

Mediating Effects of Social-Cognitive Errors and Skills for Children Experiencing Peer
Relational, Physical and Ethnic Victimization

by

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ABSTRACT

Peer victimization has been linked concurrently and over time with multiple adjustment problems, including depression and anxiety, social withdrawal, and aggression. However, the reasons for these differential outcomes are not well understood. The current study examined individual differences in social-cognitive errors and skills (hostile attributions of peers' ambiguous intent, perspective taking, and interpersonal skills) as mediators of the relation between subtypes of peer victimization (relational, physical, and ethnic or racial discrimination) and self-rated depression and anxiety, teacher-rated withdrawal, and self- and teacher-rated aggression in late childhood. This model was tested with 336 ethnic and racial minority (Aboriginal, East and South East Asian) and European-Caucasian children in grades 6 and 7. Hostile attributions were assessed from hypothetical vignettes of relational provocations (e.g., not receiving an invitation to a party) and instrumental provocations (e.g., a valued possession was broken). Perspective taking was measured as the capacity and tendency to gain insight into peers' thoughts and feelings in conflicts. Interpersonal skills were assessed from self- and teacher-reports of success relating to peers, friendships, and social problem solving skills. Modest support for the mediation hypotheses was found. Findings indicated that similar processes account for some of the multi-finality in victimization. As expected, some specificity in the processes linking subtypes of victimization with adjustment problems was also found. Perspective taking and interpersonal skills partially mediated the association between relational victimization and self-rated depression and anxiety, and reduced to the effect of physical victimization on self-rated aggression (but not significantly). Interpersonal skills

partially mediated the effect of relational victimization on teacher-rated withdrawal. Hostile instrumental attributions and interpersonal partially mediated the relation between physical victimization and teacher-rated aggression. In addition, ethnic victimization contributed to depression and anxiety, but this association did not meet the criteria for mediation. Some gender and ethnic status differences were also found. Importantly, this study contributes to understanding of the processes through which subtypes of victimization elevate risks for differential adjustment problems in late childhood. Findings suggest that programs designed to support victimized children's perspective taking and interpersonal skills may be particularly beneficial for their adjustment, regardless of the subtype of victimization experienced.

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Introduction

Theoretical and empirical advances in the peer victimization literature over the last decade have refined our understanding of the direct costs of peer victimization for multiple adjustment problems in middle and late childhood. For instance, peer victimization has been linked concurrently and over time with internalizing problems (depressive symptoms, anxiety), externalizing problems (aggression), and problematic peer relations (social withdrawal; see Hawker & Boulton, 2000; Kochenderfer-Ladd & Ladd, 2001). However, the power to forecast and prevent specific consequences of peer victimization is limited because the reasons why victimization creates risks for these differential adjustment problems are not well understood. One explanation may lie in the diversity of the victimization acts and a second explanation may relate to the multiplicity of processes by which subtypes of victimization elevate risks for adjustment problems. This dissertation addresses these explanations by examining two phenomena that may explain the multi-finality in peer victimization: 1) the differential costs of subtypes of peer victimization (relational, physical, ethnic or racial discrimination) for depression and anxiety, social withdrawal, and aggression in late childhood; and 2) individual differences in social-cognitive errors and skills (hostile attributions of peers' ambiguous intent, perspective taking, and interpersonal skills) as mediators of these associations.

Defining victimization. Peer victimization refers to the intentional intimidation, discrimination and unfair treatment of a child by one or more of her or his peers, and often occurs in the context of ongoing relationships that children develop among peers (Olweus, 1991). Research has identified two primary forms of victimization. Relational victimization is typified by both direct and indirect acts directed at damaging the victim's

social status and relationships with peers through social exclusion and manipulation of relationships, such as spreading malicious gossip (Björkqvist, Lagerspetz, & Kaukiainen, 1992; Crick & Bigbee, 1998). Physical victimization involves overt and direct actions aimed at causing bodily harm or threats of harm, such as hitting or verbal threats.

Evidence also points to ethnic and racial discrimination as a form of victimization that may be particularly salient for ethnic and racial minority children. Ethnic victimization is characterized by acts that are directed at damaging the victim's feelings toward their ethnic or racial group, such as ethnic or racial insults (Dubois, Burk-Braxton, Swenson, Tevendale, & Hardesty, 2002; Fisher, Wallace, & Fenton, 2000; Moran, Smith, Thompson, & Whitney, 1993).

The implications of these subtypes of victimization for specific adjustment problems are understudied. Research has focused on the consequences of a singular or composite assessment of victimization most often (e.g., Graham & Juvonen, 1998; Hanish & Guerra, 2002; Kochenderfer-Ladd & Wardrop, 2001). These studies have demonstrated multi-finality in the costs of peer victimization (i.e., depression and anxiety or social withdrawal compared with aggression). In the interest of prevention, the specific risks associated with subtypes of victimization and the processes linking subtypes of victimization with specific problems need to be better understood. It is proposed here that (1) subtypes of victimization (relational, physical, and ethnic) are differentially associated with social-cognitive errors and skills (hostile attributions of peers' ambiguous intent, perspective taking, and interpersonal skills), and (2) that subtypes of victimization and individual differences in social-cognitive errors and skills jointly explain the differential

adjustment problems in late childhood. The moderating effects of gender and ethnic and racial status differences are also assessed.

Proposed models. The framework guiding the current study draws from two social-cognitive theories (Crick & Dodge, 1994; Selman, 1980). Victimization by peers provides children with salient information about their fragile status in the peer group and may lead children to become apprehensive or distrustful of peers and develop adjustment problems (e.g., depressive symptoms, aggression). However, subtypes of victimization (e.g., relational, physical) may be differentially linked with these adjustment problems, and there may be diversity in the processes by which subtypes of victimization operate. Models of these differences are shown in Figures 1 and 2.

Relational victimization threatens children's social connections to peers (Crick & Grotpeter, 1996).¹ As shown in Figure 1, children who are relationally victimized may be excessively worried about preserving their relationships and limit behaviors that could jeopardize their peer relationships, such as aggression. In turn, risks for depression and anxiety and withdrawal may be elevated (Erdley & Asher, 1996; Leadbeater, Kuperminc, Blatt, & Hertzog, 1999). Relationally victimized children may infer peers' intent as hostile in ambiguous interactions that are relationally provocative (e.g., not receiving an invitation to a party) but not instrumentally provocative (e.g., a valued possession was broken; Crick, 1995; Crick, Grotpeter, & Bigbee, 2002). Children who are relationally

¹Differential effects of ethnic victimization are not proposed given the limited research linking this phenomenon with adjustment problems in late childhood. The proposed consequences of ethnic victimization are illustrated in both Figures 1 and 2. Ethnic victimization undermines children's connections to the peer group and their feelings about their ethnic or racial group. Findings from Dubois et al. (2002) suggest that ethnic victimization may directly influence depression and anxiety and withdrawal but indirectly affect aggression, particularly for ethnic and racial minority children.

victimized may also exaggerate peers' thoughts and feelings in social interactions because they are highly sensitive to peers' comments and actions and have had few occasions to gain an accurate insight into peers' perspectives (Adalbjarnardottir, 1995; Yeates, Schultz, & Selman, 1991). It is also likely that relationally victimized children are afforded few opportunities to develop the skills needed to interact well with peers, establish friendships, and solve social problems collaboratively because of their social ostracism (Adalbjarnardottir, 1995; Egan & Perry, 1998; Erdley & Asher, 1996). In turn, each of these processes may increase risks for depression and anxiety and withdrawal.

Physical victimization threatens children's power in the peer group, possessions, and physical well-being (Crick & Grotpeter, 1996). As shown in Figure 2, children who are physically victimized may be preoccupied with maintaining dominance, control over possessions or self-protection, and less concerned with preserving social relationships. In turn, risks for aggression may be elevated (Crick & Dodge, 1996; Erdley & Asher, 1996; Leadbeater et al., 1999). Physically victimized children may inaccurately infer hostile intent in ambiguous interactions that are instrumentally but not relationally provocative (Crick et al., 2002). Children who are physically victimized may also exaggerate their own thoughts or feelings and pay little attention to peers' perspectives because they are preoccupied with their own possessions or self-protection and have had few opportunities to accurately gauge peers' thoughts and feelings (Leadbeater, Hellner, Allen, & Aber, 1989; Yeates et al., 1991). Physical victimization may also limit children's opportunities to interact with prosocial peers, gain social acceptance, take on leadership roles, and solve social problems collaboratively (Erdley & Asher, 1996; Yeates et al., 1991). In turn, these processes may elevate risks for aggression.

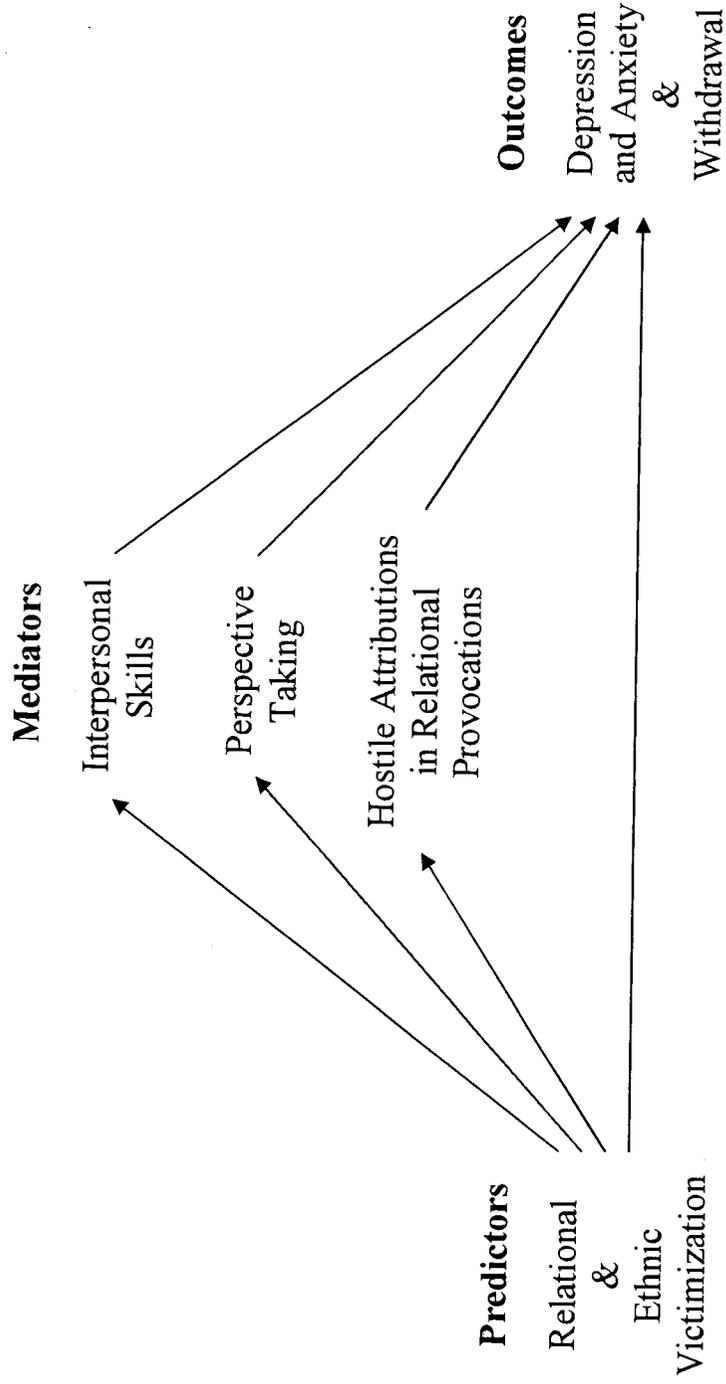


Figure 1. The mediating effects of hostile attributions in relational provocations, perspective taking, and interpersonal skills on the relation between relational and ethnic victimization and depression and anxiety and withdrawal.

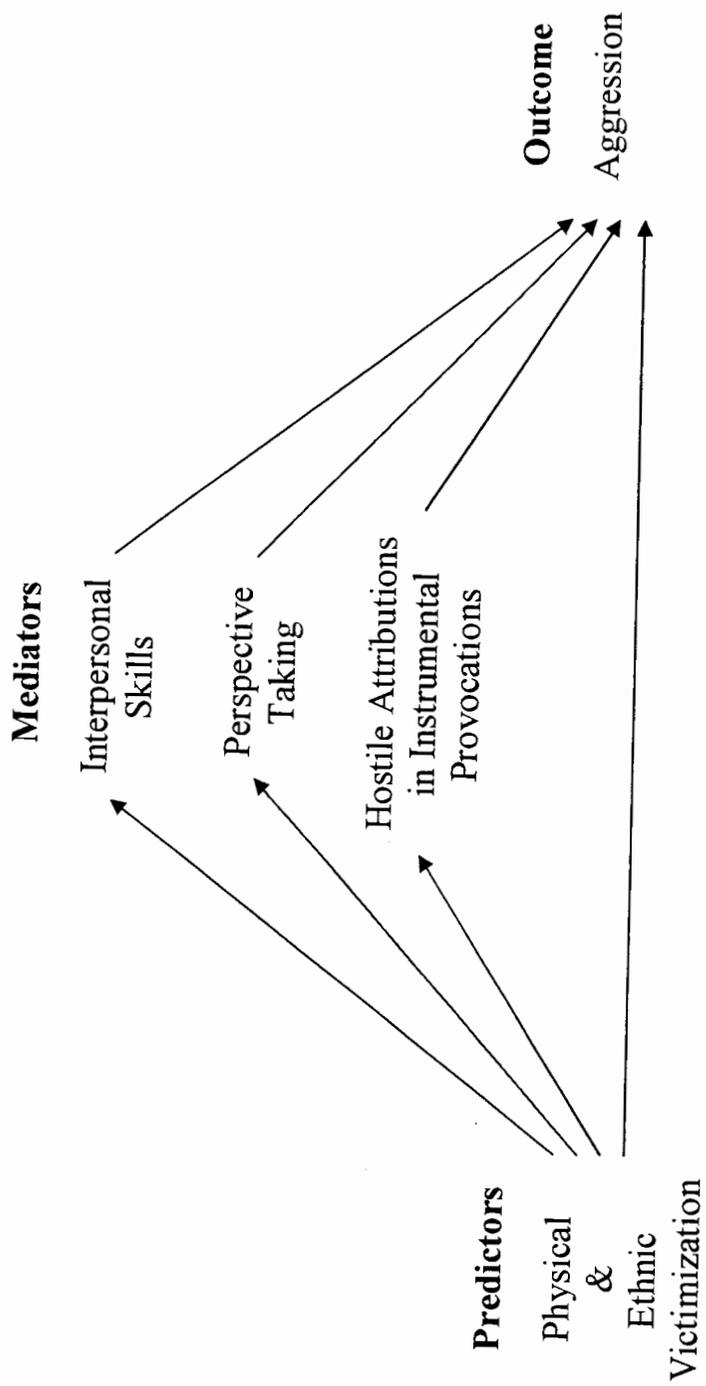


Figure 2. The mediating effects of hostile attributions in instrumental provocations, perspective taking, and interpersonal skills on the relation between physical and ethnic victimization and aggression.

Theoretical and empirical support for Figures 1 and 2 are presented in four sections. First, empirical support for direct links from victimization to depression and anxiety, withdrawal, and aggression is reviewed. Second, social-cognitive theories that guide this study's conceptual framework are outlined. Third, research on hostile attributions of intent, perspective taking, and interpersonal skills is reviewed. Lastly, evidence in support of the mediating models is presented.

The Costs of Peer Victimization for Adjustment Problems

School-based studies report that approximately 10% of children are persistently victimized by peers (Olweus, 1991), with victimization becoming more chronic and targeted at individual children as they approach late childhood (Galen & Underwood, 1997; Kochenderfer-Ladd & Wardrop, 2001). While isolated acts of victimization can cause substantial harm, research suggests that chronic victimization is more likely to elevate the severity and endurance of adjustment problems (Kochenderfer-Ladd & Wardrop, 2001; Schwartz, McFadyen-Ketchum, Dodge, Pettit, & Bates, 1998).

