The moderating effects of prosocial behaviour, friendship quality and social problem solving in the relationship between risk factors and peer victimization in Colombian early adolescents

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ABSTRACT

The moderating effects of prosocial behaviour, friendship quality and social problem solving in the relationship between risk factors and peer victimization in Colombian early adolescents

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The current series of three studies was designed to use the "buffering hypothesis" model to assess the relative buffering effectiveness of positive peer experiences and personal characteristics in the association between risk factors and peer victimization in a sample of 623 Colombian early adolescents. These longitudinal studies assessed the extent to which changes in victimization varied as a function of the interaction between risk factors and positive peer and personal experiences. Using structural equation modeling techniques, the results provide evidence that reveals the specificities of the protective effects of each of the moderators. Results from Study 1 supported previous findings by revealing a significant change on children's victimization scores across the school year. More specifically, it was found that students experienced a decline on their victimization scores over the school year, and that this decline was especially strong for the students who had the highest levels of victimization at the beginning of the year. Similarly, results from Study 1 showed that both aggression and avoidance were predictive of initial scores on peer victimization, however, only avoidance was found to predict the ways in which children change over the school year. The buffering effectiveness of prosocial behaviour was also tested in this study. It was found that prosociality acts as a buffer only for highly relationally aggressive children at the

beginning of the school year, and for highly avoidant children across the school year. Study 2 examined the moderating effect of positive provisions of friendship in the association between aggression, avoidance and peer victimization over time. Contrary to our expectations, results showed that for relationally aggressive students, having a high quality friendship predicted an increase on their victimization scores over time. In contrast, for highly avoidant children friendships were protective against risk of peer victimization. Finally, Study 3 examined how social problem solving skills impacted the relationship between risk factors and peer victimization over time. Only a main effect of this variable was found at the beginning of the year; no moderating effects emerged in the analyses. Results from all studies supported the buffering hypothesis model by providing evidence that the protective effect of positive peer experiences and personal characteristics is especially effective for children who are considered to be at-risk.

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The woman who taught me how to spread my wings and fly.

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Mire la calle.

¿Cómo puede usted ser indiferente a ese gran río de huesos,

a ese gran río de sueños, a ese gran río de sangre,

a ese gran río?

Nicolás Guillén

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Chapter 1: General Introduction

Central to the study of peer relations is the notion that interactions with peers have a profound effect on children's development. It is believed that they provide a context for the development of fundamental cognitive, social and emotional competencies (Sullivan, 1953; Schneider, 2000). Research has shown that peer interactions have both positive and negative effects for children. On the positive side, peer relations provide children with a sense of personal understanding, security, self validation, emotional support and companionship (Buhrmester, 1996). On the negative side, some experiences with peers place children at risk for developing a variety of adjustment difficulties later on in their lives (Hodges & Perry, 1999).

Victimization is one of the most damaging facets of peer relations. Several studies have shown that approximately 10% to 30% of children have reported being victimized at some point in their elementary, middle school or high school years (Hodges, Boivin, Vitaro & Bukowski, 1999; Martin & Huebner, 2007; Nansel, Overpeck, Pilla, Ruan, Simons-Morton & Scheidt, 2001). A considerable body of research has aimed to disentangle the mechanisms and dynamics that explain victimization. Evidence from these studies suggests that children who are victimized face more adjustment difficulties in a number of domains of psychological functioning such as academic performance, self esteem and affective disorders (Abou-ezzeddine, Schwartz & Chang, 2007; Kochenderfer & Ladd, 1996; Kochenderfer-Ladd, & Skinner, 2002).

A common finding in the peer relations literature is that positive peer interactions are experiences that promote development and, at the same time, protect at-risk children against negative outcomes such as peer victimization (Bagwell, Newcomb & Bukowski, 1998; Bollmer, Milich, Harris & Maras, 2005; Hodges, Boivin, Vitaro & Bukowski, 1999; Hodges & Perry, 1999; Kochenderfer & Ladd, 1996). This notion, known as the "buffering hypothesis", states that resources provided by one's interpersonal ties and positive personal experiences play a moderating role in the life-stress/well-being relationship, particularly for those individuals who face higher levels of social stress (Cohen & Hoberman, 1983).

In spite of this evidence, researchers to date have not been able to explain the process that accounts for the protective effect of positive peer and personal experiences and friendships. Specifically, it is not clear exactly how positive peer interactions and the socio-emotional competencies associated with them moderate the association between risk factors and peer victimization. Accordingly, the goal of this thesis was to use the "buffering hypothesis" model to assess the moderating effect of positive peer experiences and personal characteristics in the association between internalizing and externalizing risk factors and peer victimization over time. More specifically, the present longitudinal research was concerned with understanding the differential effects of prosocial behaviour, friendship quality and social problem solving skills for two of the most prevalent risk factors associated with victimization: aggression and avoidant behaviour. By determining the relative buffering effectiveness of each variable, this study was designed to isolate the mechanisms by which positive peer experiences and social competencies protect children from maladjustment.

For the present dissertation, a general introduction is presented followed by chapters 2, 3 and 4, each covering a separate study, and a general conclusion. The introduction examines the relationship between risk factors and peer victimization as the overarching theme. It also covers some of the most important aspects of the conceptual framework of the "buffering hypothesis". The following three chapters examine how some indices of social competence (i.e., prosocial behaviour and social problem solving) and positive peer interactions (i.e., friendships) moderate the association between aggression, avoidance and peer victimization over time. The final chapter (5) is the general discussion of the dissertation.

Peer Victimization: Characteristics and effects of peer harassment

Broadly defined, victimization is the experience of being exposed to negative actions and harmful behaviour on the part of one or more peers (Hawker & Boulton, 2000; Olweus, 2001). Peer victimization may be observed in a variety of forms; it ranges from different forms of relational victimization to overt peer victimization. Relational peer victimization takes place when a child harms another peer by using means such as spreading rumors about the victim or excluding the person from the group (Crick & Grotpeter, 1996). In contrast, overt peer victimization concerns hurting another peer using physical attacks or by threatening to physically harm the person.

Evidence from a myriad of studies show that children who are victimized by their peers are at risk for developing a wide range of physical, psychological, social and academic difficulties that can have severe effects on their well being (Hodges, Boivin, Vitaro & Bukowski, 1999; Hodges & Perry, 1999; Lamarche, et al, 2006). Indeed, peer victimization has been associated with adjustment difficulties such as low self esteem

(Graham & Juvonen, 1998; Junoven & Graham, 2001), depression (Boulton & Underwood, 1992; Kochenderfer-Ladd & Skinner, 2002), anxiety and loneliness (Crick & Bigbee, 1998; Storch, Masia-Warner & Crisp, 2005), school avoidance (Kochenderfer & Ladd, 1996) and friendlessness (Bagwell, Newcomb & Bukowski, 1998; Bollmer, Milich, Harris & Maras, 2005; Bukowski, Sippola & Boivin, 1995).

Peer victimization as an individual experience and as a group process

In an effort to understand the precursors and dynamics of peer victimization several researchers have developed models that use both individual and group experiences as mechanisms for explaining the origins of this phenomenon (Bukowski & Sippola, 2001; Hodges, Malone & Perry, 1997; Hodges, Boivin, Vitaro & Bukowski, 1999; Hodges & Perry, 1999). Some of these models conceptualize victimization as an individual experience by emphasizing stable personal qualities as the mechanisms by which children become abused by their peers. In contrast, the group oriented models explain and describe victimization as a function of the goals and dynamics that underlie group processes.

The individual experience model: Factors associated with the risk for peer victimization. According to Perry, Hodges and Egan (2001) chronic harassment by peers is defined as an interplay of personal, peer-relational and family-relational effects. However, the model proposed by Perry and colleagues (2001) primarily emphasizes the idea that relatively stable personal characteristics that draw harassment from peers are the foremost mechanisms that explain victimization. Physical attributes such as being physically weak or behavioural attributes such as being withdrawn or aggressive, or even

having certain deficits in social information processing (e.g., having a hostile cognitive bias) are variables that explain a child's status as a target of abuse.

Various researchers have proposed that risk factors for peer harassment can be divided into individual and social factors. The first set includes characteristics at the level of the individual (such as self-esteem or externalizing behaviours), whereas the second group comprise factors that involve the child's social relationships (such as peer rejection and friendlessness) (Hodges & Perry, 1999; Kochenderfer-Ladd & Skinner, 2002). At the individual level, evidence from research shows that victimized children display behaviours that could invite and reinforce attacks against them. For example, children who exhibit internalizing behaviours (e.g., anxiety or withdrawn behaviour), and who are physically weak, may be signalling their incapability to defend themselves successfully against attacks. In contrast, children who exhibit externalizing behaviours, such as overt aggression, may be targets of abuse because they are more likely to irritate and provoke other children, especially aggressors (Egan & Perry, 1998).

In a study conducted with fourth and fifth graders it was found that internalizing and externalizing behaviours, as reported by teachers, predicted increases in peer-reported victimization (Hodges, Boivin, Vitaro & Bukowski, 1999). Results also indicated that the association between internalizing behaviours and victimization was attenuated for those children who had a friend. Conversely, victimization predicted increases in both internalizing and externalizing behaviour when children did not have a close friendship.

Based on these behavioural risk factors, researchers created two profiles of possible victims of peer abuse: aggressive or provocative victims and passive victims

(Hodges, Malone & Perry, 1997). The first group consists of highly emotional children who use reactive aggression as a strategy to protect themselves against aggression; in other words, these children display hostile behaviours whenever they are provoked by their peers. Another typical characteristic of aggressive victims is their lack of friends and their high levels of peer rejection (Lamarche et al., 2006; Pellegrini, Bartini & Brooks, 1999). In contrast, passive victims have been commonly described as physically slight children who are not assertive or dominant in their peer interactions. Evidence shows that in the absence of victimizers, passive victims are perfectly normal children, although they could be less popular in their peer group (Pellegrini et al., 1999).

According to Egan and Perry (1998), another individual risk factor that can contribute to victimization over time is self esteem. These authors state that this relationship could be due to several reasons. First, because children with low self esteem tend to feel worthless, they are typically incapable of asserting their needs or of defending themselves during attacks. Second, children with low self esteem usually expect and accept more negative feedback from their peers compared with children who have high self regard. Finally, the authors explain that children with low self esteem display behaviours like depression or poor self regulation that, as mentioned previously, might signal vulnerability to the aggressors. In a study conducted by these same authors with 189 students (from third through seventh grades), children completed questionnaires related to their self worth and their relationships with their peers. Results showed that general self worth, and in particular self perceived social competence, contributed to victimization over time for children who felt inadequate in their peer group or who could not stand up for themselves in social situations (Egan & Perry, 1998).

The second group of factors associated with peer victimization includes social risk factors or group factors. Hodges and Perry (1999) proposed that two social conditions may put children at risk for victimization: lack of friends and peer rejection. Children who are victimized often have few or no friends. This friendlessness contributes to their victimization since aggressors know that they can attack them without fear of retaliation. Second, it has been found that victimized children are usually disliked (or rejected) and that this low status in the group is the reason why their harassment could be legitimized for the aggressors.

Gender differences in risk factors and peer victimization. As it was previously mentioned, variability has been observed in the characteristics that make children more prone to victimization. Another important source of this variability emerges from gender differences, and consequently they need to be examined.

Gender is a major influence on children's social lives. Indeed, several theorists have argued that in the school-age years, children appear to develop and operate within separate cultures that are defined by gender (Barton & Cohen, 2004; Maccoby, 1998; Bukowski & Saldarriaga, 2007). Although researchers have found that the likelihood of becoming a target of peer harassment does not differ much by gender, the type of victimization that boys and girls are subjected to appears to be fundamentally different (Crick & Bigbee, 1998; Parke & Slaby, 1983; Perry, Hodges & Egan, 2001; Tomada & Schneider, 1997; Zimmer-Gembeck, Geiger & Crick, 2005). Evidence reveals that boys tend to experience more physical victimization whereas girls are more subjected to relational victimization. Results from these studies also conclude that both boys and girls are equally likely to become targets of verbal harassment (Perry, Hodges & Egan, 2001).

Studies of aggression also reveal a similar pattern. According to Crick and colleagues (2009) relationally aggressive behaviours are more often observed in girls, mainly because they are particularly effective in harming the social ties valued by girls. In contrast, boys have been found to be more overtly aggressive (i.e., they more often use forms of physical threats and intimidation) compared with girls (Cairns & Cairns, 1984). Finally, although there may be gender variations in the role that withdrawn behaviour plays as a risk factor for peer victimization, research in this area has been relatively scarce. Although the mechanisms by which withdrawn behaviour operate as a risk factor are well known, research is needed in order to shed light on the specific sex differences associated with these mechanisms.

The group process model: conflict between individual characteristics and group goals. Moving away from the model that emphasizes individual characteristics as the precursors of peer victimization, attention will now focus on an alternative model which uses the mechanisms of group functioning as the source from which peer victimization emerges.

According to Bukowski and Sippola (2001), groups play a critical role in individuals' development and psychosocial adjustment for several reasons. Groups offer individuals the possibility to connect with others and acquire a sense of inclusion, support, validation and acceptance. Groups also help individuals solve more profound questions about identity and life meaning. However, in this group – individual dialectic a bidirectional link is what defines the nature of the relationship between individuals and groups. Researchers propose that while groups have to be receptive and responsive to individual's needs, each member of the group also has to subject their desires to the

group processes in order to help it accomplish its goals. As Bukowski and Sippola (2001) suggest, phenomena like victimization originate precisely in this tension between a group's needs and the goals or tendencies of some of the individuals in it.

The group process model defines victimization as the outcome of the potential conflict between individuals' characteristics and the group's need to attain its three essential goals: cohesion, homogeneity and evolution. These goals concern the need that groups have: (a) to reach a minimal level of attachment that connects individuals, (b) to acquire a sense of agreement between the members as to the values, organizing themes and habits of the group and (c) to change and evolve in order to cope with contextual challenges. Within this conceptual framework it is assumed that groups' dynamics are oriented towards achieving these group goals, and in that sense, those members of the group who hinder the achievement of these goals as a group are treated in ways that isolate them and minimize their participation (Bukowski & Sippola, 2001).

This conceptualization of victimization adequately explains the evidence in the literature that suggests that both aggressive and withdrawn children are more at risk for becoming targets of peer harassment (Hodges, Boivin, Vitaro & Bukowski, 1999; Hodges, Malone, & Perry, 1997; Hodges & Perry, 1999). In the case of aggressive children, this model assumes that due to the disruptive and conflictual nature of their behaviour, these children are most likely to be the ones who challenge group cohesiveness. In addition, their desires to impose their own views and their tendency to exclude other's perspectives also challenge the achievement of homogeneity. Finally, the unpredictable and uncontrollable nature of these children's behaviour makes the goals of change and evolution difficult to reach. For withdrawn children, the lack of connection

with other members of the group and the anxious character of their interactions makes them unlikely to be promoters of group goals, and therefore, more at risk for being victimized. According to Bukowski and Sippola (2001), avoidant children's low levels of interaction with other individuals can fail to promote connections between members of the group, and consequently jeopardize the group's cohesion and homogeneity. Finally, the shyness and anxious behaviour of withdrawn children could make them resistant to change, which in turn could hinder the evolution of the peer group.

Taken together, the studies and models presented above indicate that peer victimization has been found to be predicted by risk factors such as social withdrawal, aggressive behaviours, low self esteem, peer rejection and friendlessness; both from the individual and group levels. However, researchers have not been able to account for the variables and processes that have a potential corrective effect in these associations. Clarifying the dynamics and mechanisms of the buffers that could moderate the negative association between risk factors and peer victimization is therefore warranted.

The "buffering hypothesis": Moderating effect of positive experiences

There is research evidence to indicate that peer support and prosocial peer experiences are positively related to psychosocial adjustment (Crick & Grotpeter, 1996; Hodges, Boivin, Vitaro & Bukowski, 1999; Martin & Huebner, 2007; Sarason, Pierce, & Sarason, 1990). Specifically, it has been proposed that the resources provided by one's positive interpersonal ties and personal experiences have a moderating effect on the stress–well being relationship, and that this buffering effect is especially important for those individuals who face conditions of elevated stress (Cohen & Hoberman, 1983).

Researchers have suggested several paths by which buffering processes take place. Some studies propose that social support and peer experiences buffer the effects of negative experiences by changing the individual's interpretation of the source of stress, their coping strategies or their self-evaluation. Another way in which positive peer experiences may protect individuals is by providing them with skilful and adaptive strategies to resolve the conflicts and defuse the risk of attacks. In the peer relations literature, it has also been proposed that friendships have the potential to protect individuals from maladjustment by providing them with opportunities to develop proper socio-emotional skills and regulatory capacities (Lamarche et al., 2006). Finally, the stress literature suggests that another way in which social support can reduce the negative effects of stressors is by providing individuals with a "breathing space" from the source of stress; by helping them sustain the activity needed to solve the crisis and by re-establishing the psychological resources used during the stressful situation (Cohen & Hoberman, 1983).

Another theoretical model that was developed to explain the buffering effect of positive experiences comes from the developmental psychopathology literature (Jessor, Turbin & Costa, 1998). Within this model protective factors are defined as conditions that enhance the likelihood of positive developmental outcomes and reduce the likelihood of negative consequences from exposure to risk. According to Jessor and colleagues (1998), protective factors act as buffers via three mechanisms: (a) they provide social and personal control against a problematic behaviour, (b) they promote activities that can be incompatible or alternatives to the behaviour problem and (c) they strengthen the commitment to conventional institutions such as school, family or the peer group.

The issues addressed above provide a rich conceptualization of the interrelated nature of the factors associated with peer victimization. Moreover, these theories suggest that positive peer and personal characteristics may play an important role in the relationship between risk factors and peer victimization as protective factors against maladjustment (Egan & Perry, 1999; Hodges & Perry, 1999; Olweus, 1993; Pellegrini, Bartini & Brooks, 1999).

The Present Studies

Although the literature discussed so far indicate that buffering effects take place via various socio-emotional and cognitive processes there are no studies to date that have yet compared the relative buffering effectiveness of different forms of positive peer experiences and socio-emotional competencies. As Cohen and Hoberman (1983) have suggested, further work is needed in order to examine the nature of the potential moderators in the relationship between risk factors and negative peer interactions. More specifically, this gap in the literature calls for studies that compare the ability of potential moderators to protect individuals against the effects of various forms of maladjustment, and that isolate the mechanisms by which different aspects of positive personal experiences and peer interactions become effective protective factors.

Unlike any known study to date, the studies presented in this dissertation expand on previous research by examining whether positive qualities of individuals and peer interactions can protect children from the detrimental effects of peer victimization. More importantly, these studies were designed to determine the buffering effectiveness of positive personal characteristics and peer experiences. The three longitudinal studies assess the extent to which changes in victimization vary as a function of the interaction

between risk factors and positive peer experiences and personal characteristics. Using a latent growth curve model, a technique that has been rarely used in these types of studies, evidence is presented that incorporates a developmental perspective to the study of psychological adjustment.

The first and overarching objective of these three studies was to examine the association between risk factors and changes in peer victimization over time. Based on evidence presented by previous studies (Hodges, Boivin, Vitaro & Bukowski, 1999; Hodges, Malone, & Perry, 1997; Hodges & Perry, 1999; Troop-Gordon & Ladd, 2005), it was expected that: (a) a significant positive association between aggression (i.e., physical and relational), avoidance and peer victimization would be found; (b) a significant negative slope (i.e., a decrease) for peer victimization during the school year would be found, and (c) significant variance in the intercept and the slope representing individual differences on initial scores and changes in victimization over time would be revealed. Given that findings from different studies have suggested that physical aggression is more prevalent for boys than for girls, and that relational aggression is used similarly by both sexes, (Björkqvist, Lagerspetz, & Kaukiainen, 1992; Crick, 1997), potential direct effects involving sex were tested, even though no specific hypotheses were formulated. A similar procedure was used for the effect of grade. Several studies have shown that levels of physical aggression decrease with age (Kim, Kamphausb, Orpinasc & Keld, 2010). Accordingly, the final models controlled for the effects of grade although no specific hypotheses were formulated.

The second objective, specific to each one of the studies, was to determine whether prosocial behaviour (Study 1), friendship quality (Study 2) and social problem

solving skills (Study 3) have a buffering effect on the relationship between risk factors and peer victimization. Three models were tested separately (see Figure 1). Level one of each of these models represented the association between risk factors and changes in victimization across four time points in the school year. Level two represented the differential and protective effects of prosocial behaviour, friendship quality and social problem solving skills. Models were also tested separately for internalizing (avoidance) and externalizing (physical and relational aggression) problems. Taking into account evidence presented by previous studies (Bollmer, Milich, Harris & Maras, 2005; Fox & Boulton, 2005; Lamarche et al, 2006) it was predicted that the link between the risk factors (aggression and avoidance) and peer victimization would be weaker at high levels of the moderators (prosocial behaviour, friendship quality or social problem solving skills) particularly for those children who were high on the risk factor. The specific hypotheses for each study are elaborated in more detail in the following chapters.

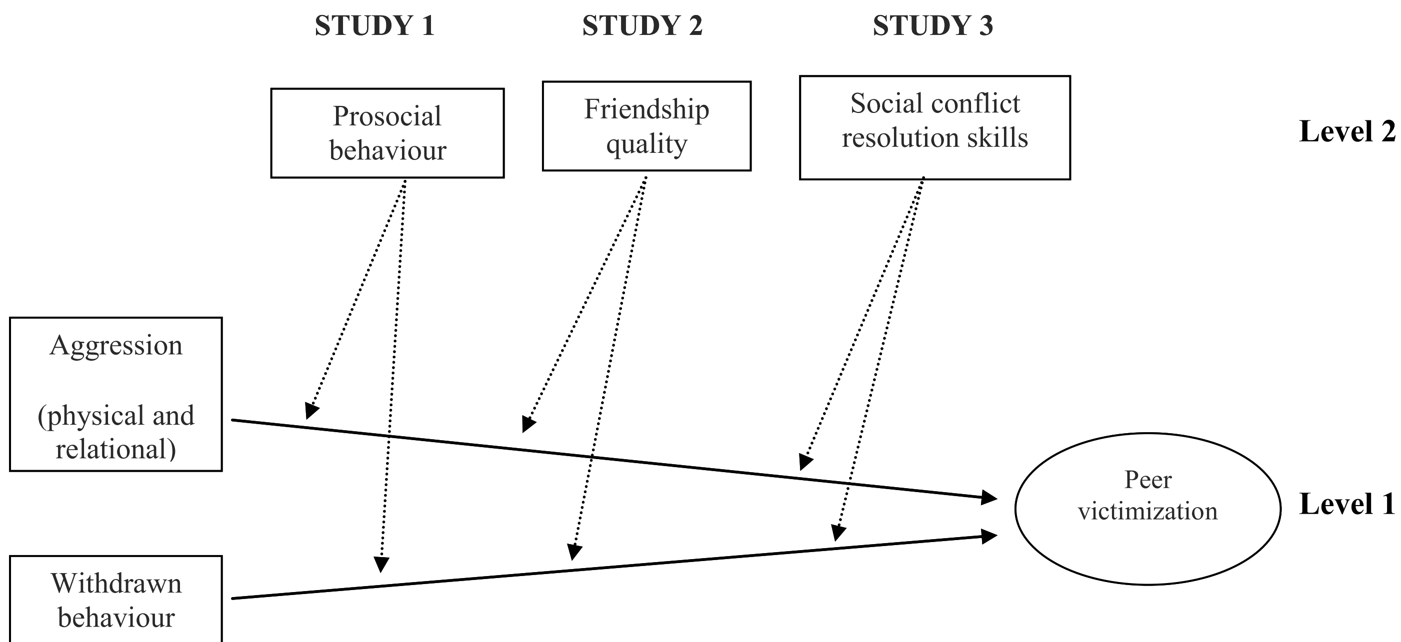

Figure1. Conceptual model of the moderating effect of prosocial behaviour, friendship quality and social problem solving in the relationship between risk factors and peer victimization.

Method for the Three Studies

Participants

Participants in the three studies were a sub-sample of a larger longitudinal study that included 1594 school age boys (*n* = 842) and girls (*n* =752) (mean age = 10.28 years, SD = 0.97) from fourth, fifth and sixth grade in nine schools in Bogotá, Colombia. In Colombia students of all ages attend classes at the same location, but they are organized in four major groups: Preschool education (i.e. pre – K, preschool and first grade), basic primary education (i.e. second to fifth grade), secondary education (i.e. sixth to ninth grade), and vocational education (i.e. tenth to eleventh grade).

Students were enrolled in mixed-sex schools that represented an urban population of low (*n*=633), middle (*n*=828) and upper (*n*=133) socio-economic status (SES). In Colombia, the SES of a neighbourhood is designated by an official rating known as the *estrato*. The estrato rating is an index of the neighbourhood's affluence (Rueda Garcia, 2003). *Estrato* scores range from 1 to 6, where higher scores indicate higher affluence. In this project, the low SES group corresponds to *estratos* 1 and 2, the middle SES corresponds to *estratos* 3 and 4 and the high SES corresponds to *estratos* 5 and 6. Students participating in the study were representative of children who attend low – middle SES and middle upper SES schools in Bogotá[1].

