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Social-Emotional Processing and Bullying Behaviour

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by

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Abstract

Bullying is a prevalent form of aggressive behaviour that is associated with negative social, emotional, and educational outcomes for children involved in bullying and victimization. Prevalence and negative outcomes associated with bullying has lead researchers to examine potential individual characteristics associated with bullying that can guide prevention and intervention efforts. While the relation between poorer empathy and facial affect recognition and aggressive behaviour is well documented, few studies have examined these individual characteristics and bullying behaviour. Moreover, research to date presents conflicting results, making it difficult to form conclusions and inform practice. Differing methods across studies and limited inclusion of different types of bullying (i.e., physical and relational) and different associated roles (i.e., bully-victim) likely explain conflicting results. Building upon these limitations, this study explored relations between affective empathy, facial affect recognition, and bullying behaviour in a sample of Canadian children. A total of 192 children in grades four to six participated in this study. Females were found to report significantly higher affective empathy than males, and higher facial affect recognition accuracy was associated with higher affective empathy scores in males only. Involvement in more frequent bullying and bully-victimization was associated with poorer affective empathy in females only. Further analysis indicated that for females poorer affective empathy predicted more frequent bullying and bully-victimization. Results of this study are discussed in terms of theoretical, empirical, and practical implications. The strengths and limitations of this study are also discussed and directions for future research are presented.

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List of Abbreviations

SIP - Social Information Processing

RBVQ - Revised Bully-Victim Questionnaire

DANVA2 - Diagnostic Assessment of Nonverbal Accuracy, 2nd Edition

DANVA2-CF - Diagnostic Assessment of Nonverbal Accuracy, 2nd Edition, Child Faces

Chapter One: Introduction

School bullying is recognized internationally as a serious form of aggressive behaviour (Craig et al., 2009; Swearer, Espelage, Vaillancourt, & Hymel, 2010). In Canada bullying is a prevalent problem, with children in grades 6 to 10 indicating that 39% have engaged in bullying, 36% have been victims, and 20% have been both bullies and victims (Craig & Edge, 2008). Recently, Vaillancourt, Brittain, and colleagues (2010) surveyed Canadian children in grades 4 to 12 and found that 5.3% bullied others, 12.3% were victimized, and 4.0% bullied others and were also victimized. The discrepancy in prevalence is likely due to the different cut-off scores used, with a higher frequency of students reporting single acts of bullying (i.e., Craig & Edge, 2008), versus bullying 2-3 times or more often (Vaillancourt, Brittain, et al., 2010). When compared to 35 other countries, prevalence rates from the World Health Organization Health Behaviour in School-Aged Children (HBSC) survey indicated that Canadian children fell in the top quartile for bullying and in the top third for victimization (Craig, 2004). These prevalence rates are particularly concerning given the well documented negative consequences of bullying. For example, children who are victimized are more likely to experience anxiety and depression, be isolated and rejected, and experience distress and helplessness (Hawker & Boulton, 2000; Hodges, Malone, & Perry, 1997; Hodges & Perry, 1999; Perry, Williard, & Perry, 1990). Children involved in bullying are also at a heightened risk for negative outcomes, including development of substance abuse problems and involvement in continued aggression and criminal behaviour (Hampel, Manhal, & Hayer, 2009; Scholte, Engels, Overbeek, de Kemp, & Haselager, 2007). Children who bully others and who are also victimized ("bully-victims") are at risk for more psychological impairment and negative behavioural outcomes than those who are only bullies or victims. For example, bully-victims display greater aggression, and more externalizing

behaviours and depressive symptoms (Craig, 1998; Austin & Joseph, 1996; Kumpulainen et al., 1998). In comparison to peers, bully-victims also display weaker self-control, lower social acceptance, and report poorer peer relationships (Austin & Joseph, 1996; Nansel et al., 2004).

The prevalence and negative outcomes associated with bullying has lead to an increased interest in identifying potential individual characteristics associated with bullying that can guide and enhance prevention and intervention efforts (Cook, Williams, Guerra, Kim, & Sadek, 2010; Swearer et al., 2010). While there has been a plethora of research indicating empathy and facial affect recognition deficits in aggressive populations, and while bullying interventions often target empathy (Vreeman & Carroll, 2007), few studies have examined the relationship between these individual characteristics/abilities and bullying behaviour. Moreover, empirical results are often inconsistent, making it difficult to draw conclusions and inform interventions. For example, while some researchers have found that in comparison to victims and uninvolved peers, bullies display poorer empathy (e.g., Endresen & Olweus, 2002), other researchers have not found poorer empathy or deficits with facial affect recognition in bullies (e.g., Warden & MacKinnon, 2003; Woods, Wolke, Nowicki, & Hall, 2009). Additionally, researchers have found that the relationship between empathy and bullying differs across sexes and type of bullying (e.g., Jolliffe & Farrington, 2006a). Therefore, the specific nature of the inter-relationship between empathy, facial affect recognition, and bullying behaviour remains unclear.

Methodological differences and limitations likely explain mixed results in the empirical literature to date. Three predominant differences within and across previous studies are the method used to measure bullying (i.e., self-report or peer nomination), a lack of inclusion of different types of bullying (e.g., relational bullying), and differing conceptualizations of bullying (i.e., bullying on a continuum versus categorization of groups). Limitations are also apparent.

Despite research indicating clear differences between children who are only bullies or victims, and children who are bully-victims (e.g., Toblin, Schwartz, Hopmeyer Gorman, & Abou-ezzeddine, 2005; Unnever, 2005), it does not appear from the review of the empirical literature that any studies to date have been conducted that have examined empathy or facial affect recognition in bully-victims. Also, while research has been conducted in Europe and the United States, no research to date has been conducted with a Canadian sample with respect to the investigation of the inter-relationship of empathy, facial affect recognition, and bullying. To this end, the current study explores the relationships among empathy, facial affect recognition, and bullying behaviour in a sample of Canadian children. The primary objective of this study is to determine if children involved in bullying (i.e., bullies, bully-victims) display poorer empathy and/or facial affect recognition deficits in comparison to victims and uninvolved children. These findings will extend the existing literature by including the identification of different types of bullying (i.e., physical and relational) and different associated roles (i.e., bully, victim, and bully-victim), within a population of Canadian children.

In order to better understand the nature and scope of bullying, chapter two begins with a review of the historical background, current conceptualization, age/grade and sex differences, and the theoretical understanding of bullying. Following this review is an overview of empathy and facial affect recognition, including relevant research with bullying populations, as well as the interrelationship between bullying, empathy, and facial affect recognition. Chapter two concludes with a brief overview of the present study. Chapter three presents the methods and data analyses for this study. The results of this study are presented in chapter four. The fifth and final chapter includes a general discussion of the results, including theoretical, empirical, and practical implications, strengths and limitations, and directions for future research.

Chapter Two: Literature Review

Chapter two begins with a brief history and current conceptualizations of bullying (including the definition, subtypes, and participant roles). Age/grade and sex differences are discussed, and theoretical understandings of bullying are presented. Providing a framework for the current study, empathy and facial affect recognition are defined and research to date with bullying populations is reviewed, including methodological differences, limitations, and gaps within the empirical literature. The interrelationship between bullying, empathy, and facial affect recognition is also discussed. Finally, the primary research questions and hypotheses for the present study are provided.

Brief History and Conceptualization of Bullying

Bullying is recognized worldwide as a prevalent problem affecting multiple social, emotional, and educational outcomes for many children (Totura, Green, Karver, Gesten, 2009). Defined as a subset of aggression, bullying is an abuse of power, and involves intentional, systematic and repetitive harm (Olweus, 1999a). Recent research indicates that bullying has been increasing worldwide (Molco et al., 2009), and that there are negative consequences for both victims and bullies (Swearer et al., 2010). Such research speaks to the importance of further understanding factors associated with bullying in order to develop more tailored and effective interventions aimed at preventing bullying among children.

Awareness of school bullying began in Scandinavia in the early 1970s, and has since grown substantially. Initial interest began with the work of Heinemann (1972), who published the book, "Mobbing-Group Aggression Against Boys and Girls" (*Mobbning-Gruppvald bland barn och vuxna)*. The term "mobbing" was used as a first attempt to conceptualize the issue (Smith, 2011). In ethology, the term "mobbing" describes a collective attack by animals on

another animal from a different species (Smith, 2011). Following Heinemann's book, Olweus (1978) published, "Aggression in Schools: Bullies and Whipping Boys", which criticized the term "mobbing" to describe peer harassment in schools. Olweus (1978) argued that the term focuses more on collective or group behaviour, rather than on the individual. He contended that small groups or individuals more often engage in peer harassment in schools, and instead used the term "bullies" in his research. The term "bullying" has since gained general international use (Olweus, 1999a). Research in the area of bullying remained largely unexplored outside of Europe until the early 1990s. At that time, research began in other countries such as Canada (e.g., Pepler, Craig, Zeigler, & Charach, 1994).

While there is no universally agreed-upon definition of bullying, many researchers do agree that bullying is characterized by: 1) intentionally negative acts that 2) are carried out repeatedly over time, and 3) involve an imbalance of power or strength (i.e., the person exposed to the negative act has difficulty defending him or herself; Espelage & Swearer, 2003; Olweus, 1999a). Bullying can be categorized in many ways, and is broadly defined as either direct or indirect. *Direct* bullying involves harming others through physical and/or verbal acts. Conversely, *indirect* bullying involves harming others surreptitiously (Cote, Vaillancourt, Barker, Nagin & Tremblay, 2007). In an attempt to better understand bullying, researchers often use more specific subtypes to define bullying behaviour. As a type of direct bullying, *physical bullying* involves acts such as hitting, kicking, or shoving. *Relational bullying* can involve both direct and indirect behaviours, and most often includes acts or threats of exclusion from social interactions or peer groups (Cornell, Sheras, & Cole, 2006). Examples of relational bullying include spreading rumours or lies, and excluding or isolating peers. In addition to these traditional types of bullying, *cyberbullying*, also referred to as cyber-harassment, online bullying,

and online harassment (Wade & Beran, 2011), has become an additional area of bullying research. Cyberbullying is defined as intentional acts of aggression, or intentional acts causing harm to someone else, which are perpetrated through an electronic medium (e.g., internet; Wade & Beran, 2011).

When conceptualizing bullying, it is also important to consider the participant role. Generally, students may be involved in bullying as a *bully* or a *victim* (Jimerson, Swearer, & Espelage, 2010). While most research on bullying has investigated these two participant roles, there has been an increase in awareness and research since the 1990s investigating *bully-victims* (Solberg, Olweus, & Endresen, 2007). Bully-victims include children who engage in bullying others and who are also victimized. Knowledge of this important group is limited when compared to bullying and victimization in general (Solberg, Olweus, & Endresen, 2007). However, researchers have found that bully-victims experience more short and long term problems in multiple areas of functioning and are especially at risk for emotional and behavioural problems (Schwartz, Proctor, & Chien, 2001; Unnever, 2005). These problems include lower self-esteem (Kokkinos & Panayiotou, 2004), depressive symptoms (Menesini, Modena, & Tani, 2009), drug and alcohol abuse (Ivarsson, Broberg, Arvidsson, & Gillberg, 2005), conduct behaviours (Gini, 2008), and a heightened risk for continued involvement in bullying over time (Kumpulainen, Rasanen, & Henttonen, 1999). Negative mental health problems are also well documented in this population, including suicide ideation (Ivarsson et al., 2005). For example, Winsper, Lereya, Zanarini, and Wolke (2012) investigated the prospective link between bullying and suicide ideation and self-injurious behaviour. While peer victimization (both victims and bully-victims) was significantly related to suicide ideation and self-injurious behaviour, bully-victims were at an increased risk. Bully-victims are also at an

increased risk for social difficulties with peers and parents (Schwartz, Proctor, & Chien, 2001; Unnever, 2005). These social difficulties include increased risk of rejection among peers, lower popularity ratings (Farmer et al., 2010; Warden & Mackinnon, 2003), and more social isolation (Georgiou & Stavrinides, 2008; Shin, 2010) than bullies, victims, or children uninvolved in bullying. The increased and distinct negative outcomes associated with bully-victims highlights the importance of including this unique group of students when examining bullying.

Age/Grade Differences and Bullying

When conceptualizing bullying behaviour, the understanding of age/grade differences is warranted. Broadly, many researchers have found that bullying tends to begin during the elementary school years and then decline toward the end of high school, with a rise during early adolescence (Pellegrini & Bartini, 2000; Olweus, 1999b). For example, Bjorkqvist, Lagerspetz, and Kaukiainen (1992) found that in a sample of 8 to 15 year olds, aggressive behaviours were lowest for 8 year olds and highest for 11 year olds. Canadian researchers have similarly found a heightened risk of bullying during middle school (Pepler et al., 2006). Other researchers have not found differences across age or grade (Baldry & Farrington, 2000; Walden and Beran, 2010). One likely explanation for the disparate findings is the type of bullying included in the sample. Direct forms, such as physical bullying, tend to increase and peak in middle school and then decline thereafter (Scheithauer, Hayer, Peterman, & Jugert, 2006). Conversely, relational bullying has been shown to increase during elementary school and peak in high school (Murray-Close, Ostrov, & Crick, 2007). Some researchers suggest that physical bullying is more prevalent among younger children as a way to fulfil their needs because of limited social skills and verbal abilities (Bjorkqvist, Lagerspetz, & Kaukiainen, 1992; Craig & Pepler, 2003). As children develop cognitively and socially, more indirect forms such as relational bullying are

believed to increase (Bjorkqvist, Lagerspetz, & Kaukiainen, 1992). Grade differences in terms of victimization are clearer, such that self-reporting of physical and relational victimization declines with age (Dennis & Satcher, 1999; Embry & Luzzo, 1996; Olweus, 1993b). Prevalence of bully-victims also tends to decline with age (Solberg, Olweus, & Endresen, 2007).