The bulk of peer victimization studies have identified victimization by peers as a risk for depression and anxiety, withdrawal, and aggression in childhood (see Hawker & Boulton, 2000; Kochenderfer-Ladd & Ladd, 2001; Underwood, 2004). However, most studies have assessed victimization as a singular construct (e.g., being picked on, laughed at, pushed around, called bad names) and findings from these studies are mixed. For instance, peer-nominated victimization predicted increases in teacher-rated depression and anxiety and aggression over 2-years among grade 3 and 4 children (Schwartz et al., 1998). Graham and Juvonen (1998) reported that self-rated victimization contributed to feelings of anxiety, loneliness, and low self-worth in grades 6 and 7. Other research found

that peer-nominated victimization contributed to increases over 1-year in self-rated depression and anxiety in grades 3 to 7, but not aggression (Hodges & Perry, 1999). On the other hand, Hanish and Guerra (2002) reported that peer-nominated victimization did not contribute to gains in depression, anxiety, or withdrawal over 2-years for children in grades 1, 2 and 4. Khatri, Kupersmidt, and Patterson (2000) also found no relation between peer-nominated victimization and prospective levels of self-rated depression and anxiety among children in grades 4 to 6. The heterogeneity in these findings raises questions about the specific processes that link victimization to depression and anxiety, withdrawal, and aggression in late childhood.

Relational and physical victimization. Research that assesses victimization as a singular construct is valuable for understanding the overall costs of peer victimization in late childhood. However, subtypes of victimization (e.g., relational, physical) may also contribute uniquely to adjustment problems among children. For instance, relational victimization threatens ties to the peer group through the manipulation and restriction of friendships and spreading of malicious rumors. These events may be particularly distressing for depressed, anxious, and withdrawn children who are preoccupied with the maintenance of social relationships (Leadbeater et al., 1999; Rudolph & Clark, 2001). In contrast, physical victimization inflicts physical harm and verbal threats of harm. These events may particularly stressful for aggressive children who are preoccupied with self-protection and minimizing perceived threats to their physical well-being, often through retaliatory aggression, and are less concerned with maintaining social relationships (Crick & Dodge, 1996; Leadbeater et al., 1999; Rose & Asher, 1999).

Research on relational victimization is relatively recent in comparison to studies of physical victimization. Some studies have assessed relational and physical victimization as a composite predictor of adjustment (e.g., Dill, Vernberg, Fonagy, Twemlow, & Gamm, 2004; Hoglund & Leadbeater, 2004), often because correlations between these two types of victimization range from moderate to high. However, discriminant validity of relational and physical victimization has been established (Crick & Grotpeter, 1996) and correlations are typically below .60, indicating that less than 36% of the variance between these constructs is shared. Moreover, studies have reported differential relations of adjustment to these subtypes of victimization. For instance, relational and physical victimization each contributed uniquely to depression but only relational victimization provided unique information on children's reports of anxiety and withdrawal in grades 3 to 6 (Crick & Grotpeter, 1996). Evidence further shows gender-linked vulnerability to relational and physical victimization.

Gender differences in relational and physical victimization. Research indicates that the frequency of relational and physical victimization may differ by gender. For instance, some studies report that girls experience significantly more relational victimization than boys, whereas boys experience more physical victimization than girls in middle to late childhood (Björkqvist et al., 1992; Crick & Bigbee, 1998). Others have found that these gender patterns hold only for physical victimization in these age groups (Crick & Grotpeter, 1996; Paquette & Underwood, 1999; Phelps, 2001; Prinstein, Boergers, & Vernberg, 2001; Storch, Nock, Masia-Warner, & Barlas, 2003). Generally, girls experience more relational than physical victimization, whereas boys are targeted by physical victimization more often than by relational victimization (Underwood, 2004; but

see Prinstein et al., 2001). Given these reports, the current study expects that boys will show higher levels of physical victimization than girls but no gender differences in relational victimization are expected.

Research has further documented that girls are distressed more by relational victimization than by physical victimization, whereas boys find physical victimization more distressing than relational victimization (Crick, 1995; Galen & Underwood, 1997). Paquette and Underwood (1999) also reported that girls viewed both relational and physical victimization as more hurtful than boys. Consistent with this evidence, relational victimization has been linked with depression, anxiety, and withdrawal for girls but not boys, whereas physical victimization was associated with each of these outcomes for girls and boys in grades 5 and 6 (Storch et al., 2003). Similarly, relational victimization contributed to depression among girls in grades 9 to 12, whereas physical victimization was associated with depression for boys (Prinstein et al., 2001). In contrast, Crick and Bigbee (1998) reported that relational victimization contributed uniquely to depression, anxiety, and withdrawal for boys and to difficulties controlling anger for girls in grades 4 and 5. Other evidence showed that relational and physical victimization both contributed to aggression among girls in grades 7 and 8 but not boys (Paquette & Underwood, 1999).

Age differences may play a role in these discrepant reports. Gender differences in depression and anxiety often emerge in late childhood, with girls showing greater vulnerability than boys (Leadbeater, Blatt, & Quinlan, 1995; Nolen-Hoeksema & Girgus, 1994). On the other hand, gender differences in physical aggression often become less prominent in this age group (Crick & Zahn-Waxler, 2003). In light of these and other reports, the current study expects that girls will show higher risks for depression and

anxiety in response to relational victimization whereas boys will show greater risks for aggression and depression and anxiety in response to physical victimization. Gender differences in risks for withdrawal are not predicted given some mixed findings, but research from Crick and Bigbee (1998) and Gazelle and Ladd (2003) suggests that relational victimization may elevate risks for withdrawal among boys but not girls.

Ethnic victimization. Similar to the exclusion processes underlying relational victimization, ethnic victimization undermines children's social connections to the peer group and their feelings about their ethnic or racial group.² Incidences of unfair treatment by peers on the basis of ethnic status represent part of the hassles and stressors that ethnic minority children may face on a daily basis (Dubois et al., 2002). Quintana (1998) argued that the awareness of ethnic discrimination emerges in late childhood and may contribute to the manifestation of ethnic biases. Consistent with this theory, evidence suggests that ethnic minority children are more often the targets of ethnic victimization, such as being called insulting names related to one's ethnic status, but not necessarily relational or physical victimization relative to non-minority children. For instance, research with ethnically diverse samples (Hispanic, African American, European-Caucasian) found no significant ethnic differences in relational or physical victimization in grades 5 and 6 (Storch et al., 2003) or grades 9 to 12 (Prinstein et al., 20001). In contrast, a survey of 26,000 grade 7 to 12 students in British Columbia found that 17% of Aboriginal students had been discriminated against because of their ethnic status compared to 9% of non-Aboriginal students (The McCreary Centre Society, 2000). Research from England found that East Asian students reported more ethnic victimization than non-East Asian students

in grades 4 to 10 (Moran et al., 1993). Similarly, research in the United States with multiple ethnic groups (East and South Asian, Hispanic, African American, European-Caucasian) found that East and South Asian students reported the highest frequency peer ethnic victimization, such as called insulting names or excluded from activities because of their ethnic status (Fisher et al., 2000). East Asian students also reported the highest level of distress associated with experiences of ethnic victimization while African American and European-Caucasian students reported the least distress. Interestingly, 38-84% of students from all ethnic groups reported that they had been called names and excluded from peer activities because of their ethnic status. Moreover, ethnic victimization contributed to higher levels of negative self-evaluations for all groups.

Few studies have examined the consequences of ethnic victimization on children's ability to limit depression and anxiety, social withdrawal, and aggression. In a study of African American and European-Caucasian children in grades 5 to 8, Dubois et al. (2002) examined the effects of discrimination events that were based on ethnic status, such as called names at school, excluded by peers, or teased about one's appearance. Discrimination events contributed indirectly to depression for European-Caucasian children through their generalized stress and global self-worth but directly to depression for African American children. Discrimination events also contributed indirectly to aggression through these paths for African American and European-Caucasian children.

In an ethnically diverse setting, discrimination may be a risk experienced by both ethnic minority and non-minority children because of sharp ethnic divisions in peer groups or because children are targeted by peers of the same ethnic group. Bellmore,

² While ethnic status is not synonymous with racial status (Quintana, 1998), ethnic status

Witkow, Graham, and Juvonen (2004) reported that the relation between peer victimization and anxiety was stronger when children were in classrooms with high proportions of same ethnic group peers than in classrooms with few same ethnic group peers. The current study examines ethnic status differences in the effects of peer relational, physical and ethnic victimization on depression and anxiety, withdrawal, and aggression in late childhood. Ethnic differences in the effects of social-cognitive errors and skills on these adjustment problems are also assessed.

Theoretical Perspectives of Social-Cognitive Errors and Skills

Two theoretical perspectives inform our understanding of the social-cognitive processes that may help children to understand and act in dealing with interpersonal conflicts. According to social information processing theory, children engage in a series of sequential, information processing steps during social interactions (Crick & Dodge, 1994). Children's cache of past social experiences guides the social cues they attend to, encode, and act on. The interpretation of social cues enables children to attribute intent to peers' actions, generate inferences about peers' perspectives, and infer causal links between the actions of the self and peers. In turn, these processes guide the generation of response strategies and goals. For instance, children who attribute hostile and purposeful intent to peers' ambiguous behaviors may retaliate aggressively to eliminate the perceived threat and protect their self (Erdley & Asher, 1996; Yoon, Hughes, Cavell & Thompson, 2000). A stockpile of problematic social interactions with peers, such as chronic victimization, could trigger expectations of peer hostility even when it does not

is used throughout this dissertation to include both ethnic and racial status for brevity.

exist, limit children's ability to generate actions that could effectively manage peer victimization when it does occur, and lead to adjustment problems.

Developmental gains in children's cognitive capacity to attend to subtle behavioral and affective cues and to simultaneously process the thoughts, feelings and actions of their self and peers may increase children's ability to accurately gauge peers' motives in social interactions (Selman, 1980). According to Selman's theory of social-cognitive development, the awareness that the self and others may hold different interpretations of the same social interaction progresses across increasingly complex levels of perspective taking. By middle to late childhood, children can interpret social interactions through a self-reflective, second-person (reciprocal) perspective where they can reflect on others' thoughts and feelings and recognize that others can do the same. However, these are sequential processes and resolutions to interpersonal conflicts satisfy the self and other in isolation, and often focus on immediate, short-term solutions. By the end of late childhood and early adolescence, many children can simultaneously reflect on the thoughts and feelings of both the self and others by cognitively stepping outside of the immediate situation to view it from a generalized third-person perspective. At this level, children are able to coordinate the perspectives of the self and others to form a mutual resolution to conflicts that integrates both perspectives and focuses on the future consequences of the resolution for their ongoing relationship (Selman, 1980). However, chronic experiences of peer victimization may compromise the formation of skillful perspective taking abilities and stability in the use of such skills because few prosocial opportunities are presented for children to gain an accurate insight into peers' thoughts and feelings. This may limit children's ability to examine social interactions from the

perspectives of both the self and peers simultaneously and to generate future-oriented and collaborative solutions to deal with conflicts.

The Costs and Benefits of Social-Cognitive Errors and Skills for Adjustment Problems

Research has demonstrated that hostile attributions of peers' ambiguous intent, perspective taking, and interpersonal skills are related to adjustment problems in late childhood, and has recently begun to examine the relations between these processes and peer victimization.

Hostile attributions of intent. Research based on social information processing theory demonstrates that aggressive children frequently interpret peers' intent as hostile rather than benign in ambiguous scenarios (see Orobio de Castro, Veerman, Koops, Bosch, & Monshouwer, 2002). In a study of social goals in peer conflicts with grade 4 and 5 children, aggressive children were more likely to interpret peers' intent in ambiguous provocations as hostile and endorse ineffective approaches to resolve peer conflicts, such as retaliation (Erdley & Asher, 1996). Other research on goals and strategies in peer provocations in grades 4 and 5 further found that boys selected instrumental-control and revenge goals whereas girls endorsed relationship maintenance goals more often (Rose & Asher, 1999).

In one of the few studies to compare hostile attributions in relational provocations (e.g., not being invited to a party) and instrumental provocations (e.g., a valued possession is broken), Crick et al. (2002) found that physically aggressive children were more likely to infer hostile intent in instrumental than relational provocations. By contrast, relationally aggressive children (children who spread malicious gossip, manipulate friendships, etc.) were more likely to attribute hostile intent in relational

provocations. Physically aggressive children also reported they would be more upset or mad in response to instrumental provocations than relationally aggressive children.

Relationally aggressive children were more upset by relational provocations. Girls were also more upset by relational provocations than were boys. Based on the evidence above, the current study expects that girls will endorse more hostile attributions in relational provocations whereas boys will show more hostile attributions in instrumental provocations.

Few studies have examined links between attributions of peers' intent and depression and anxiety and withdrawal, and these findings are mixed. In a study of grade 3 to 6 children, depressed and anxious children showed biases toward perceiving ambiguous and instrumentally provocative social cues as hostile (Quiggle, Garber, Panak, & Dodge, 1992). In contrast to aggressive children, depressed and anxious children were less likely to use assertive responses to deal with the perceived threat because of expectations that assertion would produce negative outcomes. Other research with this age group found no evidence to link hostile attributions in instrumental provocations with depression and anxiety (Burks, Dodge, Price, & Liard, 1999).

Is it reasonable to expect that experiences of relational victimization will increase the probability that children will infer hostile intent in relationally provocative interactions (e.g., whether peers were gossiping about them). In turn, children's vulnerability to depression and anxiety and withdrawal may be elevated because of fears that their status among peers is in jeopardy (Crick, 1995; Leadbeater et al., 1999). Alternatively, experiences of physical victimization may lead children to infer hostile intent in instrumentally provocative interactions (e.g., whether a prized possession was

purposely destroyed). In turn, risks for aggression may be increased because of concerns over physical dominance and self-protection (Crick & Dodge, 1996; Crick et al., 2002).

Perspective taking. Perspective taking refers to the cognitive understanding of others' internal thoughts and feelings in social interactions (Selman, 1980). Studies that tap perspective taking often assess children's social-cognitive *capacity* to reflect on others' thoughts and feelings through semi-structured interviews or hypothetical vignettes (Adalbjarnardottir, 1995; Fitzgerald & White, 2003; Schultz, Barr, & Selman, 2001; Schultz, Selman, & LaRusso, 2003) or their *tendency* or motivation to acknowledge or gain insight into others' minds through self-rated questionnaires (Carlo, Hausmann, Christiansen, & Randall, 2003; Eisenberg, Carlo, Murphy, & Van Court, 1995; Eisenberg, Zhou, & Koller, 2001). The current study assesses perspective taking as the capacity (i.e., thought) and tendency (i.e., action) to gain insight into peers' thoughts and feelings in conflicts based on children's self-reports.

Research has shown that more skillful perspective taking relates negatively to aggressive behaviors in kindergarten to grade 4 (Fitzgerald & White, 2003) and in grades 4, 6, 8 and 12 (Schultz et al., 2003). One study with an older sample found that college students who showed more skillful perspective taking reported performing fewer acts of relational aggression than less skillful students (Loudin, Loukas, & Robinson, 2003). Research further shows that perspective taking measured as a cognitive component of empathy correlates positively with prosocial behaviors (e.g., helping others when asked) in late childhood to adolescence (Carlo et al., 2003; Eisenberg et al., 1995, 2001). In addition, some studies suggest that girls demonstrate more competent perspective taking than boys (Schultz et al., 2003) while others have found no gender differences (Eisenberg

et al., 1999). Given these mixed findings, gender differences in perspective taking are not expected.

Differences in the capacity for and use of perspective taking skills can oscillate as a function of children's characteristics, such as levels of withdrawn or aggressive behaviors (Adalbjarnardottir, 1995; Leadbeater et al., 1989), and the social context, such as with familiar or unfamiliar peers (Yeates et al., 1991). Experiences of peer victimization may undermine children's capacity to reflect on their own and peers' thoughts and feelings simultaneously, consistency in the use of perspective taking skills, and their ability to generate future-oriented and collaborative solutions to conflicts. On the other hand, skillful interpretation of peers' perspectives may enable children to forecast the outcomes of future interactions with peers and prevent negative interactions. Children who can anticipate conflicts with peers may be better prepared to effectively minimize the harm of being victimized through proactive and assertive problem solving strategies and to translate social decisions into competent behavior, particularly under conditions of threat.

