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Does Theory of Mind Mediate Aggression and Bullying in Middle School Males and Females?

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DOES THEORY OF MIND MEDIATE AGGRESSION AND BULLYING IN MIDDLE SCHOOL MALES AND FEMALES?

by

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The purpose of this study was to investigate the relationship between theory of mind, gender, physical aggression, relational aggression, and bullying. Specifically, this research study was guided by the question: Does theory of mind mediate the relations between gender and physical aggression, gender and relational aggression, and gender and bullying? Three main hypotheses were made following Baron and Kenny's (1986) mediation model steps. The first hypothesis sought to identify whether gender differences existed in aggressive and bullying behaviors. Specifically, it was hypothesized that (a) adolescent females will endorse higher levels of relational aggression compared to adolescent males, (b) adolescent males will endorse higher levels of physical aggression compared to adolescent females, and (c) adolescent males and adolescent females will report similar engagement in bullying behaviors. The second hypothesis was that adolescent females will have higher theory of mind scores than adolescent males. Finally, it was hypothesized that theory of mind will mediate the relationship between gender and relational aggression, gender and physical aggression, and gender and bullying.

Participants for the study included 810 sixth, seventh, and eighth grade students from three Midwestern middle schools who participated in a larger longitudinal investigation examining school experiences in the United States, Japan, Korea, Australia, and Canada. Analyses were conducted using structural equation modeling (SEM) with latent variables. Results revealed a significant direct effect between gender and physical aggression. As hypothesized, males were more physically aggressive than females. There was also a significant direct effect between gender and theory of mind. Also as hypothesized, females had higher theory of mind scores than males. No indirect effects were identified. Additionally, theory of mind did not emerge as a mediator in the model.

Implications of the results are discussed as well as the applicability of the study findings to aggression and bullying prevention and intervention efforts. Study limitations and future research are identified.

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Chapter One: Introduction

Not many topics have spurred as much intellectual interest as childhood and adolescent aggression. Aggression represents a significant societal problem. It creates problems for the victim and the perpetrator; it disrupts learning, and drains a significant proportion of mental health and family resources (Hawley, 2007). Aggression and bullying are a ubiquitous problem in schools across the country, but it is difficult to detect the frequency of these behaviors. Prevalence rates appear to vary depending on the definition of bullying and methodology used by the researcher (Espelage & Swearer, 2003; Swearer, Siebecker, Johnson-Frerichs, Wang, in press). Estimates of bullying behavior have ranged from as low as 5 - 9% of students reporting being bullied regularly (Olweus, 1991). Higher estimates indicate approximately 29.9% of students report frequent involvement in bullying behavior (Nansel et al., 2001) and 76.8% reporting having been bullied at some point during their school years (Hoover, Oliver, & Hazler, 1992). Estimates of bullying behavior include both direct and indirect aggression (DeVoe & Kaffenberger, 2005) and ranges in frequency from monthly (Holt & Espelage, 2003), weekly (Charach, Pepler, & Ziegler, 1995), to daily involvement (National Center for Educational Statistics, 2006).

Aggressive and bullying behavior has traditionally been viewed as a within child phenomenon. When aggression is conceptualized as a problem within the child, it is viewed as a personality trait (e.g., Espnes, 1996). Labeled as a pathological or dysfunctional problem within the child, aggression has been historically viewed as maladaptive and socially incompetent. Markers of maladjustment have been noted for both the perpetrator and the victim throughout the literature (e.g., Coie & Dodge, 1998;

Hawley, Little, & Rodkin, 2007; Swearer, Grills, Haye, & Cary, 2004). Thus, aggression and bullying research has largely focused on the characteristics associated with the individual engaging in aggressive and/or bullying behavior (see Espelage & Swearer, 2003 for a review). Individual characteristics, including externalizing and internalizing problems, empathy, and social-information processing have been widely investigated from the within child perspective. Vaughn and Santos (2007) may have represented this best, describing the prevailing perspective of aggression throughout the literature:

> Regardless of whether an approach locates the source of aggressive behavior in the person, outside the person, or in the processes connecting the person to his or her context, such explanations have in common the underlying notion that aggressive behavior and trait aggressiveness are disruptive, undesirable, maladaptive, (probably) evil, and require remediation (p. 33).

The within child view of aggression and bullying, however, fails to consider the contextual and environmental influences involved in aggression and bullying behavior. In opposition to the within child viewpoint, recent research has suggested that aggression should be conceptualized within an ecological framework. Swearer and Espelage (2004) and others (Garbarino & deLara, 2002; Swearer & Doll, 2001; Swearer, Espelage, & Napolitano, 2009) have suggested that bullying is an ecological phenomenon involving the individual, family, peers, school, and community. The child's environment continually interacts with the child and the child and environmental systems influence each other (Swearer & Espelage, 2004). Thus, the focus should be on the complex systems interacting to influence one another, not exclusively on the individual.

Furthermore, the within child viewpoint does not account for the function that aggression and bullying often serve (Little, Jones, Henrich, & Hawley, 2003). From an evolutionary viewpoint, aggressive behavior serves a variety of adaptive functions, many reaching socially competent outcomes (e.g., social status, popularity; Smith, 2007). Developmentally, Hay (2005) noted that children become competent in their use of aggression in conflict situations. Overall, evidence exists that aggression can be an adaptive means of solving challenges (Hawley, 2007) or fulfilling needs (Stump, Ratliff, & Hawley, in press).

Consequences of Aggressive and Bullying Behavior

Notable maladaptive and adaptive consequences of aggression and bullying have been found throughout the literature. Aggressive children are often overtly disliked and systematically rejected from their peer groups (Coie & Dodge, 1998), suffering a number of negative outcomes including low academic achievement and risk-taking behavior (Brook & Newcomb, 1995). Physical aggression, relational aggression, and bullying are associated with markers of maladjustment (Card, Stucky, Sawalani, & Little, 2008). Youth who engage in aggressive and bullying behavior are at increased risk for criminal arrest (Farrington, 1991; Huesmann, Eron, & Dubow, 2002; Serbin, Schwartzman, Moskowitz, & Ledingham, 1991; Xie, Cairns, & Cairns, 2002), poor school performance (Serbin et al., 1991), school dropout (Kokko, Tremblay, Lacourse, Nagin, & Vitaro, 2006; Xie, Cairns et al., 2002), and physical violence (Kokko et al., 2006). They suffer from internalizing difficulties, including depression (Austin & Joseph, 1996; Duncan, 1999; Kaltiala-Heino, Rimpela, Marttunen, Rimpela, & Rantanen, 1999; Roland, 2002a, 2002b; Salmon, James, & Smith, 1998; Slee, 1995; Swearer, Song, Cary, Eagle, &

Mickelson, 2001), anxiety (Craig, 1998; Duncan, 1999; Salmon et al., 1998), loneliness (Crick & Ladd, 1993), and suicidal thoughts (Kaltiala-Heino et al., 1999; Roland, 2002b). Relational aggression is predictive of maladjustment independent of overt aggression, including behavior problems (Wolke, Woods, Bloomfield, & Karstadt, 2000), peer rejection (Crick & Grotpeter, 1995; Rys & Bear, 1997), depression (Crick & Grotpeter, 1995; Prinstein, Boergers, & Vernberg, 2001), and loneliness (Crick & Grotpeter, 1995; Prinstein et al., 2001).