These findings have implications for future research investigating bullying and victimization. Research suggests that in order to examine both physical and relational bullying, children of varying grades should be included in the sample. To account for the decline in physical bullying following middle school and the rise in relational bullying in elementary school, samples including children transitioning from elementary through middle school would help capture both forms of bullying.

Sex Differences and Bullying

As a group, males are believed to be more aggressive and engage in more bullying than females. When examining sex differences, researchers have found that males are significantly more likely to engage in bullying, aggression, and be victimized (Baldry & Farrington, 2000; Boulton & Underwood, 1992; Espelage, Bosworth, & Simon, 2000; Gruber & Fineran, 2007; Kalliotis, 2000; Olweus, 199a; Pepler et al., 2006; Peterson & Ray, 2006; Scheithauer et al., 2006; Seals & Young, 2003). Males are also more likely to be bully-victims than females (Solberg et al., 2007). However, many researchers now question the belief that males are more aggressive. Historically, females were often excluded from samples and many studies defined aggression or bullying in terms of physical acts only. Research examining relational aggression has challenged the notion that females are less aggressive. For example, Crick and Grotpeter (1995) found that only 0.4% of females engaged in physical forms of aggression while 17% of females engaged in relational forms. Bjorkqvist, Lagerspetz, and Kaukiainen (1992) also found

that in both 8 and 15 year olds, females were more likely to use relational forms in comparison to more physical forms.

While physical bullying and victimization are more prevalent among males, sex differences are less clear for relational bullying. Some researchers have found that females tend to engage in more indirect bullying, especially relational bullying, than males (Murray-Close, Ostrov, & Crick, 2007; van der Wal, de Wit, & Hirasing, 2003). Conversely, more recent research suggests that both sexes engage in similar amounts of relational bullying (Goldstein, Young, & Boyd, 2008; Swearer, 2008). To fully conceptualize bullying, the above findings suggest that researchers should consider sex differences and type of bullying behaviour. Knowledge of sex differences has important implications for future research. For example, in order to fully capture how bullying presents across sexes, both males and females should be included in samples and both physical and relational bullying should be measured. In order to accurately measure different types of bullying, a definition and explanation of each type should be explained to participants (Vaillancourt et al., 2008). Inclusion of this definition will help ensure that important information is not missed regarding the presentation of bullying in males and females.

Theoretical Understanding of Bullying

Bullying behaviour is best understood in the context of internal cognitive and emotional aspects that contribute to the social act of bullying (Swearer, Espelage, & Napolitano, 2009). As a form of aggressive behaviour, a theoretical understanding of the social and emotional processing abilities of aggressive individuals can serve as a framework for conceptualizing bullying. An important consideration when conceptualizing social problems such as aggression is how children perceive, construe, and evaluate social interactions. This has been a major

theoretical and empirical focus in the area of child aggression. Social information processing perspectives of aggression suggest that a child's decision to respond with aggression in a social situation emerges from a series of sequential mental processes. Through this processing, social situations are perceived and interpreted and behaviours are enacted (Crick & Dodge, 1994). Theory and research findings suggest that skilful processing of social information is associated with social competence and that biased, inaccurate, or ineffective processing leads to aggressive behaviour (Camodeca & Goossens, 2008; Crick & Dodge, 1994). Different theories have been proposed that attempt to explain how social-cognitive variables are associated with aggression, including Crick and Dodge's (1994) Social Information Processing (SIP) theory (see Figure 1). The SIP theory is one of the most researched and utilized theories for understanding aggression in children and provides a detailed account of child aggression by outlining a transactional network of cognitions that are believed to affect children's interpersonal behaviours (Hinshaw & Lee, 2003). Social Information Processing (SIP) theory attempts to explain how individuals perceive the world and how this information is processed and affects subsequent social behaviour (Camodeca & Goossens, 2008). This theory suggests that processing the cycle in a skilful way leads to social competence, while biased processing may lead to aggressive behaviour, such as bullying.

Social Information Processing (SIP) theory breaks down social information processing into six interdependent steps: 1) encoding of cues, 2) interpretation of cues, 3) clarification of goals, 4) response access or construction, 5) response selection, and 6) behavioural enactment. It is assumed that children's prior experience and current relationships are part of their knowledge base that guides social information processing at each step (Crick & Dodge, 1994). This knowledge base, or schema, is believed to form through interactions with others, including

parents and peers. According to SIP theory, these schemas influence social information processing at each step, and ultimately affect behaviour (Crick & Dodge, 1994).

In the first step of the SIP theory, the *encoding of cues*, children scan the environment, attend to social cues and store the information into short-term memory. It is possible that both relevant and irrelevant cues may be encoded (Crick & Dodge, 1994). For example, in the same social situation one child may encode relevant cues (e.g., the facial expression or tone of voice of a peer) but a different child may encode irrelevant cues (e.g., the colour of a peer's clothing). Thus, children attend selectively to certain cues in the social environment (Crick & Dodge, 1994). This selective encoding may lead to deficits (i.e., failure to encode relevant cues) or biases (i.e., selective attention to irrelevant cues). In typical social information processing, children attend to relevant cues that lead to accurate interpretations about the situation. Once a child has encoded cues from the environment, judgments must be made about the situation. This *interpretation of cues* encompasses the second step of SIP theory, when the child attributes meaning to the encoded social cues (Crick & Dodge, 1994). Researchers typically present one or more hypothetical scenarios requiring children to imagine that they receive harm from a peer (whose intentions are often ambiguous). Children are then asked to identify if the peer's motive was hostile (e.g., "the child was being mean") or not hostile (e.g., "it was an accident") (Crick & Dodge, 1996). When cues are not property interpreted, the attribution of intent is distorted (Crick & Dodge, 1996).

According to SIP theory, in addition to encoding and interpreting the cues of the social situation, a child must have a desired goal or outcome for the situation. This *clarification of goals* is the third step in the SIP theory. Goals or desired outcomes may be internal (e.g., feeling happy, avoiding embarrassment) or external (e.g., being first in line). Crick and Dodge (1994)

suggest that children have a pre-existing orientation towards producing a desired outcome or goal in a given social situation, which may be based on previous experience and the success of various responses in previous situations. For example, a child who is angry may be more likely to select goals that involve hostile themes. Goals can also be revised or new goals can be constructed in response to social situations. For example, seeing another child with a toy that is desired, or a given emotional state (e.g., anger or happiness), may result in new goals being formed. After children select a desired goal or outcome in a situation, possible behavioural response choices must be accessed or constructed in order to attain the desired outcome. These possible behavioural responses, also called solutions or strategies, can be recalled from memory (*response access*) or created for the particular situation (*response construction*). Research results indicate that even young children have a large repertoire of possible behavioural responses to social situations and that having a large and varied repertoire of responses is predictive of competent social behaviour (Dodge, Pettit, McClaskey, & Brown, 1986). Finally, after determining potential behavioural responses, children must select the response to be enacted. The *response selection* occurs when children consider and evaluate the generated response(s). Crick and Dodge (1994) posit that children evaluate potential responses by considering the expected outcome of the behaviour, their belief system (e.g., beliefs about the social appropriateness of aggression or the response), and their self-efficacy for enacting a particular response. It is hypothesized that favourable evaluations of a response are positively related to subsequent behavioural enactment of that response (Crick & Dodge, 1994).

Although typically developing children differ in social processing, maladaptive and persistent biases in interpreting social situations have been cited as the basis for social problems in children (Camodeca & Goossens, 2008). When the SIP model is applied to aggression, it is

suggested that specific deficits or biases in components of social processing lead to aggressive behaviour (Camodeca & Goossens, 2008). This has been defined as the "social skills deficits model". It is hypothesized that aggressive children tend to interpret and choose responses in social situations that reinforce aggressive behaviour (Crick & Dodge, 1994). Empirical research supports the use of this theory with aggressive children. Specifically, aggressive children have been shown to encode less social cues (e.g., Lochman and Dodge, 1994), attribute more hostile intentions to the behaviours of others (e.g., Quiggle, Garber, Panak, & Dodge, 1992; Orobio de Castro et al., 2002), and select goals and generate less social solutions that are not prosocial and that do not facilitate relationships, more than their non-aggressive peers (e.g., Erdley & Asher, 1996). Aggressive children are also more likely to view aggressive behaviours as more favourable and view positive outcomes from such behaviour (e.g., Boldizar, Perry, & Perry, 1989). As a result, aggressive children tend to behave in more aggressive ways than non-aggressive children.

Crick and Dodge (1999) suggest that the SIP model could also be a useful way to understand bullying behaviour. Researchers have found that bullies process social information differently than their peers in some specific ways. Based on SIP theory, these processing differences are proposed to result in bullying behaviour. With regard to the interpretation of social cues, bullies are more likely to interpret the actions of others as hostile, even when ambiguous in nature (e.g., Slee, 1993; Camodeca, Goossens, Schuengel, & Terwogt, 2003). When choosing goals, bullies have also shown to value retaliation over prosocial goals (e.g., Camodeca & Goossens, 2005). In addition, bullies have also shown deficits with response decision (e.g., Slee, 1993). In particular, bullies, who also feel more self-efficacious about acting

aggressive and who terminate aggressive behaviour due to punishment instead of perceived wrongfulness, choose aggressive solutions more often (e.g., Camodeca & Goossens, 2005).

While research supports the use of SIP theory for understanding bullying behaviour in children, the role of emotions within this theory remains unclear. Within the SIP framework, Crick and Dodge (1994) recognize the need to consider emotions and Lemerise and Arsenio (2000) propose the integration of emotional processes within the SIP model, arguing that cognition and emotion are intertwined processes. For example, Lemerise and Arsenio (2000) suggest that others' affective cues are an important source of information within the encoding and interpretation of cues steps in the SIP model. The interpretation of others' affective cues is hypothesized to affect empathic responsiveness and subsequent steps in the model, leading to aggressive or bullying behaviour (Lemerise & Arsenio, 2000). Despite theory, little is known about the role of emotions within an SIP framework for bullying populations (Woods, Wolke, Nowicki, & Hall, 2009). Therefore, while bullies have been found to display deficits within stages in the SIP model, as highlighted by Arsenio and Lemerise (2004), research is limited that investigates emotional processes from an SIP perspective, including recognizing others' affect and empathy.

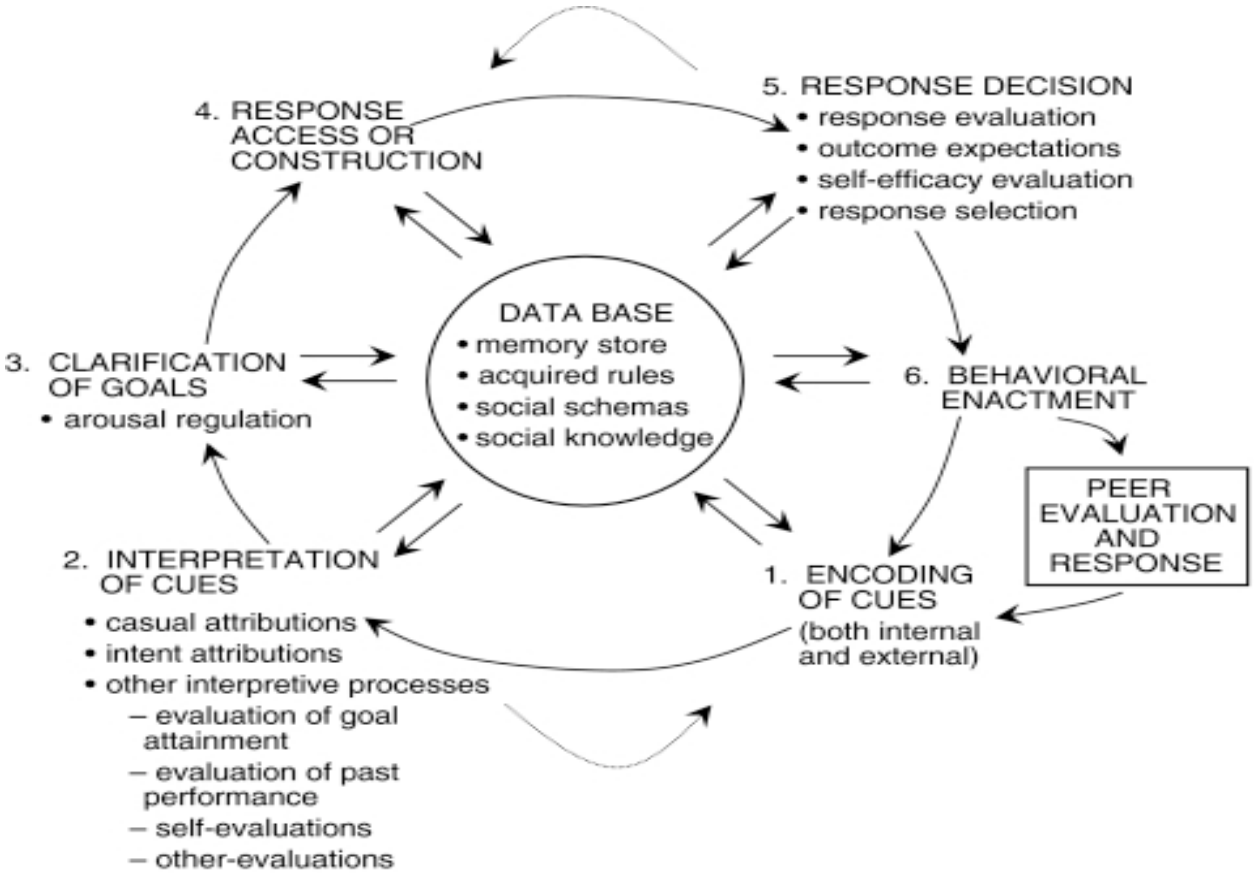

Figure 1. Crick and Dodge's Social Information Processing Theory (Crick & Dodge, 1994)

Empathy

Empathy can be defined as "an emotional response that emanates from the emotional state of another individual, and although empathy is defined as a shared emotional response, it is contingent on cognitive as well as emotional factors" (Feshbach, 1997, p. 35). Early conceptualizations of empathy were either *cognitive* (e.g., Mead, 1934) or *affective* (e.g., Berger, 1962), but not both. The cognitive component of empathy involves role taking and the ability to recognize others' emotions. Affective components of empathy, in contrast, involve empathizing with others' feelings. These differing theoretical views eventually joined in the 1970s to form cognitive-affective models of empathy (Ozkan & Cifci, 2009). Currently, it is widely accepted that empathy involves both cognitive and affective components. For example, Feshbach's (1975, 1978) Integrative Cognitive Affective model outlines empathy as involving three components: 1) cognitive ability to distinguish others' affective cues, 2) mature cognitive skills involved in understanding others' perspectives, and 3) the affective ability/emotional responsiveness to experience emotions. Other theorists have also highlighted the multi-dimensional nature of empathy, suggesting that cognitive empathy involves understanding and recognizing others' affect and that affective empathy involves sharing others' emotions (e.g., Feshbach, 1975). Therefore, cognitive and affective empathy are viewed as two different components of empathy to be measured separately.