The particular sub-sample used in the present series of studies consisted of 623 boys (*n*= 351) and girls (*n* =272) (mean age = 10.27 years, SD = 0.98) from three of the nine schools included in the larger project. These three schools represented a diverse population, not only due to their variations in socio-economic status (two from low –

[1] In contrast to other school systems around the world, Colombia's low, middle or high SES schools can be privately owned. What determines the SES of a particular school is the affluence of the housing and services provided in the area where students live and where the school is located.

middle SES and one from middle upper SES), but also in their size, administrative structure, pedagogical models, infrastructure and neighbourhoods where they are situated. A sub-sample of the larger group of participants was included in these studies because of the need for a more intensive and elaborated data collection. Thus, the entire sample was not included in these analyses for practical reasons.

It is worth mentioning that even though an important number of studies on peer victimization have been conducted using culturally diverse samples (Delfabbro, Winefield, Trainor, Dollard, Anderson, Metzer & Hammarstrom, 2006; Waasdorp, Bagdi & Bradshaw, 2010; Wiens, Haden, Dean & Sivinski, 2010), only recent evidence has been gathered on this topic using Hispanic samples and Latin American contexts (Chaux, 2005; Hanish & Guerra, 2000; Velásquez, Santo, Saldarriaga, López & Bukowski, 2010). Thus, the use of this particular sample of students expands on previous research by examining the association between risk factors and peer harassment found in other contexts and samples, and by testing the buffering effectiveness of positive peer experiences and personal characteristics in a Latin American context.

Procedure

Initial permission for participation was obtained from school principals or the academic coordinators of the schools. Following this, active consent was requested from the parents of the potential participant pool. Consent letters, informing parents of the objectives and procedures of the study, were sent home with the students (see Appendix A and B). Only participants whose parents returned a signed letter of consent were included in the study. Of the potential pool of participants, over 79% of parents provided consent for their children.

Students participating in the study completed a Spanish version of the questionnaires. The original English version of the questionnaires was given to Colombian psychologists, who assessed their meaning and relevance for Colombian children. Then items were translated into Spanish by researchers working in the fields of education and psychology.

Using a group administration procedure, participants completed a multi-section questionnaire during their homeroom class time. The students' rights as participants were explained to the class before children started answering the questions by the researchers. Children completed measures designed to assess (a) characteristics of the children in the class (i.e., aggression, prosocial behaviour, avoidance and victimization), (b) qualities of the child's relationship with his or her best friend and (c) social problem solving skills. As a token of appreciation, each child received schools supplies for their participation.

Data were collected at four times points during the academic year. In all these schools the academic year starts in February and ends in November, therefore data were collected approximately every 10 weeks during that period, depending on the exact schedules of the schools.

Measures

Behavioural characteristics of the participants. The different behaviours that characterize the students in the classrooms were measured using an unlimited choice peer assessment questionnaire (see Rubin, Bukowski, & Parker, 2006 for a description). Four characteristics were measured for the current studies: physical and relational aggression, withdrawn behaviour and prosocial behaviour; prosocial behaviour included a composite of sharing, caring, helping and inclusion behaviours.

The peer assessment questionnaire consisted of a set of items representing characteristic behaviours of children in their classrooms (see Appendix C). Children were asked to nominate the classmates that fit each characteristic on the list. They could choose as many or as few classmates as they wanted, excluding themselves. Two items in the questionnaire assessed *physical aggression* (i.e.,"someone who hits or pushes people" and "someone who gets involved in physical fights") (α =.92) and two were indices of *relational aggression* (i.e.,"someone who tries to keep others out of the group" and "someone who talks badly about others behind their backs to hurt them") (α =.86). Victimization and withdrawn behaviour were also measured using two items. For *victimization* the items were: "others treat them badly" and "others call him/her bad names" (α =.80), and for *withdrawn behaviour* "someone who would rather play alone than with others" and "someone who likes to be by him/herself" (α = .80).

Finally, eight items assessed the four dimensions of *prosocial behaviour*. *Sharing* items were "someone who shares things with others" and "someone who likes sharing with others" (α =.91). For the *caring* dimension items were "someone who knows when others are sad" and "someone who cares about other people's feelings" (α =.91) and for *including others* "someone who invites other people to play" and "someone who tries to make everyone participate" (α =.85). Finally, the items that measured *help* were "someone who helps others when they need it" and "someone who is willing to help others) (α =.92).

Adjustment for peer-nomination scores based on classroom size differences. One of the most controversial aspects in the use of class-play and peer nomination techniques is related to the potential for variations in the size of the observed scores due to differences

in the number of children in classrooms. Given that classrooms vary in size, and therefore in possible nominators for a peer assessment (in this particular case they ranged from 9 to 31), the scores for aggression, avoidance and prosocial behaviour were mathematically corrected to control for these differences in size.

A regression-based procedure was used in order to maintain the original scale of the items (i.e., number of nominations received) (Velásquez, Bukowski & Saldarriaga, 2010). Linear and quadratic effects of the classroom size (minus the person receiving the nominations) were used as predictors of the variables' scores at Times 1 and 2. This procedure permitted an examination of the ways in which changes in the classroom size impacted the number of nominations received on each variable. An average number of nominations received for the peer assessment items was calculated. This average was included as the dependent variable in the regression analysis. Results indicated that classroom size explained 12% of the variance of peer assessment scores at Time 1 and 8% ant Time 2. In this case, the linear *B*s at time 1 and 2 were 0.159 and 147, respectively, and the quadratic *B*s at Times 1 and 2 were -0.006 and -0.001, respectively. The scores for the variables used in the three studies were then adjusted according to the procedure described above.

Friendship Quality. As can be seen in Appendix D, students' perceptions of the characteristics of their relationship with their best friend were assessed using a shortened version of the *Friendship Quality Scale* (Bukowski, Hoza, & Boivin, 1994). This widely used 23-item questionnaire evaluates five dimensions of the friendship relationship: closeness, companionship, help, security and conflict. For the purpose of the present studies, only the first four dimensions – considered to be positive provisions of

friendship– were used to create a general score for friendship quality (α =.83). The *companionship* dimension was assessed using three items that were a composite of behaviours involving play, close associations and company (e.g.,"My friend and I spend a lot of our free time together") (α =.65). *Help* had seven items that evaluated student's perception about mutual help and assistance in their relationship, and protection in situations of victimization (e.g.,"My friend would help me if I needed it") (α =.90). S*ecurity* had four items to evaluate children's perceptions about the stability of their friendship in spite of conflicts, and their sense of trust in friends (e.g.,"If I have a problem at school or at home I can talk to my friend about it") (α =.62). Finally, *closeness* had five items that explored children's appraisal of being appreciated and loved by their friend (e.g.,I feel happy when I am with my friend") (α =.76). Participants rated the quality of their relationship with their friend using a standard five-point Likert scale that ranged from "1 = Not true for my friendship" to "5 = Really true for my friendship".

Social Problem Solving Skills. One of the most common methods used for evaluating children's cognition is the use of vignettes to help children generate multiple responses to hypothetical problematic situations. According to Mayeux and Cillissen (2003), vignettes typically describe situations that children face in their everyday school interactions, such as conflicts with peers or teachers. For the present studies, a new instrument that used hypothetical vignettes was developed (see Appendix E). This scale measured an individual's perceptions of one's problem solving behaviour by assessing a list of possible reactions and responses to a specific problematic situation. Children were presented with one hypothetical story about an ambiguous social situation, more specifically a misunderstanding with some classmates. After reading the story, students

were asked to rate a series of possible reactions, behaviours and feelings using a standard five-point Likert scale that ranged from “1 = Not true for me” to “5 = Really true for me”. For this study, only positive dimensions of social problem solving were used to create a general score: Non-hostile cognitive bias (α =.71), assertive solutions (α =.73) and generation of alternatives (α =.78).

Chapter 2: Study 1- The moderating effect of prosocial behaviour

Care, help, share, inclusion of others, compassion, empathy, sympathy and comfort are among the key indices that have been identified as elements of prosociality. Prosocial behaviour has been defined as voluntary actions which aim to benefit others (Holmgren, Eisenberg & Fabes, 1998). According to various researchers, one of the most distinctive features of this behaviour is that the motivation underlying the beneficial actions is not always evident (Grusec, Davidov & Lundell, 2002; Hastings, Utendale & Sullivan, 2007). Indeed, Hastings and colleagues (2007) explain that the reasons for behaving in a prosocial manner can be diverse. Individuals may behave prosocially because they expect reciprocity or a reward; because they fear the consequences of not being prosocial; because they want to alleviate their own distress or even because they want to alleviate the other person's distress. In fact, the most accepted definitions of prosocial behaviour take this diversity into account and incorporate the notion that prosocial acts are those that aim to help others regardless of the costs or benefits that they entail for the prosocial individual (Grusec, Davidov & Lundell, 2002).

According to Grusec, Davidov, and Lundell (2002), empathic and sympathetic concerns are considered fundamental motivators of prosocial behaviour. These authors explain that both empathy (i.e., an affectively-laden response that is identical or very similar to what the other person is feeling) and sympathy (i.e., an affective response that is characterized by feelings of sadness or concern) are vicarious responses to another person's feelings that elicit behaviours to alleviate the needs of the other person. Recent studies examining empathic and sympathetic concerns have shown that in order to capture the nature of the association between these elements and prosocial behaviour, it is

necessary to differentiate them from personal distress. Empathy and sympathy are other-focused reactions, whereas personal distress is a self-oriented emotional response. And while all of them can generate prosocial acts, it is more likely that either empathy or sympathy would generate prosociality given that the main goal of the prosocial individual is to increase the other person's well-being, while the main goal of personal distress is not.

Gender differences in prosocial behaviour. Evidence from various studies indicates that there are gender differences in prosocial behaviour. Although it has been shown that girls tend to display more prosocial behaviour compared with boys (Martin & Huebner, 2007) a meta-analysis by Eisenberg and Fabes (1998) revealed that the apparent gender differences in the use of prosocial behaviours vary as a function of the target of the behaviour, the type of prosocial behaviour examined, and the method used to measure it (Grusec, Davidov & Lundell, 2002). For example, Eisenberg and Fabes' (1998) meta-analysis showed that girls were more likely to be prosocial towards adults compared to peers; they tended to display more behaviours like kindness and consideration versus sharing or helping; and that they were identified as more prosocial when the measures used were self- or peer-report as opposed to direct observation.

Prosocial behaviour as a protective factor

In spite of this gender differences, researchers have found that in childhood and adolescence being prosocial is related to a variety of positive indices of psychosocial functioning for both boys and girls. For instance, it has been found that children who are prosocial tend to have better academic performance (Wentzel & McNamara, 1999), are more accepted by their peers (Warden & Mackinnon, 2003), are more self confident

(Larrieu & Mussen, 2001) and have better and more stable friendships and peer relations (Wentzel & Erdley, 1993).

According to Lamarche and colleagues (2006), prosocial behaviour has been identified as a potential buffer against negative developmental outcomes. These authors propose that prosocial behaviour operates as a buffer by providing children with concrete and adaptive strategies that can help them resolve social conflicts in an assertive manner, and at the same time, defuse the risk of escalation in social conflicts. They also suggest that by acquiring skills such as perspective taking, empathy or sympathy, children develop the necessary emotional regulatory capacities that protect themselves from becoming targets of peer harassment.

However, in spite of the development of Lamarche and colleagues' (2006) theoretical framework; there is very little empirical research that has directly tested the ways in which prosocial behaviour protects at-risk children from the detrimental effects of negative peer interactions (Bollmer, et al., 2005; Lamarche et al., 2006; Warden & Mackinnon, 2003). One of the few studies that tested the protective effect of prosocial behaviour examined the links between children's prosocial behaviour, their sociometric status, empathy and social problem solving strategies for bullies, victims and friends (Warden & Mackinnon, 2003). Results showed that children who were highly altruistic and prosocial were more emotionally stable, self-confident and had more positive and satisfying peer relations. It was also found that prosocial friends showed greater empathic awareness compared with victims and bullies, and responded more constructively to socially awkward situations compared with bullies. In particular, results showed that prosocial children were more likely to propose constructive solutions to difficult social

situations, while bullies were more likely to propose aggressive solutions and victims more passive or avoidant solutions.

Another study that explored this protective effect examined nearly 600 American sixth and eighth graders from five public middle schools (Martin & Huebner, 2007). The main goal of this study was to investigate whether there were gender differences in the relationship between victimization scores (overt victimization vs. relational) and the emotional well being (i.e., positive affect and life satisfaction) of early adolescents. More specifically, this study aimed to examine whether prosocial acts operated as moderators of the relationship between these two variables. Results showed significant gender differences in the prosocial and victimization experiences (i.e., females reported more prosocial experiences compared with males, and males reported more overt victimization than females). Interestingly, results also revealed the importance of prosocial behaviour in victimization experiences: although moderating effects were not found, findings demonstrated that greater frequencies of prosocial interactions were associated with increases in life satisfaction and positive affect at all levels of victimization experiences.

Finally, a study conducted by Lamarche and colleagues (2006) showed that friends' prosocial behaviour played a central role in mitigating the risk of victimization for vulnerable children. In this case, when aggressive children had friends with low prosocial abilities, the link between reactive aggression and victimization was strong. In contrast, when the friend was high in prosocial behaviour, the link between aggression and victimization was non-existent. The authors suggested that a possible reason why highly prosocial friends could protect children from victimization is that they are able to defuse or prevent potential attacks by peers. In this sense, victimized children could

benefit from prosocial friends because these friends can help them negotiate and solve conflicts in difficult social situations, and they can serve as models for learning appropriate social skills and regulatory capacities.

Prosocial behaviour as a mechanism for resource control

Although some researchers have focused on the study of aggression as a means of attaining social dominance and resource control, to date only a small number of studies have examined the role of prosocial behaviour as a mechanism for achieving dominance and status in a group (Crick, Murray-Close, Marks & Mohajeri-Nelson, 2009). Within this conceptual framework, prosocial behaviour is defined as a mechanism for influencing others and obtaining resources from a group. According to Hawley (2003) social groups have resources (both material and psychological) that are critical for children, and positive social interactions are among the most valuable resources that groups offer. As Hawley (2003) explains, groups pressure their members to assume an active role in the group's functioning, and to fulfill the expectations related to the use of the resources offered by the group. It is precisely this pressure which gives rise to the strategies that members of the group create in order to attain control of the resources.

The underlying assumption of this model is that children use different strategies to gain control of the group's resources. In this way, by cooperating with others and treating them in a way that fosters positive interactions (e.g., sharing, helping or comforting), they are able to compete and be more successful in obtaining control of those resources (Hawley, 2003; Hawley, Little & Pusupathi; 2002). Indeed, results from various studies suggest that this prosocial resource control strategy is characteristic of a particular group of children. Hawley and her colleagues (2002) studied differences across five groups of

children (grades three to six) that used various types control strategies: Prosocial controllers who mainly used prosocial strategies, coercive controllers who used coercive strategies, bi-strategic controllers who used both, non-controllers who did not use strategies for control and typicals who were not outstanding on any strategy.

Results showed that prosocial controllers had more positive characteristics compared with other groups: they had better social skills and agreeableness, they express intrinsic motivations to pursue friendships and they had a positive sense of well being. In contrast, coercive controllers exhibited patterns similar to the one observed in bullying: they had high levels of hostility and need for recognition. However, perhaps the most interesting finding is the one related to bi-strategic children; this group was the one that showed the highest levels of control and characteristics associated with both prosocial and coercive orientations. By being both aggressive and prosocial at the same time, these children appear to enjoy the benefits that prosocial controllers get, and also, bear the costs that aggressive controllers pay. According to Hawley and colleagues (2002), these mixed social experiences could make the bi-strategic children feel positive, competent, and connected at times, but also negative, incompetent, and lonely at others.

The current study: The effect of prosocial behaviour

The findings described above are particularly relevant as they suggest that prosocial behaviour has the potential to influence peer interactions and to correct for the detrimental effect of peer victimization. However, empirical studies examining the moderating effect of this variable on the association between risk factors and peer victimization have been scarce. To date, no previous studies have examined this moderating role of prosocial behaviour in a longitudinal design. In the present study, a

structural equation modeling technique was used to examine variations in the association between aggression (physical and relational), withdrawn behaviour[2] and peer victimization over time to determine the extent to which this relationship varied as a function of children's prosociality.

Hypotheses for Level 1: Longitudinal changes in peer victimization. Three hypotheses consistent with the overall goal of this dissertation (i.e., to explore the association between risk factors and changes in peer victimization over time) were proposed. First, it was expected that both high levels of aggression (i.e., physical and relational) and high levels of withdrawn behaviour would positively predict peer victimization at the beginning and over the school year. Second, based on previous research (Troop-Gordon & Ladd, 2005) it was expected that there would be a significant decrease in peer victimization during the school year. Third, significant individual differences in the children's levels of victimization at the beginning of the school year were anticipated, as well as differences in the ways children's victimization socres changed across the school year. Finally, even though the effects of sex and grade were controlled in the models, no specific hypotheses were formulated regarding these two variables. Models were tested separately for aggression (physical and relational) and for avoidance.

Hypotheses for Level 2: Moderating effect of prosocial behaviour. The second set of hypotheses concerned the effect of prosocial behaviour in the association between aggression, withdrawn behaviour and peer victimization. A positive moderating effect of this variable was expected. Based on the "buffering hypothesis" model, it was predicted that the strength of the association between risk factors and peer victimization would

[2] This term will be used interchangeably with the term avoidance.

decrease in the presence of high levels of prosocial behaviour; however only for those children who were high in the risk factor. In other words, it was hypothesized that: (a) for those children who were high in relational or physical aggression a reduction in their victimization scores would be observed (at the beginning and during the school year) in the presence of high levels of prosocial behaviour. In the same way, (b) it was hypothesized that for highly avoidant children a reduction in peer victimization would be observed (at the beginning and throughout the school year) in the presence of high levels of prosocial behaviour.

Results

Overview of the statistical analyses for the three studies

In this section the general procedures that were used to analyze the data for the three studies will be explained. In the same way, results for the Level 1 hypothesis will be presented, as well as the relevant analyses for Study 1. Results related to the moderating effect of friendship quality and social problem solving will be included only in Chapters 3 and 4.

Prior to performing multiple imputation procedures to replace missing data, the patterns of "missingness" were examined. Following these procedures bivariate correlations and descriptive statistics were obtained to determine the distribution of the variables and to examine the hypothesized relationship between the predictors and outcomes. Using a structural equation modeling technique, latent growth curve analyses were conducted to examine changes on peer victimization over time. Finally, models using the latent growth curves, predictors and moderators were created in order to test the specific hypothesis for the three studies.

Multiple Imputation process for the three studies

Preliminary analyses were conducted to determine the percentage of missing data in the sample. It was determined that the majority of the variables had between 1.6% to 10.9% of missing data (see Table 1). However, only the Friendship Quality variables had a higher percentage of missing data (35%), due to the drop out of one school at the beginning of the study. After conducting the MCAR test (Little, 1988) to test for the mechanisms that source of missingness in the data , it was determined that the data were not missing completely at random (χ^2 (2256, N=1594) = 3280.306, p<.001). Multiple imputation of 20 data sets was conducted using AMELIA II - Version 1.2-17 (Honaker, King & Blackwell, 2010). The general procedure for analyzing the data required three main steps (Troop-Gordon & Ladd, 2005): the creation of 20 imputed data sets, the analyses of these data sets and the combination of the results across data bases. Analyses were conducted using the statistical package M-plus version 5 (Muthén & Muthén, 2007). The 20 imputed data sets were used as the input for the analyses, using the "TYPE = IMPUTATION" option in M-plus. This type of analysis corrects for differences in standard errors using Rubin's rules. The imputation model included all the variables measured in this study, as well as additional information that was collected as part of a larger project. All the results presented below, including correlation, means, standard deviations and path coefficients (standardized and unstandarized) were computed using the procedures mentioned above.

Descriptive statistics and bivariate correlations

Table 2 provides descriptive information for the variables included in the three studies. As it was expected, the mean scores for peer victimization decreased across the

school year ranging from 2.24 to 3.68. Means for the additional variables were also in the expected ranges. Pearson correlations were computed to examine the stability across assessments, the relationship between the variables and the predictive associations between them. All the correlations were found to be in the expected direction, and the majority were significant at a p value < 0.01. As expected, correlations between the four time points for the peer victimization scores were fairly high (they ranged between 0.75 and 0.83). Correlations among the predictors and the criterion variables were all significant but moderate, however, they were consistent with evidence reported by previous studies in this area. Finally the correlations among the predictors, the outcome and the moderators were also modest but mostly significant, except for the case of social problem solving (see Table 3).

Table 1. Percentage of missing data and descriptive statistics for the indicators that comprised the variables used in the three studies.

Variable	Percent Missing	Mean	SD
Time 1			
Physical aggression	3.2	3.72	4.52
Relational aggression	3.2	3.52	2.94
Help (Peer Assessment)	3.2	6.36	3.90
Avoidance	3.4	1.74	2.16
Care	3.4	5.64	4.01
Inclusion	3.4	5.03	3.41
Sharing	3.4	6.06	3.69
Victimization	3.4	3.87	3.42
Closeness	36	4.08	0.88
Companionship	36	3.98	0.90
Help (FQS)	36	3.92	0.92
Security	36	3.72	0.96
Time 2			
Victimization	1.6	2.80	2.83
Generation of alternatives	10.3	3.68	0.91
Non hostile attribution	10.4	2.43	1.09
Assertive solutions	10.4	2.99	1.01
Time 3			
Victimization	1.6	2.56	2.57
Time 4	2.7	3.07	3.92
Victimization	10.9	3.66	0.98

Table 2. Descriptive statistics for the variables included in the models.

	Mean	SD
Level 1		
T1 Physical aggression	3.51	4.39
T1 Relational aggression	3.32	2.79
T1 Avoidance	1.64	2.07
T1 Victimization	3.68	2.97
T2 Victimization	2.64	2.77
T3 Victimization	2.42	2.50
T4 Victimization	2.24	2.52
Level 2		
Prosocial Behaviour	6.22	3.21
Friendship Quality	3.92	0.73
Social Problem Solving	3.04	0.74

Table 3. Bivariate Correlations between aggression, avoidance, peer victimization, social competencies and friendship.

Variable	1	2	3	4	5	6	7	8	9	10
1. T1 Physical aggression	1	0.623**	0.214**	0.503**	0.507**	0.505**	0.456**	-0.407**	-0.225**	-0.057
2. T1 Relational aggression		1	0.151**	0.332**	0.363**	0.365**	0.295**	-0.271**	-0.028	0.009
3. T1 Avoidance			1	0.523**	0.468**	0.441**	0.466**	-0.289**	-0.159**	-0.011
4. T1 Victimization				1	0.801**	0.780**	0.753**	-0.237**	-0.173**	-0.063
5. T2 Victimization					1	0.835**	0.768**	-0.296**	-0.193**	0.002
6. T3 Victimization						1	0.809**	-0.284**	-0.210**	-0.046
7. T4 Victimization							1	-0.298**	-0.168**	-0.020
8. Prosocial Behaviour								1	0.302**	0.024
9. Friendship Quality									1	0.187**
10. Social Problem Solving										1

** $p < 0.01$.

Longitudinal changes in peer victimization

The goal of the first analysis was to predict developmental changes in peer victimization over a period of one year as a function of children's baseline on aggression and withdrawn behaviour. In order to accomplish this goal, a latent growth curve analysis was used to examine two aspects of this relationship: changes in victimization across the school year; and the effect that risk factors (i.e., aggression and avoidant behaviour) had on the initial levels and the changes of victimization over time. Models were run separately for aggression and for withdrawn behaviour (see Figures 2 and 3).

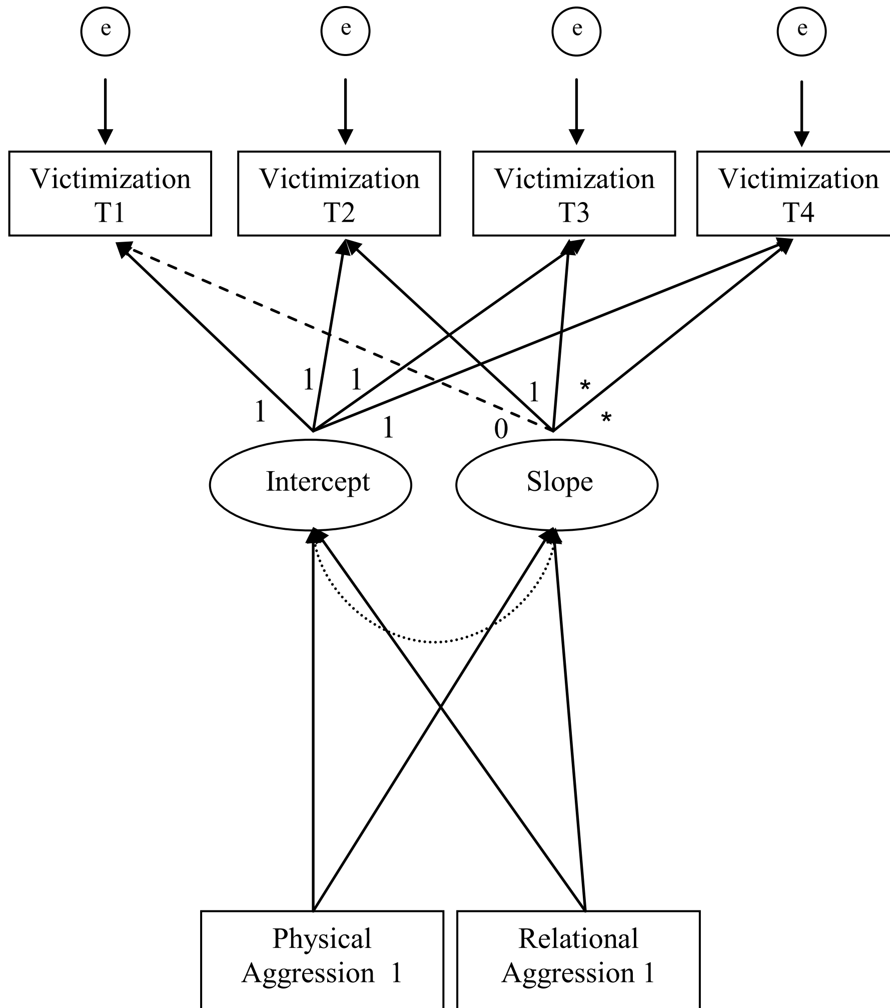

Figure 2. Theoretical model for predicted relationships between aggression and the trajectory of peer victimization.