The negative outcomes of aggressive behavior have been associated with incompetence and social skills deficits (Hawley, 2007; Smith, 2007). Proponents of the within child viewpoint purport that aggressive behavior is a result of flawed or deficient social information processing (e.g., Crick & Dodge, 1994). However, a growing number of researchers have found evidence that not all aggression is incompetent; at least some aggressive behaviors are adaptive, and even observed among competent and successful individuals (Vaughn & Santos, 2007). Years of research on aggression has led some to believe that not all aggression is “bad” (Hawley, 2007) or socially undesirable (Smith, 2007). From an evolutionary perspective, aggression must be serving an adaptive function (Hawley, Little, Rodkin, 2007) as not all aggressive children experience negative consequences as a result of their behavior. In fact, some experience quite the opposite. While it may be obvious from observing working adults (e.g., lawyers, CEO’s) who are competent and successful that aggressive tactics serve a particular function, many studies have concluded that aggressive children also reap the benefits of their aggressive tactics. Garbarino and deLara (2002) postulated that a “pro-social” kind of bullying is enacted by bullies from the dominant social groups (i.e., athletes). This

behavior is often acknowledged and approved by adults, making it even easier to create and maintain social hierarchies within schools. Hawley (2007) suggested an aggressor is capable of reaching socially successful outcomes by balancing prosocial and coercive strategies (i.e., bistrategic controller or Machiavellian).

The socially successful outcomes of aggressive behavior have been found in recent studies of aggression and prosocial outcomes. Aggressive behavior in youth has been linked to popularity (Andreou, 2006; LaFontana & Cillessen, 1998; Lease, Kennedy, & Axelrod, 2002; Rodkin, Farmer, Pearl, & Van Acker, 2000; Rose, Swenson, & Waller, 2004; Xie, Cairns et al., 2002; Xie, Swift, Cairns, & Cairns, 2002), social acceptance (Salmivalli, Kaukiainen, & Lagerspetz, 2000), and status improvement (Pellegrini & Bartini, 2001; Salmivalli et al., 2000; Sandstrom, 1999). Rose et al. (2004) found a bidirectional relationship between relational aggression and perceived popularity. A youth becomes powerful in his or her peer group through perceived popularity because he or she is affiliated with well-known social networks (Rodkin et al., 2000; Xie, Swift et al., 2002). Aggressors, such as “ringleader bullies” use their social networks and social-cognitive abilities to their advantage to predict the behavior of others to become expert manipulators in order to achieve social success (Salmivalli, Lagerspetz, Björkqvist, Österman, & Kaukiainen, 1996; Sutton, Smith, & Swettenham, 1999a, 1999b). These individuals are able to choose effective means of hurting another while avoiding detection and maintaining a positive reputation with their peers (Sutton et al., 1999a). It is not surprising then, that some aggressive behaviors function to gain positive peer attention and status when performed specifically to control resources (i.e., social dominance). Stump et al. (in press) discussed aggressors as successful balancers of

prosocial and coercive strategies, engaging in strategic rather than impulsive behaviors. Hawley (2003, 2007) labeled these individuals who combine and successfully balance coercive and prosocial strategies as bistrategic controllers or Machiavellians.

Hawley (2002) studied prosocial and coercive (antisocial) strategies, discovering a correlation between prosocial and coercive behaviors. Hawley (2003, 2007) described those who embody prosocial behaviors as prosocial controllers. Hawley described these individuals as socially skilled, agreeable, conscientious, and socially appealing; behaviors associated with social competence and popularity. Coercive controllers, on the other hand, are aggressive, hostile, more likely to cheat, and socially unskilled. They are viewed as socially incompetent and are rejected by their peers. Similar to coercive controllers, bistrategic controllers engage in aggressive and hostile behavior. However, like their prosocial controlling counterparts, they are also socially skilled, are viewed as attractive to their peers, are liked by teachers, and morally astute.

Bistrategic controllers or Machiavellians emerge as socially central, are reasonably liked by their peers, well adjusted, and are extrinsically and intrinsically motivated to achieve interpersonal control. Machiavellians are effective in resource control, balancing prosocial (getting along) and coercive behaviors (getting ahead). Since Machiavellians are so socially skilled, their aggressive strategies may go undetected by adults. From an evolutionary perspective, these individuals are considered successful at obtaining resources. Lastly, while bistrategic controllers rate themselves as having a higher than average positive affect and self-concept, noncontrollers lack positive affect and have a poor self-concept. Noncontrollers do not engage in aggression or hostility, are unpopular, and are perceived as rejected by their peers (Hawley 2003, 2007).

Subtypes of Aggression and Bullying

Youth who are effective at navigating their social world may have numerous aggressive tactics at their fingertips, which are moderated by their particular social context (Card & Little, 2007). Researchers have studied various subtypes of aggression which has historically focused on the aggressive behavior most typical of males, known as overt or physical aggression. Physical aggression has been defined as the use of force against another person, which may or may not include the use of objects (Tremblay & Nagin, 2005).

Subsequent investigations of aggressive behaviors resulted in a number of other terms used to describe forms of aggression. Behaviors that are aimed at inflicting relationship or social harm are viewed as covert in nature, and include indirect, covert, relational, and social aggression. Indirect aggression is described as behaviors that do not confront the victim, including gossiping, rejection, and exclusion (Lagerspetz, Björkqvist, & Peltonen, 1988). Crick and Grotpeter (1995) defined relational aggression as a form of aggression that targets the closeness of friendships. Relational aggression is defined as "harming others through purposeful manipulation and damage of their peer relationships" (Crick & Grotpeter, 1995, p. 711). Relationally aggressive youth are usually found to be more socially savvy, with the ability to manipulate the social hierarchy to their advantage. Social aggression, as defined by Galen and Underwood (1997) has been described as behaviors aimed at damaging the victim's self-esteem or reputation, through rejection, rumors, or social exclusion.

Bullying behavior encompasses both physical and relational acts. It has been recognized as a subset of aggressive behavior (Espelage, Bosworth, & Simon, 2001;

Pellegrini & Long, 2003), although the term is often used interchangeably with aggression. Although bullying has been considered to consist of aggressive behavior (Olweus, 1999) and those individuals who bully have been found more aggressive than their non-bullying counterparts (Swearer et al., in press), the definition of bullying differs from that of aggression. Bullying has been defined in a variety of ways, with most definitions noting the repeated nature of the offense as critical to the definition. Bullying has most recently been defined as "persistent, threatening, and aggressive behavior directed toward others, especially those who are smaller or weaker" (VandenBos, 2007, p. 139).

Gender Differences in Aggression and Bullying

Evidence has been somewhat mixed about which gender exhibits which type of aggression most frequently. Historically, boys have been considered to be the more aggressive sex (e.g., Espelage, Mebane, & Swearer, 2004). Many studies have found that males tend to exhibit physical aggression more often than females (Archer, Pearson, Westeman, 1988; Björkqvist, Lagerspetz, & Kaukiainen, 1992; Craig & Pepler, 1997; Crick, 1995; Crick, 2000; Crick & Grotpeter, 1995; French, Jansen, & Pidada, 2002; Lagerspetz et al., 1988; Pepler, Madsen, Webster, & Levene, 2005; Prinstein et al., 2001) and that females engage in relational aggression more often than males (Crick, 1996, 2000; Crick, Casas, & Mosher, 1997; Crick & Grotpeter, 1995; Rys & Bear, 1997). However, these gender differences have been known to differ with age, are often mediated by culture, and are overall inconsistent in the literature (Smith, 2007). For example, some studies have found relational aggression is enacted equally by both boys and girls (Espelage, Holt, & Henkel, 2003; Espelage et al., 2004; Rys & Bear, 1997).