Individuals exhibit varying levels of empathy which has been found to be relatively stable during childhood. For example, researchers have found that children with poorer empathy at four and five years of age continue to display poorer empathy at six and seven years of age (Hastings, Zahn-Waxler, Robinson, Usher, & Bridges, 2000). When examining empathy, sex

differences are noteworthy. Generally, females have been found to be more empathic than males (Hastings et al., 2000; Olweus & Endresen, 1998).

Theorists propose that individuals with high empathy respond to alleviate the negative emotions in others, suggesting that empathic skills are a major correlate and determinant of prosocial behaviour (e.g., Eisenberg & Miller, 1987). Consistent with this theory, researchers studying empathy have consistently found that children who are more empathic are also more socially competent and display more prosocial behaviours and less aggression (Findlay, Girardi, & Coplan, 2006). Empathy has also been studied extensively with aggressive populations. Researchers have found that empathy inhibits and negatively correlates with aggressive behaviour (Miller & Eisenberg, 1988; Richardson, Hammock, Smith, Gardner, & Manuel, 1994). More specifically, poorer empathy has been found in children and adolescents with conduct disorder, juvenile sexual offenders, and non-clinical aggressive populations (for a review see Lovett & Sheffield, 2007).

As a form of aggressive behaviour, researchers have attempted to understand if a similar relationship exists between empathy and bullying. The proposed connection between bullying and empathy is guided by the same theoretical framework as the relationship between aggressive behaviour and empathy (Jolliffe & Farrington, 2006). Specifically, children who engage in bullying are believed to display poorer empathy because children who do share and/or comprehend others' negative emotional reactions to bullying will be less inclined to continue the bullying in the future (Jolliffe & Farrington, 2006). This theoretical view is supported by research. Endresen and Olweus (2002) examined affective empathy and bullying behaviour in 1,093 students in grades six to nine in Norway. Bullying was assessed using the revised Olweus Bully Victim Questionnaire (RBVQ; Olweus, 1996) and affective empathy was assessed using

the Olweus Empathic Responsiveness Questionnaire (ERQ; Olweus & Endresen, 1998). Self-reported empathy scores were significantly higher for females than males. A significant negative correlation between bullying and affective empathy was found for both males and females (Endresen & Olweus, 2002). Warden and Mackinnon (2003) similarly investigated affective empathy and bullying with 131 children aged 9 to 10 in the United Kingdom. The researchers utilized peer nominations to categorize students as prosocial (e.g., friendly, helping behaviours), bully, or victim. Affective empathy was measured using the Index of Empathy for Children and Adolescents (Bryant, 1982). In comparison to children nominated as bullies, prosocial children reported significantly higher affective empathy. However, sex was found to moderate this relationship. Specifically, females reported higher empathy and were less likely to be bullies than males. One possible reason for these contradictory findings is the different methods used to identify children as bullies. Endresen and Olweus (2002) used self-reports while Warden and Mackinnon (2003) used peer nominations. Research indicates poor agreement between self-report and peer nominations (Branson & Cornell, 2009; Cole, Cornell, & Sheras, 2006; Cornell & Brockenbrough, 2004; Pellegrini & Bartini, 2000). While no definitive explanation for this lack of agreement is available, some researchers have suggested that self-reports and peer nominations actually measure different aspects of bullying. For example, Juvonen, Nishina, and Graham (2001), and Pellegrini (2001) suggest that self-reports capture a child's self-perception, which may not correspond to the social reputation or group perception that peer nominations capture. Therefore, poorer empathy may be related to self-reported bullying, but not the social perception of bullying behaviour.

Researchers have also investigated the relationship between both cognitive and affective empathy and bullying behaviour. Espelage, Mebane, and Adams (2004) utilized self-report

questionnaires with 268 children in grades six to eight in the United States to assess cognitive and affective empathy, bullying overall (physical, verbal, and relational), and relational bullying. The researchers used the University of Illinois Bully Scale (UIBS: Espelage & Holt, 2001) to assess bullying and a five-item self-report developed by Crick (1996) to assess relational bullying (i.e., exclusion, rumour spreading, and other activities meant to damage reputation/social relationships). Selected subscales from the Interpersonal Reactivity Index (IRI; Davis, 1983) and the Weinberger Adjustment Inventory (WAI: Weinberger & Schwartz, 1990) were used to measure empathy. This included scales assessing cognitive empathy (i.e., consideration of others and perspective taking scales) and affective empathy (i.e., empathic concern scale). Consistent with previous research, females reported significantly higher empathy (i.e., both cognitive and affective) and less bullying compared to males. However, relational bullying reported was not significantly different across sexes. For both males and females, negative correlations between cognitive and affective empathy and bullying were found. Cognitive and affective empathy were also negatively correlated with relational bullying in both sexes, but the relationship was significantly stronger for females.

Additionally, Jolliffe and Farrington (2006a) investigated cognitive and affective empathy and bullying in a group of 720 Grade 10 adolescents in the United Kingdom using self-reports. Cognitive and affective empathy were measured using the Basic Empathy Scale (BES; Jolliffe & Farrington, 2006b) as a means to assess the degree to which the child understands (i.e., cognitive empathy) and shares (i.e., affective empathy) emotions with others. A modified questionnaire by Whitney and Smith (1993) was used to measure physical and relational bullying. Results indicated more physical bullying in males than females. Similar to Espelage and colleagues (2004), the researchers found that males and females did not differ in terms of

relational bullying frequency (Jolliffe & Farrington, 2006a). Results indicated poorer affective and cognitive empathy in males who engaged in physical bullying and in females who engaged in relational bullying (Jolliffe & Farrington, 2006a).

Although self-report is the most common method used in research to measure bullying (Espelage & Swearer, 2003; Leff, 2007), similar to Warden and Mackinnon (2003), peer nomination is also utilized by some researchers. For example, Gini, Albiero, Benelli, and Altoe (2007) studied the relation between cognitive and affective empathy and bullying in 318 Italian children 12 to 14 years of age. Bullying behaviour was measured using the Participant Role Scale (Salmivalli, Lagerspetz, Bjorkqvist, Osterman, & Kaukiainen, 1996) and two scales from the Interpersonal Reactivity Index (IRI; Davis, 1983) were used to measure self-reported cognitive (i.e., perspective taking scale) and affective (i.e., empathic concern scale) empathy. Consistent with previous research, males reported more bullying than females, and females reported significantly higher cognitive and affective empathy than males. Unlike other research findings, poorer affective empathy was related to bullying in males only. This may be due to methodological limitations of this study. Gini and colleagues (2007) measured physical bullying only, which females engage in less than males (Crick & Grotpeter, 1995). Researchers measuring both physical and relational forms of bullying are more likely to gain a true understanding of how bullying presents across sexes and associated individual characteristics.

More recently, Jolliffe and Farrington (2011) investigated whether cognitive and/or affective empathy are independently related to bullying behaviour by controlling for the impact of specific individual and social factors, including socio-economic status (SES), non-intact family, parental supervision, impulsivity, and verbal fluency. A sample of 720 adolescents in the UK aged 13 to 17 completed the Basic Empathy Scale (BES; Jolliffe & Farrington, 2006b) as a

measure of cognitive and affective empathy and a modified version of Whitney and Smith's (1993) self-report to measure verbal, physical, and relational bullying. Consistent with previous research findings, males were more likely than females to be involved in direct types of bullying. Relational bullying was similarly reported across sexes. Results also indicated that when controlling for individual and social factors, poorer affective empathy was related to physical bullying in males but not females.

While some support exists for a relationship between involvement in bullying and poorer empathy, conflicting results across studies make it difficult to conclude the nature of the relationship. Previous research has implications for future study in the area. As discussed, inclusion of an age range when bullying of different forms is prevalent (i.e., later elementary/middle school) is recommended, as well as inclusion of both sexes and measurement of different types of bullying. Additionally, as theory suggests, cognitive empathy involves the ability to accurately recognize emotions in others and affective empathy involves the sharing of emotion (e.g., Feshbach, 1975). Given the differing results within and across studies with respect to the relationship between bullying and empathy, future researchers should measure both affect recognition and affective empathy separately. Finally, a substantial difference across studies involves the conceptualization of bullying. Some researchers defined bullying on a continuum with higher scores indicating more overall bullying (e.g., Endresen and Olweus, 2002; Mebane et al., 2004), whereas other researchers categorized groups as bullies, victims, or uninvolved based on frequency of involvement (e.g., Warden & Mackinnon, 2003). It is possible that this difference in how bullying is conceptualized explains differing results. An examination of both methods within the same sample may help elucidate the relationship between empathy and bullying.

Facial Affect Recognition

Recognizing facial affect is believed to be necessary for successful social interactions (Marsh & Blair, 2008). Most notably in the field of affect recognition is cross-cultural research conducted by Ekman and Friesen (1971) that confirmed that many emotions are recognized cross-culturally including happiness, surprise, sadness, anger, fear, and disgust. The ability to identify emotions from facial expressions begins in infancy with correct labelling of basic emotions for most children beginning by 18 months of age (Bretherton, McNew, & Beeghly-Smith, 1981). Correct identification of basic emotions (e.g., happy and angry) is usually developed by three years of age, but distinction of more sophisticated expressions (e.g., disgust and surprise) tends to develop a bit later in childhood. Specifically, children are believed to recognize more complex higher-order emotions, including jealousy and guilt, by approximately nine years of age (Harter & Whitesell, 1989).

Due to its universality across cultures, facial affect recognition is a viable indicator of emotional understanding and social competence. Research suggests that there is a strong positive relationship for children and adults with respect to affect recognition accuracy and social abilities, including prosocial behaviour (Marsh, Kozak, Ambady, 2007), social skills (Philippot & Feldman, 1990), and social competence (Custrini & Feldman, 1989). Therefore, facial affect recognition accuracy can be regarded as a robust indicator of social abilities. In line with this view, extensive research has examined the relationship between facial affect recognition and psychiatric disorders with significant interpersonal deficits, such as autism spectrum disorder and schizophrenia (Gross, 2004; Tremeau, 2006). Aggression and other antisocial behaviours have also been extensively studied in relation to facial affect recognition (for a review see Marsh & Blair, 2008). Guiding this research is the theoretical view that aggression may result from failure

to appropriately identify and be guided by others' social cues (Blair, 2003a). Research also suggests that the recognition of distress cues in others elicits empathy (Marsh & Ambady, 2007), which is believed to inhibit or avert aggressive behaviour (Blair, 2003b). Therefore, empathy and facial affect recognition can be regarded as important and complementary individual characteristics that are integral aspects of social communication. Theories of empathy highlighting both cognitive and affective components (e.g., Feshbach, 1975) further support the connection between empathy and facial affect recognition. The distinction between cognitive empathy and facial affect recognition is noteworthy. While cognitive empathy involves understanding the thoughts, feelings, and actions of others, facial affect recognition specifically involves accurately identifying emotion from the facial expressions of others.

As argued by Lemerise and Arsenio (2000), affect recognition is an important aspect of social information processing that occurs as part of the interpretation of cues within the SIP theory. Researchers have discovered that both children and adults who engage in aggressive or antisocial behaviour display deficits in the recognition of facial affect. For example, Walker and Leister (1994) compared facial affect recognition abilities between adolescents with and without emotional and behavioural disorders. Overall, adolescents with emotional and behavioural disorders were less accurate than controls in their ability to recognize facial affect for anger, surprise, fear, and happiness. Similarly, Carr and Lutjemeier (2005) examined facial affect recognition, delinquency, and empathy in 29 male youth offenders. The researchers found a moderate inverse relationship between the ability to recognize facial expressions and physical violence, in addition to a strong inverse relationship between empathy and delinquency.

Although research is extensive and varied examining facial affect recognition in aggressive and antisocial populations, research investigating this aspect of social communication

is lacking with bullying populations. As a form of aggressive behaviour, the relationship between bullying and facial affect recognition should also be explored.

Interrelationship of Bullying, Empathy, and Facial Affect Recognition

Although there is theoretical support for the relationship between emotional processes and bullying within an SIP framework and while there is some empirical support for the individual relationship between bullying and empathy, research is limited examining the interrelationship between bullying, empathy, and facial affect recognition. Only one published study to date has addressed the possible link between these variables. Woods and colleagues (2009) found that among children in the United Kingdom (UK) aged 9 to 11, bullying was not associated with decreased accuracy of facial affect recognition or empathy. However, some limitations of that study are noteworthy. For example, the researchers only utilized peer nominations to determine participant status, which has some specific inherent flaws. Researchers contend that not only are peer nominations labour intensive and complex, but responses also often reflect reputation and personal interpretation more than reality (Berger, 2007) and are not superior to self-reports (Solberg & Olweus, 2003). Overall, self-reports are still viewed as the primary source to distinguish bullies and victims (Berger, 2007). Similar to research investigating empathy and bullying behaviour, bully-victims were not included as a separate group. Therefore, it is possible that the participant groups were not accurately identified, which complicates the interpretation of results. Additional research improving on these limitations is needed to help clarify the interrelationship between bullying behaviour, empathy, and facial affect recognition.