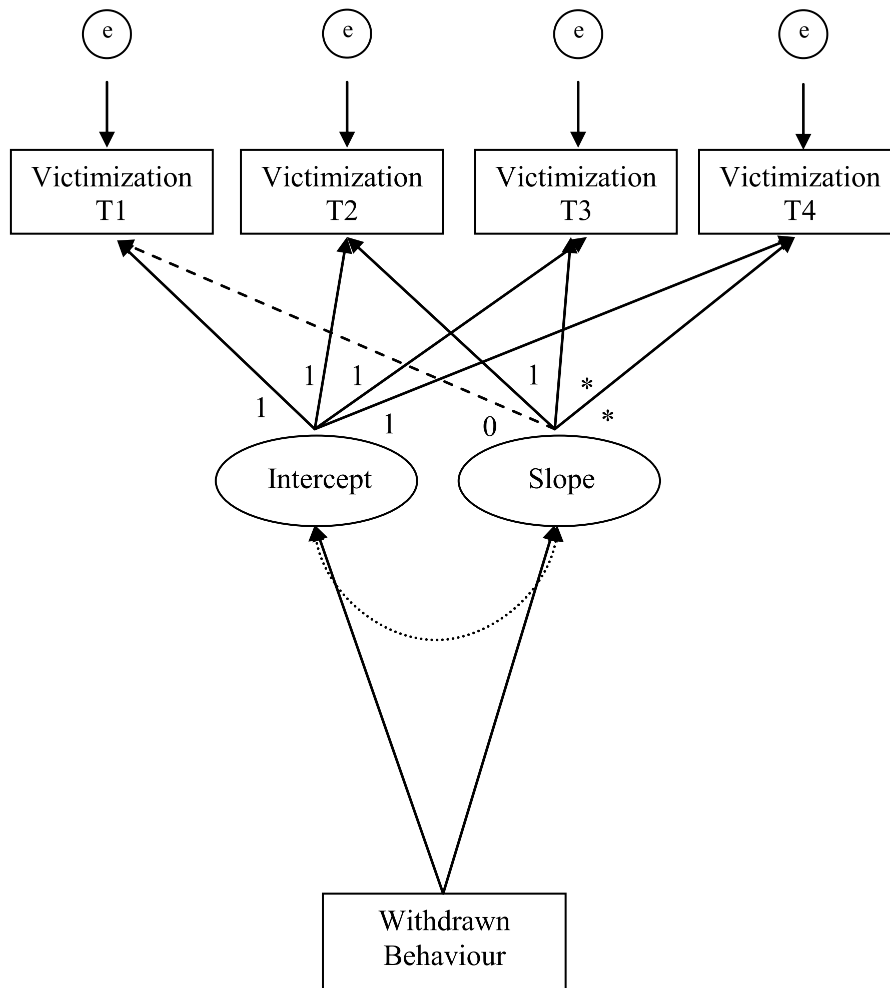

Figure 3. Theoretical model for predicted relationships between withdrawn behaviour and the trajectory of peer victimization.

Changes in victimization across the school year. For the growth curve analyses, two latent variables were created: an intercept and a slope. For the intercept, the loadings of the measures from Time 1 to Time 4 were set at 1.0 to represent the starting point of the students on victimization at the beginning of the school year. Change over time was modeled using the slope variable. Initially, an unconditional model for change (Level and shape model) was tested by setting the loadings of Times 1 and 2 to 0 and 1.0 respectively, and allowing the program to freely estimate the values for Times 3 and 4. The intercept and the slope were allowed to covary, as well as the variables that represented the same measure at different time points. Variances on the 4 Time points were set to be equal. Due to the large sample sizes for these studies, the goodness of fit of the models was evaluated using a combination of the CFI, NNFI and RMSEA indices, and the χ^2. Likewise, a Robust Maximum Likelihood estimator was used to test the models. This estimator corrected the fit indices for the non-normal distribution of the peer victimization data.

Fit indices for the unconditional model suggested a good fit to the data χ^2 (4, n=623) = 8.23 p<.05; RMSEA = .042; NNFI = .997; CFI = .998. The loadings for Times 3 and 4 were estimated to be λ_3=1.2 and λ_4=1.4 respectively. These values suggested that the change observed between Time 1 and 3 was 1.2 Times the change observed between times 1 and 2. Likewise, the loading for Time 4 indicated that the change observed between Times 1 and 4 was only 1.4 times the change observed between Times 1 and 2.

As hypothesized, significant differences in victimization scores were observed at the beginning and across the school year (see Figure 4). The latent growth curve resulted in a mean intercept value of $M_{i\,=}$ 3.68, p<.01 (testing if the parameter was significantly

different from 0.0), and mean slope of $M_{s\,=}$ -1.01, p<.01. The variance of the intercept was $D_{i\,=}$ 7.70, p<.001 and the variance of the slope was $D_{s\,=}$ 0.66, p<.01. The estimated correlation between initial status and slope scores was R_{is} = -.58, p<.01. These findings show a substantial variation on individual differences in peer victimization levels at the beginning of the school year and in the trajectories of change. More specifically, it seems that students experienced a decline on their victimization scores across the school year, and that this decline was especially strong for the students who had the highest levels of victimization at Time 1. Figures 5 and 6 depict the expected latent trajectory using the estimated means for the group of boys and girls, and for fourth, fifth and sixth graders.

Evidence from the previously explained model suggested nonlinearity in the victimization data. Consequently, an alternative model was conducted to test for linear changes in the sample. In this case, paths' loadings from Time 1 to Time 4 were set to be 0, 1, 2 and 3 respectively, to represent a linear growth on victimization. Fit indices for this model were poor χ^2 (6, n=623) = 62.25 p<.001; RMSEA = .12; NNFI = .96; CFI = .96, suggesting that a linear model was not an accurate representation of the change on victimization in this group of students. Therefore it was assumed that a better option to capture the change in victimization scores, and that the best option to represent change in victimization was a linear spline.

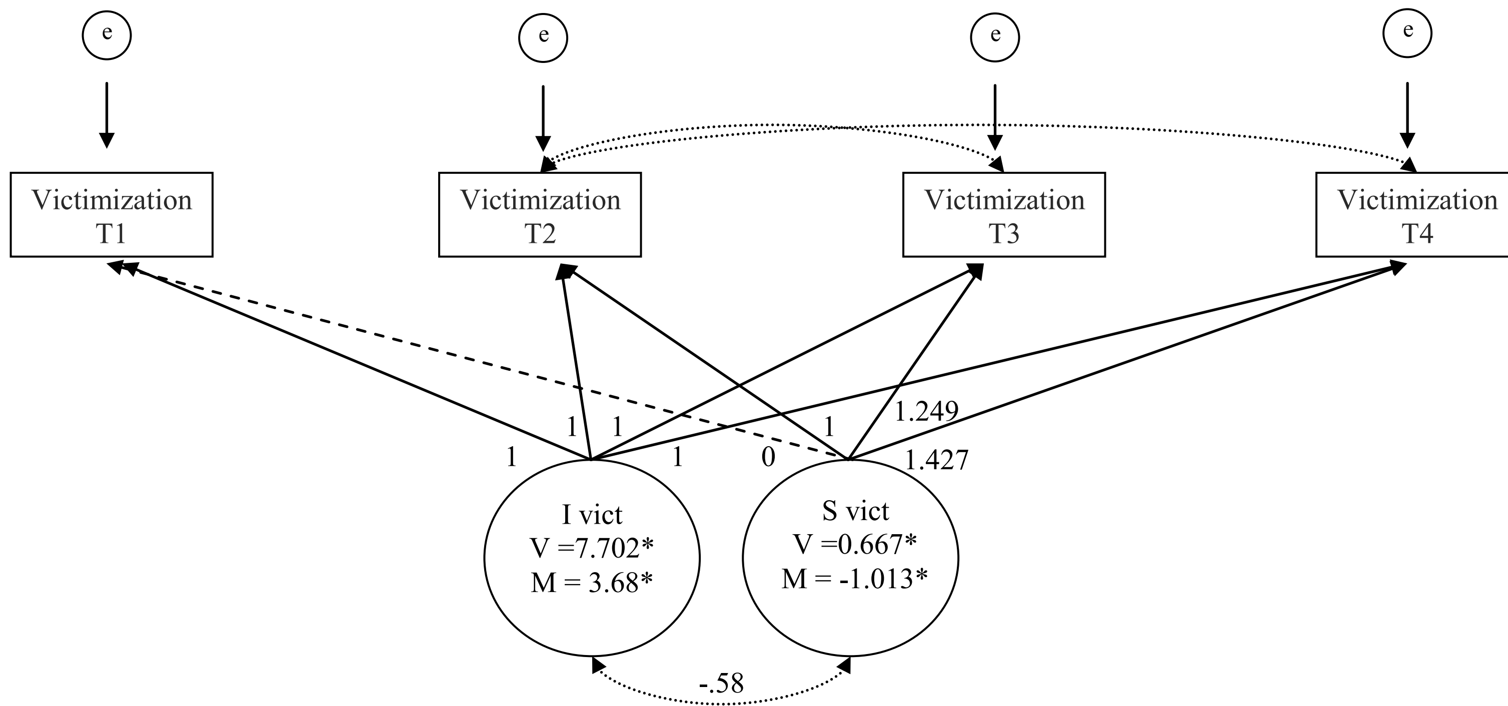

Figure 4. Final path coefficient obtained for the changes on peer victimization over time.

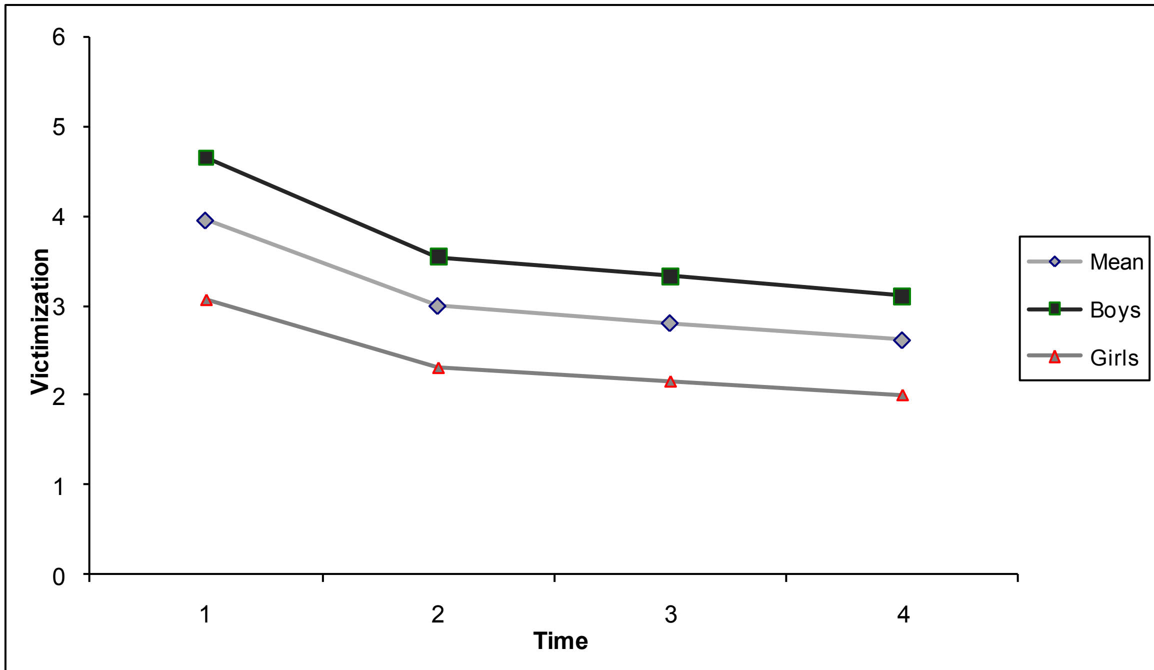

Figure 5. Predicted scores for changes on peer victimization for boys, girls and the pooled sample.

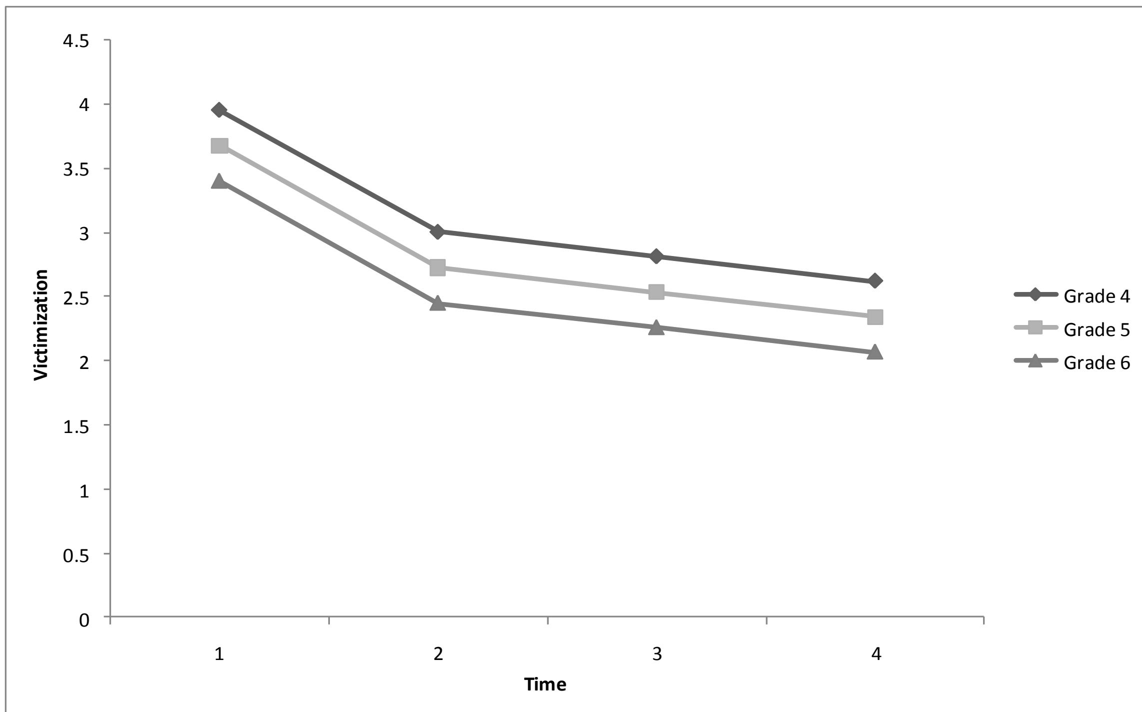

Figure 6. Predicted scores for changes on peer victimization for students in fourth, fifth and sixth grade.

Effect of risk factors on victimization. To determine whether initial scores and changes on victimization varied as a function of individual risk factors, a series of path models were estimated. More specifically, several models in which individual scores on aggression or withdrawn behaviour predicted initial scores and growth on victimization were tested. Because both sex and grade are known to correlate with peer victimization, withdrawn behaviour and aggression, these variables were controlled for in all the models.

Aggression. Having effectively modeled the latent growth curve for peer victimization, a model that tested the effect of physical and relational aggression was then estimated. As it was previously mentioned, the literature on aggression has found differences in the use of aggression; relationally aggressive behaviours have been found to be more used by girls, whereas boys have been found to use more overtly aggressive strategies (Crick et al., 2009). Taking this into account, the model proposed individually tested the effect of both types of aggression.

Fit indices suggested that the model adequately represented the data χ^2 (19, n=623) =52.61, p<.001; RMSEA = .05; NNFI = .97; CFI = .98. Estimated regression paths showed that both physical (β=0.26, p<.001) and relational (β=0.12, p<.05) aggression increased initial levels of victimization (intercept), but had no effect on changes of this variable over time (slope) after controlling for the effects of sex and grade. These positive path coefficients from aggression to the intercept of victimization show that children who are more aggressive tend to have higher scores on victimization at the beginning of the school year. A main effect of sex (β=0.18, p<.001) and grade (β= -0.11, p<.001) was also found to be significant. Taking into account the coding of sex

(female = 0, male = 1), findings revealed that being a boy significantly predicted higher scores on victimization at the beginning of the school year. No effect of sex was found for the slope. Likewise, it was found that students who were in the lower grades were more victimized at the beginning of the year, compared with the students who were in higher grades. No effect was found at the slope level for this variable (see Figure 7).

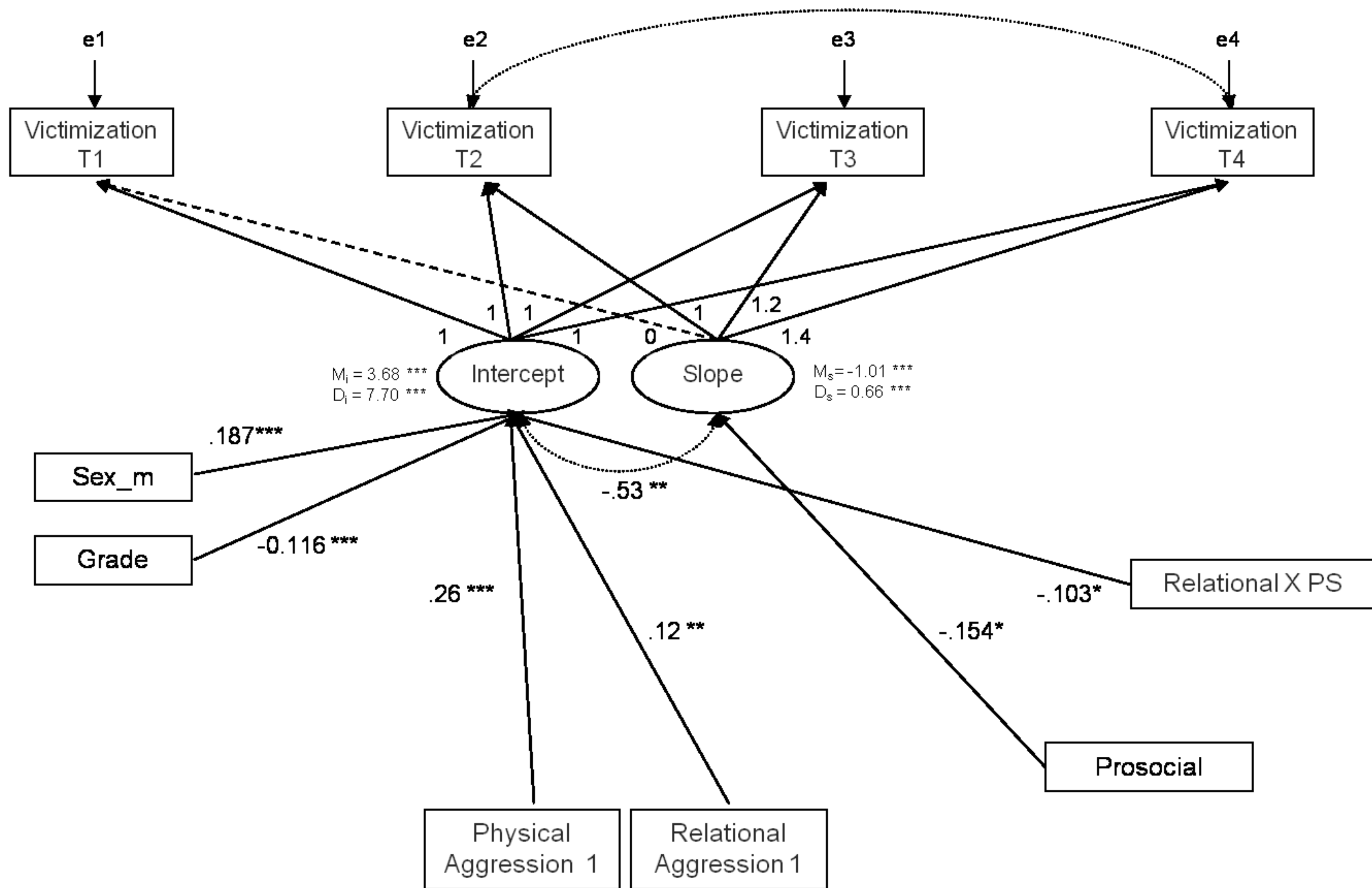

Figure 7. Path model for the moderating effect of prosocial behaviour in the relationship between aggression and the trajectory of peer victimization.

Avoidance. To examine the impact of avoidance on the developmental trajectory of victimization a similar path model was tested. Fit indices for this model revealed a good fit to the data χ^2 (15, n=623) = 31.45 p<.05; RMSEA = .042; NNFI = .985; CFI = .991 (see Figure 8). Again, this model controlled for the effect of sex and grade. Sex had a significant main effect both at the intercept (β=0.28, p<.001) and the slope (β= -0.17, p<.05), indicating that boys had higher levels of victimization at the beginning of the school year, and that they showed a stronger decrease in peer victimization over time. Grade was found to have an effect on the intercept only (β= -0.08, p<.001); meaning that being in a lower grade increased students' initial levels of peer victimization. As it was hypothesized, a main effect for avoidance was found both at the intercept (β=0.48, p<.001) and the slope (β= -0.64, p<.001). This finding indicates that avoidance has an important impact on children's baseline victimization scores, and in the ways in which these scores change across the school year. More specifically, these results indicate that avoidance increases initial levels of peer victimization, after controlling for the effect of sex and grade. Likewise, the effect on the slope shows that avoidance leads to negative growth in peer victimization over time. Figure 9 depicts the effect of avoidance on victimization changes over time. As illustrated, children who were one standard deviation above the mean had higher levels of victimization at the beginning of the school year, and experienced a faster rate of decrease in their scores from Time 1 to Time 2 compared with the other two groups. In contrast, children who were one standard deviation below the mean of avoidance were the most stable. They began the school year with the lowest scores on victimization, and their change rate across the year was not as strong as the rate that the other two groups experienced (see Figure 9).

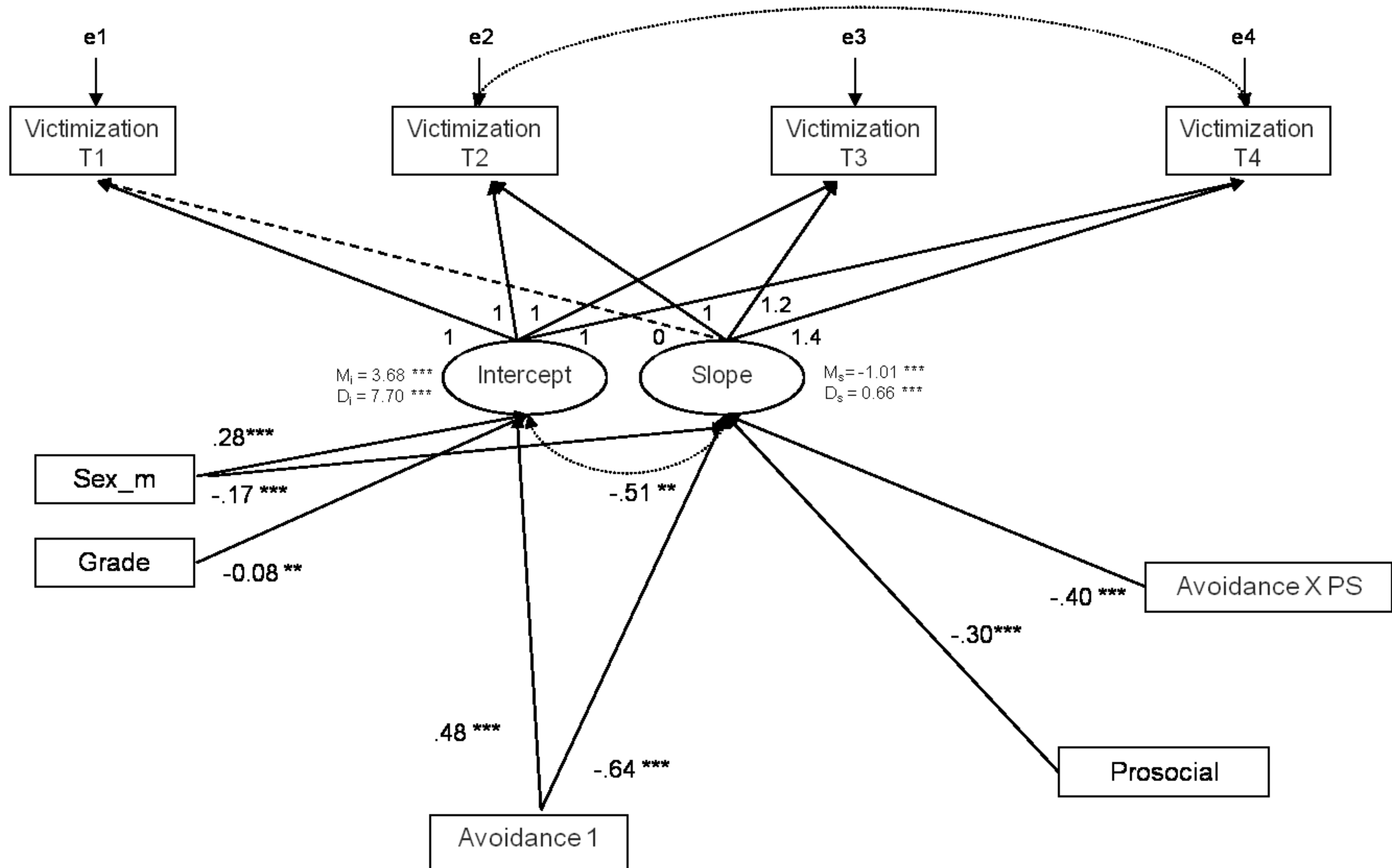

Figure 8. Path model for the moderating effect of prosocial behaviour in the relationship between avoidance and the trajectory of peer victimization.

