Self NA	4, 96	.47	.76	.02									
Baseline					4.33 (1.00)	3.36 (1.36)	4.13 (0.99)	3.93 (1.16)	4.00 (1.08)	4.00 (1.16)	3.27 (1.49)	3.46 (1.39)	3.55 (1.51)
T1					4.44 (0.56)	3.98 (1.37)	4.38 (0.71)	4.27 (0.51)	4.12 (0.81)	4.29 (0.30)	3.92 (1.28)	4.34 (0.77)	3.88 (1.25)
PBB Vignettes	4, 97	.51	.73	.02									
Baseline					4.26 (0.70)	4.33 (0.63)	4.44 (0.41)	4.31 (0.68)	4.18 (0.75)	4.29 (0.58)	4.52 (0.52)	4.46 (0.62)	4.24 (0.67)
T1					2.19 (0.06)	2.18 (0.02)	2.18 (0.04)	2.17 (0.05)	2.17 (0.06)	2.17 (0.04)	2.19 (0.05)	2.19 (0.05)	2.16 (0.07)
First Throw	4, 97	.55	.70	.02	0.78 (.44)	0.82 (.41)	0.73 (.46)	0.80 (.41)	0.77 (.44)	0.63 (.52)	0.82 (.41)	0.62 (.51)	0.82 (.41)
Percent Throws	4, 95	.46	.76	.02	0.54 (.16)	0.59 (.20)	0.48 (.12)	0.44 (.12)	0.48 (.15)	0.44 (.12)	0.45 (.17)	0.50 (.10)	0.50 (.15)
Victim Pain	8, 166	0.32	.96	.01									
T1					8.63 (0.92)	8.18 (1.66)	7.87 (1.41)	8.45 (1.08)	8.20 (1.56)	7.54 (1.07)	8.36 (1.36)	8.40 (1.40)	8.52 (1.14)
T2					8.00 (1.63)	7.27 (2.72)	7.82 (2.09)	7.69 (1.60)	7.64 (1.96)	6.25 (2.25)	8.00 (2.24)	7.83 (1.59)	8.40 (1.58)
T3					8.00 (1.63)	6.91 (3.27)	7.45 (1.81)	7.85 (1.91)	7.27 (2.05)	7.25 (1.49)	7.78 (2.54)	7.33 (1.56)	8.20 (1.75)
Victim PA	7, 145[a]	0.74	.64	.03									
T1					1.00 (0.00)	1.51 (0.85)	1.03 (0.09)	1.20 (0.32)	1.06 (0.12)	1.46 (0.98)	1.02 (0.07)	1.07 (0.11)	1.00 (0.00)
T2					1.00 (0.00)	1.55 (1.29)	1.00 (0.00)	1.23 (0.44)	1.09 (0.30)	1.00 (0.00)	1.00 (0.00)	1.08 (0.29)	1.00 (0.00)

Table 11 – Continued

Variable of Interest	df df	F F p p	partial η₁²	Excluded High PV	Included High PV	Control High PV	Excluded Avg PV	Included Avg PV	Control Avg PV	Excluded Low PV	Included Low PV	Control Low PV
Victim NA	8, 166	0.59 .79	.03									
T1				4.67 (0.46)	3.98 (1.31)	4.53 (0.72)	4.39 (0.60)	4.45 (0.61)	4.47 (0.37)	4.58 (0.61)	4.69 (0.37)	4.54 (0.89)
T2				4.57 (0.54)	4.27 (1.27)	4.55 (0.69)	4.31 (0.63)	4.73 (0.47)	4.25 (0.46)	4.44 (0.73)	4.17 (1.19)	4.10 (1.45)
Victim Pain Game	8, 166	3.08 <.005	.13									
T1				7.14 (3.63)	2.18 (3.52)	4.91 (3.02)	2.46 (2.18)	6.00 (3.10)	4.75 (2.82)	3.78 (3.38)	4.83 (2.17)	6.40 (3.24)
T2				6.00 (4.32)	4.91 (4.04)	6.73 (2.57)	2.92 (3.01)	5.82 (2.27)	5.50 (2.33)	5.11 (3.02)	4.00 (2.26)	5.80 (3.71)
T3				4.57 (3.78)	3.82 (3.84)	5.82 (3.16)	4.00 (2.45)	5.27 (2.57)	4.75 (1.49)	4.22 (3.07)	3.67 (2.54)	6.40 (3.24)
Victim PA Game	7, 140[b]	0.97 .46	.04									
T1				1.57 (1.13)	2.82 (1.83)	2.00 (1.18)	3.23 (1.36)	2.00 (1.27)	2.13 (0.64)	2.11 (1.54)	2.17 (1.19)	2.00 (1.33)
T2				2.00 (1.73)	2.64 (1.63)	1.64 (1.21)	3.08 (1.61)	1.55 (0.82)	1.63 (0.74)	1.44 (0.73)	2.08 (1.24)	2.00 (1.25)
T3				1.86 (1.57)	2.64 (1.63)	1.45 (0.93)	2.54 (1.61)	1.73 (.27)	1.75 (0.89)	1.11 (0.33)	2.25 (1.22)	1.70 (0.95)
Victim NA Game	8, 166	1.67 .11	.08									
T1				4.00 (1.53)	2.09 (1.45)	3.27 (1.68)	2.69 (1.32)	3.64 (1.43)	3.00 (1.07)	2.56 (1.51)	3.25 (1.36)	3.40 (1.43)
T2				3.43 (1.72)	3.00 (1.67)	3.55 (1.13)	2.62 (1.50)	3.73 (1.27)	3.13 (0.84)	3.11 (1.54)	3.08 (1.31)	3.10 (1.52)
T3				3.29 (1.60)	3.00 (1.67)	3.82 (1.33)	2.92 (1.38)	3.64 (1.29)	2.75 (1.04)	3.33 (1.32)	3.00 (1.21)	3.20 (1.48)

	df											PV
Actual Self Pain	7, 148[c]	.49	.85	.02									
T1					5.43 (2.51)	0.73 (1.35)	0.91 (1.38)	2.46 (2.60)	0.91 (2.43)	0.25 (0.71)	1.56 (2.19)	0.18 (0.60)	2.00 (2.49)
T2					4.57 (2.99)	0.73 (1.85)	0.36 (1.21)	1.69 (2.14)	1.09 (2.43)	0.50 (0.93)	1.56 (2.60)	0.91 (2.07)	2.00 (3.13)
T3					4.00 (2.83)	1.09 (3.02)	0.36 (0.81)	2.31 (2.14)	1.09 (2.43)	0.50 (0.93)	1.33 (2.65)	1.09 (2.07)	1.60 (3.10)
Actual Self PA	7, 146[d]	.90	.51	.04									
T1					1.71 (0.76)	3.55 (1.37)	3.27 (1.27)	2.69 (1.18)	3.91 (1.04)	3.38 (0.74)	2.67 (0.87)	3.50 (1.17)	3.50 (1.58)
T2					2.00 (1.00)	4.09 (1.38)	3.55 (1.21)	3.77 (1.24)	3.91 (1.30)	3.88 (0.64)	3.11 (1.54)	4.00 (0.74)	3.40 (1.51)
T3					1.86 (1.07)	4.36 (0.81)	3.55 (1.29)	3.46 (1.13)	4.00 (1.27)	3.63 (0.52)	2.56 (1.24)	3.67 (1.07)	3.40 (1.43)
Actual Self NA	7, 143[e]	1.24	.89	.06									
T1					3.29 (1.25)	1.09 (0.30)	1.00 (0.00)	2.23 (1.09)	1.36 (0.92)	1.00 (0.00)	2.00 (1.23)	1.42 (0.67)	1.30 (0.68)
T2					2.43 (1.27)	1.73 (1.62)	1.09 (0.30)	1.92 (1.26)	1.27 (0.91)	1.13 (0.35)	1.78 (1.30)	1.17 (0.58)	1.50 (0.85)
T3					3.00 (1.16)	1.09 (0.30)	1.09 (0.30)	2.00 (0.82)	1.36 (0.92)	1.25 (0.46)	1.67 (1.41)	1.08 (0.29)	1.50 (0.85)
Hypothetical Self Pain	7, 154[f]	.44	.89	.02									
T1					8.00 (1.48)	7.24 (2.37)	6.91 (1.87)	7.51 (1.55)	7.82 (1.82)	7.16 (1.51)	7.11 (2.85)	6.82 (1.98)	6.84 (2.60)
T2					6.86 (1.95)	5.27 (3.38)	6.36 (2.50)	7.08 (2.40)	7.45 (2.70)	7.00 (1.07)	6.44 (3.58)	5.67 (2.54)	6.80 (2.86)
T3					7.14 (2.27)	7.09 (3.15)	6.18 (2.60)	6.92 (2.66)	7.45 (2.38)	7.00 (1.07)	5.33 (4.24)	6.17 (2.48)	5.80 (3.58)

Table 11 – Continued

Variable of Interest	df	F	p	partial η²	Excluded High PV	Included High PV	Control High PV	Excluded Avg PV	Included Avg PV	Control Avg PV	Excluded Low PV	Included Low PV	Control Low PV
Hypothetical Self PA	8, 166	0.66	.73	.03									
T1					1.01 (0.04)	1.44 (0.57)	1.09 (0.14)	1.32 (0.42)	1.12 (0.18)	1.54 (1.13)	1.02 (0.04)	1.14 (0.20)	1.13 (0.25)
T2					1.29 (0.76)	2.00 (1.61)	1.00 (0.00)	1.31 (0.63)	1.09 (0.30)	1.38 (0.74)	1.00 (0.00)	1.08 (0.29)	1.00 (0.00)
T3					1.00 (0.00)	1.55 (1.29)	1.00 (0.00)	1.31 (0.63)	1.00 (0.00)	1.13 (0.35)	1.11 (0.33)	1.33 (0.65)	1.00 (0.00)
Hypothetical Self NA	8, 166	1.21	.30	.06									
T1					4.41 (0.59)	3.98 (1.37)	4.35 (0.79)	4.27 (0.52)	4.34 (0.65)	4.27 (0.28)	4.06 (1.22)	4.29 (0.78)	3.92 (1.31)
T2					3.86 (1.07)	4.18 (1.40)	4.09 (1.22)	4.00 (1.00)	4.36 (0.92)	3.87 (0.35)	3.89 (1.27)	4.00 (1.21)	4.00 (1.41)
T3					4.29 (1.11)	4.27 (1.19)	3.82 (1.17)	4.15 (0.99)	4.36 (0.92)	3.75 (0.89)	3.67 (1.41)	3.92 (1.00)	3.90 (1.37)
PBB Vignettes	7, 141ᵍ	.62	.73	.03									
T1					2.20 (0.04)	2.18 (0.03)	2.17 (0.04)	2.17 (0.05)	2.18 (0.06)	2.17 (0.04)	2.19 (0.05)	2.18 (0.06)	2.18 (0.03)
T2					4.62 (0.49)	4.24 (0.52)	4.30 (0.64)	4.36 (0.73)	4.52 (0.60)	4.50 (0.40)	4.56 (0.65)	4.47 (073)	4.47 (0.28)
T3					4.52 (0.54)	4.30 (0.55)	4.12 (0.97)	4.13 (0.83)	4.30 (0.66)	4.21 (0.71)	4.52 (0.63)	4.14 (0.74)	4.17 (0.39)

Table 11 - Continued

Note. PA = Positive Affect; NA = Negative Affect; B = Baseline; T1 = Time 1; T2 = Time 2; T3 = Time 3; PBB = Positive Bystander Behaviors; PV = Peer Victimization.