Summary and Critique: Statement of the Problem

The above review examined the research investigating empathy and facial affect recognition in aggressive and bullying populations. Although some evidence exists that children involved in different types of bullying exhibit poorer empathy, conflicting results are reported. There are several plausible explanations, and methodological differences across studies are a likely reason for conflicting results. As mentioned, there are three predominant methodological differences across studies. First, the method of measurement varies. While both self-report and peer nomination are frequently used, self-reports continue to be the most widely utilized method of measuring bullying behaviour (Espelage & Swearer, 2003; Leff, 2007). Some researchers suggest that children process the behaviour of others in a biased way, including biased causal attributions and differential evaluations of behaviour (Hymel, Wagner, & Butler, 1990). Stereotypes, prejudice, and the reputation of other children have all been suggested as possible contributors to unreliable reporting of peer behaviour. For example, Hymel (1986) found that for liked peers only, positive behaviours were viewed as caused by more stable internal factors and negative behaviours as caused by less stable factors. The same positive bias was not found for disliked peers (Hymel, 1986). Instead, negative behaviour displayed by disliked peers was often attributed to stable internal factors (Hymel, 1986). This research suggests that children's peer nominations may be subject to biases. Furthermore, peer perceptions have been found to be notably stable over time and are likely not sensitive to changes, including improvements in other children's behaviours (Pepler & Craig, 1998). This has yet to be investigated specifically in terms of peer nomination used to measure bullying. However, these findings suggest that children's stable perceptions combined with potential biases may undermine the accuracy of their reports (Pepler & Craig, 1998). Therefore, many researchers prefer and continue to use

self-reports. The use of self-report allows for comparison of findings across more studies because of the similar method of measurement. Second, the type of bullying behaviour measured also varies across studies. A primary limitation of many studies involves including only physical bullying, thereby limiting the generalization of findings to females who engage in more relational forms of bullying (Crick & Grotpeter, 1995; Bjorkqvist et al., 1992). Third, a substantial difference across studies involves the conceptualization of bullying. Some researchers defined bullying on a continuum (e.g., Endresen and Olweus, 2002; Mebane et al., 2004) whereas other researchers categorized groups (e.g., Warden & Mackinnon, 2003). It is possible that this difference in how bullying is conceptualized explains differing results. An examination of both methods within the same sample may help elucidate the relationship between empathy and bullying.

In addition to methodological differences across studies making comparison of results difficult, there are also limitations and gaps within the previous research. Despite researchers finding clear differences between children who are only bullies or victims and children who are bully-victims (e.g., Toblin, Schwartz, Hopmeyer Gorman, & Abou-ezzeddine, 2005; Unnever, 2005), no studies to date have been conduced examining empathy and facial affect recognition in bully-victims. This issue has been emphasized by Solberg and colleagues (2007) who argue that bully-victims should be treated statistically as a distinct subgroup. Finally, while research has been conducted in Europe and the United States, no research to date has been conducted with a Canadian sample and only one study in the UK has examined the interrelationship between bullying, empathy, and facial affect recognition. Therefore, the association between empathy, facial affect recognition, and bullying behaviour in Canada remains unexplored.

Purpose of Current Study

The purpose of this study was to investigate and determine the relationships between affective empathy, facial affect recognition, and bullying behaviour in Canadian children. These findings will add to and extend the existing literature by including measurement of different types of bullying (i.e., physical and relational) and different participant roles (i.e., bully, victim, and bully-victim) and by the inclusion of a Canadian sample of children. The following research questions were developed to fulfil this purpose and hypotheses are presented based on findings from previous research. It is significant to note that while questions one through four provide important information, questions five and six are the critical research questions.

Research Question and Hypothesis One. ***What is the frequency of self-reported bullying and victimization?*** Given aforementioned Canadian prevalence rates (e.g., Vaillancourt, Brittain, et al., 2010), it is expected that the largest participant group will be uninvolved children followed by victims, bullies (all subtypes), and then bully-victims.

Research Question and Hypothesis Two. ***Do sex and grade differences exist between different types of bullying?*** Consistent with previously reviewed findings, it is predicted that bullying and victimization will be more frequent in males than females. More specifically, it is hypothesized that males will be more likely than females to engage in physical bullying, and be victims and bully-victims. No significant sex differences in terms of relational bullying are expected. As children in the current sample will be later elementary and early middle school age, an overall increase in bullying is expected with increase in grade. When types of bullying are explored more specifically, reviewed research suggests that physical bullying decreases and relational bullying increases with grade level. Therefore, these developmental differences are expected.

Research Question and Hypothesis Three. ***Is there a relationship between children's affective empathy scores and their affect recognition accuracy?*** As was suggested in the above review, a positive correlation between empathy and facial affect recognition scores is expected.

Research Question and Hypothesis Four. ***Do sex and grade differences exist for children's affective empathy scores and their affect recognition accuracy?*** No sex or grade differences in affect recognition accuracy are expected. As research suggests empathy is relatively stable over time, no grade differences are expected. However, research findings consistently report that females display higher levels of empathy than males, leading to the hypothesis that females will display significantly higher affective empathy scores than males.

Research Question and Hypothesis Five. ***Do participant groups differ in terms of their affective empathy and/or facial affect recognition accuracy?*** The reviewed research highlights the inconsistent findings across studies investigating empathy and bullying behaviour, as well as the limited research investigating facial affect recognition and bullying behaviour. Therefore, no specific hypotheses are generated. However, some general predictions are made based on the reviewed research. Facial affect recognition deficits and poorer affective empathy have been found to relate to aggressive behaviour. Therefore, it is expected that children involved in bullying will display significantly poorer empathy and facial affect recognition scores than victims or uninvolved children. Given the well documented negative associations and outcomes of children involved as bully-victims, it is expected that this group will display significantly poorer empathy and facial affect recognition scores than all other participant groups.

Research Question and Hypothesis Six. ***Do affect recognition or affective empathy scores predict bullying or participant group membership?*** In line with the predictions for research question five, it is also expected that affective empathy and facial affect recognition scores will accurately predict bullying involvement and participant group membership.

Chapter Two Summary

The objective of chapter two was to provide an overall review of the literature with regards to conceptualization of bullying and research to date examining empathy and facial affect recognition in bullying populations. A brief history and current conceptualization of bullying was discussed, as well as age/grade and sex differences and theoretical understanding. Empathy and facial affect recognition were also discussed, including the theoretical relationship to bullying and relevant research with bullying populations. Gaps in previous research were presented as a rationale for the current study. The current study was briefly presented, including research questions and predictions and hypotheses. The following chapter outlines the methods for this study.

Chapter Three: Methods

Chapter three presents the methods used in the current study to address the research questions. This chapter begins with a brief description of the research design and participants, followed by a detailed description of the measures and procedures employed in this study. A presentation of the preliminary and primary data analyses used to address the research questions concludes this chapter.

Research Design

This study employed a quantitative, cross-sectional, correlational design. Data on all variables were collected at one time under equivalent conditions across participants. This approach was used to examine the relation between sex, grade, affective empathy, affect recognition accuracy, and different types of bullying and victimization in children.

Participants

A total of 192 children in grades four to six participated in this study. Of the 192 children, 41% (n = 79) were male and 59% (n = 113) were female. Regarding grade, 39% (n = 75) were in grade four, 22% (n = 42) in grade five, and 39% (n = 75) in grade six. Participants were from two schools in Alberta, Canada. All fourth, fifth, and sixth grade students at participating schools were asked to participate. This age group was targeted due to the increase in bullying during elementary and middle school (Murray-Close, Ostrov, & Crick, 2007; Scheithauer, Hayer, Peterman, & Jugert, 2006).

Children with signed and approved parent/guardian consent forms (Appendix A) who were present on the date of data collection were asked for verbal assent (Appendix B). A total of 197 children returned signed consent forms with parent/guardian permission to participate in this

study (62% response rate). Four students were absent on the dates of data collection and one student did not provide assent. This resulted in a final sample of 192 participants.

Measures

Bullying and Victimization. Self-reported bullying and victimization were measured using the Revised Olweus Bully/Victim Questionnaire (RBVQ; Olweus, 1996). The RBVQ is an anonymous self-report measure including 41 questions assessing experience and involvement with different forms of victimization and bullying, including physical, relational, verbal, racial, and sexual. Demographic and school related questions are also asked, including number of friends, perceptions of bullying, and involvement of school staff to prevent and intervene against bullying. Children are provided with a standard definition of different types of bullying and the time frame to be used (i.e., past two to three months). Children are also prompted to be mindful of where and how often bullying occurs while completing the questionnaire (Olweus, 1996). The RBVQ can be used for children in grades 3 through 12. It includes a wide range of variables relative to bullying and victimization which has lead to its international use for studying such behaviour (Kyriakides, Kaloyirou, & Lindsay, 2006). Due to copyright laws and the author's request, a copy of the RBVQ or any of its questions are not included.

Researchers have examined and supported the psychometric strength of the RBVQ. Construct validity has been investigated by Solberg and Olweus (2003), who examined differences between students classified as victims and non-victims, and bullies and non-bullies, with scales measuring related variables such as internalizing problems, depressive tendencies, and perceived social disintegration, to name a few. Results indicated highly significant differences between victims and non-victims, and bullies and non-bullies. In particular, results indicated significant differences between bullies and non-bullies on measures of aggression and

antisocial behaviour (Solberg & Olweus, 2003). Internal consistency and test-retest reliability from large samples consistently yield satisfactory to excellent results (e.g., Genta et al., 1996; Olweus, 1997). For example, a representative sample (n >5000) of male and female students in Norway, aged 11 to 16, yielded Coefficient alphas of .80 or higher (Solberg & Olweus, 2003). Other researches have also found that items assessing victimization or bullying have fairly good internal consistency reliabilities, with Coefficient alphas greater than .80 (Kyriakides, Kaloyirou, & Lindsay, 2006). Research examining the psychometric strength of the RBVQ with a Canadian sample is needed.

In order to examine the relation between bullying, affective empathy, and facial affect recognition, the RBVQ was used to measure bullying and victimization as both a continuous and a categorical variable. First, a total bullying score, a total victimization score, and a total bully-victim score (sum of total bullying and total victimization scores) were calculated by summing the responses to the corresponding items on the RBVQ, with higher total scores indicating more bullying, victimization, or bully-victimization, respectively. Second, participants were also classified into participant groups (i.e., physical bullies, relational bullies, physical and relational bullies, victims, bully-victims, or uninvolved children). The RBVQ does not indicate a particular method for creating variables to represent bullying and victimization or recommend an appropriate cut-off score to classify students as bullies or victims. Therefore, the current study used previous research to guide the classification of participants into groups. Similar to the procedure used by Olafson and Viemero (2000), a composite was developed of specific behaviour items encompassing physical or relational bullying and victimization, rather than using single item questions (i.e., how often have you been bullied/victimized). Research suggests that behaviour composites are a more sensitive measure of bullying and victimization

than single item questions (Sawyer, Bradshaw, & O'Brennan, 2008; Vaillancourt, Trinh, et al., 2010). See Appendix C for composites and corresponding items used to classify participants into physical or relational bullying groups. Next, a cut-off score was determined for the groups. A common cut-off score used by many researchers using the original BVQ and the RBVQ is "once or twice" or more often to determine involvement in bullying or victimization (Leff, Freedman, Macevoy, & Power, 2011; Wang, Ianotti, & Nansel, 2009). This cut-off has also been consistently used in large-scale bullying reports conducted by the World Health Organization (Currie et al., 2004) and the United Nations (Pinheiro, 2006). Most importantly, Canadian researchers report using this cut-off score to classify those involved and not involved in bullying or victimization (e.g., Vaillancourt, Trinh, et al., 2010). To allow for comparison to Canadian prevalence rates, this cut-off was chosen *a priori* to classify participants into groups. Therefore, participants were classified into a bullying group if they rated themselves as engaging in (bully) any of the associated bullying behaviours at a frequency of "1-2 times" or more often. Participants were further divided into type of bullying (i.e., physical, relational) based on corresponding items. Children were classified into the victimization group if they rated themselves as receiving (victim) any of the associated victimization behaviours at a frequency of "1-2 times" or more often. Finally, children were categorized as bully-victims if they met the criteria for both bullying and victimization. Otherwise, participants were classified as uninvolved.

Empathy. Affective empathy was measured using the Index of Empathy for Children and Adolescents (Bryant, 1982), a self-report used to measure the affective arousal component of empathy in children and adolescents. This measure was constructed to measure the experience of perceived sharing of feelings at the affective level and not the recognition of emotional states

of others (Bryant, 1982). It was chosen in the present study for this purpose, as affect recognition is viewed as a separate construct that was measured separately. It is also one of the most widely used measures in research to assess empathy in children and adolescents (e.g., Cohen & Strayer, 1996; Hastings, Zahn-Waxler, Robinson, Usher, & Bridges, 2000).

The index was derived by Bryant from an adult measure of empathy, the Mehrabian and Epstein (1972) scale. Seventeen items from the Mehrabian and Epstein scale were used as the basis for the child and adolescent measure and five additional questions were added to form the final Index of Empathy for Children and Adolescents (Bryant, 1982). The index consists of 22 items such as "seeing a boy who is crying makes me feel like crying" and "kids who have no friends probably don't want any" (see Appendix D for measure). For school-age children in grade six or below, the items are scored dichotomously with some items requiring reverse scoring. More specifically, for some items an answer in the affirmative contributes to an empathic tendency, and for items needing reverse scoring an answer in the negative contributes to an empathic tendency. All items are then summed to obtain a total score out of 22, with higher total scores indicating higher overall affective empathy. Total empathy scores were calculated for each participant and used for the analyses.

