

Peer Victimization and Adjustment: The Moderating Role of Personal Orientations

by

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Abstract

The present study examined whether associations between peer victimization and later aggression, depressive symptoms, and school liking are moderated by personal orientations, including popularity, affiliation, academic, and activity orientations. Data were collected from 123 early adolescents when they were initially in the fifth or sixth grade and again ten months later after the transition to middle school. Adolescents, teachers, and parents reported on peer victimization, personal orientations, aggression, depressive symptoms, and school liking. Regression analyses revealed personal orientations moderated prospective associations between peer victimization and aggression and depressive symptoms. Several moderation effects were corroborated across adolescent-, teacher-, and parent-reported peer victimization. The associations between adolescent-, teacher- and parent-reported peer victimization and aggression were stronger at higher levels of popularity orientation compared to lower levels of popularity orientation (i.e., desire for popularity). In addition, the associations between adolescent-, teacher-, and parent-reported peer victimization and depressive symptoms were stronger at higher levels of affiliation orientation compared to lower levels of affiliation orientation (i.e., desire for close relationships). Finally, associations between adolescent-, teacher-, and parent-reported peer victimization and depressive symptoms were weaker at elevated levels of activity orientation (i.e., commitment to organized activities). Results suggest that personal orientations may be useful intervention targets that could reduce aggression or depressive symptoms in the context of peer victimization.

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1. Introduction and Literature Review

Peer victimization is broadly defined as experiencing negative treatment from peers and may involve physical, verbal, or relational aggression (Boivin, Petitclerc, Feng, & Barker, 2010). Approximately 10% of children report frequent peer victimization experiences and 50% report occasional peer victimization, with peak rates occurring in the middle school years (Nansel et al., 2001; Arseneault, Bowes, & Shakoor, 2010). Experiencing peer victimization has adverse consequences for children including a greater likelihood of aggression (Reijntjes et al., 2011), depressive symptoms (Reijntjes, Kamphius, Prinzie, & Telch, 2010), and disliking school (Nakamoto & Schwartz, 2010; Wang, Ionotti, & Luk, 2011). Negative consequences associated with peer victimization, such as depression, have also been found to persist into adulthood (Lereya, Copeland, Costello, & Wolke, 2015).

Negative outcomes of peer victimization are well documented, yet it is increasingly evident that the effects of peer victimization vary depending on individual difference attributes and other social experiences. In the present study, the vulnerability or protective roles of several personal orientations (e.g., interests or values) will be examined in early adolescence, a developmental period when elevated rates of peer victimization coincide with other social, cognitive, biological, and school changes to create a developmental period of susceptibility to behavioral, emotional, and school difficulties (Masten & Coatsworth, 1998; Lord, Eccles, & McCarthy, 1994). More specifically, the present study will examine *popularity orientation*, or the drive to be

popular above and beyond other important goals, *affiliation orientation*, or the desire for social contact and close relationships, *academic orientation*, or commitment to academic performance, and *activity orientation*, or commitment to organized adult led activities.

Outcomes of Peer Victimization: Aggression, Depressive Symptoms, and School Liking

Peer victimization is reliably linked with externalizing and internalizing problems as demonstrated through meta-analyses. For example, a meta-analysis of 14 longitudinal studies ($N = 7,821$) that spanned six months to two years revealed that peer victimization predicted increases in externalizing problems over time ($r = .14$), and that externalizing problems predicted increases in peer victimization over time ($r = .13$). Four of the longitudinal studies included in the analysis specifically measured aggression (Reijntjes et al. 2011). A similar meta-analysis of 18 longitudinal studies ($N = 13,978$) that spanned six months to two years indicated that peer victimization predicted increases in internalizing problems ($r = 0.18$), and internalizing problems also predicted increases in peer victimization ($r = 0.08$). Of the 18 studies, seven included measures of depressive symptoms, specifically (Reijntjes et al., 2010). Although the effect sizes for these two meta-analyses were small, accounting for other variables, such as personal orientations, may reveal conditions under which associations between peer victimization and externalizing or internalizing problems are stronger or weaker.

A large body of work has identified peer victimization as a predictor of school adjustment; however, school adjustment is often measured using academic achievement as part or all of the outcome (e.g. Nakamoto & Schwarz, 2010). Fewer studies have examined other forms of school adjustment, such as school liking. One exception

included a longitudinal study by Boulton, Chau, Whitehead, Amaraya, and Murray (2009), who followed 429 students aged 9-12. Boulton and colleagues found that peer victimization predicted lower levels of school liking, although the effect sizes were small ($R^2 = .10$). Similarly, Troop-Gordon and Kuntz (2013) utilized a large multi-informant longitudinal study of eight to nine-year-olds and reported that peer victimization was associated with lower school liking over time. Due to the effects of peer victimization on aggression, depressive symptoms, and school liking, additional risk and protective factors that moderate these relationships should be closely studied.

Moderators of Peer Victimization

Much of the prior research that has evaluated moderators of peer victimization tends to focus on responses to stress and supportive relationships. The rationale for such studies is that children's stress response is often both involuntary (e.g., physiological) and voluntary (e.g., coping) (Connor-Smith, Compass, & Wadsworth, 2000; Compas et al., 2001). For example, electrodermal reactivity to peer stress moderated the effects of peer victimization on aggression and depressive symptoms. Specifically, peer victimization predicted aggression and depressive symptoms more strongly among early adolescents with relatively low electrodermal reactivity, which may reflect low inhibitory control responses to peer victimization (Erath, Su, & Tu, 2016; Gregson, Tu, & Erath, 2013). Examining voluntary responses to stress, Cooley and Fite (2016) studied how coping with negative emotions moderated the association between peer victimization and maladjustment for adolescents. Children who were better able to manage their anger exhibited less physical aggression in the face of peer victimization, potentially because

under-controlled cognitive and behavioral responses such as retaliation and revenge are associated with increased aggression (Dirks et al., 2014; Kochenderfer-Ladd, 2004).

Following this, several studies have examined how supportive relationships, specifically family, friend, and teacher relationships, act as moderators of peer victimization. For example, Averdijk, Eisner, and Ribeaud (2014) used a one-year longitudinal design to illuminate the protective effects of supportive relationships on the association between peer victimization and anxiety and depressive symptoms. They found that warm parenting, positive relationships with teachers, and having siblings were protective against internalizing problems in the context of peer victimization for children. Supportive relationships in a variety of domains may protect against maladjustment related to peer victimization (Erath, Flanagan, & Bierman, 2008; Desjardins & Leadbeater, 2011; Stadler, et al., 2010; Davidson & Demaray, 2007).

Personal Orientations as Potential Moderators

The present study examines personal orientations, including interests and values, as potential protective or vulnerability factors in the context of peer victimization. The roles of personal orientations as potential protective and risk factors may be understood with a basic psychological needs theory framework. Basic psychological need theory (BPNT) is a mini theory developed under a self-determination meta-theory framework that operates on the assumption that humans must meet basic psychological needs (Ryan & Deci, 2000) similar to basic physiological needs, such as hunger and thirst (Maslow, 1943). Deci and Ryan (2002) emphasize the importance of three psychological needs: relatedness, autonomy, and competence, and argue that these needs are universal to all people across the lifespan in order to function optimally (Ryan & Frederick, 1997).

Competence encompasses feelings of self-efficacy in the social environment and chances to express competent abilities. Relatedness includes feeling that one belongs in the social environment both with specific individuals as well as within the broad community through connection to others in that context. Autonomy refers to believing that an individual determines his or her own behaviors. BPNT posits that optimal functioning is supported by achieving competence, autonomy, and relatedness (Deci & Ryan, 2002).

Environmental contexts can undermine or facilitate meeting basic psychological needs. When people are faced with environmental contexts that thwart attempts to meet their needs, they both consciously and subconsciously seek out opportunities to meet those needs (Ryan & Deci, 2000). Peer victimization is one environmental context that may impede adolescents' ability to meet psychological needs, leading them to seek other opportunities to achieve competence, relatedness, and autonomy.

Peer victimization may undermine the psychological need of competence because early adolescents who are victimized often feel less socially competent (Fox & Boulton, 2005). Victimization also weakens one's ability to meet the need for autonomy because victimized individuals may react or behave in ways that are not congruent with their typical behaviors or values, such as seeking revenge (Kochenderfer-Ladd, 2004). Finally, peer victimization may also interfere with feelings of relatedness. Early adolescents who are exposed to peer victimization report feeling isolated and lonely (Storch & Masia-Warner, 2004; Hawker & Boulton, 2000; Reijntjes et al., 2010), have fewer friends (Card & Hodges, 2008) and report feeling disconnected from their school community (Wei & Chen, 2010). Thus, when the psychological needs of competence, autonomy, and relatedness are thwarted through experiencing peer victimization, early adolescents may

be motivated to seek other opportunities to meet their psychological needs through personal orientations toward popularity, affiliation, academics, or organized activities.

Popularity orientation. Popularity orientation is characterized by the drive to be popular and have many friends above and beyond other important priorities. LaFontana and Cillessen (2010) emphasized the importance of studying popularity orientation during early adolescence due to the peak for popularity preference during this developmental period. Early adolescents were more likely to prioritize popularity over friends and academics compared to younger children or older adolescents (LaFontana & Cillessen, 2010). Numerous studies have linked popularity orientation or similar constructs (e.g., social status goals, priority for popularity) with relational aggression (Shoulberg, Sijtsema, & Murray-Close, 2011; Dawes & Xie, 2014) and proactive aggression (Ojanen, Gronroos, & Salmivalli, 2005; Salmivalli, Ojanen, Haanpaa, and Peets, 2005). The association between popularity orientation and aggression is likely due to adolescents' tendency to use aggressive strategies to display their power in an attempt to become popular (Rodkin, Ryan, Jamison, & Wilson, 2013), as well as the apparent effectiveness of using aggressive strategies to gain perceived popularity among peers (Rose, Swenson, & Waller, 2004).

Although no research has examined the moderating effect of popularity orientation on the association between peer victimization and maladjustment, Kiefer and Wang (2016) have examined social goals as a potential moderator of the association between peer nominated coolness (e.g., each participant nominated up to three peers who were "really cool" in their grade) and peer-reported aggression. For girls, popularity goals moderated the association between coolness and relational aggression, such that cool girls

with high popularity goals also exhibited the highest levels of relational aggression. Adolescents low in coolness exhibited low levels of aggression. Similarly, Cillessen et al. (2014) also examined the association between peer-nominated popularity and peer-nominated aggressive behaviors with prioritizing popularity (vignette measure of prioritizing popularity over other important goals or activities) as a moderator. Popular adolescents who strongly prioritized popularity exhibited particularly high levels of aggression while adolescents low in popularity who prioritized popularity had low levels of aggression. The empirical evidence suggests that popularity orientation is a risk factor for “cool” or popular adolescents. It is unclear whether popularity orientation is a risk factor for aggression among victimized adolescents. Thus, examining interrelations among peer victimization, popularity orientation, and aggression is in important future direction.

Based on the BPNT framework (Ryan and Deci, 2000), popularity orientation may undermine the psychological need for relatedness when early adolescents experience peer victimization, as peer victimization typically occurs among unpopular early adolescents. Thus, we hypothesized that the association between peer victimization and depressive symptoms would be stronger at higher levels of popularity orientation and weaker at lower levels of popularity orientation. Similarly, early adolescents with a strong popularity orientation may be particularly likely to retaliate with aggressive behavior in an attempt to defend and re-establish social status when they are victims of peer aggression. Thus, we hypothesized that the association between peer victimization and aggression would be stronger at higher levels of popularity orientation and weaker at lower levels of popularity orientation.

Affiliation orientation. Affiliation orientation refers to the desire for social contact and close relationships and has been conceptualized as a measure of temperament (Capaldi & Rothbart, 1992). Few studies have examined relations between affiliation orientation and adjustment outcomes such as aggression, depressive symptoms, or school liking. In one exception, children who exhibited high affiliation also displayed higher levels of school attachment and lower levels of aggression (Hill & Werner, 2006). In another study, adolescents who reported higher levels of affiliation reported higher levels of well-being (Vinas, Gonzalez, Malo, Garcia, & Casas, 2014). Similarly, social development goals, such as building social competence, improving relationship quality, and developing a social life (Ryan & Shim, 2006), have been linked to lower levels of loneliness and a stronger sense of belonging in the school group (Mouratidis & Sideridis, 2009).

Kawabata and Onishi (2016) defined relational interdependence, a construct similar to affiliation orientation, as how much people consider close friends and family as a part of themselves or important to them. Relational interdependence moderated the association between relational victimization and depressive symptoms for boys, such that the association between relational peer victimization and depressive symptoms was stronger at higher levels of relational interdependence compared to lower levels of relational interdependence. Although Kawabata and Onishi (2016) found that affiliation exacerbated depressive symptoms in the context of peer victimization, this effect applied only to boys and the sample was comprised of Japanese participants, whose more collectivist culture may result in a different moderating role of affiliation compared to an American sample.

Affiliation orientation may serve a protective function for victimized early adolescents, counteracting retaliatory impulses and allowing them to connect with other peers or adults who provide effective social support (Averdijk, Eisner, & Ribeaud, 2014). Thus, we hypothesized that associations linking peer victimization with aggression and depressive symptoms would be attenuated among early adolescents with higher affiliation orientation but elevated among early adolescents with lower affiliation orientation.

Academic orientation. Academic orientation is conceptualized as being committed to school, measured with a proxy of grades (academic achievement) in the present study. Although grades are not an ideal measure of academic commitment, adolescents who do well in school are likely to be committed to academics (Ladd, Buhs, & Seid, 2000; Valiente, Lemery-Chalfant, & Castro, 2007). The degree to which academic achievement predicts aggression, depressive symptoms, and school liking is relatively understudied compared to research in which academic achievement is the outcome variable. However, Schwartz, Gorman, Duong, and Nakamoto (2008) revealed that students who reported lower GPAs experienced more depressive symptoms than their higher-performing counterparts. Similarly, Masten et al. (2005) tested a developmental cascade model and found that children with lower academic achievement had increased internalizing problems and also displayed higher levels of externalizing problems. Other research has revealed that understanding school work is a protective factor in the longitudinal association between adolescent peer victimization and depressive symptoms in emerging adulthood, such that adolescents who were both victimized and understood school work had less depressive symptoms than their

victimized peers who did not understand school work (Vasallo, Edwards, Renda, & Olsson, 2014).

Utilizing BPNT (Ryan and Deci, 2000), early adolescents who are academically oriented may be able to use school to meet competence needs when they are victims of peer aggression, compensating for the degree to which peer victimization undermines feelings of competence. Thus, we hypothesized that the association between peer victimization and depressive symptoms may be weaker at higher levels of academic orientation and stronger at lower levels of academic orientation. Additionally, the negative association between peer victimization and school liking may be stronger at low levels of academic orientation and weaker at high levels of academic orientation.

Activity orientation. Activity orientation is defined in the present study as students' level of commitment to organized activities. Activity orientation may also be related to aggression, depressive symptoms, and school liking. Randall and Bohnert (2009) found that activity involvement was associated with less depressive symptoms for adolescents (although the relation was curvilinear with 10 hours per week being ideal). Adolescents who were more involved both in breadth and intensity of organized activities in early adolescence showed greater school commitment across adolescence (Denault & Poulin, 2009). In addition, adolescents who were more involved with organized leisure-time activities were more engaged with school, which included reporting liking school more than their peers who were not involved (Badura et al., 2016). More committed adolescents may have better school-related outcomes because organized activities provide youth with contexts that enhance their abilities and strengths, facilitate friendships, and offer support and guidance from adults (Badura et al., 2016).

Driessens (2015) examined whether activity involvement moderated the association between peer victimization and behavioral problems. The association between peer victimization and internalizing and externalizing problems was weaker for early adolescents who participated in sports than for early adolescents who had low levels of involvement. Thus, activity involvement could serve as a protective factor in the face of peer victimization because adolescents participating in these activities may learn social skills or establish supportive peer and adult relationships that help protect them from maladjustment. We hypothesized that activity orientation would moderate the association between peer victimization and aggression and depressive symptoms, such that the association between peer victimization and aggression and depressive symptoms would be weaker at high levels of activity orientation and stronger at low levels of activity orientation. Additionally, we hypothesized that activity orientation would moderate the negative association between peer victimization and school liking such that the association between peer victimization and school liking would be weaker at high levels of activity orientation and stronger at low levels of activity orientation.

The Present Study

The present study aimed to examine (1) whether self-, teacher-, and parent-reported peer victimization predict early adolescents' parent-reported aggression, self-reported depressive symptoms, and self-reported school liking across the transition to middle school, (2) whether early adolescents' personal orientations (self-reported popularity orientation, parent-reported affiliation orientation, composite of self-, teacher-, and parent-reported academic orientation, and self-reported activity orientation) predict aggression, depressive symptoms, and school liking 10 months later, and (3) whether

personal orientations moderate the associations between peer victimization and aggression, depressive symptoms, and school liking.

2. Method

Participants

A total of 123 early adolescents in grades five and six ($Mage = 12.03$ years, $SD = 0.64$) and one parent per child (82% biological mothers, 67% married) participated in the present study at Time 1 (T1). The sample included 50% females and 58.5% European Americans, 35% African Americans, and 6.5% other races/ethnicities, which is consistent with the racial/ethnic composition of schools from which participants were recruited. Twenty-one percent reported an income of less than \$20,000 and 24% reported an income of more than \$75,000. Teacher reports were obtained for 81% of participants at T1. There were no significant differences between participants with and without teacher data based on adolescent sex, adolescent reported peer victimization, depressive symptoms, affiliation, or school liking. However, participants without teacher data were more likely to be ethnic minorities, $\chi^2(1, N = 123) = 9.21, p < .01$, from lower income households $t(117) = -2.64, p < .01$, with lower grades, $t(121) = -2.56, p < .05$, and higher parent-reported aggression $t(121) = .81, p < .05$. Ten months later, at Time 2 (T2), 99 early adolescents and one parent per child participated ($Mage = 12.78$ years, $SD = .63$). Participants with and without T2 data did not differ on any variables included in the present study.

Procedure

A short-term longitudinal design was utilized involving two waves of data collection approximately ten months apart. During the spring or early summer before the transition to middle school (end of fifth or sixth grade, depending on the school) T1 data were collected, while T2 data were collected during the spring of the first year of middle

school. Participants were recruited through flyers sent home with fifth and sixth grade students at five elementary schools in the southeastern United States. The participants were recruited in two cohorts with one year between each. Parents who responded to the flyers were scheduled for a research visit. Over the summer early adolescents and their parents visited the lab for about two hours. Once in the lab they completed consent procedures and questionnaires, and the adolescents participated in lab-based social challenge activities. Elementary school students had one primary teacher with whom they spent most of the day, and this teacher completed questionnaires in May at T1. In the spring of the first year of middle school, parents were contacted for a follow-up visit (T2). Adolescents visited the research lab again to complete questionnaires. Adolescents, parents, and teachers were compensated monetarily and all study procedures were approved by the University Institutional Review Board.

Measures

Peer victimization. At T1, early adolescents completed seven items from the Social Experiences Questionnaire that measure peer victimization. Example items include “How often do you get pushed or shoved by other peers at school?” and “How often have other kids said mean things about you to keep other people from liking you?” (Crick & Grotpeter, 1996). All items were rated on a 5-point scale (1 = *Almost never* to 5 = *Almost always*). Internal consistency was high ($\alpha = .85$). Similarly, teachers rated six items that refer to peer victimization from the Social Behavior Rating Scale (e.g. “Other kids hit or push this child” and “Other children tease or make fun of this child”; Schwartz et al., 2002) on a 5-point scale (0 = *Never true* to 4 = *Always true*). Internal consistency was high ($\alpha = .91$). In addition, parents completed seven items that are commonly used to

assess peer victimization (Schwartz et al., 2002). Example items include “My child is picked on by other children” and “Other children hit or push my child.” All items were rated on a five-point scale (0 = *Never* to 4 = *Almost always*). Internal consistency was high ($\alpha = .93$).

Popularity orientation. At T2, popularity orientation was assessed for a subset of the sample (Cohort 2, $n = 45$). Adolescents completed two items in which popularity priorities were compared to other priorities (e.g. “Compared to other important priorities or goals you may have, how important is it for you to be popular with your peers?”; “Compared to other important priorities or goals you may have, how important is it for you to have many friends among your peers?”) Respondents used a 4-point rating scale (1 = *not as important*, 2 = *about the same importance*, 3 = *more important*, 4 = *much more important*). Internal consistency was borderline ($\alpha = .66$).