Interpersonal skills. Qualities that characterize interpersonal skills are multifaceted and generally refer to effectiveness in social interactions (Rose-Krasnor, 1997). Studies show that competent interpersonal skills, such as the ability to relate well to peers and to solve social problems collaboratively, relate negatively to levels of depression and anxiety, withdrawal, and aggression in childhood and adolescence (Adalbjarnardottir, 1995; Crick & Bigbee, 1998; Hoglund & Leadbeater, 2004; Ladd & Troop-Gordon, 2003; Murphy, Shepard, Eisenberg, & Fabes, 2004; Rudolph & Conley, 2005). Gender differences in interpersonal skills have also been observed, with girls

showing higher levels of skills relative to boys (Hoglund & Leadbeater, 2004; Murphy et al., 2004). Given these reports, the current study expects that girls will show more competent interpersonal skills than boys.

Like perspective taking, the expression of interpersonal skills shows context-dependent and goal-specific characteristics (Rose-Krasnor, 1997). For instance, the knowledge and skills to respond appropriately in conflict situations may be compromised under conditions of overwhelming stress, such as victimization. Experiences of victimization may limit children's access to the social contexts necessary to make prosocial friendships, practice collaborative social problem solving skills, or expand their repertoire of effective conflict management techniques. For instance, poor conflict resolution strategies, such as asserting one's own self-interests or yielding to peers' demands, or maladaptive goals, such as controlling possessions or seeking revenge, may compromise children's capacity to resolve peer conflicts effectively (Rose & Asher, 1999; Chung & Asher, 1996; Erdley & Asher, 1996; Yeates et al., 1991).

Alternatively, a foundation of interpersonal skills may be a resource available to victimized children because such skills can enable children to translate social decisions into competent behavior and to regulate emotional responses under conditions of threat, possibly reducing negative outcomes. The priority that children assign to maintaining friendships and accommodating the needs of both the self and peers may further increase the likelihood that interpersonal skills are maximized and peer conflicts are resolved peacefully (Erdley & Asher, 1996; Rose & Asher, 1999; Yeates et al., 1991). The current study examines individual differences in hostile attributions, perspective taking, and

interpersonal skills as mediators of the association between peer victimization and adjustment problems.

The Mediating Effects of Social-Cognitive Errors and Skills on Peer Victimization

Evidence supports the current study's hypothesis that hostile attributions, perspective taking, and interpersonal skills may mediate the relation between peer victimization and depression and anxiety, withdrawal, and aggression (Boivin, Hymel, & Bukowski, 1995; Dill et al., 2004; Fitzgerald & White, 2003; Graham & Juvonen, 1998; Ladd & Troop-Gordon, 2003; Tram & Cole, 2000). For instance, a study of grade 3 boys' playgroup interactions found positive correlations among hostile attributions in instrumental provocations, physical victimization, and reactive aggression (the tendency to strike back or get angry when threatened; Schwartz, Dodge, et al., 1998). Although mediation was not assessed, boys who were the targets of peers' physically aggressive overtures were more inclined to expect hostility in ambiguous interactions that involved personal property or dominance issues than non-victimized boys.

Other studies have examined mediating links between peer victimization and depression and anxiety and withdrawal. For instance, Boivin et al. (1995) found that self-rated loneliness partially mediated the relation between peer victimization and prospective levels of depression in grades 4 and 5. Drawing from social-cognitive theory, Dill et al. (2004) assessed children's beliefs that victimization is legitimate and warranted (e.g., the victimized child must have done something wrong, aggressing against peers is okay). These beliefs partially mediated the effect of peer victimization on depression and anxiety in grades 3 and 4. A 4-year prospective study examined the mediating effects of (1) self-rated social acceptance (perceptions of being accepted and liked by peers) and (2)

beliefs that peers are supportive, prosocial and trustworthy on the relation between victimization and adjustment problems (Ladd & Troop-Gordon, 2003). Social acceptance partially mediated the relation between concurrent levels of peer victimization and internalizing problems (depression, anxiety, withdrawal). Mediation support for beliefs about peers as supportive and for aggression was not found. Alternatively, Dubois et al. (2002) found that perceptions of acceptance by peers and generalized stress partially mediated the effect of ethnic discrimination events on aggression among African American and European-Caucasian children. Peer acceptance and stress also accounted for some of the effects of discrimination on depression and anxiety for European-Caucasian children.

Together, these findings suggest that victimized children who believe that they deserved the abuse and are disliked by peers may feel apprehensive in interactions with peers. These feelings may result in depression and anxiety or withdrawal. Alternatively, victimized children may believe that the peer is the root of the problem and become angered by peers' dislike or mistreatment of them, resulting in aggressive behaviours. Overall, the research reviewed calls for advances in our understanding of the differential links between subtypes of victimization and adjustment problems, and the mediating influences of salient social-cognitive errors and skill on these linkages in late childhood.

Summary of the Current Study

The current study examines whether hostile relational and instrumental attributions, perspective taking, and interpersonal skills mediate the associations between subtypes of peer victimization (relational, physical, ethnic) and depression and anxiety,

withdrawal, and aggression.³ These mediator models are examined with ethnic minority children (Aboriginal, East and South East Asian) and European-Caucasian children in late childhood (grades 6 and 7). According to developmental theory, peers are a valuable source of social capital for dealing with the developmental tasks of late childhood, such as puberty, pressures to conform to peer group values, and stressors related to the transition from elementary to middle school (Hartup, 1996; Selman, 1980). In late childhood, peer relationships also provide opportunities to practice emerging developmental abilities, such as perspective taking, decision making, and collaborative social problem solving. Gains in understanding such concepts as ethnic status and culture are also observed in late childhood and children become more cognizant of discrimination based on ethnicity, race, and culture (Quintana, 1998). Beyond the benefits afforded by peers, negative peer experiences can be a liability for these emerging abilities and for children's ability to control feelings of depression and anxiety and the expression of withdrawn and aggressive behaviors. Understanding ways to limit the costs of peer victimization in late childhood is particularly important given that victimization becomes more chronic and targeted as children approach late childhood (Galen & Underwood, 1997; Kochenderfer-Ladd & Wardrop, 2001).

Social-cognitive theories propose that positive social interactions with peers advance children's ability to accurately gauge others' intentions in ambiguous interactions, infer others' thoughts and feelings in social interactions, and develop the skills needed to relate to peers and solve social problems effectively (Crick & Dodge,

³In the interest of informing prevention, the effects of victimization and the mediators on depression-anxiety and withdrawal are examined separately. Although they are

1994; Selman, 1980). However, victimized children may not be afforded sufficient prosocial opportunities to gain these insights or develop competent interpersonal skills. Chronic experiences of victimization may lead children to expect hostility even when it is not present, exaggerate the thoughts and feelings of either the self or peer, and leave children friendless, socially unskilled and with a limited cache of competent social problem solving skills. In turn, these restricted abilities may increase risks for depression and anxiety, withdrawal, and aggression.

Hypotheses. Based on previous research, it was expected that: 1) relational victimization would contribute to higher levels of depression and anxiety and withdrawal, physical victimization would contribute to higher levels of aggression, and ethnic victimization would contribute to higher levels of depression and anxiety, withdrawal, and aggression; 2) hostile attributions in relational provocations would contribute to higher levels of depression and anxiety and withdrawal whereas hostile attributions in instrumental provocations would predict higher levels of aggression; and 3) perspective taking and interpersonal skills would contribute to lower levels of depression and anxiety, withdrawal, and aggression. It was further proposed that hostile relational attributions, perspective taking, and interpersonal skills would jointly mediate the effects of relational and ethnic victimization on depression and anxiety and withdrawal whereas hostile instrumental attributions, perspective taking and interpersonal skills would jointly mediate the effect of physical and ethnic victimization on aggression.

Gender and ethnic status (ethnic minority and European-Caucasian) were further expected to moderate some effects of peer victimization and the mediators on levels of

commonly assessed together (along with somatic complaints) in global assessments of

depression and anxiety, withdrawal, and aggression. In line with previous research, it was expected that: 1) girls would show higher mean levels of hostile relational attributions, interpersonal skills, and depression and anxiety, and that relational victimization would contribute to higher levels of depression and anxiety for girls relative to boys; 2) boys would show higher mean levels of physical victimization, hostile instrumental attributions, and aggression, and that physical victimization would predict higher levels of depression and anxiety and aggression for boys relative to girls; and 3) ethnic minority children would show higher mean levels of ethnic victimization, and that ethnic victimization would predict higher levels of adjustment problems for ethnic minority children relative to European-Caucasian children. No further predictions regarding the moderation analyses were made.

Methods

Participants

Participants included 336 children in grades 6 and 7 at a suburban/rural middle school in British Columbia (52.5 % grade 6; 57.3% girls; mean age = 12.5 years, range 11.5 to 13.9 years). Student ethnic status was 79.8% European-Canadian (n = 268), 10.7% Aboriginal (n = 36), and 9.5% other visible minority (predominately East and South East Asian; n = 32). According to parent-reports (83.4% mothers), 16.8% of parents had a high school diploma or less, 46.6% received some college or technical training, 36% received a bachelor degree or higher. Children had attended an average of 2.47 schools ($SD = 0.77$; range = 2 to 6) and experienced an average of 0.77 residential moves ($SD = 1.89$; range = 0 to 6) since grade 1, and 76.2% lived in a two-parent

internalizing problems, they often correlate weakly (Reynolds & Kamphaus, 1992).

household. Data on family income was not collected at the school's request. According to Statistics Canada 2001 community profiles, the average annual income of the middle school district (\$33,859) was slightly higher than BC's average annual income (\$31,544). This school was asked to participate in this study because Aboriginal students represented more than 5% of the student population, as reported by the School District (Aboriginal children comprise approximately 5% of the children in BC; Statistics Canada, 2003). In addition, the school administrators were interested in informing their victimization prevention programming that was to be implemented the following year.

Procedure

Information packages regarding the purpose of this study, parental consent forms, and a short demographics questionnaire were sent home with all children in grades 6 and 7. Children received a snack item (e.g., granola bar, candy, chips) as an incentive to return their consent forms, regardless of whether parents granted consent. Sixty-eight percent of eligible children returned consent forms (364 of 537 students). Of these returned consents, 6.8% ($n = 25$) of parents or children refused consent. Parental consent was received for 62.9% of eligible children. The final sample included 62.5% of eligible children ($n = 336$; one student left on holidays before data collection and data was excluded for one student due to an incident at the school).

Data were collected from children and their home room teachers over 2 days in June 2004. Children completed questionnaires assessing peer victimization, hostile attributions, perspective taking, interpersonal skills, depression and anxiety, and aggression in classroom groupings of 12 to 27 students during class time (about 40 minutes). A research assistant read the questions aloud and two research assistants

circulated to ensure that children were completing the questionnaires correctly. Children received a snack item for completing the questionnaires. Children who were absent during data collection completed the questionnaires with a research assistant when they returned to school. Non-participating children read or worked on a class activity at their desks quietly. Home room teachers (n = 19) completed questionnaires rating the interpersonal skills, social withdrawal, and aggression of each child who had parental consent to participate. Children moved through their class blocks as a home room group and home room teachers taught their home room group two blocks on average (range = 1 to 4). Home room classes received \$1 for each child who returned a consent form.

Measures

Depression and anxiety were measured from self-reports on the depression, anxiety subscale of the Youth Self-Report (YSR; Achenbach, 1991). This subscale contains 13 items rated on a 3-point scale (0 = not true, 2 = very true or often true) that assess feelings of oversensitivity, worries, generalized fears, sadness, and hopelessness.

(Two items referring to suicidal tendencies were excluded at the school's request.)

Internal consistency was excellent ($\alpha = .84$).

Withdrawal was measured from teacher-reports on the withdrawal subscale of the Behavioral Assessment System for Children (BASC; Reynolds & Kamphaus, 1992). This subscale contains 7 items rated on a 4-point scale (0 = never, 3 = almost always) that assess shyness, social avoidance, and peer neglect. Internal consistency was excellent ($\alpha = .81$).

Aggression was measured from self-reports on the aggressive behaviors subscale of the YSR (Achenbach, 1991) and from teacher-reports on the aggression subscale of the

BASC (Reynolds & Kamphaus, 1992). The YSR aggressive behaviors subscale contains 19 items rated on a 3-point scale that assess physical hostility and destructive and defiant behaviors. The BASC aggression subscale contains 14 items rated on a 4-point scale that assess physical hostility, criticism and threats directed at others, hitting others, and breaking others' possessions. Internal consistencies were excellent for the YSR ($\alpha = .84$) and the BASC ($\alpha = .95$) subscales.

Peer victimization was measured from self-reports on the relational and physical victimization subscales of the Social Experiences Questionnaire (SEQ; Crick & Grotpeter, 1996) and the ethnic victimization subscale developed for the current study based on Dubois et al. (2002) and Fisher et al. (2000). The relational subscale (e.g., malicious gossip, manipulation of relationships) and physical subscale (e.g., physical harm or threats of harm) contain 5 items each rated on a 5-point scale (0 = never, 4 = all the time). The ethnic subscale (e.g., teased about or made to feel ashamed of one's ethnic group or culture) contains 8 items also rated on a 5-point scale (see Appendix A). One item was dropped from the ethnic subscale because of extreme skewness and kurtosis ("How often does another student threaten to beat you up because of your ethnic group or culture?"). The administrative protocol specifically defined ethnic status and discrimination, and gave examples of each that related to several ethnic groups (e.g., British, Chinese and Aboriginal heritage). Internal consistencies were good to excellent for the relational ($\alpha = .86$), physical ($\alpha = .83$), and ethnic ($\alpha = .76$) subscales.

Hostile attributions of peers' ambiguous intent were assessed on the relational and instrumental subscales of the Why Kids Do Things Questionnaire (Crick, 1995; Crick & Dodge, 1996). This questionnaire contains 10 ambiguous vignettes (five per

subscale) that depict relational provocations (e.g., child overhears others students talking about a party that the child has not been invited to) and instrumental provocations (e.g., a student breaks a child's prized possession). For each vignette, children first selected one of four answers to indicate the peers' intent in each provocation. Two answers reflected benign intent (e.g., the student was planning to invite the child later, the break was accidental; scored = 0) and two answers reflected hostile intent (e.g., the student didn't want the child to come to the party, the student wanted to ruin the possession; scored = 1). Next, children rated whether the provocateur's behavior was meant to be benign (not mean = 0) or hostile (mean = 1). Scores were totaled within each vignette and then summed across the vignettes in each subscale (range = 0 to 10 per vignette). Internal consistency was good to excellent for the relational ($\alpha = .71$) and instrumental ($\alpha = .82$) subscales.

Perspective taking was assessed from a 13 item questionnaire (5 items were reversed scored) developed for the current study based on Selman (1980). This questionnaire was designed to measure children's capacity and tendency to gain insight into peers' thoughts and feelings in conflicts (see Appendix B). Items were rated on a 5-point scale (0 = never, 4 = all the time). Internal consistency for all 13 items was low ($\alpha = .52$). The inter-item correlations between the positive and reverse scored statements were negative ($r_s = .01$ to $-.24$). The overall variance ($S^2 = 9.28$) and standard deviation ($SD = 3.04$; range = 0.88 to 1.04 for the items) of the reverse scored items were lower than the overall variance ($S^2 = 24.13$) and standard deviation ($SD = 4.91$; range 0.96 to 1.16 for the items) of the positive items. For these reasons, only the five reverse scored items are used in the current analyses (see bolded items in Appendix B). Internal consistency for

the reverse scored items was adequate ($\alpha = .63$). One-week retest reliability was established with a random sample of 10% of the participating children ($n = 32$). Retest reliability for the reverse scored items was good ($r = .76$).

Interpersonal skills were assessed from self-reports on the interpersonal relations subscale of the BASC and from teacher-reports on the leadership and social skills subscales of the BASC (Reynolds & Kamphaus, 1992). The interpersonal relations subscale (e.g., social acceptance, success relating to peers, friendships) contains 16 items that were rated on a 3-point scale (0 = not true, 2 = very true or often true; adapted from the original True-False scale to be consistent with the YSR scale). The leadership skills (e.g., social problem solving and decision making skills) and social skills (e.g., complimenting and encouraging others, admitting mistakes, social acceptance) subscales contain 9 and 11 items, respectively, rated on a 4-point scale. Internal consistencies were excellent for the interpersonal relations ($\alpha = .87$), leadership skills ($\alpha = .93$), social skills ($\alpha = .95$) subscales. The leadership and social skills subscales correlated highly ($r = .81$) and were summed to create a composite teacher-rated interpersonal skills variable.