Bryant (1982) investigated the psychometric strength of the index with children in first, fourth, and seventh grade. Discriminant validity has been supported through the comparison of the empathy index with a measure of reading achievement and social desirability. Neither measure was correlated with the empathy score (Bryant, 1982). The Index of Empathy has also been found to display adequate test-retest reliability ($r = .74$, $r = .81$). Acceptable construct validity has been reported as evidenced by significant correlations with other measures of affective empathy in first ($r = .33$), fourth ($r = .54$) and seventh ($r = .76$) graders (Bryant, 1982).

Coefficient alphas were reported as .54 for first graders, .68 for fourth graders, and .79 for seventh graders (Bryant, 1982), suggesting poor internal consistency. Other researchers examining empathy and bullying behaviour in children have reported a Coefficient alpha of .70 (Woods, Wolke, Nowicki, & Hall, 2009).

Facial Affect Recognition. Facial affect recognition was measured using the child faces subtest of the Diagnostic Assessment of Nonverbal Accuracy-2 (DANVA2; Nowicki, 2004), a measure of children's abilities to accurately identify nonverbal information. The DANVA2 measures four types of nonverbal receptive abilities (facial expressions, postures, gestures, and paralanguage). Adapted from the original DANVA, the DANVA2 is used to identify children who may have difficulties in processing non-verbal information related to affect (Nowicki, 2004). Unlike the original DANVA, the DANVA2 includes both high- and low-intensity levels of each emotion for the facial expressions subtests. This includes happiness, sadness, anger, and fear. Overall, the DANVA2 facial expressions subtest allows for assessing children's abilities to identify nonverbal communication of emotions with differing levels of intensity. Three different versions of the DANVA2 are available, including traditional (photographs), computer, and internet-based. In order to allow for group administration, the traditional format was used in this study. There are two facial expressions subtests, one with adult faces (DANVA2-AF) and one with child faces (DANVA2-CF). As participants were children, only the DANVA2-CF was used in this study (see Appendix E for instructions). For this study, a total correct score was calculated for each participant by summing the total number of correctly identified facial affect across the 24 photographs. Higher total correct scores indicate higher accuracy and better affect recognition.

The DANVA2-CF includes 24 photographs of children (equal male and female) making facial expressions depicting happiness, sadness, anger, and fear. Each emotion is displayed at either a low- or high-intensity, with three high-intensity and three low-intensity photographs for each emotion (4 emotions, 3 high intensities and 3 low intensities = 24 photographs). Rather than being constructed on the basis of a particular theory of emotional development or anatomically objective criteria (e.g., position of facial features or specific muscle tensions), the test items were selected primarily on empirical-normative grounds (Nowicki, 2004). Judgments were made by individuals of different ages to ensure that the items were perceived similarly across ages and a relatively high percentage of inter-judge agreement was used for final item selection (Nowicki, 2004). More specifically, vignettes designed to elicit particular emotions were read to 36 children between the ages of 6 and 12. Photographs were then taken of these children as they posed for each emotion and as they changed from expressing one emotion to another. The photographs were shown to college students (n = 54), high school students (n = 43), seventh grade students (n = 34) and third grade students (n = 54). Photographs were included in the final DANVA2-CF if at least 80% of participants agreed on the emotion that was being displayed (Nowicki, 2004).

Reliability and validity data has been collected on the DANVA2-CF through numerous studies. Coefficient alphas have been reported from .69 to .81 across 10 separate studies with children between the ages of 4 and 16 (Nowicki, 2004), suggesting poor to adequate internal consistency. Regarding test-retest reliability, an r = .74 was reported for third grade children (n = 36) (Nowicki & Carton, 1993). Evidence of discriminative validity is also available for the DANVA2-CF. Receptive nonverbal processing skills, such as those assessed with the DANVA2-CF is conceptualized to be unrelated to general cognitive ability. Consistent with this,

the DANVA2-CF scores have not been shown to relate to intelligence scores or tests of general cognitive ability in a number of studies involving preschool and elementary school children, college students, and older adults (Nowicki, 2004).

Procedure

Approval was granted from the University of Calgary's Ethical Review Board and from a major school district in Alberta, Canada. Schools were chosen at random, and school administrators were contacted in order to explain the study and determine interest in involvement. Recruitment yielded final approval from two schools. Meetings were held with participating administrative staff, involving the presentation of the aims of the research and procedures. Letters and consent forms explaining the study and requesting informed consent were sent home to parents/guardians of children from classroom teachers at participating schools.

Data was collected by the researcher during May and June, 2012. All students present in school on the day of data collection who had approved parent/guardian consent forms were asked to participate. Participants were informed of their rights at the beginning of data collection and asked for verbal assent. Group format was used for all measures in a separate classroom during school hours with a teacher and the researcher present. The purpose of the study and limits to confidentiality were explained to all participants, as well as the suggestion to discuss experiences with parents and/or teachers, particularly if students are being bullied. All instructions were read to the group by the researcher and questions were answered prior to beginning each questionnaire (see Appendix D for Bryant Empathy Index; Appendix E for DANVA2-CF instructions). Students were encouraged to ask questions and consult with the researcher as necessary in order to promote comprehension and accurate completion of all items. After

reading the instructions, participants completed the RBVQ and the Index of Empathy for Children and Adolescents independently. The DANVA2-CF was completed as a group with the researcher using a laptop and projection screen. Participants were seated to ensure visibility for all items on the screen. Explanation of the study, assent, instructions, and completion of the questionnaires took approximately 60 minutes per group. The order of administration was counter-balanced across groups to ensure no effect of administration order. Participants were encouraged to sit quietly and draw on the back of the measures until all participants were finished.

In order to ensure privacy and confidentiality for each participant, names were only recorded on the consent forms. All participant consent forms were assigned a research number that matched a research number on all corresponding measures. Following data collection, all consent forms and measures were stored separately and securely in a locked cabinet.

Data Analyses

Preliminary Analyses. Prior to the primary analyses, preliminary analyses were completed. First, total scores for all variables were calculated and participants were assigned to participant groups using the approach outlined in chapter three. Second, the data were inspected and descriptive analyses were calculated using SPSS version 20.0 to determine any data entry errors, missing data, or outliers, and to examine the assumptions required for the primary analyses. Third, descriptive statistics, including means, standard deviations, ranges, and skewness and kurtosis values were calculated for empathy and facial affect recognition total scores and for the total bullying, total victimization, and total bully-victim scores. Fourth, reliability analysis for the RBVQ bullying and victimization scales and the DANVA2-CF and

empathy index total scales were calculated as an estimate of its internal consistency reliability with this study's sample.

Primary Analyses. Descriptive statistics were reviewed in order to determine the frequency of self-reported bullying and victimization, including physical and relational bullying, victimization, and bully-victimization. Point-Biserial correlations and an independent-samples t-test were used to examine the relationship between total scores (i.e., total bullying score, total victimization score, total bully-victim score) and sex/grade. Chi-square tests were conducted to examine differences in participant groups by sex and grade. Pearson correlation was used to determine the strength and direction of the relationship between affective empathy and affect recognition across the entire sample. A two-way between-groups multivariate analysis of variance (MANOVA) was used to examine if there is a difference between males and females across grades in terms of their facial affect recognition and affective empathy scores, with post-hoc analyses to investigate any significant results. A MANOVA was completed due to the relationship between the dependent variables (Tabachnick & Fidell, 2007). Follow-up ANOVAs for each dependent variable were completed with Bonferroni correction in order to protect against inflated Type I error rates (Field & Miles, 2010).

Multiple Pearson correlations were conducted to examine the relation between total bullying, total victimization, and total bully-victim scores, with affective empathy and affect recognition accuracy. In order to determine if participant groups differ in terms of their facial affect recognition accuracy or affective empathy, a one-way between-groups MANOVA was conducted, with post-hoc analyses to investigate significant results. Finally, standard multiple regressions were conducted in order to examine how well empathy scores and facial affect recognition accuracy predict total bullying, total victimization, and total bully-victim scores. As

a follow up to the aforementioned MANOVA, discriminant function analysis was planned to determine if facial affect recognition accuracy or affective empathy predicts participant group membership.

Chapter Four: Results

Chapter four presents the results of the current study. Results from the preliminary analyses are outlined first, including sample characteristics, data inspection and descriptive analysis, and reliability analysis. Following is the results from the primary analyses organized according to research question.

Preliminary Analyses

Sample Characteristics. Females represented the majority of the sample (n = 113; 59%) in comparison to males (n = 79; 41%). The majority of participants were in grades four (n = 75; 39%) or six (n = 75; 39%), and slightly less were in grade five (n = 42; 22%).

Data Inspection and Descriptive Analysis. Table 1 provides descriptive information. An overall examination of the data revealed some missing data. Specifically, two participants did not complete the DANVA2-CF and 10 participants did not complete the entire DANVA2-CF (i.e., missing responses). Two additional participants did not complete the entire empathy index and two other participants did not complete the entire RBVQ (i.e., missing responses). Therefore, no total scores on these measures were calculated for the participants with missing data. Participants were excluded from the primary analyses only if they were missing the information required for the specific analysis. Participants were still included in any of the analyses for which they had the necessary information.

DANVA2-CF total scores and empathy total scores were calculated for each participant who had complete data for those measures. A total of 180 participants completed the entire DANVA2-CF, with total scores ranging from 11 to 24 (M = 20.79; SD = 2.57), and 190 participants completed the entire empathy index, with total scores ranging from 5 to 21 (M = 15.53; SD = 2.87). Next, total scores for bullying, victimization, and bully-victim scales were

calculated for the 190 participants with complete RBVQ questionnaires. Total bullying scores ranged from 13 to 28 (M = 14.94; SD = 3.05), total victimization scores ranged from 11 to 46 (M = 16.93; SD = 6.82), and total bully-victim scores ranged from 24 to 65 (M = 31.89; SD = 8.51).

Examination of histograms, boxplots, and z scores for the DANVA2-CF and empathy index total scores indicated no extreme outliers (z = +/- 3.29; Tabachnick & Fidell, 2007). Therefore, all cases were retained for the primary analyses. The distribution for the DANVA2-CF total score is slightly negatively skewed due in large part to the large number of high total scores on this measure (i.e., high accuracy). However, skewness and kurtosis values are within the acceptable range (i.e., +/-2; Tabachnick & Fidell, 2007) and the distribution appears to be reasonably normally distributed as evidenced by an examination of the histograms and normal probability plots. The distribution for the total empathy index score is approximately normal with skewness and kurtosis values falling within the excellent range (+/- 1; Tabachnick & Fidell, 2007).

Preliminary inspection of the total bullying, total victimization, and total bully-victim score distributions required initial considerations. Specifically, total bullying, total victimization, and total bully-victim scores were found to have extremely positive (>2) kurtosis (3.77, 3.96, and 2.33, respectively) and positive (>1) skew (1.91, 1.87, and 1.54, respectively). Closer examination of the data identified three extreme outliers for the total bullying score distribution and three extreme outliers for the total victimization score distribution (z > +/- 3.29; Tabachnick & Fidell, 2007). These participants reported high levels of bullying and/or victimization behaviour compared to their peers. As the nature of this study was to examine bullying behaviours and associated individual characteristics, these outliers indicated more frequent bullying or victimization and were therefore retained for analysis. However, given the potential

of extreme outliers to affect the analyses, extreme outliers for the total bullying and total victimization scores were winsorized to less extreme values with z = +/- 3.29 (Tabachnick & Fidell, 2007). Total bully-victim scores were re-calculated for these participants to reflect the new total bullying and/or victimization scores. Skewness and kurtosis values were considerably reduced (see Table 2). Therefore, all analyses involving bullying, victimization, and bully-victim total scores were completed with the modified scores.

Table 1. *Descriptive data for the DANVA2-CF, empathy index, and bullying, victimization, and bully-victim total scores.*

Scale	*n*	Minimum	Maximum	*M*	*SD*	Skewness	Kurtosis
DANVA2-CF Total Score	180	11	24	20.79	2.57	-1.23	1.95
Empathy Total Score	190	5	21	15.53	2.87	-.73	.89
Bullying Total Score	190	13	28	14.94	3.05	1.91	3.77
Victimization Total Score	190	11	46	16.93	6.82	1.87	3.96
Bully-Victim Total Score	190	24	65	31.89	8.51	1.54	2.33

Table 2. *Descriptive data for the bullying, victimization, and bully-victim total scores with winzorization.*

Scale	*n*	Minimum	Maximum	*M*	*SD*	Skewness	Kurtosis
Bullying Total Score	190	13	24	14.89	2.86	1.57	1.63
Victimization Total Score	190	11	39	16.85	6.53	1.64	2.53
Bully-Victim Total Score	190	24	63	31.84	8.31	1.42	1.69

Multivariate normality was examined for DANVA2-CF and empathy index total scores using Mahalanobis' distance. Three multivariate outliers were found, but the scores were not too high as to warrant removing the participants. Given the adequately large sample size, these participants were retained for the analyses. Scatterplots were created to examine linearity between continuous variables. All continuous variables appear to be linearly related.

Reliability Analysis. Coefficient alpha was calculated for each scale used in this study as an estimate of its internal consistency reliability with this study's sample. Table 3 illustrates the coefficient alphas for each scale.

Table 3: *Coefficient alphas for each scale.*

Measure	Scale	Coefficient Alpha
RBVQ	Bullying Total	.78
RBVQ	Victimization Total	.91
DANVA2-CF	DANVA2-CF Total	.67
Empathy Index	Empathy Total	.58

It is recommended that ideally, the coefficient alpha value of a scale be above .7 (DeVellis, 2003). The RBVQ bullying and victimization scales demonstrated fair to excellent internal consistency with this sample, with reliabilities of .78 and .91, respectively. These coefficient alphas are comparable to those reported for similar samples (e.g., Solberg & Olweus, 2003; Kyriakides, Kaloyirou, & Lindsay, 2006). DANVA2-CF and empathy index total scores demonstrated acceptable internal consistency with this sample, with reliabilities of .67 and .58, respectively. Other researchers using the DANVA2-CF or the Index of Empathy for Children and Adolescents report similar or slightly higher coefficient alphas with similar aged children (e.g., Bryant, 1982; Nowicki, 2004; Woods, Wolke, Nowicki, & Hall, 2009).