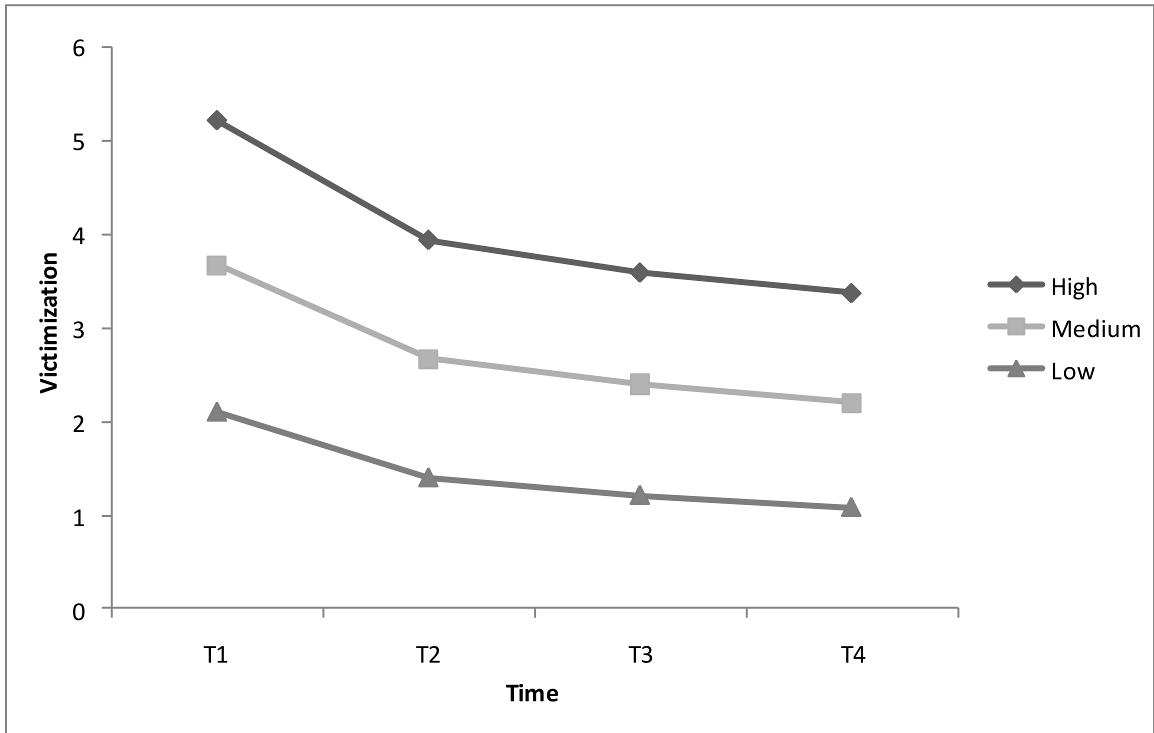

Figure 9. Predicted scores for changes on peer victimization for avoidant children.

Moderating effect of prosocial behaviour

The next set of analyses examined the moderating effect of prosocial behaviour in the association between aggression, withdrawn behaviour and peer victimization. Using the latent growth curve and the path models previously created, direct and moderating effects of prosocial behaviour were tested. In this case, a positive moderating effect of prosocial behaviour was expected, or in other words, a weaker association between risk factors and peer victimization in the presence of high levels of prosocial behaviour was predicted. Once again, models were run separately for aggression and for withdrawn behaviour.

Aggression and prosocial behaviour. The analyses revealed two main findings. First, a main effect of prosocial behaviour on the victimization slope was observed (β= -0.15, p<.05), indicating that prosociality predicted a strong decline of victimization at the beginning of the year, that was followed by a weaker change in the next Time points. As shown in Figure 10, children who were high in prosocial behaviour showed the strongest decrease on victimization scores over the course of the school year compared with students who had lower scores on prosocial behaviour. However, all the groups showed a pattern in which victimization was less prevalent as the year went on (see Figure 10).

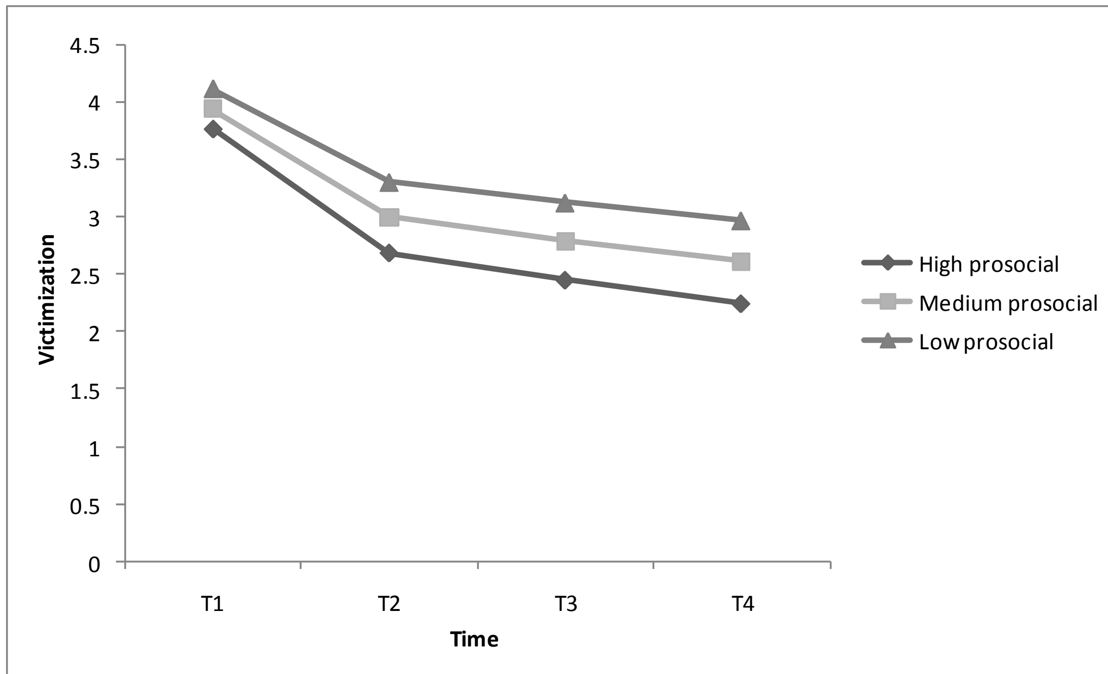

Figure 10. Predicted scores for changes on peer victimization for children who have high, mean and low scores on prosocial behaviour.

Second, results showed that prosocial behaviour moderated the association between relational aggression and victimization at the beginning of the school year (β= -0.10, p<.05). That is, relationally aggressive students, who also had high scores on prosocial behaviour, were less prone to being victimized by their peers at the beginning of the school year (see Figure 11). A particularly interesting aspect of this moderating effect was that prosocial behaviour protected only those children who were high on relational aggression, giving support to the buffering hypothesis model, which states that buffering effects only take place when individuals are at high risk. Indeed, prosociality had virtually no effect for children who were low in relational aggression. Figure 12 depicts the predicted developmental trajectories of peer victimization for children who were (a) low on prosocial behaviour / high in relational aggression, (b) low on prosocial behaviour / low on relational aggression, (c) high in prosocial behaviour / low on relational aggression and (d) high in prosocial behaviour / high in relational aggression. As it can be seen, the intercepts for the four groups are significantly different, illustrating the moderating effect of prosociality at the beginning of the school year. Furthermore, even though the developmental trajectories of the four groups are similar, it is worth mentioning that students who were high in prosocial behaviour and high in relational aggression consistently showed the lowest scores in peer victimization across the school year. Finally, no direct or moderating effects were found for physical aggression.

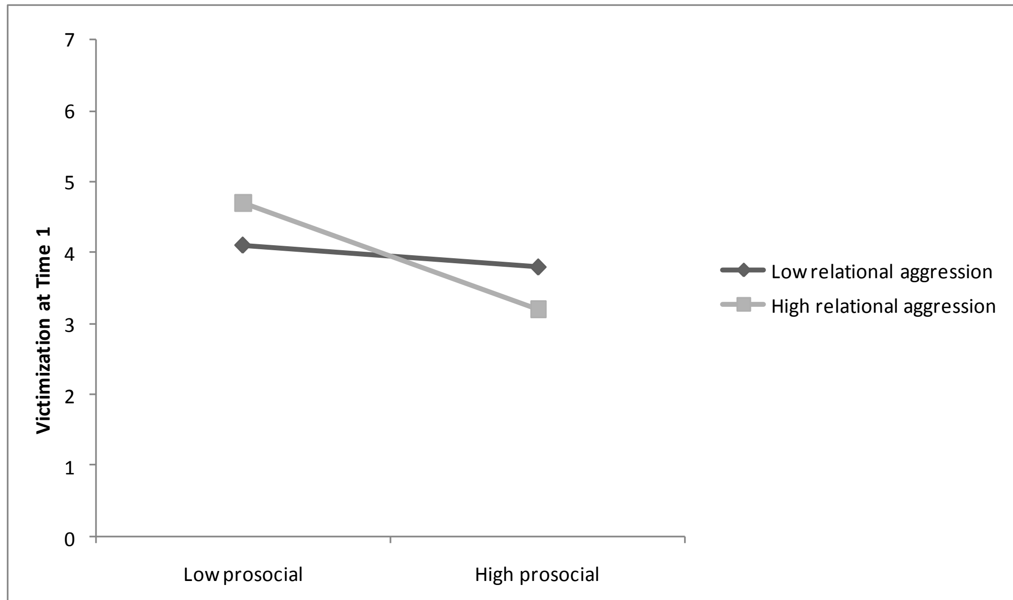

Figure 11. Interaction between relational aggression and prosocial behaviour for the scores on peer victimization.

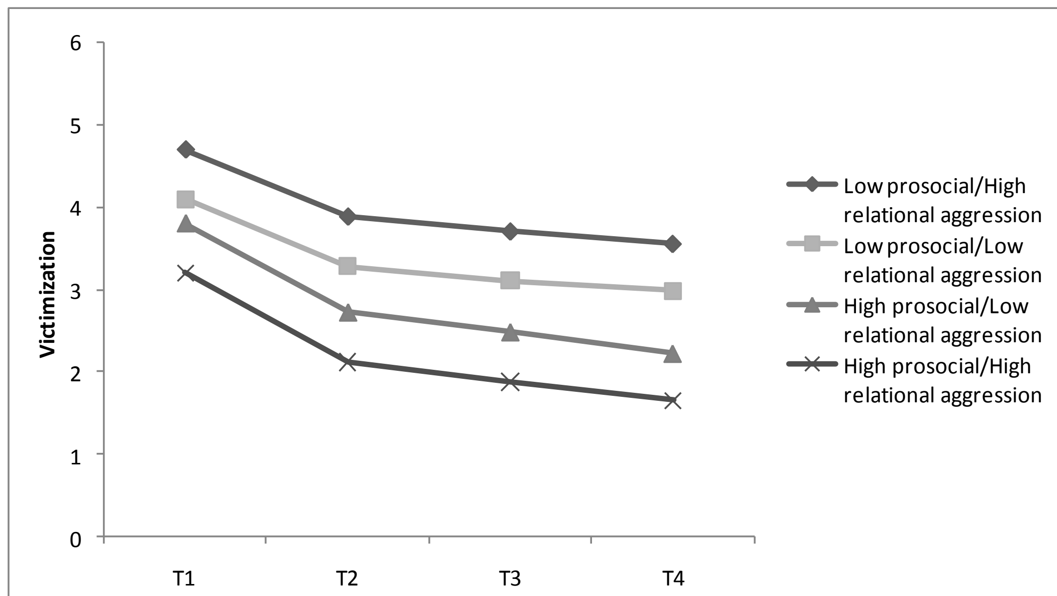

Figure 12. Predicted scores for changes on peer victimization for interaction between relational aggression and prosocial behaviour.

Avoidance and prosocial behaviour. The final model for avoidance suggested that prosocial behaviour also had a direct and a moderating effect on the victimization slope, but no effect was found for the intercept. That is, prosocial behaviour impacted the ways in which children changed over the school year, but had no effect on their initial victimization scores. The standardized path coefficient from prosocial behaviour to changes in victimization was significant (β= -0.30, p<.001), as well as the path from the interaction between avoidance and prosocial behaviour (β= -0.40, p<.001). As anticipated, these paths indicated that children who were high in prosocial behaviour experienced a strong decrease in their victimization scores at the beginning of the year, which was followed by a weaker reduction of victimization scores at the succeeding Time points. For this model the moderating effect of prosocial behaviour on the slope also supported the buffering hypothesis model. Specifically, children who were both high in prosocial behaviour and avoidance were observed to have the highest scores on peer victimization at the beginning of the school year, but there were also the ones who experienced the strongest decline in their scores over the one year period. In addition, their victimization scores consistently decreased as the year went on. Children who were high in avoidance and low in prosociality also started off the year with the highest levels of victimization, and even though their scores decreased over time, this decrease was not as strong as the one experienced by the high prosocial behaviour/ high avoidance group. In contrast, children who were low in avoidance and also low on prosociality had the lowest levels of victimization, which also remained stable throughout the school year. Finally, students who were low in avoidance and high in prosocial behaviour started the

school year being the least victimized, and their already low levels of victimization decreased further throughout the school year (see Figure 13).

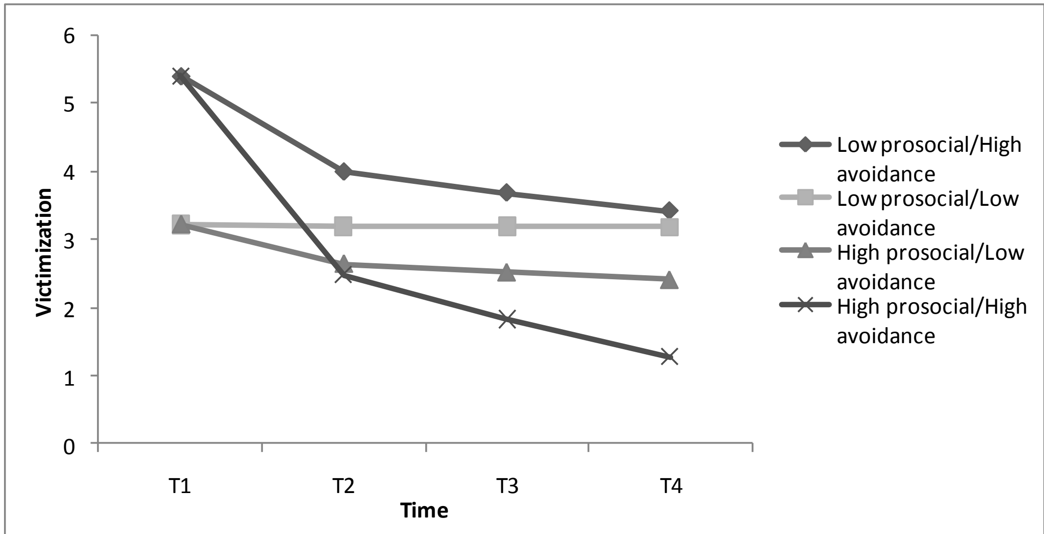

Figure 13. Predicted scores for changes on peer victimization for the interaction between avoidance and prosocial behaviour.

Discussion

This longitudinal study was designed to examine the developmental trajectories of peer victimization in a sample of early adolescents and the relative buffering effectiveness of prosocial behaviour in the relationship between risk factors and peer victimization. The results obtained support the idea that victimization is a changing phenomenon that is experienced differently by children. Moreover, results indicate that victimization can be understood as a control mechanism that helps groups accomplish their goals of cohesion, homogeneity and evolution (Bukowski & Sippola, 2001). The evidence obtained also showed that prosocial behaviour acts a buffer against maladjustment, but only for certain types of risk factors, and most effectively for children who are considered to be at high risk. Therefore, our results support the buffering hypothesis model, which states that resources provided by one's positive personal experiences and social ties have a moderating effect on the relationship between stress and maladjustment, especially for individuals who face elevated conditions of stress (Cohen & Hoberman, 1983).

Longitudinal changes in peer victimization

One of the most significant contributions of Study 1 was the use of a latent growth curve technique to study the developmental changes of victimization. Specifically, this approach allowed change in the mean levels of victimization over time to be examined and to determine if individual differences in change were related to the predictors and control variables. The use of this technique helped expand knowledge on the mechanisms that explain the nature and changes of peer harassment in childhood and early adolescence.

As expected, significant individual differences on children's victimization scores were found both at the beginning and over the school year. The negative mean trajectory of victimization suggested that children experienced an important decline on this variable over time, and the negative association between initial levels of victimization and change over time indicated that this decline was greatest for those children who had the highest victimization scores at the beginning of the year. This finding supports evidence from previous studies that have also shown that peer victimization declines over time (Ladd & Troop-Gordon, 2003; Troop-Gordon & Ladd, 2005).

A possible explanation for the observed decline on victimization scores comes from the group process model proposed by Bukowski and Sippola (2001). Within this framework victimization is conceptualized as the outcome of potential conflicts between individuals' characteristics and the group's goals. In that sense, victimization becomes a group strategy for isolating and minimizing the participation of the members that interfere with the attainment of group goals (i.e., aggressive and avoidant children). Specifically, in the case of the present study it seems that victimization is acting as a control mechanism that starts operating at the beginning of the school year. Once the group goals and rules are defined, and its members become aware of their role in the group, victimization significantly decreases as control is no longer needed. Indeed, the strongest decline on victimization is experienced by the children who are either highly aggressive or avoidant, which suggests that victimization is in fact an effective control mechanism for the children who jeopardize adequate group functioning (Bukowski & Sippola, 2001). The strong reduction in victimization scores observed from time one to time two demonstrates the effectiveness of this variable as a control mechanism in the

formation of new groups. Unfortunately, the design of the study was not able to capture in detail the processes that explain how this control operates. Therefore, this issue should be further explored in future research.

Even though it was not the focus of this investigation, a significant effect of sex was found on the trajectory of peer victimization. No specific hypotheses were proposed for the effect of this variable, however based on previous evidence it was assumed that the likelihood of becoming a target of peer harassment was similar for boys and girls (Crick & Bigbee, 1998; Parke & Slaby, 1983; Perry, Hodges & Egan, 2001; Tomada & Schneider, 1997; Zimmer-Gembeck et al., 2005). Contrary to what these studies found, results from the present study revealed an increased likelihood for boys to become targets of peer victimization, for both the aggression and the avoidance models. This finding may suggest that in this particular sample sex could be considered as a risk factor per se. A possible explanation for this finding is related to the idea of the two cultures proposed by Maccoby (1998). That is, it could be the case that in this particular group of students behaviours' such as aggression or avoidance may be considered more tolerable among girls than among boys, and therefore boys would be more penalized for displaying these types of behaviours. Taking into account that both male and female contexts are characterized by different patterns of behaviour and expectations, the way aggressive and avoidant behaviours are perceived and addressed by the peer group will be a product of the gender norm associated with the behaviour.

Grade was also found to predict initial levels of peer victimization. More specifically, for both the aggression and avoidance models, it was observed that being in a lower grade predicted higher baseline victimization scores. In a study that examined the

associations between aggression, avoidance and peer harassment across grade levels, Boivin, Hymel and Hodges (2001) found a similar trend. For aggression, a clear reduction in the association between aggression and victimization was observed as grade level increased for boys and girls. In contrast, avoidant boys showed a pattern where they were progressively more harassed by their peers as grade increased. Avoidant girls showed a similar trend to the one found in the present study; they were less harassed as grade increased. These findings suggest that the nature of the relationship between risk factors and peer harassment could be analyzed with respect to age, but further research is needed to understand how control variables interact with predictors of peer victimization. Studies using longitudinal data with multiple group comparisons may help researchers to enlighten on these relationships.

Effect of risk factors on victimization

Strong evidence was also found regarding the association between risk factors and peer victimization. Results were consistent with the premise that a good portion of the variance in victimization can be explained by individual characteristics of children, and the ways in which they behave among their peers (Perry, Hodges & Egan, 2001). As expected, both aggressive and withdrawn behaviour predicted initial scores on victimization, but only withdrawn behaviour was found to be predictive of changes in victimization. According to Boivin, Hymel and Hodges (2001), there are two developmental pathways that lead to social rejection and ultimately, to peer harassment. The first one is characterized by the use of inappropriate and aggressive behaviours, and the second one, is characterized by signs of shyness, social withdrawal and submission. Indeed, evidence from several studies demonstrates that personal and behavioural

characteristics associated with these pathways contribute to the likelihood of becoming a target of peer harassment (Hodges & Perry, 1999; Kochenderfer-Ladd & Skinner, 2002).

Evidence from the present study demonstrated that physical and relational aggression were positively associated with high levels of peer victimization at the beginning of the school year, even after the effects of sex and grade were statistically controlled. This finding is consistent with what has been found in the literature. More specifically, in the case of aggressive children studies have shown that they are significantly more victimized due to their conflictual nature and their tendency to irritate and provoke other children (Egan & Perry, 1998; Hodges, Boivin, Vitaro & Bukowski, 1999). But perhaps one of the most interesting aspects of this finding was that aggression had no effect on the ways in which victimization changed over the year. The lack of a significant effect of aggression on the slope might be partly explained by a ceiling effect on the association between these variables. It might be the case that by the time the data were collected (i.e., time one was collected in February/March), both variables were already so strongly related that further changes in victimization were not be detectable. Thus, an objective for future research would be to explore the association between risk factors and peer harassment at the beginning of the school year in more detail. More frequent and more detailed assessments within the first two months of the year could help researchers capture the variations on this association that were not revealed by the design present design.

Consistent with the hypotheses, initial scores and growth of peer victimization were predicted by children's withdrawn behaviour. This finding is in line with evidence from previous research. For instance, a study conducted by Boivin, Hymel and Hodges

(2001), investigated the relationship between children's social experiences and their socio-emotional adjustment over time, for withdrawn-rejected, aggressive-rejected and other-rejected children. Results showed that overall rejected children were more harassed by their peers compared with the average status children. However, significant differences were found among the three rejected groups: The withdrawn-rejected children were the most victimized of the three groups. Furthermore, it was found that withdrawn-rejected boys were more victimized than withdrawn-rejected girls.

It was interesting to discover that avoidance had an impact in the ways in which victimization changed across the school year. In contrast to what was observed for aggression, different trends of change were found for children who had different scores in avoidance. Two aspects of these findings are noteworthy: Although the three groups had significant differences in their initial scores, they showed a similar pattern of change (i.e., a sharp decline from Time 1 to Time 2, and a slower one from Time 2 to Time 3 to Time 4). Second, the strongest reduction on victimization scores was experienced by children who were high in avoidance. Together, findings from the aggression and the avoidance models call for studies that thoroughly explore the impact of these two risk factors on victimization change within the first couple of months of the school year. While speculative, it seems that major changes occur within this period of time, and additional analysis of this period is warranted.

Moderating effect of prosocial behaviour

This is one of the first studies to use a latent growth curve technique to examine the impact of prosocial behaviour in the relationship between risk factors and peer harassment. Based on the buffering hypothesis model, a positive moderating effect of this

variable was expected, at the beginning and over the school year, especially for children who were high in aggression and avoidance.

Our results indicated that being prosocial protects children from detrimental effects of peer victimization. Overall, prosocial behaviour predicted a reduction on victimization scores for both the aggression and the avoidance models. This decline was found to be particularly strong at the beginning of the year, and it was followed by a deceleration of change in the subsequent time points. This finding fits well within the research literature that shows that higher levels of prosocial behaviour are associated with increases in life satisfaction and quality of peer relations and with decreases in social conflicts and peer harassment (Bollmer, et al., 2005; Lamarche et al., 2006; Martin & Huebner, 2007; Warden & Mackinnon, 2003).

The present findings also revealed that being prosocial protected relationally aggressive children from the detrimental effects of peer victimization. We found that children who were high in relational aggression and high in prosocial behaviour were less victimized at Time 1, compared with children who were also high on relational aggression, but were low in prosocial behaviour. Support for this finding comes both from the "buffering hypothesis" model (Cohen & Hoberman, 1983) and the Resource Control Theory (Hawley, 2003). Given that the moderating effect of prosocial behaviour was only found for children who were high in relational aggression, this finding seems to support the idea that buffering effects mainly operate for children who are at elevated conditions of stress. However, caution is necessary in the interpretation of these findings, because no moderating effects were found for physical aggression.