Results

The results are presented in three sections. First, gender and ethnic status⁴ differences in mean levels of peer victimization, social-cognitive errors and skills, and adjustment problems are presented, followed by the intercorrelations among these

⁴Data from the Aboriginal and visible minority children are collapsed into one minority group for all analyses given the small sample size ($n = 68$) and few significant mean level differences between Aboriginal and visible minority children. Aboriginal children showed significantly lower levels of teacher-rated interpersonal skills ($M = 18.58$) and higher levels of hostile attributions in instrumental provocations ($M = 3.52$), relational victimization ($M = 5.97$), and withdrawal ($M = 6.49$) relative to visible minority children ($M_s = 33.22$ for skills, 2.03 for attributions, 3.81 for victimization, and 3.44 withdrawal).

variables. Second, hierarchical regression analyses assessing the mediating effects of the social-cognitive errors and skills on the relation between peer victimization and the adjustment problems are presented. Lastly, the moderating effects of gender and ethnic status on the associations between peer victimization and adjustment problems and between the social-cognitive errors and skills and adjustment problems are examined.

Descriptive Data

Gender and ethnic status differences. Three multivariate analyses of variance (MANOVAs) models were examined to assess gender and ethnic status differences in mean levels of peer victimization, social-cognitive errors and skills, and adjustment problems (see Table 1).⁵ In each model, gender and ethnic status were entered as the between-subjects variables. Adjustment problems were entered as the within-subjects variables in model 1, subtypes of peer victimization were entered as the within-subjects variables in model 2, and social-cognitive errors and skills were entered in model 3. The two-way interactions between gender and ethnic status were examined but few interaction effects were expected.

Consistent with expectations, girls showed boys showed significantly higher mean levels of teacher-rated interpersonal skills ($F[1, 329] = 7.33, p < .01$) and depression and

⁵Grade level was not expected to moderate these associations given the limited age range between grade 6 and 7 students. In the MANOVAs, grade 6 children showed significantly higher mean levels of teacher-rated withdrawal and aggression ($F_s[1, 329] = 7.08$ and $8.11, p < .01$, respectively) and lower levels of teacher-rated interpersonal skills ($F[1, 329] = 4.76, p < .01$) than grade 7 children.

Table 1

Gender and Ethnic Status Differences in Mean Levels (and Standard Deviations) of the Predictor, Mediator and Dependent Variables

	Gender		Ethnic Status		Range
	Girls	Boys	Ethnic Minority	European-Caucasian	
Depression and anxiety	5.93 (4.48)^a	5.00 (4.71)^a	5.66 (4.36)	5.50 (4.66)	0-24
Withdrawal	3.32 (3.25)	4.00 (3.85)	4.90 (3.84)^c	3.29 (3.38)^c	0-18
Physical aggression (T)	4.68 (6.14)^a	8.26 (9.02)^a	7.93 (9.36)^c	5.78 (7.17)^c	0-37
Physical aggression (S)	7.34 (4.80)	8.03 (6.26)	8.94 (5.64)^c	7.30 (5.39)^c	0-31
Relational victimization	4.56 (3.96)	4.23 (3.99)	4.96 (4.14)	4.28 (3.92)	0-20
Physical victimization	3.69 (2.79)^a	6.08 (4.36)^a	4.63 (3.44)	4.74 (3.81)	0-20
Ethnic victimization	1.65 (2.63)	1.84 (2.74)	2.96 (3.78)^c	1.42 (2.23)^c	0-18
Hostile attributions (R)	5.15 (2.24)	5.19 (2.07)	4.93 (2.52)	5.23 (2.07)	0-10
Hostile attributions (I)	2.19 (2.37)^a	3.58 (2.95)^a	2.82 (2.64)	2.78 (2.74)	0-10
Perspective taking	12.68 (3.09)	12.33 (2.99)	12.03 (3.26)	12.66 (2.99)	2-20
Interpersonal skills (T)	33.62 (13.41)^a	27.38 (14.26)^a	25.47 (16.71)^c	32.34 (13.04)^c	0-60
Interpersonal skills (S)	26.72 (4.47)	24.57 (5.53)	25.93 (5.09)	25.77 (5.06)	7-32

Note. T = teacher-report, S = self-report, R = relational provocations, I = instrumental provocations. Mean levels differ significantly ($p < .05$) between columns with the same subscript.

anxiety ($F[1, 329] = 4.49, p < .01$) relative to boys. Girls also showed significantly lower mean levels of hostile instrumental attributions ($F[1, 329] = 8.55, p < .01$), physical victimization ($F[1, 329] = 11.04, p < .01$), and teacher-rated aggression ($F[1, 329] = 15.18, p < .01$) than boys. Ethnic minority children showed significantly higher mean levels of ethnic victimization ($F[1, 329] = 12.43, p < .01$), withdrawal ($F[1, 329] = 10.78, p < .01$), and teacher- and self-reported aggression ($F_s[1, 329] = 5.84$ and $4.79, p < .05$, respectively) relative to European-Caucasian children. Ethnic minority children also demonstrated significantly lower levels of teacher-reported interpersonal skills ($F[1, 329] = 11.42, p < .01$) than European-Caucasian children.

As expected, few of the two-way interactions between gender and ethnic status were significant. Interactions between gender and ethnic status were significant for physical and ethnic victimization ($F_s[3, 327] = 4.83$ and $5.71, p < .05$, respectively) and for self-rated interpersonal skills ($F[5, 325] = 5.03, p < .05$). Specifically, ethnic minority boys showed significantly lower levels of physical victimization ($M = 4.92$) and higher levels of ethnic victimization ($M = 2.14$) and interpersonal skills ($M = 26.41$) relative to European-Caucasian boys ($M_s = 6.29$ for physical victimization, 1.73 for ethnic victimization, and 24.27 for skills). Ethnic minority girls showed significantly higher levels of physical victimization ($M = 4.36$) and ethnic victimization ($M = 3.38$) and lower levels of interpersonal skills ($M = 25.93$) relative to European-Caucasian girls ($M_s = 3.56$ for physical victimization, 1.22 for ethnic victimization, and 26.92 for skills).

Bivariate correlations. Intercorrelations among subtypes of victimization, social-cognitive errors and skills, and adjustment problems are presented in Table 2. As expected, intercorrelations among the subtypes of victimization were significant and

Table 2
Intercorrelations among Peer Victimization, Social-Cognitive Errors and Skills, and Adjustment Problems

Variables	1	2	3	4	5	6	7	8	9	10	11
1. Depression and anxiety											
2. Withdrawal	.11*										
3. Aggression (T)	.13*	.31**									
4. Aggression (S)	.43**	-.02	.46**								
5. Relational victimization	.58**	.23**	.24**	.29**							
6. Physical victimization	.40**	.09	.29**	.39**	.58**						
7. Ethnic victimization	.39**	.13*	.13*	.21**	.49**	.45**					
8. Hostile attributions (R)	.23**	.01	.03	.11*	.26**	.17**	.15**				
9. Hostile attributions (I)	.11*	.06	.24**	.18**	.26**	.25**	.09	.40**			
10. Perspective taking	-.43**	-.03	-.12*	-.35**	-.38**	-.36**	-.25**	-.21**	-.19**		
11. Interpersonal skills (T)	-.14**	-.56**	-.52**	-.23**	-.26**	-.26**	-.14**	-.05	-.17**	.14**	
12. Interpersonal skills (S)	-.46**	-.39**	-.23**	-.19**	-.50**	-.40**	-.29**	-.23**	-.22**	.17**	.35**

Note. N = 336. T = teacher-report, S = self-report, R = relational provocations, I = instrumental provocations. * $p < .05$, ** $p < .01$

moderate. Relational, physical, and ethnic victimization were each associated with significantly higher levels of hostile relational and instrumental attributions, depression and anxiety, withdrawal, and aggression (with the exception of non-significant correlations between physical victimization and withdrawal and between ethnic victimization and hostile instrumental attributions). Subtypes of victimization were also correlated with significantly lower levels of perspective taking and interpersonal skills.

Intercorrelations among hostile relational and instrumental attributions, perspective taking, and interpersonal skills were significant and in the expected directions (expect for a non-significant association between hostile relational attributions and teacher-rated interpersonal skills). Hostile relational and instrumental attributions also correlated significantly with higher levels of depression and anxiety and aggression (with the exception of a non-significant correlation between hostile relational attributions and teacher-rated aggression). Perspective taking and interpersonal skills were associated with significantly lower levels of depression and anxiety and aggression. Interpersonal skills also correlated significantly and negatively with withdrawal. Lastly, intercorrelations among depression and anxiety, withdrawal, and aggression were significant (with the exception of a non-significant association between withdrawal and self-rated aggression).

Mediating Effects of Social-Cognitive Errors and Skills

Hierarchical regression analyses were used to assess 1) the effects of the subtypes of peer victimization (relational, physical, ethnic) on children's adjustment problems (depression and anxiety, withdrawal, or aggression); and 2) the mediating effects of hostile relational and instrumental attributions, perspective taking, and interpersonal skills

on these associations. In each regression model, demographic characteristics (gender, ethnic status) were entered first. Levels of depression and anxiety, withdrawal, or aggression were entered next to control for other concurrent adjustment problems. The subtypes of victimization (relational, physical, and ethnic) were entered third. Hostile attributions were entered fourth and perspective taking and interpersonal skills were entered last. The independent and additive contributions of hostile attributions and skills were examined.⁶

As recommended by Baron and Kenny (1986), mediation was evaluated by examining 1) the effects of the subtypes of victimization on each mediator (path A) and each outcome (path C), and 2) the effects of the mediators on each outcome (path B). See Figure 3. To meet the criteria for mediation, victimization should contribute significantly to the mediators (path A) and the significance of victimization on the outcomes should decrease once the effects of the mediators are adjusted for (path C).

The significance of the mediating effects was evaluated in two ways. First, the confidence interval (CI) around the product of the unstandardized *B* coefficients from path A and path B (*AB*) were computed. The confidence interval is the *B* coefficient \bullet its associated standard error. The standard error (*SE*) for the *B* coefficient of *AB* was computed by taking the square root of the sum of the squared estimates of the *B*

⁶All regression models were also tested with the entry order of the mediator variables reversed such that the skills were entered fourth and the errors were entered last. No significant differences between these analyses and the regression models presented were found.

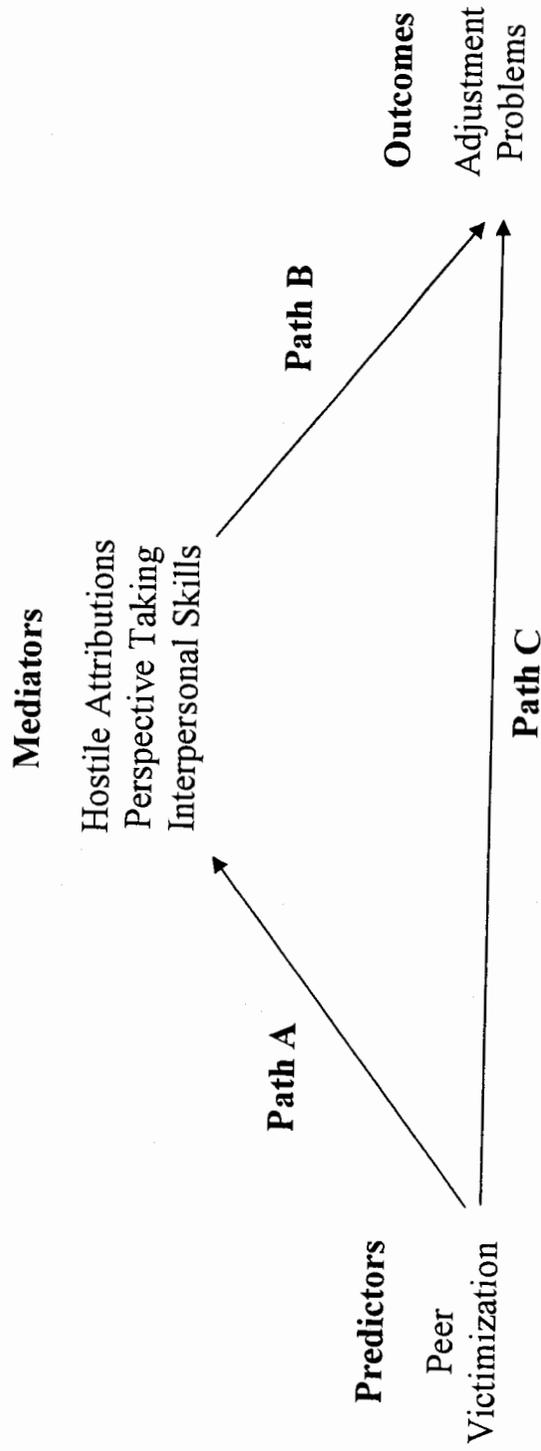


Figure 3. The mediating paths between peer victimization, social-cognitive errors and skills (hostile attributions, perspective taking, interpersonal skills), and adjustment problems.

coefficients from path A and path B, each multiplied by the squared standard error (SE^2) of the other path ($SE_{AB} = \sqrt{SE_A^2 B^2 + SE_B^2 A^2}$). Confidence intervals that do not include zero suggest that the B coefficient for AB is larger than expected by chance. Second, the significance of path C was assessed by computing the confidence intervals ($B \pm SE$) around the unstandardized B coefficients for victimization in the unadjusted model (without the mediators) and in the mediated model (with the mediators). A B coefficient for victimization in the unadjusted model greater than the confidence interval for victimization in the mediated model suggests that the mediators produced a significant change in the proportion of variance explained by victimization (Baron & Kenny, 1986; MacKinnon, Krull, & Lochwood, 2000).

Regressions examining the effects of subtypes of victimization on the mediators (path A) showed support for the first criterion. Specifically, relational victimization contributed significantly ($p < .01$) to higher levels of hostile relational and instrumental attributions (standardized β s = .24 and .20, respectively) and to lower levels of perspective taking ($\beta = -.25$) and teacher- and self-rated interpersonal skills (β s = -.17 and -.39, respectively). Physical victimization predicted significantly ($p < .01$) higher levels of hostile instrumental attributions ($\beta = .17$) and lower levels of perspective taking ($\beta = -.20$) and teacher- and self-rated interpersonal skills (β s = -.17 and -.15, respectively). Ethnic victimization did not meet this criterion for mediation.⁷ Regressions examining

⁷Ethnic victimization contributed significantly ($p < .01$) to hostile relational attributions ($\beta = .15$), perspective taking ($\beta = -.25$), and teacher- and self-rated interpersonal skills (β s = -.14 and -.29, respectively) when relational and physical victimization were excluded from the analyses.

paths B and C are presented in Tables 3 to 6, and are reported for each outcome separately.⁸

Self-rated depression and anxiety. Findings supported the hypothesis that perspective taking and interpersonal skills would mediate the effect of relational victimization (but not physical victimization) on self-rated depression and anxiety. As shown in Table 3, the mediated model explained 52% of the variance in depression and anxiety and was significant, $F(12, 324) = 29.21, p < .01$. Gender differences were significant, with girls reporting higher levels of depression and anxiety than boys. Children experiencing higher levels of self-rated aggression and relational and ethnic victimization also showed significantly higher levels of depression and anxiety. Children who demonstrated higher levels of perspective taking and self-rated interpersonal skills showed significantly lower levels of depression and anxiety. Effects for physical victimization, hostile relational and instrumental attributions, and for teacher-rated interpersonal skills were not significant.

Consistent with expectations, perspective taking and self-rated interpersonal skills (but not hostile relational attributions) partially mediated the effect of relational victimization on depression and anxiety. The standardized β coefficient for relational victimization declined from .41 ($p < .01$) in the unadjusted model to .27 ($p < .01$) in the mediated model; the unstandardized B coefficient declined from .48 ($SE = .06$) to .31 ($SE = .06$). The proportion of variance in depression and anxiety explained by relational

⁸The regression models were also tested without the demographic indicators because sequential regression analyses were used and the low ratio of cases (336) to variables (12) creates risks to power. No significant differences in the β coefficients of the victimization or mediator variables were found between regressions with and without the demographic indicators. The demographic indicators were retained in all regressions reported.

