

**THE MEDIATING ROLE OF SOCIAL PREFERENCE IN THE RELATIONSHIP
BETWEEN TEACHER-STUDENT RELATIONSHIP QUALITY AND PEER
VICTIMIZATION**

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ABSTRACT

Teachers are integral to cultivating healthy relationships among students (Cortes & Kochenderfer-Ladd, 2014) and are uniquely positioned to affect change in social processes that maintain victimization (Newman-Carlson & Horne, 2004; Rodkin & Hodges, 2003). Evidence suggests that children with supportive teacher-student relationships have more positive social and behavioral outcomes (Thijs & Verkuyten, 2008;), whereas teacher-student conflict may place children at risk for victimization (Reavis et al., 2010). In this study, we examine the relation between teacher-student relationship quality (TSRQ) and peer victimization (PV), TSRQ and social preference (SP), and whether SP is one mechanism that explains the link between TSRQ and PV. We hypothesize that students who score high TSRQ will be more preferred by their peers over time, and subsequently less victimized. Additionally, there are reasons to expect differential associations by gender. Girls typically receive higher scores for acceptance and perceived popularity (Cilsssen & Mayeux, 2004). The role of gender in the associations among TSRQ, SP, and PV was an exploratory goal of the current investigation. Results indicated that girls who scored higher on TSRQ at time 1 were more preferred by peers at time 2 and experienced lower levels of peer victimization at time 3. There was also some evidence of a reciprocal relation between social preference and peer victimization overtime. Evidence suggests that researchers developing interventions for bullied children should attend to the teacher-student relationship, and this could be particularly important for girls.

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CHAPTER 1

INTRODUCTION

There is a developmental advantage for children who cultivate positive relationships with other individuals outside of the home (Troop-Gordon & Kopp, 2011). A growing body of evidence suggests that children with high quality or supportive teacher-student relationships perform better academically and have more positive social and behavioral outcomes (Thijs & Verkuyten, 2008; Wang et al., 2014; Nakamoto & Schwartz, 2010). However, less is known about how the teacher-student relationship affects risk for peer victimization. The current investigation examines whether the quality of the teacher-student relationship adds to the prediction of children's peer victimization experiences over and above their level of peer acceptance. Also examined is whether the prospective association between teacher-student relationship quality and peer victimization is mediated by children's peer acceptance. It is hypothesized that the teacher-student relationship quality will emerge as a unique predictor of peer victimization and that peer acceptance is one mechanism that explains this prospective association.

Peer Victimization

Bullying is a significant public health problem, affecting children of all races, gender, and socioeconomic status (Kochenderfer-Ladd & Skinner, 2002, Graham, 2006; Christie-Mizell, 2004). *Peer victimization* refers to children's repeated exposure to peer interactions that convey harmful intent, produce harmful effects, and are sanctioned (often implicitly) by peer groups

(Craig & Pepler, 1997; Rodkin & Hodges, 2003). Bully-victim dyads are characterized by a power imbalance favoring the bully, but this imbalance often extends beyond the dyad to include bystanders, supporters, and others who witness but typically fail to intervene in the face of peer harassment (Fite et al., 2013; Stadler et al. 2010; Salmivalli, 2010; Salmivalli, & Voeten, 2004). Peer victimization is particularly prevalent among children in elementary school, affecting nearly 30% of school-age children. However, fewer children experience chronic peer victimization (Goldbaum, Craig, & Pepler, 2007; Ladd & Kochenderfer-Ladd, 2002; Olweus, 1993; Salmivalli, 1999; Solberg & Olweus, 2003), and the affects of chronic victimization on psychosocial adjustment are more severe. Peer victimization is linked to a number of negative adjustment outcomes for children including both internalizing and externalizing symptoms, physical health problems, and academic adjustment. Children who are victimized by peers are more likely to experience symptoms of depression, depressive self-schemas and strong negative cognitions as well as weak positive cognitions, and a diminished ability to view themselves in a positive light (Cole et al 2014; Nansen et al, 2001; Hawker and Boulton 2000). Moreover, research has found that anxiety and loneliness serve as both antecedents and consequents of children's victimization experiences (Reijnjes et al, 2010). There is also evidence that peer victimization is associated with initially low levels of school liking, and subsequent declines in school liking are exacerbated for victimized children with a low quality teacher-student relationship (Cole et al 2014).

The Role of Teachers in Children's Peer Victimization Experiences

Teachers are integral to cultivating positive, healthy relationships among students at school (Cortes and Kochenderfer-Ladd, 2014) and are uniquely positioned to affect change in the social process that maintain peer victimization (Newman-Carlson & Horne, 2004; Olweus, 1993;

Rodkin & Hodges, 2003). Understandably, teachers play a prominent role in most empirically supported anti-bullying programs (Hirschstein, Van Schoiack Edstrom, Frey, Snell, & MacKenzie, 2007; Horne, Swearer, Givens, & Meints, 2010; Kärnä et al., 2011; Olweus & Limber, 2010). Antibullying programs often encourage teachers to communicate to students clear rules to students against bullying, impose consequences for the perpetrators of bullying, supervise contexts that occasion bullying, and encourage classmates to support victims and report incidences of bullying to teachers and school staff (Kallestad & Olweus, 2003). Children in classrooms with teachers who consistently implement such practices tend to experience decreased bullying and victimization (Hirschstein et al., 2007; Kallestad & Olweus, 2003).