An alternate explanation for these findings suggests that in order to adapt to their environment, children use different strategies as means for attaining social dominance and resource control. According to Hawley (2003), the simultaneous use of both aggressive and prosocial strategies has been found to improve children's social standing in a group, and to make them more competitive and successful in obtaining control of resources. In that sense, it might be possible to think that results of the current study reflect the use of both prosocial and aggressive strategies by a certain group of children. Consequently, the decrease observed on their victimization scores could be interpreted as an indicator of the success of a control strategy that improves the quality of their social interactions in the peer group.

Finally, prosocial behaviour was also found to protect children who were highly avoidant from the negative effects of victimization. In this case, prosocial behaviour moderated the ways in which this relationship changed over time. This finding is particularly interesting because it suggests that, in contrast to what was found for aggression, the effect of prosociality on avoidant children is more enduring; in other words, even though prosociality does not affect their baseline scores, it does determine how these children change over a one year period. Thus, it would plausible to think that perhaps avoidant children are the ones who benefit the most from the presence of protective factors. Consistent with Cohen and Hoberman (1983), the evidence gathered for the present study provides support for the proposition that the individuals who benefit the most by the development of socio-emotional competencies are the ones considered to be more at risk.

Chapter 3: Study 2- The moderating effect of friendships

Friendships are considered to be central experiences in the development of children's social, cognitive and emotional competencies. Broadly defined, friendships are egalitarian interactions in which a person is attracted to another who is attracted in return. These interactions, which are voluntary, are characterized by the creation of strong emotional bonds that facilitate the accomplishment of developmental and socio-emotional goals (Hinde, 1997; Newcomb & Bagwell, 1998).

According to Hartup and Stevens (1997) friendships encompass a number of expectations regarding the way friends are supposed to behave. For instance, friends are expected to spend more time with each other, and to have a positive "cost – benefit" relationship. Friends are also expected to be available to offer help, companionship, security and emotional support (Bukowski, Newcomb & Hartup, 1998; Hartup & Stevens, 1997; Hinde, 1997). Researchers have explained that friendship expectations vary across the lifespan. In young children, friendships are characterized by the presence of common activities and concrete reciprocities. In that sense, expectations for intimacy, security or help are not essential for this developmental stage. In school-aged children, the nature of the friendship changes with the development of new cognitive and emotional skills. This allows children to spend more time with their friends sharing their interests and beliefs, and also to engage in more intimate interactions. In older individuals, friendships are viewed as relations where one can receive support from a significant other; in other words, the friend is perceived as a dependable and understanding person (Hartup, 1989; Hartup & Stevens, 1997).

According to Berndt (1998, 2002), friendships have two dimensions that define the nature of the relationship. The first one, called the f*eatures* dimension, is defined as the positive and negative attributes of a particular relationship. For instance, intimacy, conflict and closeness would be examples of the *features* of a friendship. Friendships also have *qualities*, which are related to the concept of features but have an important difference: they are not affectively neutral. Qualities represent the degree of excellence in a particular characteristic or feature of a friendship. For instance, a dyad of friends can have a relationship characterized by high levels of companionship and security (good quality of friendship), while another dyad can have a relationship characterized by high levels of conflict (poor friendship quality). These features and qualities are considered to be key elements for understanding the nature and dynamic of the friendship relationship.

A substantial body of research has examined the elements that comprise friendship quality (Berndt, 2002; Bukowski, Hoza & Boivin, 1994; Ladd, Kochenderfer & Coleman, 1996). One of the most important theoretical frameworks that has been developed for this purpose was proposed by Bukowski, Hoza and Boivin (1994). According to these authors, children's perceptions of company, conflict, help, closeness and security are the essential dimensions that define the quality of a friendship (see Figure 14).

Within this framework, conflict and companionship are unidimensional constructs, while security, closeness and help are comprised by several sub-dimensions. The concept of *companionship* is defined by these Bukowski and colleagues (1994) as a composite of behaviours that involve play, close associations and company. These behaviours represent opportunities for interactions with other peers which are central

elements of the friendship experience. The concept of *help* consists of two components: aid and protection. The former refers to the help and assistance that friends give to each other, while the latter refers to the protective role that friends have in difficult situations such as victimization (Bukowski et al., 1994).

The concept of *security* is derived from two essential aspects of the relation that children have with their friends: the perceptions that the relationship is secure and stable in spite of conflicts, and that it is possible to trust and rely on friends. The concept of *closeness* refers to the perception that children have that they are appreciated and loved by their friends. Finally, the concept of *conflict* is related to the notion that, in order to have positive and constructive friendships, individuals need to learn the necessary skills to resolve problems in an assertive manner, manage disagreements with friends, and be able to reconcile after a fight.

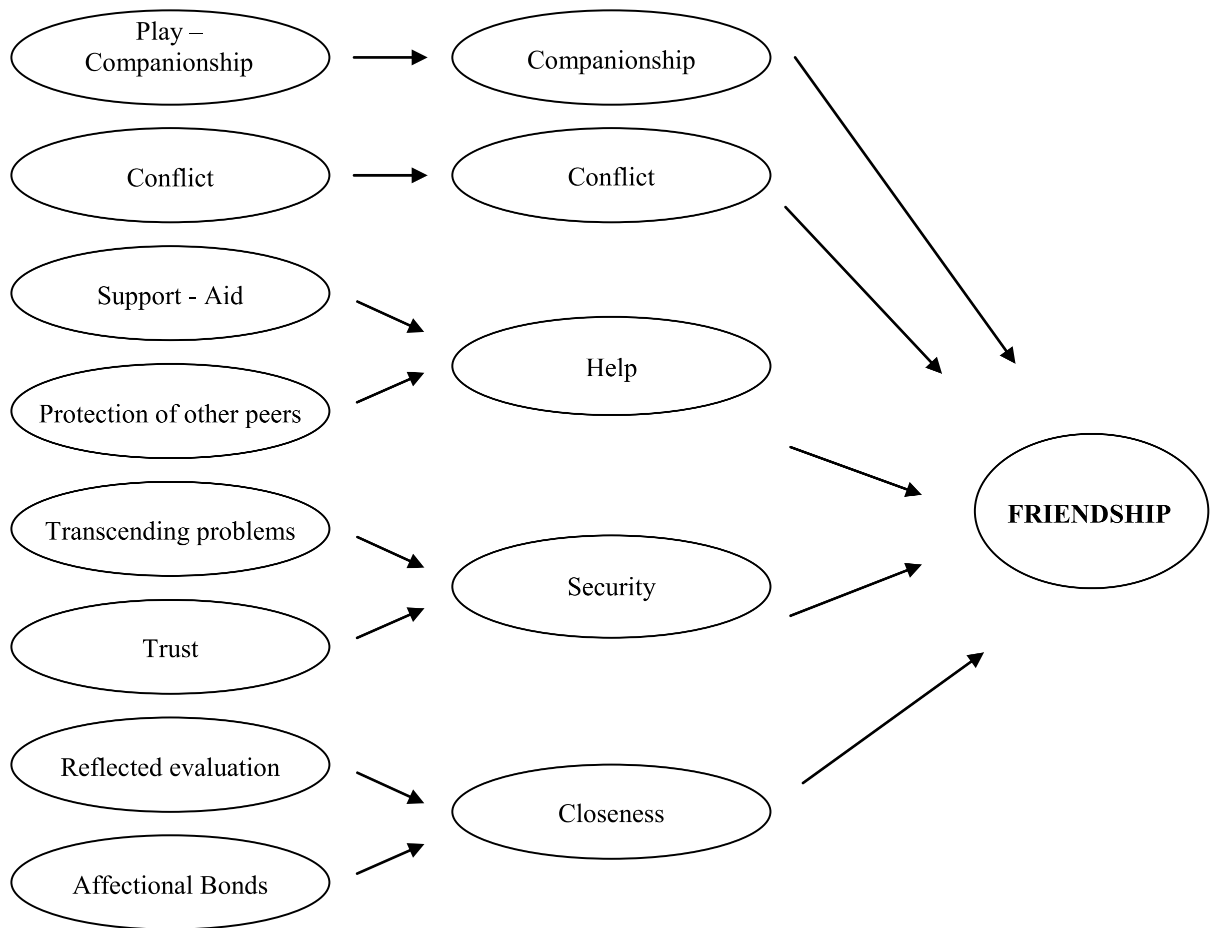

Figure 14. Conceptual model of the qualities of a friendship relationship. (Bukowski, Hoza & Boivin, 1994).

The significance of friendships on children's development. The concepts mentioned above are important for understanding the developmental significance of friendships, not only because they characterize the nature of this relationship, but also because they reveal the significance that friendship has across the lifespan. According to Newcomb and Bagwell (1998) there are two dominant models in the friendship literature that explain the importance of this relationship on human development. In the first model, positive peer relations are conceived of as fundamental interactions that promote the acquisition of social, emotional and cognitive competencies. When children lack these positive peer interactions, this condition has a direct causal effect in the development of maladjustment. For instance, this model would propose that children who have negative interactions with their peers, and who are also at risk (e.g., withdrawn, isolated, rejected, or aggressive children), will lack opportunities for socialization and positive social learning. In this way, these children will experience a gap in their social learning process, that will lead to poor developmental outcomes and disadvantages in terms of their psychological adjustment and socialization opportunities.

The second model developed by Newcomb and Bagwell (1998) proposes that the link between peer relations and developmental outcomes is not direct. From this perspective, individual differences in the predisposition for maladjustment facilitate behavioural deviance, and therefore, this abnormal social behaviour leads to a poor developmental outcome, which in turn could incidentally lead to peer rejection. In this sense, this model would not consider poor peer relations as the direct cause that determines maladjustment in children.

Based on the models reviewed above, one can argue that it is important to have positive peer relations – such as friendships – for at least three fundamental reasons. First, because friendships promote well-being at different stages of development by giving individuals the sense that they are loved, understood and appreciated. Second, because friends provide support to one another when facing developmental challenges (Hartup & Stevens, 1997), and finally, because this relationship provides a context in which children can improve in aspects of their lives where they have experienced problems in previous developmental stages. That is, friendships have the potential to serve as corrective interactions, since they help children overcome earlier adjustment difficulties.

Protective effects of friendships. Beyond the benefits of positive standing among the group on psychosocial adjustment, evidence exists to demonstrate that children benefit from positive interactions with friends. Specifically, studies have shown that the support received in friendships can minimize the detrimental effect of peer victimization and various behavioural problems. Evidence shows that the relation between victimization and personal risk factors depends largely on the quantity and quality of interpersonal relationships, and also that reciprocal friendships have a moderating effect in the relation between children's behavioural risk and peer victimization (Bagwell, Newcomb & Bukowski, 1998; Bollmer, Milich Harris & Maras, 2005; Bukowski, Sippola & Boivin, 1995; Card & Hodges, 2007; Hodges, Boivin, Vitaro & Bukowski, 1999; Kochenderfer & Ladd, 1996; Lamarche et al., 2006; Rodkin & Hodges, 2003).

Indeed, several studies have shown that friendships are important factors that protect children from maladjustment. In a study conducted by Hodges, Malone and Perry (1997) with 230 seventh graders, it was found that friendship served an important

function in the protection against aggressors. Results showed that internalizing problems, externalizing problems and physical weakness were more predictive of peer victimization for children who had few friends or who had friends that were incapable of fulfilling a protective function, compared with those who had a lot of friends or were more accepted by their peers. The authors suggested that this could be due to several reasons. First, aggressors could fear retaliation or exclusion from a victim's friends. Second, children who have friends are usually in the company of others, and therefore they are not salient as victimization targets. Finally, the authors suggested that children who have friends may receive advice from them on how to solve conflicts or face threats of victimization.

Other investigations conducted by Pellegrini and colleagues (1999) and Hodges and colleagues (1997) have also shown that, for children who have friends, the behavioural characteristics of the friends moderate the relation between behavioural risk and victimization. That is, when the child's friends had characteristics that made them unlikely to give protection to the child – for example when they were physically weak – the relation between behavioural risk and victimization was greater than when the friends were more capable of providing protection and defense. Moreover, in cases where the child’s friends displayed externalizing behaviours, the child's own problems were less predictive of victimization compared with those whose friends lacked externalizing problems. The authors suggested that friends who are prone to use externalizing behaviours may react on behalf of their friends and thereby serve a protective function.

Consistent with these findings, Hodges and colleagues (1999) found that for children with a best friend, the degree to which this friend rescued the child during attacks moderated the relation between internalizing problems as a risk factor of

victimization, on the one hand, and actual victimization experiences, on the other hand. Finally, Bollmer and colleagues (2005) also reported that children who have a high quality best friendship are less likely to be targets of peer victimization compared to children without this type of friendship.

The current study: The effect of friendship quality

Taken together, these findings suggest that having friends and having a high quality relationship are important moderators in the relation between risk factors and victimization. In other words, “the extent to which having friends protects behaviourally vulnerable children against attacks from hostile peers is largely dependent upon the friends’ capability to successfully buffer or defend them from potential victimizers” (Lamarche et al., 2006, p. 375). However, only a limited number of investigations have attempted to understand the nature of the protection given by friends, and more specifically, the protection that positive provisions of friendships offer to children. Consequently, more research is required to address the question of the moderating role of friendship quality in the relationship between risk factors and peer victimization. The present study with its longitudinal design examined the moderating effect of positive provisions of friendship on the association between aggression (physical and relational), withdrawn behaviour and peer victimization over time.

As presented for Study 1, the hypotheses and results from level 1 correspond to the longitudinal association between risk factors and changes in peer victimization. The relationship between aggression (i.e., physical and verbal), withdrawn behaviour and peer victimization was explored, and it was expected that (a) high levels of aggression (i.e., physical and relational) and withdrawn behaviour would positively predict peer

victimization and (b) a significant decrease on peer victimization over time would be revealed and (c) significant differences in victimization scores at the beginning and across the school year would be shown. Results and discussion from these analyses will not be reported in this study since they were already reported in the previous chapter for Study 1.

Hypotheses for Level 2: Moderating effect of friendship quality. Two hypotheses were proposed in terms of the moderating role of friendship quality. Using the "buffering hypothesis" model it was expected that a decrease in the strength of the association between risk factors and peer victimization in the presence of high levels of the positive provisions of friendship would be revealed. However, this decrease would be observed only for those children who had high levels of aggression (i.e., physical and relational) and high levels of withdrawn behaviour. More specifically, it was predicted that: (a) for children who were high in relational or physical aggression a reduction in their victimization scores would be observed, both at the beginning and across the school year, if they perceived that they had a good relationship with their best friend. Similarly, (b) a reduction in peer victimization scores at the intercept and the slope was expected for highly avoidant children if they perceived themselves as having a positive friendship quality with their best friend.

Results

Moderating effect of friendship quality

The main objective of Study 2 was to examine the moderating effect of friendship quality in the association between risk factors and peer victimization. As it was for Study

1, analyses were based on the latent growth curve modeled for chapter one, and tested a similar path analysis structure in which risk factors were the level one predictors and friendship quality was a level two moderator. Based on the "buffering hypothesis" model a reduction in children's victimization scores associated with the presence of a high quality friendship was expected. Moreover, this reduction was expected to be found only for children who had high scores on risk factors.

Aggression and friendship quality. Fit indices suggested that the model presented in Figure 15 adequately represented the data χ^2 (19, *n*=623) =49.24, *p*<.001; RMSEA = .05; NNFI = .97; CFI = .98. Paths coefficients from physical aggression (β=0.36, *p*<.001), relational aggression (β=0.13, *p*<.02), grade (β= -0.12, *p*<.001) and sex (β=0.16, *p*<.001) indicated that these variables significantly predicted initial levels of peer victimization. More specifically, results revealed that being relationally or physically aggressive was predictive of higher scores on victimization at the beginning of the school year, after controlling for the effects of sex and grade. This effect was particularly strong for physically aggressive children. Path coefficients from sex and grade also showed a significant effect on initial victimization scores. Consistent to what was presented in Chapter 1, boys seemed to have higher levels of victimization compared with girls at Time 1, and students who were in the lower grades had higher scores on victimization at the beginning of the school year. No effect was found at the slope level for any of the variables.

A moderating effect of friendship quality on the change over time in the relationship between relational aggression and victimization was found (β= -0.14, *p*<.05) (see Figure 16). Contrary to what was expected, for relationally aggressive students,

having a high quality friendship predicted an increase on their victimization scores over time. It is worth mentioning that these were the only conditions under which victimization increased and not decreased over the school year. A similar pattern was observed for students who were high in relational aggression but low in friendship quality; however their rate of increase was not as strong as the one experienced by the high relational aggression / high friendship quality group. In contrast, students who were low relational aggression / high friendship quality and low relational aggression / low friendship quality showed a significant decline in their victimization scores over time. Both groups had a similar growth trajectory that revealed a strong decline on victimization from Time 1 to Time 2, and slower but consistent reduction of these scores from Time 2, to Time 3 and Time 4.

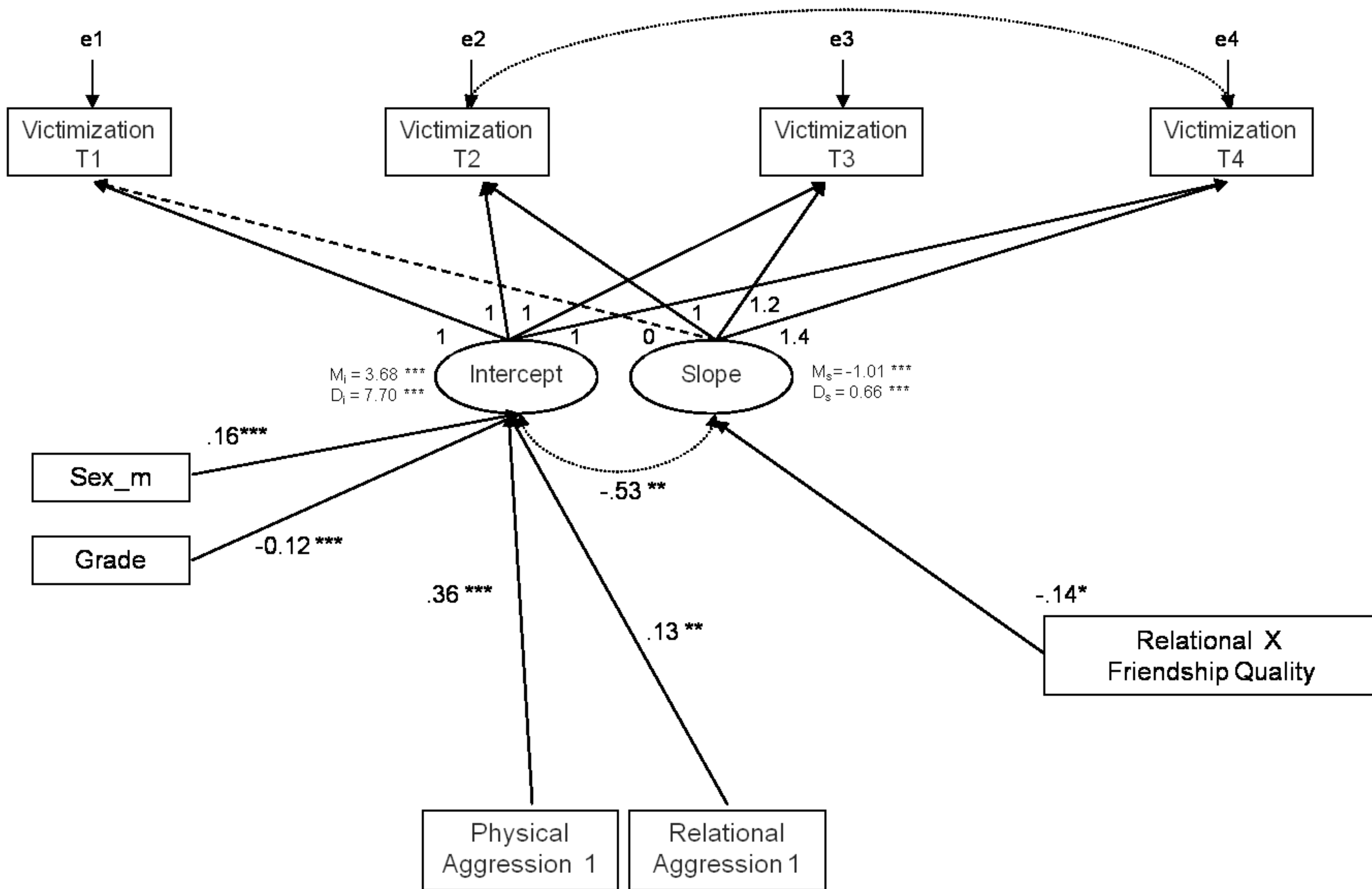

Figure 15. Path model for the moderating effect of friendship quality in the relationship between aggression and the trajectory of peer victimization.

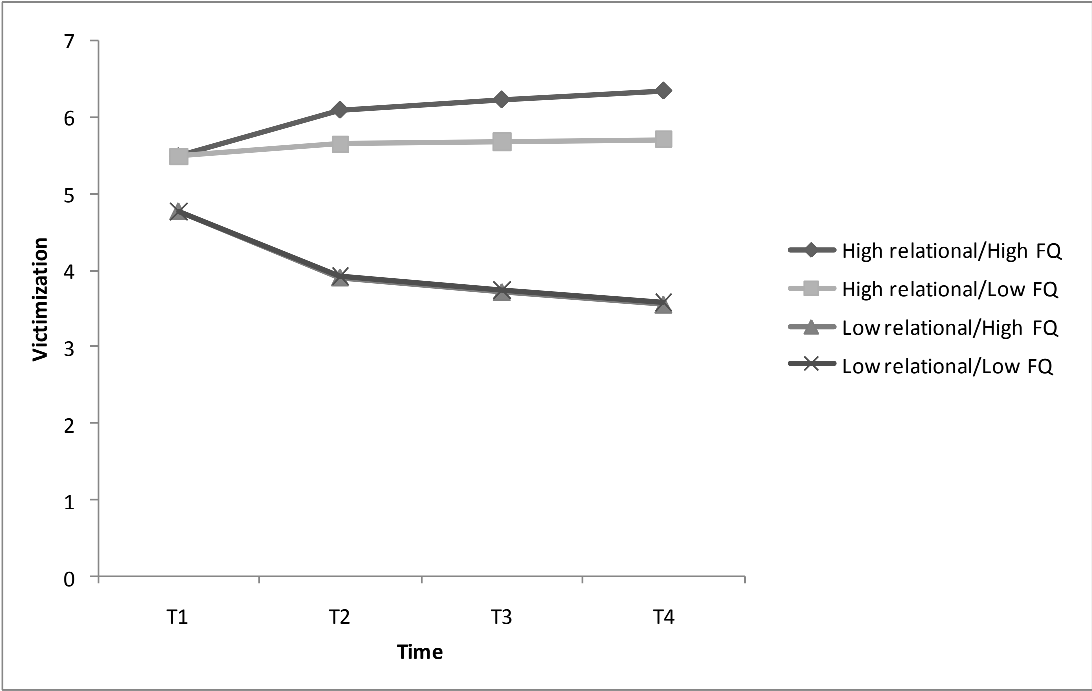

Figure 16. Predicted scores for changes on peer victimization for the interaction between relational aggression and friendship quality.

Avoidance and friendship quality. The model created to test the moderating effect of friendship quality in the relationship between avoidance and victimization also adequately represented the data χ^2 (15, *n*=623) = 36.05 $p<.001$; RMSEA = .047; NNFI = .980; CFI = .989 (see Figure 17). After controlling for the effects of sex (β=0.28, $p<.001$) and grade (β= -0.06, $p<.05$), a main effect of avoidance was found both at the intercept (β=0.54, $p<.001$) and the slope (β= -0.42, $p<.001$); suggesting that high scores on avoidance increased initial levels of peer victimization, and that this variable also predicted a decline in peer victimization over time. This pattern was similar to the one found for the avoidance models described in Chapter 1.

The avoidance model also indicated that friendship quality had a positive moderating effect on the relationship between avoidance and victimization (β= -0.23, $p<.001$). In contrast to what was found for relational aggression, friendship quality had a positive buffering effect that protected avoidant children from the detrimental effects of peer harassment. As anticipated, having a high quality friendship transformed the ways in which highly avoidant children experienced victimization across the school year. Even though these children started the school year with the highest scores on victimization, they showed a strong decline in their scores from Time 1 to Time 2, and these scores consistently continued to decrease over time. In contrast, children who were low in avoidance and were either low or high on friendship quality showed the lowest levels of victimization across the school year. Furthermore, no significant increases or decreases were observed in these groups' victimization scores over the one year period (see Figure 18).