Primary Analyses

What is the frequency of self-reported bullying and victimization?

Descriptive statistics were reviewed in order to determine the frequency of self-reported bullying and victimization across the entire sample. Relational victimization, and more specifically being left out or excluded, was the most common form of victimization and bullying across the entire sample. Almost half of the sample (n = 83; 43%) reported experiencing this form of victimization 1-2 times or more often, whereas 34 participants (18%) reported using this type of bullying against other children at least 1-2 times. A similar number of participants reported being victims of lies or false rumours (n = 81; 42%). Participants reported physical forms of victimization less often. Few students reported engaging in physical bullying or spreading false rumours about other students.

As per the procedure described in chapter three, children were classified into participant groups. Results from the RBVQ indicate that a small but considerable number of participants reported bullying others. Of the participants involved in some form of bullying (n = 48; 25%), 22 were classified as bully-victims. A total of 16 participants were classified as relational bullies, 5 were classified as physical bullies, and 5 were classified as physical/relational bullies. Victimization was fairly common in this sample, with one in five participants being classified as victims (n = 38; 20%).

Given the small sample size in each bully subgroup, these subgroups were collapsed into one bullying group for the primary analyses (see Table 4). This resulted in a total of 26 (14%) participants classified as bullies. In line with predictions, the largest participant group was uninvolved children followed by victims, bullies (subtypes together), and then bully-victims. No

specific predictions were made regarding frequency of pure bullying roles. In this sample relational bullies were more common than physical bullies or physical/relational bullies.

Table 4: *Participant groups collapsed.*

Group	*n* (% of sample)
Uninvolved	106 (55%)
Victim	38 (20%)
Bully/Victim	22 (11%)
Bully	26 (14%)

Do sex and grade differences exist between different types of bullying?

Descriptive statistics were reviewed in order to examine the frequency of participants in each participant group across sex and grade (see Table 5). Two chi-square tests for independence were conducted to determine if there is an association between sex and participant role, or grade and participant role. Results indicated no significant association between sex and participant role, $\chi^2(3, n = 192) = 2.26$, $p = .52$, $phi = .11$, or grade and participant role, $\chi^2(6, n = 192) = 10.54$, $p = .10$, $phi = .17$.

Table 5: *Participant group descriptive statistics by sex and grade.*

		Uninvolved	Victim	Bully/Victim	Bully
		n	*n*	*n*	*n*
Sex					
	Male	47	13	7	12
	Female	59	25	15	14
Grade					
	Four	35	22	9	9
	Five	25	6	7	4
	Six	46	10	6	13

Point-Biserial correlations were conducted between bullying, victimization, and bully-victim total scores with sex, and are presented in Table 6. Bonferroni corrections were applied (.05/3 = .0167). No significant correlation was found between sex and bullying total score or

bully-victim total score. A significant positive correlation was found between sex and victimization total (r = .197, p = .006).

Table 6: *Point-Biserial correlations between bullying and victimization total scores and sex.*

	Bullying Total	Victimization Total	Bully-Victim Total
Sex	-.029	.197*	.148

p <.0167

Descriptive data were calculated by sex to further explore this relationship and are presented in Table 7. Visual inspection of the data suggests that this correlation was primarily due to higher victimization total scores in females (M = 19.94, SD = 7.22) compared to males (M = 15.33, SD = 5.07). An independent-samples t-test was used to compare the mean victimization scores for males and females to determine if this difference is significant. There was a significant difference in scores for males and females (t (187) = -2.93, p = .004, two-tailed). The magnitude of the differences in the means (mean difference = -2.61, 95% CI: -4.37 to -.85) was moderate (η^2 = .047).

Table 7: *Bullying and victimization descriptive statistics by sex.*

Sex	Bullying Total Score *M (SD)*	Victimization Total *Score M (SD)*	Bully-Victim Total *Score M (SD)*
Male	14.99 (3.05)	15.33 (5.07)	30.39 (7.25)
Female	14.82 (2.73)	17.94 (7.22)	32.88 (8.89)

Point-Biserial correlations were also conducted between bullying, victimization, and bully-victim total scores and grade. First, three dichotomous grade variables were created in order to compare total scores across grade, and descriptives were examined (see Table 8). Results of the correlations are presented in Table 9. Bonferroni corrections were applied (.05/9 = .005). No significant correlations were found between grade and bullying, victimization, or bully-victim total scores.

Table 8: *Bullying and victimization descriptive statistics by grade.*

Sex	Bullying Total *M (SD)*	Victimization Total *M (SD)*	Bully-Victim Total *M (SD)*
Four	14.93 (2.92)	17.26 (6.32)	32.24 (7.99)
Five	15.02 (3.19)	17.95 (6.89)	32.93 (9.26)
Six	14.77 (2.63)	15.85 (6.46)	30.63 (8.04)

Table 9: *Point-Biserial correlations between bullying and victimization total scores and grade.*

Grade	Bullying Total	Victimization Total	Bully-Victim Total
Four and Five	.015	.051	.025
Five and Six	-.043	-.151	-.129
Four and Six	-.029	-.110	-.116

Is there a relationship between children's affective empathy scores and their affect recognition accuracy?

Pearson's product moment correlation was calculated to determine the strength and direction of the relationship between affective empathy and affect recognition across the entire sample. Contrary to predictions, no significant relationship was found between affect recognition and empathy scores ($r = .123$). When the relationship was examined for males and females separately, a medium significant positive correlation was found between affect recognition and empathy scores ($r = .246$, $p = .039$) for males, but not females. These results indicate that for males, higher affective empathy is associated with higher facial affect recognition accuracy.

Do sex and grade differences exist for children's affective empathy scores and their affect recognition accuracy?

Sex and grade differences in empathy and facial affect recognition scores were examined using a two-way between-groups MANOVA. There was a statistically significant difference between males and females, $F(2, 171) = 3.25$, $p = .041$, $\eta_p^2 = .04$. Follow up ANOVAs were

conducted using a Bonferroni adjusted alpha level of .025 (.05/2). Only empathy scores reached statistical significance, F (1, 172) = 6.50, p = .012, η_p^2 = .04. Inspection of the mean scores revealed that females reported significantly higher levels of empathy (M = 16.11, SD = 2.63) than males (M = 14.79, SD = 2.92). No sex differences were found for facial affect recognition, and no grade differences were found for empathy or facial affect recognition scores. Descriptive data by sex and grade are presented in Table 10, including means and standard deviations.

Table 10: *Empathy and facial affect recognition descriptive statistics by demographic variables.*

	Affective Empathy		Affect Recognition	
	M	*SD*	*M*	*SD*
Total Sample	15.53	2.88	20.79	2.57
Sex				
Male	14.79*	2.92	20.68	2.59
Female	16.11*	2.63	20.84	2.58
Grade				
Four	15.11	2.81	20.52	2.67
Five	15.12	3.34	20.91	1.93
Six	16.30	2.42	20.97	2.76

*Significant difference in mean scores

Do participant groups differ in terms of their affective empathy and/or facial affect recognition accuracy?

Pearson's product moment correlations were conducted in order to examine the relationship between bullying, victimization, and bully-victim total scores, with affective empathy and facial affect recognition. Given the exploratory nature of this question, Bonferroni corrections were not applied. Instead, an alpha of .05 was set *a priori*, and exact significance values (p) are

reported. No significant correlations were found between facial affect recognition and bullying, victimization, or bully-victim total scores, or between empathy and victimization total score. However, small but significant negative correlations were found between empathy and bullying total score (r = -.179, p = .014), and between empathy and bully-victim total score (r = -.158, p = .031) (see Table 11). These results indicate that higher bullying and bully-victim total scores are associated with lower empathy scores.

Given the significant difference in empathy scores across sexes, Pearson's product moment correlations were also conducted for males and females separately. No significant correlations were found for males. For females, there was a significant negative relationship between empathy and bullying total score (r = -.239, p = .012), and empathy and bully-victim total score (r = -.158, p = .05) (see Table 11). These results suggest that for female participants, higher bullying and bully-victim total scores are associated with lower empathy scores.

Table 11: *Correlation coefficients between bullying, victimization, and bully-victim total scores and DANVA2-CF and empathy total scores.*

	Bullying Total			Victimization Total			Bully-Victim Total		
	Total Sample	Males	Females	Total Sample	Males	Females	Total Sample	Males	Females
DANVA2-CF Total	-.042	---	---	-.109	---	---	-.112	---	---
Empathy Total	-.179*	-.100	-.239*	-.111	-.196	-.135	-.158*	-.208	-.184*

*p<.05

In order to investigate participant group differences in facial affect recognition and empathy, a one-way between groups MANOVA was performed. Results did not indicate a statistically significant difference between participant groups, F (6, 346) = 1.02, p = .41; Λ = .97, η_p^2 = .02. This result indicates that uninvolved children, victims, bully-victims, and bullies

displayed similar facial affect recognition and empathy scores. Table 12 presents DANVA2-CF and empathy descriptive statistics for each participant group.

Table 12: *DANVA2-CF and empathy descriptive statistics for participant groups.*

	Participant Group	*M*	*SD*
DANVA2-CF Total Correct Score	Uninvolved	20.96	2.49
	Victim	20.16	2.58
	Bully/Victim	21.00	2.33
	Bully	20.83	2.98
Total Empathy Score	Uninvolved	15.81	2.57
	Victim	15.54	3.35
	Bully/Victim	14.53	3.57
	Bully	15.57	2.15

Given the significant difference in empathy scores across sexes, one-way between groups ANOVAs (one for males and one for females) were conducted to explore empathy differences between participant groups. A statistically significant difference was found for both males (F (3, 74) = 3.12, p = .031) and females (F (3, 108) = 3.26, p = .024). As the most commonly used measure of effect size for ANOVA, *eta squared* was calculated for males and females, and were large (.11) and medium (.08), respectively (Cohen, 1988; Levine & Hullett, 2002). Post-hoc comparisons using the Tukey HSD test indicated that for males, only the mean score for uninvolved participants (M = 15.37, SD = 2.37) was significantly different from victims (M = 12.92, SD = 3.30). This result suggests that for males, uninvolved participants had significantly higher empathy scores than victims. For females, only the mean score for bully-victims (M =

14.21, *SD* = 3.57) was significantly different from victims (*M* = 17.00 *SD* = 2.38), suggesting that female victims had significantly higher empathy scores than bully-victims.

Do affect recognition or affective empathy scores predict bullying or participant group membership?

Discriminant function analysis was considered to determine if facial affect recognition or empathy predicts participant group membership. However, because overall participant group differences were not found for facial affect recognition and empathy scores, the discriminant function analysis was not completed. However, the predictive relationship of facial affect recognition and empathy on frequency of bullying, victimization, and bully-victimization was examined using standard multiple regression analysis.

For the first set of regression analyses, the facial affect recognition and empathy total scores were entered as the independent variables and bullying total score was entered as the dependent variable. This model was significant, F (2, 175) = 2.937, p = .05. However, the overall model explains only 3.2% of the variance (R^2 = .032) in bullying total score. Empathy had significant negative regression weights indicating that participants with higher empathy scores were expected to have lower bullying total scores after facial affect recognition was controlled for in the model. Facial affect recognition did not contribute to the model (see Table 13).

When sexes were examined separately, the overall model was significant for females (F (2,103) = 3.165, p = .046), explaining 5.8% of the variance (R^2 = .058) in bullying total score. Empathy again had significant negative regression weights indicating that female participants with higher empathy scores were expected to have lower bullying total scores after controlling

for other variables in the model (see Table 13). Facial affect recognition did not contribute to the model. The model was not significant for males (F (2, 68) = .362, p = .698).

Table 13. *Standardised regression coefficients for model predicting bullying total score*.

	Entire Sample		Males		Females	
Predictor Variable	Beta	*p*	Beta	*p*	Beta	*p*
Facial Affect Recognition Accuracy	-.019	.797	-.024	.845	-.028	.771
Affective Empathy	-.177	.019	-.094	.454	-.238	.014

The second set of regression analyses involved the same independent variables, but victimization total score as the dependent variable (see Table 14). The overall model was not significant, F (2, 175) = 1.919, p = .150. When examined separately, the overall model was not significant for males (F (2, 68) = 1.370, p = .261) or females (F (2, 103) = 2.312, p = .104).

Table 14. *Standardised regression coefficients for model predicting victimization total score.*

	Entire Sample		Males		Females	
Predictor Variable	Beta	*p*	Beta	*p*	Beta	*p*
Facial Affect Recognition Accuracy	-.097	.202	.015	.901	-.158	.105
Affective Empathy	-.099	.192	-.200	.108	-.130	-.831

The third and final set of regression analyses also involved facial affect recognition and empathy total scores as the independent variables, but bully-victim total score as the dependent variable. This model was significant, F (2, 173) = 3.009, p = .05, but explains only 3.4% (R^2 = .034) of the variance in bully-victim total score. As evidenced in Table 15, empathy score had significant negative regression weights, indicating that participants with higher empathy scores were predicted to have lower bully-victim total scores after controlling for facial affect recognition in the model. Facial affective recognition did not contribute to the multiple regression model. When sexes were examined separately, the overall model was significant for

females (F (2,101) = 3.183, p = .046), explaining 5.9% of the variance (R^2 = .059) in total bully-victim score. However, neither variable made a significant unique contribution to the prediction of bully-victim total score (see Table 15). The model was not significant for males (F (2, 68) = 1.551, p = .219).