More recently, schools are advocating connectedness among individuals to encourage an active approach to bullying prevention in which individuals stand firm, advocating for anti-violence and bullying programs (Libbey, 2004). It is argued that more attention must be paid to students' relationships with teachers and how the perceived teacher-student connectedness may enhance the efficacy of intervention programs targeting bullying (Beets et al., 2008). Despite a call for focused attention by interventionists on the teacher-student relationship, more research is needed to shed light on which aspects of the relationship influence children's peer victimization experiences. Few studies have examined the link between teacher-student relationship quality and peer victimization. There is some evidence from both cross-sectional and longitudinal studies that teacher-student conflict is a stronger predictor of children's peer victimization experiences than teacher-student support (Reavis et al. 2010; Shin & Kim, 2008). Troop-Gordon and Kopp (2011) examined whether characteristics such as teacher-student closeness, dependency, and conflict are associated with children's peer acceptance and bully-victim experiences during the academic year. While dependency, as opposed to closeness, predicted

more bullying experiences, a close relationship with the teacher predicted less bullying perpetration. Additionally, a decrease in friendships, or being less socially preferred, mediated the link between teacher-student dependency and higher levels of victimization in males (Troop-Gordon and Kopp, 2011). In another study, Elledge, Elledge, Newgent, and Cavell (2015) examined whether peer perceptions of a positive teacher-student relationship could buffer children with low peer acceptance, or who were actively rejected, from the risk of peer victimization. Results from this study indicated that the children accepted less well by their peers were at risk for peer victimization, but only for the children with relatively poor quality teacher-student relationships. This relation held across self-, peer-, and teacher-reports of peer victimization. One implication of this finding is that teachers' relationships with individual students could directly or indirectly shape the peer group dynamics (Rodkin and Hodges, 2003); yet few studies have examined the associations between the teacher-student relationship, peer acceptance, children's peer victimization experiences over time (Mercer & DeRosier, 2008). A study by Cassidy (2009) noted that victimized children experience less support from their teachers than other children in the classroom. In summary, available evidence indicates that teacher-student conflict or dependency could increase children's risk for peer victimization, but peer perceptions of a positive teacher-student relationship may serve as a protective function from social risk for peer victimization.

Peer Acceptance and Teacher Influence

If the teacher-student relationship quality is a predictor of peer victimization, then it is important to identify mechanisms that explain this relation. Elementary school children spend the majority of their weekday with a single teacher, and for many children a teacher provides support, security, and a behavioral model for communication and relational skills. It is possible

that a positive teacher-student relationship creates a context in which children are better able to learn coping and conflict resolution skills that help them manage instances of peer victimization (Reavis, Keane, and Calkins, 2010; Troop-Gordon & Kopp, 2011; Hughes et al., 2008). Another possibility is that teachers are more likely to monitor students, intervene in instances of bullying, and issue retribution for bullying when a student with whom they have a positive teacher-student relationship is victimized (Badad, 1990; Olweus, 1993; Smith, Schneider, Smith, & Ananiadou, 2004). In this study we consider the possibility that getting along positively with a teacher may signal to other students that a child has positive qualities or characteristics, which overtime may soften negative peer perceptions and increase peer acceptance, translating to reduced peer victimization.

Peer Acceptance as Mechanism of Action

Peer acceptance is an attitudinal construct that reflects the collective valence of group members' sentiments (i.e., liking, disliking) toward individuals in the group (Buhs and Ladd, 2001). Unlike dyadic ties such as friendship, Buhs and Ladd convey that peer acceptance is established solely at the level of the peer group, and measures of this construct convey how well liked versus disliked a child is, on average, by members of his or her peer group (2001). Thus, peer acceptance is evidence that a student is more socially preferred by his or her peers. Enveloping the concept of classroom-wide social preference involves intricate peer ecologies that are often hierarchical, in which more socially preferred children gain popularity and prestige among their fellow classmates (Dawes et al, 2014; Troop-Gordon, 2015). There is a wealth of research linking peer acceptance or active peer rejection to children's experiences with bullying (Card, Isaacs, & Hodges, 2008; Hawker & Boulton, 2000). In fact, factors that index children's peer relationships are some of the most reliable predictors of peer victimization experiences

(Buhs, 2005; Card et al., 2007; Gazelle & Ladd, 2002; Perry, Hodges, & Egan, 2001). Victims of peer victimization or school bullying are known to have smaller peer networks, fewer friendships, and are accepted less well by their peers (Card et al., 2007; Hodges, Malone, & Perry, 1997; Salmivalli, Huttunen, & Lagerspetz, 1997). There is also evidence suggesting children can be apathetic towards victims, with some believing that bullied children are at least in part responsible for the circumstances that lead to their victimization (Adams et al., 2010; Hoover, Oliver, & Hazler, 1992; Rigby & Slee, 1991). Fortunately, research also suggests that children who are well accepted or who have friends are less likely to become victims of chronic bullying (Boivin, Hymel, & Hodges, 2001; Card et al., 2007; Kochenderfer & Ladd, 1997; Rodkin & Hodges, 2003).

Research on children's peer relationships has primarily focused on children's social interactions with classmates as an influence on relationship formation and social status; less attention has been given to teacher interactions as a source of influence on children's peer relationships (Chang et al. 2004). There is some evidence linking teacher-student relationships with aspects of children's peer relationships. Studies find supportive teacher relationships lead to improvements in children's social functioning, social status, or social reputation (Howes, Hamilton, & Matheson, 1994; Hughes, Cavell, & Willson, 2001; Moore, Shoulberg, & Murray-Close, 2012; Taylor, 1989). There is also evidence suggesting that children's level of peer acceptance can vary as a function of their teacher-student relationship (e.g., Hughes et al., 2001). In fact, Hughes et al. (2001) found that teacher-student relationship quality predicted children's social preference scores even when controlling for peer and teacher reports of classmate aggression, which are robust predictors of social preference (Coie, Dodge, & Kupersmidt, 1990; Parker & Asher, 1987). Moreover, a study by Hughes, Zang, and Hill (2004) found that even at