Affiliation orientation. At T1, parents completed the 6-item affiliation subscale of the Early Adolescent Temperament Questionnaire (e.g. “Your son or daughter wants to have close relationships with other people,” and “Would like to be able to spend time with a good friend everyday”; Capaldi & Rothbart, 1992). Parents responded using a five-point scale (1 = *almost always untrue*, 2 = *usually untrue*, 3 = *sometimes true*, 4 = *usually true*, 5 = *almost always true*). Internal consistency was borderline ($\alpha = .66$).

Academic orientation. Academic performance was assessed at T1 with teacher, parent, and adolescent ratings of performance in five subject areas: English/Language, Reading, Mathematics, Science, and Social Studies/History. Each respondent used a 5-point rating scale (1 = *Failing*, 2 = *Below Average*, 3 = *Average*, 4 = *Above Average*, and

5 = *Excellent*). Inter-item reliability was high within each informant, ranging from $\alpha = 0.73$ to 0.98 . Similar academic performance ratings have been validated with cross-informant correlations and school-issued report cards (Graham, Updegraff, Tomascik, & McHale, 1997; Swanson et al., 2011; Valiente, Lemery-Chalfant, Swanson, & Reiser, 2008). In the present study, cross-informant correlations ranged from 0.49 to 0.63 at T1. We averaged across informants (teacher, parent, early adolescent) to create an academic performance score. Cross-informant reliability was good ($\alpha = 0.78$ at T1).

Activity orientation. Activity orientation was assessed at T1 based on responses to the statement, “Please list the hobbies or activities that are most important to you, then circle the word or phrase that indicates how important each activity is to you (1 = *Just a little*, 2 = *Somewhat*, 3 = *Very*, 4 = *Extremely*). Two independent coders gave a score of 1 to reflect strong commitment in which at least one activity was (1) adult-supervised (e.g., Boy Scouts, football, beta club) and (2) rated as extremely important. Scores of 0 were conceptualized as reflecting low to normal commitment. The intraclass correlation between raters was $.98$.

Parent-reported aggression. At T1 and T2, parents completed 18 items from the Child Behavior Checklist to measure aggressive behavior (e.g., “Mean to others”; Achenbach, 1991), rated on a 3-point scale (0 = *Not true* to 2 = *Very true*). The aggressive behavior subscale was highly reliable at T1 ($\alpha = .86$) and T2 ($\alpha = .88$).

Self-reported depressive symptoms. At T1 and T2, early adolescents completed 26 items from the Children’s Depression Inventory (CDI; Kovacs, 1992). On the CDI, early adolescents select one of three possible options per item (e.g. “I am sad...”, ranging from absence of symptoms [e.g. “I am sad once in a while,” scored as 0] to definite

symptoms [e.g., “I am sad all the time,” scored as 2]). Internal consistency was high at both T1 ($\alpha = .82$) and T2 ($\alpha = .87$).

Self-reported school liking. Early adolescents completed the School Liking and Avoidance Questionnaire (Ladd & Price, 1987) at T1 and T2. Each item was rated on a 5-point scale (e.g. “When I get up in the morning, I feel happy about going to my school”; 1 = *not at all true* to 5 = *really true*). This measure had high internal consistency at T1 ($\alpha = .86$) and T2 ($\alpha = .74$).

3. Results

Plan of Analysis

The aim of the present study was to examine the independent and interactive associations linking peer victimization and personal orientations with aggression, depressive symptoms, and school liking. Regression analyses were conducted to test the main hypotheses in AMOS version 22 (Arbuckle, 2013), which uses full information maximum likelihood estimation to handle missing data. All continuous predictor variables were mean-centered prior to regression analyses. Separate regression analyses were conducted with adolescent-, teacher-, and parent-reported peer victimization as predictors. In addition, separate regression analyses were conducted with the three outcome variables: aggression, depressive symptoms, and school liking. All hypothesized personal orientation variables were included in each regression analysis. All analyses were conducted longitudinally with earlier levels of the respective outcome variable, peer victimization, and personal orientations at T1 and later level of the respective outcome variable at T2.

Sex, ethnicity, grade, and SES were considered as possible control variables. Grade was correlated with parent-reported peer victimization, T1 and T2 depressive symptoms, and T2 school liking, and thus grade was entered as a control variable in both the depressive symptoms and school liking models. However, sex, ethnicity, and SES were not correlated with both predictor and outcome variables, and thus were not included as control variables. Sex was uncorrelated with all study variables. Ethnicity was only correlated with academic orientation, and SES was correlated with adolescent-

reported peer victimization, academic orientation, T1 aggression, and T1 depressive symptoms.

In a series of hierarchical regression models, earlier level of the respective outcome variable was entered in the first model, T1 grade was entered in the second model (for the depressive symptoms and school liking models), the respective peer victimization variable was entered in the next model, personal orientations were entered in the following model, and hypothesized interactions between the respective peer victimization variable and respective personal orientation variables were entered in the final model. All predictor variables (including interaction terms) that were correlated were allowed to covary in the regression analyses.

Significant interactions were probed and plotted by calculating simple intercepts and simple slopes (Aiken & West, 1991). Follow-up analyses included all predictor variables and all interaction terms from the regression models. These analyses yielded intercepts and slopes representing the relations between the predictor variable (peer victimization) and outcome variables (aggression, depressive symptoms, and school liking) at low (-1 SD) and high (+1 SD) levels of the moderator variables (popularity orientation, affiliation orientation, academic orientation, and activity orientation). In addition, as exploratory analyses, regions of significance with respect to X (the predictor, peer victimization; Roisman et al., 2012) were tested, but prospective associations between personal orientations and outcomes variables were not significant at any level of peer victimization; thus, no further information is presented about regions of significance with respect to X.

Preliminary Analyses

Descriptive analyses were conducted to calculate the ranges, means, standard deviations, and skewness statistics for each of the study variables (Table 1). Skewness statistics for all study variables were within the acceptable range, and thus all variables were retained in their original metric. According to self-, teacher-, and parent-reports, on average, early adolescents experienced some victimization (e.g., rated peer victimization as sometimes true). Adolescents reported average levels of popularity orientation (e.g., rated popularity as about the same importance compared to other important priorities), high levels of academic orientation (e.g., on average participants were rated above average in school subjects), and 52% of participants reported being committed to an activity. Parents reported generally high levels of affiliation orientation (e.g., usually true about their child), on average. As expected for a community sample, parents reported relatively low levels of adolescent aggression, on average. Similarly, adolescents also reported relatively low levels of depressive symptoms and generally liked school (see Table 1 for details).

Correlations were conducted for all study variables (Table 2). Adolescent- and teacher- reported peer victimization were correlated only at the non-significant trend level, which indicates that teacher and adolescent perspectives of peer victimization measure distinct aspects of peer victimization. Parent reports of peer victimization were moderately correlated with both adolescent and teacher reports. Adolescent-reported peer victimization was also correlated with aggression, depressive symptoms, and school liking in the expected directions. On the other hand, teacher-reported peer victimization was only correlated with depressive symptoms, and parent-reported peer victimization

was moderately correlated with aggression and depressive symptoms (but not school liking).

Adolescent, teacher, and parent-reported peer victimization were negatively correlated with activity orientation. Adolescent- and parent-reported peer victimization were positively correlated with popularity orientation. Only adolescent-reported peer victimization was related to affiliation orientation. Peer victimization was not correlated with academic orientation across informants. Popularity orientation was positively correlated with aggression, and academic orientation was negatively correlated with depressive symptoms. Affiliation orientation and activity orientation were not correlated with any adjustment outcomes.

Predicting Adolescent Aggression

Adolescent-reported peer victimization. Analyses with adolescent-reported peer victimization as a predictor of aggression yielded some support for hypotheses. Aggression at T1 strongly predicted aggression at T2, indicating stability in aggression over time. In addition, adolescent-reported peer victimization and popularity orientation predicted higher levels of aggression. Furthermore, popularity orientation moderated the association between adolescent-reported peer victimization and aggression. The full set of predictors explained 83% of the variance in aggression (Table 3). As hypothesized, adolescent-reported peer victimization predicted higher levels of aggression at high levels of popularity orientation ($B = .05$, $SE = .02$, $p < .05$), but did not predict aggression at low levels of popularity orientation (Figure 1; $B = .03$, $SE = .02$, $p = .17$).

Teacher-reported peer victimization. Analyses with teacher-reported peer victimization as a predictor of aggression provided support for some hypotheses.

Contrary to adolescent-reported peer victimization, teacher-reported peer victimization did not predict higher levels of T2 aggression over and above T1 aggression. However, popularity orientation did predict higher levels of T2 aggression. In addition, two interaction effects emerged. Popularity orientation and affiliation orientation each moderated the association between teacher-reported peer victimization and aggression. The full set of predictors accounted for 81% of the variance in aggression (Table 4). As shown in Figure 2, results with teacher-reported peer victimization corroborated the findings with adolescent-reported peer victimization, such that peer victimization predicted higher levels of aggression at high levels of popularity orientation ($B = .07$, $SE = .03$, $p < .05$), but did not predict aggression at low levels of popularity orientation ($B = -.004$, $SE = .03$, $p = .90$). In addition, teacher-reported peer victimization predicted higher levels of aggression at the non-significant trend level at high levels of affiliation orientation ($B = .09$, $SE = .05$, $p = .06$), but did not predict aggression at low levels of affiliation orientation (Figure 4; $B = -.02$, $SE = .03$, $p = .48$).

Parent-reported peer victimization. Analyses with parent-reported peer victimization as the predictor corroborated findings with adolescent- and teacher-reported peer victimization. Parent-reported peer victimization did not predict higher levels of aggression, but popularity orientation did predict higher levels of aggression. Popularity orientation and affiliation orientation each moderated the association between parent-reported peer victimization and aggression. The full set of predictors accounted for 80% of the variance in early adolescents' aggression (Table 5). Although popularity orientation interacted significantly with parent-reported peer victimization to predict higher levels of aggression, the slope of high levels of popularity orientation ($B = .05$, SE

= .03, $p = .11$) and low levels of popularity orientation ($B = .02$, $SE = .03$, $p = .48$) were both non-significant (Figure 3). Consistent with teacher reports, parent-reported peer victimization marginally predicted higher levels of aggression at high levels of affiliation orientation ($B = .06$, $SE = .03$, $p = .06$), but was unrelated to aggression at low levels of affiliation orientation (Figure 5; $B = .01$, $SE = .03$, $p = .81$).

Predicting Adolescent Depressive Symptoms

Adolescent-reported peer victimization. Analyses with adolescent-reported peer victimization provided support for main effect and interaction effect hypotheses. Depressive symptoms at T1 predicted depressive symptoms at T2, indicating that depressive symptoms are moderately stable over time. Adolescent-reported peer victimization predicted higher depressive symptoms at T2, but none of the personal orientations predicted depressive symptoms at T2. Affiliation orientation and activity orientation each moderated the association between peer victimization and depressive symptoms. The full set of predictors accounted for 58% of the variance in depressive symptoms at T2 (Table 6). Follow up analyses revealed that adolescent-reported peer victimization predicted higher levels of depressive symptoms at high levels of affiliation orientation ($B = .28$, $SE = .05$, $p < .001$), as well as higher levels of depressive symptoms at low levels of affiliation orientation ($B = .09$, $SE = .04$, $p < .05$). Although adolescent-reported peer victimization predicted higher levels of depressive symptoms regardless of level of affiliation orientation, the association was much stronger at high levels of affiliation orientation (Figure 6). In addition, adolescent-reported peer victimization was marginally predictive of higher levels of depressive symptoms for adolescents who were committed to an activity ($B = .07$, $SE = .04$, $p = .05$), but was strongly predictive of

higher levels of depressive symptoms for adolescents who were not committed to an activity (Figure 9; $B = .19$, $SE = .04$, $p < .001$).

Teacher-reported peer victimization. Analyses with teacher-reported peer victimization also provided support for main effect and interaction effect hypotheses. Teacher-reported peer victimization did not predict depressive symptoms at T2, but lower academic orientation predicted higher levels of depressive symptoms at T2. Early adolescent affiliation orientation and activity orientation each moderated the association between peer victimization and depressive symptoms. The full set of predictors accounted for 49% of the variance in T2 depressive symptoms (Table 7). Follow up analyses to calculate simple intercepts and slopes corroborated findings from adolescent-reported peer victimization. Teacher-reported peer victimization predicted higher levels of depressive symptoms at high levels of affiliation orientation ($B = .28$, $SE = .08$, $p < .001$), but did not predict depressive symptoms at low levels of affiliation orientation (Figure 7; $B = .05$, $SE = .05$, $p = .24$). Additionally, teacher-reported peer victimization was unrelated to depressive symptoms for adolescents who were committed to an activity ($B = -.03$, $SE = .06$, $p = .56$), but predicted higher levels of depressive symptoms for adolescents who were not committed to an activity (Figure 10; $B = .16$, $SE = .05$, $p < .001$).

Parent-reported peer victimization. Analyses with parent-reported peer victimization provided support for some hypotheses. Parent-reported peer victimization was unrelated to later depressive symptoms, but lower academic orientation marginally predicted higher levels of depressive symptoms at T2. Affiliation orientation and activity orientation each moderated the association between peer victimization and depressive

symptoms. The full set of predictors accounted for 47% of the variance in T2 depressive symptoms (Table 8). Follow up analyses to calculate simple intercepts and slopes corroborated findings from models with adolescent and teacher reports of peer victimization. Parent-reported peer victimization predicted higher levels of depressive symptoms at high levels of affiliation orientation ($B = .20, SE = .06, p < .001$), but did not predict depressive symptoms at low levels of affiliation orientation (Figure 8; $B = .05, SE = .05, p = .41$). Also, parent-reported peer victimization did not predict depressive symptoms at T2 for adolescents who were committed to an activity ($B = -.06, SE = .05, p = .22$), but did predict higher levels of depressive symptoms for adolescents who were not committed to an activity (Figure 11; $B = .12, SE = .05, p < .05$).

Predicting school liking

Adolescent-reported peer victimization. School liking at T1 predicted school liking at T2, indicating that school liking is moderately stable over time. Grade at T1 was also a significant predictor of school liking at T2, such that students in the sixth grade at T1 liked school more than students in the fifth grade at T1. Adolescent-reported peer victimization did not predict school liking at T2. None of the personal orientations predicted school liking at T2. No moderation hypotheses with personal orientations were confirmed. The full model accounted for 28% of the variance in school liking (Table 9).

Teacher-reported peer victimization. Analyses with teacher-reported peer victimization did not provide support for any of the main effect or interaction effect hypotheses. Teacher-reported peer victimization did not predict school liking at T2. No moderation hypotheses with personal orientations were confirmed. The full model accounted for 28% of the variance in school liking (Table 10).

Parent-reported peer victimization. Analyses with parent-reported peer victimization found one unexpected interaction effect. Academic orientation moderated the association between peer victimization and school liking. The full model accounted for 30% of the variance in school liking (Table 11). Parent reports of peer victimization predicted higher levels of school liking at high levels of academic orientation ($B = .37$, $SE = .16$, $p < .05$), but did not predict higher levels of school liking at low levels of academic orientation (Figure 12; $B = -.11$, $SE = .16$, $p = .48$).

4. Discussion

During early adolescence, peer victimization peaks (Nansel et al., 2001) and predicts aggression, depressive symptoms, and lower school liking (Reijntjes et al., 2011; Reijntjes et al., 2010; Wang, Ionotti, & Luk, 2011). Identifying vulnerability and protective factors that may inform efforts to reduce the negative effects of peer victimization is particularly important. The present study examined whether peer victimization and personal orientations predict early adolescent aggression, depressive symptoms, and school liking across the transition to middle school. Furthermore, personal orientations (e.g., interests, values) were examined as moderators of the prospective association between experiences of peer victimization and aggression, depressive symptoms, and school liking. Hypotheses were tested longitudinally with multiple informants of the predictors, moderators, and outcomes.

Results showed that adolescent-reported peer victimization predicted aggression and depressive symptoms across the transition to middle school, but these short-term longitudinal main effects were not corroborated by teacher- and parent-reported peer victimization. Additionally, popularity orientation consistently predicted aggression across the transition to middle school, but other personal orientations did not consistently predict adjustment. Most relevant to the primary aims of the present study, regression analyses revealed that personal orientations moderated prospective associations between peer victimization and adjustment, and several moderation effects were corroborated across adolescent-, teacher-, and parent-reported peer victimization. As hypothesized, the

associations between adolescent-, teacher- and parent-reported peer victimization and aggression were stronger at higher levels of popularity orientation compared to lower levels of popularity orientation (i.e., desire for popularity). In addition, the associations between both adolescent- and teacher-reported peer victimization and depressive symptoms were stronger at higher levels of affiliation orientation compared to lower levels of affiliation orientation (i.e., desire for close relationships). Finally, associations between both adolescent- and teacher-reported peer victimization and depressive symptoms were weaker at elevated levels of activity orientation (i.e., commitment to organized activities).

Main Effects

Adolescent-reported peer victimization predicted higher levels of aggression and depressive symptoms over time, controlling for prior levels of aggression and depressive symptoms, respectively, which is consistent with prior research (Reijntjes et al., 2011; Reijntjes et al., 2010). In contrast, teacher- and parent-reported peer victimization did not predict higher levels of aggression or depressive symptoms across the transition to middle school. Relatively few studies have examined associations between teacher- and parent-reported victimization and adjustment; however, multi-informant composites of peer victimization, including parents or teachers, have been linked with higher levels of externalizing and internalizing behaviors (Cullerton-Sen & Crick, 2005; Putallaz, et al., 2007). The present findings may be inconsistent with a few existing studies linking parent- or teacher-reported peer victimization with adjustment due to the relatively conservative control for levels of adjustment only 10 months earlier. Additionally, perhaps adolescents are better able to report on all experiences of peer victimization (e.g.,

relational, less extreme), while teachers and parents are more likely to only report about more extreme instances of peer victimization, thus limiting the association between peer victimization and adjustment. Ladd and Kochenderfer-Ladd (2002) suggest that different informants of peer victimization provide complementary perspectives, and thus examining multiple informants provide increased predictive power. Future research should further examine discrepancies across adolescent, teacher, and parent reports of peer victimization to determine the individual and collective value of informants. Due to the potential to utilize teachers and parents in peer victimization interventions, their perspectives on peer victimization may be particularly important to further understand.

Surprisingly, peer victimization did not predict lower levels of school liking regardless of the informant of peer victimization. School liking was moderately stable over time, and thus the amount of change in school liking over ten months may be insufficient for prediction by peer victimization. Additionally, it is possible school liking over the transition to middle school is better explained by other predictors such as friendship support, academic engagement, or teacher supportiveness (Erath, Flanagan, & Bierman, 2008; Whitlock, 2006).

Consistent with previous research, popularity orientation predicted higher levels of aggression (Shoulberg, Sijtsema, & Murray-Close, 2011; Salmiavalli et al., 2005), but neither affiliation orientation nor activity orientation predicted aggression across the transition to middle school. Although popularity orientation and academic orientation predicted depressive symptoms, the effects were weak, as revealed by small effect sizes and inconsistencies across models with different informants of peer victimization. Finally, no personal orientations predicted school liking across the transition to middle

school. Overall, personal orientations were not strong or consistent predictors of adjustment outcomes. Personal orientations may take a longer period of time to affect adjustment outcomes than ten months. It is also possible that positive personal orientations primarily provide protection in the context of stress (rather than as main effects), consistent with the moderation effects discussed below.

Moderation Effects

Aggression. Personal orientations (popularity orientation, affiliation orientation, and activity orientation) were examined as moderators of the association between peer victimization and aggression. Our hypothesis was confirmed, such that the association between T1 peer victimization and T2 aggression was stronger at higher levels of popularity orientation compared to lower levels of popularity orientation. This finding was corroborated across informants, which indicates that peer victimization is a consistent risk factor for higher levels of aggression in the context of elevated popularity orientation. BPNT (Deci & Ryan, 2002) suggests that popularity orientation could further exacerbate the negative effects of peer victimization. Adolescents who are high in popularity orientation may be more likely to set high standards of competence and relatedness, which they fail to reach while experiencing peer victimization. In particular, adolescents with a strong popularity orientation who experience peer victimization may become frustrated, leading them to respond with aggression (e.g., frustration-aggression hypothesis; Berkowitz, 1989) and attempts to establish social status using aggressive strategies to display dominance (Kochenderfer-Ladd, 2004).