62

[a] Mauchly's test of sphericity indicated that the assumption of sphericity had been violated for this model, $\chi^2(2) = 13.46$, $p = .001$. Therefore, the Greenhouse-Geisser correction was applied to this model to correct for potential bias.

[b] Mauchly's test of sphericity indicated that the assumption of sphericity had been violated for this model, $\chi^2(2) = 17.01$, $p < .005$. Therefore, the Greenhouse-Geisser correction was applied to this model to correct for potential bias.

[c] Mauchly's test of sphericity indicated that the assumption of sphericity had been violated for this model, $\chi^2(2) = 9.49$, $p = .009$. Therefore, the Greenhouse-Geisser correction was applied to this model to correct for potential bias.

[d] Mauchly's test of sphericity indicated that the assumption of sphericity had been violated for this model, $\chi^2(2) = 12.14$, $p = .002$. Therefore, the Greenhouse-Geisser correction was applied to this model to correct for potential bias.

[e] Mauchly's test of sphericity indicated that the assumption of sphericity had been violated for this model, $\chi^2(2) = 14.15$, $p = .001$. Therefore, the Greenhouse-Geisser correction was applied to this model to correct for potential bias.

[f] Mauchly's test of sphericity indicated that the assumption of sphericity had been violated for this model, $\chi^2(2) = 6.50$, p = .049. Therefore, the Greenhouse-Geisser correction was applied to this model to correct for potential bias.

[g] Mauchly's test of sphericity indicated that the assumption of sphericity had been violated, $\chi^2(2) = 16.38$, $p < .005$. Therefore, the Greenhouse-Geisser correction was applied to this model to correct for potential bias.

Chapter 4

DISCUSSION

Overview of Study

The overarching goal of the present study was to investigate the empathy gap phenomenon as it applies to children in bullying situations. We did this through four aims: 1) examining whether children displayed the empathy gap for social pain and affect in bullying situations, 2) determining whether the empathy gap phenomenon would extend to children's bystander behaviors for bullying situations, 3) examining the decay of the empathy gap phenomenon, and 4) investigating peer victimization as a moderator of children's reported empathy and the empathy gap phenomenon.

During home visits, participants listened to a bullying vignette and gave baseline appraisals of intra- and interpersonal pain, positive affect, and negative affect, as well as their hypothetical bystander behaviors regarding this situation. Next, participants played a ball-tossing game, which served as an experimental manipulation designed to induce a "hot" (Excluded group) or "cold" (Included and Control groups) state. They then completed a series of computer and vignette tasks assessing their post-manipulation empathy and bystander behaviors in bullying situations. One and seven days following the home visit, we contacted participants via telephone and asked them follow-up questions to assess the decay of the empathy gap phenomenon.

The design of the present study included four notable strengths designed to extend the current knowledge of the empathy gap phenomenon including: 1) use of a child sample to examine the empathy gap for social pain in bullying

situations, 2) inclusion of behavioral data to examine how this phenomenon may influence actual bystander behavior, 3) one- and seven-day follow-up time points to assess the decay of "hot" states and the empathy gap phenomenon, 4) examination of peer victimization as a "chronic hot state" and potential moderator of the empathy gap phenomenon.

Original Aims and Actual Findings

Results did not support any of the four aims described in the previous section. We did not find evidence of the empathy gap phenomenon for children in bullying situations in the context of either appraisals or bystander behaviors. The empathy gap phenomenon was not observed to decline over time. Finally, the empathy gap phenomenon was not moderated by peer victimization.

We were surprised by these null results, especially given the strong grounding of our hypotheses in the extant literature. One possible explanation for these discrepant results is that the empathy gap phenomenon may not in fact occur in children in the context of social pain, as has been found for adults. The empathy gap phenomenon has been well-documented in adult literature for both social pain (e.g., Nordgren et al., 2011) and physical pain (Christensen-Szalanski, 1984; Read & Lowenstein, 1999); however, to our knowledge this phenomenon has not been examined in children. Thus, it is possible that for children, being in a hot versus cold state does not affect appraisals of social situations, or perhaps visceral situations more generally (hunger, fatigue). If this is the case, then the tendency to form differing appraisals of others' experience as a function of one's own current state may emerge across development. That is, it is possible that children naturally display more

accurate appraisals of socially painful experiences than adults, and this accuracy decreases across development.

Procedural issues may also account for some of the non-significant findings in the present study. First, the experimental manipulation may have not induced sufficient feelings of social exclusion to put children in a "hot" state. Although Nordgren and colleagues (2011) used Cyberball as a successful experimental manipulation when examining the empathy gap phenomenon for social pain in adults, the manipulation may have been less distressing to our child sample. However, our manipulation check variables indicated that children in the Excluded condition reported receiving the ball a fewer number of times than children in the Included condition, suggesting that children were aware of the social exclusion. In addition, significant group effects from our third aim indicated that Excluded children endorsed significantly more negative experience (e.g., higher negative affect and pain, lower positive affect) in the Cyberball game than did Included and Control children, and they continued to do so during the follow-up phone calls. Thus, although Excluded children were aware that they were being socially rebuffed and found this experience upsetting, it is possible that they perceived the experience as less painful than adults found it or that the pain caused was not sufficient to result in the empathy gap phenomenon.

Second, children may not have displayed the interpersonal empathy gap due to low identification with the victim. Nordgren and colleagues (2011) found that in adults, individuals experiencing higher levels of identification or connectedness (e.g., being on the same team) with another individual had more accurate perceptions and pain estimates compared to individuals experiencing lower levels of identification

66

(e.g., being on an opposing team). The vignettes in the present study were presented as hypothetical situations with hypothetical children. Although they were designed to be developmentally appropriate and relevant, children may not have identified with these hypothetical situations and/or peers closely enough to result in the empathy gap phenomenon. Similarly, for the second Cyberball game, children were told that the other kids playing Cyberball were from their same school district and in the fourth or fifth grade. This description may not have been powerful enough to induce a feeling of identification with the virtual peer excluded during the game.

Third, measurement issues may at least partially account for discrepancies between our findings and those of Nordgren and colleagues (2011). Both studies assessed pain using the Faces of Pain scale. However, we assessed positive and negative affect using separate five-point Likert scales, whereas Nordgren and colleagues (2011) used one continuous scale ranging from -25 to 25. We made a conscious decision to simplify the response choices to be more developmentally appropriate for children. Unfortunately, this decision decreased the sensitivity of measurement and confounded the developmental level of the sample with the use of continuous versus separate measures of positive and negative affect.

Fourth, the measures used in the present study may not have been sensitive enough to distinguish empathic appraisals above and beyond socially-appropriate responding. Across our sample, children responded in the most socially-appropriate with high frequency. Even at baseline, children's appraisals of the victim's pain ($M = 7.08$ on 10 point scale), positive affect ($M = 1.36$ on 5 point scale), and negative affect ($M = 4.23$ on 5 point scale) and their own hypothetical pain ($M = 6.40$ on 10 point scale), positive affect ($M = 1.36$ on 5 point scale), and negative affect ($M = 3.78$ on 5

67

point scale) were quite high and near the minimum (positive affect) or maximum (pain, negative affect) for each response scale. This pattern left little room for additional change in scores from baseline, and ceiling and floor effects may have resulted and limited the ability to detect potential effects.

It is worth noting that although results of the present study did not replicate the empathy gap phenomenon in children for bullying situations, children did report very high levels of empathy or understanding for the victims of bullying. Children's appraisals of the victim's experience simply did not vary by experimental condition, with the exception of children's actual own experiences. Thus, these results suggest that experiencing hot versus cold emotional states may not affect children's empathy or appraisals of social situations. In children, it may be that trait variables related to empathy, such as gender or age, are better predictors of empathic appraisals and responses than are state variables.

Non-Hypothesized Significant Findings

Several non-hypothesized significant findings did emerge and are described below.

Time effects

In our first aim, statistically significant time effects emerged for all interpersonal empathy variables, such that children indicated that the victim experienced increased pain and negative affect and lower positive affect following the Cyberball manipulation than at baseline. Statistically significant time effects also emerged for intrapersonal pain and negative affect, such that children judged the

bullying vignettes to induce more pain and negative affect after the manipulation than at baseline.

Several additional significant main effects for time also emerged for our third aim. For interpersonal empathy, children judged the bullying vignettes to be more painful and to induce more negative affect for the victim following the manipulation than during either the one- or seven-day follow-up phone call. Time effects also emerged for children's appraisals of their own hypothetical pain and positive affect, such that they judged the vignettes to induce more pain and less positive affect following the manipulation than during either phone call. Finally, children judged the Cyberball game to induce less positive affect for the victim following the manipulation than during the seven-day follow-up phone call.

We considered a measurement confound as a possible explanation for the time effects involving hypothetical vignettes, in that we used a single vignette at baseline and during the follow-up phone calls but an average across ten vignettes following the manipulation. However, when we re-ran analyses using only responses from the single vignette at all time points, findings did not change, except perhaps for results related to children's appraisals of their own hypothetical pain. Thus, it seems that other factors likely explain why children judged the majority of both interpersonal and intrapersonal variables to be more severe following the manipulation than at baseline or during the follow-up phone calls.

One possibility is that, during the home visit following the manipulation, children were asked repeated questions about the impact of bullying on victims, and this repetition may have cued children to begin to give the most socially appropriate answer. That is, as more and more questions were asked following the Cyberball

game, children may have realized that the content of all items related to bullying and thus started to respond in the most socially appropriate manner for this context. This may especially be true for the present sample of children, as they were participating in a school-based bullying prevention program that aims to increase empathy for victims of bullying.