the classroom level, teacher-support predicted student's peer acceptance and overall classroom engagement (2005). In another study, Chang and colleagues (2004) examined the concept of teacher liking, which is defined as the amount of warmth a teacher attributes to a particular student. Warmth exhibited by teachers towards a particular student is related to the teacher's overall teaching style and demeanor, which is affected by students' peer relations. This suggests that teacher-student closeness is heavily influenced by peer interactions in the classroom. Results from this study indicated that students' peer acceptance was influenced by teacher liking, conveying that a student's tendency to accept or reject a classmate depends not only on the student's behavior, but also on the extent to which the student is liked by the teacher (Mercer & Derosier 2008; Taylor 1989). There are also studies that find peers tend to react more positively to rejected children who receive higher teacher liking scores, relative to those who received lower teacher liking scores (Taylor, 1989, Taylor & Tricket, 1989). In fact, since peer rejection is related to peer exclusion and victimization (Buhs & Ladd, 2001), it is often a prominent factor that contributes to general class disruption. It is possible that teachers may be more inclined to dislike rejected students. This denouncement of favor and acknowledgement of social rejection by the teacher could further perpetuate bullies being reinforced by classroom peers when they victimize and reject other students.

The Present Study

This study aimed to examine whether peer acceptance is a mechanism that explains the relation between teacher-student relationship quality and peer victimization. Examined first was the prospective association between peer perceptions of teacher-student relationship quality (TSRQ) and children's peer acceptance and peer victimization. It was hypothesized that TSRQ would emerge as a significant unique positive predictor of peer acceptance and a negative

predictor of peer-reported peer victimization. Our methodological approach to this study aims to extend current research by using a peer-based measure of TSRQ. A recent multitrait-multimethod study found that peer reports of TSRQ accounted for the largest proportion of trait variance and nonsignificant method variance when compared to child- or teacher-reports (Li, Hughes, Kwok, & Hsu, 2012). The current investigation also examined whether peer acceptance was a mechanism that explained the longitudinal association between TSRQ and peer victimization. It was hypothesized that peer acceptance would mediate that relation between TSRQ and peer-reported victimization. Finally, the possibility that the associations among TSRQ, peer acceptance, and peer victimization are bidirectional was also be examined. There is evidence that bullied children experience subsequent problems in their social relationships with peers (Boivin, Hymel, & Hodges, 2001). There is also reason to believe that teacher's perceptions of students are in part influenced by student's perceptions of their classmates (Buhs & Ladd, 2001; Nesdale & Pickering, 2006). Thus, the current study examined (1) whether peer victimization predicts children's subsequent level of peer acceptance and TSRQ, (2) whether peer acceptance emerges as a longitudinal predictor of TSRQ, and (3) whether the relation between peer victimization and subsequent levels of TSRQ is mediated by peer acceptance.

Additionally, there are reasons to expect differential associations for boys and girls, although few studies have considered gender differences when examining associations between teacher-student relationship quality, peer acceptance, and peer victimization.. Research exploring gender differences in the association between peer victimization and peer acceptance has produced mixed results. Moreover, girls typically receive higher scores for peer acceptance and perceived popularity than boys (Cilsssen & Mayeux, 2004) whereas others have found no gender differences in peer acceptance (De Bryun et al., 2010). Because of these mixed findings, the role

of gender in the relations among teacher-student relationship quality, social preference, and peer victimization will be explored.

CHAPTER 2

METHOD

Participants

Participants were 492 children recruited from eight schools located in the Midwestern United States. Schools were selected to represent the ethnic and socioeconomic diversity of the area. Fifty-five children were participating in a randomized-controlled trial testing the efficacy of a school-based mentoring program (Lunch Buddy Mentoring) and 437 children were the classroom peers of the children participating in the intervention trial. In the spring semester of year 1 (screening), teachers nominated 136 1st, 2nd, or 3rd grade children from their classroom who met a behavioral description (physical, verbal, relational aggression) of an aggressive child (Hughes, Cavell, Meehan, Zhang, & Collie, 2005). Parental consent forms were sent home with 84 teacher-nominated children. Sixty-seven parents consented to allow their child to participate in the intervention arm of the study. Eligible for the intervention were 55 children nominated by their teacher aggressive and met scored at or above 60 T on the Aggressive Behavior subscale of the TRF (Achenbach, 1991a) or CBCL (Achenbach, 1991b). Fifty-five children were randomized to the conditions of the intervention (28 = Lunch Buddy Mentoring; 27 = Waitlist control). In the fall semester of year 2, parental consent forms were sent home with the classmates of children participating in the intervention arm of the study (513 children from 25 classrooms). Parental consent forms were returned by 390 parents, with 351 agreed to allow their child to participate in a larger study examining the correlates of peer conflict, teasing, and

bullying in schools. In the fall semester of year 3, after intervention children had transitioned to the next grade and classroom, 565 additional consent forms were sent home to the parents of classmates of the intervention children (from 35 classrooms) who previously had not partaken in the consent procedure in the fall semester of year 2 of the larger study (i.e., these students were in classrooms without intervention children in year 2 of the study) or were children who failed to return a consent form. Parental consent forms were returned to school by 257 parents, and 143 parents agreed to allow their children to participate in the study. A total of 427 children participated in year 3 of the study.

Across cohorts, participants were 492 (249 girls, 227 boys) 2nd- through 5th-grade children (Cohort 1: 125 in 2nd grade, 133 in 3rd grade, and 88 in 4th grade; Cohort 2: 161 in 3rd grade, 139 in 4th grade, and 126 in 5th grade) between the ages of 6 and 12 years old (M age at consent = 8.75 years, SD = .99 years). Racial makeup of the total sample was: 61.8% Caucasian American, 4.9% African American, 1.2% Asian American, 3.0% Hispanic, 3.7% American Indian, 15.0% multiracial, 0.4% other ethnicity, 10.0% missing. Median income of the children's families was \$35,000-\$50,000, with 30.5% receiving reduced price lunch and 35.0% receiving free lunch.