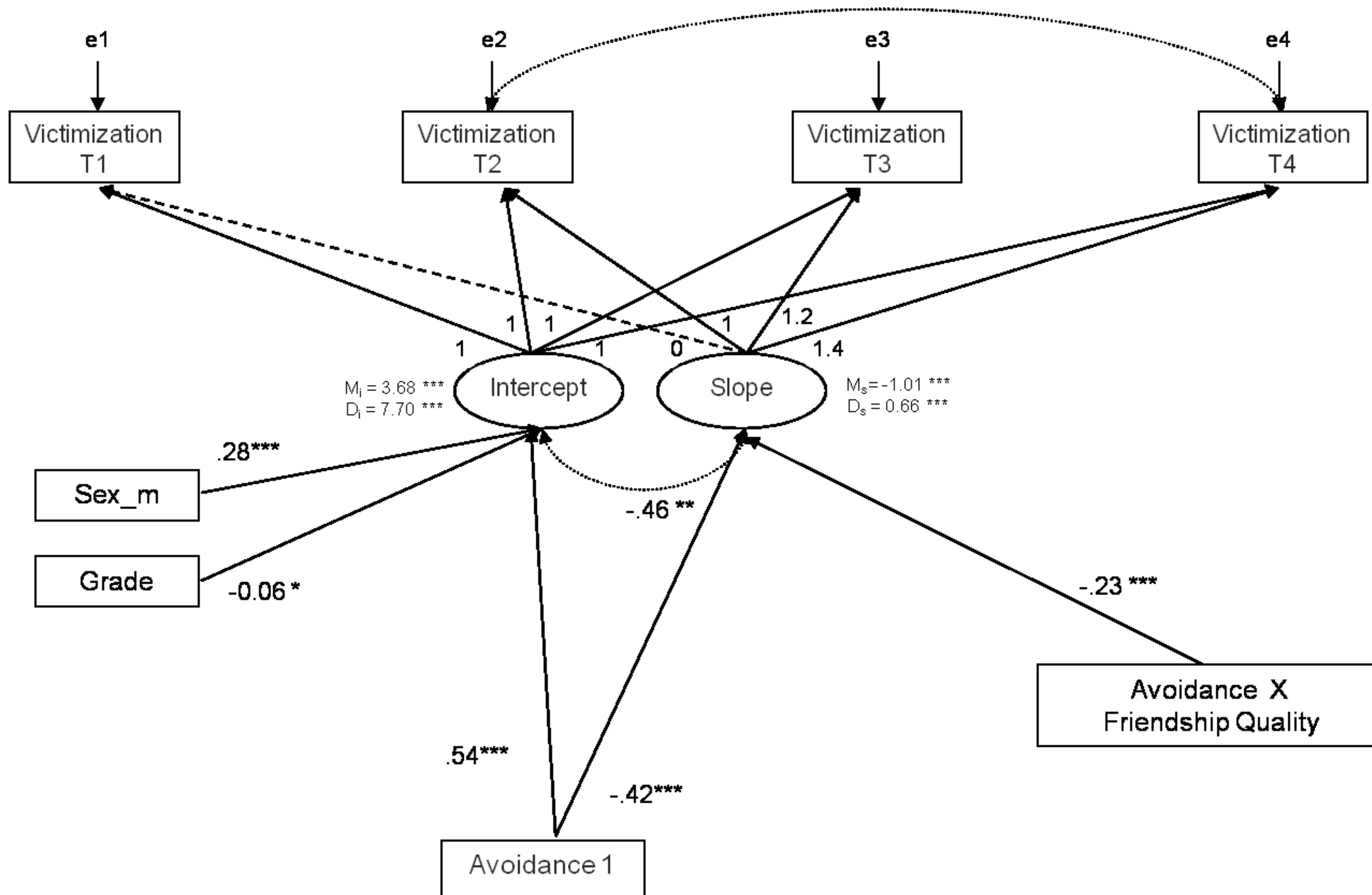

Figure 17. Path model for the moderating effect of friendship quality in the relationship between avoidance and the trajectory of peer victimization.

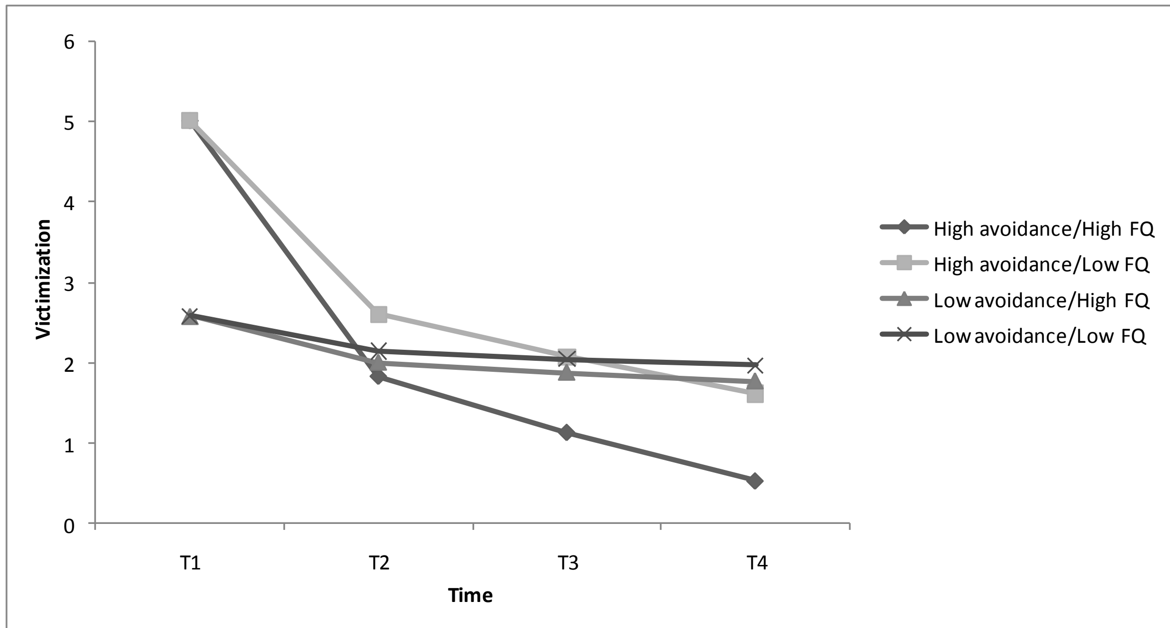

Figure 18. Predicted scores for changes on peer victimization for the interaction between avoidance and friendship quality.

Discussion

Based on the premise that friendships are relationships that make important contributions to children's well being, the current study was conducted to examine the possible moderating role of friendship quality in the relationship between risk factors and peer victimization. The purpose of this study was to go beyond the well known finding that having a friend protects children from victimization (Hodges, et al, 1999), and was aimed at determining whether the association between risk factors and victimization varied as a function of the perception that children have about the quality of friendships. The present study expands on previous literature on peer victimization by shedding light on the possible mechanisms that explain the relative buffering effectiveness of friendship quality.

Effect of friendship on victimization

Results from the present study revealed that children's perception of friendship quality did not predict their baseline scores or their changes in victimization over time. Given that victimization is related to low supportiveness, protection and companionship within friendships (Rodkin & Hodges, 2003), it might have been expected to find a negative association between friendship quality and peer victimization. However, no such effect was observed for the aggression or the avoidance models.

Evidence from previous studies in this area of research is conflicting. Several studies have found that friendship quality is likely to reduce victimization and improve adjustment in children by offering them validating and intimate exchanges (Bollmer, Milich Harris & Maras, 2005; Ladd, Kochenderfer & Coleman, 1996; Kochenderfer & Ladd, 1996; Lamarche et al., 2006; Rodkin & Hodges, 2003; Sullivan, 1953). However,

other studies have not been able to find a direct link between this friendships and better psychosocial adjustment (Berndt, Hawkins & Jiao, 1999; Keefe & Berndt, 1996).

The discrepancy between results from the studies that tested direct effects of friendship quality may be suggesting that such effects occur mainly via mediating or moderating processes. Indeed, in the current study evidence of an interactive effect between aggression, avoidance and friendship quality was found. This is consistent with evidence in the literature that demonstrates that friendships are one of the most consistent moderators of the association between risk factors and maladjustment (Hodges, Boivin, Vitaro & Bukowski, 1999; Ladd & Kochenderfer, 1998).

Another possible explanation for the lack of association between friendship quality and peer victimization may be related to the specificity of the effects of friendship quality. According to Berndt (2002), there is evidence that friendship quality has an important effect in children's success in the social world, however, the same protective effect is not found for children's general self-worth. While speculative, it might be the case that in this particular sample friendship quality was not considered an important criterion that determined the social standing of a child in the peer group. Additional studies that examine group norms and processes may serve to elucidate the specific conditions under which friendship quality predicts children's adjustment.

Moderating effect of friendship quality

One of the most interesting results found in this study was the moderating effect that friendship quality had on aggression and avoidance. Results indicated that having a high quality friendship predicted a decline in victimization scores for highly avoidant

children, whereas for highly relationally aggressive children it actually predicted an increase in these scores over time.

Results obtained for the aggression models contradicted our hypotheses, and the premise that high-quality relationships with peers serve to promote positive mental health, well-being and adjustment in children (Sullivan, 1953). However, more recent studies have been able to show that friendships also have a dark side. Evidence from these studies indicates that, in some cases, these relationships can contribute to social maladaptation and the development of behavioural problems (Dishion, Nelson, Winter & Bullock, 2004).

In essence, what was found in the current study was that for relationally aggressive students, having a high quality friendship predicted an increase in their victimization scores over time. One possible explanation for this finding comes from the study of the dynamics of negative peer influence. Studies in this area have demonstrated that friendships can generate and reinforce maladaptive behaviours in the context of shared but unconventional beliefs. In that sense, the only difference between a positive and a maladaptive friendship lies in the fact that the latter is based on a different set of norms that produce a deviant behaviour (Gillmore, Hawkins, Day & Catalano, 1992). Thus, findings from Study 2 could indicate that in high quality friendships of relationally aggressive children, the negative behaviours and attitudes associated with this type of aggression might be the shared norm of the dyad. Consequently, instead of affording the child the opportunities to learn assertive social skills, this particular friendship acts as a risk factor by reinforcing the negative behaviours associated with being relationally aggressive.

In contrast, results from the second model supported the hypothesis of the positive buffering effect of friendship quality. Friendship quality predicted a significant decrease in victimization scores for highly avoidant children throughout the school year. These results are consistent with evidence from studies that have found that friendship moderates the links between internalizing behaviours and victimization. For instance, in a study that examined these processes, it was found that withdrawn behaviour was considered a risk factor for peer harassment only when children did not have a friend that provided protection from possible attacks (Boivin, Hymel & Hodges, 2001); evidence that is consistent to what was found in this data.

Chapter 4: Study 3 - The moderating effect of social problem solving

An important body of research has demonstrated that a strong association exists between children's abilities to resolve social problems, and the quality of their social interactions. Indeed, social problem solving has been found to be a central cognitive appraisal and coping process that serves both a moderating and a mediating role in the relationship between life events and psychosocial adjustment (Crick & Dodge, 1994; Dodge, & Price, 1994; Mayeux & Cillissen, 2003).

Social problem solving is defined as "the self-directed cognitive behavioural process by which a person attempts to identify or discover effective or adaptive ways of coping with problematic situations encountered in everyday living" (D'Zurilla & Maydeu-Olivares, 1995, p. 410). Solving everyday problems entails a wide variety of challenges related to personal and interpersonal problems, as well as community and social challenges. According to D'Zurilla and Maydeu-Olivares (1995), the concept of social problem solving is a multi-dimensional construct that comprises five different dimensions: positive problem orientation, or the use of constructive problem-solving skills; negative problem orientation, defined as a dysfunctional or inhibitive cognitive-emotional processing; rational problem solving, or the knowledge and use of effective problem-solving skills, impulsivity/carelessness style, which refers to ineffective or inadequate efforts to apply problem-solving skills, and avoidance style, defined as a defective problem-solving pattern characterized by procrastination, passivity and dependency. These authors also explain that the process of solving social problems can be divided in two different parts: solving a problem and implementing a solution. The main distinction between these two parts is that while problem solving is defined as the

process of finding solutions to specific problems, implementing a solution is the process that requires applying them to specific problematic situations. Therefore, these two domains require different sets of skills. As the former entails the use of cognitive and emotional competencies, the latter requires different coping and performance strategies, which could be, but are not necessarily related to the ones used for problem-solving.

One of the models that has been more frequently used to comprehensively describe the process of children’s problem solving is the Social Information Processing Model – SIP (Crick & Dodge, 1994). This model suggests that children's social behaviour and responses are the product of a series of sequential social information-processing steps. According to Crick and Dodge (1994), children have a set of biological capabilities and a collection of memories from their past that help them interpret environmental cues and choose behavioural responses. This process requires several steps. First, individuals (a) need to encode the external and internal cues; (b) then, they make an interpretation and a mental representation of those cues. After that, (c) they clarify or select the desired goal in order to (d) construct a response, (e) make a decision, and finally (f) display a selected behaviour (see Figure 19).

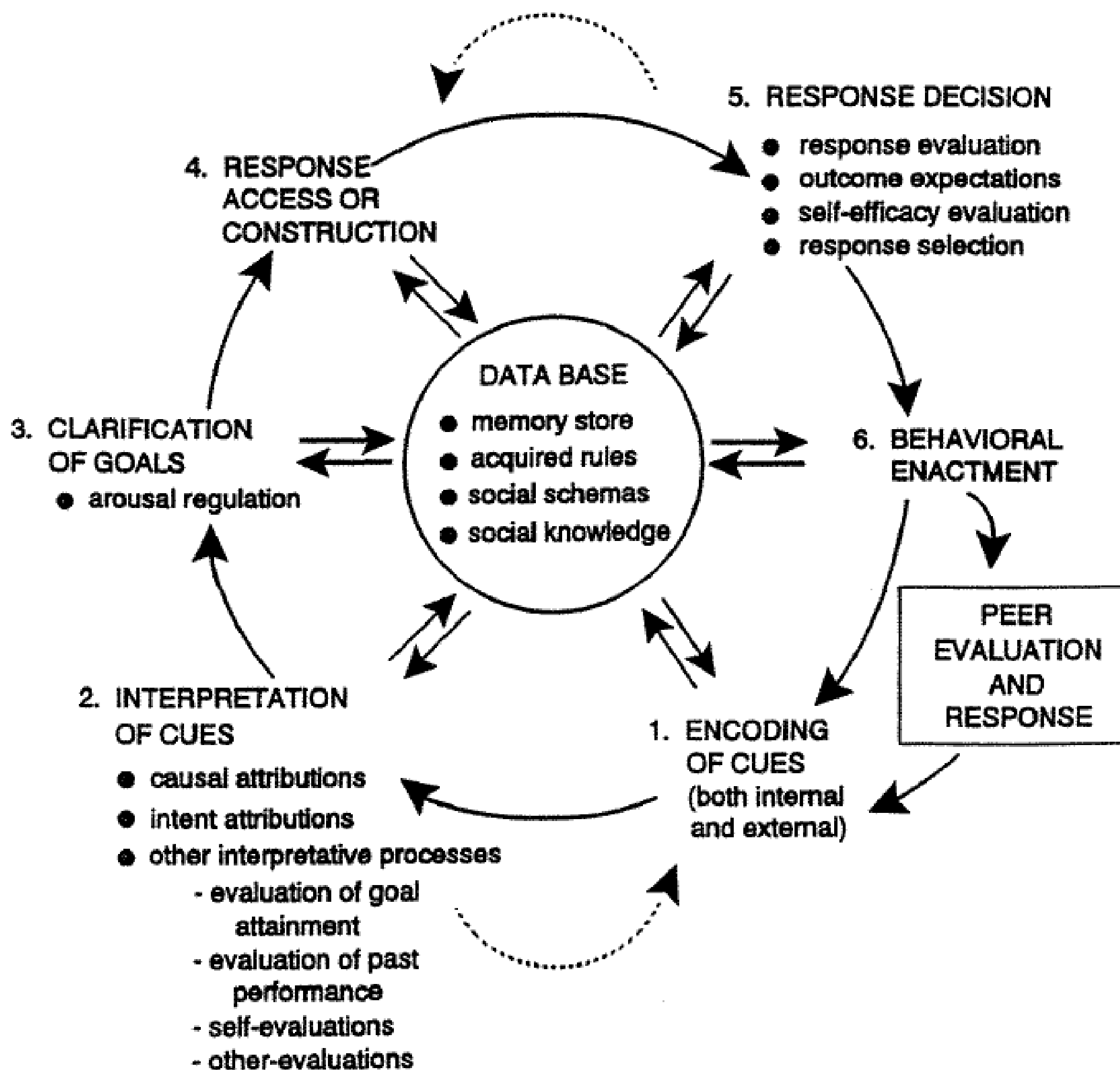

Figure 19. A reformulated social information processing model of children's social adjustment (Crick & Dodge, 1994).

Taken together these elements suggest that, in order to deal with social problematic situations, individuals need to identify and interpret situational cues, generate possible solutions, and be able to evaluate them in order to enact a desired response. Within this theoretical framework it is assumed that skilful processing at each step will result in socially competent behaviour, whereas deficient processing of the information at any of the steps will lead to deviant social behaviour (Crick & Werner, 1998; Takahashi, Koseki & Shimada, 2009).

The capacity to effectively, productively and positively cope with social problems is considered to be one of the most important developmental tasks for children's emotional and psychosocial adjustment (Battstich et al., 1989). According to Crick and Dodge (1994), deficiencies in the capacity to solve social problems may increase the risk for developing problematic outcomes such as depression, anxiety, substance abuse, aggression, and other deviant behaviour. Conversely, results from a few studies have illustrated the positive effect of social problem solving; it has been found that children with good social problem solving abilities tend to be more prosocial and have higher constructive social skills (Eisenberg et al., 1996).

Empirical research on social problem solving has been largely based on the premise that a social information-processing pattern generally is associated with children's engagement in a particular type of behaviour (e.g., prosocial or deviant behaviour) (Crick & Werner, 1998). In support of this view, a number of studies have found that children who are aggressive or have conduct disorders commonly have deficits in their social problem solving skills. These studies have shown that aggressive children tend to evaluate situations as hostile, select inappropriate and aggressive goals, and see

aggressive responses as adequate alternatives. Furthermore, aggressive children have been found to generate few problem-solving solutions, which are generally qualitatively poor, ineffective and aggressive (Keltikangas-Järvinen, 2001).

For example, evidence from the work conducted by Dodge and colleagues (1980, 1982) found that boys and girls who were identified by their peers or teachers as being aggressive, were more prone to assume that ambiguous social situations require aggressive responses, and to react in a more reflexive and aggressive manner in social problems compared with their nonaggressive counterparts even when it was not clear that an act was motivated by a hostile intention. In the same way, Crick and colleagues (2002) found that both relationally and physically aggressive children used a hostile attributional bias to evaluate situations of relational provocation and instrumental provocation, respectively. This finding indicates that the information-processing pattern used by aggressive children has an effect on how they react to problematic situations.

The protective effect of social problem solving. Despite the ample number of studies that have examined the association between the lack of social problem solving skills and negative developmental outcomes, there is a paucity of empirical research on the possible buffering effect of this variable on the relationship between risk factors and children's psychosocial adjustment. According to Frye and Goodman (2000) there are only a few studies that have given support to the buffering effect of social problem solving, and the majority of these studies have mainly focused on the moderating effect of this variable on the relationship between stress and depression. In a study conducted by Goodman, Gravitt and Kaslow (1995) it was found that the ability to generate alternative solutions buffered the stress–depression relationship in a sample of 50

children (ages 8 to 12) from a low-income minority population. Evidence from this study showed that children who experienced a high impact of negative life events and had less effective social problem-solving skills, reported higher levels of depression compared with children who also had a high impact of negative life events, but had better and more effective social problem-solving abilities. In another study developed by Glyshaw and colleagues (1989) with 530 students from eighth, ninth, tenth and eleventh grade, it was found that students from junior and senior high school who used positive problem solving as a coping strategy showed lower levels of depression, both concurrently and prospectively. Finally, in a study developed by Chang (2002) with 371 college students, the moderating effect of social problem solving in the association between perfectionist tendencies and depression was tested. Results revealed that although perfectionism accounted for a significant amount of variance in depression, social problem solving had an important impact in the association between these two variables by augmenting the prediction of each of these maladjustment measures. That is, the magnitude of the positive association between perfectionism and depression was greater in the presence of low problem-solving abilities, suggesting that social problem solving acts as an effective buffer against the detrimental consequences typically associated with perfectionism.

The current study: The effect of social problem solving

Given the evidence presented above, it seems plausible to expect that social problem solving skills have the potential to act as a buffer for at-risk children. However, the literature reviewed also suggests that further work is needed to shed light on the mechanisms that explain this possible buffering effect. Several models have been developed to examine the moderating effect of a lack of social problem solving skills,

however only a limited number of studies have examined the role of this variable as a protective factor in the association between life events and psychological adjustment. Furthermore, to date no studies have examined this moderating role of social problem solving in the relationship between risk factors and peer victimization.

In the present study, structural equation modeling was used to study the variations in the association between aggression (physical and relational), withdrawn behaviour and peer victimization over time. This study was also concerned with the mechanisms through which social problem solving might play a moderating role in the relationship between risk factors and peer victimization. As it was mentioned in Study 1 and 2, level 1 results corresponded to the longitudinal association between risk factors and changes in peer victimization. The relationship between aggression (i.e., physical and verbal), withdrawn behaviour and peer victimization was explored, and it was expected: (a) that high levels of aggression (i.e., physical and relational) and withdrawn behaviour would positively predict peer victimization and (b) that a significant decrease in peer victimization over time and (c) significant differences in victimization scores at the beginning and across the school year would be observed. Results from these analyses will not be reported in this study since they were already reported in the Study 1.

Hypotheses for Level 2: Moderating effect of social problem solving. In this study the hypothesis for level two corresponded to the moderating role of social problem solving. It was expected that a decrease in the strength of the association between risk factors and peer victimization would be found when children had high scores on social problem solving skills. Based on the "buffering hypothesis" model, this decrease was expected in children who had high levels of aggression (i.e., physical and relational) and

high levels of withdrawn behaviour. More specifically, a reduction in victimization scores at the beginning and across the school year was expected: (a) for children who were high in relational or physical aggression and who had high scores in social problem solving skills, and (b) for children who were highly avoidant and who had high scores in social problem solving skills.

Results

Moderating effect of social problem solving skills

Study 3 was also designed to test the possible buffering effect of social problem solving skills on the association between risk factors and peer victimization. Similar to what was presented in previous chapters, analyses for this paper used two Structural Equation Modeling techniques: a latent growth curve to analyze the trajectory of victimization over a one year period, and a path analysis that was used to determine the impact of the predictors on the growth parameters of peer victimization.

Aggression and social problem solving skills. The model created to estimate the impact of aggression and social problem solving skills on the latent growth curve of victimization is presented in Figure 20. Indices show a good fit of the model to the data χ^2 (19, *n*=623) =48.041, p<.001; RMSEA = .05; NNFI = .97; CFI = .98. A direct effects of physical aggression (β=0.39, *p*<.001), relational aggression (β=0.12, *p*<.02), grade (β= -0.14, *p*<.001) and sex (β=0.16, *p*<.001) were found. Loadings on these path coefficients indicate a similar pattern to the one observed in Studies 1 and 2. Relational and physical aggression were found to be predictive of higher scores on victimization at Time 1. On the other hand, it was observed that being a boy was predictive of higher scores on

victimization at the beginning of the year, and that being in fourth grade also predicted higher scores on victimization at time one. No effect was found at the slope level for any of the variables.

Social problem solving skills were found to be moderators of the relationship between relational aggression and peer victimization only for the intercept ($\beta = 0.12$, $p < .05$). Contrary to the hypotheses proposed, this finding revealed that for relationally aggressive students, having social problem skills actually increased their victimization scores at Time 1. To explain, using a non-hostile cognitive bias and being able to generate alternative and assertive solutions seemed to increase the risk of highly relationally aggressive children for peer victimization. It is worth mentioning that for low relationally aggressive children, social problem solving skills had virtually no effect on their victimization scores (see Figure 21).