Another possibility is that children may have responded in an increasingly automatic manner when answering the many questions following the manipulation, as they listened to 10 bullying vignettes and were asked the same series of questions after each one. Some children may have responded in a more rapid and less thoughtful manner after discovering the similarities across vignettes and the questions that followed them. In fact, behavioral observations during the home visits led us to believe that this may have been the case at times; some children provided responses to questions even before the question was asked, and this tendency increased across vignettes. In an effort to encourage children to provide thoughtful answers, experimenters were trained to read the entire vignette and each question every time, to tell children that they would be doing this, and to encourage children to think carefully about each individual vignette and question. However, it is still likely that automatic responding played a role in the time effects that emerged in the present study. Thus, both socially-appropriate responding and automatic responding may help to explain why children answered in more extreme ways to the many questions asked following the manipulation than to the relatively fewer questions asked at baseline or during the phone calls.

Group effects

In our third aim, significant main effects for Group emerged for children's reports of their own actual pain, positive affect, and negative affect during the Cyberball game. Specifically, children in the Excluded group reported experiencing more pain and negative affect and less positive affect across all time points when playing the Cyberball game. This effect was consistent across all three time points. This finding is essentially an enhanced manipulation check, suggesting that children in the Excluded group indeed felt worse than children in the Included or Control groups, which was the purpose of the Cyberball manipulation.

Appraisals of positive affect did decrease over both the one- and seven-day follow-up time periods, but this was true for children in all experimental groups. Given the lack of observed decay for the Excluded group only, these findings do not lend support for the empathy gap phenomenon. In order to be consistent with this phenomenon, we would have expected that only appraisals for Excluded children would have decayed across time.

Peer victimization as a moderator

Throughout the study, only one effect was moderated by peer victimization, and that effect was for children's reports of the victim's pain experienced during the second Cyberball game. Highly-victimized children who were in the Included group in the first Cyberball game rated the victim in the second Cyberball game as experiencing less pain than did highly-victimized children in the Excluded and Control groups. This effect only emerged during the home visit and not during the phone calls, and it only emerged for children high in peer victimization, not for children at mean or low levels of peer victimization. The experience of being included in a social group

71

may have been unusual for children who typically experience considerable peer victimization, and this experience may have temporarily desensitized them to the pain that others feel when they are excluded. If replicated, this finding may suggest that the natural empathy that bullied children feel for other victims may dissipate surprisingly quickly if they have more positive social experiences with peers.

Limitations and Future Directions

The fact that our results did not replicate the empathy gap phenomenon in a child sample or with respect to bullying situations suggests a number of limitations and directions for future research. First, in future studies, it may be worthwhile to examine whether the empathy gap phenomenon replicates in children in different types of socially and physically painful situations. It would be beneficial to examine children's appraisals of other potential sources of social pain or physical pain to determine whether children do in fact display the empathy gap phenomenon in different contexts or whether this phenomenon does not emerge at all until a later developmental period. As empathy gaps for physical pain and visceral states have been given more attention and are better-established in the adult literature than those for social pain, it may be worthwhile to examine children's appraisals of physical pain first and foremost.

Second, future researchers should consider increasing the range of the response scales for pain, positive affect, and negative affect. Using a response format with a wider range would allow for more sensitivity to detect differences across time points and between groups.

Future studies may also consider exploring whether increased connectedness with the victim affects children's empathic appraisals. The present study was

designed such that children may have some feelings of relatedness to virtual peers in the Cyberball game (e.g., same school district and similar grade), but perhaps less connection to hypothetical peers in vignettes. Examining the role of children's connection to victims of bullying on their empathy for these children may be a fruitful avenue for future work.

It may also be worthwhile in future studies to examine other potential moderators of the empathy gap phenomenon, both in child and in adult samples. First, socialization of empathic understanding or responding by parents or educators may be a worthwhile moderator to explore, as evidence suggests that parental socialization of emotions is related to increased child empathic responding at a more general or trait-like level (e.g., Eisenberg, Cumberland, & Spinrad, 1998; Eisenberg & Fabes, 1998; Zhou et al., 2002). It would be useful to examine whether socialization of emotions influences empathic appraisals and responding at a state-level in a similar manner. It is possible that socialization of empathic understanding and responses may close the empathy gap for both child and adult samples above and beyond situations that place these individuals in a "hot" emotional state. If socialization of empathy does in fact serve as a moderator of the empathy gap phenomenon, this information would be useful for informing bullying prevention and intervention programs.

Second, it may also be valuable to examine physiological arousal as a moderator of the empathy gap phenomenon. Research suggests that individuals who become adequately, but not overly, aroused display the highest levels of empathic responding (e.g., Eisenberg et al., 1994; Eisenberg et al., 1996; Liew et al., 2011). The empathy gap phenomenon assumes that an individual first becomes aroused by a certain situation that puts that individual into a "hot" state. Future studies could

employ physiological indicators (e.g., heart rate, electrodermal activity) to examine the level of arousal that an individual experiences during a physically or socially painful situation and whether this arousal moderates the empathy gap. In other words, it is possible that increased arousal relates positively to closure of the empathy gap. This type of evidence would provide additional support of the empathy gap phenomenon and the importance of experiencing a "hot" state of arousal to close the empathy gap.

Overall, although results from the present study did not support the empathy gap phenomenon as expected in children during bullying situations, the findings did stimulate interesting questions and avenues for future research regarding the nature of this phenomenon for both physical and social pain, the development and presentation of this phenomenon in children, and potential moderators of this phenomenon in both child and adult samples. It is our hope that examination of these questions will provide a better understanding of the empathy gap phenomenon and that this information will be used to increase empathic understanding and responding for both children and adults by informing intervention and prevention programs.

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CLASSROOM PARENTAL PERMISSION FORM

Note: Actual permission form will have a space for parents to initial at the top of each page.

University of Delaware | College of Arts & Sciences
DEPARTMENT OF PSYCHOLOGY

108 Wolf Hall
Newark, DE 19716-2577
Phone: 302-831-2271
Fax: 302-831-3645

Fall, 2013

Dear Parent or Guardian,

Bullying has become an important concern in today's classrooms. This school year, the Peer Relations Research Group from the University of Delaware and the staff of your child's school will implement the KiVa Bullying Prevention Program in 4th and 5th grade classrooms. At the same time, we are conducting a research project to learn more about how children feel about bullying and how parents talk to children about bullying.

We would like to ask your permission for you and your child to participate in this research project. Written permission is required for participation. We anticipate that participation will require about two hours of your time and your child's time during our home visit today, as well as two five-minute phone calls for your child over the next week.

If you agree to participate, we will ask you to do two things today. First, we will ask you to answer questionnaires about yourself and your child. The questions about your child will involve his/her feelings and experiences with peers. The questions about yourself will focus on your thoughts and feelings about children's peer relationships, your understanding of emotions, your parenting, and other demographic information about your family. We will be here to answer any questions that you may have about the questionnaires or to read the questionnaires to you if you prefer.

Second, we would like to audiotape you talking to your child about situations in which he/she sees other children being bullied. We will describe these situations to you and your child, and then we will leave you alone to discuss the situations. We

will later listen to, transcribe, and code these conversations to learn more about how parents and children talk about bullying together.

We will also ask your child to do two things today, in addition to taking part in the conversation with you described above. First, he/she will answer questionnaires about him/herself. These questions will involve his/her feelings, understanding of emotions, and relationships with peers.

Second, your child will play a ball-tossing computer game called Cyberball. Your child will believe that he/she is playing Cyberball over the Internet with two other children. In this game, your child will throw a virtual ball to either of the other two players on the screen by clicking on that player's icon. However, in truth, the other children will not exist but will be computer-simulated, or what we call virtual peers. Sometimes, these virtual peers will include your child in the ball-tossing game, but other times the virtual peers will exclude your child from the game. These exclusion incidents will be brief (less than 5 minutes) and are designed to be similar to situations that your child may encounter in everyday life. We include this experience in our study because it helps us learn more about how children feel when they are excluded and how we can increase children's empathy for peers who are excluded in real-life situations at school.

It is fine to tell your child that he/she will be playing a computer game with other children (or to ask if he/she would like to do so). However, we would prefer that that you not share information about the fact that the virtual peers are not "real" with your child. Providing children with these details will make it harder for them to behave naturally and for us to learn from them. It is our experience that most parents prefer not to share this information with their children at any point. However, a few parents may choose to tell their child about the virtual peers, if they are worried that their child was concerned about being excluded during the computer game. Of course, it is your right to tell your child about the virtual peers at any point; however, if you tell him/her before our last phone call, we ask that you call us at 302-831-0355 to let us know. We would be happy to speak with you in person or by phone to discuss the decision about whether or not to share this information with your child, and we would also be happy to speak to your child in person or by phone should he/she have any questions at all for us about the computer game.

Finally, we will call your child twice over the next week (tomorrow, one week from today) to ask him/her brief follow-up questions about the activities he or she did today. Each phone call will take less than 5 minutes. We will schedule the time of these calls with you at the end of our visit today so that they will be convenient for you.

All of your responses and your child's responses to questions and participation in activities (computer game, conversation) will be entirely confidential. None of the information will be viewed by anyone at your child's school. Although identifying information (e.g., names) will be gathered, this information will be replaced by arbitrary identification numbers, and all identifying information will be

deleted. Once audio recordings are transcribed, the recordings themselves will be destroyed. All information will be stored in locked offices at the University of Delaware, accessible only to our staff. Reports of the project results will never include children's names, and the results will be based on information gathered from groups of children rather than individual children. Because the data will be stored only under identification numbers, we plan to keep the data indefinitely. There is only one exception to our rule that everything will be entirely confidential. That is, if we suspect or find evidence of abuse or neglect, we are obligated to inform appropriate authorities, as necessary, to prevent serious harm to your child or others.

Participating in our project will most likely be a positive experience for you and your child. In fact, many children and parents report that they enjoy participating and that they learn more about themselves through answering our questions and taking part in our activities. It is also possible that you or your child will feel uncomfortable answering our questions or being audiotaped, or that your child will feel sad if he/she is excluded by the virtual peers while playing Cyberball. However, we consider these risks to be very slight. We have conducted similar studies with many children in Delaware schools over the past several years, and not a single child, teacher, or parents has reported any concern to us following participation.

To further minimize these risks, we want to stress that your participation and your child's participation are voluntary. You may skip any question or activity that you choose, and you may stop participating altogether at any point. Your child will also make his/her own choice about participating, and he/she will indicate that choice on a written assent form, after we tell him/her about the things that we plan to do today (the questionnaires, the computer game, the conversation with you). Children will also be told that they can skip any questions or activities, and that they can stop participating at any point. Finally, children will also be told that all of their responses are confidential. If either you or your child chooses not to participate, this decision will not have any negative consequences whatsoever, including any negative effects on your child's grades or relationship with school personnel.