In partial contrast to results of the present study, prior research has identified perceived “coolness” or popularity as a risk factor for higher levels of aggression in the

context of elevated popularity orientation. Specifically, both cross-sectionally and longitudinally, adolescents who exhibited higher levels of popularity orientation and higher levels of perceived popularity had higher levels of aggression. On the other hand, adolescents low in perceived popularity did not exhibit high levels of aggression regardless of popularity orientation (Dawes & Xie, 2014; Kiefer & Wang, 2016; Cillessen et al., 2014). However, in the present study, peer victimization was a risk factor in the context of elevated popularity orientation. Although adolescents who are not nominated as cool or popular may be victimized, perceived popularity and peer victimization are not identical constructs. Another potential explanation for the inconsistent results involves different types of aggression. Results from other studies may be driven by proactive aggression among popular adolescents, whereas results of the present study may be driven by reactive aggression among victimized adolescents. Future studies that examine peer victimization and popularity orientation and distinguish proactive and reactive aggression will be informative.

Contrary to our hypothesis, high levels of peer victimization did not predict aggression in the context of low levels of affiliation orientation, but teacher- and parent-reported peer victimization predicted higher levels of aggression in the context of high affiliation orientation at the non-significant trend level. Affiliation orientation has not been examined as a protective factor against aggression in the context of peer victimization. BPNT (Deci & Ryan, 2000) suggests that affiliation orientation could provide a base for meeting needs of relatedness, particularly in the context of peer victimization which may impede feelings of relatedness. However, the measure utilized for the present study measured adolescents' *desire for* close relationships, and it may be

only actual relationships that are protective for adolescents experiencing peer victimization (Averdijk, Eisner, & Ribeaud, 2014). Furthermore, according to the frustration aggression hypothesis, thwarted goal-directed behavior elicits frustration which, in turn, can lead to aggression (Berkowitz, 1989). Peer victimization may thwart meeting the goal of affiliation orientation (e.g., desire for close relationships), leading peer-victimized adolescents with a high affiliation orientation to respond aggressively.

Due to slightly contrasting results from adolescent- (e.g., peer victimization predicts higher levels of aggression regardless of level of affiliation orientation) versus teacher- and parent-reports of peer victimization (e.g., peer victimization predicts higher levels of aggression only in the context of high affiliation orientation), there are likely unique contributions that the different perspectives of peer victimization provide. Specifically, parents and teachers may be more likely to report on more extreme types of peer victimization while adolescents report all peer victimization experiences. More extreme forms of peer victimization may be particularly likely to elicit frustrated-aggressive responses from adolescents, strengthening the relationship between teacher- and parent-reported peer victimization and aggression among adolescents with a relatively high affiliation orientation.

Our hypothesis that peer victimization would only predict aggression in the context of low levels of activity orientation was not confirmed. Activity orientation was expected to provide a context for adolescents to meet basic psychological needs and protect adolescents from higher levels of aggression when experiencing peer victimization. Lack of evidence for the moderating role of activity orientation may be due to some adolescents (about 25% of the sample) being committed to high contact sports

(e.g., football and wrestling), which have been linked to higher levels of aggression (Bredemeier, Weiss, Shields, & Cooper, 1986; Kreager, 2007), while other adolescents were committed to other types of activities (e.g., beta club).

Depressive symptoms. Personal orientations (popularity orientation, affiliation orientation, academic orientation, and activity orientation) were also examined as moderators of the association between peer victimization and depressive symptoms. Peer victimization predicted depressive symptoms more strongly at higher levels of affiliation orientation compared to lower levels of affiliation orientation. Notably, this interaction effect was replicated across adolescent-, parent-, and teacher-reported peer victimization. Although the direction of the interaction is contrary to our hypothesis based on BPNT (Deci & Ryan, 2002), it is consistent with recent research in which boys who were high in relational interdependence (e.g., feeling friends are a part of themselves) and high in peer victimization showed elevated depressive symptoms, but all other individuals showed no relationship between peer victimization and depressive symptoms (Kawabata & Onishi, 2016). Perhaps these results are also consistent with BPNT because for adolescents who experience high levels of peer victimization, high affiliation orientation may make peer victimization experiences feel particularly painful and impede feelings of competence and relatedness. Peer victimization did not predict depressive symptoms at low levels of affiliation orientation. Adolescents who do not desire close friendships and contact with peers may feel less hurt by peer victimization (Coplan et al., 2013).

Consistent with our hypothesis, activity orientation moderated the association between peer victimization and depressive symptoms, such that high levels of peer victimization predicted higher levels of depressive symptoms only for adolescents who

were not committed to an activity. This interaction effect was corroborated across all three informants, providing strong support for the protective role of activity orientation. Activity orientation was expected to provide a context for adolescents to meet basic psychological needs of competence, relatedness, and autonomy (Deci & Ryan, 2002). Commitment to an activity may provide adolescents with opportunities to feel competent either athletically or in another type of organized activity (e.g., band, Boy Scouts, glee club). Activity orientation also provides a context to spend time with peers, potentially make friends, and feel related as well as receive support from trusted adults (Randall & Bohnert, 2009; Rose-Krasnor, Busseri, Willoghby, & Chalmers, 2006). Being committed to an activity may also provide a context for autonomy, as those who are highly committed to an activity are more likely to pursue it autonomously (Mageau, et al., 2009). It is important to emphasize that the protective benefits of activity orientation were evident only for adolescents who were extremely committed to an organized activity, which suggests that activity involvement alone is not enough to reap the protective benefits.

Surprisingly, popularity orientation did not exacerbate the relationship between peer victimization and depressive symptoms. Perhaps adolescents who are high in popularity orientation are more likely to feel frustrated in the context of peer victimization and respond with aggression, but do not feel hurt by peer victimization more than those who do not have high levels of popularity orientation. Similarly, academic orientation did not protect early adolescents from depressive symptoms in the context of peer victimization. Academic orientation may not be protective because grades

may not be an adequate proxy of academic orientation. A measure of academic motivation may better capture the protective effects of academic orientation.

School liking. Personal orientations (academic orientation and activity orientation) were also examined as moderators of the association between peer victimization and school liking. Unexpectedly, there was only one significant interaction effect in models that predicted school liking. Academic orientation moderated the association between peer victimization and school liking, such that peer victimization predicted school liking more strongly at higher levels of academic orientation compared to lower levels of academic orientation. Although this interaction was significant, the finding was not corroborated across informants, which casts doubt on the reliability of the result. Although the present study was longitudinal, the time span was relatively short. Interaction effects to predict individual differences in school liking may not have been detectable after only ten months. Additionally, other important factors may better explain individual differences in school liking across the transition to middle school (e.g., teacher supportiveness; Gest, Welsh, & Domitrovich, 2005).

Limitations and Future Directions

While the results from the present study contribute to knowledge about peer victimization and introduce personal orientations as moderators of peer victimization and adjustment, there were several limitations to the present study. First, the popularity orientation measure, although face valid, consisted of only two questions. The measure could be enhanced with a validated measure (e.g., vignettes; LaFontana & Cillessen, 2010) or additional questions to increase the reliability of the measure. Furthermore, the popularity orientation measure was also administered only to a subset of the sample at T2

(i.e., the second cohort), and thus further research should utilize a larger sample to examine the reliability of results related to popularity orientation. Academic orientation was measured as a composite of adolescent, parent, and teacher reports, but grades may be a poor measure of academic orientation. Perhaps academic motivation or classmate perceptions of academic orientation would better capture this personal orientation. Finally, the activity orientation measure was dichotomized. The activity orientation measure could be enhanced with different aspects of commitment (e.g., committed to doing well in the activity, building a team relationship, or learning a new skill) to further examine how activity orientation, or commitment to an activity, operates. In addition, although the data were longitudinal, additional time points could determine whether some hypothesized effects take longer to emerge.

Despite these limitations, the present study included several notable strengths. Peer victimization peaks during early adolescence, thus the transition to middle school is a salient age to study moderators of the relationship between peer victimization and adjustment. Also, personal orientations have not been studied extensively as moderators of peer victimization and may be particularly important protective and vulnerability factors to target for interventions. Additional strengths include the longitudinal design and multiple informants of predictors, moderators, and outcomes. A longitudinal study design and multiple informants allowed for control of earlier level of adjustment and reduced common source variance.

Future research should examine the relationship between popularity orientation and different forms of aggression (e.g., relational and overt) as well as how the interaction between peer victimization and popularity orientation may predict different

functions of aggression (reactive versus proactive). Examining different forms and functions of aggression may help elucidate inconsistencies between other studies and the present study (Dawes & Xie, 2014; Kiefer & Wang, 2016). Additionally, future research could examine specific types of peer victimization (e.g., cyber, overt, and covert) to determine if personal orientations influence adjustment differently depending on the type of peer victimization experience. The processes that underlie the effects of personal orientations should be further examined to determine how personal orientations act as risk or protective factors. For example, personal orientations may be protective or vulnerability factors due to impeding or meeting basic psychological needs, but it is unclear if personal orientations meet those needs (e.g., assess whether personal orientations meet needs for competence, relatedness, and/or autonomy).

Additional orientations may also be identified, especially potentially more malleable orientations such as family orientation (Buchanan & McConnell, 2017), social media orientation (Durkin & Barber, 2002; Valkenburg & Peter, 2009), and pet orientation (Brown, Hengy, & McConnell, 2016; McConnell, Brown, Shoda, Stayton, & Martin, 2011). Finally, although a large number of analyses were conducted, results that were consistent across informants were interpreted accordingly and additional findings were taken with caution. Future research should attempt to replicate these findings, and research with a larger and more representative sample would increase confidence in the results and allow tests of possible sex and ethnic differences.

Conclusions and Practical Implications

Findings from this study provide additional support that peer victimization predicts adjustment, but it is notable that these findings were not consistent across

informants, indicating that multiple informants provide unique perspectives of the peer victimization experience. Interestingly, some personal orientations (e.g., popularity orientation, affiliation orientation, and activity orientation) were found to be significant moderators between peer victimization and adjustment across adolescent-, teacher-, and parent-reported peer victimization. These findings contribute to our knowledge of potential risk and protective factors for early adolescent adjustment and further explain differences in the association between peer victimization and later adjustment.

These findings may also have implications for prevention and intervention with victimized adolescents, as personal orientations may be malleable targets for intervention to protect early adolescents. Affiliation orientation and popularity orientation were consistent risk factors for higher levels of maladjustment across informants. On the other hand, activity orientation was a consistent protective factor for depressive symptoms across informants. Perhaps providing activity opportunities that are well-matched with adolescents' interests may offer more adolescents a chance to participate in activities and reap the protective benefits of commitment to an activity. Additionally, it may be possible to reduce excessive popularity orientation by identifying other important interests or values that could be enhanced (e.g., activity orientation, pet orientation). It may be helpful to build social skills among peer-victimized adolescents with strong affiliation orientation, which could promote their ability to establish the close relationships they desire. Of course, it will be important to replicate and extend results of the present study before drawing conclusions about intervention implications.

References

- Achenbach, T. M. (1991). *Integrative guide for the 1991 CBCL/ 4-18, YSR, and CBCL-TRF profiles*. Burlington, VT: University of Vermont Department of Psychiatry.
- Aikin, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage.
- Arbuckle, J. L. (2013). *Amos 22.0 Users' guide*. Chicago: IBM SPSS.
- Arseneault, L., Bowes, L., & Shakoor, S. (2010). Bullying victimization in youths and mental health problems: 'Much ado about nothing'?. *Psychological Medicine, 40*(5), 717-729. doi:10.1017/S0033291709991383
- Averdijk, M., Eisner, M., & Ribeaud, D. (2014). Do social relationships protect victimized children against internalizing problems?. *Journal of School Violence, 13*(1), 80-99. doi:10.1080/153882220.2013.842175
- Badura, P., Sigmund, E., Madarasova, G. A., Sigmundova, D., Sirucek, J., van Dijk, J. P., & Reijneveld, S. A. (2016). Is participation in organized leisure-time activities associated with school performance in adolescence?. *PLoS ONE, 11*(4). doi:10.1371/journal.pone.0153276
- Boivin, M., Petitcherc, A., Feng, B., & Barker, E. D. (2010). The developmental trajectories of peer victimization in middle to late childhood and the changing nature of their behavioral correlates. *Merrill-Palmer Quarterly, 56*(3), 231-260. doi:10.1353/mpq.0.0050

- Boulton, M. J., Chau, C., Whitehand, C., Amataya, K., & Murray, L. (2009). Concurrent and short-term longitudinal associations between peer victimization and school and recess liking during middle school. *British Journal of Educational Psychology, 79*(2), 207-221. doi:10.1348/000709908X336131
- Bredemeier, B. J., Weiss, M. R., Shields, D. L., & Cooper, B. A. B. (1986). The relationship of sport involvement with children's moral reasoning and aggression tendencies. *Journal of Sport Psychology, 8*(4), 304-318. doi:10.1123/jsp.8.4.304
- Brown, C. M., Hengy, S. M., & McConnell, A. R. (2016). Thinking about cats and dogs provides relief from social rejection. *Anthrozoos, 29*(1), 47-58.
doi:10.1080/20414005.2015.1067958
- Buchanan, T. M., & McConnell, A. R. (2017). Family as a source of support under stress: Benefits of greater breadth of family inclusion. *Self and Identity, 16*(1), 97-122.
doi:10.1080/15298868.2016.1226194
- Capaldi, D. M., & Rothbart, M. K. (1992). Development and validation of an early adolescent temperament measure. *Journal of Early Adolescence, 12*(2), 153-173.
doi:10.1177/0272431692012002002
- Card, N. A., & Hodges, E. V. E. (2008). Peer victimization among schoolchildren: Correlations, causes, consequences, and considerations in assessment and intervention. *School Psychology Quarterly, 23*(4), 451-461.
doi:10.1037/a0012769
- Cillessen, A. H.N., Mayeux, L., Ha, T., de Bruyn, E. H., & LaFontana, K. M. (2014). Aggressive effects of prioritizing popularity in early adolescence. *Aggressive Behavior, 40*(3), 204-213. doi:10.1002/ab.21518

- Compas, B. E., Connor-Smith, J. K., Saltzman, H., Thomsen, A. H., & Wadsworth, M. E. (2001). Coping with stress during childhood and adolescence: Problems, progress, and potential in theory and research. *Psychological Bulletin*, *127*(1), 87-127. doi:10.1037//0033-2909.127.1.87
- Connor-Smith, J. K., Compas, B. E., Wadsworth, M. E., Thomsen, A. H., & Saltzman, H. (2000). Responses to stress in adolescence: Measurement of coping and involuntary stress responses. *Journal of Consulting and Clinical Psychology*, *68*(6), 976-992. doi:1037//0022-006X.68.6.976
- Cooley, J. L., & Fite, P. J. (2016). Peer victimization and forms of aggression during middle childhood: The role of emotion regulation. *Journal of Abnormal Child Psychology*, *44*(3), 535-546. doi:10/1007/s10802-015-0051-6
- Coplan, R. J., Rose-Krasnor, L., Weeks, M., Kingsbury, A., Kingsbury, M., & Bullock, A. (2013). Alone is a crowd: Social motivations, social withdrawal, and socioemotional functioning in later childhood. *Developmental Psychology*, *49*(5), 861-875. doi:10.1037/a0028861
- Crick, N. R., & Dodge, K. A. (1996). Social information-processing mechanisms in reactive and proactive aggression. *Child Development*, *67*(3), 993-1002. doi:10.1111/j.1467-8624.1996.tb01778.x
- Crick, N. R., & Grotpeter, J. K. (1996). Children's treatment by peers: Victims of relational and overt aggression. *Developmental Psychopathology*, *8*(2), 367-380. doi:10.1017/S095457900007148

- Cullerton-Sen, C., & Crick, N. R. (2005). Understanding the effects of physical and relational victimization: The utility of multiple perspectives in predicting social-emotional adjustment. *School Psychology Review, 34*(2), 147-160.
- Dawes, M., & Xie, H. (2014). The role of popularity goal in early adolescent's behaviors and popularity status. *Developmental Psychology, 50*(2), 489-497.
doi:10.1037/a0032999
- Davidson, L. M., & Demaray, M. K. (2007). Social support as a moderator between victimization and internalizing-externalizing distress from bullying. *School Psychology Review, 36*(3), 383-405.
- Deci, E. L., & Ryan, R. M. (2002). *Handbook of Self Determination Research*. Rochester, NY: The University of Rochester Press.
- Denault, A., & Poulin, F. (2009). Intensity and breadth of participation in organized activities during the adolescent years: Multiple associations with youth outcomes. *Journal of Youth and Adolescence, 38*(9), 1199-1213. doi:10.1007/s10964-009-9437-5
- Desjardins, T. L., & Leadbeater, B. J. (2011). Relational victimization and depressive symptoms in adolescence: Moderating effects of mother, father, and peer emotional support. *Journal of Youth and Adolescence, 40*(5), 531-544.
doi:10.1007/s10964-010-9562-1
- Dirks, M. A., Suor, J. H., Rusch, D., & Frazier, S. L. (2014). Children's responses to hypothetical provocation by peers: Coordination of assertive and aggressive strategies. *Journal of Abnormal Child Psychology, 42*(7), 1077-1087.
doi:10.1007/s10802-014-9862-0

- Driessens, C. M. E. F. (2015). Extracurricular activity participation moderates impact of family and school factors on adolescents' disruptive behavioral problems. *BMC Public Health, 15*(1), 1100-1113. doi:10.1186/s12889-015-2464-0
- Durkin, K., & Barber, B. (2002). Not so doomed: Computer game play and positive adolescent development. *Applied Developmental Psychology, 23*(4), 373-392. doi:10.1016/S0193-3973(02)00124-7
- Erath, S. A., Flanagan, K. S., & Bierman, K. L. (2008) Early adolescent school adjustment: Associations with friendship and peer victimization. *Social Development, 17*(4), 853-870. doi:10.1111/j.1467-9507.2008.00458.x
- Erath, S. A., Su, S., & Tu, K. M. (*in press*). Electrodermal reactivity moderates the prospective association between peer victimization and depressive symptoms in early adolescence. *Journal of Clinical Child & Adolescent Psychology*. doi:10.1080/15374416.2016.1197838
- Fox, C. L., & Boulton, M. J. (2005). The social skills problems of victims of bullying: Self, peer and teacher perceptions. *British Journal of Educational Psychology, 75*(2), 313-328. doi:10.1348/000709905X25517
- Gest, S. D., Welsh, J. A., & Domitrovich, C. E. (2005). Behavioral predictors of changes in social relatedness and liking school in elementary school. *Journal of School Psychology, 43*(4), 281-301. doi:10.1016/j.jsp.2005.06.002
- Graham, J. E., Updgraff, K. A., Tomascik, C. A., & McHale, S. M. (1997). Someone who cares: Evaluation of school advisor programs in two community settings. *Applied Developmental Science, 1*(1), 28-42. doi:10.1207/s1532480xads0101_4

- Gregson, K. D., Tu, K. M., & Erath, S. A. (2014). Sweating under pressure: Skin conductance level reactivity moderates the association between peer victimization and externalizing behavior. *The Journal of Child Psychology and Psychiatry*, *55*(1), 22-30. doi:10.1111/jcpp.12086
- Hanish, L. D., Eisenber, N., Fabes, R. A., Spinrad, T. L., Ryan, P., & Schmidt, S. (2004). The expression and regulation of negative emotions: Risk factors for young children's peer victimization. *Developmental Psychopathology*, *16*(2), 335-353. doi:10.1017/S0954579404044542
- Hawker, D. S. J., & Boulton, M. J. (2000). Twenty years' research on peer victimization and psychosocial maladjustment: A meta-analytic review of cross-sectional studies. *The Journal of Child Psychology and Psychiatry*, *41*(4), 441-455. doi:10.1111/1469-7610.00629
- Hill, L. G., & Werner, N. E. (2006). Affiliative motivation, school attachment, and aggression in school. *Psychology in the Schools*, *43*(2), 231-246. doi:10.1002/pits.20140
- Kawabata, Y., & Onishi, A. (2016). Moderating effects of relational interdependence on the association between peer victimization and depressive symptoms. *Child Psychiatry & Human Development*, *48*(2), 214-224. doi:10.1007/s10578-016-0634-7
- Kiefer, S. M., & Wang, J. H. (2016). Associations of coolness and social goals with aggression and engagement during adolescence. *Journal of Applied Developmental Psychology*, *44*, 52-62. doi:10.1016/j.appdev.2016.02.007