Other studies have found boys to be more physically and relationally aggressive than girls (Henington, Hughes, Cavell, & Thompson, 1998). The literature also has conflicting evidence about which gender engages in bullying behavior most often. Boulton and Underwood (1992) found bullying and being bullied was more frequent among boys. Other studies have found no gender differences (Card et al., 2008; Craig, 1998; Espelage et al., 2003; Galen & Underwood, 1997; Storch, Brassard, & Masia-Warner, 2003; Underwood, 1997).

Theories of Aggression and Bullying

Social information processing. Numerous studies of aggressive behavior have promulgated the viewpoint that aggressive children and adolescents are socially incompetent, suffering from deficits in their ability to process social information (e.g., Crick & Dodge, 1994). The social information processing model is one of the most influential theories explaining aggressive behavior in humans. Crick and Dodge (1994) described the social information processing model, stating aggressive youth are biologically limited in their memory and behavioral responses. The social information processing model proposes that youth focus on cognitive cues through a series of six processing steps. A deficit during one or more of the six processing steps results in maladaptive or aggressive behavior (Crick & Dodge, 1994). In a meta-analytic review by Yoon, Hughes, Gaur, and Thompson (1999), social information processing deficits and biases were identified as prominent in aggressive children. While the social information processing model is a useful heuristic for explaining aggressive and bullying behavior, other explanations should be considered (Smith, 2007).

Resource control theory. Hawley described the successful aggressor under the theoretical model of resource control theory (Hawley, 1999, Stump et al., in press). Resource control theory consists of behaviors enacted with the goal of acquiring and utilizing material and social resources (Hawley, 1999, 2007). Drawing on evolutionary and social dominance theory, resource control focuses on the function of the behavior. Resource control strategies include prosocial and coercive strategies. Prosocial strategies are positively correlated with positive personality traits. On the other hand, coercive strategies are not always associated with negative personality traits, nor are they negatively associated with positive personality traits. Bistrategic controllers employ both prosocial and coercive strategies and are referred to as Machiavellians. These individuals are viewed as socially prominent and are not negatively impacted by the aggression they display.

Theory of mind. It has been argued that at least some aggressive children and adolescents are not incompetent, and actually use their aggression in adaptive ways. This may be more relevant for relationally aggressive youth, especially given the ties relational aggression has to social cognitive factors, including social intelligence (Kaukiainen et al., 1999; Xie, Swift et al., 2002). It has been argued that some aggressive children and adolescents possess a higher level of theory of mind, and use it to their advantage to manipulate social situations and benefit from their aggression (Sutton et al., 1999a, 1999b).

Sutton et al. (1999a) presented the notion that aggressive youth have the ability to understand others' strengths and weaknesses. They proposed that these youth posses a superior theory of mind, and are able to attribute mental states (e.g., beliefs, desires,

intentions, and emotions) to others in order to predict and explain their behavior (Baron-Cohen, 1995; Leslie, 1987). While research on theory of mind and aggression has not been widely investigated, there is support for the notion that aggressive youth use their social understanding of others to their advantage. For example, Sutton et al. (1999a) found that bullies scored higher on a theory of mind task than control participants. This cognitive and emotional understanding may be evident through the observation that aggressors choose a target for their aggression, usually someone with little to no social support, who is not well liked by the group, and who will tolerate being tormented (Salmivalli et al., 1996). Thus, evidence exists that aggressive individuals engage in strategic rather than impulsive behaviors (Stump et al., in press). This theory does little to maintain the within child viewpoint of aggression as maladaptive. Rather, it supports the argument by Hawley, Little, and Rodkin (2007) that not all aggression is maladaptive or socially incompetent as some aggressive and bullying behaviors benefit the perpetrator. In fact, in vying for social, informational, or material resources, aggressors can successfully and strategically balance aggressive behaviors with prosocial and cooperative behaviors (Hawley, 1999).

Purpose of the Study

This study investigated the relationship between gender, theory of mind, physical aggression, relational aggression, and bullying. Based on the evidence that some aggressive behavior serves a functional and adaptive purpose for the perpetrator (Hawley, Little, & Rodkin, 2007); this study examined the relationship between a superior and inferior theory of mind and types of aggressive and bullying behavior. Given the mixed findings in the research regarding aggression and gender, it is hypothesized that an

underlying intervening variable, theory of mind, may be contributing to differences in aggression between boys and girls. This study investigated theory of mind as a mediating variable between gender and aggression subtypes. The literature in this area is relatively unexplored and this study adds to the knowledge regarding the competent and adaptive nature of aggression.

Chapter Two: Literature Review and Theoretical Framework

Definition of Aggression

It is difficult to define what constitutes aggressive behavior and it is often mentioned as a problem within the research on aggression (Tremblay, 2000). There have been over 200 attempts to define aggression throughout the psychological literature in terms of its topography, antecedents, consequences, and social correlates. Various definitions have influenced the theory, methods, results, and interpretations of the research (Underwood, 2003) and created difficulties in measuring and interpreting aggressive behavior (Tremblay, 2000). Tremblay (2000) discussed the problem of various aggressive behavior definitions, including classifying children as "physically aggressive" when a scale may only have two items that measure physical aggression while the rest of the scale measures behaviors that are more irritating in nature versus aggressive (e.g., Achenbach & Edelbrock, 1983). Hay (2005) suggested that "definitions of aggression are multidimensional, requiring information about the specific intent of an action, its form and intensity, its provocation, and the interpersonal history of aggressor and victim" (p. 108).

The study of aggressive behavior has a long history in the social sciences. From the frustration-aggression hypothesis in social learning theory came the assertion that aggression is behavior intended to harm or driven by frustration or passion (Dollard, Miller, Doob, Mowrer, & Sears, 1939). Another often cited description of aggression is Parke and Slaby's (1983), definition as a "behaviour that is aimed at harming or injuring another person or persons" (p. 550). Intent to harm and the victim feeling hurt are two features common to most definitions of both physical and nonphysical forms of

aggression (Galen & Underwood, 1997). However, Hay (2005) suggested intent is a developmental phenomenon, making it difficult to measure.

In response to the long history of aggression research, Vaughn and Santos (2007) call attention to the "bad reputation" that has been given to aggressive behavior in research and society, noting most explanations of aggressive behavior describe it as "disruptive, undesirable, maladaptive, (probably) evil, and require remediation" (p. 33). In contrast to these explanations Hawley and colleagues (2007) presented the notion that aggressive individuals can be socially successful; meaning aggression may serve an adaptive function. They suggested that aggressive behavior serves an evolutionary and adaptive function in gaining social status and garnering positive peer and social outcomes. By implementing both prosocial and coercive strategies, aggressive youth obtain resources desired by many. Additionally, for those who could not obtain their goals without the use of aggression, natural selection may help shape aggressive behavior (Hawley, Little, and Rodkin, 2007; Vaughn & Santos, 2007). However, when aggressive behavior is continued without the achievement of goals or socially meaningful gains; it should not be considered competent (Vaughn & Santos, 2007). Therefore, it is meaningful to explore the manifestations of aggressive behavior and their functional relevance.

Subtypes of Aggressive and Bullying Behavior

Numerous subtypes of aggressive behavior have been proposed and defined throughout the aggression literature in attempts to better understand individual and group behavior. Most frequently studied are those who are overtly aggressive. Overtly aggressive children use their aggression to harm those outside their friendship group

(Grotpeter & Crick, 1996) through physical damage or the threat of physical damage (e.g., hitting, shoving, threatening; Grotpeter & Crick, 1996; Olweus, 1978; Parke & Slaby, 1983). Physical aggression may be the most widely recognized form of overt or direct aggression and also one of the most serious forms of antisocial behavior (Lee, Baillargeon, Vermont, Wu, & Tremblay, 2007). In fact, physical aggression is one of the criteria for the diagnosis of conduct disorder (i.e., "often bullies, threatens, or intimidates others," American Psychological Association, 2000, p. 98). Physical aggression usually takes place in a face-to-face confrontation (Espelage & Swearer, 2003) and includes behaviors that threaten or cause bodily injury, such as making threats of harm, fighting, and violent crimes (Loeber & Hay, 1997). Physical aggression has also been defined as the use of force against another person, which may or may not include the use of objects (Tremblay & Nagin, 2005).