To thank you for helping us, we will pay you $50 ($20) today and let your child choose a toy from our treasure chest. We will also enter your child's name in a lottery for a $20 prize each time he/she participates in a follow-up phone call with us. Your child will earn five entries in the lottery for his/her first phone call and ten more entries in the lottery for his/her second phone call.

If you have any questions about this project, please do not hesitate to contact the project supervisor, **Dr. Julie Hubbard (302-831-4191)**, or the project coordinators, Marissa Smith (msmith@psych.udel.edu; 302-831-0355) and Stevie Grassetti (sgrassetti@psych.udel.edu; 302-831-0355). If you have general concerns about your rights or your child's rights as a participant in research conducted by the University of Delaware, please contact the Human Subjects Review Board chairperson (302-831-*2137*). A report of the results from this project will be available in the summer of 2014.

Thank you for your time and your consideration of our project.

Sincerely,

Julie A. Hubbard, Ph.D.
302-831-4191
jhubbard@psych.udel.edu

Please complete the form on the next page.

Regardless of whether you **do** or **do not** want your child to participate, please do the following:
1. Initial the top of each page of this letter.
2. Complete the information below.

Child's Name: _____

I have read and understand the request for my participation and my child's participation in the study described above.

☐ **Yes**, I consent to participate in this study, and I give permission for my child to participate in this study.

☐ **No**, I do not consent to participate in this study, and I do not give permission for my child to participate in this study.

Parent Signature: _____

Parent Name (Print): _____

Date: _____

Home Telephone Number: _____

Cell Phone Number: _____

Email: _____

Address: _____

CLASSROOM CHILD ASSENT FORM

We want to learn about bullying. One way we learn is by doing a study. We are doing a study, and we are asking you if you want to be in it.

If you decide that you want to be in the study, we will ask you to answer some questions on paper. We will ask about things like bullying, your behaviors, your feelings, your thoughts, and your friendships. Finally, we will ask you some questions about the other kids in your class, how you feel about them, and things that they may do.

Answering the questions will take about an hour. This is not a test. There are no right or wrong answers. We just want to know what you think. If you are in the middle of answering questions and you decide that you want to stop, or that you want to skip a question, that's fine. Just tell me if you want to stop, or just skip the question. I won't be upset at all, and neither will your teacher.

An important thing to know is that we will keep all of your answers private. We will not tell your answers to anyone – not your parents, teachers, or classmates. It's very important that you keep your answers private, too.

Your parent has said that it is okay for you to answer our questions. But, it is up to you if you want to or not. You do not have to be in this study if you do not want to. No one will be upset with you if you decide not to be in the study—not us, or your teacher, or your parents. If you want to be in the study, then I'm going to ask you to sign your name at the bottom of this page. But, if you don't want to be in the study, then you can tell me right now, and that will be just fine too.

I, _____, want to be in this study.
  (Print your name here)

_____   _____
Sign your name here   Date

The Peer Relations Research Group

TEACHER CONSENT FORM

Note: Actual permission form will have a space for teachers to initial at the top of each page.

UNIVERSITY OF DELAWARE.

College of Arts & Sciences
DEPARTMENT OF PSYCHOLOGY

108 Wolf Hall
Newark, DE 19716-2577
Phone: 302-831-2271
Fax: 302-831-3645

September, 2013 (May, 2014)

Dear Teacher,

Bullying has become an important concern in today's classrooms. This school year, the Peer Relations Research Group from the University of Delaware and the staff of your school are implementing the KiVa Bullying Prevention Program in 4th and 5th grade classrooms. We believe that the program will help to create a positive environment in which all children feel safe and enjoy attending school. At the same time, we are conducting a research project to evaluate how well the program is working and whether any changes are needed to improve it.

We would like you to participate in the project by completing questionnaires about each child with parental permission. You will complete the questionnaires twice, once in September/October and again in April/May. In these questionnaires, we will ask about each child's experience with bullying, feelings (e.g., sadness, fear), and friendships. You will also be asked about each child's weight status (e.g., underweight, overweight); our work suggests that overweight children are particularly likely to experience problems with bullying, and we are working to understand this problem and find ways to help these children have a positive school experience. Each time, it will take about 5 minutes per child for you to complete the questions.

We would also like to you complete some questionnaires about yourself. You will complete the questionnaires twice, once in September/October and again in April/May. In these questionnaires, we will ask about your beliefs about and attitudes toward teaching in general and toward the KiVa program more specifically. Each time, it will take about 15 minutes for you to complete the questions.

To thank you for participating, *we* will give you $100 to use on classroom supplies and activities in September/October and a second $100 to use on

classroom supplies and activities in April/May. We realize that you have many other important and time-consuming responsibilities as a teacher, and that this task is a burden on you. This payment is a small way of acknowledging your efforts to help our project succeed.

Responses to all questions will be entirely confidential. None of the information will be viewed by parents or other school personnel, including administrators in your school or the district. Children's names, your name, and your school's name on all of the forms will be replaced by identification numbers to ensure that no one except the Peer Relations Research Group staff can identify responses about individual children, classrooms, or schools. All information will be stored in locked offices at the University of Delaware, accessible only to our staff. Reports of the project results will never include children's names, and results will never be separated by classroom or school. Rather, results will be based on information gathered from all participating children.

Your participation is voluntary. **Please complete the third page of this form to indicate your consent to participate.** Even if you grant consent, you may skip any questions that you do not feel comfortable answering. Just write "Skip" next to that question. You will not experience any negative consequences, penalty, or loss of benefits if you choose not to participate or if you skip questions.

There are truly no right or wrong answers to these questions. As we are sure you know, all children of this age display a range of positive and negative behaviors, and all teachers have different beliefs about teaching and the KiVa program. We are interested in gathering as much accurate information as we can about all of these things. So, please do your best to answer the questions honestly.

We will return on _____ **to pick up these questionnaires,** so please have them completed by that time.

We do not believe that there are any risks associated with participating in this project. We have conducted similar studies with over 11,000 children and their teachers in Delaware schools over the past several years and have had no reported problems. Regarding the benefits of this project, you may enjoy participating and even learn more about the children in your class as well as your own beliefs about teaching and the KiVa program through answering our questions. Furthermore, as described above, the primary benefit of the project is to evaluate how well the KiVa program is working and whether any changes are needed to improve it for future teachers and children.

Thank you so much for your help with our project. Your assistance is truly invaluable to us, and we greatly appreciate your cooperation. We are trying to do everything possible to minimize any inconvenience that this project may cause you. If you have any suggestions or questions about this project, please do not hesitate to contact the project supervisor, **Dr. Julie Hubbard (302-831-4191)**. If you have general concerns about your rights as a participant in research conducted by the University of

Delaware, please contact the Human Subjects Review Board chairperson (302-831-*2137*). A report of the results from this project will be available in the summer of 2013.

Sincerely,

Julie A. Hubbard, Ph.D.
302-831-4191
jhubbard@psych.udel.edu

Please complete the form on the next page.

The Peer Relations Research Group

Regardless of whether you **do** or **do not** want to participate, please do the following:
1. Initial the top of each page of this letter.
2. Complete the information below.
3. Return this whole letter (3 pages) with your packet of questionnaires.

Name: _____

I have read and understand the request for my participation in the study described
above.
☐ **Yes**, I consent to participate in this project.
☐ **No**, I do not consent to participate in this project.

Signature: _____

Date: _____

Email: _____

CHILD SELF-REPORT MEASURE OF PEER VICTIMIZATION (1)

Peer Victimization Scale
(Austin & Joseph, 1996)

The following items each talk about two kinds of kids, and we want to know which kid is most like *you*. For each question, you should do these two steps:

1) Decide whether you are more like the kid on the right side or more like the kid on the left side. Don't mark anything yet, but first decide which kind of kid is most like you, and go to that side of the question.
2) Now, the second thing you should do is to decide whether that side of the question is only *sort of true for you* or *really true for you*. If it's only sort of true, then put an X in the box under *sort of true for me.* If it's really true for you, then put an X in that box, under *really true for me.*

For each sentence, you only check <u>one</u> box. Sometimes it will be on one side of the page, another time it will be on the other side of the page, but you can only check *one box* for each sentence. You *don't* check both sides, just the *one* side that is most like you.

	Really true for me	Sort of true for me				Sort of true for me	Really true for me
1.	1	2	Some kids are *often* teased by other kids.	**BUT**	Other kids are *not* teased by other kids.	3	4
2.	1	2	Some kids are *often* bullied by other kids.	**BUT**	Other kids are *not* bullied by other kids.	3	4
3.	1	2	Some kids are *not* called horrible names.	**BUT**	Other kids are *often* called horrible names.	3	4
4.	1	2	Some kids are *often* picked on by other kids.	**BUT**	Other kids are *not* picked on by other kids.	3	4
5.	1	2	Some kids are *not* hit and pushed about by other kids.	**BUT**	Other kids are *often* hit and pushed about by other kids.	3	4
6.	1	2	Some kids are *not* laughed at by other kids.	**BUT**	Other kids are *often* laughed at by other kids.	3	4

Appendix E

CHILD SELF-REPORT MEASURE OF PEER VICTIMIZATION (2)

Global Victimization Item from the Revised Olweus Bully/Victim Questionnaire
(Olweus, 1996)

1. How often have you been bullied at school in the last couple of months?	**1** Not At All	**2** Once or Twice	**3** 2 or 3 Times Per Month	**4** About Once a Week	**5** Several times a Week

Appendix F

CHILD SELF-REPORT MEASURE OF PEER VICTIMIZATION (3)

Comprehensive Scales of Traditional Peer Victimization
(Morrow, Hubbard, & Swift, 2014)

Here are some sentences about different things that might happen to you. For each item, please circle the number that shows how often the statement is true for you. If a sentence is true about you a whole lot, circle 5. If it is true about you a lot, circle 4. If it is true about you sometimes, circle 3. If it is true about you a little, circle 2. If a sentence is not at all true about you, circle 1. Remember, all kids are different, so there are no right or wrong answers. Just answer how often each thing happened to you in the past several months.