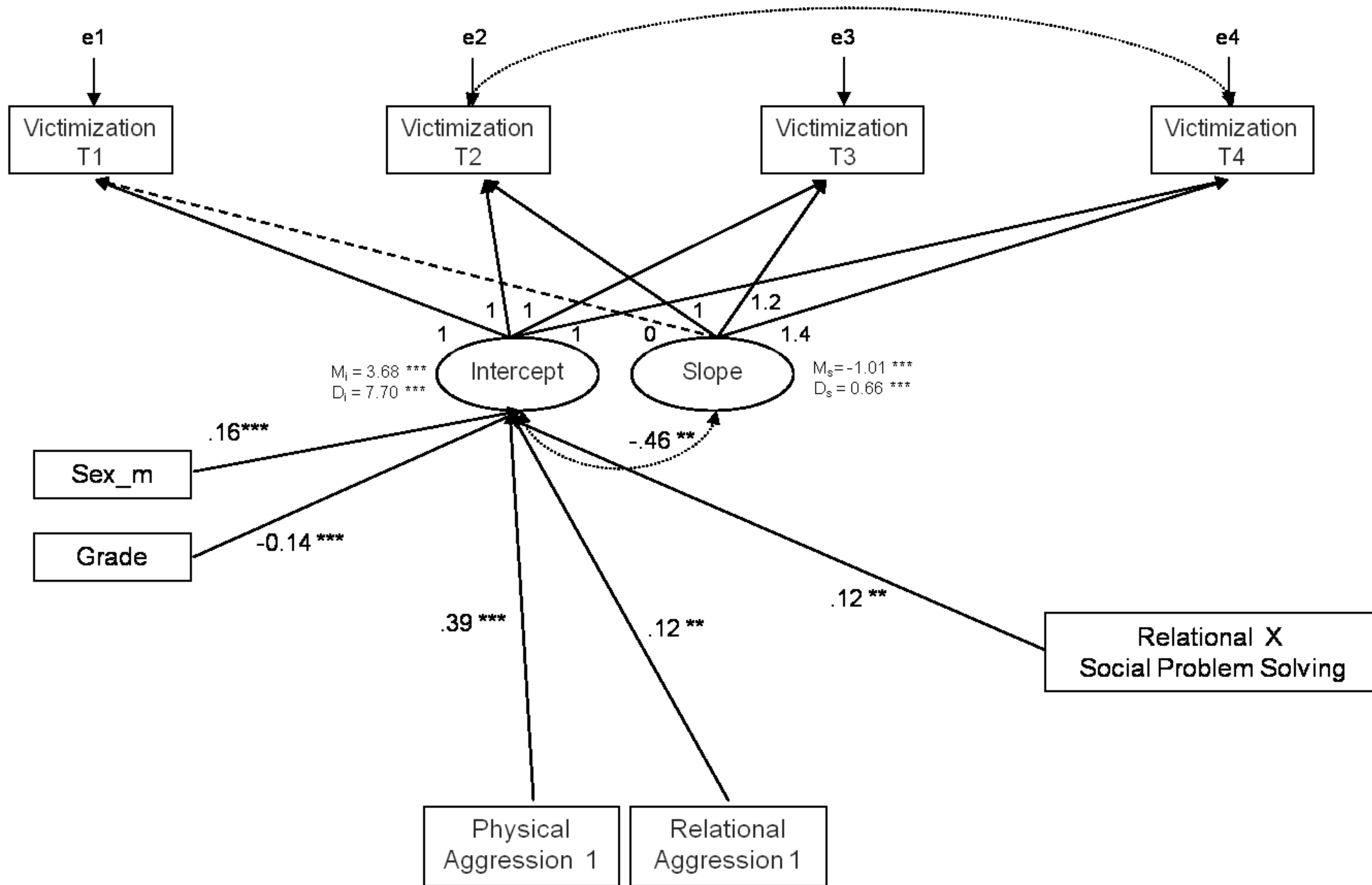

Figure 20. Path model for the moderating effect of social problem solving skills on the relationship between aggression and the trajectory of peer victimization.

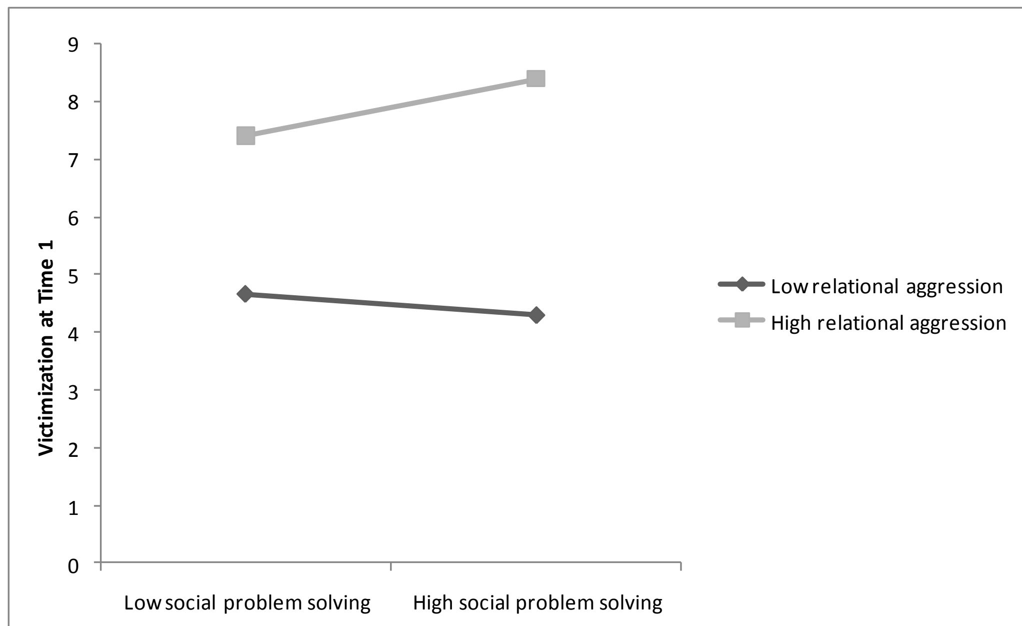

Figure 21. Interaction between relational aggression and social problem solving skills for the scores on peer victimization.

Avoidance and social problem solving skills. The model designed to determine whether social problem solving skills moderated the relationship between avoidance and victimization showed good fit , χ^2 (15, n=623) = 36.57 $p<.001$; RMSEA = .048; NNFI = .981; CFI = .989 (see Figure 22). However, contrary to what was predicted, no moderating effect of social problem solving skills was found. Only direct effects of the predictor and the control variables were significant. Similarly to what previous models showed, it was found that sex had a significant main effect at the intercept (β=0.28, $p<.001$), indicating that boys had higher levels of victimization scores at the beginning of the school year. Similarly, grade was found to negatively predict the victimization intercept (β= -0.08, $p<.001$), suggesting that fourth grade students had higher levels of victimization at Time 1, compared with fifth and sixth graders.

As anticipated, avoidance was found to predict initial scores of peer victimization (β=0.51, $p<.001$) and changes of this variable over a 1 year period (β= -0.31, $p<.001$). That is, avoidance predicted an increase on children's baseline victimization scores, after controlling for the effect of sex and grade. Similarly, being avoidant was predictive of a more negative growth on peer victimization over time. No other effects were found to be significant in this model.

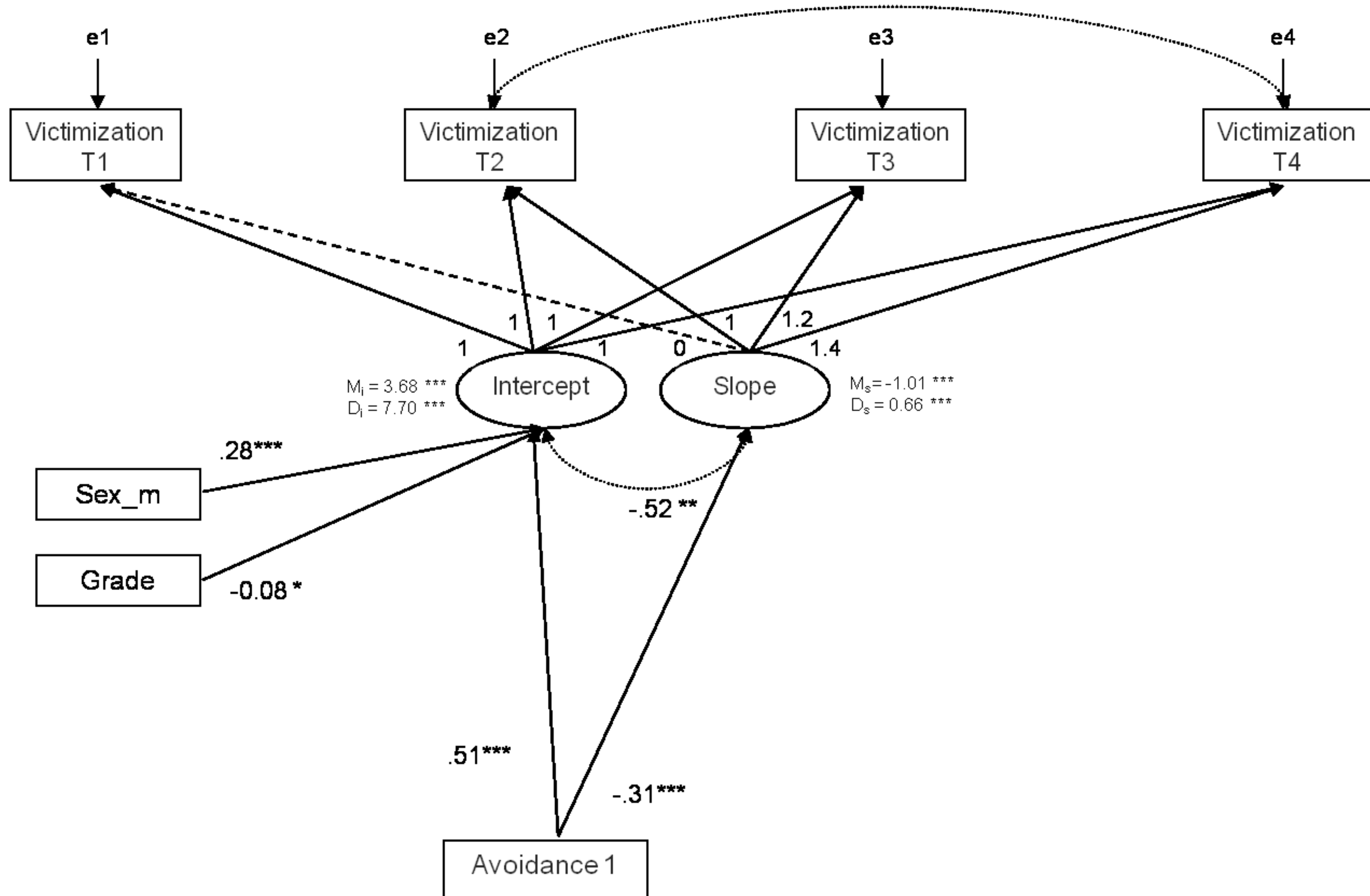

Figure 22. Path model for the moderating effect of social problem solving skills on the relationship between avoidance and the trajectory of peer victimization.

Discussion

The objective of Study 3 was to expand on previous research by examining the moderating effect of social problem solving skills in the association between risk factors and peer victimization. In general, results showed that social problem solving did not predict baseline scores or changes in victimization scores over time. Moreover, it was determined that this in this study this variable did not act as a buffer from the detrimental effects of peer victimization. In fact, the only moderating effect observed showed that social problem solving predicted higher scores on victimization at the beginning of the year for students who were also high in relational aggression.

Effect of social problem solving skills on victimization

Results Study 3 did not provide support for previous findings which reported that social problem solving skills have a positive effect on children`s psychosocial adjustment (Crick & Dodge, 1994; Dodge, & Price, 1994; Mayeux & Cillissen, 2003). And while this direct effect was not the focus of the investigation, it is nonetheless important to discuss the lack of this significant association. One possible explanation for the lack of significance of these findings is related to the measures used in this study. As discussed previously, the majority of the studies that have shown a predictive effect of social problem solving were focused in understanding how deficiencies in the capacity to solve social problems may increase the risk for developing problematic outcomes. Further, the limited number of investigations that have explored the positive dimension of this variable have also found that is the lack of the ability to resolve social problems that predicts children`s adjustment (Frye & Goodman, 2000).

Given that the measure developed for this study only assessed positive dimensions of social problem solving (i.e., Non-hostile cognitive bias, use of assertive solutions and generation of alternatives), it is plausible that the lack of support for the association between social problem solving and victimization may have been related to issues of content validity (i.e., how well the instrument captures the construct in question). That is, the measure developed for this study only assessed the degree to which a person used positive strategies associated with competent social problem solving. The current measure made no attempt to tap into deficiencies on this ability, or even into the use of maladaptive strategies. Consequently, a possible reason why social problem solving did not predict initial scores or changes in victimization was because the instrument used was not able to tap into the specific aspects of social problem solving that are predictive of children`s adjustment (i.e., social problem solving deficiencies) (D'Zurilla & Maydeu-Olivares, 1995). Finally, results also suggest limitations of the measure used in terms of discriminant validity; as can be seen in Table 3, there were no significant associations between social problem solving and other variables included in the study, even though the Chronbach's alphas for the three subscales were acceptable. Future research will need to include a more comprehensive measure of social problem solving in order to determine the predictive value of this ability on the prevention of peer victimization.

Moderating effect of social problem solving skills

The hypothesis that social problem solving skills buffered the association between risk factors and peer victimization was not supported in this study. In fact, contrary to expectations results showed that for relationally aggressive children, the use of positive

dimensions of social problem solving skills predicted an increase in their victimization scores at the beginning of the year, compared with children who were low in relational aggression. The reason why social problem solving skills were associated with an increase in victimization at Time 1 is not clear. It is possible that this finding indicates that the use of positive strategies only to solve social problems could be interpreted by the peer group as a sign of weakness or vulnerability that makes children more prone to victimization. It might be the case that children who only use positive strategies are being perceived by the peer group as not assertive, indecisive and problematic for the adequate functioning. However, taking into account the issues of content and discriminant validity discussed earlier, caution is necessary in the interpretation of the findings related to social problem solving.

Chapter 5: General Discussion

The three studies presented above used the "buffering hypothesis" model to assess the relative buffering effectiveness of positive peer experiences and personal characteristics in the association between risk factors and peer victimization. The basic premise of this model is that resources provided by one's positive interpersonal ties and personal characteristics have a moderating effect on the stress–well being relationship, especially for individuals who face conditions of high stress (Cohen & Hoberman, 1983). In the following sections the findings from the three studies previously presented are discussed from broader theoretical perspective. In addition, the strengths and limitations of the studies and the implications that the findings have for the study of peer relations.

The buffering effect of prosocial behaviour, friendship quality and social problem solving

Overall, the results from this investigation support the idea that some interpersonal ties and personal experiences have the potential to protect children from the detrimental effects of peer victimization. However, evidence also revealed that not all the moderators protected children in the same way, and that in some cases, they were even considered as risk factors.

Buffering effects have been defined as conditions that enhance the likelihood of a positive developmental outcome. In the present results, buffering effects were not found to be generalizable to all the moderators and to all the risk factors. For example, in the case of prosocial behaviour this variable protected both aggressive and avoidant children, however, this protection was only at initial levels of victimization for aggressive children, and for changes in victimization for avoidant students. For friendship quality the evidence obtained was counter-intuitive. Even though this variable was found to protect

avoidant children by predicting a decline in their victimization scores over time, results also revealed that friendship quality had a negative impact on the initial levels of victimization of relationally aggressive children. As discussed in Study 3, this iatrogenic effect of friendship quality is possibly related to the dynamics of negative peer influence. Results for social problem solving indicated that this variable had no protective effect for aggressive or avoidant children, at least in the context of the present studies. Nevertheless it should be noted that the results from Study 3 might not be generalizable to other samples and ages, due to limitations of construct validity that were detected in the instruments that assessed this dimension. Finally, it is important to mention that although not all of the moderators were found to be buffers against peer victimization, those that were identified as protective factors, seem to better protect children who were either high on relational aggression or withdrawn behaviour. These findings also lend support to the theoretical model that guided this investigation.

Contribution of the latent growth curve model to the present studies

The overarching theme that connected the three studies was the relationship between risk factors and peer victimization over time. One of the major contributions of this dissertation was the use of a latent growth curve technique to examine this relationship. The main difference between using a regular structural equation framework and using a latent growth curve, is the inclusion of a model on the means for the observed variables. In this specific case, the latent growth curve allowed estimates of the mean trajectories of victimization over time to be obtained, as well as a mean value for victimization at the beginning of the school year. Likewise, this technique enabled teasing apart the effects of the different predictors, moderators and control variables, in

order to detect the unique contribution of each variable to the variance of peer victimization.

By using this latent model it was possibly to thoroughly analyze two aspects of the association between risk factors and peer victimization: First, it was possible for us to examine the ways in which victimization changed throughout the school year. Indeed, important evidence emerged from these analyses indicating that victimization is not stable; on the contrary, it is a changing process which shows a decreasing trend over time. Moreover, it was possible to determine that students experienced a sharp decline on their victimization levels at the beginning of the school year, which is probably attributable to the strategies groups use to assure adequate functioning. Second, the latent model permitted a more comprehensive understanding of the nature of the association between risk factors and peer victimization. The models tested here represent a shift in the study of the effects of internalizing and externalizing problems on peer victimization. Given that the majority of the studies conducted in this area use concurrent data, the present study expanded on the previous literature by shedding light on the longitudinal associations that are responsible for changes in victimization over time. Important evidence emerged from these analyses indicating that the predictors of peer victimization are qualitatively different. Throughout the series of three studies, results suggested that withdrawn behaviour was predictive of both initial scores and changes on peer victimization, whereas aggression only predicted initial levels of victimization. Furthermore, path loadings revealed that the strongest predictor of initial scores of peer victimization was physical aggression, which interestingly, did not interact with any of the moderators, or had significant effects over time.

It is worth noting that another advantage of the use of structural equation models for this investigation was that it allowed diverse theoretical perspectives to be brought together to explain the different facets of the findings. For instance, our interpretations of the latent growth curve results were based on the *group process model* proposed by Bukowski and Sippola (2001), which emphasizes the notion that victimization is the product of the conflict between individual and group goals. In contrast, in the present studies interpretations of the path models that tested the impact of the risk factors on the latent growth curve of victimization were based on *the individual experience model*, which emphasizes the idea that relatively stable personal characteristics are the key predictors that explain victimization.

Another strength associated with the use of Structural Equation Modeling was the careful control of confounds that could have potentially explained the association between risk factors and victimization. In fact, analyses revealed that sex, grade and prosocial behaviour were important predictors of victimization, both at the level of the intercept and the slope. Finally, another valuable asset of the design of this investigation was the sample size. Since Structural Equation Modeling techniques are particularly sensitive to the size of the samples analyzed in the models, the large number of participating students helped create a strong and consistent methodological design.

Limitations and practical implications

This series on Studies is unique in that it attempted to answer a number of questions concerning the developmental trajectories of peer victimization and the relative buffering effectiveness of prosocial behaviour, friendship quality and social problem solving in the relationship between risk factors and peer victimization. While a number of

strengths of this investigation have been detailed already (i.e., the use of a longitudinal design that encompassed the complete school year, a diverse sample - high and low SES, the use of structural equation modeling and latent variables, the sample size, the comparison of buffering effectiveness, etc.), limitations of this work also require some elaboration.

The first limitation is that the analysis and conclusions drawn from this study are mainly based on self report and peer assessment information. It would be important to explore if the associations found in the analyses vary as a function of the type of measurements and sources of information used (e.g., teacher reports or class observations). There are a number of studies that have shown differences in the association of the correlates of victimization depending on the type of measure used or the informant from whom the data is gathered. However, this use of multiple informants also needs to be managed with caution. There is little information on how to integrate information from multiple sources, particularly when there is little modest agreement between the informants.

A second limitation is related to the sample used in the studies. In this particular case, the group of participating students was located in Bogotá, Colombia. Given that only a few studies on risk factors and peer victimization have been conducted in Latin America, and that the results obtained here were compared to studies conducted in North America, the interpretation of the findings in this dissertation should be done with caution. According to Henrich, Heine and Norenzayan (2010), findings from several disciplines have shown considerable variation among human populations in diverse domains like analytic reasoning, social interactions, fairness, cooperation, and memory.

In this sense, it is important to keep in mind that the set of values and social norms that characterize children's interaction in Latin America could differ from the ones observed in North American samples. Therefore further research is needed in this cross-cultural domain to be able to fully describe the risk factor – peer victimization in Latin American samples, and to be able to make more accurate and precise comparison with other cultures around the world.

Another limitation is related to the use of the latent growth curve technique. In the present studies a latent growth curve was created to analyze only the outcome of the models. It could be the case that variables such as aggression or avoidance also experience changes over the school year. By introducing a latent growth curve analysis for the predictors, it would have been possible to have a more comprehensive view that explains how initial scores and changes in risk factors relate to initial scores and changes in victimization over time.

A fourth limitation that is common for the three studies is that the analyses were mainly focused on moderating effects of positive personal characteristics and peer experiences. Further research is needed to examine possible mediating or suppressing influences of the variables included in this study.

A limitation that was specific to Study 2 was that the analyses of the protective effects were focused on the best friend domain only; in doing so, children's relationships with other close friends were not taken into account, and therefore their own protective effect was not explained. For example, it might be the case that for relationally aggressive children the quality of the relationship with the second or third best friend could be the

source of support against peer harassment. Further research is needed to shed light on this topic.

A limitation that was specific to Study 3, was the lack of association and predictive power of the instrument used to measure this variable. The potential lack of content validity of the instrument limited the capacity to determine if children's social problem solving skills is a central factor that could protect them from the risk of becoming targets of peer harassment.

Finally, it is important to mention some practical implications of the findings presented in this dissertation. One of the reasons why studying the relationship between risk factors and peer victimization is important is that many educational efforts aimed at preventing socio-emotional difficulties in children and youth are based on findings derived from studies looking at this relationship. A basic assumption of most prevention programs in this area is that by improving the quality of children's interactions, aspects like self esteem or the general well being of children are also benefited. In this sense, the results presented in the three studies give practitioners and researchers specific valuable information that inform prevention strategies that could be implemented in classrooms. For example, it would be very important for practitioners who work in the classroom to know that relationally aggressive children having a close similar friend is actually a risk factor, whereas fro avoidant children this same situation could protect them from victimization and maladjustment.

Concluding Statement

One of the most important premises of the peer relations literature states that an individual's relationships with peers are a key component of a healthy development

(Sullivan, 1953). By examining growth trajectories of children's victimization, and the ways in which these changes are predicted by risk factors, the results from this dissertation added important evidence to the peer relations area. It was possible to demonstrate that both group processes and individual differences make important contributions to children's risk for becoming targets of peer harassment. The present findings supported the contention that an important portion of the variance in peer victimization can be explained both by individual characteristics and by children's peer experiences. The longitudinal design that was used allowed for a more comprehensive view of the ways in which children relate to each other over the school year, and how they use certain types of behaviours as control mechanism to guarantee adequate group functioning.

Perhaps the major contribution of this dissertation is related to the analyses that determined the relative buffering effectiveness of positive personal characteristics and peer experiences. By testing different models, these three studies were able to isolate the mechanisms that explain how buffering effects occur in the classroom setting and protect children from maladjustment. Together, the three studies have provided additional support for the notion that positive peer experiences and positive personal characteristics are essential for children's healthy development.

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Appendix A:
Information Letter

Febrero de 2008

Estimado(s) padre(s),

Mi nombre es William Bukowski y soy profesor del Centro para la Investigación del Desarrollo Humano (CRDH) de la Universidad de Concordia en Montreal, Canadá. Allí trabajo como docente e investigador en temas relacionados con la niñez y la adolescencia. En particular, estudio la manera en la cual las relaciones de amistad, las habilidades y los comportamientos de los niños les ayudan a manejar los retos a los que se enfrentan en su vida diaria. Este tema es de gran interés para los padres, profesores y personas que trabajan en el sector de la educación.

Esta carta tiene como propósito informarles que actualmente mis estudiantes de doctorado y yo nos encontramos realizando un estudio con niños de 4º, 5º y 6º grado del colegio de su hijo(a). Esta investigación nos ayudará a entender de una mejor manera cómo se da el proceso de desarrollo de los niños.

Como parte de este estudio, nos reuniremos con los estudiantes para pedirles que nos ayuden a responder un cuestionario en cuatro ocasiones durante el año escolar. Les pediremos que nos cuenten como son sus relaciones sociales con sus amigos y compañeros, así como algunas características de sus salones de clase.

La información recolectada en este estudio será completamente confidencial y la participación es voluntaria. Incluso, si usted(es) y su hijo(a) deciden participar podrán retirarse en el momento en que lo deseen.

Este estudio ha sido aprobado previamente por el Comité de Ética en Investigación Humana de la Universidad de Concordia. Si usted(es) tiene(n) preguntas sobre sus derechos o los derechos de su hijo(a) como participante del proyecto, por favor diríjase Ana María del Río, coordinadora del proyecto en Colombia. (Teléfono: 3402978, Celular: 3003388712, Correo electrónico: adel@uniandes.edu.co). Si tiene alguna otra pregunta adicional, puede comunicarse al correo electrónico: william.bukowski@concordia.ca.

Le(s) pido el favor entonces que llene(n) la forma de consentimiento adjunta y la envíe(n) de vuelta mañana al colegio con su hijo(a). Como incentivo para motivar a los niños a que nos ayuden a reunir las formas de consentimiento, recibirán un pequeño regalo de parte del equipo de investigación.

Muchas gracias por su ayuda.
Cordialmente,

William M. Bukowski
Profesor

Appendix B:

Parental Consent Form

PROYECTO CULTURE, SOCIAL RELATIONS AND ACADEMIC COMPETENCIES
(GRADOS 4º, 5º y 6º)

2008

PERMISO PARA PARTICIPACIÓN

Por favor lea y firme el siguiente texto:

Comprendo que se está solicitando mi autorización para que mi hijo(a) participe en la investigación del Dr. W. M. Bukowski. Comprendo que el propósito de este estudio es examinar la manera cómo las relaciones de amistad, las habilidades y los comportamientos de los niños les ayudan a manejar los retos de la vida diaria. Comprendo que si mi hijo(a) participa se le pedirá que conteste un cuestionario en cuatro ocasiones durante el año escolar. Se me ha informado que el cuestionario es sobre las relaciones sociales de los niños y sobre el clima de su salón de clase. Comprendo que mi hijo(a) no está obligado a participar en el estudio, e incluso, que si empieza a llenar el cuestionario y no quiere continuar, puede parar en cualquier momento. También comprendo que todas las respuestas serán confidenciales y no serán mostradas a ninguna persona. Solamente el Dr. W. M. Bukowski y sus asistentes conocerán la información de los cuestionarios.

Por favor marque alguna de las dos siguientes respuestas y pida a su hijo(a) que lleve esta carta mañana al colegio y la entregue a su profesor.