Measures

Peer victimization. Peer-reports of peer victimization were derived from a peer nomination inventory following procedures similar to those outlined by Coie, Dodge, and Coppotelli (1982). Peer victimization was assessed via two peer nomination items measuring overt (*Who in your class gets hit, pushed, threatened, or teased by other children?*) and relational victimization (*Who in your class gets gossiped about or left out of activities?*). Within time point correlations for overt and relational victimization were .45, .65, and .83, respectively.

Items assessing overt and relational victimization were averaged to form a composite index of peer-reported peer victimization.

Teacher-student relationship quality. TSRQ was measured using the same peer nomination procedure described above. Two peer nomination items (e.g. *Who in your class gets along best with the teacher?*; *Who in your class is liked by the teacher the most?*) were used to index TSRQ. Items assessing TSRQ were correlated (correlations ranged from .40 to .65) across time points) and were averaged to form a single peer-reported index of TSRQ. Although few studies have utilized peer-reports of TSRQ, available evidence supports the validity of this peer report measure. Previous research has found that peer nominations of teacher-student support correlate negatively with children's and teacher's ratings of teacher-student conflict and positively with teacher's ratings of support (Wu et al., 2010).

Peer acceptance. Children were asked to nominate three classmates who they “like the most” and three classmates who they “like the least”. Social preference, a measure of peer acceptance, was computed by subtracting “like least” nominations from “like most” nominations and then standardizing those scores by classroom.

Procedure

The University Institutional Review Board approved this project, and written parental consent and child assent were obtained for all participating children. Peer reports of peer victimization, social preference, and peer perceptions of teacher-student relationship quality were collected in the fall and spring of children's 2nd, 3rd, and 4th grade year, and again in the fall and spring of children's 3rd, 4th, and 5th grade year. Children completed peer-report measures in class groups overseen by trained research assistants. For peer nomination items, children used a numerical roster and items were read aloud; children nominated classmates by circling the

number corresponding to their name on the roster. To minimize discussion about ratings, children were spaced, instructed to keep answers covered, and allowed to work on distracter activities (e.g., mazes) between sets of questions.

Data Analysis

A cross-lagged longitudinal panel model in Mplus version 7.3 was estimated to examine the bidirectional relations among TSRQ, social preference, and peer victimization as well as whether the relation between TSRQ and peer victimization was mediated by peer acceptance. Because indirect effects are not normally distributed and to reduce bias associated with violations of normality for outcome variables, a biased corrected bootstrapping procedure (10,000 bootstrapped samples) was used to establish significance of parameter estimates through estimating confidence intervals around model parameters. A parameter estimate was considered significant if the 95% bias-corrected bootstrapped confidence interval did not contain the value of zero. Estimated in the model was (1) lag 1 associations for TSRQ, social preference, and peer victimization, (2) cross-lagged paths from TSRQ to social preference and peer victimization, (3) cross-lagged paths from social preference to TSRQ and peer victimization, (4) cross-lagged paths from peer victimization to TSRQ and social preference, and (5) cross-lagged 2 paths from TSRQ to peer victimization (i.e. c' path). Model fit was evaluated using the following criteria, $CFI > .90$, $RMSEA < .08$, and $SRMR < .08$ (Bentler, 1990; Brown, 2015; Hu & Bentler, 1999; Little, 2013). Model results are presented in Table 3 and graphically depicted in Figure 1.

Treatment of Missing Data

Analyses were based on a sample of 492 children who consented to participate at time 1 or time 3 and for whom data was available for at least one measurement occasion. Missing data ranged from less than 1% to 20% across study variables. Data were missing completely at

random (MCAR; Little, 1995), and full-information maximum likelihood (FIML) estimation was used to address missing data, which in the multivariate case uses all available information in the dataset to estimate model parameters.

CHAPTER 3

RESULTS

Preliminary Analyses

Means and standard deviations for predictor and outcome variables are presented in Table 1. Girls scored higher than boys on TSRQ and social preference. Peer victimization scores were similar for boys and girls. Correlations among primary study variables are presented in Table 2. TSRQ was positively associated with social preference across all time points for girls, and positively correlated across time points 1-3 for boys. Social preference was negatively correlated with peer victimization across all time points for girls and boys. Peer victimization was negatively correlated with TSRQ across all time points for girls, and at times 1, 2, and 4 for boys.

Primary Analyses

A multiple group cross-lagged panel model was first estimated to examine model equivalence for boys and girls. A model where effects were freely estimated for boys and girls was compared to a model where effects were constrained to be equivalent across gender. Model fit was compared using a chi-square difference test. The fit for the freely estimated model fit the data significantly better than the constrained model ($\Delta \chi^2 (\Delta 118) = 322.4, p < .01$). Therefore, results for the current study are based on the model where pathways were freely estimated for boys and girls. The fit of the multiple group model was acceptable ($\chi^2 (38) = 83.163, p < .01$, $CFI = .97$, $RMSEA = .07$, $[0.051-0.094]$ $SRMR = .03$).

Construct Stability

Model results suggested moderate to high stability of TSRQ, social preference, and peer victimization overtime. Children's scores on each construct were positively correlated overtime. The one exception was that peer victimization in the fall of year 1 was not significantly related to peer victimization in the spring of year 1.

Teacher-Student Relationship Quality

TSRQ at time 1 emerged as a significant positive predictor of social preference at time 2 for girls ($\beta = .24, SE = .09, p < .01$). Girl's TSRQ at time 1 was negatively associated with peer victimization at time 2, ($\beta = -.11, SE = .06, p < .06$) but only at the level of a non-significant trend. TSRQ at time 2 was a positive predictor of girl's peer victimization scores at time 3 at the trend level ($\beta = .16, SE = .07, p < .05$), while TSRQ at time 3 was a significant negative predictor of girl's peer victimization at Time 4 ($\beta = -.17, SE = .07, p < .05$). TSRQ did not emerge as significant predictor of social preference or peer victimization for boys at any time point.