- Kochenderfer-Ladd, B. (2004). Peer victimization: The role of emotions in adaptive and maladaptive coping. *Social Development, 13*(3), 329-349. doi:10.1111/j.1467-9507.2004.00271.x
- Kovacs, M. (1992). *Children's depression inventory*. North Tonawanda, NY: Multi-Health System.
- Kreager, D. A. (2007). Unnecessary roughness? School sports, peer networks, and male adolescent violence. *American Sociological Review, 72*(5), 705-724. doi:10.1177/000312240707200612
- Ladd, G. W., Buhs, E. S., & Seid, M. (2000). Children's initial sentiments about kindergarten: Is school liking an antecedent of early classroom participation and achievement. *Merrill-Palmer Quarterly, 46*(2), 255-279.
- Ladd, G. W., & Price, J. M. (1987). Predicting children's social and school adjustment following the transition from preschool to kindergarten. *Child Development, 58*(5), 1168-1189. doi:10.2307/1130613
- LaFontana, K. M., & Cillessen, A. H. N. (2010). Developmental changes in the priority of perceived status in childhood and adolescence. *Social Development, 19*(1), 130-147. doi:10.1111/j.1467-9507.2008.00522.x
- Lereya, S. T., Copeland, W. E., Costello, E. J., & Wolke, D. (2015). Adult mental health consequences of peer bullying and maltreatment in childhood: Two cohorts in two countries. *Lancet Psychiatry, 2*(6), 524-531. doi:10.1016/S2215-0366(15)00165-0
- Lord, S. E., Eccles, J. S., & McCarthy, K. A. (1994). Surviving the junior high school transition: Family processes and self-perceptions as protective and risk factors. *The Journal of Early Adolescence, 14*(2), 162-199.

doi:10.1177/027243169401400205

- Mageau, G. A., Vallerand, R. J., Charest, J., Salvy, S., Lacaille, N., ... & Koestner, R. (2009). On the development of harmonious and obsessive passion: The role of autonomy support, activity specialization, and identification with the activity. *Journal of Personality, 77*(3), 601-646. doi: 10.1111/j.1467-6494.2009.00559.x
- Maslow, A. H. (1943). A theory of human motivation. *Psychological Review, 50*(4), 370-396. doi:10.1037/h0054346
- Masten, A. S., & Coatsworth, J. D. (1998). The development of competence in favorable and unfavorable environments. *American Psychologist, 53*(2), 205-220. doi:10.1037/0003-066X.53.2.205
- Masten, A. S., Roisman, G. I., Long, J. D., Burt, K. B., Obradovic, J., Riley, J. R., Boelcke-Stennes, K., & Tellegen, A. (2005). Developmental cascades: Linking academic achievement and externalizing and internalizing symptoms over 20 years. *Developmental Psychology, 41*(5), 733-746. doi:10.1037/0012-1649.41.5.733
- McConnell, A. R., Brown, C. M., Shoda, T. M., Stayton, L. E., & Martin, C. E. (2011). Friends with benefits: On the positive consequences of pet ownership. *Journal of Personality and Social Psychology, 101*(6), 1239-1252. doi:10.1037/a0024506
- Mouratidis, A. A., & Sideridis, G. D. (2009). On social achievement goals: Their relations with peer acceptance, classroom belongingness, and perceptions of loneliness. *The Journal of Experimental Education, 77*(3), 285-308. doi:10.3200/JEXE.77.3.285-308
- Nakamoto, J., & Schwartz, D. (2010). Is peer victimization associated with academic

achievement? A meta-analytic review. *Social Development*, 19(2), 221-242.

doi:10.1111/j.1467-9507.2009.00539.x

Nansel, T. R., Overbeck, M., Pilla, R. S., Ruan, W. J., Simon-Morton, B., & Scheidt, P.

(2001). Bullying behaviors among US youth: Prevalence and association with psychosocial adjustment. *Journal of the American Medical Association*, 285(16), 2094-2100. doi:10.1001/jama.285.16.2094

Ojanen, T., Gronroos, M., & Salmivalli, C. (2005). An interpersonal circumplex model of

children's social goals: Links with peer-reported behavior and sociometric status. *Developmental Psychology*, 41(5), 699-710. doi:10.1037/0012-1649.41.5.699

Putallaz, M., Grimes, C. L., Foster, K. J., Kupersmidt, J. B., Coie, J. D., & Dearing, K.

(2007). Overt and relational aggression and victimization: Multiple perspectives within the school setting. *Journal of School Psychology*, 45(5), 523-547.

doi:10.1016/j.jsp.2007.05.003

Randall, E. T., & Bohnert, A. M. (2009) Organized activity involvement, depressive symptoms, and social adjustment in adolescents: Ethnicity and socioeconomic status as moderators. *Journal of Youth and Adolescence*, 38(9), 1187-1198.

doi:10.1007/s10964-009-9417-9

Reijntjes, A., Kamphuis, J. H., Prinzie, P., Boelen, P. A., Van der Schoot, M., & Telch,

M. J. (2011). Prospective linkages between peer victimization and externalizing problems in children: A meta-analysis. *Aggressive Behavior*, 37(3), 215-222.

doi:10.1002/ab.20374

Reijntjes, A., Kamphuis, J. H., Prinzie, P., & Telch, M. J. (2010). Peer victimization and

internalizing problems in children: A meta-analysis of longitudinal studies. *Child*

Abuse & Neglect, 34(4), 244-252. doi:10.1016/j.chiabu.2009.07.009

- Rodkin, P. C., Ryan, A. M., Jamison, R., & Wilson, T. (2013). Social goals, social behavior, and social status in middle childhood. *Developmental Psychology*, 49(6), 1139-1150. doi:10.1037/a0029389
- Roisman, G. I., Newman, D. A., Fraley, R. C., Haltigan, J. D., Groh, A. M., & Haydon, K. C. (2012). Distinguishing differential susceptibility from diathesis-stress: Recommendations for evaluating interaction effects. *Development and Psychopathology*, 24(2), 389-409. doi:10.1017/S0954579412000065
- Rose, A. J., Swenson, L. P., & Waller, E. M. (2004). Overt and relational aggression and perceived popularity: Developmental differences and concurrent and prospective relations. *Developmental Psychology*, 40(3), 378-387. doi:10.1037/0012-1649.40.3.378
- Rose-Krasnor, L., Busseri, M. A., Willoughby, T., & Chalmers, H. (2006). Breadth and intensity of youth activity involvement as contexts for positive development. *Journal of Youth and Adolescence* 35(3), 385-399. doi: 10.1007/s10964-006-9037-6
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68-78. doi:10.1037/0003-066X.55.1.68
- Ryan, R. M., & Frederick, C. (1997). On energy, personality, and health: Subjective vitality as a dynamic reflection of well-being. *Journal of Personality*, 65(3), 529-565. doi:10.1111/j.1467-6494.1997.tb00326.x
- Ryan, A. M., & Shim, S. S. (2006). Social achievement goals: The nature and

- consequences of different orientations toward social competence. *Personality and Social Psychology Bulletin*, 32(9), 1246-1263. doi:10.1177/0146167206289345
- Salmivalli, C., Ojanen, T., Haanpaa, J., & Peets, K. (2005). "I'm ok but you're not" and other peer-relational schemas: Explaining individual differences in children's social goals. *Developmental Psychology*, 41(2), 363-375. doi:10.1037/0012-1649.41.2.363
- Schwartz, D., Farver, J. M., Chang, L., & Lee-Shin, Y. (2002). Victimization in South Korean children's peer groups. *Journal of Abnormal Child Psychology*, 30(2), 113-125. doi:10.1023/A:1014749131245
- Schwartz, D., Gorman, A. H., Duong, M. T., & Nakamoto, J. (2008). Peer relationships and academic achievement as interacting predictors of depressive symptoms during middle childhood. *Journal of Abnormal Psychology*, 117(2), 289-299. doi:10.1037/0021-843X.117.2.289
- Shoulberg, E. K., Sijtsema, J. J., & Murray-Close, D. (2011). The association between valuing popularity and relational aggression: The moderating effects of actual popularity and physiological reactivity to exclusion. *Journal of Experimental Child Psychology*, 110(1), 20-37. doi:10.1016/j.jcep.2011.03.008
- Stadler, C., Feifel, J., Rohrmann, S., Vermeiren, R., & Poutska, F. (2010). Peer victimization and mental health problems in adolescents: Are parental and school support protective?. *Child Psychiatry & Human Development*, 41(4), 371-386. doi:10.1007/s10578-010-0174-5
- Storch, E. A., & Masia-Warner, C. (2004). The relationship of peer victimization to social anxiety and loneliness in adolescent females. *Journal of Adolescence*,

27(3), 351-362. doi:10.1016/j.adolescence.2004.03.003

Swanson, J., Valiente, C., Lemery-Chalfant, K., & O'Brien, T. C. (2011). Predicting early adolescents' academic achievement, social competence, and physical health from parenting, ego resilience, and engagement coping. *The Journal of Early Adolescence, 31*(4), 548-576. doi:10.1177/0272431610366249

Troop-Gordon, W., & Kuntz, K. J. (2013). The unique and interactive contributions of peer victimization and teacher-child relationships to children's school adjustment. *Journal of Abnormal Child Psychology, 41*(8), 1191-1202. doi:10.1007/s10802-013-9776-2

Valiente, C., Lemery-Chalfant, K., & Castro, K. S. (2007). Children's effortful control and academic competence: Mediation through school liking. *Merrill-Palmer Quarterly, 53*(1), 1-25.

Valiente, C., Lemery-Chalfant, K., Swanson, J., & Reiser, M. (2008). Prediction of children's academic competence from their effortful control, relationships, and classroom participation. *Journal of Educational Psychology, 100*(1), 67-77. doi:10.1037/0022-0663.100.1.67

Valkenburg, P. M., & Peter, J. (2009). The effects of instant messaging on the quality of adolescents' existing friendships: A longitudinal study. *Journal of Communication, 59*(1), 79-97. doi:10.1111/j.1460-2466.2008.01405.x

Vassallo, S., Edwards, B., Renda, J., & Olsson, C. A. (2014). Bullying in early adolescence and antisocial behavior and depression six years later: What are the protective factors?. *Journal of School Violence, 13*(1), 100-124. doi:10.1080/15388220.2013.840643

- Vinas, F., Gonzalez, M., Malo, S., Garcia, Y., & Casas, F. (2014). Temperament and personal wellbeing in a sample of 12 to 16 year-old adolescents. *Applied Research Quality Life*, *9*(2), 355-366. doi:10.1007/s11482-013-9242-x
- Wang, J., Iannotti, R. J., & Luk, J. W. (2011). Peer victimization and academic adjustment among early adolescents: Moderation by gender and mediation by perceived classmate support. *Journal of School Health*, *81*(7), 386-392. doi:10.1111/j.1746-1561.2011.00606.x
- Wang, J., Iannotti, R. J., & Nansel, T. R. (2009). School bullying among adolescents in the United States: Physical, verbal, relational, and cyber. *Journal of Adolescent Health*, *45*(4), 368-375. doi:10.1016/j.jadohealth.2009.03.021
- Wei, H.S., & Chen, J.K. (2010). School attachment among Taiwanese adolescents: The roles of individual characteristics, peer relationships, and teacher well-being. *Social Indicators Research*, *95*(3), 421-436. doi:10.1007/s11205-009-9529-3
- Whitlock, J. L. (2006). Youth perceptions of life at school: Contextual correlates of school connectedness in adolescence. *Applied Developmental Science*, *10*(1), 13-29. doi:10.1207/s1532480xads1001_2
- Wolke, D., Copeland, W. E., Angold, A., & Costello, E. J. (2013). Impact of bullying in childhood on adult health, wealth, crime, and social outcomes. *Psychological Science*, *24*(10), 1958-1970. doi:10.1177/0956797613481608
- Yeung, R., & Leadbeater, B. (2010). Adults make a difference: The protective effects of parent and teacher emotional support on emotional and behavioral problems of peer victimized adolescents. *Journal of Community Psychology*, *38*(1), 80-98. doi:10.1002/jcop.20353

Tables

Table 1

Descriptive Statistics for Predictors, Moderators, and Outcomes

| | <i>N</i> | <i>M (SD)</i> | <i>Range</i> | <i>Sk</i> |
|-------------------------|----------|---------------|--------------|-----------|
| AR Peer victimization | 122 | 2.03 (.89) | 1.0-4.43 | .91 |
| TR Peer victimization | 100 | 1.54 (.67) | 1.0-3.67 | 1.28 |
| PR Peer victimization | 123 | .95 (.73) | 0-4.0 | .89 |
| Popularity orientation | 43 | 1.98 (.80) | 1.0-4.0 | .70 |
| Affiliation orientation | 123 | 3.87 (.57) | 2.67-5.0 | .10 |
| Academic orientation | 123 | 4.0 (.71) | 2.3-5.0 | -.58 |
| Activity orientation | 121 | 52% | 0-1 | - |
| T1 Aggression | 123 | .25 (.25) | 0-1.22 | 1.11 |
| T2 Aggression | 99 | .24 (.27) | 0-1.22 | 1.51 |
| T1 Depressive symptoms | 120 | .23 (.21) | 0-.81 | 1.05 |
| T2 Depressive symptoms | 99 | .28 (.26) | 0-1.35 | 1.51 |
| T1 School liking | 122 | 3.77 (.98) | 1.0-5.0 | -.93 |
| T2 School liking | 99 | 3.61 (.95) | 1.0-5.0 | .47 |

Note. AR = Adolescent-report, TR= Teacher-report, PR = Parent-report, and T2 = Time

2.

Table 2

Correlations Between Predictors, Moderators, and Outcomes

| | T2 Aggression | T2 Depressive | T2 School liking |
|-------------------------|------------------|---------------|------------------|
| AR Peer victimization | .42** | .53* | -.24* |
| TR Peer victimization | .19 ⁺ | .23* | -.10 |
| PR Peer victimization | .42** | .21* | -.10 |
| Popularity orientation | .39** | -.09 | .11 |
| Affiliation orientation | -.09 | -.03 | .07 |
| Academic orientation | -.15 | -.31** | .20* |
| Activity orientation | -.09 | .05 | .08 |

Note. AR = Adolescent-report, TR= Teacher-report, PR = Parent-report, Depressive =

Depressive Symptoms, and T2 = Time 2.

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

Table 3

Predicting T2 Early Adolescent Aggression from Adolescent-reported Peer Victimization and the Interactions of Peer Victimization and Personal Orientations

| | Adolescent-reported peer victimization | | | |
|--|--|---------|------------------------|------------------|
| | Model of entry | | Final model | |
| | <i>B</i> (<i>SE</i>) | β | <i>B</i> (<i>SE</i>) | β |
| Step 1: Auto-regressive effects | | | | |
| T1 Aggression | .92(.05) | .87*** | .83(.05) | .82*** |
| <i>R</i> ² | .75 | | | |
| Step 2: Main effects (predictor) | | | | |
| Peer victimization | .03(.02) | .11* | .04(.02) | .14 ⁺ |
| ΔR^2 | 1% | | | |
| Step 3: Main effects (personal orientations) | | | | |
| Popularity orientation | .06(.02) | .17* | .04(.02) | .14 ⁺ |
| Affiliation orientation | .002(.02) | .002 | -.05(.02) | -.11* |
| Activity orientation | -.01(.03) | -.01 | 0.0(.02) | -.002 |
| ΔR^2 | 2% | | | |
| Step 4: Interaction effects | | | | |
| PV x Popularity orientation | | | .08(.02) | .25*** |
| PV x Affiliation orientation | | | -.05(.03) | -.09 |
| PV x Activity orientation | | | -.04(.03) | -.11 |
| ΔR^2 / Total <i>R</i> ² | | | 5% / .83 | |

Note. PV = Peer victimization, T1 = Time 1.

⁺*p* < .10, **p* < .05, ****p* < .001.

Table 4

Predicting T2 Early Adolescent Aggression from Teacher-reported Peer Victimization and the Interactions of Peer Victimization and Personal Orientations

| | T2 Aggression | | | |
|--|-------------------------------------|---------|------------------------|------------|
| | Teacher-reported peer victimization | | | |
| | Model of entry | | Final model | |
| | <i>B</i> (<i>SE</i>) | β | <i>B</i> (<i>SE</i>) | β |
| Step 1: Auto-regressive effects | | | | |
| T1 Aggression | .92(.05) | .87*** | .88(.05) | .86*** |
| R^2 | | | | .75 |
| Step 2: Main effects (predictor) | | | | |
| Peer victimization | 0.0(.02) | 0.0 | .03(.03) | .09 |
| ΔR^2 | | | | 0% |
| Step 3: Main effects (personal orientations) | | | | |
| Popularity orientation | .06(.02) | .20** | .06(.02) | .20** |
| Affiliation orientation | 0.0(.02) | 0.0 | 0.0(.02) | 0.0 |
| Activity orientation | -.01(.03) | -.03 | -.03(.03) | -.06 |
| ΔR^2 | | | | 3% |
| Step 4: Interaction effects | | | | |
| PV x Popularity orientation | | | .10(.04) | .18* |
| PV x Affiliation orientation | | | .10(.05) | .13* |
| PV x Activity orientation | | | -.08(.05) | -.11 |
| ΔR^2 / Total R^2 | | | | 2.5% / .81 |

Note. PV = Peer victimization and T1 = Time 1

* $p < .05$, ** $p < .01$, *** $p < .001$.

Table 5

Predicting T2 Early Adolescent Aggression from Parent-reported Peer Victimization and the Interactions of Peer Victimization and Personal Orientations

| | T2 Aggression | | | |
|--|------------------------------------|---------|------------------------|------------------|
| | Parent-reported peer victimization | | | |
| | Model of entry | | Final Model | |
| | <i>B</i> (<i>SE</i>) | β | <i>B</i> (<i>SE</i>) | β |
| Step 1: Auto-regressive effects | | | | |
| T1 Aggression | .92(.05) | .87*** | .87(.05) | .84*** |
| R^2 | | | | .75 |
| Step 2: Main effects (predictor) | | | | |
| Peer victimization | .03(.02) | .09 | .04(.03) | .10 |
| ΔR^2 | | | | .7% |
| Step 3: Main effects (personal orientations) | | | | |
| Popularity orientation | .06(.02) | .18** | .03(.03) | .09 |
| Affiliation orientation | 0.0(.02) | 0.0 | .004(.02) | .01 |
| Activity orientation | -.01(.06) | -.02 | .001(.03) | .001 |
| ΔR^2 | | | | 2.1% |
| Step 4: Interaction effects | | | | |
| PV x Popularity orientation | | | .08(.04) | .19* |
| PV x Affiliation orientation | | | .07(.04) | .11 ⁺ |
| PV x Activity orientation | | | -.03(.04) | -.04 |
| ΔR^2 / Total R^2 | | | | 2.2 % / .80 |

Note. PV = Peer victimization and T1 = Time 1

⁺ $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Table 6

Predicting T2 Early Adolescent Depressive Symptoms from Adolescent-reported Peer Victimization and the Interactions of Peer Victimization and Personal Orientations

| | T2 Depressive symptoms | | | |
|--|--|---------|------------------------|-------------|
| | Adolescent-reported peer victimization | | | |
| | Model of entry | | Final model | |
| | <i>B</i> (<i>SE</i>) | β | <i>B</i> (<i>SE</i>) | β |
| Step 1: Auto-regressive effects | | | | |
| T1 Depress | .65(.10) | .54*** | .35(.12) | .31** |
| R^2 | | | | .29 |
| Step 2: Control | | | | |
| T1 Grade | -.07(.05) | -.13 | -.09(.04) | -.16* |
| ΔR^2 | | | | 2.2% |
| Step 3: Main effects (predictor) | | | | |
| Peer victimization | .10(.03) | .34*** | .20(.04) | .64*** |
| ΔR^2 | | | | 7.1% |
| Step 4: Main effects (personal orientations) | | | | |
| Popularity orientation | -.07(.04) | -.20* | -.10(.04) | -.31* |
| Affiliation orientation | .03(.04) | .07 | .03(.04) | .07 |
| Academic orientation | -.04(.03) | -.11 | -.05(.03) | -.14* |
| Activity orientation | .05(.04) | .09 | .04(.04) | .08 |
| ΔR^2 | | | | 6.4% |
| Step 5: Interaction effects | | | | |
| PV x Popularity orientation | | | .02(.05) | .04 |
| PV x Affiliation orientation | | | .19(.05) | .34*** |
| PV x Academic orientation | | | -.03(.03) | -.07 |
| PV x Activity orientation | | | -.13(.05) | -.29** |
| ΔR^2 / Total R^2 | | | | 13.1% / .58 |

Note. Depress = Depressive symptoms, PV = Peer victimization, and T1 = Time 1.