Table 3

Hierarchical Regression Analyses of Peer Victimization and Social-Cognitive Errors and Skills on Levels of Self-Rated Depression and Anxiety

Step variables	Unadjusted		Mediated		Mediated		
	β	sr^2	β	sr^2	ΔR^2	ΔF	df
1. Gender ^a	.12**	.019	.14**	.029	.01	1.73	2, 334
Ethnic status ^b	-.09	.012	-.06	.006			
2. Withdrawal	.03	.001	.00	.000	.21	45.17**	2, 332
Aggression (S)	.29**	.108	.25**	.086			
3. Relational victimization	.41**	.135	.27**	.063	.21	41.95**	3, 329
Physical victimization	.02	.003	-.01	.000			
Ethnic victimization	.14**	.022	.10*	.014			
4. Hostile attributions (R)			.04	.002	.01	2.28	2, 327
Hostile attributions (I)			-.07	.008			
5. Perspective taking			-.19**	.056	.08	16.79**	3, 324
Interpersonal skills (T)			.07	.005			
Interpersonal skills (S)			-.29**	.093			
Model statistics					.52	29.21**	12, 324

Note. Bolded variables indicate partial mediation in this model. T = teacher-report, S = self-report, R = relational provocations, I = instrumental provocations, β = standardized beta coefficients, sr^2 = squared semi-partial correlations.

^aGirls = 1, boys = 0. ^bEthnic minority = 1, European-Caucasian = 0.

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

victimization (squared semi-partial correlation, sr^2) also decreased from 13.5% to 6.3% once the mediators were adjusted. According to the significance tests for AB and for path C, this represents a significant decrease in the proportion of variance explained by relational victimization. The confidence interval (CI) of the B coefficient computed for AB (the product of path A and path B) did not include zero for the path from relational victimization to perspective taking and, in turn, from perspective taking to depression and anxiety ($B = .06$, $SE = .02$, $CI = .04-.08$). Similarly, the confidence interval for the path from relational victimization to self-rated interpersonal skills and, in turn, from interpersonal skills to depression and anxiety did not include zero ($B = .12$, $SE = .02$, $CI = .10-.14$). In addition, the confidence interval for path C in the mediated model ($B = .31$, $SE = .06$, $CI = .25-.37$) did not include the unstandardized B coefficient of .48 for path C in the unadjusted model.

Teacher-rated withdrawal. Findings supported the hypothesis that interpersonal skills would mediate the effect of relational victimization (but not physical victimization) on teacher-rated withdrawal. As shown in table 4, the mediated model explained 40% of the variance in withdrawal and was significant, $F(12, 324) = 18.41$, $p < .01$. Children experiencing higher levels of physical victimization showed significantly lower levels of withdrawal. Children who demonstrated higher levels of teacher- and self-rated interpersonal skills also showed significantly lower levels of withdrawal. The effects for ethnic victimization, hostile relational and instrumental attributions, and for perspective taking were not significant.

As expected, teacher- and self-rated interpersonal skills (but not hostile relational attributions or perspective taking) partially mediated the effect of relational victimization

Table 4

Hierarchical Regression Analyses of Peer Victimization and Social-Cognitive Errors and Skills on Levels of Teacher-Rated Withdrawal

Step variables	Unadjusted Model		Mediated Model		Mediated Model statistics		
	β	sr^2	β	sr^2	ΔR^2	ΔF	df
1. Gender ^a	-.10	.010	.01	.000	.04	7.65**	2, 334
Ethnic status ^b	.14**	.019	.07	.008			
2. Depression and anxiety	.00	.000	-.07	.004	.08	15.29**	2, 332
Aggression (T)	.25**	.062	.04	.001			
3. Relational victimization	.26**	.036	.12	.011	.04	4.70**	3, 329
Physical victimization	-.17*	.018	-.17*	.023			
Ethnic victimization	.01	.000	.02	.000			
4. Hostile attributions (R)			-.03	.001	.00	0.76	2, 327
Hostile attributions (I)			-.05	.003			
5. Perspective taking			.04	.002	.24	43.79**	3, 324
Interpersonal skills (T)			-.48**	.197			
Interpersonal skills (S)			-.27**	.068			
Model statistics					.40	18.41**	12, 324

Note. Bolded variables indicate partial mediation in this model. T = teacher-report, S = self-report, R = relational provocations, I = instrumental provocations, β = standardized beta coefficients, sr^2 = squared semi-partial correlations.

^aGirls = 1, boys = 0. ^bEthnic minority = 1, European-Caucasian = 0.

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

on withdrawal. The standardized β coefficient for relational victimization declined from .26 ($p < .01$) in the unadjusted model to .12 (*ns*) in the mediated model; the unstandardized B coefficient declined from .23 ($SE = .06$) to .11 ($SE = .06$). The proportion of variance in withdrawal explained by relational victimization (sr^2) also decreased from 3.6% to 1.0% after adjusting for the mediators. As above, this represents a significant decrease in the proportion of variance explained by relational victimization according to the significance tests for AB and for path C. The confidence interval for AB did not include zero for the path from relational victimization to teacher-rated interpersonal skills and, in turn, from interpersonal skills to withdrawal ($B = .08$, $SE = .02$, $CI = .06-.10$). Similarly, the confidence interval for the path from relational victimization to self-rated interpersonal skills and, in turn, from interpersonal skills to withdrawal did not include zero ($B = .06$, $SE = .03$, $CI = .03-.09$). In addition, the confidence interval for path C in the mediated model ($B = .11$, $SE = .06$, $CI = .05-.17$) did not include the unstandardized B coefficient of .23 for path C in the unadjusted model.

Teacher-rated aggression. Findings supported the hypothesis that hostile instrumental attributions (but not relational attributions) and interpersonal skills would mediate the effect of physical victimization (but not relational victimization) on teacher-rated aggression. As shown in table 5, the mediated model explained 32% of the variance in teacher-rated aggression and was significant, $F(12, 324) = 12.94$, $p < .01$. Children experiencing higher levels of physical victimization and children who demonstrated higher levels of hostile instrumental attributions also showed significantly higher levels of teacher-rated aggression. Alternatively, children who demonstrated higher levels of teacher-rated interpersonal skills showed significantly lower levels of aggression. Effects

Table 5

Hierarchical Regression Analyses of Peer Victimization and Social-Cognitive Errors and Skills on Levels of Teacher-Rated Aggression

Step variables	Unadjusted Model		Mediated Model		Mediated Model statistics		
	β	sr^2	β	sr^2	ΔR^2	ΔF	df
1. Gender ^a	-.16**	.024	-.08	.006	.07	12.02**	2, 334
Ethnic and racial status ^b	.08	.007	.02	.001			
2. Depression and anxiety	.01	.000	.03	.001	.09	17.27**	2, 332
Withdrawal	.24**	.061	.04	.001			
3. Relational victimization	.11	.006	.06	.003	.04	5.36**	3, 329
Physical victimization	.19**	.021	.12	.010			
Ethnic victimization	-.07	.003	-.02	.001			
4. Hostile attributions (R)			-.07	.006	.02	4.72**	2, 327
Hostile attributions (I)			.15**	.023			
5. Perspective taking			.02	.001	.11	17.08**	3, 324
Interpersonal skills (T)			-.42**	.136			
Interpersonal skills (S)			.05	.002			
Model Statistics					.32	12.94**	12, 324

Note. Bolded variables contributed to partial mediation in this model. T = teacher-report, S = self-report, R = relational provocations, I = instrumental provocations, β = standardized beta coefficients, sr^2 = squared semi-partial correlations.

^aGirls = 1, boys = 0. ^bEthnic minority = 1, European-Caucasian = 0.

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

for relational and ethnic victimization, hostile relational attributions, perspective taking, and for self-rated interpersonal skills were not significant.

Consistent with expectations, hostile instrumental attributions and teacher-rated interpersonal skills (but not perspective taking) partially mediated the effect of physical victimization on teacher-rated aggression. The standardized β value for physical victimization declined from .19 ($p < .01$) in the unadjusted model to .12 (*ns*) in the mediated model; the unstandardized B coefficient declined from .39 ($SE = .14$) to .24 ($SE = .14$). The proportion of variance in teacher-rated aggression explained by physical victimization (sr^2) also decreased from 2.1% to 1.0%. Consistent with the findings for depression and anxiety and withdrawal, this represents a significant decrease in the proportion of variance explained by physical victimization. The confidence interval for AB did not include zero for the path from physical victimization to hostile instrumental attributions and, in turn, from hostile instrumental attributions to aggression ($B = .05$, $SE = .02$, $CI = .03-.07$). Similarly, the confidence interval for the path from physical victimization to teacher-rated interpersonal skills and, in turn, from interpersonal skills to aggression did not include zero ($B = .13$, $SE = .05$, $CI = .08-.18$). In addition, the confidence interval for path C in the mediated model ($B = .24$, $SE = .14$, $CI = .10-.38$) did not include the unstandardized B coefficient of .39 for path C in the unadjusted model.

Self-rated aggression. Findings for self-rated aggression were also in the expected directions, but the hypothesis that that hostile instrumental attributions (but not relational attributions), perspective taking, and interpersonal skills would mediate the effect of physical victimization (but not relational victimization) on self-rated aggression was not fully supported. As shown in table 6, the mediated model explained 33% of the variance

Table 6

*Hierarchical Regression Analyses of Peer Victimization and Social-Cognitive Errors
and Skills on Levels of Self-Rated Aggression*

Step variables	Unadjusted		Mediated		Mediated		
	β	sr^2	β	sr^2	ΔR^2	ΔF	df
1. Gender ^a	-.01	.000	.04	.002	.02	3.21*	2, 334
Ethnic status ^b	.16**	.030	.12*	.017			
2. Depression and anxiety	.37**	.108	.34**	.086	.20	42.52**	2, 332
Withdrawal	-.10*	.011	-.19**	.031			
3. Relational victimization	-.07	.003	-.11	.007	.06	8.69**	3, 329
Physical victimization	.33**	.069	.27**	.049			
Ethnic victimization	-.08	.005	-.05	.002			
4. Hostile attributions (R)			-.03	.001	.01	1.98	2, 327
Hostile attributions (I)			.08	.008			
5. Perspective taking			-.13**	.017	.04	7.03**	3, 324
Interpersonal skills (T)			-.22**	.042			
Interpersonal skills (S)			.04	.001			
Model Statistics					.33	13.22**	12, 324

Note. Bolded variables contributed additively in this model. T = teacher-report, S = self-report, R = relational provocations, I = instrumental provocations, β = standardized beta coefficients, sr^2 = squared semi-partial correlations.

^aGirls = 1, boys = 0. ^bEthnic minority = 1, European-Caucasian = 0.

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

in self-rated aggression and was significant, $F(12, 324) = 13.22, p < .01$. Ethnic differences were significant, with ethnic minority children reporting significantly higher levels of aggression than European-Caucasian children. Children experiencing higher levels of depression and anxiety and physical victimization also showed significantly higher levels of self-rated aggression. Children who were more withdrawn displayed significantly lower levels of aggression. In addition, children who demonstrated higher levels of perspective taking and teacher-rated interpersonal skills also showed significantly lower levels of aggression. The effects for relational and ethnic victimization, hostile relational and instrumental attributions, and self-rated interpersonal skills were not significant.

Consistent with expectations, perspective taking and teacher-rated interpersonal skills (but not hostile instrumental attributions) reduced the effect of physical victimization on aggression. The standardized β value for physical victimization declined from .33 ($p < .01$) in the unadjusted model to .27 ($p < .01$) in the mediated model; the unstandardized B coefficient declined from .48 ($SE = .09$) to .39 ($SE = .09$). The proportion of variance in self-rated aggression explained by physical victimization (sr^2) also decreased from 6.9% to 4.9%. According to the significance test for AB (but not path C), this represents a reduction in the proportion of variance explained by physical victimization. The confidence interval for AB did not include zero for the path from physical victimization to perspective taking and, in turn, from perspective taking to aggression ($B = .03, SE = .02, CI = .01-.05$). Similarly, the confidence interval for the path from physical victimization to teacher-rated interpersonal skills and, in turn, from interpersonal skills to aggression did not include zero ($B = .05, SE = .02, CI = .03-.07$).

However, test for path C was not significant. The confidence interval for path C in the mediated model ($B = .39$, $SE = .09$, $CI = .30-.48$) included the unstandardized B coefficient of .48 for path C in the unadjusted model. These findings suggest that perspective taking and interpersonal skills contributed additively to the effect of physical victimization on self-rated aggression.

Moderating Effects of Gender and Ethnic Status

The moderating effects of gender and ethnic status on the associations between subtypes of victimization and adjustment problems and between social-cognitive errors and skills and the adjustment problems were assessed last. Interactions were entered last in the sequential regression models (i.e., after perspective taking and interpersonal skills). Sets of interactions between gender and (1) the subtypes of victimization, (2) hostile attributions, and (3) perspective taking and interpersonal skills were examined first. Interaction sets between ethnic status and (1) victimization, (2) hostile attributions, and (3) the skills were tested next. In total, 8 interactions were examined per demographic variable for each outcome (demographic variable X 3 victimization and 5 mediator variables). Significant interactions were probed by regressing the outcome on the victimization variable or the mediator variable for each gender or ethnic status category, separately, and examining the β coefficients of the victimization or mediator variable for each gender or ethnic status category (Aiken & West, 1991).

Self-rated depression and anxiety. One interaction for gender (but none for ethnic status) was significant for depression and anxiety. Gender interacted significantly with teacher-rated interpersonal skills such that higher levels of interpersonal skills contributed

to higher levels of depression and anxiety for boys ($\beta = .21, p < .01$) but not girls ($\beta = -.04, ns$).

Teacher-rated withdrawal. Two gender interactions (but none for ethnic status) were significant for withdrawal. Gender interacted significantly with relational victimization and teacher-rated interpersonal skills. Relational victimization contributed to higher levels of withdrawal for boys ($\beta = .29, p < .01$) but not girls ($\beta = .03, ns$). Interpersonal skills were associated with lower levels of withdrawal for both boys and girls, but the effects were stronger for boys ($\beta = -.59, p < .01$) relative to girls ($\beta = -.39, p < .01$).

Teacher-rated aggression. One interaction for gender and one interaction for ethnic status were significant for teacher-rated aggression. Gender interacted significantly with teacher-rated interpersonal skills. As above, interpersonal skills decreased risks for aggression for both boys and girls, but this effect was stronger for boys ($\beta = -.42, p < .01$) relative to girls ($\beta = -.33, p < .01$). Ethnic status interacted significantly with hostile instrumental attributions. Hostile attributions predicted higher levels of aggression for ethnic minority children ($\beta = .35, p < .01$) but not European-Caucasian children ($\beta = .06, ns$).

Self-rated aggression. Two interactions for ethnic status (but none for gender) were significant for self-rated aggression. Ethnic status interacted significantly with relational victimization and physical victimization. Relational and physical victimization contributed to higher levels of aggression for European-Caucasian children (β s = .15 for relational victimization, $p < .05$, and .40 for physical victimization, $p < .01$) but not ethnic minority children (β s = -.19 and .15, ns , respectively).

Discussion

The current study contributes to understanding of the processes through which subtypes of peer victimization (relational and physical) influence levels of depression and anxiety, social withdrawal, and aggression in late childhood. Individual differences in social-cognitive errors and skills (hostile attributions of peers' ambiguous intent, perspective taking, and interpersonal skills) were examined as mediators linking subtypes of victimization with adjustment problems. Modest support for the mediation hypothesis was found. Findings showed that subtypes of victimization were differentially associated with the adjustment problems (i.e., relational victimization with depression and anxiety and withdrawal vs. physical victimization with aggression), and that the social-cognitive errors and skills partially mediated these associations. Importantly, the pattern of associations was consistent across the teacher- and self-rated outcomes and indicated that similar processes accounted for some of the multi-finality in victimization. As expected, some specificity in the processes mediating the effects of subtypes of victimization on adjustment problems was demonstrated.

Interpersonal skills demonstrated consistent mediation effects for both the teacher- and self-rated outcomes while perspective taking was important for the self-rated outcomes. Specifically, perspective taking and interpersonal skills partially mediated the effect of relational victimization on self-rated depression and anxiety, and reduced the effect of physical victimization on self-rated aggression (but this reduction did not meet the criteria for mediation). Interpersonal skills partially mediated the association between relational victimization and withdrawal. Hostile attributions in instrumental provocations and interpersonal skills partially mediated the relation between physical victimization and

teacher-rated aggression. Importantly, these findings suggest that limited social-cognitive skills may be particularly injurious for the adjustment of victimized children, regardless of the subtype of victimization experienced. The tendency to infer peers' ambiguous actions in instrumental attributions as hostile (e.g., believing that another child purposefully ruined a prized possession rather than accidentally) may be particularly harmful for physically victimized children. Programs designed to support children's capacity to understand others' thoughts and feelings in conflicted interactions and their skills to relate well to peers and solve social problems collaboratively may show promise in reducing the differential risks associated with subtypes of victimization. In addition, programs that promote children's ability to accurately attend to subtle social cues may be beneficial for lessening the costs associated with physical victimization.