Table 15. *Standardised regression coefficients for model predicting bully-victim total score.*

	Entire Sample		Males		Females	
Predictor Variable	Beta	*p*	Beta	*p*	Beta	*p*
Facial Affect Recognition Accuracy	-.094	.215	.014	.909	-.159	.102
Affective Empathy	-.146	.05	-.212	.088	-.179	.066

Chapter Five: Discussion

This chapter highlights the significant findings from the current study and reviews the results relative to the preliminary and primary analyses. Following is an examination of the theoretical, empirical, and practical implications of the results from this study. Finally, a discussion of the strengths and limitations of this study are presented, as well as conclusions and directions for future research.

Overview of Significant Results

The current study explored the relations among empathy, facial affect recognition, and bullying behaviour and extended the existing literature by including the measurement of different types of bullying (i.e., physical and relational) and different associated roles (i.e., bully, victim, and bully-victim) in a sample of Canadian children. The primary objective of this study was to determine if children involved in bullying (i.e., bullies, bully-victims) display poorer empathy and facial affect recognition deficits in comparison to victims and uninvolved children. To fulfill this objective, preliminary analyses were first conducted to examine the sample characteristics and the reliability of the measures used with this study's sample. The most significant results from the preliminary and primary analyses are subsequently discussed.

Discussion of Results Relative to Preliminary Analyses

As a group, participants exhibited high facial affect recognition accuracy. Empathy scores were fairly normally distributed, with participants ranging from low to high levels of affective empathy. Mean scores for the DANVA2-CF and empathy index were consistent with the means reported by the test developers in previous research for similarly aged participants (Bryant, 1982; Nowicki, 2004), suggesting that the sample in this study performed similarly to other samples on these measures.

As expected, total bullying, victimization, and bully-victim scores were not normally distributed. In particular, most participants did not report engaging in or experiencing bullying and a few participants exhibited high levels of bullying and/or victimization compared to their peers. While these participants' data required statistical consideration prior to conducting the primary analyses, they represented the population of children exhibiting significantly high levels of bullying and/or victimization.

In order to examine reliability of the measures used with this study's sample, coefficient alpha was calculated for each scale as an estimate of its internal consistency reliability. With this study's sample, coefficient alphas for the RBVQ bullying and victimization scales exceeded the acceptable criteria for internal consistency reliability of .7 (DeVellis, 2003). These results were consistent with those reported for similar aged participants in Norway (Endresen & Olweus, 2002; Solberg & Olweus, 2003) and Greece (Kyriakides, Kaloyirou, & Lindsay, 2006). Reliability analysis also indicated that while internal consistency estimates for the DANVA2-CF and empathy index were poor to fair, it is similar to or slightly lower than coefficient alphas reported by other researchers with similar samples (Woods et al., 2009). Due to the low internal consistency reliability estimates of the empathy index and DANVA2-CF measures with this study's sample, results involving empathy and facial affect recognition should be interpreted with caution.

Discussion of Results Relative to Primary Analyses

What is the frequency of self-reported bullying and victimization?

The frequency of self-reported bullying and victimization was examined in this study to compare results with Canadian prevalence rates reported by other researchers. Consistent with expectations based on Canadian prevalence rates (e.g., Vaillancourt, Brittain, et al., 2010), the

largest participant group was uninvolved children, comprising 55% of the total sample. Also consistent with expectations, victims were the next largest group (20%), followed by bullies (14%), and bully-victims (11%). Relational bullying was the most frequent form of bullying in this study, with less participants engaging in or being victims of physical bullying. These rates are lower than those reported in a large-scale Canadian study of children in elementary school (44.5% victims; 23.8% bullies; Vaillancourt, Trinh, et al., 2010). These rates are also lower than Canadian prevalence rates from children ages 11, 13, and 15 from UNICEF (2007) (36.3% victims; 37% bullies), and results from Woods and colleagues' (2009) study in Britain (30% victims; 24% bullies). As both Canadian studies used the same cut-off point for frequency (i.e., 1-2 times or more often) as in the current study, it is concluded that the frequency of self-reported bullying and victimization in this study's sample was lower than Canadian prevalence rates. The lower prevalence of self-reported bullying and victimization in this study's sample compared to prevalence in other Canadian studies may suggest that the participants in this sample engage in less bullying. However, it is possible that participants under-reported their involvement in bullying and experience of victimization. Social desirability involves under- or over- reporting certain behaviours to appear socially desirable (Pellegrini, 2001), and has been cited as a potential concern with self-reports. Some researchers have suggested that by providing anonymity of reporting, socially desirable responding will decrease (Pellegrini, 2001). The current study ensured that participants' responses were confidential and anonymous, but it is possible that some participants may still have underreported bullying and/or victimization.

Do sex and grade differences exist between different types of bullying?

Sex and grade differences across participant roles was investigated, as well as correlations between bullying, victimization, and bully-victim total scores with sex and grade.

The hypotheses that bullying and victimization would be more prevalent in males than females, and that bullying would increase with grade, were not supported. In regards to sex, no significant associations were found between sex and participant role. While no significant correlations were found between sex and bullying or bully-victim total score, sex and victimization role were positively correlated, with a moderate significant difference in victimization scores between males and females. Contrary to predictions, females displayed significantly higher victimization scores than males. Also contrary to predictions, no significant association was found between grade and participant role, or between grade and bullying, victimization, or bully-victim total score.

These results are contrary to sex differences reported by some Canadian researchers who have found that males report more bullying than females (Vaillancourt, Trinh, et al., 2010). However, some Canadian researchers have similarly found that females report significantly higher victimization than males (Vaillancourt, Trinh, et al., 2010). Due to the small sample size in bullying subgroups, comparisons between subtypes of bullying and sex or grade were not completed. As females are more likely to engage in relational rather than physical bullying (Murray-Close, Ostrov, & Crick, 2007; van der Wal, de Wit, & Hirasing, 2003), grouping all forms of bullying together for the analyses may have masked any potential sex or grade differences in bullying behaviour. In addition to mixed results from other studies, the current study's results highlight the need for researchers to caution against concluding sex differences in bullying behaviour (Espelage, Mebane, & Swearer, 2004).

Is there a relationship between children's affective empathy scores and their affect recognition accuracy?

Theory suggests that the recognition of distress cues in others elicits empathy (Marsh & Ambady, 2007). Therefore, it was hypothesized that a positive correlation between facial affect recognition and empathy would be found. This hypothesis was partially supported. As a group, no significant correlation was found. However, higher affective empathy was associated with higher facial affect recognition accuracy in males only. These results are surprising given theory suggesting the connection between recognition of affect in others and affective empathy (e.g., Blair, 2003b; Marsh & Ambady, 2007). Theoretically, the current study suggests a positive relationship between the recognition of affect in others and affective empathy in males only. Other researchers, including Woods and colleagues (2009), have also failed to find a significant relationship between emotion recognition abilities and affective empathy. However, Woods and colleagues (2009) did not examine sexes separately, providing no comparison of results to the current study.

Do sex and grade differences exist for children's affective empathy scores and their affect recognition accuracy?

Consistent with predictions, no sex or grade differences in affect recognition accuracy were found. This study provides an initial investigation into facial affect recognition with Canadian children, and results suggest that facial affect recognition accuracy is similar across sexes and throughout elementary school. Empathy scores were not significantly different across grades, suggesting the relative stability of affective empathy during elementary school. The hypothesis that females would display significantly higher affective empathy scores than males was supported. These results add to the body of research suggesting higher self-reported affective empathy in females (Endresen & Olweus 2002; Espelage, Mebane, & Adams, 2004; Gini, et al., 2007; Warden & Mackinnon, 2003). Knowledge of the sex imbalance in affective

empathy suggests that other social and emotional constructs may also present differently across sexes. When examining bullying as a social behaviour and investigating social and emotional processes, sexes need to be examined separately.

Do participant groups differ in terms of their affective empathy and/or facial affect recognition accuracy?

While no specific hypotheses were formulated, some general predictions were made. Contrary to predictions, facial affect recognition accuracy did not differ significantly across participant groups and was not associated with bullying, victimization, or bully-victim total scores. Victimization score was also not associated with empathy scores. However, predictions were partially supported. Higher bullying and bully-victim total scores were associated with lower empathy scores in females. These results are somewhat different than those found by other researchers. While some researchers have found that higher bullying scores were associated with poorer empathy in both males and females (Endresen & Olweus, 2002; Espelage, Mebane, & Adams, 2004), or in males only (Gini et al., 2007; Jolliffe & Farrington, 2006a), the current study found this relationship in females only. Taken together with results from this study, differing results across studies is likely due to differing methodology. Researchers that have found an association between empathy and bullying for both sexes (Endresen and Olweus, 2002; Espelage, Mebane, & Adams, 2004) included measurement of both physical and relational bullying. Furthermore, researchers that have found this association in males only (Gini et al., 2007), included measurement of physical bullying only. Other researchers have found an association with empathy and bullying to be sex dependent, such that poorer empathy is associated with higher physical bullying in males and relational bullying in females (Jolliffe & Farrington, 2006a). As relational bullying was the most prevalent type of bullying in the present

study and few participants reported physical bullying, it is unsurprising that a negative correlation with bullying and empathy was found in females only.

Do affect recognition or affective empathy scores predict bullying or participant group membership?

Consistent with the results above, higher empathy scores predicted lower bullying and bully-victim total scores in females only. Therefore, in the current study female participants with lower empathy scores also tended to display higher levels of bullying and bully-victimization. Higher victimization scores were not predicted by lower empathy scores in either sex. Therefore, poorer affective empathy does not seem to be related to, or predict, victimization of bullying. By understanding predictors to bullying behaviour such as poorer empathy, interventions can be implemented earlier to students that may be at risk for bullying. Results from this study suggest that females with poorer affective empathy may be a specific group to involve in targeted interventions to prevent bullying.

Summary

This study explored the relationship between empathy, facial affect recognition, and bullying behaviour in a sample of Canadian elementary school children. The results of this research extend and add to theory and previous research. The most significant result from this study is the evidence that in a sample of Canadian female children, poorer empathy is associated with and predicts higher self-reported bullying and bully-victimization. By understanding that poorer affective empathy is associated with higher bullying, interventions aimed to decrease bullying can be tailored to include empathy for female children. This study expanded our understanding of the usefulness of the RBVQ, DANVA2-CF, and empathy index with Canadian children by examining the internal consistency of these measures, as well as reporting the

descriptives of these measures with this study's Canadian sample. As the first known study to use the DANVA2-CF and empathy index together with Canadian children, descriptives provide a comparison for future Canadian researchers utilizing these measures. The frequency of self-reported bullying and victimization across grade and sex was also examined, as well as the presentation of empathy and facial affect recognition in a sample of Canadian children and its relation to bullying behaviour. Therefore, the results of this study provide theoretical, empirical, and practical implications.

Theoretical and Empirical Implications of the Study

Results of the current study provide important theoretical and empirical implications for the understanding and study of bullying, facial affect recognition, and empathy in children. Despite no agreed-upon cut-off point to serve as a criterion (Solberg & Olweus, 2003), researchers in the area of bullying often categorize participants into two groups; those involved in bullying and those not involved in bullying. Theoretically, bullying is viewed categorically by these researchers. Some researchers argue that collapsing participants into categories reduces precision in the measurement of bullying behaviour, thereby favouring measuring bullying on a continuum (Bosworth, Espelage, & Simon, 1999). In the current study no association between bullying and empathy was found when participants were categorized into groups using the commonly used cut-off point of "1-2 times a month or more often". While categorization may be important for prevalence estimates, results of this study suggest that categorization may lead to important information being missed. For example, if only categorization had been used in this study the negative relationship between empathy and bullying and bully-victimization frequency in females would not have been found. Furthermore, categorization assumes that there is no useful distinction among those who engage in bullying. However, results of the current study

suggest that the frequency of bullying behaviour, and not the absence or presence of bullying behaviour itself, is associated with differences in affective empathy. More specifically, associations between empathy and bullying were only found in the current study when bullying was viewed on a continuum of frequency; a result that adds some support to the proposed relation between bullying and poorer empathy. Therefore, researchers are encouraged to measure bullying on a continuum rather than categorically in order to examine differences among those involved in bullying, rather than simply examining differences among those who do and those who do not engage in bullying.

While results of the current study indicate associations between bullying and affective empathy, results do not indicate a relationship between facial affect recognition and bullying behaviour. Theoretically, these results do not add support to the inclusion of emotions within the SIP theory for bullying populations. The SIP framework suggests that affective cues are an important source of information within the encoding and interpretation of cues steps in the SIP model. The interpretation of others' affective cues is hypothesized to affect empathic responsiveness and subsequent steps in the model, leading to aggressive or bullying behaviour (Lemerise and Arsenio, 2000). However, facial affect recognition was not related to bullying behaviour, as would be predicted based on SIP theory. Therefore, the application of facial affective recognition as an affective cue within the SIP model is not supported from these results, or from other similar research (e.g., Woods et al., 2009).

In relation to theories of aggressive behaviour, the results of this study are consistent with theories proposing that empathy may play a part in the inhibition of aggressive behaviour, including bullying (Jolliffe & Farrington, 2006). However, the relationship between poorer empathy and bullying was only found for females. As discussed above, methodological

differences across studies may explain differing results. Combined with results from other studies, it is suggested that poorer empathy may be related to involvement in relational bullying for females and physical bullying for males. The results of this study do not indicate a causal relationship between poorer empathy and bullying behaviour. However, as emphasized by other researchers, the predictive relationship found in this study between poorer empathy and bullying and bully-victimization in females, adds support to the suggestion that a tendency toward empathic concern for others may have an inhibitory effect on bullying (Endresen & Olweus, 2002). Theoretically, results from this study suggest that the proposed relation between poorer empathy and higher levels of bullying is not the same for both sexes. Therefore, theories suggesting that empathy plays a part in inhibiting aggressive behaviour need to account for the presentation of relational and physical bullying in males and females. Researchers should also include and measure both types of bullying separately in order to ensure that bullying is captured across sexes.