____ Mi hijo(a) ***tiene*** permiso para participar en la investigación del Dr. Bukowski

(Si usted marcó esta opción, le agradecemos que escriba a continuación el estrato del barrio en el que vive su familia:____)

____ Mi hijo(a) ***no tiene*** permiso para participar en la investigación del Dr. Bukowski

Nombre del estudiante: ______________________ Sexo: Hombre ____ Mujer____

Nombre del colegio: __________________________________ Curso: _____________

Nombre del(los) padre(s):_________________________ Teléfono:________________

Firma: ______________________________________ Fecha:_________________

Appendix C:

Peer Assessment

12351

¿CÓMO SON MIS COMPAÑEROS(AS)?

Colombo-4A

Instrucciones: A continuación encontrarás diferentes características. Cada una describe la forma en que una persona puede ser o actuar. Después de cada característica encontrarás una lista con los nombres de tus compañeros de clase que están participando en el estudio. Rellena la casilla que esté junto a los nombres de las personas que tengan esta característica. PUEDES ESCOGER TANTAS PERSONAS COMO QUIERAS. SI NADIE TIENE ESA CARACTERÍSTICA, DEJA LAS CASILLAS EN BLANCO.

1. ¿Quiénes son populares? (es decir que los demás los quieren)	**2. ¿Quiénes ayudan a los demás cuando lo necesitan?**	**3. ¿Quiénes le pegan o empujan a otras personas?**	**4. ¿Quiénes son amigables?**
Angélica María Ballestas ☐	Angélica María Ballestas ☐	Angélica María Ballestas ☐	Angélica María Ballestas ☐
Juan Pablo Barberi ☐	Juan Pablo Barberi ☐	Juan Pablo Barberi ☐	Juan Pablo Barberi ☐
Daniela Alexandra Barrios ☐	Daniela Alexandra Barrios ☐	Daniela Alexandra Barrios ☐	Daniela Alexandra Barrios ☐
Ivan Santiago Beltran ☐	Ivan Santiago Beltran ☐	Ivan Santiago Beltran ☐	Ivan Santiago Beltran ☐
Sebastian Garcia ☐	Sebastian Garcia ☐	Sebastian Garcia ☐	Sebastian Garcia ☐
Valentina Guerrero ☐	Valentina Guerrero ☐	Valentina Guerrero ☐	Valentina Guerrero ☐
Carlos Alberto Herrera ☐	Carlos Alberto Herrera ☐	Carlos Alberto Herrera ☐	Carlos Alberto Herrera ☐
Juliana Lozano ☐	Juliana Lozano ☐	Juliana Lozano ☐	Juliana Lozano ☐
Daniela Madariaga ☐	Daniela Madariaga ☐	Daniela Madariaga ☐	Daniela Madariaga ☐
Natalia Martinez ☐	Natalia Martinez ☐	Natalia Martinez ☐	Natalia Martinez ☐
Felipe Novoa ☐	Felipe Novoa ☐	Felipe Novoa ☐	Felipe Novoa ☐
Diana Catalina Nuñez ☐	Diana Catalina Nuñez ☐	Diana Catalina Nuñez ☐	Diana Catalina Nuñez ☐
Cesar Augusto Ordoñez ☐	Cesar Augusto Ordoñez ☐	Cesar Augusto Ordoñez ☐	Cesar Augusto Ordoñez ☐
Juan Sebastian Otalora ☐	Juan Sebastian Otalora ☐	Juan Sebastian Otalora ☐	Juan Sebastian Otalora ☐
Rodrigo Felipe Palma ☐	Rodrigo Felipe Palma ☐	Rodrigo Felipe Palma ☐	Rodrigo Felipe Palma ☐
Gabriela Real ☐	Gabriela Real ☐	Gabriela Real ☐	Gabriela Real ☐
Diego Alejandro Rodríguez ☐	Diego Alejandro Rodríguez ☐	Diego Alejandro Rodríguez ☐	Diego Alejandro Rodríguez ☐
Sophia Schenk ☐	Sophia Schenk ☐	Sophia Schenk ☐	Sophia Schenk ☐
Nicolás Sotelo ☐	Nicolás Sotelo ☐	Nicolás Sotelo ☐	Nicolás Sotelo ☐
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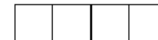
¿CÓMO SON MIS COMPAÑEROS(AS)?


Colombo-4A

Rellena la casilla junto a los nombres de personas que tengan estas características.

5. ¿Quiénes dejan a otras personas por fuera de su grupo?	**6. ¿Quiénes le ponen apodos ofensivos a otras personas?**	**7. ¿Quiénes están dispuestos a ayudar a los demás?**	**8. ¿Quiénes se meten en peleas físicas?**
Angélica María Ballestas ☐	Angélica María Ballestas ☐	Angélica María Ballestas ☐	Angélica María Ballestas ☐
Juan Pablo Barberi ☐	Juan Pablo Barberi ☐	Juan Pablo Barberi ☐	Juan Pablo Barberi ☐
Daniela Alexandra Barrios ☐	Daniela Alexandra Barrios ☐	Daniela Alexandra Barrios ☐	Daniela Alexandra Barrios ☐
Ivan Santiago Beltran ☐	Ivan Santiago Beltran ☐	Ivan Santiago Beltran ☐	Ivan Santiago Beltran ☐
Sebastian Garcia ☐	Sebastian Garcia ☐	Sebastian Garcia ☐	Sebastian Garcia ☐
Valentina Guerrero ☐	Valentina Guerrero ☐	Valentina Guerrero ☐	Valentina Guerrero ☐
Carlos Alberto Herrera ☐	Carlos Alberto Herrera ☐	Carlos Alberto Herrera ☐	Carlos Alberto Herrera ☐
Juliana Lozano ☐	Juliana Lozano ☐	Juliana Lozano ☐	Juliana Lozano ☐
Daniela Madariaga ☐	Daniela Madariaga ☐	Daniela Madariaga ☐	Daniela Madariaga ☐
Natalia Martinez ☐	Natalia Martinez ☐	Natalia Martinez ☐	Natalia Martinez ☐
Felipe Novoa ☐	Felipe Novoa ☐	Felipe Novoa ☐	Felipe Novoa ☐
Diana Catalina Nuñez ☐	Diana Catalina Nuñez ☐	Diana Catalina Nuñez ☐	Diana Catalina Nuñez ☐
Cesar Augusto Ordoñez ☐	Cesar Augusto Ordoñez ☐	Cesar Augusto Ordoñez ☐	Cesar Augusto Ordoñez ☐
Juan Sebastian Otalora ☐	Juan Sebastian Otalora ☐	Juan Sebastian Otalora ☐	Juan Sebastian Otalora ☐
Rodrigo Felipe Palma ☐	Rodrigo Felipe Palma ☐	Rodrigo Felipe Palma ☐	Rodrigo Felipe Palma ☐
Gabriela Real ☐	Gabriela Real ☐	Gabriela Real ☐	Gabriela Real ☐
Diego Alejandro Rodríguez ☐	Diego Alejandro Rodríguez ☐	Diego Alejandro Rodríguez ☐	Diego Alejandro Rodríguez ☐
Sophia Schenk ☐	Sophia Schenk ☐	Sophia Schenk ☐	Sophia Schenk ☐
Nicolás Sotelo ☐	Nicolás Sotelo ☐	Nicolás Sotelo ☐	Nicolás Sotelo ☐
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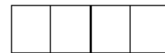
¿CÓMO SON MIS COMPAÑEROS(AS)?



Colombo-4A

Rellena la casilla junto a los nombres de personas que tengan estas características.

9. ¿Quiénes se la llevan bien con los demás?	10. ¿Quiénes hablan mal de otras personas a sus espaldas para lastimarlas?	11. ¿Quiénes hacen amigos fácilmente?	12. ¿Quiénes se burlan de los demás para lastimarlos?
Angélica María Ballestas ☐	Angélica María Ballestas ☐	Angélica María Ballestas ☐	Angélica María Ballestas ☐
Juan Pablo Barberi ☐	Juan Pablo Barberi ☐	Juan Pablo Barberi ☐	Juan Pablo Barberi ☐
Daniela Alexandra Barrios ☐	Daniela Alexandra Barrios ☐	Daniela Alexandra Barrios ☐	Daniela Alexandra Barrios ☐
Ivan Santiago Beltran ☐	Ivan Santiago Beltran ☐	Ivan Santiago Beltran ☐	Ivan Santiago Beltran ☐
Sebastian Garcia ☐	Sebastian Garcia ☐	Sebastian Garcia ☐	Sebastian Garcia ☐
Valentina Guerrero ☐	Valentina Guerrero ☐	Valentina Guerrero ☐	Valentina Guerrero ☐
Carlos Alberto Herrera ☐	Carlos Alberto Herrera ☐	Carlos Alberto Herrera ☐	Carlos Alberto Herrera ☐
Juliana Lozano ☐	Juliana Lozano ☐	Juliana Lozano ☐	Juliana Lozano ☐
Daniela Madariaga ☐	Daniela Madariaga ☐	Daniela Madariaga ☐	Daniela Madariaga ☐
Natalia Martinez ☐	Natalia Martinez ☐	Natalia Martinez ☐	Natalia Martinez ☐
Felipe Novoa ☐	Felipe Novoa ☐	Felipe Novoa ☐	Felipe Novoa ☐
Diana Catalina Nuñez ☐	Diana Catalina Nuñez ☐	Diana Catalina Nuñez ☐	Diana Catalina Nuñez ☐
Cesar Augusto Ordoñez ☐	Cesar Augusto Ordoñez ☐	Cesar Augusto Ordoñez ☐	Cesar Augusto Ordoñez ☐
Juan Sebastian Otalora ☐	Juan Sebastian Otalora ☐	Juan Sebastian Otalora ☐	Juan Sebastian Otalora ☐
Rodrigo Felipe Palma ☐	Rodrigo Felipe Palma ☐	Rodrigo Felipe Palma ☐	Rodrigo Felipe Palma ☐
Gabriela Real ☐	Gabriela Real ☐	Gabriela Real ☐	Gabriela Real ☐
Diego Alejandro Rodríguez ☐	Diego Alejandro Rodríguez ☐	Diego Alejandro Rodríguez ☐	Diego Alejandro Rodríguez ☐
Sophia Schenk ☐	Sophia Schenk ☐	Sophia Schenk ☐	Sophia Schenk ☐
Nicolás Sotelo ☐	Nicolás Sotelo ☐	Nicolás Sotelo ☐	Nicolás Sotelo ☐
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¿CÓMO SON MIS COMPAÑEROS(AS)?

Colombo-4A

Instrucciones: A continuación encontrarás diferentes características. Cada una describe la forma en que una persona puede ser o actuar. Después de cada característica encontrarás una lista con los nombres de tus compañeros de clase que están participando en el estudio. Rellena la casilla que esté junto a los nombres de las personas que tengan esta característica. PUEDES ESCOGER TANTAS PERSONAS COMO QUIERAS. SI NADIE TIENE ESA CARACTERÍSTICA, DEJA LAS CASILLAS EN BLANCO.

1. ¿Quiénes se dan cuenta cuando los otros están tristes?	**2. ¿A quiénes les ponen apodos ofensivos?**	**3. ¿Quiénes comparten sus cosas con los demás?**	**4. ¿Quiénes prefieren jugar solos, más que con los demás?**
Angélica María Ballestas ☐	Angélica María Ballestas ☐	Angélica María Ballestas ☐	Angélica María Ballestas ☐
Juan Pablo Barberi ☐	Juan Pablo Barberi ☐	Juan Pablo Barberi ☐	Juan Pablo Barberi ☐
Daniela Alexandra Barrios ☐	Daniela Alexandra Barrios ☐	Daniela Alexandra Barrios ☐	Daniela Alexandra Barrios ☐
Ivan Santiago Beltran ☐	Ivan Santiago Beltran ☐	Ivan Santiago Beltran ☐	Ivan Santiago Beltran ☐
Sebastian Garcia ☐	Sebastian Garcia ☐	Sebastian Garcia ☐	Sebastian Garcia ☐
Valentina Guerrero ☐	Valentina Guerrero ☐	Valentina Guerrero ☐	Valentina Guerrero ☐
Carlos Alberto Herrera ☐	Carlos Alberto Herrera ☐	Carlos Alberto Herrera ☐	Carlos Alberto Herrera ☐
Juliana Lozano ☐	Juliana Lozano ☐	Juliana Lozano ☐	Juliana Lozano ☐
Daniela Madariaga ☐	Daniela Madariaga ☐	Daniela Madariaga ☐	Daniela Madariaga ☐
Natalia Martinez ☐	Natalia Martinez ☐	Natalia Martinez ☐	Natalia Martinez ☐
Felipe Novoa ☐	Felipe Novoa ☐	Felipe Novoa ☐	Felipe Novoa ☐
Diana Catalina Nuñez ☐	Diana Catalina Nuñez ☐	Diana Catalina Nuñez ☐	Diana Catalina Nuñez ☐
Cesar Augusto Ordoñez ☐	Cesar Augusto Ordoñez ☐	Cesar Augusto Ordoñez ☐	Cesar Augusto Ordoñez ☐
Juan Sebastian Otalora ☐	Juan Sebastian Otalora ☐	Juan Sebastian Otalora ☐	Juan Sebastian Otalora ☐
Rodrigo Felipe Palma ☐	Rodrigo Felipe Palma ☐	Rodrigo Felipe Palma ☐	Rodrigo Felipe Palma ☐
Gabriela Real ☐	Gabriela Real ☐	Gabriela Real ☐	Gabriela Real ☐
Diego Alejandro Rodríguez ☐	Diego Alejandro Rodríguez ☐	Diego Alejandro Rodríguez ☐	Diego Alejandro Rodríguez ☐
Sophia Schenk ☐	Sophia Schenk ☐	Sophia Schenk ☐	Sophia Schenk ☐
Nicolás Sotelo ☐	Nicolás Sotelo ☐	Nicolás Sotelo ☐	Nicolás Sotelo ☐
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¿CÓMO SON MIS COMPAÑEROS(AS)?

Colombo-4A

Rellena la casilla junto a los nombres de personas que tengan estas características.

5. ¿Quiénes invitan a los otros a jugar?

- Angélica María Ballestas ☐
- Juan Pablo Barberi ☐
- Daniela Alexandra Barrios ☐
- Ivan Santiago Beltran ☐
- Sebastian Garcia ☐
- Valentina Guerrero ☐
- Carlos Alberto Herrera ☐
- Juliana Lozano ☐
- Daniela Madariaga ☐
- Natalia Martinez ☐
- Felipe Novoa ☐
- Diana Catalina Nuñez ☐
- Cesar Augusto Ordoñez ☐
- Juan Sebastian Otalora ☐
- Rodrigo Felipe Palma ☐
- Gabriela Real ☐
- Diego Alejandro Rodríguez ☐
- Sophia Schenk ☐
- Nicolás Sotelo ☐
- ____________________ ☐
- ____________________ ☐

6. ¿Quiénes se preocupan por los sentimientos de los otros?

- Angélica María Ballestas ☐
- Juan Pablo Barberi ☐
- Daniela Alexandra Barrios ☐
- Ivan Santiago Beltran ☐
- Sebastian Garcia ☐
- Valentina Guerrero ☐
- Carlos Alberto Herrera ☐
- Juliana Lozano ☐
- Daniela Madariaga ☐
- Natalia Martinez ☐
- Felipe Novoa ☐
- Diana Catalina Nuñez ☐
- Cesar Augusto Ordoñez ☐
- Juan Sebastian Otalora ☐
- Rodrigo Felipe Palma ☐
- Gabriela Real ☐
- Diego Alejandro Rodríguez ☐
- Sophia Schenk ☐
- Nicolás Sotelo ☐
- ____________________ ☐
- ____________________ ☐

7. ¿A quiénes los empujan o les pegan?

- Angélica María Ballestas ☐
- Juan Pablo Barberi ☐
- Daniela Alexandra Barrios ☐
- Ivan Santiago Beltran ☐
- Sebastian Garcia ☐
- Valentina Guerrero ☐
- Carlos Alberto Herrera ☐
- Juliana Lozano ☐
- Daniela Madariaga ☐
- Natalia Martinez ☐
- Felipe Novoa ☐
- Diana Catalina Nuñez ☐
- Cesar Augusto Ordoñez ☐
- Juan Sebastian Otalora ☐
- Rodrigo Felipe Palma ☐
- Gabriela Real ☐
- Diego Alejandro Rodríguez ☐
- Sophia Schenk ☐
- Nicolás Sotelo ☐
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8. ¿A quiénes les gusta compartir con los demás?

- Angélica María Ballestas ☐
- Juan Pablo Barberi ☐
- Daniela Alexandra Barrios ☐
- Ivan Santiago Beltran ☐
- Sebastian Garcia ☐
- Valentina Guerrero ☐
- Carlos Alberto Herrera ☐
- Juliana Lozano ☐
- Daniela Madariaga ☐
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- Diana Catalina Nuñez ☐
- Cesar Augusto Ordoñez ☐
- Juan Sebastian Otalora ☐
- Rodrigo Felipe Palma ☐
- Gabriela Real ☐
- Diego Alejandro Rodríguez ☐
- Sophia Schenk ☐
- Nicolás Sotelo ☐
- ____________________ ☐
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¿CÓMO SON MIS COMPAÑEROS(AS)?

Colombo-4A

Rellena la casilla junto a los nombres de personas que tengan estas características.

9. ¿Quiénes prefieren estar solos?		**10. ¿Quiénes tratan de que todos participen?**	
Angélica María Ballestas	☐	Angélica María Ballestas	☐
Juan Pablo Barberi	☐	Juan Pablo Barberi	☐
Daniela Alexandra Barrios	☐	Daniela Alexandra Barrios	☐
Ivan Santiago Beltran	☐	Ivan Santiago Beltran	☐
Sebastian Garcia	☐	Sebastian Garcia	☐
Valentina Guerrero	☐	Valentina Guerrero	☐
Carlos Alberto Herrera	☐	Carlos Alberto Herrera	☐
Juliana Lozano	☐	Juliana Lozano	☐
Daniela Madariaga	☐	Daniela Madariaga	☐
Natalia Martinez	☐	Natalia Martinez	☐
Felipe Novoa	☐	Felipe Novoa	☐
Diana Catalina Nuñez	☐	Diana Catalina Nuñez	☐
Cesar Augusto Ordoñez	☐	Cesar Augusto Ordoñez	☐
Juan Sebastian Otalora	☐	Juan Sebastian Otalora	☐
Rodrigo Felipe Palma	☐	Rodrigo Felipe Palma	☐
Gabriela Real	☐	Gabriela Real	☐
Diego Alejandro Rodríguez	☐	Diego Alejandro Rodríguez	☐
Sophia Schenk	☐	Sophia Schenk	☐
Nicolás Sotelo	☐	Nicolás Sotelo	☐
____________________	☐	____________________	☐
____________________	☐	____________________	☐

Appendix D:

Friendship Quality Scale

15875

MI AMIGO(A) Y YO

¿Cuál es nombre y apellido de tu mejor amigo(a) dentro de tu curso?

____

Queremos hacerte algunas preguntas sobre la persona que consideras tu mejor amigo(a) para conocer como se comportan lo mejores amigos. A continuación encontrarás algunas frases. Por favor cuéntanos qué tan cierto es lo que dicen sobre tu relación de amistad. Recuerda que no hay respuestas correctas o incorrectas a estas preguntas. Asegúrate de contestar de manera cuidadosa y honesta.

¿Qué tan cierto es lo siguiente para tu relación de amistad?	No es cierto	Pocas veces es cierto	Algunas veces es cierto	Casi siempre es cierto	Siempre es cierto
1. Mi amigo(a) y yo pasamos gran parte de nuestro tiempo libre juntos.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
2. Puedo llegar a pelear con mi amigo(a).	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
3. Mi amigo(a) y yo nos ayudamos el uno al otro.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
4. Si otras personas me molestan, mi amigo(a) me defiende.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
5. Cuando tengo un problema en el colegio o en mi casa puedo hablar con mi amigo(a) sobre eso.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
6. Si mi amigo(a) se fuera a vivir a otra parte yo lo(a) extrañaría.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
7. Cuando me va bien en algo, mi amigo(a) se alegra por mí.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
8. A mi amigo(a) se le ocurren cosas divertidas para que hagamos juntos(as).	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
9. Mi amigo(a) me molesta aún cuando yo le pido que no lo haga.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
10. Mi amigo(a) me ayuda cuando tengo problemas con algo.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
11. Si alguien me intentara pegar, mi amigo(a) me defendería.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
12. Si mi amigo(a) hace algo que me moleste o yo hago algo que a él(ella) le moleste, es fácil que hagamos las paces.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
13. Si hay algo que me preocupa, sé que puedo contárselo a mi amigo(a), aunque sea algo que no puedo contarle a los demás.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
14. Me siento feliz cuando estoy con mi amigo(a).	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
15. A veces mi amigo(a) hace cosas por mí que me hacen sentir especial.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

15875

MI AMIGO(A) Y YO

¿Qué tan cierto es lo siguiente para tu relación de amistad?	No es cierto	Pocas veces es cierto	Algunas veces es cierto	Casi siempre es cierto	Siempre es cierto
16. Mi amigo(a) y yo peleamos mucho.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
17. Si se me olvidó llevar almuerzo o necesito dinero, mi amigo(a) me presta.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
18. Mi amigo(a) me defendería si otra persona me causara problemas.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
19. Si mi amigo(a) y yo tenemos una pelea, podemos decir "lo siento" y estar bien otra vez.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
20. Pienso en mi amigo(a), incluso cuando él(ella) no está conmigo.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
21. Algunas veces mi amigo(a) y yo nos sentamos a hablar sobre el colegio y sobre las cosas que nos gustan.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
22. Mi amigo(a) y yo tenemos desacuerdos en muchas cosas.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
23. Mi amigo(a) me ayudaría si lo necesitara.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

Appendix E:

Social Problem Solving Scale

38330

¿CÓMO SOLUCIONO MIS PROBLEMAS CON LOS DEMÁS?

En esta sección vas a encontrar una historia sobre cosas que les pueden pasar a los niños. Queremos que la leas con atención y que te imagines que lo que sucede te está pasando a ti. Luego, lee las frases que encuentras a continuación y cuéntanos que tan cierto sería para ti lo que dice cada frase.

Vas a encontrar preguntas sobre lo que te pasa a ti:

ANTES DE ACTUAR: Son las cosas que pensarías o sentirías antes de reaccionar.
CUANDO ACTÚAS: Son las cosas que harías, pensarías o sentirías cuando ocurre la situación.
DESPUÉS DE ACTUAR: Son las cosas que pensarías o sentirías después de que hiciste algo frente a la situación.

HISTORIA

Imagínate que estás sentado en clase y el profesor hace una pregunta difícil. Tú no estás seguro de saber la respuesta correcta. Después de dar tu respuesta, escuchas a unos niños reírse en el otro lado del salón.

Primero, queremos que pienses en lo que te pasaría ANTES DE ACTUAR.

¿Qué tan ciertas crees que serían cada una de estas frases para ti? Rellena la casilla que consideres que describe mejor lo que tú pensarías o sentirías, según la siguiente escala:	**No sería cierto**	**Pocas veces sería cierto**	**Algunas veces sería cierto**	**Casi siempre sería cierto**	**Siempre sería cierto**
1. Trataría de darme cuenta cómo me estoy sintiendo.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
2. Trataría de pensar en las cosas diferentes que podría hacer frente a la situación.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
3. Trataría de pensar en las consecuencias que tendrían mis acciones.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
4. Pensaría en cuál sería la mejor forma de reaccionar.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
5. Trataría de calmarme.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

Continúa...

38330

¿CÓMO SOLUCIONO MIS PROBLEMAS CON LOS DEMÁS?

Ahora piensa en las cosas que te pasan CUANDO ACTÚAS frente a esta situación.

¿Qué tan ciertas crees que serían cada una de estas frases para ti? Rellena la casilla que consideres que describe mejor lo que tú harías, pensarías o sentirías.	**No sería cierto**	**Pocas veces sería cierto**	**Algunas veces sería cierto**	**Casi siempre sería cierto**	**Siempre sería cierto**
6. Me sentiría triste.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
7. Pensaría que se están riendo de otra cosa.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
8. Pensaría que les parezco divertido.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
9. Pensaría que les caigo bien.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
10. Pensaría que se están burlando de mí.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
11. Pensaría que quieren hacerme sentir mal.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
12. Pensaría que les caigo mal.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
13. Les pediría que no se burlaran.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
14. Les preguntaría si ellos se están riendo de mí.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
15. Les preguntaría por qué se están riendo.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
16. Me burlaría de ellos.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
17. Trataría de hacerlos sentir mal.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
18. Le contaría lo que pasó a mis amigos para que me dijeran qué hacer.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
19. Le diría a un profesor.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
20. Los insultaría.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
21. Le diría cosas malas de ellos a mis compañeros.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

Por último, queremos que pienses en las cosas que te pasarían DESPUÉS DE ACTUAR.

¿Qué tan ciertas crees que serían cada una de estas frases para ti? Rellena la casilla que consideres que describe mejor lo que tú pensarías	**No sería cierto**	**Pocas veces sería cierto**	**Algunas veces sería cierto**	**Casi siempre sería cierto**	**Siempre sería cierto**
22. Después de actuar, trataría de calmarme.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
23. Trataría de darme cuenta cómo me estoy sintiendo.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
24. Pensaría en las consecuencias de mis acciones.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
25. Trataría de pensar en las diferentes cosas que pude haber hecho frente a la situación.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5