Social Preference

Social preference at time 1 was a significant negative predictor of peer victimization at Time 2 for girls and boys, respectively ($\beta = -.24, SE = .10, p < .05$; $\beta = -.25, SE = .13, p < .05$). Social preference at time 2 was also a significant negative predictor of peer victimization at time 3 for girls ($\beta = -.33, SE = .10, p < .05$), but not for boys. Social preference at time 3 did not emerge as significant predictors of peer victimization at time 3 for either gender. Social preference did not predict TSRQ at any time point.

Peer Victimization

Peer victimization at time 1 was a negative predictor of social preference at time 2 for girls at the trend level, but not boys ($\beta = -.12, SE = .09, p > .05$), such that girls scoring higher on peer victimization in the fall of year 1 scored lower on social preference in the spring of the

same academic year. Peer victimization at time 2 was also a negative predictor of social preference at time 3 for both girls and boys respectively, but only at the trend level ($\beta = -.13$, $SE = .07$, $p > .05$; $\beta = -.12$, $SE = .09$, $p > .05$). This indicates that students who scored higher on peer victimization in the spring scored were less socially preferred in the fall of the same year.

Examined next was whether the relation between TSRQ and peer victimization was mediated by social preference. For girls, social preference at time 2 was found to mediate the relation between TSRQ at time 1 and peer victimization at time 3 ($b = .01$, 95% CI [-0.141, -.029]). Girls who scored higher on TSRQ were more socially preferred by their peers overtime and subsequently less likely to become victims of school bullying. Social preference at time 3 did not mediate the relationship between TSRQ at time 2 and peer victimization at time 4. There was no evidence that social preference mediated the relation between TSRQ and peer victimization for boys.

CHAPTER 4

DISCUSSION

The current study examined the transactional relationships among teacher-student relationship quality, peer acceptance, and peer victimization in elementary school children and tested whether peer acceptance was one mechanism that explains the relation between TSRQ and peer victimization. Findings from the current study revealed important gender differences in the associations among TSRQ, peer acceptance, and peer victimization. The implications of TSRQ on social adjustment appear stronger for girls than boys. TSRQ emerged as a unique predictor of peer acceptance and peer victimization for girls. Girls scoring higher on TSRQ in the fall of year 1 were more preferred by their peers in the spring of the same academic year. This is consistent with previous literature suggesting that teacher support predicts peer acceptance at the classroom level, and that students' peer acceptance is influenced by teacher liking, or the teacher-student relationship (Hughes et al, 2004; Mercer & Derosier 2008; Taylor 1989). Additionally, we found that girls scoring higher on TSRQ in the fall of year 2 were less likely to be victims of peer bullying the spring of that same year. A similar pattern emerged in year one, but this finding was at the level of a non-significant trend. We did find, however, that TSRQ at time 2 was a positive predictor of girls' peer victimization experiences at time 3 at the trend level, indicating that girls with a higher score on TSRQ also received higher scores on peer victimization. This finding is difficult to explain, but it is possible that girls are perceived negatively by the peer group when their relationship with their teacher continues to improve over the academic year, which places them at risk for victimization the subsequent fall when they have transitioned to a new classroom. This finding is in need of replication and should be interpreted with caution.

Alternatively, boys' TSRQ did not emerge as a prospective predictor of peer acceptance or peer victimization at any time point. It is possible that for boys, a general measure of peer-perceived TSRQ does not capture the aspects of the teacher-student relationship that are associated with boys' social adjustment (e.g. dependency; Troop-Gordon & Kopp, 2011).

The current study provided evidence that social preference is one mechanism that explains how TSRQ affects change in peer victimization for girls. Girls who were perceived by their peers as having a higher quality teacher-student relationship in the fall of year 1 scored higher on peer acceptance in the spring of year 1 and were subsequently less victimized after transitioning to a new classroom in the fall of the next academic year. It appears that when girls are perceived by their classmates as getting along well with the teacher at the beginning of the academic year their peer relationships improve by the end of that same year. This finding is consistent with existing research demonstrating that peers tend to react more positively to rejected children who receive higher teacher liking scores (Taylor, 1989; Taylor & Trickett, 1989). Having a positive relationship with a teacher may signal to classmates that a female student has positive qualities or characteristics, which may soften existing reputational biases negatively impacting a female student's relationship with classmates. When peer's beliefs about a student are altered, there may be increased opportunity for girls to develop positive social connections or relationships with same-sex or opposite sex classmates—a social goal that girls emphasize to a greater degree than boys (Rose & Rudolph, 2006). As girl's peer relations improve, there risk for experiencing peer victimization may decrease as a function of increased social connection, friendship, or social status.

This study also replicates and extends prior research examining the association between social preference and peer victimization (Boivin, Hymel, & Hodges, 2001; Rodkin & Hodges,

2003). Findings from the current study provide some evidence for a bidirectional relation between social preference and peer victimization, particularly for girls. For both genders, social preference in the fall of the first academic year was uniquely and negatively related to their peer victimization in the spring of the same year; however, both genders' peer victimization scores in the spring were also negatively associated with their social preference scores in the fall of year 2, but only at the level of a non-significant trend. Moreover, girls who experienced peer victimization in the fall of year 1 were less preferred by their classmates in the spring of year 1, and lower levels of social preference in the spring of year 1 placed girls at risk for peer victimization in the fall of year two. This set of findings is troubling in that they suggest a spiraling down process in girls that could start with either lower peer social preference or victimization. However, our findings also suggest that intervention or prevention programs that focus on improving peer acceptance or reducing peer victimization in girls are likely to experience success reducing both. The bidirectional relationship between social preference and peer victimization was not found for boys. However, there is some evidence to suggest that, for boys, social preference at the beginning of the academic school year is an antecedent to peer victimization experiences in the spring. These findings are consistent with recent literature suggesting that low social preference, and active dislike and rejection by students are social risk factors that exacerbate peer victimization (Hodges, Salmivalli, et al, 1997).