	1 Not at all	2 A little	3 Sometimes	4 A lot	5 A whole lot
1. A kid hit or pushed me.	1 Not at all	2 A little	3 Sometimes	4 A lot	5 A whole lot
2. A kid kicked me.	1 Not at all	2 A little	3 Sometimes	4 A lot	5 A whole lot
3. A kid beat me up.	1 Not at all	2 A little	3 Sometimes	4 A lot	5 A whole lot
4. A kid hurt my body in some other way.	1 Not at all	2 A little	3 Sometimes	4 A lot	5 A whole lot
5. A kid called me mean names.	1 Not at all	2 A little	3 Sometimes	4 A lot	5 A whole lot
6. A kid said something mean about me.	1 Not at all	2 A little	3 Sometimes	4 A lot	5 A whole lot
7. A kid made fun of the way I look.	1 Not at all	2 A little	3 Sometimes	4 A lot	5 A whole lot

8. A kid made fun of me for other some reason.	**1** Not at all	**2** A little	**3** Sometimes	**4** A lot	**5** A whole lot
9. A kid tried to get me in trouble with my friends.	**1** Not at all	**2** A little	**3** Sometimes	**4** A lot	**5** A whole lot
10. A kid tried to make my friends turn against me.	**1** Not at all	**2** A little	**3** Sometimes	**4** A lot	**5** A whole lot
11. When I tried to play with one kid, another kid would not let me.	**1** Not at all	**2** A little	**3** Sometimes	**4** A lot	**5** A whole lot
12. A kid made other people not talk to me.	**1** Not at all	**2** A little	**3** Sometimes	**4** A lot	**5** A whole lot
13. A kid took something of mine without permission.	**1** Not at all	**2** A little	**3** Sometimes	**4** A lot	**5** A whole lot
14. A kid tried to break something of mine.	**1** Not at all	**2** A little	**3** Sometimes	**4** A lot	**5** A whole lot
15. A kid stole something from me.	**1** Not at all	**2** A little	**3** Sometimes	**4** A lot	**5** A whole lot
16. A kid damaged something of mine on purpose.	**1** Not at all	**2** A little	**3** Sometimes	**4** A lot	**5** A whole lot
17. A kid ignored me.	**1** Not at all	**2** A little	**3** Sometimes	**4** A lot	**5** A whole lot
18. A kid refused to talk to me.	**1** Not at all	**2** A little	**3** Sometimes	**4** A lot	**5** A whole lot
19. A kid wouldn't let me join their game.	**1** Not at all	**2** A little	**3** Sometimes	**4** A lot	**5** A whole lot
20. A kid had a secret and would not tell me.	**1** Not at all	**2** A little	**3** Sometimes	**4** A lot	**5** A whole lot

Appendix G

TEACHER-REPORT MEASURE OF CHILD PEER VICTIMIZATION (1)

Peer Victimization Scale for Teachers
(Austin & Joseph, 1996)

For these items, **first** decide what kind of kid this child is like, the one described on the left **OR** the one described on the right. **Then** indicate whether this is just sort of true or really true for this child by circling the number under the correct label. Thus, for each item, circle only one of the four numbers.

	Really true	Sort of true				Sort of true	Really true
1.	1	2	This child is *often* teased by other kids.	**OR**	This child is *not* teased by other kids.	3	4
2.	1	2	This child is *often* bullied by other kids.	**OR**	This child is *not* bullied by other kids.	3	4
3.	1	2	This child is *not* called horrible names.	**OR**	This child is *often* called horrible names.	3	4
4.	1	2	This child is *often* picked on by other kids.	**OR**	This child is *not* picked on by other kids.	3	4
5.	1	2	This child is *not* hit and pushed about by other kids.	**OR**	This child is *often* hit and pushed about by other kids.	3	4
6.	1	2	This child is *not* laughed at by other kids.	**OR**	This child is *often* laughed at by other kids.	3	4

Appendix H

TEACHER-REPORT MEASURE OF CHILD PEER VICTIMIZATION (2)

Comprehensive Scales of Traditional Peer Victimization
(Morrow, Hubbard, & Swift, 2014)

Here are some sentences about different things that might happen to students. For each item, please circle the number that shows how often the statement is true for this student. Remember, all kids are different, so there are no right or wrong answers. Just answer how often each thing happened to this student in the past several months.

1. A kid hit or pushed this student.	**1** Not at all	**2** A little	**3** Sometimes	**4** A lot	**5** A whole lot
2. A kid kicked this student.	**1** Not at all	**2** A little	**3** Sometimes	**4** A lot	**5** A whole lot
3. A kid beat up this student.	**1** Not at all	**2** A little	**3** Sometimes	**4** A lot	**5** A whole lot
4. A kid hurt this student's body in some other way.	**1** Not at all	**2** A little	**3** Sometimes	**4** A lot	**5** A whole lot
5. A kid called this student mean names.	**1** Not at all	**2** A little	**3** Sometimes	**4** A lot	**5** A whole lot
6. A kid said something mean about this student.	**1** Not at all	**2** A little	**3** Sometimes	**4** A lot	**5** A whole lot
7. A kid made fun of the way this student looks.	**1** Not at all	**2** A little	**3** Sometimes	**4** A lot	**5** A whole lot
8. A kid made fun of this student for other some reason.	**1** Not at all	**2** A little	**3** Sometimes	**4** A lot	**5** A whole lot

9. A kid tried to get this student in trouble with his/her friends.	**1** Not at all	**2** A little	**3** Sometimes	**4** A lot	**5** A whole lot
10. A kid tried to make this student's friends turn against him/her.	**1** Not at all	**2** A little	**3** Sometimes	**4** A lot	**5** A whole lot
11. When this student tried to play with one kid, another kid would not let him/her.	**1** Not at all	**2** A little	**3** Sometimes	**4** A lot	**5** A whole lot
12. A kid made other people not talk to this student.	**1** Not at all	**2** A little	**3** Sometimes	**4** A lot	**5** A whole lot
13. A kid took something of this student's without permission.	**1** Not at all	**2** A little	**3** Sometimes	**4** A lot	**5** A whole lot
14. A kid tried to break something of this student's.	**1** Not at all	**2** A little	**3** Sometimes	**4** A lot	**5** A whole lot
15. A kid stole something from this student.	**1** Not at all	**2** A little	**3** Sometimes	**4** A lot	**5** A whole lot
16. A kid damaged something of this student's on purpose.	**1** Not at all	**2** A little	**3** Sometimes	**4** A lot	**5** A whole lot
17. A kid ignored this student.	**1** Not at all	**2** A little	**3** Sometimes	**4** A lot	**5** A whole lot
18. A kid refused to talk to this student.	**1** Not at all	**2** A little	**3** Sometimes	**4** A lot	**5** A whole lot
19. A kid wouldn't let this student join his/her game.	**1** Not at all	**2** A little	**3** Sometimes	**4** A lot	**5** A whole lot
20. A kid had a secret and would not tell this student.	**1** Not at all	**2** A little	**3** Sometimes	**4** A lot	**5** A whole lot

Appendix I

TELEPHONE RECRUITING SCRIPT

Hello, may I please speak with the parent or guardian of *CHILD'S NAME?* My name is *GRA'S NAME* and I'm calling from the Peer Relations Lab at the University of Delaware. Earlier this year, when you signed a permission form about the KiVa Bullying Prevention Program, you gave permission for our lab to contact you about future studies. Is now a good time to talk?

(IF NO): When would be a better time to call back?
(IF YES): Our lab is conducting a study to learn more about how children feel about bullying and how parents talk to children about bullying. We would like to invite you and your child to participate. If you are interested, we would schedule a time for two members of our lab to come to your home for two hours. While we are there, we will ask you and your child to fill out questionnaires, we will audiotape you talking to your child about situations in which he/she sees other children being bullied, and your child will play a ball-tossing game on a computer. We will pay you *$20-$50 (amount to be determined based on available funding)* for your time, and your child will receive a desirable toy. Is this something you would be interested in hearing more about?

(IF NO): Okay, thank you for your time. Goodbye.
(IF YES): Great! At the beginning of the visit, we will provide more details about all of the parts of the study. Now, I want to take just a moment to tell you a little more about the ball-tossing computer game that your child may play. Some kids will play a ball-tossing game in which they click on a ball that changes places on the screen. Other kids will play a ball-tossing game called Cyberball. Your child will believe that he/she is playing Cyberball over the Internet with other children. However, in truth, the other children will not exist but will be computer-simulated, or what we call virtual peers. Sometimes, these virtual peers will include your child in the ball-tossing game, but other times the virtual peers will exclude your child from the game for a very brief time (less than five minutes). In addition, your child will also observe virtual peers playing Cyberball and then have the opportunity to join in their play. We include this experience in our study because it helps us learn more about how children feel when they are excluded and how we can increase children's empathy for peers who are excluded in real-life situations at school. It is fine to tell your child that he/she will be playing a computer game with other children. However, it would be better if you did not share the fact that the virtual peers are not "real" with your child before our visit, or that they will be excluding your child. Providing children with these details will make it harder for them to behave naturally and for us to learn what we can from them. During our visit, we'll talk to you more to help you decide whether you want to tell your child about the virtual peers at a later point, or whether you would prefer not to tell

your child at all. Do you have any questions for me at this time?

IF YES: *Answer questions*
IF NO: Are you interested in scheduling a time to participate?

If NO: Thank you so much for talking to me and considering participating.
IF YES: Thank you so much for agreeing to participate. *Schedule visit, secure contact information, ask if will need childcare during visit.* Thank you! We will send you a reminder email and phone call the day before your home visit. We look forward to seeing you at *date and time.* Please call us at 302-831-0355 if you have any questions or need to reschedule.

<center>**Appendix J**</center>

<center>**HOME-VISIT PARENTAL PERMISSION FORM**</center>

Note: Actual permission form will have a space for parents to initial at the top of each page.

Fall, 2013

Dear Parent or Guardian,

Bullying has become an important concern in today's classrooms. This school year, the Peer Relations Research Group from the University of Delaware and the staff of your child's school will implement the KiVa Bullying Prevention Program in 4th and 5th grade classrooms. At the same time, we are conducting a research project to learn more about how children feel about bullying and how parents talk to children about bullying.

We would like to ask your permission for you and your child to participate in this research project. Written permission is required for participation. We anticipate that participation will require about two hours of your time and your child's time today, as well as two five-minute phone calls for your child over the next week.

If you agree to participate, we will ask you to do two things today. First, we will ask you to answer questionnaires about yourself and your child. The questions about your child will involve his/her feelings and experiences with peers. The questions about yourself will focus on your thoughts and feelings about children's peer relationships, your understanding of emotions, your parenting, and other demographic information about your family. We will be here to answer any questions that you may have about the questionnaires or to read the questionnaires to you if you prefer.

Second, we would like to audiotape you talking to your child about situations in which he/she sees other children being bullied. We will describe these situations to you and your child, and then we will leave you alone to discuss the situations. We

<center>103</center>

will later listen to these conversations to learn more about how parents and children talk about bullying together.

We will also ask your child to do two things today, in addition to taking part in the conversation with you described above. First, he/she will answer questionnaires about him/herself. These questions will involve his/her feelings, understanding of emotions, and relationships with peers.