While the overt or direct nature of aggression has been studied for decades, indirect forms of aggression have not received as much attention in the research until relatively recently. The popular culture has become increasingly interested in the expression of indirect aggression, as evidenced by its interest in mainstream books such as the *New York Times* bestseller (and basis for the movie *Mean Girls), Queen Bees & Wannabes* (Wiseman, 2002) and *Odd Girl Out* (Simmons, 2002). Indirect aggression (e.g., Björkqvist et al., 1992; Buss, 1961; Lagerspetz et al., 1988) was the first term to emerge to describe the topography of nonphysical behavior. Buss (1961) first used the term indirect aggression to describe aggressive behavior in which the aggressor was not easily observed. Later, Björkqvist et al. (1992) defined indirect aggression as "a type of

behavior in which the perpetrator attempts to inflict pain in such a manner that he or she makes it seem as though there has been no intention to hurt at all" (p. 118).

Viewed as both overt and indirect behavior, verbal aggression (Parke & Slaby, 1983) has not received much empirical attention as a distinct form of aggression (Underwood, 2003). Verbal aggression has been characterized by threats of physical aggression and yelling (Parke & Slaby, 1983). Kochenderfer-Ladd and Ladd (2001) distinguished overt verbal aggression (e.g., name-calling, insults, threats) and indirect verbal aggression (e.g., talking behind the victim's back). Also viewed as indirect behavior, social aggression (e.g., Galen & Underwood, 1997; Underwood, 2004) is viewed as subtle, indirect behavior that is just as hurtful as physical aggression (Galen & Underwood, 1997). Social aggression is aimed at damaging another's self- esteem and social status. Underwood (2004) posits that social aggression can be direct (e.g., verbal rejection, negative facial expressions) or indirect (e.g., rumors, social exclusion). Other behaviors manifested through social aggression include hurting another's social status or friendships through nonverbal and verbal social exclusion, gossip, and friendship manipulation (Galen & Underwood, 1997; Paquette & Underwood, 1999; Underwood, 2003). It has also been referred to as non-confrontational or concealed behavior, including ostracism, alienation, or character defamation (Cairns & Cairns, 1994; Cairns, Cairns, Neckerman, Ferguson, & Gariepy, 1989). It is less likely that social aggression will be detected and punished by adults or avenged by victims (Xie, Cairns et al., 2002; Xie, Cairns, & Cairns, 2005).

Similar behaviors have been noted in a form of aggression defined by Crick and Grotpeter (1995), relational aggression. Crick and Grotpeter (1995) defined relational

aggression as “harming others through purposeful manipulation and damage of their peer relationships” (p. 711). These authors hypothesized that girls would damage the goals other girls found salient to them (e.g., relationships, reputation, etc.) just as boys have historically harmed through physical means, achieving physical dominance and power. Relational aggression consists of both direct (e.g., telling someone they are not your friend anymore unless they do something for you) and indirect behaviors (e.g., spreading rumors; Cairns & Cairns, 2000). Relational aggression is aimed at inflicting harm by manipulating peer relationships, including behaviors such as gossiping, rumor spreading, social exclusion, and ostracizing. It is further characterized by high levels of intimacy, exclusivity, and jealousy (Grotpeter & Crick, 1996). While educators and mental health professionals work to better understand indirect aggression and its correlates, researchers are still debating on the most appropriate term to define indirect behaviors (Merrell, Buchanan, & Tran, 2006). Different labels have been given to indirect forms of aggression to emphasize the topography of the act. However, the commonality is that the behaviors can be subtle and socially sophisticated; making the aggressor difficult to detect.

Aggression has also been subtyped into functions, specifically proactive and reactive aggression. Reactive aggression is angry, defensive, and responsive to a real or perceived threat (Crick & Dodge, 1996; Dodge & Coie, 1987). Reactively aggressive youth hold more hostile attributions than their nonaggressive peers (Crick & Dodge, 1996) and their aggression is motivated by both accurate and inaccurate perceptions of a real or perceived threat. Proactive aggression, on the other hand, is defined as behavior intended to achieve personal gain through attainment of status or desired objects. It is

deliberate behavior focused on reaching an instrumental (not relational) goal. This type of aggression is focused on self-enhancement through material or territorial gain (i.e., external reward) (Crick & Dodge, 1996; Dodge & Coie, 1987).

Bullying, a subset of aggressive behavior, is frequently used interchangeably with aggression both colloquially and within the aggression literature, creating issues in operationalizing the construct (Underwood, 2003). Anti-bullying initiatives which began as a result of Scandinavian research during the 1970's (e.g., Olweus, 1978). Olweus (1995) defined bullying as aggression in which a more powerful individual or more powerful group inflicts negative acts repeatedly upon those who are less powerful. Bullying has been primarily viewed as proactive aggression due to its aggressive behaviors enacted without provocation (Espelage & Swearer, 2003). Students recognize both relational and physical forms of bullying. For example, students aged 12-18 endorsed being victims of verbal (i.e., being made fun of, 19%), social (i.e., rumors, 15%), and physical means (i.e., pushed, shoved, tripped, or spit on, 9%; National Center for Education Statistics, 2006). Bullying occurs along a continuum, with students moving in and out of involvement ranging from categorization as a bully, victim, bully-victim, bystander, and not involved (Espelage & Swearer, 2003).

While some argue that there is no universal definition of bullying (Rigby, Smith & Pepler, 2004), many researchers agree that Olweus's definition is the most widely accepted and accurate definition of bullying (e.g., Camodeca & Goossens, 2005; Espelage & Swearer, 2003; Kokkinos & Panayiotou, 2004). Consequently, bullying researchers (e.g., Swearer, 2001) have begun to include the three components of Olweus's (1995, 1999) definition in their description and measurement of bullying

behavior: (1) the behavior is aggressive and negative, (2) the behavior is perpetrated repeatedly, and (3) the behavior occurs in a relationship characterized by an imbalance of power. Most recently, bullying has been defined as "persistent, threatening, and aggressive behavior directed toward others, especially those who are smaller or weaker" (VandenBos, 2007, p. 139).

For the current study, efforts were made to define bullying consistently across countries. Therefore, a description of the behavior that includes the critical elements as put forth by Olweus (1993), including, intentionality, repetition, and imbalance of power was used. The term "bullying" was not used since it has different meanings in other cultures. Therefore, the following definition was adapted from Olweus (1993) and used to assess bullying frequency in the current study.

> There are many different ways students can be mean and use negative behavior against others in the group who cannot defend themselves easily. We are interested in how often over the past two months you have taken part in being mean or negative to others (Konishi et al., 2009, pg. 86).

Prevalence of Aggression and Bullying

While prevalence rates of bullying appear to vary depending on the definition of bullying and methodology used by the researcher (Espelage & Swearer, 2003; Swearer et al., in press), even conservative estimates of prevalence rates indicate bullying is a significant factor in children's lives. For example, in Midwestern schools, Hoover et al. (1992) found that 76.8% of middle and high school students reported having been bullied at some point during their school years. In a large-scale study of over 15,686 sixth through tenth grade students in the United States, 29.9% of the students reported

moderate to frequent involvement in bullying at school. Thirteen percent reported involvement as a bully, 10.6% were victimized, and 6.3% indicated they were both a victim and a perpetrator of bullying behavior (Nansel et al., 2001). Olweus (1991) found that between 5% and 9% of children ages 7 to 16 (N = 130,000) reported being bullied regularly.