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 7

Predicting T2 Early Adolescent Depressive Symptoms from Teacher-reported Peer Victimization and the Interactions of Peer Victimization and Personal Orientations

| | T2 Depressive symptoms | | | |
|--|-------------------------------------|---------|------------------------|-------------|
| | Teacher-reported peer victimization | | | |
| | Model of entry | | Final model | |
| | <i>B</i> (<i>SE</i>) | β | <i>B</i> (<i>SE</i>) | β |
| Step 1: Auto-regressive effects | | | | |
| T1 Depress | .65(.10) | .54*** | .59(.10) | .47*** |
| R^2 | | | | .29 |
| Step 2: Control | | | | |
| T1 Grade | -.07(.05) | -.13 | -.06(.04) | -.11 |
| ΔR^2 | | | | 2.2% |
| Step 3: Main effects (predictor) | | | | |
| Peer victimization | .05(.04) | .13 | .16(.05) | .41*** |
| ΔR^2 | | | | 1% |
| Step 4: Main effects (personal orientations) | | | | |
| Popularity orientation | -.04(.04) | -.11 | -.02(.04) | -.06 |
| Affiliation orientation | .06(.04) | .13 | .08(.03) | .17* |
| Academic orientation | -.05(.03) | -.15 | -.04(.03) | -.12 |
| Activity orientation | .04(.04) | .06 | .01(.04) | .03 |
| ΔR^2 | | | | 5.6% |
| Step 5: Interaction effects | | | | |
| PV x Popularity orientation | | | .01(.07) | .03 |
| PV x Affiliation orientation | | | .19(.08) | .25* |
| PV x Academic orientation | | | -.05(.05) | -.08 |
| PV x Activity orientation | | | -.20(.09) | -.28* |
| ΔR^2 / Total R^2 | | | | 11.6% / .49 |

Note. Depress = Depressive symptoms, PV = Peer victimization, and T1 = Time 1.

* $p < .05$, *** $p < .001$.

Table 8

Predicting T2 Early Adolescent Depressive Symptoms from Parent-reported Peer Victimization and the Interactions of Peer Victimization and Personal Orientations

| | T2 Depressive symptoms | | | |
|--|------------------------------------|-------------------|------------------------|-------------------|
| | Parent-reported peer victimization | | | |
| | Model of entry | | Final model | |
| | <i>B</i> (<i>SE</i>) | β | <i>B</i> (<i>SE</i>) | β |
| Step 1: Auto-regressive effects | | | | |
| T1 Depress | .65(.10) | .54*** | .59(.11) | .46*** |
| R^2 | | | | .29 |
| Step 2: Control | | | | |
| T1 Grade | -.07(.05) | -.13 | -.07(.04) | -.13 ⁺ |
| ΔR^2 | | | | 2.2% |
| Step 3: Main effects (predictor) | | | | |
| Peer victimization | -.01(.03) | -.01 | .11(.05) | .30* |
| ΔR^2 | | | | 0% |
| Step 4: Main effects (personal orientations) | | | | |
| Popularity orientation | -.03(.04) | -.08 | -.06(.05) | -.19 |
| Affiliation orientation | .05(.04) | .11 | .07(.04) | .16* |
| Academic orientation | -.06(.03) | -.15 ⁺ | -.06(.03) | -.16* |
| Activity orientation | .02(.04) | .03 | .02(.04) | .03 |
| ΔR^2 | | | | 4.5% |
| Step 5: Interaction effects | | | | |
| PV x Popularity orientation | | | .05(.06) | .11 |
| PV x Affiliation orientation | | | .14(.06) | .20* |
| PV x Academic orientation | | | -.07(.04) | -.13 |
| PV x Activity orientation | | | -.17(.07) | -.29** |
| ΔR^2 / Total R^2 | | | | 11.9% / .47 |

Note. Depress = Depressive symptoms, PV = Peer victimization, and T1 = Time 1.

⁺ $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 9

Predicting T2 Early Adolescent School Liking from Adolescent-reported Peer Victimization and the Interactions of Peer Victimization and Personal Orientations

| | T2 School liking | | | |
|--|--|---------|------------------------|-------------------|
| | Adolescent-reported peer victimization | | | |
| | Model of entry | | Final model | |
| | <i>B</i> (<i>SE</i>) | β | <i>B</i> (<i>SE</i>) | β |
| Step 1: Auto-regressive effects | | | | |
| T1 School liking | .43(.09) | .44*** | .42(.09) | .42*** |
| R^2 | | | | .19 |
| Step 2: Control | | | | |
| T1 Grade | .47(.17) | .24** | .44(.17) | .23** |
| ΔR^2 | | | | 6.5% |
| Step 3: Main effects (predictor) | | | | |
| Peer victimization | -.10(.10) | -.09 | .12(.14) | .11 |
| ΔR^2 | | | | 1% |
| Step 4: Main effects (personal orientations) | | | | |
| Academic orientation | .09(.10) | .07 | .05(.12) | .04 |
| Activity orientation | -.03(.17) | -.01 | .01(.17) | .01 |
| ΔR^2 | | | | 0% |
| Step 5: Interaction effects | | | | |
| PV x Academic orientation | | | .14(.14) | .09 |
| PV x Activity orientation | | | -.34(.19) | -.22 ⁺ |
| ΔR^2 / Total R^2 | | | | 1.6% / .28 |

Note. PV = Peer victimization and T1 = Time 1.

⁺ $p < .10$, ** $p < .01$, *** $p < .001$.

Table 10

Predicting T2 Early Adolescent School Liking from Teacher-reported Peer Victimization and the Interactions of Peer Victimization and Personal Orientations

| | T2 School liking | | | |
|--|-------------------------------------|---------|------------------------|------------|
| | Teacher-reported peer victimization | | | |
| | Model of entry | | Final model | |
| | <i>B</i> (<i>SE</i>) | β | <i>B</i> (<i>SE</i>) | β |
| Step 1: Auto-regressive effects | | | | |
| T1 School liking | .43(.09) | .44*** | .43(.09) | .44*** |
| R^2 | | | | .19 |
| Step 2: Control | | | | |
| T1 Grade | .47(.17) | .24** | .48(.17) | .24** |
| ΔR^2 | | | | 6.5% |
| Step 3: Main effects (predictor) | | | | |
| Peer victimization | -.02(.14) | -.02 | -.06(.18) | -.04 |
| ΔR^2 | | | | 0% |
| Step 4: Main effects (personal orientations) | | | | |
| Academic orientation | .12(.11) | .09 | .10(.12) | .08 |
| Activity orientation | .003(.18) | .002 | .01(.18) | .01 |
| ΔR^2 | | | | 1% |
| Step 5: Interaction effects | | | | |
| PV x Academic orientation | | | -.16(.22) | -.07 |
| PV x Activity orientation | | | .24(.30) | .10 |
| ΔR^2 / Total R^2 | | | | 1.6% / .28 |

Note. PV = Peer victimization and T1 = Time 1.

** $p < .01$, *** $p < .001$.

Table 11

Predicting T2 Early Adolescent School Liking from Parent-reported Peer Victimization and the Interactions of Peer Victimization and Personal Orientations

| | T2 School liking | | | |
|--|------------------------------------|---------|------------------------|---------|
| | Parent-reported peer victimization | | | |
| | Model of entry | | Final model | |
| | <i>B</i> (<i>SE</i>) | β | <i>B</i> (<i>SE</i>) | β |
| Step 1: Auto-regressive effects | | | | |
| T1 School liking | .43(.09) | .44*** | .43(.09) | .43*** |
| R^2 | .19 | | | |
| Step 2: Control | | | | |
| T1 Grade | .47(.17) | .24** | .50(.17) | .25** |
| ΔR^2 | 6.5% | | | |
| Step 3: Main effects (predictor) | | | | |
| Peer victimization | .15(.13) | .11 | .13(.16) | .09 |
| ΔR^2 | .5% | | | |
| Step 4: Main effects (personal orientations) | | | | |
| Academic orientation | .12(.12) | .001 | .14(.12) | .10 |
| Activity orientation | 0.0(.17) | .26 | .02(.17) | .01 |
| ΔR^2 | .4% | | | |
| Step 5: Interaction effects | | | | |
| PV x Academic orientation | | | .34(.16) | .18* |
| PV x Activity orientation | | | .07(.24) | .03 |
| ΔR^2 / Total R^2 | | | 3.9% / .30 | |

Note. PV = Peer victimization and T1 = Time 1.

* $p < .05$, *** $p < .001$.

Figures

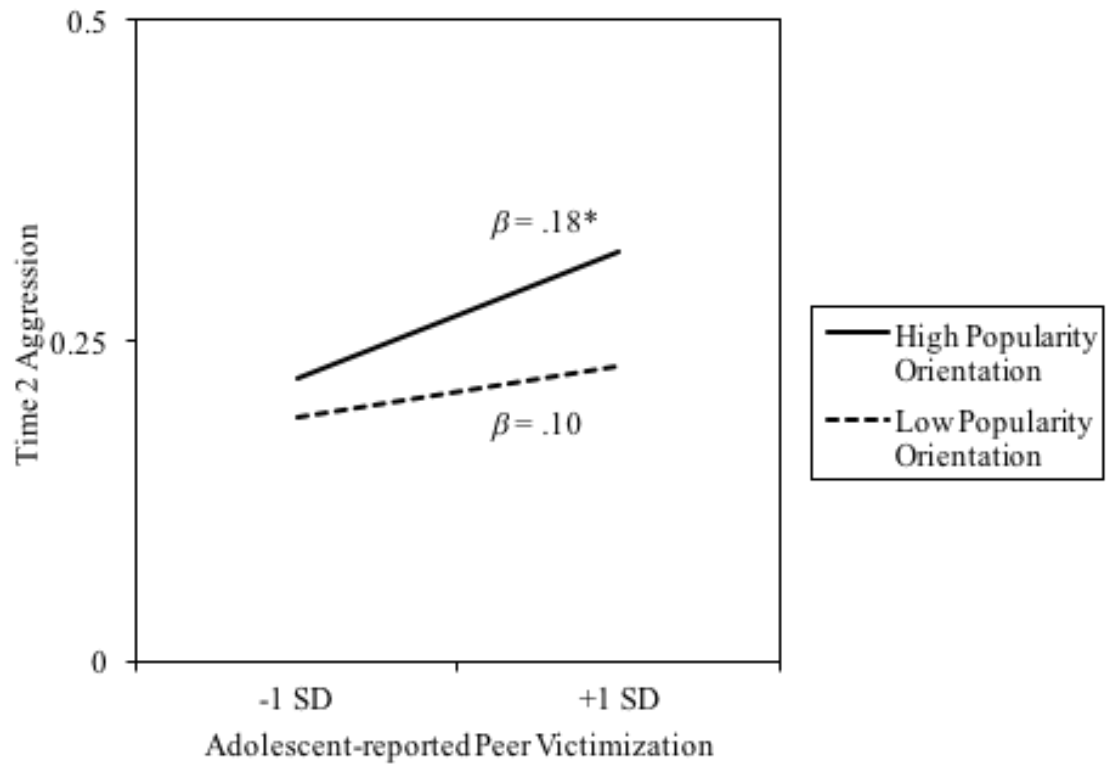


Figure 1. Associations between T1 adolescent-reported peer victimization and T2 parent-reported aggression at lower (-1 SD) and higher (+1 SD) levels of adolescent-reported popularity orientation.

* $p < .05$

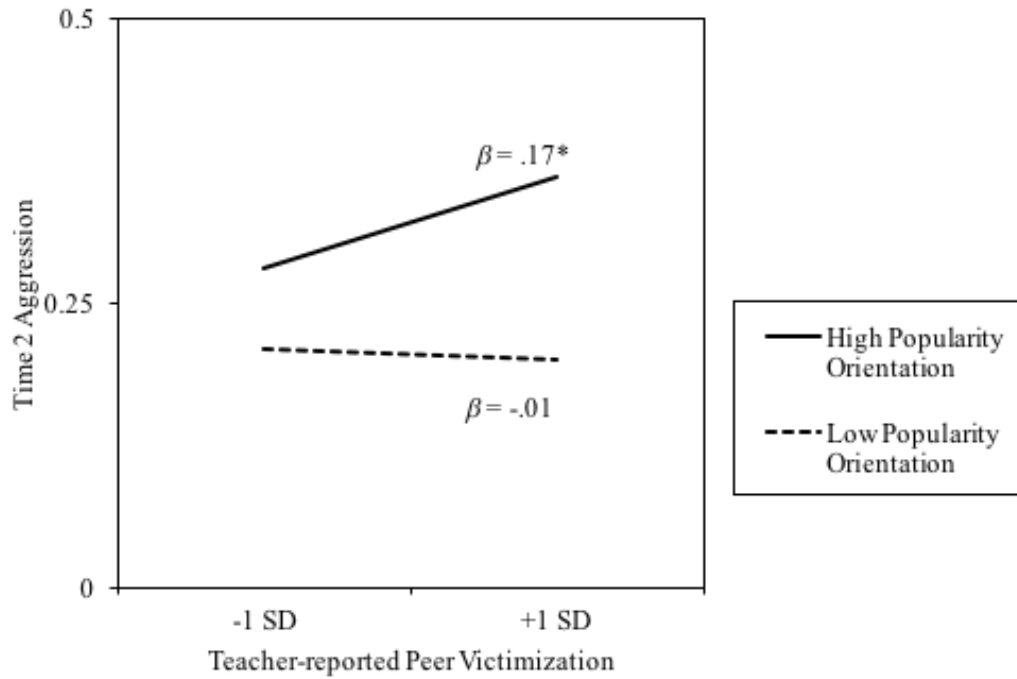


Figure 2. Associations between T1 teacher-reported peer victimization and T2 parent-reported aggression at lower (-1 SD) and higher (+1 SD) levels of adolescent-reported popularity orientation.

* $p < .05$

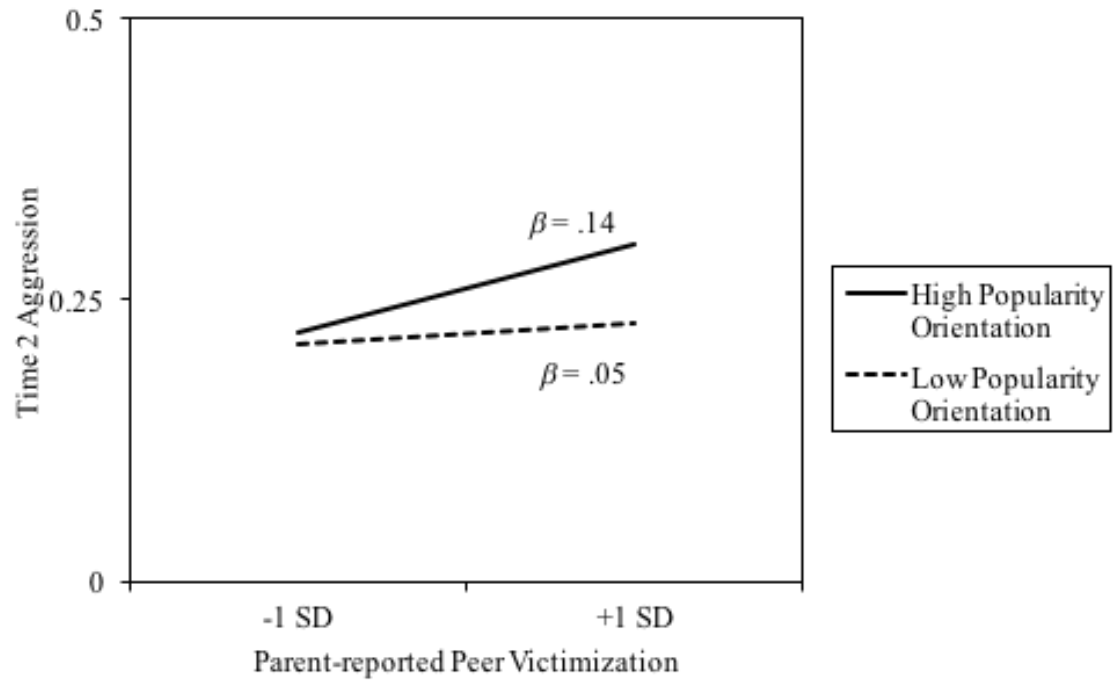


Figure 3. Associations between T1 parent-reported peer victimization and T2 parent-reported aggression at lower (-1 SD) and higher (+1 SD) levels of adolescent-reported popularity orientation.

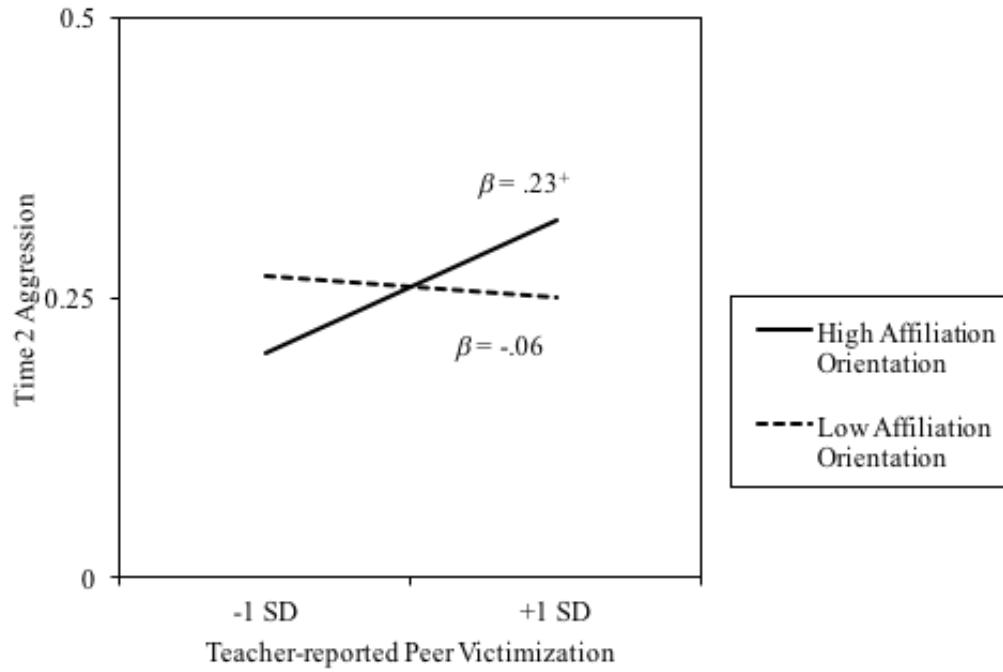


Figure 4. Associations between T1 teacher-reported peer victimization and T2 parent-reported aggression at lower (-1 SD) and higher (+1 SD) levels of parent-reported affiliation orientation.

⁺ $p < .10$

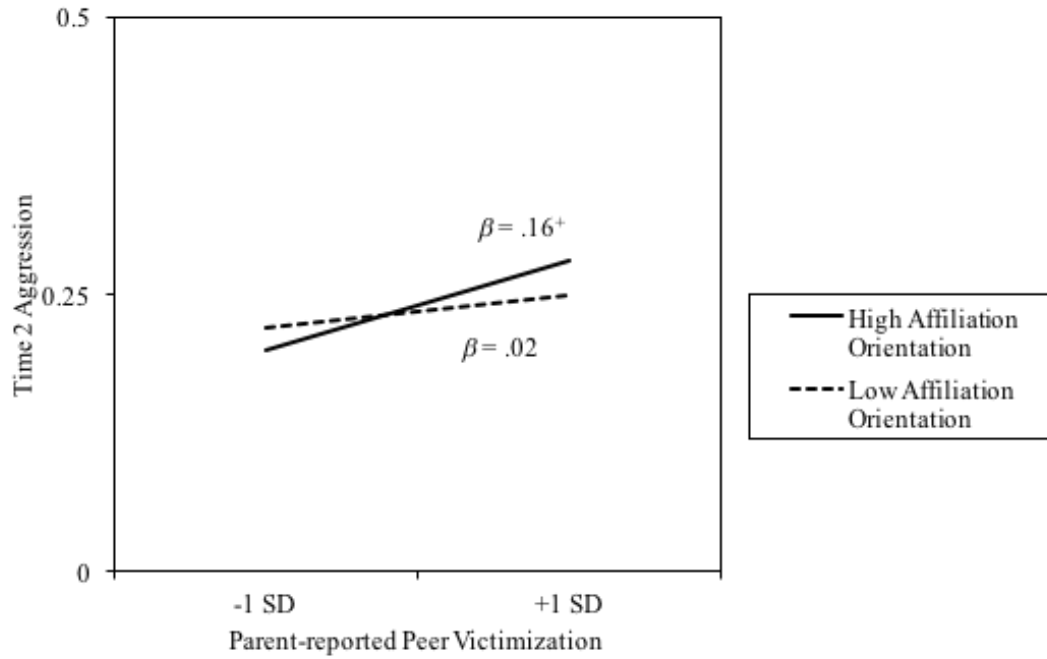


Figure 5. Associations between T1 parent-reported peer victimization and T2 parent-reported aggression at lower (-1 SD) and higher (+1 SD) levels of parent-reported affiliation orientation.