Practical Implications of the Study

The results of this study not only inform theory and extend and add to existing literature, but also inform and guide the work of staff within schools, including teachers and psychologists. As a prevalent problem in schools, bullying is of the utmost importance to school staff. In addition, there is an increasing awareness of the need for parents and schools to encourage values related to compassion and concern (Manger, Eikeland, & Asbjornsen, 2001). Programs have been designed and implemented internationally that aim to encourage such values in an attempt to decrease school bullying. Such programs often include teaching empathy as a critical component (Nickerson, Mele, & Princiotta, 2008). Some researchers have examined the effects of social-cognitive training on students' empathy, without specifically examining the effects on

bullying behaviour. For example, Manger and colleagues (2001) provided a one-year school-based social cognitive training intervention with 14- and 15-year old students, assessing empathy in both the experimental and control groups pre- and post-intervention. Increases in affective empathy were found for students in the training group but not the control group (Manger et al., 2001). No sex differences were found, suggesting that the training increased empathy in both males and females (Manger et al., 2001). The researchers argue that the school can play a significant role in promoting and developing students' empathy.

More recently, the effect of empathy training on the frequency of school bullying has been examined. Sahin (2012) investigated the effectiveness of an empathy intervention program on bullying and affective empathy in sixth grade students. Cognitive aspects of empathy such as recognizing, evaluating, and naming emotions were taught, and the program also included didactic components, role-playing, and modeling. Bullying and affective empathy were evaluated pre- and post- intervention, as well as at 60 days following the intervention in both the experimental and control groups. Empathy training significantly decreased bullying behaviours and increased affective empathy in the experimental group only. These changes were also observed at follow-up (Sahin, 2012). The results from Sahin (2012) suggest that training in the cognitive aspects of empathy also improve affective empathy, as well as decrease bullying. While social-cognitive interventions and anti-bullying programs are based on the assumption that poorer empathy is related to bullying, little research has examined the possible link between bullying and empathy. Results of the current study support the link between poorer empathy and bullying in females, and provide empirical support that interventions targeting empathy may decrease bullying in females. Therefore, results of the current study also indicate that a single approach to bullying interventions may not be effective for both males and females.

Strengths, Limitations, and Future Directions

The current study has a number of strengths and some limitations that can guide future research. There are two primary strengths. First, this study included bully-victims as a separate group. Despite considerable research highlighting differences between children who are only bullies or victims, and children who are bully-victims (e.g., Toblin, Schwartz, Hopmeyer Gorman, & Abou-ezzeddine, 2005; Unnever, 2005), researchers have not investigated empathy and facial affect recognition in bully-victims. As argued by Solberg and colleagues (2007), bully-victims should be examined as a distinct subgroup of children involved in bullying. Results of this study suggest however, that the relationship with affective empathy is similar for bullying and bully-victimization.

Second, this study examined empathy, facial affect recognition, and bullying behaviour in a Canadian sample of children. While research has been conducted in Europe and the United States, this was the first study to examine these variables together with Canadian children. Therefore, this study provided an initial exploration of the relationships between empathy, facial affect recognition, and bullying behaviour in Canadian children.

While this study exhibits some significant strengths, there are some limitations that must be indicated and considered when interpreting the results. This study has five primary limitations. First, it is recognized that the small sample size in the bullying subgroups is a primary limitation that restricted comparisons between children involved in different types of bullying. Few participants reported engaging in physical or relational bullying, which led to collapsing the subgroups into one bullying group. A larger sample size in each bullying subgroup would have allowed for specific comparisons between children who engage in relational versus physical bullying.

Second, the generalizability of the study's sample to the larger Canadian child population may be limited. The participants in this study included children in grades four to six from two schools in Alberta, Canada. While efforts were made by the researcher to recruit a larger sample from additional schools, consent was provided by only two schools. Therefore, it is acknowledged that this sample may not be representative of the larger Canadian child population.

Third, a methodological limitation of this study was the sole use of self-reports to measure bullying and victimization. While the decision was made consciously due to limitations of peer nomination, obtaining data solely from children's self-report is not without its weaknesses. Some argue that children may be reluctant to admit engaging in bullying because of the socially inappropriate nature of the behaviour (Griffin & Gross, 2004). The desire to appear socially acceptable may result in children not reporting their own acts of bullying (Craig & Pepler, 1998). Pellegrini (2001) suggested that bullying and victimization are most likely to be underreported when responses are not anonymous. In an attempt to minimize socially desirable responding many researchers utilize anonymous self-reports. While anonymous self-reports were used for all measures in this study, the possibility of socially desirable responding is evident. The use of multiple informants whereby data can be converged, including that from self, peer, and teacher reports, may provide more reliable information regarding the relationship between children's bullying and affective empathy.

Fourth, the poor to fair internal consistency estimates for the Empathy Index for Children and Adolescents (.58) and DANVA2-CF (.67) with this study's sample is another limitation. While the coefficient alphas reported with this study's sample are similar to or slightly lower

than those reported by other researchers (e.g., Bryant, 1982; Nowicki, 2004; Woods, et al., 2009), results for the analyses using these measures should be interpreted with caution.

Fifth and finally, this study is limited by the cross-sectional nature of the data collection. While poorer affective empathy was found to be significantly related to bullying and bully-victimization in female children, results do not provide evidence of a cause and effect relationship. Experimental and longitudinal research may help establish if poorer affective empathy does have a causal effect on bullying (Jolliffe & Farrington, 2006a). Experimental research involves manipulation of an independent variable, such as empathy training, to observe the effect on behaviour, such as bullying. It also allows for the control of other variables, thereby allowing researchers to make causal inferences that the independent variable caused the observed change in behaviour. For example, continued research of the effect that empathy training has on bullying frequency is needed, which indirectly provides information about the role of empathy in bullying behaviour. Longitudinal research also has an advantage over cross-sectional designs by allowing for the understanding of how bullying can change over time, including if effects found from experimental designs continue to produce change over time. Therefore, both longitudinal and experimental studies would allow for a better understanding of the potential causes or contributors to bullying behaviour.

Conclusion

School bullying has increasingly become recognized as a serious problem affecting children and adolescents internationally (Swearer et al., 2010). Indeed, in Canada bullying and victimization are prevalent problems that have well documented negative consequences for children involved as bullies, victims, and bully-victims. Individual characteristics associated with bullying has been investigated in an attempt to enhance prevention and intervention efforts

to decrease school bullying (Swearer et al., 2010). This study intended to explore the relations among empathy, facial affect recognition, and bullying behaviour in a sample of Canadian children. Despite limitations, this research adds and extends current literature aiming to understand the relations between empathy, facial affect recognition, and bullying behaviour. This study also highlights the importance of continued research in this area in order to better understand bullying behaviour and ultimately guide prevention and intervention efforts to decrease school bullying.

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Appendix A: Parent/Guardian Letter and Consent Form

Dear Parent or Guardian,

I am writing to request permission for your child to participate in a study about children's behaviour, and their understanding and experience of emotions. This study will explore the relationship between social understanding, feeling of emotions, and school bullying. This research may have important implications for decreasing school bullying. This project is conducted by Gia Pugliese under the supervision of Dr. Jac J.W. Andrews, Professor at the University of Calgary. The methods of this project have been reviewed and approved by the Conjoint Faculties Research Ethics Board at the University of Calgary, and your child's school district. The results of this study will be used to meet the requirements of a doctoral degree (PhD), and in the future may be published or presented at a professional conference.

What Will I Be Asked To Do?

If you agree to participate, your child will be asked to complete 3 short questionnaires independently for approximately 60 minutes in a group session at school. The questionnaires completed involve understanding children's bullying and feelings of empathy, and identifying emotions in pictures of faces. Please do not hesitate to contact the researcher to clarify any uncertainties. If you wish, a review of general conclusions derived from this study can be forwarded to you.

Are there Risks or Benefits if I Participate?

Risks associated with this study are minimal. However, your child may experience mild discomfort when completing the questionnaires (for example, questions asking them to identify bullying they may have personally experienced). However, if a child indicates being a victim of bullying or being involved in bullying, they will be told that they should report this to their teacher, principal, parent/guardian, or another trusted adult. Children will also be informed that the researchers have an obligation to report harm or threats of harm to the appropriate legal authorities. Regarding benefits, by helping us better understand bullying behaviour, we can hopefully help inform prevention and intervention efforts to decrease bullying.

What Happens to the Information my Child and I Provide?

Participation is completely voluntary, and confidential. However, absolute confidentiality cannot be guaranteed due to the process of recruitment and the group nature of participation. More specifically, the classroom teachers and other students will know that your child has participated, but they will not know how your child responded on the questionnaires. Nobody, except the researchers will be allowed to see any of the answers to the questionnaires. All identifying information that is collected will remain confidential, by the assignment of identification numbers to each participant. Your child's name and identifying information will not be used, and the list of identification numbers and associated names will be stored in a locked file separate

from the data used for the study. This will be kept for 5 years, and then destroyed. No individual child responses will be reported, and no identifying information will be revealed. You are free to discontinue participation at any time without providing a reason, and information collected will be destroyed (i.e. shredded).

Thank you in advance for considering participation in this valuable research!

Sincerely,

Gia Pugliese, B.A. (Hons.)
Ph.D. Student, Educational Studies in
School and Applied Child Psychology
University of Calgary, Canada
gvpuglie@ucalgary.ca

Jac J.W. Andrews, Ph.D.
Professor, Educational Studies in
School and Applied Child Psychology
University of Calgary, Canada

PLEASE RETURN THIS PAGE TO YOUR CHILD'S TEACHER

Statement of Consent:

This is to state that I agree to allow my child to participate in the research project entitled, "Social-Emotional Processing and Bullying Behaviour".

I understand that this project is conducted by Gia Pugliese, under the supervision of Dr. Jac J.W. Andrews in the Division of Educational Studies in Psychology at the University of Calgary.

I understand the purpose of this study and that there are minimal anticipated risks or inconveniences.

I understand that participation is voluntary and that my child and I are free to withdraw from this study at any time without penalty or prejudice.

I understand how confidentiality will be maintained during this research project.

I understand the anticipated uses of data, especially with respect to publication, communication, and dissemination of results.

I have carefully studied the above and understand my participation in this agreement. I freely consent and voluntarily agree to my child's participation in this study.

Name of child (please print)_____
Name of Parent/Guardian (please print)_____
Parent/Guardian Signature_____ Date_____
Name of researcher (please print)_____
Researcher Signature_____Date_____
If you have any concerns about the way you have been treated as a participant, please contact the Senior Ethics Resource Officer, Research Services Office, University of Calgary at (403) 220-3782; email rburrows@ucalgary.ca

A copy of this consent form has been given to you to keep for your records and reference. The investigator has kept a copy of the consent form.

Appendix B: Participant Assent Instructions

Before we get started I will tell you a little bit about what we are doing. This is a research project that we are doing to learn more about how kids think, feel, and act. This study is run by myself, Gia Pugliese, and a Professor at the University of Calgary.

We will put a number on your answer sheets instead of your name, and we will not tell anyone your name or how you answered these questions. What you answer here is confidential (or secret), unless for some reason we are worried about your safety or the safety of someone else.

I will ask you to complete three questionnaires by yourself. This includes answering questions about bullying at your school and about how you feel in different situations. You will also look at some pictures and answer the emotion you think the person in the picture is feeling. Some of these questions may cause you to feel uncomfortable as they may ask you about feelings and experiences with bullies and victims. If you feel uncomfortable, please speak to someone you trust, like a teacher or parent. We hope the information from this research will help us better understand bullying at school.

Your parents gave permission for you to be here today, but you don't have to do this if you don't want to. If you say you don't want to do this you can go back to class at any time and you don't have to tell me why. If you have any questions at any time during this session or want to stop, please raise your hand.

Do you understand?
Do you have any questions?
Do you agree to participate?

Name of participant: _____Date: _____

Appendix C: Composites for Relational and Physical Bullying

Participant Group	Corresponding Items
Relational Bully	Items 25, 26, and 28
Physical Bully	Items 27, 29, and 30

Appendix D: Index of Empathy for Children and Adolescents (Bryant, 1982)

Instruction for Children: Please indicate "T" if you feel the item is true of you, or "F" if you feel the item is not true of you. Please indicate your response next to each item.

1. It makes me sad to see a girl who can't find anyone to play with.
2. People who kiss and hug in public are silly.
3. Boys who cry because they are happy are silly.
4. I really like to watch people open presents, even when I don't get a present myself.
5. Seeing a boy who is crying makes me feel like crying.
6. I get upset when I see a girl being hurt.
7. Even when I don't know why someone is laughing, I laugh too.
8. Sometimes I cry when I watch TV.
9. Girls who cry because they are happy are silly.
10. It's hard for me to see why someone else gets upset.
11. I get upset when I see an animal being hurt.
12. It makes me sad to see a boy who can't find anyone to play with.
13. Some songs make me so sad I feel like crying.
14. I get upset when I see a boy being hurt.
15. Grown-ups sometimes cry even when they have nothing to be sad about.
16. It's silly to treat dogs and cats as though they have feelings like people.
17. I get mad when I see a classmate pretending to need help from the teacher all the time.
18. Kids who have no friends probably don't want any.
19. Seeing a girl who is crying makes me feel like crying.
20. I think it is funny that some people cry during a sad movie or while reading a sad book.
21. I am able to eat all my cookies even when I see someone looking at me wanting one.
22. I don't feel upset when I see a classmate being punished by a teacher for not obeying school rules.

Appendix E: Instructions for the Diagnostic Assessment of Nonverbal Accuracy-2, Child Faces Subtest (DANVA2-CF; Nowicki, 2004)

Specific Instructions: "I AM GOING TO SHOW YOU SOME PEOPLES' FACES AND I WANT YOU TO TELL ME HOW THEY FEEL. I WANT YOU TO TELL ME IF THEY ARE HAPPY, SAD, ANGRY, OR FEARFUL (SCARED). LET US START WITH CHILDRENS' FACES. IS THIS A HAPPY, SAD, ANGRY, OR FEARFUL FACE? GOOD, LET US TRY THE NEXT ONE."

Complete the 24 child faces giving the children about two seconds to look at each face.