It is problematic to compare prevalence rates from different studies due to the differing definitions and methods of assessing bullying across researchers and cultures (Swearer et al., in press). To examine this disparity in the bullying literature, Swearer et al. (in press) defined three different cut-off points for measuring bullying involvement based on self-report data for over 1,000 sixth through eighth grade students. The three bully statuses were determined based on (1) endorsing "yes" to "Did you bully anyone this school year?" (2) indicating bullying "one or more times a day" or "one or more times a week" and (3) indicating "often happened" or "always happened" to a verbal and physical list of items. These authors found that prevalence rates varied from 2.5% to 8% depending on the cut-off point used to assess bullying behavior. Several large-scale studies also illustrate the disparity across methodologies.

The problem of aggressive behavior in schools across the country has been highlighted by several large scale surveys on both aggression and bullying. The 2007 national Youth Risk Behavior Survey (YRBS) was completed by 14,103 students in 157 schools in the ninth through twelfth grade students across the United States to assess aggressive behavior. Of those students, 35.5% reported they were involved in a physical fight (12.4% on school property) in the 12 months prior to the survey. Males reported higher rates of physical aggression on school property than females (i.e., 16.3% and

8.5%, respectively). Overall, 5.5% of the students indicated they had missed school on more than one occasion in the 30 days prior to the survey because they felt unsafe at school or on their way to and from school. The prevalence of property damage (having property stolen or damaged while on school property) among students was 27.1% (males, 30.4%; female, 23.7%; Center for Disease Control and Prevention, 2008).

The United States Department of Education surveyed 8,374 students, ages 12 to 18 years about their bullying experiences. Of those students, 14% reported they were bullied at school in the six months prior to the interview. Three percent reported they were bullied directly (i.e., physical means) and 7% reported they were bullied indirectly (i.e., social exclusion or rejection). Five percent reported they were bullied both directly and indirectly (DeVoe & Kaffenberger, 2005). A younger sample of 1,982 students between the ages of six and nine were interviewed in 2000 to determine bullying involvement. Direct bullies were identified as 4.3% of the students and relational bullies comprised 1.1% of the students. When direct and indirect behavior was analyzed for overlap, 22.5% were physical bullies (and relational neutrals) and 13.1% were relational bullies (and physical neutrals). However, it is interesting to note that 39.8% of the students were identified as victims of direct bullies and 37.9% were identified as victims of relational bullies (Wolke et al., 2000).

A 2005 National Crime Victimization Survey of students aged 12-18, found 28% of students were bullied during the last six months. Fifty-three percent of students reported they were bullied once or twice during the past six months, 25% reported experiencing bullying once or twice a month, 11% indicated they were bullied once or twice a week, and 8% reported being bullied almost daily. Bullying consisted of being

made fun of (19%), victimized through rumors (15%), and through physical means (9%; i.e., pushed, shoved, tripped, or spit on; National Center for Education Statistics, 2006).

Development of Aggression and Bullying

Aggressive behaviors, whether seen as maladaptive or adaptive, vary in terms of form and function; displaying different developmental patterns (see Vitaro, Brendgen, & Barker, 2006). Few studies have traced the development of physical aggression over time (Brame, Nagin, & Tremblay, 2001). Tremblay et al. (1999) studied the onset of physical aggression among 17-month-old children. Through mother reports of their child's behavior, mothers reported an increase in physical aggression from 12 to 17 months. By the age of 17 months, around 80% of the mothers reported that their children were physically aggressive.

As children age they engage in fewer physically aggressive acts, as the motor skills necessary for children to inflict physical harm develop prior to children's verbal, cognitive, and social capacity to inflict mental or emotional harm (Brame et al., 2001). Researchers have found that physically aggressive behaviors tend to peak during early childhood (Tremblay et al., 1999) and steadily decrease from ages 10 to 18 years (Cairns & Cairns, 1994; Cairns et al., 1989). Several developmental studies have proven these trajectories to hold true. For example, a cross-sectional study of Canadian children found that maternal reports of physical aggression decreased in children ages 2 to 11 and indirect aggression increased from ages 4 to 11 (Tremblay, Masse, Pagani, & Vitaro, 1996). In a Canadian study of 12,292, 5 to 11-year-old children, Lee et al. (2007) found that the prevalence of physical aggression in females decreased with age, while no age differences were detected in the physical aggression of males.

Others have found that once dominance within the peer group is established, bullying behaviors decrease. For example, Pellegrini and Bartini (2001) found bullying behaviors initially increased following a transition from the fifth to sixth grade; however, once peer groups were established, dominance decreased and was characterized by affiliation versus aggression by the end of the sixth grade year. In a seven year longitudinal study by Pepler and colleagues (2008), bullying decreased from late elementary school to high school. Students who reported moderate levels of bullying had similar risks as the group who reported bullying with high frequency. However, over the course of the study relatively few adolescents could be classified as following a "career path" (defined by Farrington (1993) as frequent bullying over an extended period of time). Additionally, those whose bullying behavior desisted over time had similar risk variables as the group who never bullied (Pepler et al., 2008).

On the other hand, Espelage et al. (2001) examined bullying behavior among 500 sixth through eighth grade students and found that bullying behavior increased over a four month period during the sixth grade. As the sixth graders struggled to fit into the school climate, it appeared that they engaged in bullying behavior to become part of the culture of the school. Similarly, Nansel et al. (2001) found the frequency of bullying behaviors was higher among students in sixth through eighth grade compared to students in ninth through tenth grade. Pepler and colleagues found that bullying decreased from late elementary school to high school (Pepler, Jiang, Craig, & Connolly, 2008).

The topography of bullying behavior varies with age. During the preschool years, peer and teacher reports of aggressive behavior found relationally aggressive behavior to be distinct from overt aggression (Crick et al., 1997). Similarly, knowledge of the threats

of social exclusion has been acknowledged in a group of 3 to 5-year-old children (Giles & Heyman, 2005). Several studies have found that older children engage in fewer overt bullying behaviors than younger children (e.g., Craig, 1998; Crick & Grotpeter, 1995; Olweus, 1991). Craig (1998) found that male bullies in the fourth through sixth grades reported higher levels of physical aggression than non-bullies, but higher levels of verbal aggression as they reached the seventh and eighth grade. As female bullies aged, they endorsed higher levels of verbal aggression than non-bullies. Relational aggression peaks in middle childhood (Cairns et al., 1989; Crick & Grotpeter, 1996) as desires for intimacy and closeness in relationships increase from childhood to adolescence, and continues to adulthood (Werner & Crick, 1999).

As adolescent's cognitive and verbal capacities develop, they may use these skills for the social manipulation involved in relational aggression (Björkqvist et al., 1992). Children and adolescents' knowledge and responses to social situations become adept when they have been successful in social situations and have been socialized by adults. Through development, children and adolescents are better able to pay attention to the subtle details of a social situation. While this makes it difficult to detect the subtle behavior of relational aggression, this ability is also used when the aggressor wants to avoid risking his/her reputation (e.g., being seen as a bully) so the individual asserts his/her dominance "invisibly." Therefore, if confronted, the aggressor can deny the behavior as an unintended offense (Baron-Cohen, 2003).