⁺ $p < .10$

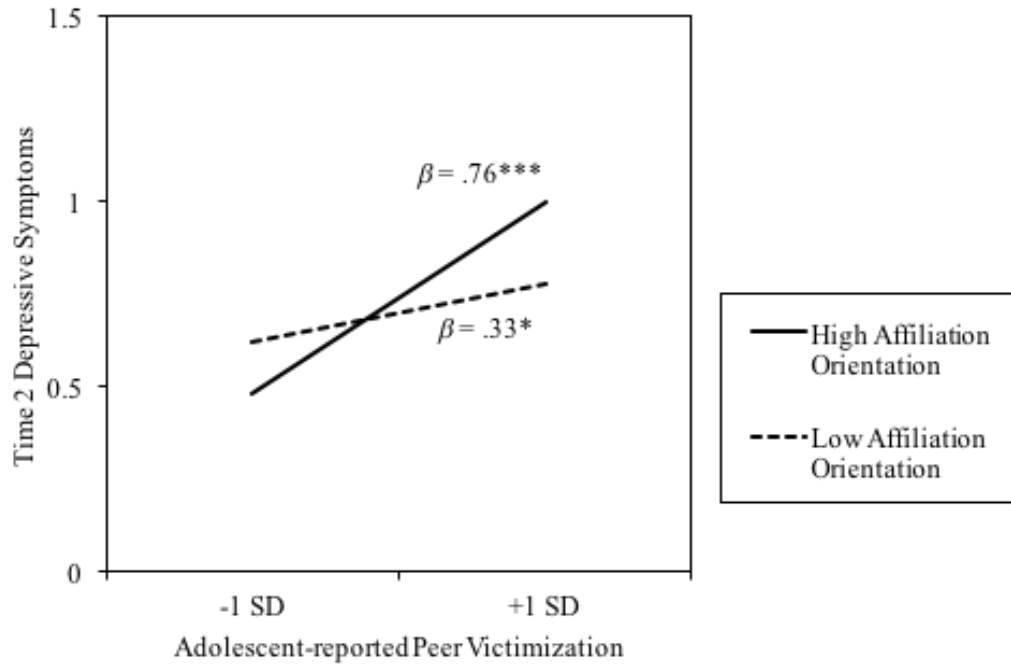


Figure 6. Associations between T1 adolescent-reported peer victimization and T2 adolescent-reported depressive symptoms at lower (-1 SD) and higher (+1 SD) levels of parent-reported affiliation orientation.

*** $p < .001$, * $p < .05$

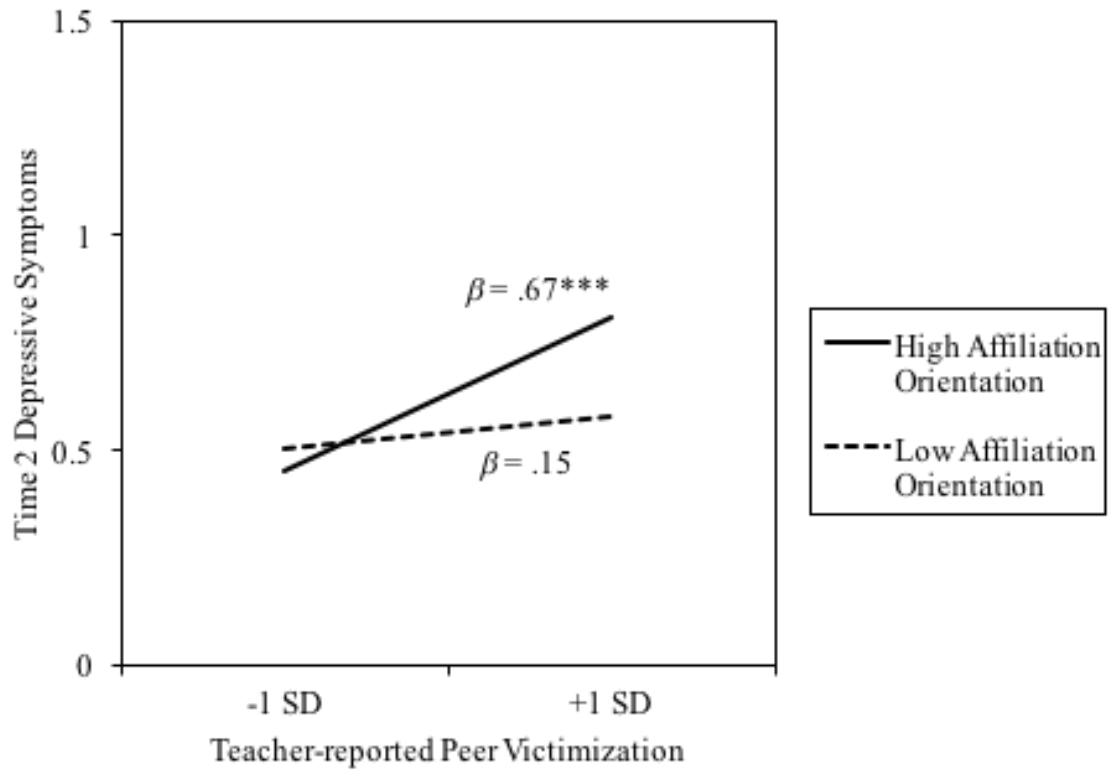


Figure 7. Associations between T1 teacher-reported peer victimization and T2 adolescent-reported depressive symptoms at lower (-1 SD) and higher (+1 SD) levels of parent-reported affiliation orientation.

*** $p < .001$

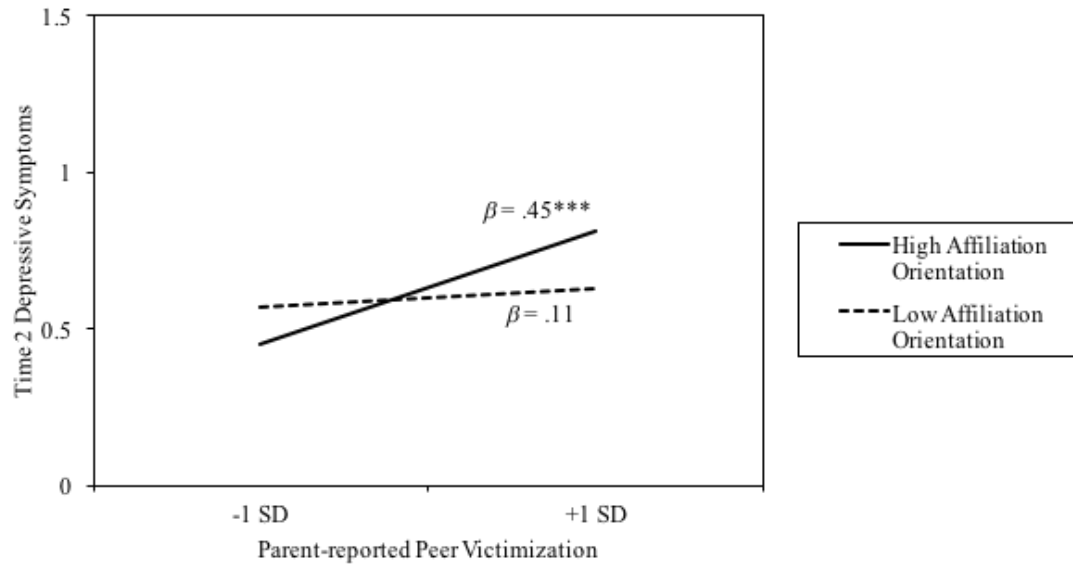


Figure 8. Associations between T1 parent-reported peer victimization and T2 adolescent-reported depressive symptoms at lower (-1 SD) and higher (+1 SD) levels of parent-reported affiliation orientation.

*** $p < .001$

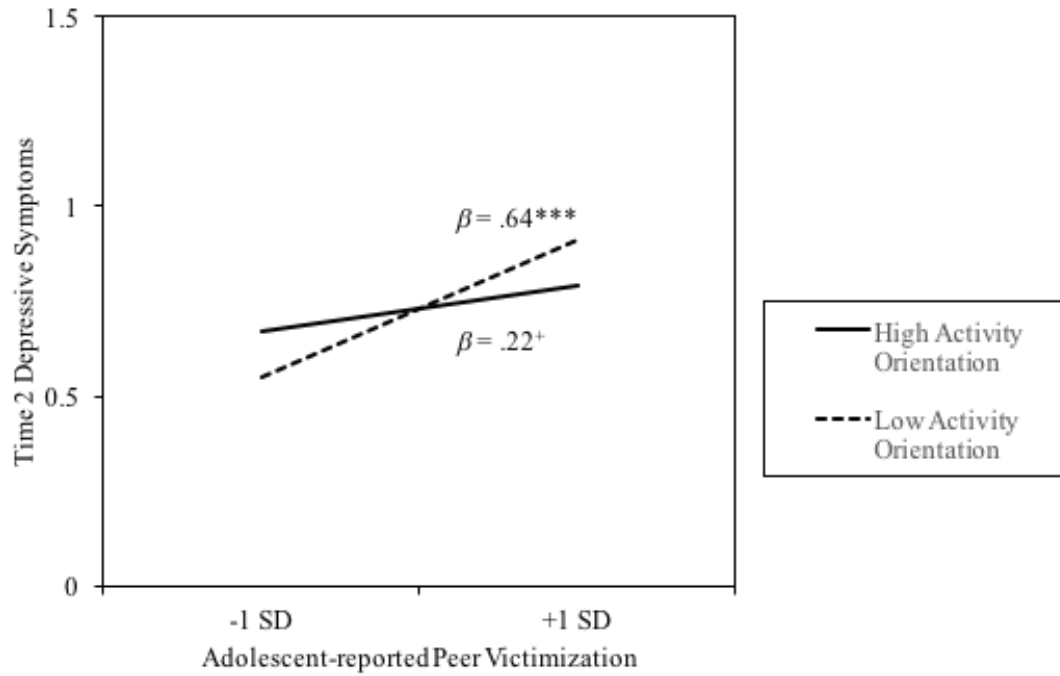


Figure 9. Associations between T1 adolescent-reported peer victimization and T2 adolescent-reported depressive symptoms at lower (0) and higher (1) levels of adolescent-reported activity orientation.
 *** $p < .001$, $^+p < .10$

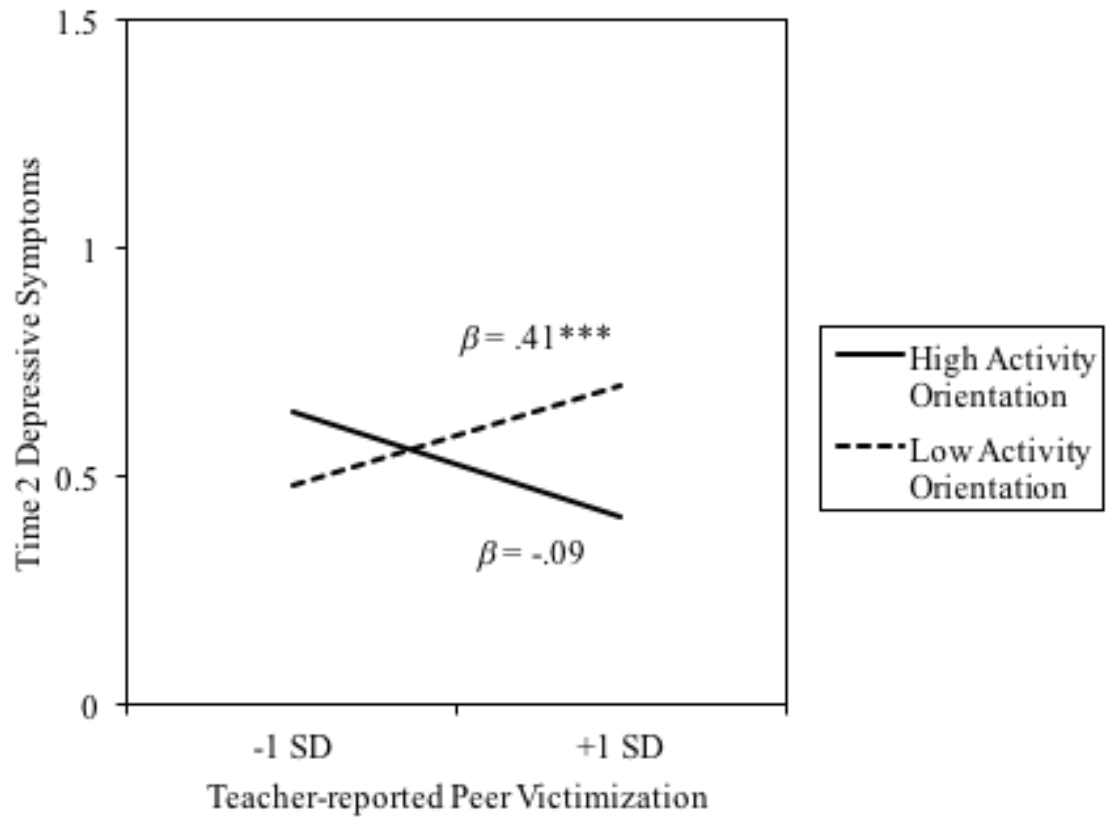


Figure 10. Associations between T1 teacher-reported peer victimization and T2 adolescent-reported depressive symptoms at lower (0) and higher (1) levels of adolescent-reported activity orientation.

*** $p < .001$

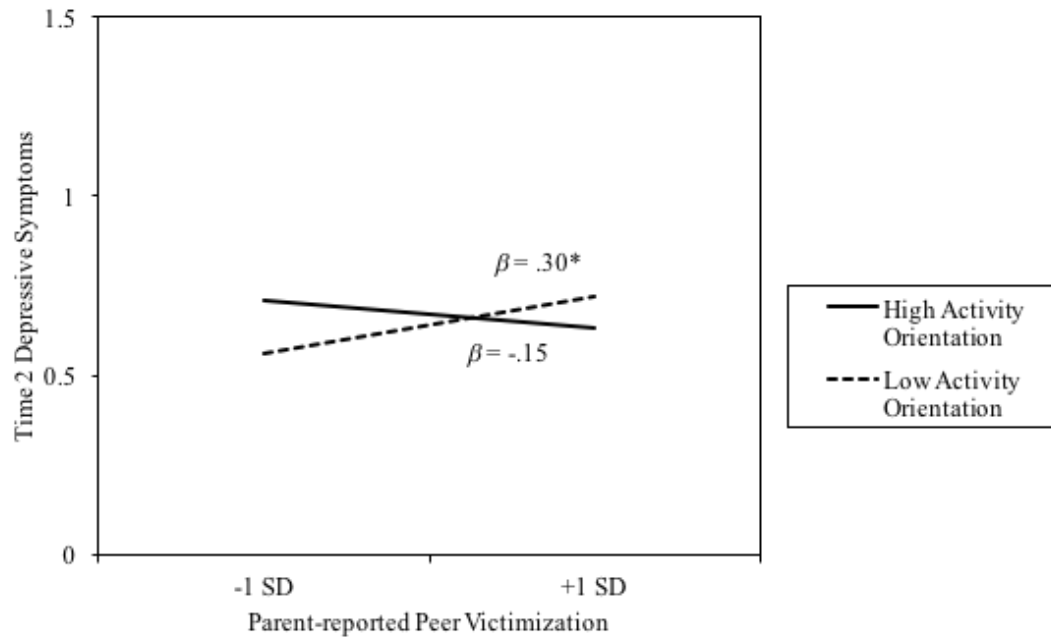


Figure 11. Associations between T1 parent-reported peer victimization and T2 adolescent-reported depressive symptoms at lower (0) and higher (1) levels of adolescent-reported activity orientation.

* $p < .05$

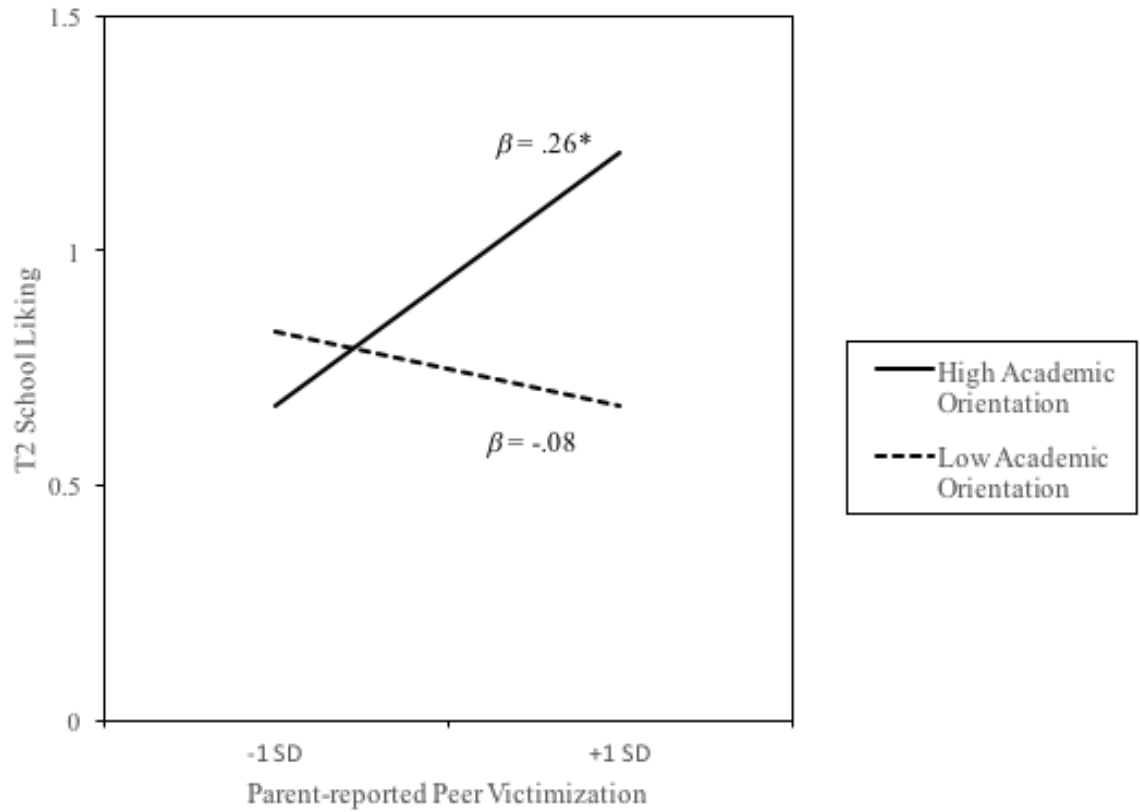


Figure 12. Associations between T1 parent-reported peer victimization and T2 adolescent-reported school liking at lower (-1 SD) and higher (+1 SD) levels of the composite of adolescent-, teacher-, and parent-reported academic orientation.

* $p < .05$

Appendix A

Additional Literature Review

Developmental context of early adolescence

Early adolescence is characterized by many changes in the biological, ecological, and social domains. Biologically, 10-14 year olds are going through puberty which involves changes in both hormones and physical appearance (Craig et al., 2001). This time period is often accompanied by a change in classroom structure, more difficult class work and a larger peer network (Rudolph et al., 2001). Finally, early adolescents also experience changes socially. Oftentimes, there are increased demands at both school and home. The peer group structure may also change because of the transition to middle school, which typically involves a different peer group structure and exposure to a broader group of people (Aikins, Bierman, & Parker 2005; Brown, 1990). Furthermore, early adolescents face several important developmental tasks that characterize success in adolescence including being adjusted in school, achieving academically, getting along with peers, and following rules (Masten & Coatsworth, 1998). Consequently, the developmental tasks are sometimes at odds with the changing structure the transition to middle school provides.

Early adolescence is also marked by a variety of challenges. Firstly, the transition to middle school is accompanied by decreased self-esteem, increased self-consciousness, and the belief that others have negative views of them (Robins et al., 2002; Simmons, Rosenberg, & Rosenberg, 1973). Early adolescents also report increases in internalizing problems such as depressive symptoms and anxiety (Reijntes et al., 2010). Furthermore,

early adolescents tend to have declines in academic performance, school engagement, and attendance (Rudolph et al., 2001).

Despite all of the changes occurring across domains, many early adolescents find life exciting and revel in exploration of identities, making friends, engaging with school, and remaining connected to family (Roeser, Eccles, & Sameroff, 2000). Unfortunately, some early adolescents face additional stressors that influence their adjustment beyond the normative changes of adolescence, such as peer victimization. Due to the prevalence of peer victimization, especially in middle school, it is important to better understand what malleable characteristics and involvement may be able to protect early adolescents from maladjustment.