Strengths and Limitations

The current study adds to the existing literature on social-relational influences impacting children's peer victimization experiences. This study had several strengths. Findings from the current study provide newfound insight on the effect of the teacher-student relationship quality on both social preference and peer victimization by examining a mechanism through which

TSRQ could be related to children's peer victimization. Furthermore, this study considered whether the relation among TSRQ, social preference, and peer victimization was conditional on gender, an understudied aspect of the literature linking TSRQ to social adjustment difficulties. Additionally, data was collected using a longitudinal design that consisted of four separate measurement occasions across two academic years. Peer victimization was assessed using peer report data, which is considered a valid method for assessing peer victimization and peer acceptance and discerning teachers' relationships with students (Li et al., 2012).

There are also several limitations of the current investigation that are worth considering. The four time-point data collection covered a relatively short developmental window. To fully appreciate developmental changes in the associations among our study variables a longer time span would be necessary. It is unclear whether our findings would hold across lengthier assessment periods, or whether TSRQ would predict levels of peer victimization as students progress from elementary school to middle school or high school. In addition, TSRQ, peer acceptance, and social preference were assessed via a single report source, peer-report. Although peer-report data is considered a valid method for assessing these constructs, it would be important to examine whether this mediational process holds when these constructs are measured using other report sources. Moreover, the peer-report measure of TSRQ used in the current investigation did not tap into specific dimensions of TSRQ (e.g. warmth, support, conflict, dependency) that could have important implications for children's social adjustment.

Furthermore, it is possible that the prospective relationship between TSRQ and social adjustment are stronger for girls because the majority of the teachers in our sample were women. In year one of our study, 22 of 25 teachers were women. Future studies should consider the extent to which the gender makeup of the teacher-student dyad influences the link between

TSRQ and children's peer relations.

Conclusion

Teachers are integral to cultivating positive, healthy relationships among their students (Cortez and Kochenderfer-Ladd, 2014). Given that peer acceptance is one of the most robust predictors of chronic peer victimization, the findings from the current investigation are encouraging for those who are seeking to find ways to guide teachers and other school staff in their efforts to help children, particularly girls, who are faced with bullying at school (Buhs, 2005; Card et al., 2007; Rodkin and Hodges, 2003). Developing a high-quality relationship with the teacher is noticed by other students within the classroom, and may attenuate risk for peer victimization through improvements in peer relationships. Helping students develop higher quality relationships with their teacher may attenuate their risk for peer victimization through improvements in their peer relationships. More attention should be paid to students' perceptions of the teacher-student relationship among his or her classmates. Specifically, an emphasis on teacher education around the importance of their bond with bullied children could raise awareness of the social climate in the classroom, in addition to facilitating teachers' attendance to visible ruptures in the teacher-student relationship that could alter classmates' perceptions. Overall, findings from the current investigation are in line with a growing body of evidence suggesting that bully prevention efforts should consider the teacher-student relationship as a target for intervention.

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APPENDIX

Table A-1**Means and Standard Deviations of Study Variables**

Variables	Time 1		Time 2		Time 3		Time 4	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
TSRQ	.75 (1.14)	1.39 (1.65)	.71 (1.31)	1.50(2.05)	1.13 (1.56)	2.30 (2.32)	.89 (1.53)	. 2.02(2.33)
SP	.33 (3.12)	1.14 (2.95)	.41 (3.31)	.72 (3.49)	.09 (3.21)	.80 (3.24)	.33 (3.19)	.44 (3.22)
PV	1.55 (1.62)	1.30 (1.46)	1.01 (1.08)	1.24 (1.61)	1.05 (1.44)	1.24 (1.65)	1.17 (1.66)	1.13 (1.54)

Note. TSRQ = Teacher-Student Relationship Quality; SP = Social Preference; PV = Peer Victimization.

Table A-2
Correlations Among Primary Study Variables by Gender

	1	2	3	4	5	6	7	8	9	10	11	12
1. TSRQ T1	1	.59**	.53**	.56**	.48**	.38**	.24*	.22*	-.22**	-.26**	-.11	-.15
2. TSRQ T2	.63**	1	.62**	.69**	.37**	.33**	.27**	.18	-.22**	-.18*	-.00	-.05
3. TSRQ T3	.65**	.70*	1	.79**	.43**	.35**	.40**	.34**	-.17	-.20*	-.18	-.16*
4. TSRQ T4	.71**	.65**	.73**	1	.34**	.31**	.32**	.28**	-.20*	-.14	.04	-.10
9. SP T1	.45**	.34**	.28**	.31**	1	.65**	.55**	.57**	-.47**	-.36**	-.08	-.19
10. SP T2	.48**	.57**	-.40**	.44**	.63**	1	.61**	.66**	.66**	-.41**	-.28**	-.31**
11. SP T3	.33**	.38**	.41**	.38**	.53**	.64**	1	.69**	.58**	.60**	-.30**	-.38**
12. SP T4	.31**	.43**	.34**	.40**	.52**	.67**	.71**	1	.57**	.64**	.68**	-.44**
13. PV T1	-.23**	-.26**	-.29**	-.34**	-.50**	-.42**	-.49**	-.47**	1	-.38**	-.28**	-.36**
14. PV T2	-.24**	-.22**	-.20*	-.18*	-.34**	-.43**	-.39**	-.37**	.27**	1	-.34**	-.18
15. PV T3	-.25**	-.19*	-.19**	-.21**	-.51**	-.50**	-.43**	-.39**	.45**	.53**	1	-.28**
16. PV T4	-.31**	-.21*	-.26**	-.26**	-.56**	-.50**	-.43**	-.49**	.43**	.60**	.61**	1

Note. Correlations for boys are presented below the diagonal; correlations for girls are presented above the diagonal.