Gender, Aggression, and Bullying

Early studies of peer aggression have primarily focused on the overt, physical aggression most typical of males (Crick, 2000); with overwhelming evidence that males

are more overtly aggressive than females (Björkqvist et al., 1992; Crick, 2000; Crick & Grotpeter, 1995; Espelage et al., 2004; Prinstein et al., 2001; Rys & Bear, 1997; Tomada & Schneider, 1997). However, more recent investigations have added relational aggression to the mix. While there have been some inconsistent findings, multiple studies have found that females are usually more relationally aggressive than males (Archer et al., 1988; Bjorkqvist et al., 1992; Craig & Pepler, 1997; Crick, 1995, 2000; Crick & Grotpeter, 1995; Crick et al., 1997; French et al., 2002; Lagerspetz, et al., 1988; Pepler et al., 2005; Prinstein et al., 2001; Rys & Bear, 1997). However, at least one study of school-aged youth in grades four to ten, found that boys and girls engaged in relationally aggressive behavior equally (Galen & Underwood, 1997).

Crick (1995) posited that girls may engage in relational aggression more frequently than boys because relational aggression is an effective means of inflicting harm and gaining control over peers in the peer group. In sum, relational aggression leads to desired outcomes typical of girls. In the first systematic research study on relational aggression, Crick and Grotpeter (1995) studied 491 third through sixth grade students. Through peer nominations, relational and overt aggression emerged as related but separate constructs. While boys and girls were found equally aggressive, the overtly aggressive group consisted of mainly boys while the relationally aggressive group consisted mainly of girls. Gender differences may also account for social-psychological adjustment as Crick and Grotpeter (1995) found that girls were more adversely affected than boys by social problems. This could be because relationally aggressive children were significantly more disliked, rejected, and controversial than other children. Another study by Crick, Bigbee, and Howes (1996) investigated gender differences in aggression

between third through sixth grade students and found that both sexes identified relational aggression as a normative behavior.

Björkqvist et al. (1992) examined direct physical aggression, direct verbal aggression, and indirect aggression among 8-, 11-, and 15-year-old students. These authors found that boys at all three age groups displayed more direct aggression, while girls displayed a somewhat higher level of indirect aggression at ages 11 and 15. These findings support the notion that indirect aggression may be an adolescent phenomenon. Similar findings were reported in a cross-cultural study of 11 to 14-year-old United States and Indonesian students. Adolescent males were found to be more overtly aggressive in general and Indonesian males were more overtly aggressive than United States males. Adolescent females in both cultures reported more relationship manipulation, social ostracism, and malicious rumors than adolescent males (French et al., 2002).

Supporting the theory that boys are the more aggressive sex, both self-report (Little et al., 2003) and peer nomination studies (Henington et al., 1998; Tomada & Schneider, 1997) have found boys to be more relationally and overtly aggressive than girls. In a study of 1,723 fifth through tenth grade students, Little et al. (2003) found a modest difference favoring boys as the more relationally aggressive sex. However, the authors contended, “A likely reason for these findings is that the subjective criterion for self-describing one’s behaviour as relationally aggressive may be less pronounced in males than in females.” (p. 130). Additionally, the adolescent participants are of an increased developmental level from previous studies (e.g., Crick’s elementary school age participants), which may reflect actual developmental changes over time as described previously.

In a study of second and third grade students (N = 904), Henington and colleagues (1998) found male students were more aggressive than female students, in both relational and physical aggression. Similarly, using peer and teacher nominations, Tomada and Schneider (1997) found that Italian boys aged 8 to 10-years were more relationally and overtly aggressive than girls. This was contrary to their hypothesis that girls would be more relationally aggressive than boys. However, it should be noted that the gender difference in relational aggression only emerged through peer nomination data and not through teacher nomination data. The peer nomination data contained only a small percentage gap in favor of boys; the authors note that cross-cultural differences may explain these results as boys may have the opportunities to learn more relationally aggressive behaviors from their close knit families.

In studies of bullying behavior, Boulton and Underwood (1992) found bullying and being bullied was more frequently reported by boys than girls. Nansel et al. (2001) found males to be perpetrators of bullying more frequently than females. Sharp and Smith (1991) found boys more likely to be involved in physical bullying and threats, while girls were more involved in verbal and social bullying. Other studies have found no gender differences in aggressive and bullying behavior (Card et al., 2008; Craig, 1998; Espelage et al., 2003; Galen & Underwood, 1997; Storch et al., 2003; Underwood, 1997).

It is difficult to discern an exact understanding of the relationship between gender and aggression. Underwood, Galen, and Paquette (2001) discussed methodological challenges leading to a gap in our understanding, including numerous subtypes of aggression, various definitions, and the inability to observe some types of aggressive behavior. Therefore, it may be more beneficial to examine why these gender differences

exist, rather than simply documenting their existence. Espelage et al. (2004), discussed ways to “move beyond mean level differences” in gender by exploring individual and environmental characteristics and the theories used to explain the development of aggression and bullying among males and females. Individual characteristics are often shaped by environmental influences, including maladaptive and adaptive consequences of aggression and bullying.

Maladaptive and Adaptive Consequences of Aggressive and Bullying Behavior

Engagement in aggressive behavior is an indicator of severe short-, and long-term consequences, including negative effects on the health and well being of children. Physical aggression is related to a myriad of problems including increased risk for criminal arrest (Farrington, 1991; Huesmann et al., 2002; Serbin et al., 1991; Xie, Cairns et al., 2002), rejection (Huesmann et al., 2002), poor school performance (Serbin et al., 1991), school dropout (Kokko et al., 2006; Xie, Cairns et al., 2002), and physical violence (Kokko et al., 2006). In a longitudinal study of aggression, Farrington (1991) examined the aggressive behavior patterns of 411 males from ages 8 to 32 years. Of the 93 boys who were identified as aggressive from the ages of 8 to 10 years, Farrington (1991) found that 57% were convicted of a criminal act by age 32. Similarly, of the 134 12 to 14-year-old boys, 56.7% were convicted of a criminal act by age 32 and of the 119 16 to 18-year-old boys, 61.3% had a conviction by age 32. Aggression from ages 12 to 14 and 16 to 18 years also significantly predicted marijuana use and self-reported offending (e.g., burglary, shoplifting, vandalism). Similarly, Serbin et al. (1991) found that aggressive males (45%) were more likely than aggressive females (3.8%) to commit a criminal offense. Aggression in females is associated with negative consequences.

Aggressive females have been found more likely to become adolescent mothers, single parents, and to have higher levels of psychiatric symptomatology.

Early acts of aggression have predicted negative long term outcomes for aggressive youth. For example, in a longitudinal study of aggressive behavior, Huesmann et al. (2002) found that aggression at age eight was the single largest predictor of aggression 22 years later. This research study started in 1960 with 856 third grade students, using peer nominations to measure aggression. The researchers studied a number of variables to assess risk factors for aggression including mother's age, child's birth weight, family background (e.g., parents' education, value of family housing), parents' beliefs and behaviors (e.g., parents' delinquency), family interaction variables (e.g., parents' rejection of child, parental disharmony, child's IQ, and peer-nominated popularity). While many of these variables were predictive of adult criminality individually, they did not add prediction once aggression at age eight was considered. Thus, early aggression emerged as the largest risk factor for adult criminality. A similar finding emerged from a study by Kumpulainen and Rasanen (2000) who found that those who bullied at age 8 or 12 were more likely to be deviant at age 15, compared to those who did not bully.