Peer Victimization and Early Adolescent Adjustment

Although peer victimization can be defined in a variety of ways, it is often defined in broad terms such as experiencing negative treatment from peers (Boivin, Petitclerc, Feng, & Barker, 2010). There are four types of peer victimization commonly used in the literature. Physical victimization (e.g. pushing and kicking) and verbal victimization (e.g. threatening and name calling) comprise overt victimization which is the more direct or confrontational form of victimization (Putaliez et al., 2007). Relational victimization or social victimization is defined as excluding, spreading rumors, or humiliating individuals in the peer group (Griffin & Gross, 2004). Finally, cyber victimization involves using technology to target victims (Smith et al., 2008). It is important to note that bullying is a more specific type of peer victimization characterized by its chronic harassing nature and the use of power (Olweus, 1994).

The World Health Organization collects data on a variety of topics affecting children in the United States and several other countries. Nansel et al. (2001) used this data to measure the prevalence of bullying in the United States. A nationally representative survey of both public and private schools in the US involved 15,686 students. Results revealed about 10% of people reported being chronically bullied. Furthermore, also using the Health Behavior in School-Aged Children data, Chester et al. (2015) found that in the United States being bullied once or more in the past couple of months in 2010 was at 28.4% for males and 27.4% for females. Additionally, children in grades six through eight reported the highest levels of victimization (Nansel et al., 2001) which is congruent with other research suggesting peer victimization peaks between ages 12 and 14 and declines through adolescence (Arseneault, Bowes, & Shakoor, 2010).

Experiencing peer victimization has many adverse consequences for children including increased externalizing problems such as aggression (Reijntjes et al., 2011) internalizing problems such as depressive symptoms (Reijntjes, Kamphuis, Prinzie, & Telch, 2010), and problems with school performance, adjustment, and attendance (Nakamoto & Schwartz, 2010; Wang, Ionotti, & Luk, 2011). Additionally, children and adolescents who encounter peer victimization show increases in fear of negative evaluation, social avoidance, loneliness (Storch & Masia-Warner, 2006), substance use (Tharp-Taylor, Haviland, & D'Amico, 2009), delinquent behaviors (Sullivan, Farrell, & Kliewer, 2006), and increased risk for psychosomatic problems (Gini & Pozzoli, 2009). For many youth, peer victimization is reported as stable over time (Gini & Pozzoli, 2009) indicating the importance of detecting and addressing the problem early, as well as understanding factors that increase risk of or provide protection from negative outcomes.

The negative consequences associated with peer victimization have also been found to persist into adulthood (Lereya, Copeland, Costello, & Wolke, 2015). For example, Wolke, Copeland, Angold and Costello (2013) studied the association between peer victimization in childhood and adult outcomes of health, wealth, and social relationships. Specifically, victims had more psychiatric problems, were more likely to be impoverished, had difficulty keeping jobs, experienced disrupted social relationships and negative social functioning, poorer health, and poorer educational outcomes in adulthood. Moreover, people who experienced chronic victimization showed elevated risk for negative outcomes. Biebl, DaLalla, Davis, Lynch, and Shinn (2011) also found that those children who experienced chronic victimization reported more negative outcomes in late adolescence, including both conduct problems and physical health problems.

Outcomes of Peer Victimization: Aggression, Depressive Symptoms, and School Liking

Aggression is one type of externalizing behavior that victims may exhibit. Aggression is often studied as an outcome of peer victimization beginning in early childhood and throughout adolescence. In very young children (e.g. age three) physical victimization was associated with increases in physical aggression, and relational victimization was associated with increases in relational aggression (Ostrov, 2010). Boivin et al. (2010) investigated the behavioral correlates associated with victimization in children in third through sixth grade. Aggression was highly related to peer victimization. Rusby, Forrester, Biglan, and Metzler (2005) examined peer victimization in fifth through seventh grade and followed those students through high school. Experiencing physical harassment in middle school predicted aggression in high school. Similarly,

Sullivan, Farrell, and Kliewer studied the association between physical and relational victimization and aggression in eighth graders. Physical victimization was related to both physical and relational aggression, while relational victimization was related only to physical aggression.

Reijntjes et al. 2011 conducted a meta-analysis to synthesize the longitudinal research on the connection between victimization and externalizing problems and to expand the understanding of nature of the relation. They used 14 longitudinal studies with 7,821 participants across studies to explore the direction and strength of the association. Peer victimization was found to lead to increases in externalizing problems over time ($r = .14$). Similarly, externalizing problems were also found to lead to increases in peer victimization over time ($r = .13$).

A meta-analysis on the association between peer victimization and internalizing problems found a link between the two (Reijntjes et al., 2010). This meta-analysis utilized 18 longitudinal studies with 13,978 total participants in order to better understand the association between victimization and internalizing problems. Reijntjes et al. (2010) revealed that the association is bidirectional, such that students who are more victimized show increases in internalizing problems over time ($r = 0.18$) and students who have more internalizing problems show increases in victimization over time ($r = 0.08$). Peer victimization was specifically found to increase depressive symptoms (Reijntjes et al., 2010).

Zwierzynska, Wolke, and Lereya conducted a longitudinal study using 3,692 children to examine the relation between peer victimization/bullying and depressive symptoms. Multiple informants were used to obtain reports on bullying from mothers,

teachers and the children themselves. Childhood peer victimization was associated with depressive symptoms across the two years. Additionally, victimization increased the likelihood of scoring in the 90th percentile in depressive symptoms as well as persistence of those high symptoms across time. Similarly, Schwartz, Lansford, Dodge, Pettit, & Bates (2015) also examined the association between childhood peer victimization and internalizing problems but followed youth from age eight through high school graduation. Children who faced peer victimization in childhood were more likely to experience internalizing problems as well as increases in internalizing problems over time. There was also a small association between childhood peer victimization and unipolar depression.

Victimization by peers may also lead students to have poorer academic adjustment. Much of the literature in this area has focused on academic achievement as an outcome variable rather than other measures of school adjustment such as school liking or school attachment. However, a collection of research has been formed to better understand the complex effects peer victimization can have on a variety of academic measures including school liking. Wang, Iannotti, and Luk (2011) found a negative relation between victimization and academic adjustment, which was measured by the students reporting on their school performance compared to others as well as how much they liked school. Students who reported more peer victimization also reported lower academic adjustment, meaning children who are victimized by their peers are more likely to feel as if they are doing poorly compared to their peers and to like school less. Similarly, Wei and Chen (2010) also found that students who were victimized exhibited lower levels of school attachment.

Research in the UK also supports the effects of victimization on school liking. Fifth graders who experienced higher levels of peer victimization during the spring semester of school also reported lower levels of school liking, and for boys there was a decrease in school liking from fall to spring for those children highly victimized (Boulton, Chau, Whitehead, Amaraya, & Murray, 2009). Troop-Gordon and Kuntz (2013) found that school liking decreased across the board for third and fourth graders and that peer victimization was associated with lower school liking.

Moderators of Peer Victimization on Early Adolescent Adjustment

The moderators of peer victimization are also extremely important for better understanding what may protect children from the negative effects of victimization as well as what may put them at risk for increases in internalizing and externalizing problems. Researchers have identified some important moderators, including supportive relationships, responses to stress, and genetics.

Supportive Relationships (Friends, Family, and Teachers)

The rationale for studies that examine supportive relationships as protective factors is that children and adolescents can turn to relationships for support after experiencing victimization, as well as feel connected to others (Averdijk, Eisner, & Ribeaud, 2014). A large body of research has examined how supportive relationships, specifically family, friend, and teacher relationships, act as moderators of peer victimization. Firstly, when examining friendship, the literature in this field is mixed with some research supporting friends as protective (Hodges, Boivin, Vitaro, & Bukowski, 1999), others being unable to find that effect (Averdijk, Eisner, & Ribeaud, 2014), and

still others finding differences in effects across age and gender (Thompson & Leadbeater, 2012).

Social support from parents or teachers appears to have protective effects against peer victimization based on some studies. Using a large cross sectional sample in students ages 11-18, Stadler, Feifel, Rohrman, Vermeiren, and Poustka (2010) analyzed the association between peer victimization and mental health problems as well as whether school support (e.g. teacher) and parental support may be protective for victims. School support was effective in both males and females where those adolescents who had more support at school and were victimized had fewer mental health problems than their victimized peers with less school support. In grades six through ten, Ledwell and King (2015) examined whether the relation between peer victimization and internalizing problems could be attenuated with the moderator of parental communication. Parental communication moderated the effect between victimization and internalizing problems for both boys and girls such that those who were highly victimized but had high levels of parental communication had lower levels of internalizing problems than those with low levels of parental communication. Another longitudinal study examined the association between peer victimization and both mental and behavioral problems in adolescence as well as how parents and teachers may serve as protective factors. Mother support moderated the effects of physical peer victimization on maladjustment such that there was a weaker association between physical peer victimization and maladjustment for those with high levels of mother support. Relatedly, teacher support moderated the effects of relational victimization on both emotional and behavioral problems across time where the association between relational victimization and emotional and behavioral problems

was weaker at high levels of teacher support (Yeung & Leadbeater, 2010). As previously stated, experiences of peer victimization may influence children's liking of school. Troop-Gordon and Kuntz (2013) expanded this area of research by studying teacher student relationship quality as a moderator of peer victimization and school liking. This longitudinal study involved students beginning in third and fourth grade and found a negative relation between peer victimization and school liking. The quality of teacher child relationship moderated this association, such that children who experienced peer victimization but had a high quality relationship with their teacher reported increases in school liking. When the teacher relationship quality was poor, there was a cumulative effect of peer victimization and these kids reported liking school the least. Moreover, Averdijk et al. (2014) revealed warm parenting, positive relationships with teachers, and having siblings were protective against increases in internalizing problems for children exposed to peer victimization.

Sources of support may influence the association between peer victimization and maladjustment differently for males and females, as some research has found differential effects across sex. Thompson and Leadbeater (2012) studied the association between peer victimization and internalizing problems as well as whether friends, mother, or father support would act as protective factors on that relationship. Support from friends exacerbated the internalizing and externalizing problems from physical victimization for females and weakened the association between physical victimization and internalizing problems for males. Mother support weakened the association between peer victimization and negative outcomes for females but not for males, and father support increased the negative effects of peer victimization for boys. When children experienced relational

victimization, supportive friends protected males from internalizing problems and had no influence for females. Additionally, Davidson and Demaray (2007) used a cross sectional sample to test whether teacher, classmate, friend, and school support may protect against internalizing and externalizing problems from victimization. Teacher, classmate, and school support protected against internalizing problems for males, and parent support protected against internalizing problems for both males and females. Peer victimization may influence males and females differently for several reasons. For example, gender socialization is different across males and females, which may indicate that social support works differently across boys and girls (Davidson & Demaray, 2007). In addition, different types of support may be perceived differently across genders, especially parental support (Thompson & Leadbeater, 2012).

Interestingly, several studies have suggested unexpected effects of social support on the association between peer victimization and adjustment. Unexpectedly, for females, classmate support moderated the association between victimization and externalizing problems such that those with more support exhibited increased externalizing problems (Davidson & Demaray, 2007) Similarly, Vassallo, Edwards, Renda, and Olsson (2014) also found an unexpected effect of high peer attachment strengthening the association between peer victimization and depressive symptoms. Moreover, Averdijk, Eisner, and Ribeaud (2014) revealed friendship not to be protective against the effects of peer victimization with no effect on the association. Erath, Flanagan, and Bierman (2008) examined the potential moderating role of friendship support on the association between peer victimization and school adjustment. Interestingly, friendship support moderated the association between peer victimization and school liking such that higher levels of

support led to higher levels of school liking for victimized adolescents. This association may exist because of the types of friends highly victimized peers associate with (e.g. other victimized adolescents) as well as the use of corumination in these friendships (Erath et al., 2008). Another reason friendship may not be protective is due to the superficiality of friendships formed, or because the support provided may not be adequate to deal with peer victimization (Davidson & Demeray, 2007).

Responses to Stress

The rationale for studies guided by the responses to stress framework is that children's involuntary (e.g., physiological) and voluntary (e.g., coping) responses to peer victimization shape its effects on behavioral and psychological adjustment (Connor-Smith, Compas, & Wadsworth, 2000; Compas et al., 2001). For example, electrodermal reactivity to peer stress moderated the effects of peer victimization, such that peer victimization predicted aggressive behaviors and depressive symptoms more strongly among early adolescents with relatively low electrodermal reactivity, which may reflect low inhibitory control over responses to peer victimization (Erath, Su, & Tu, 2016; Gregson, Tu, & Erath, 2014). Rudolph, Troop-Gordon, and Granger (2011) aimed to understand how cortisol influenced the relation between peer victimization and depressive symptoms. Cortisol interacted such that children who experienced elevated victimization and had higher anticipatory cortisol had increases in depressive symptoms but children who were not victimized and displayed higher anticipatory cortisol were protected against depressive symptoms. Tu, Erath, and El-Sheikh (2015) examined objective and subjective measures of sleep as moderating the association between peer victimization and internalizing and externalizing behaviors. Overall, youth who had the

best sleep and experienced no peer victimization had the fewest internalizing and externalizing problems. For self-reported sleep/wake problems, youth who had more sleep problems and higher levels of peer victimization had the highest levels of internalizing symptoms.

Examining voluntary responses to stress, Cooley and Fite (2016) studied how coping with negative emotions moderated the association between peer victimization and maladjustment for adolescents. Children who were better able to manage their anger exhibited less physical aggression in the face of peer victimization, potentially because under-controlled cognitive and behavioral responses such as retaliation and revenge are associated with increased aggression (Dirks et al., 2014; Kochenderfer-Ladd, 2004). Perren, Etekal, and Ladd (2013) revealed that among early adolescents who report higher levels of self-blame attributions, peer victimization had a stronger association with increased internalizing symptoms. Sugimura and Rudolph (2012) examined the moderating effect of temperament in the relation between peer victimization and aggression and depressive symptoms. For girls, overt victimization was related to overt aggression only when they scored low on inhibitory control. Also, both overt and relational victimization were related to depressive symptoms only for girls who scored high on negative emotionality. For boys, relational victimization was related to depressive symptoms when they were low in negative emotionality.

Genetic

With scientific advances allowing more complex data collection of genetic risk for maladjustment, research has begun to examine what genetic contributions may protect or exacerbate the effects of peer victimization on adjustment for children and adolescents.

Brendgen et al. (2008) utilized a large twin sample to determine if there is a gene by environment contribution to the relation between peer victimization and aggression. For girls, a gene environment interaction was found for the association between victimization and aggression such that victimized girls who had a high genetic risk for aggressive behavior showed high levels of aggression while those without the genetic vulnerability did not. (Brendgen et al., 2008). Benjet, Thompson, & Gorlib (2010) examined whether a polymorphism of the 5-HTTLPR (homozygous for the short allele) gene interacted with relational peer victimization to predict depressive symptoms for girls. Girls with the polymorphism who also experienced relational victimization had higher levels of depressive symptoms. DiLalla, Bersted, and John (2015) also focused on genetics, specifically the DRD4 gene. Children who had the DRD4-7 repeat allele and no verbal victimization had lower levels of externalizing behaviors while those who experienced verbal victimization had the highest levels of externalizing behaviors.

Appendix B

References in Literature Review

- Aikin, J. W., Bierman, K. L., & Parker, J. G. (2005). Navigating the transition to junior high school: The influence of pre-transition friendship and self-system characteristics. *Social Development, 14*, 42-60. doi:10.1111/j.1467-9507.2005.00290.x
- Arseneault, L., Bowes, L., & Shakoor, S. (2010). Bullying victimization in youths and mental health problems: 'Much ado about nothing'?. *Psychological Medicine, 40*(5), 717-729. doi:10.1017/S0033291709991383
- Averdijk, M., Eisner, M., & Ribeaud, D. (2014). Do social relationships protect victimized children against internalizing problems?. *Journal of School Violence, 13*(1), 80-99. doi:10.1080/153882220.2013.842175
- Benjet, C., Thompson, R. J., & Gorlib, I. H. (2010). 5-HTTLPR moderates the effect of relational peer victimization on depressive symptoms in adolescent girls. *Journal of Child Psychology and Psychiatry, 51*(2), 173-179. doi:10.1111/j.1469-7610.2009.02149.x
- Biebl, S. J., DiLalla, L. F., Davis, E. K., Lynch, K. A., & Shinn, S. O. (2011). Longitudinal associations among peer victimization and physical and mental health problems. *Journal of Pediatric Psychology, 36*(8), 868-877. doi:10.1093/jpepsy/jsr025
- Boivin, M., Petitclerc, A., Feng, B., & Barker, E. D. (2010). The developmental trajectories of peer victimization in middle to late childhood and the changing

nature of their behavioral correlates. *Merrill-Palmer Quarterly*, 56(3), 231-260.
doi:10.1353/mpq.0.0050

Boulton, M. J., Chau, C., Whitehand, C., Amataya, K., & Murray, L. (2009). Concurrent and short-term longitudinal associations between peer victimization and school and recess liking during middle school. *British Journal of Educational Psychology*, 79(2), 207-221. doi:10.1348/000709908X336131

Brendgen, M., Boivin, M., Vitaro, F., Girard, A., Dionne, G., & Perusse, D. (2008). Gene-environment interaction between peer victimization and child aggression. *Development and Psychopathology*, 20(2), 455-471.
doi:10.1017/S095457908000229

Brown, B. B. (1990). Peer groups and peer cultures. In S. S. Feldman & G. R. Elliot, (Eds.), *At the threshold: The developing adolescent* (pp. 171-196). Cambridge, MA: Harvard University Press.