TSRQ=Teacher-Student Relationship Quality; SP = Social Preference; PV = Peer Victimization; T1-4 = Time 1 – Time 4.

* $p < .05$, ** $p < .01$.

Table A-3

Path Analysis Results for Teacher-Student Relationship Quality

Variable	Girls					Boys				
	β	B	S.E.	95% CI		β	B	S.E.	95% CI	
				Lower	Upper				Lower	Upper
Age → TSRQ2	-.09	-.10	.08	-0.249	0.041	.00	.00	.07	-0.120	0.133
White → TSRQ2	-.02	-.01	.02	-0.044	0.029	-.05	-.01	.02	-0.053	0.025
Inter → TSRQ2	-.04	-.20	0.16	-0.507	0.148	-.01	-.04	.21	-0.376	0.449
TSRQ1 → TSRQ2	.59*	.60	.09	0.410	0.759	.60*	.57	.11	0.348	0.791
SP1 → TSRQ2	.04	.04	.49	-0.134	0.217	.02	.02	.08	-0.133	0.167
PV1 → TSRQ2	-.08	-.09	.08	-0.241	0.058	-.07	-.06	.05	-0.171	0.030
Age → SP2	-.05	-.05	.07	-0.178	0.079	.00	.00	.07	-0.133	0.141
White → SP2	-.02	-.01	.02	-0.043	0.028	.03	.01	.02	-0.032	0.052
Inter → SP2	-.13*	-.63	.21	-0.998	-0.161	.03	.11	.20	-0.276	0.510
TSRQ1 → SP2	.24*	.22	.07	0.102	0.355	.04	.04	.08	-0.144	0.219
SP1 → SP2	.47*	.50	.08	0.340	0.648	.64*	.62	.08	0.462	0.771
PV1 → SP2	-.12	-.12	.07	-0.252	0.011	.01	.00	.07	-0.119	0.138
Age → PV2	.03	.03	.08	-0.116	0.183	.11	-.04	.07	-0.186	0.091
White → PV2	-.08	-.03	.02	-0.069	0.016	-.03	.04	.03	-0.012	0.092
Inter → PV2	.08	.41	.38	-0.246	1.255	-.04	-.14	.23	-0.585	0.296
TSRQ1 → PV2	-.11	-.11	.06	-0.229	0.002	-.13	-.14	.08	-0.282	0.018
SP1 → PV2	-.22*	-.25	.10	-0.436	-0.056	-.27*	-.25	.10	-0.440	-0.067
PV1 → PV2	.11	.12	.09	-0.059	0.297	.12	.03	.09	-0.135	0.196
TSRQ1 → PV3	-.02	-.02	.07	-0.165	0.122	.05	.06	.12	-0.178	0.294
Age → TSRQ3	-.05	-.05	.06	-0.188	0.074	.01	.00	.05	-0.093	0.103
White → TSRQ3	-.01	-.01	.02	-0.038	0.035	-.06	-.02	.02	-0.047	0.014
Inter → TSRQ3	-.12*	-.63	.23	-1.098	-0.197	-.05	-.14	.15	-0.455	0.127
TSRQ2 → TSRQ3	.51*	.50	.10	0.316	0.716	.35*	.34	.13	0.111	0.615
SP2 → TSRQ3	-.08	-.09	.08	-0.243	0.073	.14	.12	.07	-0.003	0.259
PV2 → TSRQ3	-.01	-.01	.08	-0.172	0.140	.05	.04	.07	-0.103	0.182
Age → SP3	.06	.06	.06	-0.050	0.172	-.03	-.03	.06	-0.153	0.104
White → SP3	-.03	-.01	.02	-0.047	0.030	.05	.02	.02	-0.028	0.062
Inter → SP3	-.11*	-.54	.24	-0.951	-0.021	.00	.01	.27	-0.543	0.533
TSRQ2 → SP3	.02	.02	.06	-0.099	0.151	.05	.05	.08	-0.109	0.220
SP2 → SP3	.40*	.40	.11	0.193	0.608	.36*	.36	.10	0.152	0.562
PV2 → SP3	-.13	-.19	.07	-0.256	0.012	-.12	-.12	.09	-0.301	0.059
Age → PV3	-.00	.00	.07	-0.131	0.137	.04	.04	.07	-0.090	0.172
White → PV3	-.13*	-.04	.02	-0.079	-0.004	-.26	-.10	.03	-0.155	-0.042
Inter → PV3	-.02	-.12	.35	-0.804	0.567	-.18*	-.62	.21	-1.025	-0.222
TSRQ2 → PV3	.16*	.14	.07	0.005	0.297	.05	.07	.11	-0.164	0.288
SP2 → PV3	-.33*	-.32	.10	-0.508	-0.130	-.10	-.10	.10	-0.294	0.096
PV2 → PV3	.32*	.30	.09	0.138	0.487	.45*	.49	.13	0.248	0.746
TSRQ2 → PV4	.14	.12	.09	-0.049	0.269	.03	.04	.11	-0.147	0.279
Age → TSRQ4	-.05	-.05	.07	-0.176	0.076	-.01*	-.01	.04	-0.073	0.064
White → TSRQ4	-.10*	-.04	.02	-0.073	-0.002	.06*	.02	.01	-0.010	0.041
Inter → TSRQ4	.00	.02	.17	-0.299	0.377	-.03	-.09	.10	-0.277	0.104