The discussion below centers on the significance of subtypes of peer victimization for the expression of depression and anxiety, social withdrawal, and aggression in late childhood, and social-cognitive errors and skills as processes that can interrupt these associations. Gender and ethnic status differences are also discussed. Implications for school-based prevention programming designed to lessen the costs of peer victimization for depression and anxiety, withdrawal, and aggression are presented.

The Costs of Peer Victimization for Adjustment Problems

As expected, the subtypes of victimization showed differential associations with depression and anxiety, withdrawal, and aggression. The unique effects of relational, physical, and ethnic victimization on these adjustment problems are discussed below.

Relational victimization. Consistent with expectations and other findings (Crick & Bigbee, 1998; Crick & Grotpeter, 1996; Prinstein et al., 2001; Storch et al., 2003),

relational victimization contributed independently to higher levels of depression and anxiety and social withdrawal. Experiences of social taunts, malicious gossip, and intentional exclusion by peers may amplify children's feelings of sadness, hopelessness, and anxiety or desires to withdraw from the peer group because perceptions of the self as worthless or inferior or of others as untrustworthy are reinforced. Being the target of uncontrollable and malicious acts that jeopardize children's peer relationships might also set in motion maladaptive cognitions that distort or exaggerate children's fears of disapproval by peers (Quiggle et al., 1992; Rudolph & Clark, 2001; Tram & Cole, 2000). Children who are relationally victimized may be preoccupied with maintaining their fragile peer relationships and resist responding to relational threats in ways that could further damage their peer standing, such as through aggression (Leadbeater et al., 1999; Rudolph & Clark, 2001; Rudolph & Hammen, 1999). This goal-oriented response to preserve relationships may be particularly likely to culminate in feelings of hopelessness and anxiety or in withdrawal from the peer group when children have few allies or little confidence in their ability to assertively deal with relational threats (Erdley & Asher, 1996; Quiggle et al., 1992).

The associations between relational victimization and depression and anxiety and withdrawal may operate reciprocally. Children who become visibly upset or anxious easily are often easy and rewarding targets for victimization, which further elevates risks for depression and anxiety (Hodges & Perry, 1999). Research also indicates that withdrawn children who encounter substantial exclusion by peers become even more withdrawn over time, possibly in attempts to avoid their aggressors (Gazelle & Ladd, 2003). These cyclical processes may be particularly likely in instances where the

aggressors maintain an aura of popularity and are central within the peer network (Adler & Adler, 1995). Fears that affiliating with an excluded child will jeopardize one's own standing in the peer group may increase the likelihood that a relationally victimized child will become further ostracized by prosocial peers.

Physical victimization. As expected, physical victimization contributed to higher levels of teacher- and self-rated aggression. The consistency found across reporters and with other studies raises concerns about the long-term consequences of physical victimization for children's ability to limit aggressive tendencies and risks for antisocial behavior (Khatri et al., 2000; Prinstein et al., 2001; Schwartz et al., 1998). It is well documented that high levels of physical aggression in late childhood can give rise to serious, conduct-disordered adjustment problems in need of clinical or judicial intervention in adolescence (Loeber & Stouthamer-Loeber, 1998). Children who are hit, pushed, or verbally threatened by peers may be focused on regaining a position of power or retaliating against their aggressors in the service of self-protection (Chung & Asher, 1996; Crick & Dodge, 1996; Erdley & Asher, 1996; Yoon et al., 2000). These goal-oriented responses are likely to culminate in aggression, particularly when children feel confident that retaliating aggressively against their aggressors will reduce the threat more effectively than responding prosocially (Erdley & Asher, 1996). In aggressive children's peer groups, aggressive behavior may be normative and the use of aggression may be a socially sanctioned way to deal with perceived threats, contributing to a vicious cycle of physical victimization and aggression.

Unexpectedly, physical victimization contributed to lower levels of withdrawal in the regression analyses. However, the bivariate correlation between physical

victimization and withdrawal was not significant. This suggests that the negative effect of physical victimization on withdrawal was due to a suppressor effect (Pedhauzer, 1999).

Longitudinal investigation in this area may clarify the long-term consequences of physical victimization for socially withdrawn children.

Ethnic victimization. Only recently have studies begun to investigate the implications of peer ethnic or racial victimization for adjustment problems in late childhood (Dubois et al., 2002; Fisher et al., 2000; Phinney, Madden, & Santos, 1998). Consistent with these studies and as hypothesized, ethnic victimization contributed independently to higher levels of depression and anxiety (but not aggression or withdrawal). Children who experience ethnic or racial slurs, taunts, or social exclusion related to their ethnic or racial group may feel inferior to their peers and fear that reacting aggressively or withdrawing from the peer group will single them out further. Ethnic victimization might elevate levels of depression and anxiety because children are singled out by members of their own ethnic group. Graham and colleagues (Bellmore et al., 2004; Graham & Juvonen, 1998) found that the association between victimization and anxiety was stronger when children were in classrooms with a high proportion of same ethnic group peers relative to ethnically diverse classrooms and when the average level of aggression among their same ethnic peers was high. It may also be that depressed and anxious children infer higher levels of ethnic victimization than do aggressive or withdrawn children because of their sensitivity to subtle acts of discrimination (Phinney et al., 1998). Further investigation of the costs of ethnic victimization is needed to advance understanding of these links to depression and anxiety. Beyond assessing the main effects of subtypes of victimization on adjustment problems in late childhood, a

primary goal of this study was to investigate individual differences in social-cognitive errors and skills as processes explaining the multi-finality in victimization.

The Costs and Benefits of Social-Cognitive Errors and Skills in the Context of Victimization

Consistent with the proposed models, individual differences in hostile attributions of peers' ambiguous intent, perspective taking, and interpersonal skills partly mediated the effects of subtypes of victimization on depression and anxiety, withdrawal, and aggression. These findings are discussed below.

Hostile attributions of intent. Research on hostile attributions in relational provocations is relatively recent (Crick, 1995; Crick et al., 2002). Consistent with this line of evidence and as hypothesized, tendencies to infer hostile intent in ambiguous relational provocations were associated with depression and anxiety (but not withdrawal). Relational concerns involved social exclusion, gossiping, and friendships. As others have argued, depressed and anxious children may be hypervigilant to cues that appear to jeopardize their relationships with peers, such as thinking that peers are purposely excluding them from social activities, talking about them, or conspiring against them (Leadbeater et al., 1999; Rudolph & Clark, 2001; Rudolph & Hammen, 1999). However, hostile relational attributions did not mediate the link between relational victimization and depression and anxiety and the association between hostile relational attributions and depression and anxiety was weakened in the presence of the social-cognitive skills. In late childhood, a tendency to gain accurate information about peers' perspectives and competent interpersonal skills may be more salient predictors of how relationally

victimized children are able to manage their emotional responses than errors in attributing intent to others' relationally ambiguous actions.

In line with expectations and past research (Burks et al., 1999; Crick & Dodge, 1996; Crick et al., 2002; Schwartz et al., 1998), the tendency to infer hostile attributions in instrumental provocations was associated with higher levels of teacher- and self-rated aggression, but not depression and anxiety or withdrawal. Instrumental concerns included physical dominance, personal property issues, and control over activities and possessions. Inferences of hostility in ambiguous instrumental interactions may be most likely to fuel aggression when children have had few prosocial opportunities to accurately gauge peers' intentions and their repertoire of strategies to deal with perceived threats is limited to aggression (Erdley & Asher, 1996; Yoon et al., 2000). As other have argued, it may be that aggressive children over-estimate peer-directed instrumental aggression and respond aggressively to ambiguous threats (Lochman & Dodge, 1998). A distorted view of others as aggressive and inherently malicious, and a repertoire of maladaptive strategies and goals, likely co-contribute to continued risks for aggression. As above, the link between hostile instrumental attributions and self-rated aggression was reduced by the skills-oriented processes, suggesting that skills-oriented processes are important for lessening vulnerability to aggression under conditions of threat.

Findings partly support the hypothesized mediation model that children who are physically victimized by peers expect hostility from peers, interpret peers' intent in ambiguous and provocative interactions as hostile, and respond aggressively. Consistent with this, hostile instrumental attributions partially mediated the effect of physical victimization on teacher-rated aggression (but not self-rated aggression). Children who

are physically victimized may perceive their social world as hostile because they do frequently experience aggression from peers. Experiences of physical victimization might reinforce expectations of hostility from peers, preempt the processing of subtle social information, and trigger distorted interpretations of peers' intentions in ambiguous interactions (Crick & Dodge, 1996). These processes may be particularly likely when victimization is chronic and accompanied by high emotional arousal. In turn, these processes may contribute to feelings of intense anger and displays of reactive aggression because children are focused on getting even with their aggressors, retaining control over a prized possession, or protecting themselves. Studies suggest that hostile attribution biases in instrumental provocations and physical victimization incite reactive aggression (tendency to strike back or get angry when threatened) but not proactive aggression (enacting aggression to obtain desired rewards; Crick & Dodge, 1996; Schwartz, Dodge et al., 1998). It is likely that physical victimization, expectations of hostility, and aggression operate cyclically (Crick & Dodge, 1994). Interrupting this cycle may require increasing reactively aggressive children's ability to accurately encode the subtle cues related to peers' actions and to recognize body cues that signal anger.

Perspective taking. Consistent with expectations and previous evidence (Adalbjarnardottir, 1995; Leadbeater et al., 1989; Yeates et al., 1991), perspective taking was associated with lower levels of self- and teacher-rated aggression and depression and anxiety (but not teacher-rated withdrawal). Perspective taking referred to the ability and tendency to attend to the thoughts and feelings of peers in conflicts. Evidence shows that children who are inclined to seek others' point of view in conflicts are better able to resolve interpersonal conflicts in ways that maintain relationships and meet mutual goals,

reducing risks for depression and anxiety and aggression (Adalbjarnardottir, 1995; Leadbeater et al., 1989; Yeates et al., 1991). Competence in perspective taking may enable depressed and anxious children to limit their exaggerated view of how peers' perceive them and feelings of hopelessness and anxiety because they are able to focus on the long-term consequences of their relationships with peers rather than the immediate problem. Skillful perspective taking in conflicts may enable aggressive children to limit their own retaliatory aggression because they can appreciate peers' perceptions of a conflicted social interaction and the future consequences of their actions.

Findings provide some support for the hypothesis that victimized children have few opportunities to gain an accurate insight into peers' thoughts and feelings which, in turn, creates risks for adjustment problems. Consistent with this hypothesis, perspective taking partially mediated the effect of relational victimization on depression and anxiety (but not withdrawal) and reduced the effect of physical victimization on self-rated aggression (but not teacher-rated aggression). Relational victimization may increase the likelihood that children ruminate over their fragile relationships with peers, exaggerate peers' perceptions of them, overlook their own thoughts and feelings in peer conflicts, and focus on the immediate problem rather than the future consequences of their own and peers' actions. In turn, these processes may create risks for feelings of depression and anxiety because children believe they deserved the abuse or feel inferior to peers (Dill et al., 2004; Graham & Juvonen, 1998). Relationally victimized children may also have trouble reconciling multiple perspectives in conflicted interactions or enacting long-term solutions to deal with the problem (Yeates et al., 1991). It may also be that depressed and

anxious children have difficulty eliciting peers' point of view in conflicts because they are fearful or worried about how peers will respond.

On the other hand, physical victimization may prompt aggressive children to exaggerate their own thoughts and feelings in peer conflicts and to dismiss peers' perspectives because of the arousing nature of these physical interactions. In turn, being overly self-focused may create risks for aggression because children are angered by peers' threatening actions, are focused on immediate solutions to the problem, and cannot merge multiple perspectives in conflicts or evaluate the long-term consequences of their own actions (Erdley & Asher, 1996; Leadbeater et al., 1989). It may also be that aggressive children are unlikely to seek information about peers' point of view in conflicts because they place little value on peers' thoughts or feelings. Overall, the findings suggest that victimized children who inaccurately recognize or do not acknowledge how peers think and feel in conflicted interactions are at risk for self-perceived adjustment problems, regardless of the subtype of victimization experienced.

Alternatively, skillful perspective taking may enable children to forecast acts of victimization and to take precautionary measures to avoid negative interactions, especially when victimization is chronically perpetrated by the same peers. Insight into peers' thoughts and feelings can also foster greater flexibility in reasoning about negative peer events and may enable children to manage the threats effectively through a range of proactive and assertive strategies. In the context of victimization, cognitive flexibility may enable children to attend to the viewpoints of those outside of the immediate interaction or relationship rather than ruminate over the relational damage and negative self-evaluations (Graham, & Juvonen, 1998; Rudolph & Conley, 2005). Cognitive

flexibility may also enable children to suspend beliefs of others as malicious and restrain inclinations to use aggression as a way to deal with peer threats (Crick & Dodge, 1996; Erdley & Asher, 1996). The cognitive capacity to understand peer's internal thoughts and feelings and consistency in the use of perspective taking may also promote children's success in relating to peers because goals that accommodate the needs of both the self and peers are selected and more opportunities to practice such prosocial skills are presented (Carlo et al., 2003; Chung & Asher, 1996; Yeates et al., 1991). These processes may facilitate children's ability to enact collaborative conflict resolution strategies that deal with the problem in the long-term.

Interpersonal skills. Consistent with expectations and other studies (Adalbjarnardottir, 1995; Leadbeater et al., 1989; Yeates et al., 1991), interpersonal skills were related to lower levels of all the adjustment problems assessed here. Specifically, teacher-rated skills contributed to lower levels of teacher- and self-rated aggression, self-rated skills contributed to lower levels of depression and anxiety, and teacher- and self-rated skills predicted lower levels of withdrawal. Differences between teacher- and self-rated skills may be because depressed and anxious children underestimate their skills and acceptance by peers which, in turn, increases feelings of inferiority. Alternatively, aggressive children may inflate their skills and relationship quality with peers, potentially as a defensive posture to deny threats from others and enhance self-perceptions (Hughes et al., 1997; Quiggle et al., 1992; Rudolph & Clark, 2001). Withdrawn children may be too inhibited to participate in social interactions or their bids to interact with peers may be rebuffed, reducing opportunities to practice their skills relating to peers, such as effective group entry behaviors or conversational skills (Rubin, Burgess, Coplan, 2002).

Consistent support for the hypothesis that victimization interferes with the formation of children's interpersonal skills which, in turn, elevates risks for adjustment problems was found. Specifically, interpersonal skills partially mediated the effects of relational victimization on depression and anxiety and withdrawal and the relation between physical victimization and aggression. Victimization may limit children's access to prosocial peers and occasions to form prosocial friendships, practice collaborative social problem solving skills, and take on prosocial leadership roles in the peer group. In turn, few opportunities to build these interpersonal skills may further compromise children's ability to regulate emotions (anger, depression, anxiety) and to limit their reticent behaviors in peer groups.

Victimization may also manipulate children's beliefs about actions that will be effective in dealing with victimization. Attempts to prevent victimization may prove ineffective when the strategies children can generate only include passively ignoring or withdrawing from a problem or retaliating against the peer aggressively (Chung & Asher, 1996; Erdley & Asher, 1996; Phelps, 2001). Children who do not assert their own needs in interpersonal conflicts and who select passive conflict resolution strategies where they submit to peers' commands tend to be anxious and withdrawn. Alternatively, children who deal with peer conflicts through self-interested and revenge-oriented strategies tend to be aggressive and have fewer friends and poorer quality friendships than children who use strategies that accommodate the needs of both parties (Chung & Asher, 1996; Erdley & Asher, 1996; Rose & Asher, 1999). Children who have few prosocial peer allies and are not well accepted by peers to begin with may be seen by the peer group as easy and rewarding targets for peer abuse, particularly when they react to provocations by crying

easily, displaying immature and solitary behaviors, or retaliating aggressively (Egan & Perry, 1999; Hodges & Perry, 1999; Gazelle & Ladd, 2003).