Aggression and bullying are linked with behavior problems (Wolke et al., 2000) and peer rejection (Crick & Grotpeter, 1995; Dijkstra, Lindenberg, & Veenstra, 2008; Rys & Bear, 1997). Victimization has been associated with depression (Callagan & Joseph, 1995) and anxiety (Craig, 1998; Olweus, 1994; Slee, 1994). Bully-victims are also at risk for depression (Austin & Joseph, 1996; Swearer et al., 2001) and anxiety (Duncan, 1999; Swearer et al., 2001). Physical and relational aggression have been found

to be independently related to maladjustment (e.g., Crick, 1995, 1996; Crick & Grotpeter, 1995) and peer difficulties (Werner & Crick, 2004). Aggressive and bullying behaviors have been linked to depression (Austin & Joseph, 1996; Crick & Grotpeter, 1995; Duncan, 1999; Kaltiala-Heino et al., 1999; Prinstein et al., 2001; Roland, 2002a, 2002b; Salmon et al., 1998; Slee, 1995; Swearer et al., 2001), anxiety (Craig, 1998; Duncan, 1999; Salmon et al., 1998), loneliness (Crick & Grotpeter, 1995; Prinstein et al., 2001), and suicidal thoughts (Kaltiala-Heino et al., 1999; Roland, 2002b). Studies have found relational aggression is marked by peer rejection, loneliness, depression, and negative self-perception (Crick, 1996; Crick & Grotpeter, 1995, 1996; Rys & Bear, 1997). Crick (1996) found that without intervention, relationally aggressive girls became increasingly more rejected throughout the school year. Relational aggression has also been found to be more distressing for girls than boys (Crick, 1995).

Crick (1996) examined aggression, prosocial behavior, and social adjustment among 245 third through sixth grade students at three time points during one academic year. A peer nomination measure was used to assess overt aggression, relational aggression, and prosocial behavior. Teacher ratings were designed to mirror the peer nomination measure to assess social behavior and social adjustment from the perspective of the teacher. Based on both nomination measures, relational and overt aggression was positively correlated with future peer rejection for both boys and girls, and negatively correlated with future peer acceptance for girls only. Additionally, a lack of prosocial skills at the beginning of the school year predicted year end rejection for boys and less peer acceptance for girls. Additionally, relationally aggressive girls became more rejected throughout the year. In their 1995 study of 252 third through sixth grade students, Crick

and Grotpeter found the children identified through peer nomination as relationally aggressive were more socially and emotionally maladjusted than their non-relationally aggressive peers; including problems with peer relationships, rejection, loneliness, depression, and isolation. These results were more salient for girls than for boys.

Prinstein et al. (2001) studied 566 adolescents in grades nine through twelve, assessing overt and relational aggression and victimization through self-report questionnaires. The authors identified four groups of aggressors, including relational aggressor, overt aggressor, both relational and overt aggressor, and neither relational nor overt aggressor. They found relational and overt aggression to be distinct constructs as in the previously described studies. Additionally, relational aggression explained a significant amount of the variance in girls' externalizing behavior. This was not true for boys. Relational victimization was related to girls' internalizing symptoms. The authors also found that adolescents who self-reported being both overtly and relationally aggressive (as well as those who endorsed receiving both forms of victimization), endorsed feeling more social-psychological maladjustment than adolescents who self-reported one or no forms of aggression involvement. This included significant effects for depression, loneliness, and externalizing behavior. Of those who self-identified as overtly aggressive, girls reported greater levels of depression and lower self-esteem than boys. Relationally aggressive males reported being more lonely than relationally aggressive females.

Despite the historical viewpoint that aggressive behavior is a within child problem, a marker of incompetent behavior, and symptomatic of pathology, some studies have reported that aggressive behavior is adaptive and even beneficial for the aggressor.

Hawley (2007) argued that aggressive individuals, especially those who are socially skilled, have more social options than many of their non-aggressive counterparts. Hawley (2007) labeled aggressive individuals who experience social success through their behaviors *bistrategic controllers* or *Machiavellians*. These individuals balance both prosocial and coercive strategies. In other words they are able to get along and get ahead in relationships with peers. Despite sharing aggressive behavior strategies with their coercive counterparts, these individuals do not suffer negative consequences from their aggression. Bistrategic controllers or Machiavellians are highly relationally and overtly aggressive, socially aware, and morally developed. While these individuals are aggressive, studies have found they achieve social dominance in their relationships during preschool (Hawley, 2002) and adolescence (Hawley, Little, & Pasupathi, 2002). Perhaps, while it is counterintuitive to say that aggression is "good," there is growing evidence from an evolutionary perspective that aggression is adaptive and functional and that antisocial and prosocial characteristics are not mutually exclusive. Evidence suggests aggressive individuals who have reaped more benefits than costs through their strategies have survived natural selection.

Dominant and adaptive aggressive behavior is observable as many of the commonly held stereotypes of aggression (e.g., manipulation, hostility, and deception) may describe successful individuals (Hawley, 2007). Vaughn and Santos (2007) may have depicted this relationship best when they stated aggression can be observed among the "most competent and successful." The aggression literature provides evidence that not all aggression leads to negative outcomes, in fact a growing number of studies have found that aggression is linked to popularity (Andreou, 2006; LaFontana & Cillessen,

1998; Lease et al., 2002; Rodkin et al., 2000; Rose et al., 2004; Xie, Cairns et al., 2002; Xie, Swift et al., 2002), social acceptance (Salmivalli et al., 2000), and status improvement (Pellegrini & Bartini, 2001; Salmivalli et al., 2000; Sandstrom, 1999). LaFontana and Cillessen (1998) found that while aggressive youth are popular, they are not well liked. However, aggressive youth are actually often at the center or nucleus of peer groups (Rodkin et al., 2000). Relationally aggressive youth, for example, are embedded among their social and peer networks, with those in the center employing aggressive strategies. The subtle behaviors of relational aggression make it possible for the aggressor to conceal his or her behavior and identity (Xie, Cairns et al., 2002; Xie, Swift et al., 2002), which may give cause to the link between relational aggression and social intelligence (Kaukiainen et al., 1999; Xie, Swift et al., 2002).

The subtle behaviors seen in relational aggression may be strategic, with the desired goal of obtaining or maintaining social status (Archer, 2001). Andreou (2006) found that relational aggression led to increases in perceived popularity, while overt aggression predicted decreases in perceived popularity in fourth through sixth grade students. Similarly, in a longitudinal study, Rose et al. (2004) found that initial perceived popularity predicted increases in relational aggression, but not overt aggression in fifth, seventh, and ninth grade boys and girls. Initial relational aggression in older girls also predicted increased perceived popularity over the course of the study. Given these findings, the benefits of aggression may be more salient for relationally aggressive versus physically aggressive youth. Also finding support for the advantages of relational aggression, Xie, Swift, et al. (2002) gathered aggressive behavior information using semi-structured interviews from 475 seventh grade students and teacher ratings from the

Carolina Longitudinal Study (i.e., Cairns & Cairns, 1994). Relational aggression was found to be associated with academic competence, popularity, and affiliation.