Second, your child will play a computer ball-tossing computer game. In some cases, your child might play an individual ball-tossing game in which s/he clicks on a ball that changes places on the computer screen. In other cases, your child will play a game called Cyberball in which s/he will believe that he/she is playing over the Internet with two other children. In this game, your child will throw a virtual ball to either of the other two players on the screen by clicking on that player's icon. However, in truth, the other children will not exist but will be computer-simulated, or what we call virtual peers. Sometimes, these virtual peers will include your child in the ball-tossing game, but other times the virtual peers will exclude your child from the game. These exclusion incidents will be brief (less than 5 minutes) and are designed to be similar to situations that your child may encounter in everyday life. We include this experience in our study because it helps us learn more about how children feel when they are excluded and how we can increase children's empathy for peers who are excluded in real-life situations at school. In addition, your child will play a game of Cyberball in which he/she first observes three virtual peers playing with each other and then has the chance to join in the game and play with them.

It is fine to tell your child that he/she will be playing a computer game with other children (or to ask if he/she would like to do so). However, we would prefer that that you not share information about the fact that the virtual peers are not "real" with your child. Providing children with these details will make it harder for them to behave naturally and for us to learn from them. It is our experience that most parents prefer not to share this information with their children at any point. However, a few parents may choose to tell their child about the virtual peers, if they are worried that their child was concerned about being excluded during the computer game. Of course, it is your right to tell your child about the virtual peers at any point; however, if you tell him/her before our last phone call, we ask that you call us at 302-831-0355 to let us know. We would be happy to speak with you in person or by phone to discuss the decision about whether or not to share this information with your child, and we would also be happy to speak to your child in person or by phone should he/she have any questions at all for us about the computer game.

Finally, we will call your child twice over the next week (tomorrow, one week from today) to ask him/her brief follow-up questions about the activities he or she did today. Each phone call will take less than 5 minutes. We will schedule the time of these calls with you at the end of our visit today so that they will be convenient for you.

All of your responses and your child's responses to questions and participation in activities (computer game, conversation) will be entirely confidential. None of the information will be viewed by anyone at your child's school. Although identifying information (e.g., names) will be gathered, this information will be replaced by arbitrary identification numbers, and all identifying information will be deleted. All information will be stored in locked offices at the University of Delaware, accessible only to our staff. Reports of the project results will never include children's names, and the results will be based on information gathered from groups of children rather than individual children.

Participating in our project will most likely be a positive experience for you and your child. In fact, many children and parents report that they enjoy participating and that they learn more about themselves through answering our questions and taking part in our activities. It is also possible that you or your child will feel uncomfortable answering our questions or being audiotaped, or that your child will feel sad if he/she is excluded by the virtual peers while playing Cyberball. However, we consider these risks to be very slight. We have conducted similar studies with many children in Delaware schools over the past several years, and not a single child, teacher, or parents has reported any concern to us following participation.

To further minimize these risks, we want to stress that your participation and your child's participation are voluntary. You may skip any question or activity that you choose, and you may stop participating altogether at any point. Your child will also make his/her own choice about participating, and he/she will indicate that choice on a written assent form, after we tell him/her about the things that we plan to do today (the questionnaires, the computer game, the conversation with you). Children will also be told that they can skip any questions or activities, and that they can stop participating at any point. Finally, children will also be told that all of their responses are confidential. If either you or your child chooses not to participate, this decision will not have any negative consequences whatsoever, including any negative effects on your child's grades or relationship with school personnel.

To thank you for helping us, we will pay you $50 ($20) today and let your child choose a toy from our treasure chest. We will also enter your child's name in a lottery for a $20 prize each time he/she participates in a follow-up phone call with us. Your child will earn five entries in the lottery for his/her first phone call and ten more entries in the lottery for his/her second phone call.

If you have any questions about this project, please do not hesitate to contact the project supervisor, **Dr. Julie Hubbard (302-831-4191)**. If you have general concerns about your rights or your child's rights as a participant in research conducted by the University of Delaware, please contact the Human Subjects Review Board chairperson (302-831-*2137*). A report of the results from this project will be available in the summer of 2014.
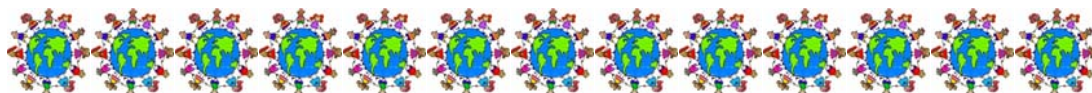
Thank you for your time and your consideration of our project.

Sincerely,

Julie A. Hubbard, Ph.D.
302-831-4191
jhubbard@psych.udel.edu

Please complete the form on the next page.

Regardless of whether you **do** or **do not** want your child to participate, please do the following:
1. Initial the top of each page of this letter.
2. Complete the information below.

Child's Name: _____

I have read and understand the request for my participation and my child's participation in the study described above.

☐ **Yes**, I consent to participate in this study, and I give permission for my child to participate in this study.

☐ **No**, I do not consent to participate in this study, and I do not give permission for my child to participate in this study.

Parent Signature: _____

Parent Name (Print): _____

Date: _____

Home Telephone Number: _____

Cell Phone Number: _____

Email: _____

Address: _____

Appendix K

CHILD ASSENT FORM FOR HOME VISIT DATA COLLECTION

We are from the University of Delaware. We are interested in learning about children's feelings and behaviors and about how children and parents talk to one another. We are especially interested in learning more about how children feel about bullying and how parents talk to children about bullying. One way we learn is by doing a study. We are doing a study, and we are asking you if you want to be in it. We are asking 100 families to be in our study. If you decide that you want to be in our study, you will answer some questions about your thoughts, feelings, and things that might happen to you. Next, you will play a ball-tossing computer game. In this game, you might be clicking on a ball that changes places on the screen or you might be playing with other kids over the internet. Finally, you and your parent will talk about different situations that happen to kids. In addition, we will call you on the phone two times in the next week to ask you a few short questions about the things you did today.

There are some things about this study that you should know. We will be here for about 2 hours today, and when we are done, we will let you pick a toy out of our treasure chest for helping us out. When we call you on the phone, each phone call will take less than five minutes. At the end of each phone call, your name will be entered into a lottery to earn a $20 prize. You will earn 5 entries into the lottery at the end of the first phone call, and you will earn 10 entries into the lottery at the end of the second phone call. Three out of the 100 children who take part in our study will win a $20 prize.

Another thing to know is this: If you don't want to do one of the activities we are doing today, or if you don't want to talk when I call you on the phone, you can just tell me. We'll skip that part, and that will be fine. Also, if you decide that you just want to stop all of the activities, you can tell me that too. We'll just stop everything, and I won't be upset with you at all.

Your parent has said that it is ok for you to do these activities. But, it is up to you if you want to do them or not. You do not have to do these activities if you do not want to. If you want to do these activities, then I'm going to ask you to sign your name at the bottom of this page. Signing your name means that you want to participate, and that you understand all of the things that I've just told you. But, if you don't want to do these activities, then you can tell me right now, and that will be just fine, too.

I, _____, want to be in this research study.
   (Print your name here)

_____   _____
Sign your name here   Date

The Peer Relations Research Group
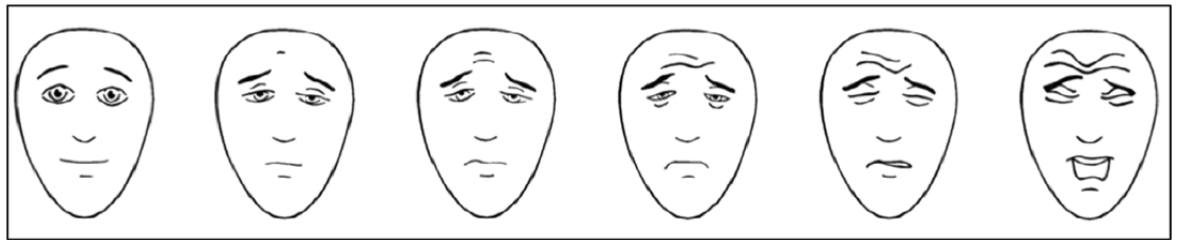
Appendix L

INITIAL DEBRIEFING SCRIPT

Thank you both so much for helping us out today! From your help, we can learn a lot about kids and bullying and what parents can do to help. This information is very important because we are working to make programs against bullying as good as they can be. In addition to school-based programs, we believe that parent involvement is important to making anti-bullying programs a success. From your help today, we will learn a lot about how to make this possible. Do you have any questions for me now? *(If yes, answer questions).* Thanks again for your help! Do not hesitate to contact us at (302) 831-0355 should you have any questions in the future.

Appendix M

FACES OF PAIN SCALE-REVISED

(Hicks, von Baeyer, Spafford, van Korlaar, & Goodenough, 2001)

Instructions: These faces show how much something can hurt. This face *[point to left-most face]* shows <u>no pain</u>. The faces show more and more pain *[point to each from left to right]* up to this one *[point to the right-most face]* – it show <u>very much pain</u>. Point to the face that shows [insert question here].

CYBERBALL GAME INSTRUCTIONS

First Time Playing Ball-Tossing Game (Control):
Now you are going to play a game on this computer. When the game starts you will have the chance to throw a ball. To throw the ball, click on it with your mouse. This will cause the ball to move to a new place on the screen. Click on it again to throw it again. Keep clicking until it's time to stop. Do you have any questions before we start? (Answer child questions if any.) Great, now let's go ahead and get started.
The child will then play the individual ball-tossing game for 5 minutes while the GRA remains silent and in the same room, but out of sight of the child (e.g., standing or sitting behind child).

First Time Playing Cyberball Game (Included, Excluded):
Now you are going to play a game over the Internet with two other kids who are like you. These kids are all in 4th or 5th grade from different schools around here, but none are from your school. They're playing out of their homes on computers just like you. They should be ready to play in just a few moments. When the game starts you all will have the chance to throw a ball to each other. Whoever has the ball can choose the next person to throw it to by clicking on that person's icon with their mouse. So, you can choose who to throw the ball to when you have it, and the other two kids will be able to choose who to throw the ball to when they have it. [*LOOK AT COMPUTER TO "CHECK" THAT THE OTHER 'CHILDREN' ARE READY TO BEGIN*.] Okay, it looks like everyone is just about ready. Do you have any questions before we start? (Answer child questions if any.) Great, now let's go ahead and get started.
The child will then play the Cyberball game for 5 minutes while the GRA remains silent and in the same room, but out of sight of the child (e.g., standing or sitting behind child).