On the other hand, a foundation of interpersonal skills may provide victimized children with some of the tools they need to regulate their emotional or behavioral responses under conditions of threat. For instance, the skills to effectively enter peer group activities and to use assertive rather than passive strategies to resolve peer conflicts may benefit relationally victimized children because they are able to manage feelings of anxiety or reticent behaviors when threatened. The skills to work collaboratively with peers and to enact prosocial rather than aggressive strategies in peer conflicts may benefit physically victimized children because they are able to limit their retaliatory responses when threatened and are able to weigh alternative responses that may resolve the problem in the long-term (Erdley & Asher, 1996; Quiggle et al., 1992; Yoon et al., 2000). The skills to develop and maintain prosocial friendships may also benefit victimized children because they are able to gain allies who can support them in resolving peer conflicts or dealing with their aggressors and can reinforce victimized children's feelings of worth and acceptance by the peer group, reducing risks for adjustment problems (Hodges & Perry, 1999; Ladd & Troop-Gordon, 2003). Peer allies can be a valuable source of support for victimized children as allies offer victimized children a safe venue to practice their conflict resolution skills and someone to confide in, enabling victimized children to manage overwhelming emotions. Overall, the consistent mediation effects demonstrated by the skills-oriented processes across the models suggest that social-cognitive skills are practical targets for programs directed at lessening the costs associated with subtypes of peer victimization.

The Moderating Effects of Gender and Ethnic Status

As expected, modest demographic differences in the effects of subtypes of victimization and the social-cognitive errors and skills on the adjustment problems examined were found. The moderating effects are discussed below.

Gender differences. Consistent with expectations, girls showed higher mean levels of teacher-rated interpersonal skills and depression and anxiety; and lower levels of hostile attributions in instrumental provocations, teacher-rated aggression, and physical victimization relative to boys. This gender-linked vulnerability to depression and anxiety may be because girls experience more challenges in late childhood that tax their ability to cope, engage in more ruminative and passive coping to deal with stress, and are more relationally-oriented relative to boys (Leadbeater et al., 1995; Nolen-Hoeksema & Girgus, 1994). However, gender did not moderate the effect of relational victimization on depression and anxiety in the current study. Other research suggests that fear of negative evaluations by peers is more salient for the prediction of depression and anxiety in the context of relational victimization than gender (Rudolph & Conley, 2005).

In contrast to findings for depression and anxiety, gender moderated the effect of relational victimization on withdrawal and the effects of teacher-rated interpersonal skills on depression and anxiety and withdrawal. Relational victimization contributed to risks for withdrawal for boys but not girls. As other findings suggest (Crick & Bigbee, 1998; Gazelle & Ladd, 2003), boys who are ostracized by the peer group through relational means may be neglected by prosocial peers because negative peer experiences carry more social costs when they violate gender role expectations. For instance, a boy who has malicious rumors spread about him may have greater difficulty integrating into the peer

group if he is submissive and anxious than a girl. Competent interpersonal skills appeared to lessen risks for withdrawn behaviors for both girls and boys, especially for boys. To successfully participate in boys' peer groups and limit reticent behaviors may require a higher threshold of skills because boys interact in large groups most often whereas girls interact in dyads more often, which may not require the same level of skills (Maccoby, 2004). However, interpersonal skills may come at a cost for boys. Findings here suggest highly skilled boys are at higher risk for depression and anxiety than interpersonally skilled girls, potentially because these boys are overly anxious about being accepted by peers or overwhelmed by the leadership roles they engage in.

Gender differences in the prevalence of physical victimization and teacher-rated aggression were also found, with boys showing higher levels of both. These differences may be because boys participate in more aggressive, rough-and-tumble interactions than girls (Maccoby, 2004). The higher threshold of teacher-rated interpersonal skills displayed by girls relative to boys may also be the resource that enables girls to resist aggressing against others physically. Interestingly, gender differences in self-rated aggression were not found, which corresponds to other research with the same measure and age group (Khatri et al., 2000). It may be that boys under-rate their own aggression relative to girls or that boys attend to different social cues that inform them of the aggressiveness of their actions than the cues that teachers observe (e.g., Hughes et al., 1997; Lochman & Dodge, 1998). Boys were more likely to identify hostility in ambiguous instrumental than girls, which may contribute to the aggressive tendencies teacher observe in boys. In contrast to findings for depression and anxiety, differences in teacher-rated aggression diminished once levels of victimization, hostile attributions, and

interpersonal skills were adjusted. In addition, gender differences in the costs of physical victimization for depression and anxiety or aggression were not found. This finding is consistent with other evidence (Storch et al., 2003), and suggests that both girls and boys who are physically victimized are at risk for adjustment problems.

Overall, the findings suggest that the processes through which victimization influences adjustment problems operate similarly for girls and boys. This indicates that programs targeting the social-cognitive errors and skills identified here may lessen the costs of peer victimization for both girls and boys. Further investigations of additional processes that may affect gender-linked vulnerability to adjustment problems for children experiencing victimization are needed, including research on children's confidence in enacting prosocial and assertive strategies to deal with subtypes of peer victimization.

Ethnic and racial status. As expected, ethnic minority children reported higher levels of ethnic victimization. Ethnic minority children also showed higher levels of teacher- and self-rated aggression and withdrawal and lower levels of teacher-rated interpersonal skills relative to European-Caucasian children. The rise of ethnic stereotyping, ethnocentrism and awareness of ethnic discrimination in late childhood may account for the ethnic status differences in ethnic victimization (see Quintana, 1998). Findings here converge with evidence that children in middle childhood hold more positive attitudes toward ethnic minority groups than children in early and late childhood (Black-Gutman & Hickson, 1996; Doyle & Aboud, 1995). Other research found that grade 10 students were more likely to report that it was okay to exclude others from the peer group because of their ethnic status than were grade 4 and 7 students, suggesting that

risks for ethnic victimization may increase with age (Killen, Lee-Kim, McGlothlin, & Stangor, 2002).

Differences in teacher-rated aggression and withdrawal were reduced to non-significance in the presence of victimization and interpersonal skills. Interestingly, ethnic minority children showed higher levels of self-rated aggression than European-Caucasian children, and these differences were only partially reduced by the addition of interpersonal skills in the regression models. Ethnic minority children may be overly observant of their aggression because expectations for appropriate behaviors differ substantively between their home and school contexts or because they are reprimanded for displays of aggression more often than non-minority children. Ethnic minority children may also show more aggression because they are more often the target of ethnic and racial taunts and slurs than non-minority children.

Interestingly, ethnic status did not moderate the effect of ethnic victimization on adjustment problems. Findings here and elsewhere suggest that unfair treatment by peers on the basis of ethnic or racial status adversely affects ethnic minority as well as non-minority children (Dubois et al., 2002; Fisher et al., 2000). As argued by DuBois et al. (2002), we know relatively little about the implications of ethnic or racial discrimination on the adjustment of both minority and non-minority children. It may be that the consequences of discrimination depend on the ethnic diversity within the school and classroom, the ethnic status of the perpetrator (whether they are of the same or different ethnic background), and how much children differ behaviorally from peers in their ethnic group (e.g., Bellmore et al., 2004; Graham & Juvonen, 2002).

Alternatively, ethnic status did moderate the effects of relational and physical victimization on self-rated aggression, with these forms of victimization contributing to aggression for European-Caucasian children but not ethnic minority children. It is possible that ethnic minority children are more tolerant of different forms of peer-directed aggression and are better able to manage these adverse experiences relative to European-Caucasian children. However, ethnic minority children who endorsed higher levels of hostile instrumental attributions were at higher risk for teacher-rated aggression relative to European-Caucasian children. This suggests that inferences of peer hostility may be more salient for the prediction of observable adjustment problems for ethnic minority children than reported experiences of victimization. Further research on the costs of peer victimization within groups of ethnic minority children are needed to fully understand these findings. Caution is urged in these interpretations given the small sample size of ethnic minority children in this study and that few studies have explored the consequences of multiple forms of victimization for ethnic minority children, and Aboriginal children in particular.

In sum, the current study suggests hostile attributions in instrumental provocations, perspective taking, and interpersonal skills operate as processes through which subtypes of victimization create risks for distinct adjustment problems. The fertile groundwork laid by this and other research (e.g., Boivin et al., 1995; Dubois et al., 2002; Graham & Juvonen, 1998; Ladd & Troop-Gordon, 2003) provides several directions for further study of the processes influencing the costs of victimization in late childhood. Longitudinal research is needed to examine whether experiences of subtypes of victimization and adjustment problems operate cyclically through children's social-

cognitive errors over time. Further investigation of children's ability to accurately gauge or attend to others' thoughts and feelings in conflicts and their ability to interact well with peers and resolve conflicts collaboratively could clarify whether these skills continue to limit risks for depression and anxiety, withdrawal, and aggression in the context of victimization over time. Can training in perspective taking and interpersonal skills interrupt the link between victimization and adjustment problems in late childhood and into adolescence? More process-orientated studies on the consequences of subtypes of peer victimization are needed to inform prevention. In addition to the social-cognitive errors and skills studied here, other salient social-cognitive processes that may mediate the link between victimization and adjustment problems include goal-directed reasoning, proactive and assertive conflict resolution strategies, attributions about who is responsible for the victimization, and cognitive understanding of ethnicity and culture.

Implications for Prevention Programming in Middle Schools

Findings from the current study indicate that social-cognitive errors and skills are viable targets for prevention programs to interrupt the adverse effects of subtypes of peer victimization on depression and anxiety, withdrawal, and aggression in late childhood. Prevention programs that simultaneously target peer victimization and the social-cognitive errors and skills examined here are needed in the middle school years, as suggested by the findings here and from prevention science research in middle schools (e.g., Bruene-Butler, Hampson, Elias, Clabby, & Schuyler, 1997; Farrell, Valois, Meyer, & Tidwell, 2003; Schultz et al., 2001). Overarching strategies for victimization prevention programs in middle schools include a universal, interactive and simple curriculum; team-building and role-play activities to improve accuracy in decoding subtle

social cues, insight into peers' thoughts and feelings during conflicts, goal-oriented and consequence-based reasoning, and collaborative social problem solving; multi-cultural activities to promote awareness of subtle acts of discrimination and intergroup relations; peer mentoring for leadership training, friendship formation and to provide prosocial allies; and training in multiple skills such as anger management, regulation of emotions, peer group entry skills, assertiveness, and strategies to make safe and thoughtful decisions in conflicts (Aber, Brown, & Jones, 2003; Bruene-Butler et al., 1997; Farrell et al., 2003; Leadbeater, Hoglund & Woods, 2003; Olweus, 1991; Schultz et al., 2001).

Limitations

Unearthing potential processes that link subtypes of peer victimization with depression and anxiety, withdrawal, and aggression in late childhood was the primary goal of the current study. Modest support for the main hypotheses was found. However, the cross-sectional design reflects only concurrent relations among victimization, social-cognitive errors and skills, and adjustment problems. Longitudinal research with this age group is needed to establish whether these mediation findings persist over time and predict changes in the dependent variables. It may be that hostile attributions or shortfalls in perspective taking and interpersonal skills operate cyclically with peer victimization over time to predict changes in specific adjustment problems. The reliance on self-report data for many of the variables may have inflated the findings because of shared method variance. Some comparisons of self- and peer-rated victimization on adjustment indicators have yielded similar patterns of findings (Crick & Bigbee, 1998) while others have found significant differences (Graham & Juvonen, 1998). Indeed, effect sizes are stronger when the same informant is used to rate both victimization and the dependent

variables (Hawker & Boulton, 2000). Nonetheless, teacher-ratings were used for two dependent variables and for interpersonal skills, and a similar pattern of results was found for teacher- and self-rated aggression. Although perspective taking did correlate significantly with teacher-rated aggression and interpersonal skills, perspective taking was not a significant mediator of the teacher-rated outcomes. The perspective taking measure was developed for the current study and the findings for this construct should be interpreted with caution. However, this measure showed adequate internal consistency and re-test reliability. Few studies have used classroom-based assessments with large samples to assess this phenomenon in late childhood (but see Eisenberg et al., 1995, 2001). Further investigation of competencies associated with perspective taking in the context of peer conflicts is needed.

Conclusion

This study contributes to understanding of the injurious and differential costs of subtypes of peer victimization for depression and anxiety, withdrawal, and aggression among ethnic minority and non-minority children in late childhood. Importantly, this study builds understanding of how individual differences in social-cognitive errors and skills can transmit the costs of subtypes of victimization to adjustment problems. The patterns of associations were consistent across the adjustment problems studied here and indicate that similar processes explain some of the multi-finality in peer victimization. Some specificity in the processes linking subtypes of victimization and distinct adjustment problems was also found, suggesting that targets for prevention may need some tailoring to address the specific costs associated with subtypes of victimization. While hostile attributions were important in the context of physical victimization and

aggression, perspective taking and interpersonal skills in particular wielded the most consistent power in limiting the differential consequences of subtypes of victimization. As argued by others (Gazelle & Ladd, 2002), prevention programs designed to prevent the costs of peer victimization require a better understanding the processes that link victimization with adjustment problems. This study advances this goal by identifying accuracy in detecting subtle instrumental cues, sophistication in perspective taking, and success relating to peers and leadership qualities as goals for victimization prevention programs in the middle school years. Providing children with the tools to strengthen these skills holds promise for preventing risks for adjustment problems in the context of victimization during late childhood.

Bibliography

- Aber, J. L., Brown, J. L., & Jones, S. M. (2003). Developmental trajectories toward violence in middle childhood: Course, demographic differences, and response to school-based intervention. *Developmental Psychology, 39*, 324-348.
- Achenbach, T. M. (1991). Manual for the Youth Self-Report and 1991 Profile. Burlington, VT: University of Vermont Department of Psychiatry.
- Adalbjarnardottir, S. (1995). How schoolchildren propose to negotiate: The role of social withdrawal, social anxiety, and locus of control. *Child Development, 66*, 1739-1751.
- Adler, P. A., & Adler, P. (1995). Dynamics of inclusion and exclusion in preadolescent cliques. *Social Psychology Quarterly, 58*(3), 145-162.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*, 1173-1182.
- Bellmore, A. D., Witkow, M. R., Graham, S., & Juvonen, J. (2004). Beyond the individual: The impact of ethnic context and classroom behavioral norms on victims' adjustment. *Developmental Psychology, 40*, 1159-1172.
- Björkqvist, K., Lagerspetz, K. M. J., & Kaukiainen, A. (1992). Do girls manipulate and boys fight? Developmental trends in regard to direct and indirect aggression. *Aggressive Behavior, 18*, 117-127.
- Black-Gutman, D., & Hickson, F. (1996). The relationship between racial attitudes and social-cognitive development in children: An Australian study. *Developmental Psychology, 32*, 448-456.
- Boivin, M., Hymel, S., & Bukowski, W. M. (1995). The roles of social withdrawal, peer rejection, and victimization by peers in predicting loneliness and depressed mood in childhood. *Development and Psychopathology, 7*, 765-785.
- Bruene-Butler, L., Hampson, J., Elias, M., Clabby, J., & Schuyler, T. (1997). The Improving Social Awareness-Social Problem Solving Project. In G. W. Albee & T. P. Gullotta (Eds.), *Primary prevention works* (pp. 239-267). Thousand Oaks, CA: Sage.
- Burks, V. S., Dodge, K. A., Price, J. M., & Laird, R. D. (1999). Internal representational models of peers: Implications for the development of problematic behavior. *Developmental Psychology, 35*, 802-810.