Table A-3 Continued

Path Analysis Results for Teacher-Student Relationship Quality

Variable	Girls					Boys				
	β	B	S.E.	95% CI		β	B	S.E.	95% CI	
				Lower	Upper				Lower	Upper
TSRQ3 $\rightarrow$ TSRQ4	.53*	.54	.11	0.328	0.752	.58*	.54	.08	0.380	0.706
SP3 $\rightarrow$ TSRQ4	.07	.08	.07	-0.045	0.208	.00	.00	.04	-0.070	0.081
PV3 $\rightarrow$ TSRQ4	-.04	-.05	.05	-0.145	0.062	.06	.05	.04	-0.027	0.122
Age $\rightarrow$ SP4	.01	.01	.05	-0.088	0.114	.02	.02	.06	-0.096	0.134
White $\rightarrow$ SP4	.03	.01	.02	-0.024	0.040	-.06	-.02	.02	-0.061	0.022
Inter $\rightarrow$ SP4	-.08	-.42	.21	-0.739	0.096	-.01	-.03	.18	-0.398	0.308
TSRQ3 $\rightarrow$ SP4	.02	.02	.05	-0.080	0.112	.01	.00	.08	-0.143	0.157
SP3 $\rightarrow$ SP4	.50*	.50	.07	0.368	0.646	.47*	.47	.08	0.299	0.629
PV3 $\rightarrow$ SP4	-.03	-.04	.07	-0.177	0.108	.03	.03	.06	-0.083	0.148
Age $\rightarrow$ PV4	-.05	-.05	.06	-0.162	0.066	.04	.04	.07	-0.094	0.184
White $\rightarrow$ PV4	-.01	-.00	.02	-0.037	0.036	.01	.00	.03	-0.043	0.056
Inter $\rightarrow$ PV4	.05	.26	.30	-0.288	0.889	-.05	-.17	.16	-0.451	0.188
TSRQ3 $\rightarrow$ PV4	-.17*	-.16	.07	-0.298	-0.014	-.07	-.09	.13	-0.347	0.157
SP3 $\rightarrow$ PV4	-.11	-.10	.07	-0.253	0.024	-.15	-.16	.09	-0.348	0.012
PV3 $\rightarrow$ PV4	.40*	.39	.09	0.194	0.551	.45*	.46	.11	0.244	0.668
							.00			
TSRQ1 $\rightarrow$ SP2 $\rightarrow$ PV3	-	.01*	.28	-0.141	-0.029	-	-.01	.01	-0.054	0.012
TSRQ2 $\rightarrow$ SP3 $\rightarrow$ PV4	-	.01	.60	-0.028	0.008	-	-.04	.01	-0.053	0.010

Note. PA = Proactive Aggression; SP = Social Preference; PV = Peer Victimization; Inter = Intervention.

* $p < .05$, ** $p < .01$

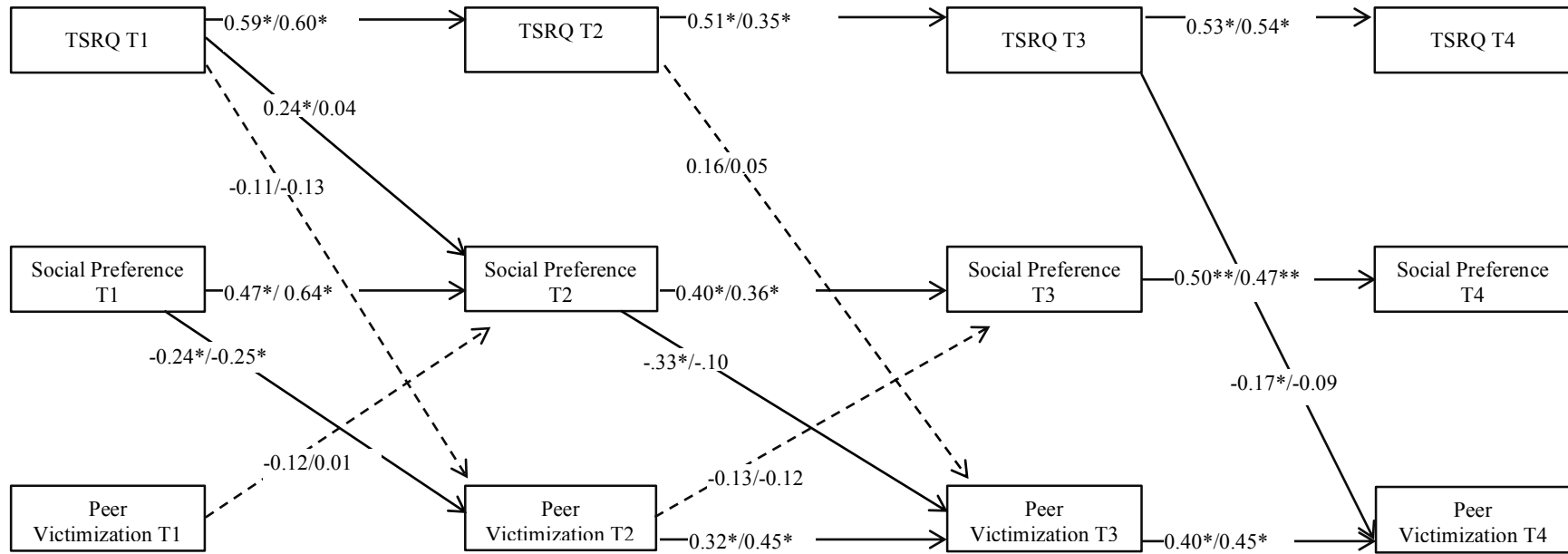


Figure 1. Standardized Associations between Teacher-Student Relationship Quality, Social Preference, and Peer Victimization, Before the Dash for Girls and Behind the Dash for Boys. A dashed line indicates a marginal effect for boys and girls.

* $p < .05$

VITA

Kathryn Smeraglia was born in Birmingham, Alabama. She earned a bachelor's degree in psychology from Auburn University in 2012. She worked for one year as a research assistant at Auburn University before enrolling in graduate school at the University of Tennessee to study clinical psychology.