Chester, K. L., Callaghan, M., Cosma, A., Donnelly, P., Craig, W., Walsh, S., & Molcho, M. (2015). *European Journal of Public Health*, 25(2), 61-64.
doi:10.1093/eurpub/ckv029

Compas, B. E., Connor-Smith, J. K., Saltzman, H., Thomsen, A. H., & Wadsworth, M. E. (2001). Coping with stress during childhood and adolescence: Problems, progress, and potential in theory and research. *Psychological Bulletin*, 127(1), 87-127.
doi:10.1037//0033-2909.127.1.87

Connor-Smith, J. K. Compas, B. E. Wadsworth, M. E., Thomsen, A. H., & Saltzman, H. (2000). Responses to stress in adolescence: Measurement of coping and

- involuntary stress responses. *Journal of Consulting and Clinical Psychology*, 68(6), 976-992. doi:1037//0022-006X.68.6.976
- Cooley, J. L., & Fite, P. J. (2016). Peer victimization and forms of aggression during middle childhood: The role of emotion regulation. *Journal of Abnormal Child Psychology*, 44(3), 535-546. doi:10/1007/s10802-015-0051-6
- Craig, W. M., Pepler, D., Connolly, J., & Henderson, K. (2001). Developmental context of peer harassment in early adolescence: The role of puberty and the peer group. In Juvonen, J., & Graham, S., Peer harassment in school: The plight of the vulnerable and victimized, (242-261), New York, NY: The Guilford Press.
- Davidson, L. M., & Demaray, M. K. (2007). Social support as a moderator between victimization and internalizing-externalizing distress from bullying. *School Psychology Review*, 36(3), 383-405.
- DiLalla, L. F., Bersted, K., & John, S. G. (2015). Peer victimization and DRD4 genotype influence problem behaviors in young children. *Journal of Youth Adolescence*, 44(8), 1478-1493. doi:10.1007/s10964-015-0282-4
- Dirks, M. A., Suor, J. H., Rusch, D., & Frazier, S. L. (2014). Children's responses to hypothetical provocation by peers: Coordination of assertive and aggressive strategies. *Journal of Abnormal Child Psychology*, 42(7), 1077-1087. doi:10.1007/s10802-014-9862-0
- Erath, S. A. Flanagan, K. S., & Bierman, K. L. (2008) Early adolescent school adjustment: Associations with friendship and peer victimization. *Social Development*, 17(4), 853-870. doi:10.1111/j.1467-9507.2008.00458.x

- Erath, S. A., Su, S., & Tu, K. M. (*in press*). Electrodermal reactivity moderates the prospective association between peer victimization and depressive symptoms in early adolescence. *Journal of Clinical Child & Adolescent Psychology*, 1-12. doi:10.1080/15374416.2016.1197838
- Gini, G., & Pozzoli, T. (2009). Association between bullying and psychosomatic problems: A meta-analysis. *Pediatrics*, 123(3), 1059-1065. doi:10.1542/peds.2008-1215
- Gregson, K. D., Tu, K. M., & Erath, S. A. (2014). Sweating under pressure: Skin conductance level reactivity moderates the association between peer victimization and externalizing behavior. *The Journal of Child Psychology and Psychiatry*, 55(1), 22-30. doi:10.1111/jcpp.12086
- Griffin, R. S., & Gross, A. M. (2004). Childhood bullying: Current empirical findings and future directions for research. *Aggression and Violent Behavior*, 9(4), 379-400. doi:10.1016/S1359-1789(03)00033-8
- Hodges, E. V. E., Boivin, M., Vitaro, F., & Bukowski, W. M. (1999). Friendship: Protection against an escalating cycle of peer victimization. *Developmental Psychology*, 35(1), 94-101. doi:10.1037/0012-1649.35.1.94
- Kochenderfer-Ladd, B. (2004). Peer victimization: The role of emotions in adaptive and maladaptive coping. *Social Development*, 13(3), 329-349. doi:10.1111/j.1467-9507.2004.00271.x
- Ladd, G. W., & Kochenderfer-Ladd, B. (2002). Identifying victims of peer aggression from early to middle childhood: Analysis of cross-informant data for concordance, estimation of relational adjustment, prevalence of victimization, and

- characteristics of identified victims. *Psychological Assessment*, 14(1), 74-96.
doi:10.1037//1040-3590.14.1.74
- Ledwell, M., & King, V. (2015). Bullying and internalizing problems: Gender differences and the buffering role of parental communication. *Journal of Family Issues*, 36(5), 543-566. doi:10.1177/0192513X13491410
- Lereya, S. T., Copeland, W. E., Costello, E. J., & Wolke, D. (2015). Adult mental health consequences of peer bullying and maltreatment in childhood: Two cohorts in two countries. *Lancet Psychiatry*, 2(6), 524-531. doi:10.1016/S2215-0366(15)00165-0
- Masten, A. S., & Coatsworth, J. D. (1998). The development of competence in favorable and unfavorable environments. *American Psychologist*, 53(2), 205-220.
doi:10.1037/0003-066X.53.2.205
- Nakamoto, J., & Schwartz, D. (2010). Is peer victimization associated with academic achievement? A meta-analytic review. *Social Development*, 19(2), 221-242.
doi:10.1111/j.1467-9507.2009.00539.x
- Nansel, T. R., Overbeck, M., Pilla, R. S., Ruan, W. J., Simon-Morton, B., & Scheidt, P. (2001). Bullying behaviors among US youth: Prevalence and association with psychosocial adjustment. *Journal of the American Medical Association*, 285(16), 2094-2100. doi:10.1001/jama.285.16.2094
- Olweus, D. (1994). Bullying at school: Basic facts and effects of a school based intervention. *The Journal of Child Psychology and Psychiatry*, 35(7), 1171-1190.
doi:10.1111/j.1469-7610.1994.tb01229.x
- Ostrov, J. M. (2010). Prospective associations between peer victimization and aggression. *Child Development*, 81(6), 1670-1677. doi:10.1111/j.1467-8624.2010.01501.x

- Perren, S., Ettekal, I., & Ladd, G. (2013). The impact of peer victimization on later maladjustment: Mediating and moderating effects of hostile and self-blaming attributions. *The Journal of Child Psychology and Psychiatry*, *54*(1), 46-55. doi:10.1111/j.1469-7610.2012.02618.x
- Reijntjes, A., Kamphuis, J. H., Prinzie, P., Boelen, P. A., Van der Schoot, M., & Telch, M. J. (2011). Prospective linkages between peer victimization and externalizing problems in children: A meta-analysis. *Aggressive Behavior*, *37*(3), 215-222. doi:10.1002/ab.20374
- Reijntjes, A., Kamphuis, J. H., Prinzie, P., & Telch, M. J. (2010). Peer victimization and internalizing problems in children: A meta-analysis of longitudinal studies. *Child Abuse & Neglect*, *34*(4), 244-252. doi:10.1016/j.chiabu.2009.07.009
- Robins, R. W., Trzesniewski, K. H., Tracy, J. L., Gosling, S. D., & Potter, J. (2002). Global self-esteem across the lifespan. *Psychology and Aging*, *17*(3), 423-434. doi:10.1037/0882-7974.17.3.423
- Roeser, R. W., Eccles, J. S., & Sameroff, A. J. (2000). School as a context of early adolescents' academic and social-emotional development: A summary of research findings. *The Elementary School Journal*, *100*(5), 443-471. doi:0013-5984/2000/10005-0003\$02.00
- Rudolph, K. D., Lambert, S. F., Clark, A. G., & Kurlakowsky, K. D. (2001). Negotiating the transition to middle school: The role of self-regulatory processes. *Child Development*, *73*(3), 929-946. doi:10.1111/1467-8624.00325
- Rudolph, K. D., Troop-Gordon, W., & Granger, D. A. (2011). Individual differences in biological stress responses moderate the contribution of early peer victimization

to subsequent depressive symptoms. *Psychopharmacology*, 214(1), 209-219.
doi:10.1007/s00213-010-1879-7

Rusby, J. C., Forrester, K. K., Biglan, A., & Metzler, C. W. (2005). Relationships between peer harassment and adolescent problem behaviors. *The Journal of Early Adolescence*, 25(4), 453-477. doi:10.1177/0272431605279837

Schwartz, D., Landsford, J. E., Dodge, K. A., Pettit, G. S., & Bates, J. E. (2015). Peer victimization during middle childhood as a lead indicator of internalizing problems and diagnostic outcomes in late adolescence. *Journal of Clinical Child & Adolescent Psychology*, 44(3), 393-404. doi:10.1080/15374416.2014.881293

Simmons, R. G., Rosenberg, F., & Rosenberg, M. (1973). Disturbance in the self-image at adolescence. *American Sociological Review*, 38(5), 553-568.

Smith, P. K., Mahdavi, J., Carvalho, M., Fisher, S., Russell, S., & Tippett, N. (2008). Cyberbullying: Its nature and impact in secondary schools. *The Journal of Child Psychology and Psychiatry*, 49(4), 376-385. doi:10.1111/j.1469-7610.2007.01846.x

Stadler, C., Feifel, J., Rohrmann, S., Vermeiren, R., & Poutska, F. (2010). Peer victimization and mental health problems in adolescents: Are parental and school support protective?. *Child Psychiatry & Human Development*, 41(4), 371-386. doi:10.1007/s10578-010-0174-5

Storch, E. A., & Masia-Warner, C. (2004). The relationship of peer victimization to social anxiety and loneliness in adolescent females. *Journal of Adolescence*, 27(3), 351-362. doi:10.1016/j.adolescence.2004.03.003

Sugimura, N., & Rudolph, K. D. (2012). Temperamental differences in children's

- reactions to peer victimization. *Journal of Clinical Child & Adolescent Psychology*, 41(3), 314-328. doi:10.1080/15374416.2012.656555
- Sullivan, T. N., Farrell, A. D., & Kliewer, W. (2006). Peer victimization in early adolescence: Association between physical and relational victimization and drug use, aggression, and delinquent behaviors among urban middle school students. *Development and Psychopathology*, 18(1), 119-137. doi:10.1017/S095457940606007X
- Tharp-Taylor, S., Haviland, A., & D'Amico, E. J. (2009). Victimization from mental and physical bullying and substance use in early adolescence. *Addictive Behaviors*, 34(6-7), 561-567. doi:10.1016/j.addbeh.2009.03.012
- Thompson, R. S. Y., & Leadbeater, B. J. (2012). Peer victimization and internalizing symptoms from adolescence into young adulthood: Building strength through emotional support. *Journal of Research on Adolescence*, 23(2), 290-303. doi:10.1111/j.1532-7795.2012.00827.x
- Troop-Gordon, W., & Kuntz, K. J. (2013). The unique and interactive contributions of peer victimization and teacher-child relationships to children's school adjustment. *Journal of Abnormal Child Psychology*, 41(8), 1191-1202. doi:10.1007/s10802-013-9776-2
- Tu, K. M., Erath, S. A., & El-Sheikh, M. J. (2015). Peer victimization and adolescent adjustment: The moderating role of sleep. *Abnormal Child Psychology*, 43(8), 1447-1457. doi:10.1007/s10802-015-0035-6
- Vassallo, S., Edwards, B., Renda, J., & Olsson, C. A. (2014). Bullying in early adolescence and antisocial behavior and depression six years later: What are the

protective factors? *Journal of School Violence*, 13(1), 100-124.

doi:10.1080/15388220.2013.840643

Wang, J., Iannotti, R. J., & Luk, J. W. (2011). Peer victimization and academic adjustment among early adolescents: Moderation by gender and mediation by perceived classmate support. *Journal of School Health*, 81(7), 386-392.

doi:10.1111/j.1746-1561.2011.00606.x

Wei, H.S., & Chen, J.K. (2010). School attachment among Taiwanese adolescents: The roles of individual characteristics, peer relationships, and teacher well-being.

Social Indicators Research, 95(3), 421-436. doi:10.1007/s11205-009-9529-3

Wolke, D., Copeland, W. E., Angold, A., & Costello, E. J. (2013). Impact of bullying in childhood on adult health, wealth, crime, and social outcomes. *Psychological Science*, 24(10), 1958-1970. doi:10.1177/0956797613481608

doi:10.1177/0956797613481608

Yeung, R., & Leadbeater, B. (2010). Adults make a difference: The protective effects of parent and teacher emotional support on emotional and behavioral problems of peer victimized adolescents. *Journal of Community Psychology*, 38(1), 80-98.

doi:10.1002/jcop.20353

Zwierzynska, K., Wolke, D., & Lereya, T. S. (2013). Peer victimization in childhood and internalizing problems in adolescence: A prospective longitudinal study. *Journal of Abnormal Child Psychology*, 41(2), 309-323. doi:10.1007/s10802-012-9678-8

doi:10.1007/s10802-012-9678-8

Appendix C

Measures

Adolescent-Reported Peer Victimization (Social Experiences Questionnaire)

Please answer the following questions about how often you have these experiences at school.

| | Almost never | 1 | 2 | Sometimes | 3 | 4 | Almost always | 5 |
|---|-----------------|---|---|-----------|---|---|------------------|---|
| 1. How often do you get pushed or shoved by other peers at school? | 1 | 2 | 3 | 4 | 5 | | | |
| 2. How often does another peer exclude you when they want to get back at you for something? | 1 | 2 | 3 | 4 | 5 | | | |
| 3. How often does another kid say they won't like you unless you do what they want you to do? | 1 | 2 | 3 | 4 | 5 | | | |
| 4. How often do you get hit by another kid at school? | 1 | 2 | 3 | 4 | 5 | | | |
| 5. How often are you left out on purpose when it's time to do an activity? | 1 | 2 | 3 | 4 | 5 | | | |
| 6. How often have kids told lies about you to make other kids not like you anymore? | 1 | 2 | 3 | 4 | 5 | | | |
| 7. How often have other kids said mean things about you to keep other people from liking you? | 1 | 2 | 3 | 4 | 5 | | | |

Teacher-Reported Peer Victimization (Social Behavior Rating Scale)

For each of the following statements, please circle the number that best applies to this child.

| | Never true | Rarely true | Sometimes true | Usually true | Almost always true |
|---|---------------|----------------|-------------------|-----------------|--------------------------|
| 1. Other children hit or push this child. | 1 | 2 | 3 | 4 | 5 |
| 2. Other children tease or make fun of this child. | 1 | 2 | 3 | 4 | 5 |
| 3. Other children pick on or bully this child. | 1 | 2 | 3 | 4 | 5 |
| 4. Other children gossip or say mean things about this child. | 1 | 2 | 3 | 4 | 5 |
| 5. Other children ignore this child to be mean. | 1 | 2 | 3 | 4 | 5 |
| 6. Other children try to hurt this child's feelings by excluding him/her. | 1 | 2 | 3 | 4 | 5 |

Parent-reported Peer Victimization (Social Experiences Questionnaire)

Please rate the extent to which each description applies to your child's experiences with other children.

| | Never | Sometimes | | | Almost always |
|---|-------|-----------|---|---|---------------|
| 1. My child is picked on by other children. | 0 | 1 | 2 | 3 | 4 |
| 2. My child is called names by other children. | 0 | 1 | 2 | 3 | 4 |
| 3. Other children say negative or mean things about my child to other children. | 0 | 1 | 2 | 3 | 4 |
| 4. My child is teased or made fun of by peers. | 0 | 1 | 2 | 3 | 4 |
| 5. Other children hit or push my child. | 0 | 1 | 2 | 3 | 4 |
| 6. Other children ignore my child to be mean. | 0 | 1 | 2 | 3 | 4 |
| 7. Other children try to hurt my child's feelings by excluding him or her. | 0 | 1 | 2 | 3 | 4 |

Adolescent-Reported Popularity Orientation

There are many potentially important areas of your life, such as getting along with peers, performing well in school, developing talents, skills, hobbies, and many others.

- 1. Compared to other important priorities or goals you may have, how important is it for you to be popular with your peers?**
 - a. Not as important
 - b. About the same importance
 - c. More important
 - d. Much more important
- 2. Compared to other important priorities or goals you may have, how important is it for you to have many friends among your peers?**
 - a. Not as important
 - b. About the same importance
 - c. More important
 - d. Much more important

Parent Reported Affiliation Orientation (Early Adolescent Temperament Questionnaire)

On the following pages you will find a series of statements that people might use to describe their child. The statements refer to a wide number of activities and attitudes.

For each statement, please circle the answer which best describes how true each statement is for your child. There are no best answers. People are very different in how they feel about these statements. Please circle the first answer that comes to you.

| Your son or daughter: | Almost always untrue | Usually untrue | Sometimes true, sometimes untrue | Usually true | Almost always true |
|--|----------------------------|-------------------|---|-----------------|--------------------------|
| 1. Likes taking care of other people. | 1 | 2 | 3 | 4 | 5 |
| 2. Likes to be able to share his/her private thoughts with someone else. | 1 | 2 | 3 | 4 | 5 |
| 3. Would like to be able to spend time with a good friend every day. | 1 | 2 | 3 | 4 | 5 |
| 4. Enjoys exchanging hugs with people s/he likes. | 1 | 2 | 3 | 4 | 5 |
| 5. Wants to have close relationships with other people. | 1 | 2 | 3 | 4 | 5 |
| 6. Is quite a warm and friendly person. | 1 | 2 | 3 | 4 | 5 |

Parent, Teacher, and Adolescent-Reported Academic Orientation (Grades)

Please rate how well you (your child, the student) perform/s in the following subject areas.

| | Failing | Below Average | Average | Above Average | Excellent |
|---------------------------|---------|---------------|---------|---------------|-----------|
| 1. English/Language | | | | | |
| 2. Reading | | | | | |
| 3. Mathematics | | | | | |
| 4. Science | | | | | |
| 5. Social studies/History | | | | | |

Adolescent-Reported Activity Orientation

Please list the hobbies or activities that are most important to you, then circle the word or phrase that indicates how important each activity is to you.

1. _____
How important is this activity to you? Just a little Somewhat Very
Extremely
2. _____
How important is this activity to you? Just a little Somewhat Very
Extremely
3. _____
How important is this activity to you? Just a little Somewhat Very
Extremely

Parent-Reported Aggression (Child Behavior Checklist)

Below is a list of items that describe children and youths. For each item that describes your child **now or within the past 6 months**, please circle the appropriate number. Please answer all items as well as you can, even if some do not seem to apply to your child.

| | Not true (as far as you know) | Somewhat or sometimes true | Very true or Often true |
|--|-------------------------------------|----------------------------------|-------------------------------|
| 1. Argues a lot | 0 | 1 | 2 |
| 2. Cruelty, bullying, or meanness to others | 0 | 1 | 2 |
| 3. Demands a lot of attention | 0 | 1 | 2 |
| 4. Destroys his/her own things | 0 | 1 | 2 |
| 5. Destroys things belonging to his/her family or others | 0 | 1 | 2 |
| 6. Disobedient at home | 0 | 1 | 2 |
| 7. Disobedient at school | 0 | 1 | 2 |
| 8. Gets in many fights | 0 | 1 | 2 |
| 9. Physically attacks people | 0 | 1 | 2 |
| 10. Screams a lot | 0 | 1 | 2 |
| 11. Stubborn, sullen, or irritable | 0 | 1 | 2 |
| 12. Sudden changes in mood or feelings | 0 | 1 | 2 |
| 13. Sulks a lot | 0 | 1 | 2 |
| 14. Suspicious | 0 | 1 | 2 |
| 15. Teases a lot | 0 | 1 | 2 |
| 16. Temper tantrums or hot temper | 0 | 1 | 2 |
| 17. Threatens people | 0 | 1 | 2 |
| 18. Unusually loud | 0 | 1 | 2 |

Adolescent-Reported Depressive Symptoms (Children's Depression Inventory)

For each item, pick out the one sentence that describes you best in the PAST TWO WEEKS.

Item 1

- I am sad once in a while.
- I am sad many times.
- I am sad all the time.

Item 2

- Nothing will ever work out for me.
- I am not sure if things will work out for me.
- Things will work out for me O.K.

Item 3

- I do most things O.K.
- I do many things wrong.
- I do everything wrong.

Item 4

- I have fun in many things.
- I have fun in some things.
- Nothing is fun at all.

Item 5

- I am bad all the time.
- I am bad many times.
- I am bad once in a while.

Item 6

- I think about bad things happening to me once in a while.
- I worry that bad things will happen to me.
- I am sure that terrible things will happen to me.

Item 7

- I hate myself.
- I do not like myself.
- I like myself.

Item 8

- All bad things are my fault.
- Many bad things are my fault.
- Bad things are not usually my fault.

Item 9

- I feel like crying everyday.
- I feel like crying many days.
- I feel like crying once in a while.

Item 10

- Things bother me all the time.
- Things bother me many times.
- Things bother me once in a while.

Item 11

- I like being with people
- I do not like being with people many times.
- I do not want to be with people at all.

Item 12

- I cannot make up my mind about things.
- It is hard to make up my mind about things.
- I make up my mind about things easily.

Item 13

- I look O.K.
- There are some bad things about my looks.
- I look ugly.

Item 14

- I have to push myself all the time to do my schoolwork.
- I have to push myself many times to do my schoolwork.
- Doing schoolwork is not a big problem.

Item 15

- I have trouble sleeping every night.
- I have trouble sleeping many nights.
- I sleep pretty well.

Item 16

- I am tired once in a while.
- I am tired many days.
- I am tired all the time.

Item 17

- Most days I do not feel like eating.
- Many days I do not feel like eating.
- I eat pretty well.

Item 18

- I do not worry about aches and pains.
- I worry about aches and pains many times.
- I worry about aches and pains all the time.

Item 19

- I do not feel alone.
- I feel alone many times.
- I feel alone all the time.

Item 20

- I never have fun at school.
- I have fun at school only once in a while.
- I have fun at school many times.

Item 21

- I have plenty of friends.
- I have some friends but I wish I had more.
- I do not have any friends.

Item 22

- My schoolwork is alright.
- My schoolwork is not as good as before.
- I do very badly in subjects I used to be good in.

Item 23

- I can never be as good as other kids.
- I can be as good as other kids if I want to.
- I am just as good as other kids.

Item 24

- Nobody really loves me.
- I am not sure if anybody loves me.
- I am sure that somebody loves me.

Item 25

- I usually do what I am told.
- I do not do what I am told most times.
- I never do what I am told.

Item 26

- I get along with people.
- I get into fights many times.
- I get into fights all the time.

Adolescent-Reported School Liking (School Liking and Avoidance Questionnaire)

Read each of the following sentences carefully and circle the number that shows how true you think it is for you.

1. I like being in my school

| | | | | |
|-----------------|----------|---------------|-------------|-------------|
| 1 | 2 | 3 | 4 | 5 |
| Not at all true | Not true | Somewhat true | Mostly true | Really true |

2. I wish I could stay home from my school.

| | | | | |
|-----------------|----------|---------------|-------------|-------------|
| 1 | 2 | 3 | 4 | 5 |
| Not at all true | Not true | Somewhat true | Mostly true | Really true |

3. When I get up in the morning, I feel happy about going to my school.

| | | | | |
|-----------------|----------|---------------|-------------|-------------|
| 1 | 2 | 3 | 4 | 5 |
| Not at all true | Not true | Somewhat true | Mostly true | Really true |

4. I wish I could move to another school.

| | | | | |
|-----------------|----------|---------------|-------------|-------------|
| 1 | 2 | 3 | 4 | 5 |
| Not at all true | Not true | Somewhat true | Mostly true | Really true |

5. I would be much happier if I could go to a different school.

| | | | | |
|-----------------|----------|---------------|-------------|-------------|
| 1 | 2 | 3 | 4 | 5 |
| Not at all true | Not true | Somewhat true | Mostly true | Really true |