Second Time Playing Cyberball Game (All Conditions; Observe, then Play):
Now you are going to play a game over the Internet with three other kids who are like you. These kids are all in 4th or 5th grade from different schools around here, but none are from your school. They're playing out of their homes on computers just like you. They should be ready to play in just a few moments. When the game starts you will first watch these three other kids for a few minutes as they toss a ball to each other. The way the game works is that whoever has the ball gets to choose the next person to throw it to by clicking on that person's icon with their mouse. After you have watched these other kids play for a few minutes you will have the chance to join

the game. When you join you get to choose who to throw the ball to when you have it, just like the other kids get to chose who to throw the ball to when they have it. [*LOOK AT COMPUTER TO "CHECK" THAT THE OTHER 'CHILDREN' ARE READY TO BEGIN.*]   Okay, it looks like everyone is just about ready. Do you have any questions before we start? (Answer child questions if any.) Great, now let's go ahead and get started.

The child will then watch the three virtual peers play the Cyberball game for 2.5 minutes. Then, the child will join in the play for another 2.5 minutes. The GRA will remain silent and in the same room, but out of sight of the child (e.g., standing or sitting behind child). In addition, the GRA will check in after the first 2.5 minutes to make sure the child has started to play the game and does not have any questions.

Appendix O

CHILD BULLYING VIGNETTES

Instructions: *I am going to tell you about some situations that you might see at school. Please listen carefully to each one because I am going ask you some questions about it afterward.*

Target vignette is in blue text.

1. In the lunchroom, you see [Anthony/Brianna] shout to [Nicholas/Emily], "Nasty, you smell like garbage! GROSS!" [Nicholas/Emily] does not reply, but looks like [he/she] is about to cry. [Anthony/Brianna] said this same thing to [Nicholas/Emily] at lunch yesterday.

2. In the hallway, you hear [Eric/Rachel] chant to [Marcus/Jessica] "You're stupid, you're stupid! Even kindergarteners are smarter than you!" [Marcus/Jessica] holds back tears, but [Eric/Rachel] just continues to chant, "You ARE stupid! Stupid!" at [him/her]. You have heard [Eric/Rachel] say this same thing to [Marcus/Jessica] before.

3. At recess you hear [Kyle/Cierra] say to [Dominic/Kayla], "If you don't play the game by my rules I won't be your friend anymore." [Dominic's/Kayla's] lip starts to tremble as if [he/she] is about to cry, but agrees anyway. You have heard [Kyle/Cierra] say this type of thing to [Dominic/Kayla] several times before.

4. During lunch you see [Shane/Gabriella] say to [Jeremy/Aniyah], "You better share your dessert with me or I won't invite you to my sleepover this weekend." [Jeremy's/Aniyah's] eyes fill with tears, but [he/she] shares [his/her] dessert anyway. This is not the first time you have heard [Shane/Gabriella] say this kind of thing to [Jeremy/Aniyah].

5. In the hallway before school starts [Isaiah/Arianna] is showing [his/her] friends the new iPod [he/she] just got for [his/her] birthday. All of a sudden [Thomas/Sarah] walks over and purposely knocks the iPod out of [Isaiah's/Arianna's] hand, sending it crashing to the floor. [Isaiah/Arianna] holds back tears as [he/she] bends over to pick up the broken iPod. [Thomas/Sarah] has done this sort of thing to [Isaiah/Arianna] before.

6. In art class [Alexander/Haley] has just finished painting a picture to give to [his/her] parent. When nobody is looking, [Damion/Alyssa] takes a paintbrush with black paint and makes dark lines all over the painting. [Alexander/Haley]

114

sees this happen just as [Damion/Alyssa] is done and looks like [he/she] is about to cry. This is not the first time [Damion/Alyssa] has done something like this to [Alexander/Haley].

7. In gym class you hear [Jared/Maria] say to [Michael/Jaqueline], "No! You can't be on our team. We've already said we don't want you here." [Michael's/Jaqueline's] eyes fill with tears as [he/she] walks away. This is not the first time that [Jared/Maria] has not let [Michael/Jaqueline] play.

8. [Joshua/Caitlin] is sitting with a group of kids at lunch when [Andrew/Abby] joins the table. Whenever [Andrew/Abby] says anything, [Joshua/Caitlin] ignores [him/her] and pretends [he/she] is not there. [Andrew/Abby] looks down and almost starts crying. You have seen [Joshua/Caitlin] do this same thing to [Andrew/Abby] before.

9. Your class is lining up at the door to go to gym. As everyone is moving into line, you see [Evan/ McKenzie] elbow [Daniel/Destiny] in the stomach so hard that [Daniel/Destiny] grabs [his/her] stomach and holds back tears. You have seen [Evan/ McKenzie] do this sort of thing to [Daniel/Destiny] before.

10. Your class is on the bus on the way to a school field trip. [Christopher/Julia] and [Brandon/Grace] are both sitting in the back of the bus when you see [Christopher/Julia] hit [Brandon/Grace] across the face. [Brandon/Grace] cries out in pain and [his/her] lip starts to tremble as is [he/she] is about to cry. You have seen [Christopher/Julia] do something like this to [Brandon/Grace].

Backup names to use if child has same name as a name in the vignette:
- Males: Devon and Isaac
- Females: Brittany and Sophia

Appendix P

FOLLOW-UP PHONE SCRIPT

A GRA will call each participating family during a scheduled time one and seven days following the home visit to ask the child a series of follow-up questions.

If there is an answer:

Hello, may I please speak with the parent or guardian of *CHILD'S NAME?* My name is *GRA'S NAME* and I'm calling from the Peer Relations Lab at the University of Delaware. I'm calling because it has been *ONE/SEVEN* days since we came to your home, and we scheduled this time to ask *Child's Name* a few follow-up questions. This will take less than 5 minutes. Is *CHILD'S NAME* available?

(IF NO): What would be a good time for me to call back later today?
(IF YES): Thank you.

To child:
Hello, this is *GRA'S NAME* from the University of Delaware. We came to your house *ONE/SEVEN* days ago. I'm calling because I would like to ask you a few questions about our visit. This should take less than 5 minutes. Is this okay with you?

(IF NO): Ok. Would it be okay if I called back later today, or would you rather not answer the questions at all?
(IF YES): Great! Let's get started.

Proceed to ask child follow-up questions described above.

At the conclusions of the questions:
Thank you so much for answering my questions today! You've earned 5/10 entries into a $20 prize drawing. When we are all finished talking to all of the children who are participating, we will call you if you are the winner.

(IF ONE-DAY FOLLOW UP): I will be calling back in about a week to talk to you again. At that time, you will have the chance to earn 10 more entries into the lottery. Thanks again! Can I talk to your parent now?

To parent: Thank you for all of your help. We are done with our questions for today, and your child has earned 5 entries into our $20 lottery. As a reminder, we will be calling back on *PREVIOUSLY SCHEDULED DATE* to ask some more questions of your child. These questions will be just like the ones he/she did today and it will take

less than 5 minutes. Your child can earn an additional 10 entries into our lottery at that time. Does this time still work well for us to call?

(IF YES): Great! I will call you at that time. Thanks again for your help.
(IF NO): What time would be better for us to call you that day? *Schedule time with parent.*

(IF SEVEN-DAY FOLLOW UP): *Read "Final Debriefing Script" to child. When finished, ask to talk to child's parent and read "Final Debriefing Script" to parent as well.*
If leaving a message:

Hello, this is *GRA'S NAME* calling from the Peer Relations Lab at the University of Delaware. I'm calling because it has been *ONE/SEVEN* days since our visit to your home. We scheduled this time to ask *Child's Name* a few follow-up questions that will take less than 5 minutes. If he/she answers these questions, we will enter his/her name in a lottery to win $20. Please return my call at *cell phone or 302-831-0355* at your earliest convenience. Thank you, and I look forward to hearing from you!

Appendix Q

FINAL DEBRIEFING SCRIPT

READ TO CHILD: Thank you so much for helping me out. I learned a lot about how kids like you feel when they see another kid being bullied and what they might do. You've been a big help to me, so thanks for your help! Do you have any questions for me?

READ TO CAREGIVER: Thank you again for helping us out and participating in this study. From your participation, we can learn a lot about how parents and kids can help with bullying situations. Thank you again for your participation in this study and for allowing your child to participate as well. You've been a great help—thank you so much! Do you have any questions for me at this time?

Appendix R

HUMAN SUBJECT ISSUES

Overview of risks:

Other than the risk of disclosure of confidential information, the risks associated with the present study are related to the questionnaires and the Cyberball game. These risks are outlined below, in addition to steps we will take to address them. In addition, we discuss the issue of debriefing children and how we will handle this process.

Risks of Questionnaires:

One potential risk of questionnaires is that asking children and parents to reveal personal information including family demographics and negative experiences, behaviors, thoughts, and feelings may make them feel uncomfortable or make them more aware of concerns than they had been previously. We are protecting against this risk in several ways. First, children and their parents will be able to decline to participate, through our parent consent and child assent procedures. Second, we will clearly tell parents and children that they are free to skip any questions that they do not want to answer. Third, we will tell parents and children that they are free to stop answering all of the questions at any point. Fourth, the GRAs and URAs will be trained to be sensitive to the slightest distress from participants, to remind them that they need not answer questions that make them uncomfortable and that they can stop participation without penalty, to inquire about adverse reactions, and to report adverse reactions to the PI immediately. The PI will then call the family to check in and to offer referrals for psychological services if desired and report any adverse effects to the human subjects review board. We believe, though, that this discomfort is unlikely to occur. We have used these measures in our laboratory in past projects, and we have not seen any adverse effects.

Risks of Cyberball:

One potential risk of the Cyberball procedure is that it may arouse negative emotions, such as feelings of social exclusion or sadness, in some children. One primary means of protecting children against this risk is to inform them through the child assent procedure that they are free to decline or stop participation in any or all of our procedures at any time without penalty. We have gone to great lengths in the wording of our child assent forms to help children believe that they have the right to decline or stop participation and that they will not experience any negative consequences if they do so. This issue is important, because young children often do not believe they should decline the requests of adults, especially unfamiliar ones, even if they are told it is acceptable

119

(Fisher, 2005; Keith-Spiegel, 1983; Koocher, 1987; Powell & Vacha-Haase, 1994). However, empirical work suggests that the majority of children, even as young as second grade, are able to understand and believe in the voluntary nature of their participation if it is explained in simple language (Hurley & Underwood, 2002). As an added precaution, the GRAs will be trained to establish rapport with children, to remind them about their rights to decline or stop participation, and to monitor for distress during the Cyberball task.

If a child does experience a serious adverse reactions during the Cyberball game, the GRA will immediately check in with the child and offer the family referrals for psychological services if desired (including a referral to the low-fee Psychological Services Training Center at the University of Delaware). Furthermore, the PI will inform the University of Delaware's IRB and will consider the necessity of amending data collection procedures to avoid the possibility of future adverse reactions.