- Carlo, G., Hausmann, A., Christiansen, S., & Randall, B. A. (2003). Sociocognitive behavioral correlates of a measure of prosocial tendencies for adolescents. *Journal of Early Adolescence, 23*, 107-134.
- Chung, T. Y., & Asher, S. R. (1996). Children's goals and strategies in peer conflict situations. *Merrill-Palmer Quarterly, 42*, 125-147.
- Crick, N. R. (1995). Relational aggression: The role of intent attributions, feelings of distress, and provocation type. *Development and Psychopathology, 7*, 313-322.
- Crick, N. R., & Bigbee, M. A. (1998). Relational and overt forms of peer victimization: A multiinformant approach. *Journal of Consulting and Clinical Psychology, 66*, 337-347.
- Crick, N. R., & Dodge, K. A. (1994). A review and reformulation of social information-processing mechanisms in children's social adjustment. *Psychological Bulletin, 115*, 74-101.
- Crick, N. R., & Dodge, K. A. (1996). Social information-processing mechanisms in reactive and proactive aggression. *Child Development, 67*, 993-1002.
- Crick, N. R., & Grotpeter, J. K. (1996). Children's treatment by peers: Victims of relational and overt aggression. *Development and Psychopathology, 8*, 367-380.
- Crick, N. R., Grotpeter, J. K., & Bigbee, M. A. (2002). Relationally and physically aggressive children's intent attributions and feelings of distress for relational and instrumental peer provocations. *Child Development, 73*, 1134-1142.
- Crick, N. R., & Zahn-Waxler, C. (2003). The development of psychopathology in females and males: Current progress and future challenges. *Development and Psychopathology, 15*, 719-742.
- Dill, E. J., Vernberg, E. M., Fonagy, P., Twemlow, S. W., & Gamm, B. K. (2004). Negative affect in victimized children: The roles of social withdrawal, peer rejection, and attitudes toward bullying. *Journal of Abnormal Child Psychology, 32*, 159-173.
- Doyle, A., & Aboud, F. (1995). A longitudinal study of White children's racial prejudice as a social cognitive development. *Merrill-Palmer Quarterly, 41*, 209-228.
- Dubois, D. L., Burk-Braxton, C., Swenson, L. P., Tevendale, H. D., & Hardesty, J. L. (2002). Race and gender influences on adjustment in early adolescence: Investigation of an integrative model. *Child Development, 73*, 1573-1592.
- Eisenberg, N., Carlo, G., Murphy, B., & Van Court, P. (1995). Prosocial development in late adolescence: A longitudinal study. *Child Development, 66*, 1179-1197.

- Eisenberg, N., Zhou, Q., & Koller, S. (2001). Brazilian adolescents' prosocial moral judgment and behavior: Relations to sympathy, perspective taking, gender-role orientation, and demographic characteristics. *Child Development, 72*, 518-534.
- Egan, S. K., & Perry, D. G. (1997). Does low self-regard invite victimization? *Developmental Psychology, 34*, 299-309.
- Erdley, C. A., & Asher, S. R. (1996). Children's social goals and self-efficacy perceptions as influences on their responses to ambiguous provocation. *Child Development, 67*, 1329-1344.
- Farrell, A. D., Valois, R. F., Meyer, A. L., & Tidwell, R. P. (2003). Impact of the RIPP Violence Prevention Program on Rural Middle School Students. *The Journal of Primary Prevention, 24*, 143-167.
- Fisher, C. B., Wallace, S. A., & Fenton, R. E. (2000). Discrimination distress during adolescence. *Journal of Youth and Adolescence, 29*, 679-695.
- Fitzgerald, D. P., & White, K. J. (2003). Linking children's social worlds: Perspective-taking in parent-child and peer contexts. *Social Behavior and Personality, 31*, 509-522.
- Galen, B., & Underwood, M. K. (1997). A developmental investigation of social aggression among children. *Developmental Psychology, 33*, 589-600.
- Gazelle, H., & Ladd, G. W. (2002). Interventions for children victimized by peers. In P. A. Schewe (Ed.), *Preventing violence in relationships: Interventions across the lifespan* (pp. 55-). Washington, DC: American Psychological Association.
- Gazelle, H., & Ladd, G. W. (2003). Anxious solitude and peer exclusion: A diathesis-stress model of internalizing trajectories in childhood. *Child Development, 74*, 257-278.
- Graham, S., & Juvonen, J. (1998). Self-blame and peer victimization in middle school: An attributional analysis. *Developmental Psychology, 34*, 587-599.
- Graham, S., & Juvonen, J. (2002). Ethnicity, peer harassment, and adjustment in middle school: An exploratory study. *Journal of Early Adolescence, 22*, 173-199.
- Hanish, L. D., & Guerra, N. G. (2002). A longitudinal analysis of patterns of adjustment following peer victimization. *Development and Psychopathology, 14*, 69-89.
- Hartup, W. W. (1996). Cooperation, close relationships, and cognitive development. In W. M. Bukowski, A. F. Newcomb, & W. W. Hartup (Eds.), *The company they keep: Friendship in childhood and adolescence* (pp. 213-237). New York: Cambridge University Press.

- Hawker, D. S. J., & Boulton, M. J. (2000). Twenty years' research on peer victimization psychosocial maladjustment: A meta-analytic review of cross-sectional studies. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, *41*, 441-455.
- Hodges, E. V. E., & Perry, D. G. (1999). Personal and interpersonal antecedents and consequences of victimization by peers. *Journal of Personality and Social Psychology*, *76*, 677-685.
- Hoglund, W. L., & Leadbeater, B. J. (2004). The effects of family, school, and classroom ecologies on changes in children's social competence and emotional and behavioral problems in first grade. *Developmental Psychology*, *40*, 533-544.
- Hughes, J. N., Cavell, T. A., & Grossman, P. B. (1997). A positive view of self: Risk or protection for aggressive children? *Development and Psychopathology*, *9*, 75-94.
- Khatri, P., Kupersmidt, J. B., & Patterson, C. (2000). Aggression and peer victimization as predictors of self-reported behavioral and emotional adjustment. *Aggressive Behavior*, *26*, 345-358.
- Killen, M., Lee-Kim, J., McGlothlin, H., & Stangor, C. (2002). How children and adolescents evaluate gender and racial exclusion. *Monographs of the Society for Research in Child Development*, *67* (4, Serial No. 271).
- Kochenderfer-Ladd, B., & Ladd, G. W. (2001). Variations in peer victimization: Relations to children's maladjustment. In J. Juvonen & S. Graham (Eds.), *Peer harassment in school: The plight of the vulnerable and victimized* (pp. 25-48). New York: Guilford Press.
- Kochenderfer-Ladd, B., & Wardrop, J. L. (2001). Chronicity and instability of children's peer victimization experiences as predictors of loneliness and social satisfaction trajectories. *Child Development*, *72*, 134-151.
- Ladd, G. W., & Troop-Gordon, W. (2003). The role of chronic peer difficulties in the development of children's psychological adjustment problems. *Child Development*, *74*, 1344-1367.
- Leadbeater, B. J., Blatt, S. J., & Quinlan, D. M. (1995). Gender-linked vulnerabilities to depressive symptoms, stress, and problem behaviors in adolescents. *Journal of Research on Adolescence*, *5*, 1-29.
- Leadbeater, B. J., Hellner, I., Allen, J. P., & Aber, J. L. (1989). Assessment of interpersonal negotiation strategies in youth engaged in problem behaviors. *Developmental Psychology*, *25*, 465-472.

- Leadbeater, B., Hoglund, W., & Woods, T., Cpl. (2003). Changing contexts? The effects of a primary prevention program on classroom levels of peer relational and physical victimization. *Journal of Community Psychology, 31*, 1-22.
- Leadbeater, B. J., Kuperminc, G. P., Blatt, S. J., & Hertzog, C. (1999). A multivariate model of gender differences in adolescents' internalizing and externalizing problems. *Developmental Psychology, 35*, 1268-1282.
- Lochman, J. E., & Dodge, K. A. (1998). Distorted perceptions in dyadic interactions of aggressive and nonaggressive boys: Effects of prior expectations, context, and boys' age. *Development and Psychopathology, 10*, 495-512.
- Loeber, R., & Stouthamer-Loeber, M. (1998). Development of juvenile aggression and violence: Some common misconceptions and controversies. *American Psychologist, 53*, 242-259.
- Maccoby, E. E. (2004). Aggression in the context of gender development. In M. Putallaz & K. L. Bierman (Eds.), *Aggression, antisocial behavior, and violence among girls* (pp. 3-22). New York: The Guilford Press.
- Moran, S., Smith, P. K., Thompson, D., & Whitney, I. (1993). Ethnic differences in experiences of bullying: Asian and white children. *British Journal of Educational Psychology, 63*, 431-440.
- Murphy, B. C., Shepard, S. A., Eisenberg, N., & Fabes, F. A. (2004). Concurrent and crosstime prediction of young adolescents' social functioning: The role of emotionality and regulation. *Social Development, 13*, 56-86.
- Nolen-Hoeksema, S., & Girgus, J. S. (1994). The emergence of gender differences in depression during adolescence. *Psychological Bulletin, 115*, 424-443.
- Olweus, D. (1991). Bully/victim problems among schoolchildren: Basic facts and effects of a school based intervention program. In D. J. Pepler & K. H. Rubin (Eds.), *The development and treatment of childhood aggression* (pp. 411-449). Lawrence Erlbaum Ass.: Hillsdale, NJ.
- Orobio de Castro, B., Veerman, J. W., Koops, W., Bosch, J. D., & Monshouwer, H. J. (2002). Hostile attribution of intent and aggressive behavior: A meta-analysis. *Child Development, 73*, 916-934.
- Paquette, J. A., & Underwood, M. K. (1999). Gender differences in young adolescents' experiences of peer victimization: Social and physical aggression. *Merrill-Palmer Quarterly, 45*, 242-266.
- Pedhazur, E. J. (1997). *Multiple regression in behavioral research: Explanation and prediction* (3rd Ed.). New York: Harcourt Brace College Publishers.

- Phelps, C. E. R. (2001). Children's responses to overt and relational aggression. *Journal of Clinical Child Psychology, 30*, 240-252.
- Phinney, J. S., Madden, T., & Santos, L. J. (1998). Psychological variables as predictors of perceived ethnic discrimination among minority and immigrant adolescents. *Journal of Applied Social Psychology, 28*, 937-953.
- Prinstein, M. J., Boergers, J., & Vernberg, E. M. (2001). Overt and relational aggression in adolescents: Social-psychological adjustment of aggressors and victims. *Journal of Clinical Child Psychology, 30*, 479-491.
- Quiggle, N. L., Garber, J. Panak, W. F., & Dodge, K. A. (1992). Social information processing in aggressive and depressed children. *Child Development, 63*, 1305-1320.
- Quintana, S. M. (1998). Children's developmental understanding of ethnicity and race. *Applied and Preventive Psychology, 7*, 27-45.
- Roeser, R. W., Eccles, J. S., & Strobel, K. (1998). Linking the study of schooling and mental health: Selected issues and empirical illustrations at the level of the individual. *Educational Psychologist, 33*, 153-176.
- Rose, A. J., & Asher, S. R. (1999). Children's goals and strategies in response to conflicts within a friendship. *Developmental Psychology, 35*, 69-79.
- Rose-Krasnor, L. (1997). The nature of social competence. *Social Development, 6*, 111-135.
- Rudolph, K. D., & Clark, A. G. (2001). Conceptions of relationships in children with depressive and aggressive symptoms: Social-cognitive distortion or reality? *Journal of Abnormal Child Psychology, 29*, 41-56.
- Rudolph, K. D., & Conley, C. S. (2005). The socioemotional costs and benefits of social-evaluative concerns: Do girls care too much? *Journal of Personality, 73*, 115-137.
- Rudolph, K. D., & Hammen, C. (1999). Age and gender as determinants of stress exposure, generation, and reactions in youngsters: A transactional perspective. *Child Development, 70*, 660-677.
- Rubin, K. H., Burgess, K. B., & Coplan, R. J. (2002). Social withdrawal and shyness. In P. K. Smith & C. H. Hart (Eds.), *Blackwell handbook of childhood social development* (pp. 329-352). Malden, MA: Blackwell Publishers.
- Schultz, L. H., Barr, D. J., & Selman, R. L. (2001). The value of a developmental approach to evaluating character development programs: An outcome study of Facing History and Ourselves. *Journal of Moral Education, 30*, 3-20.

- Schultz, L. H., Selman, R. L., & LaRusso, M. (2003). *The assessment of psychosocial maturity in children and adolescents: Implications for the evaluation of school-based character education programs*. Manuscript under review.
- Schwartz, D., Dodge, K. A., Coie, J. D., Hubbard, J. A., Cillessen, A. H. N., Lemerise, E. A., & Bateman, H. (1998). Social-cognitive and behavioral correlates of aggression and victimization in boys' play groups. *Journal of Abnormal Child Psychology*, 26, 431-440.
- Schwartz, D., McFadyen-Ketchum, S., Dodge, K. A., Pettit, G. S., & Bates, J. E. (1998). Peer group victimization as a predictor of children's behavior problems at home and in school. *Development and Psychopathology*, 10, 87-99.
- Selman, R. L. (1980). *The growth of interpersonal understanding: Clinical and developmental analyses*. New York: Academic Press.
- Statistics Canada. (2003). Aboriginal peoples of Canada: A demographic profile. 2001 Census: Analysis series (Catalogue No. 96F0030XIE2001007). Ministry of Industry, Ottawa.
- Storch, E. A., Nock, M. K., Masia-Warner, C., & Barlas, M. E. (2003). Peer victimization and social-psychological adjustment in Hispanic and African-American children. *Journal of Child and Family Studies*, 12, 439-452.
- The McCreary Centre Society. (2000). *Raven's Children: Aboriginal Youth Health in BC*. Burnaby, BC: Author.
- Tram, J. M., & Cole, D. A. (2000). Self-perceived competence and the relation between life events and depressive symptoms in adolescence: Mediator or moderator? *Journal of Abnormal Psychology*, 109, 753-760.
- Underwood, M. K. (2003). *Social aggression among girls*. New York: Guilford Press.
- Yeates, K. O., Schultz, L. H., Selman, R. L. (1991). The development of interpersonal negotiation strategies in thought and action: A social-cognitive link to behavioral adjustment and social status. *Merrill-Palmer Quarterly*, 37, 369-405.
- Yoon, J. S., Hughes, J. N., Cavell, T. A., & Thompson, B. (2000). Social cognitive differences between aggressive-rejected and aggressive-nonrejected children. *Journal of School Psychology*, 38, 551-570.

Appendix A: Ethnic Victimization Questionnaire

Directions: Think about your relationships with other students and HOW OFTEN THESE THINGS HAPPEN TO YOU when you're with other students.	Never	Almost	Some- times	Almost the Time	All the Time
1. How often do other students tell jokes or make fun of your ethnic group or culture?	0	1	2	3	4
2. How often does another student say insulting things about your ethnic group or culture to you?	0	1	2	3	4
3. How often does another student make fun of you because of the way you speak?	0	1	2	3	4
4. How often does another student threaten to beat you up because of your ethnic group or culture?	0	1	2	3	4
5. How often does another student not include you in their activities because of your ethnic group or culture?	0	1	2	3	4
6. How often does another student make you feel ashamed of your ethnic group or culture?	0	1	2	3	4
7. How often does another student imitate your ethnic accent in a negative way?	0	1	2	3	4
8. How often does another student make fun of you because of the way you look or dress?	0	1	2	3	4

Note. Item 4 was deleted from the final scale in the current analyses because of the low endorsement of this item.

Appendix B: Perspective Taking Questionnaire

Directions: For each sentence, circle the number to show how well it describes you.	Never	Almost	Some-	Almost all	All the
	0	1	2	3	4
1. When another student and I fight about something, it is easy for me to talk it out with them.	0	1	2	3	4
2. When another student understands a story differently from me, I think they're wrong.	0	1	2	3	4
3. When another student apologizes for hurting me, I can't tell whether or not to believe them.	0	1	2	3	4
4. When another student does something that I disagree with, it is hard for me to understand why they did it.	0	1	2	3	4
5. When another student gets bad news, I also feel upset.	0	1	2	3	4
6. When I play a game with another student, it is easy for me to figure out their next move.	0	1	2	3	4
7. When another student and I disagree about something, it is hard for me to get them to understand my point of view.	0	1	2	3	4
8. When a friend has a problem with another student, it is easy for me to figure out what my friend will say or do.	0	1	2	3	4
9. When another student does something that hurts me, it is hard for me to figure out whether or not they did it on purpose.	0	1	2	3	4

Appendix B continued on next page.

(Appendix B continued)

	Never	Almost	Some-	Almost all	All the
	times	times	times	times	Time
	0	1	2	3	4
10. When I do something to another student, it is easy for me to figure out how they will react.	0	1	2	3	4
11. It is easy for me to understand how another student can both like and dislike someone at the same time.	0	1	2	3	4
12. When two students argue, it is easy for me to understand each person's point of view.	0	1	2	3	4
13. When another student says I have done something to hurt their feelings, it is easy for me to figure out if they are really hurt or just pretending to be hurt.	0	1	2	3	4

Note. Bolded items were reverse scored and comprised the items used to assess interpersonal understanding.