It is clearly important to discuss the possibility of children having strong emotional reactions to the Cyberball procedure. However, we do not believe that such reactions are likely to occur. Researchers (Barkley, personal communication) who have used Cyberball with children of similar ages have reported that the impact of the game appears to be transient and is not dissimilar from minor bouts of ostracism children deal with regularly. This observation is consistent with the extant literature suggesting that "hot" emotional states of pain and social pain are short-lived and evidence rapid decay (Nordgren et al., 2011). Furthermore, Cyberball is a common procedure that has been employed with participants across all age groups (e.g., Gunther et al., 2012), including adults (e.g., Oaten, Williams, Jones, & Zadro, 2008; van Beest & Williams, 2006), adolescents (e.g., Salvy et al., 2011; White et al., 2012), and children (e.g., Barkley et al., 2012; Hawes et al., 2012). Finally, researchers who have used this same procedure with children of similar ages have reported that they have had no instances of children reporting lasting negative effects of Cyberball play (Barkley, personal communication).

Our laboratory (with the approval of the University of Delaware's IRB) has conducted many studies with children in the past involving deception and provocation by peers. For example, 383 children previously participated in a procedure in which they lost a game and a prize to a confederate peer who cheated (Dearing, Hubbard, Ramsden, Parker, Flanagan, Relyea, & Smithmyer, 2002; Hubbard, 2001; Hubbard, Parker, Ramsden, Flanagan, Relyea, Dearing, Smithmyer, Simons, & Hyde, 2004; Hubbard, Smithmyer, Ramsden, Parker, Flanagan, Dearing, Relyea, & Simons, 2002; Parker, Hubbard, Ramsden, Relyea, Dearing, Schimmel, & Smithmyer, 2001; Rubin & Hubbard, 2003). That procedure was considerably more arousing than the one proposed here, because the provoking peer was real, not virtual, and was in the same room with the participant. In that project, we collected brief survey data to investigate whether the safeguards that we routinely take to protect children were successful in insuring their ethical treatment. Each survey contained four questions directed toward parents and one question directed toward children. The survey results were as follows: When asked "How positive did your child feel about his/her visit to the University of Delaware?", parents' responses averaged 4.60 (1 = negative, 5 = positive). When asked "How comfortable were you with the treatment of your child while at the university?", parents' responses averaged 4.81 (1

= not at all, 5 = very). When asked "How likely would you be to recommend this experience to a friend?", parents' responses averaged 4.68 (1 = not at all, 5 = very). When asked "Overall, how would you rate your experience?", parents' responses averaged 4.83 (1 = negative, 5 = positive). Finally, when children were asked "How much did you like coming to the University of Delaware and playing the astronaut game?", their responses averaged 4.57 (1 = not at all, 5 = a whole lot). The results of the survey suggest that parents and children overwhelmingly viewed their participation in our study positively. In fact, in the comments section at the end of the survey, not a single parent expressed concerns or reservations about our work. These results provide support for our experience and growing expertise in eliciting and measuring children's negative feelings in ways that are ecologically valid, ethically sound, and leave children and parents feeling respected and well-treated (Hubbard, 2005).

Treatment of Data:

Several steps will be taken to ensure that all hard data files are securely transported from home visits to the laboratory. These steps will include: a) each set of hard data files is counted twice by two different individuals before leaving the home to ensure that no files are left behind, c) hard data files are transported in zipped tote bags, so that no files are inadvertently dropped, and d) the GRA will drives directly from the home to the laboratory with the hard data files.

All hard data files will be kept in locked file cabinets. Participants will be identified via an arbitrary ID number. All computer data sets will be encrypted, secured with passwords, and recorded under identification numbers only.

One copy of a key list matching participant names and their contact information and identification numbers will be kept in a locked file cabinet in the PI's office, which is in a separate building from the one in which the data will be kept. Thus, except when GRAs and URAs are actually interacting with participants, only the PI will have access to individually-identifiable data on participants.

All data will be stored indefinitely. The one exception is that audio recordings will be destroyed once transcription is complete.

Issue of Debriefing:

At the end of the home visit, the GRA will conduct an initial debriefing with the parent and child. In addition, the GRA will schedule a 1-day and 7-day follow-up telephone appointment with the family and confirm the family's contact information. Finally, the GRA will pay the family $20-$50 (amount to be determined based on available funding) and allow the child to select a desirable toy from among several options as compensation for their participation.

Through the recruitment telephone calls and Parental Consent Form, parents will be fully informed of all details of the study procedures. Thus, parents will not require a second debriefing following the second follow-up phone call with the child.

The issue of debriefing child participants, however, is more complex. The nature of the study requires deceiving child participants, in that they will not know that the peers with whom they interact when playing Cyberball are virtual peers or that we designed the procedure to purposefully exclude them. Furthermore, we will ask the parent not to share this information with their child prior to the home visit. In addition, because we will conduct one- and seven-day follow-up phone call with the child, he/she will remain naïve about these aspects of Cyberball throughout this follow-up period as well.

We have struggled with the issue of how much to tell children about Cyberball at the conclusion of the study. Although a case can be made that "complete honesty" is morally and ethically required, the benefits of a thorough debriefing are not entirely obvious. The goal of debriefing is to clarify painful misperceptions, reduce anxiety, or otherwise be of help (Atkins, 1996). In this case, in fact, we worry that the information conveyed in the debriefing could do more harm than the actual deceptive procedures themselves (Fisher, 2005). If we debrief children thoroughly, we worry they will feel unnecessarily foolish because they believed the virtual peers were real children, that they will feel unnecessarily distrustful of adults (Fisher, 2005), and that they will feel unnecessarily embarrassed in a way that they are not psychologically or developmentally prepared to handle. More generally, we worry that we will do more harm than good if we provide children with more detailed and hard-to-digest information than they can handle.

For these reasons, we have decided against providing children with a detailed debriefing about the virtual peers and intentional social exclusion. Instead, we will simply thank the children for helping us learn about their behaviors and feelings by participating in the Cyberball game and answering questions about their thoughts, feelings, and behaviors. We will also answer all questions that they may have following both the home visit and the phone calls.

We believe that withholding debriefing is acceptable for several reasons. First, empirical evidence suggests that young children do not have the recursive thinking skills to comprehend debriefings about deception, and so the debriefing fails to achieve its intended purpose (Hurley & Underwood, 2002). This finding suggests that it is wise to consider children's developmental level when weighing the pros and cons of debriefing (Fisher, 2003; Thompson, 1990). Second, one of the primary goals of debriefing is to give children a chance to process their feelings and to ask questions. However, we wonder whether children will truly feel comfortable engaging in such a dialogue with an adult who has just admitted that he/she lied to the child. In addition, the design of the present study requires that we continue to deceive children through the follow-up phone calls. As a result, the final debriefing would necessarily take place over the phone rather than in-person. We worry that debriefing children in this way would make this process more difficult for children and may preclude an in-depth discussion with the child and the child's parent should this be necessary. In addition, and consistent with previous research, we predict that children's feelings of exclusion

following the Cyberball game will be relatively short-lived. Thus, to debrief children one week following the game would not necessarily relieve ongoing feelings of social exclusion, as such feelings likely will have subsided almost entirely by that time. Rather, we wonder whether such debriefing would make children feel worse about their overall experience. Finally, it is important to note that the APA Ethics Code permits withholding debriefing in cases of adequate scientific or humane justification for doing so (APA, 2002, Standard 8.08b and c, Debriefing).

Perhaps for all of these reasons, other researchers who have used virtual peer procedures have made similar decisions to withhold debriefing from child participants (Atkins, Osborne, Bennett, Hess, & Halperin, 2001; Barkley, personal communication; Barkley, Salvy, & Roemmich, 2012; Lochman, personal communication; Phillips & Lochman, 2003; Waschbusch, personal communication; Waschbusch et al., 2002), sometimes at the request or recommendation of their university's IRB (e.g., Barkley, Waschbusch). Interestingly, Atkins reportedly did debrief in his first two virtual peer studies (Atkins & Stoff, 1993; Atkins, Stoff, Osborne, & Brown, 1993), but did not debrief in the third study (Atkins et al., 2001), because a number of parents in the first two studies were upset by the idea of the debriefing and the fact that it must be done to follow human subjects guidelines (Atkins, 1996).

We will, however, give parents the option to debrief their child themselves following the home visit procedure if they believe their child to be especially upset by the Cyberball experience. This approach has been used in previous research with child participants playing the Cyberball game and requiring deception (Barkley, personal communication; Barkley et al., 2012) and reportedly has worked well. Interestingly, Barkley reported that although the option to debrief was available to parents, there were no instances where the parent felt it necessary to debrief their child after their initial visit.

Although we will not debrief children about the Cyberball task and virtual peers, we will debrief children in a positive and developmentally appropriate way about the other tasks that they completed and the overall goal of the study.

Appendix S

IRB LETTER

UNIVERSITY OF DELAWARE

RESEARCH OFFICE

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DATE:	September 16, 2013
TO:	Julie Hubbard, Ph.D.
FROM:	University of Delaware IRB
STUDY TITLE:	[500595-1] Children's Bystander Responses to Bullying: The Roles of Empathy and Parental Advice
SUBMISSION TYPE:	New Project
ACTION:	APPROVED
APPROVAL DATE:	August 23, 2013
EXPIRATION DATE:	August 20, 2014
REVIEW TYPE:	Full Committee Review

Thank you for your submission of New Project materials for this research study. The University of Delaware IRB has APPROVED your submission. This approval is based on an appropriate risk/benefit ratio and a study design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

This submission has received Full Committee Review based on the applicable federal regulation.

Please remember that informed consent is a process beginning with a description of the study and insurance of participant understanding followed by a signed consent form. Informed consent must continue throughout the study via a dialogue between the researcher and research participant. Federal regulations require each participant receive a copy of the signed consent document.

Please note that any revision to previously approved materials must be approved by this office prior to initiation. Please use the appropriate revision forms for this procedure.

All SERIOUS and UNEXPECTED adverse events must be reported to this office. Please use the appropriate adverse event forms for this procedure. All sponsor reporting requirements should also be followed.

Please report all NON-COMPLIANCE issues or COMPLAINTS regarding this study to this office.

Please note that all research records must be retained for a minimum of three years.

Based on the risks, this project requires Continuing Review by this office on an annual basis. Please use the appropriate renewal forms for this procedure.

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If you have any questions, please contact Nicole Farnese-McFarlane at (302) 831-1119 or nicolefm@udel.edu. Please include your study title and reference number in all correspondence with this office.