Aggression and bullying have been found to be related to popularity. In a study by Rodkin et al. (2000), all-male fourth through sixth grade students were assessed in subtypes of popularity (i.e., popular-prosocial and popular-antisocial) through teacher ratings, peer ratings, and self-report measures. Results of the study revealed a heterogeneous group of popular boys. The popular-prosocial group (model boys) and the popular-antisocial group (tough boys) both demonstrated characteristics of social centrality in the classroom. Teachers rated tough boys as popular and extremely aggressive. Peers viewed tough boys as "cool, athletic, getting into fights, causing trouble, and being disruptive," while tough boys rated themselves as "popular, aggressive and physically competent" (p. 21). Other studies have identified links between bullying behavior and popularity (DeBruyn & Cillessen, 2006; Dijkstra et al., 2008; Lease et al., 2002). One study found that when popular students bullied others, the negative consequences were not as distressing (Dijkstra et al., 2008). Bullying has also been found to successfully enhance peer group status (Pellegrini & Bartini, 2001). Pellegrini and Bartini (2001) found bullying behavior was implemented to gain initial status and later decreased once that dominance was established. When bullying is viewed as normative behavior in a classroom, those who bully others have been found to be less likely to be rejected and are even preferred by their friends (Sentse, Scholte, Salmivalli, & Voeten, 2007). In a study of the effects of peer groups, Espelage et al. (2003) found that those students who bully and fight affiliate with other students who bully and fight at the same rate. Thus, at least some studies have found evidence that there is a sense of affiliation or

homophily with those who are like them and instead of rejecting those who are aggressive; they accept, embrace, and are influenced by their behavior.

The question may be then; do the benefits of aggressive behavior offset the costs? Overall costs and benefits of aggressive behavior were analyzed by Leadbeater and colleagues (2006) in a study of eighth through tenth grade students (N = 449). They found that relationally aggressive students received more prosocial attention, but also reported more relational victimization than physically aggressive students. On the other hand, physically aggressive students were more accepted by their peers, but were also more victimized overall and more depressed than their peers. They found that perceived popularity was not related to aggression. However, the authors argued that either the corollary nature of aggression and popularity declines in adolescence or self-reported popularity is underreported by those who are popular (Leadbeater, Boone, Sangster, & Mathieson, 2006).

Theoretical Explanations for Aggression and Bullying

Social Information Processing

Social information processing models are currently one of the most widely utilized theoretical frameworks to describe youth social adjustment (Bijttebier, Vasey, & Braet, 2003; Crick & Dodge, 1994; Dodge, 1986; Dodge & Crick, 1990; Dodge et al., 2003; Ingram, Fidaleo, Friedberg, Shenk, & Bernet, 1995; Lochman & Dodge, 1994; Lösel, Bliesener, & Bender, 2007; Pettit, Polaha, & Mize, 2001; Schultz, Izard, & Ackerman, 2000). Research on social information processing models has focused on children's social cognitions to provide an understanding of children's social adjustment and behavior (see Yoon et al., 1999, for a review). This theory holds that children engage

in aggressive acts as a result of deficiencies during processing (Crick, Grotpeter, & Bigbee, 2002). The social information processing paradigm has informed researchers for decades about aggressive behavior, through its use of sequential processing steps.

In his social information processing model, Dodge (1986) hypothesized that youth have a limited and biologically determined set of responses and capabilities. It was also suggested that youth have memories of past events and circumstances, all of which predisposes them to respond to social cues in particular ways. Almost a decade after Dodge (1986) introduced the four steps of his social information processing model, Crick and Dodge (1994) reformulated the model to include six steps. Their reformulated model proposed that information is processed sequentially, simultaneously, and nonlinearly; each step being dependent on the other steps. The reformulation of steps include, (1) encoding of internal and external social cues, (2) interpretation of these cues, (3) clarification of goals (e.g., determining an outcome for the situation), (4) response access (e.g., recalling or generating possible response strategies), (5) response decision (e.g., evaluating possible strategies and selecting a behavior), and (6) behavioral enactment (e.g., implementing the chosen behavior). Those who master these steps are considered socially competent, while those who have biased processing are more apt to engage in aggressive and deviant social behavior (Crick & Dodge, 1994; Dodge & Crick, 1990; Pettit et al., 2001).

Social information processing, aggression, and bullying. Social information processing deficits have been linked to aggressive behavior for a number of years (see Dodge & Crick, 1990, for a review). Findings from this line of research has revealed evidence that aggressive children process information differently than non-aggressive

children (e.g., Crick & Dodge, 1994, 1996; Dodge, 1980; Dodge & Price, 1994; Dodge & Somberg, 1987; Lochman & Dodge, 1994; Quiggle, Garber, Panak, & Dodge, 1992; Schultz et al., 2000). The majority of the research in this area has focused on the social information processing of aggressive boys only (e.g., Lösel et al., 2007). In a meta-analytic review by Yoon et al. (1999), social information processing deficits and biases were identified as prominent in aggressive children. These processes have been identified throughout the literature.

Under this theory, aggressive children search for fewer social cues than non-aggressive children, before making attributions of intent. They fail to attend to prosocial cues and interpret aggressive cues instead (*step 1*) (Dodge, 1986; Dodge & Frame, 1982). Aggressive children often interpret others' benign cues as "hostile" (*step 2*) (Dodge & Crick, 1990). They select relationship damaging goals (*step 3*) (Coie et al., 1999; Crick & Dodge, 1996) and generate fewer prosocial responses (*step 4*) (Rubin, Bream, & Rose-Krasnor, 1991). Aggressive children evaluate aggressive responses as favorable, anticipate fewer consequences, expect positive outcomes from aggression, and feel self-confident about engaging in aggressive behavior (*step 5*) (Crick & Dodge, 1994; Crick & Ladd, 1990; Hart, Ladd, & Burleson, 1999) and as a result, they enact aggressive behavior in line with their goals (*step 6*) (Crick & Dodge, 1994; Dodge, 1986).

Research has found that aggressive children attribute more hostile intent than their non-aggressive peers and engage in hostile attribution bias. In other words, their attributions of intent are made by using social cues to infer the motives of others, regardless of whether the peer acted with benign or hostile intent (Crick et al., 2002). A hostile attribution bias reliably predicts aggressive responses (Crick & Dodge, 1994;

Dodge & Frame, 1982; Dodge & Somberg, 1987; see Orobio de Castro, Veerman, Koops, Bosch, & Monschouwer, 2002, for a review) and this is further exacerbated when the aggressor is provoked (Dodge & Frame, 1982), threatened (Dodge & Somberg, 1987), or in the context of dyadic peer relationships (Coie et al., 1999; Hubbard, Dodge, Cillesen, Coie, & Schwarz, 2001).

A study by Quiggle and colleagues (1992) compared children identified as aggressive, depressed, or both based on their social information processing patterns. Aggression was assessed using teacher report, based on the teacher version of the Child Behavior Checklist (Achenbach & Edelbrock, 1983) on 220 children in third through sixth grade. Peer nominations were also used to nominate aggressive children using Dodge's (1980) nomination technique. Depression was assessed using the Childhood Depression Inventory (Kovacs, 1992). Information processing patterns were assessed and coded through a series of open ended responses to six stories. The aspects of social information processing assessed included; familiarity, attribution of intent, attributional style, affect, response generation, and response evaluation. These authors found that aggressive children demonstrated a hostile attribution bias, were more likely to engage in aggressive behavior, found it easy to aggress against others, and found aggressive responses as favorable. Aggressive children also reported that negative situations, as described in the stories, happened to them more often than to non-aggressive children (this was also true for depressed children). The authors hypothesized that aggressive children may in fact experience more negative events or they may be more biased toward noticing and reporting them.

Crick (1995) assessed the social information processing patterns of relationally aggressive children, since previous investigations solely focused on overt forms of aggression. It was hypothesized that relationally aggressive children would exhibit a hostile attribution bias similar to that demonstrated by overtly aggressive children. Crick (1995) expected this bias would be particular to the social context, namely relational provocations. In other words, it was expected that relationally aggressive children would not react negatively to instrumental provocations (e.g., being pushed by a peer), but rather they would react negatively to a relational slight or conflict (e.g., not being invited to a birthday party). To test these hypotheses, 252 third through sixth grade students were nominated by their peers into relational, overt, and non-aggressive groups. Ten hypothetical situations were presented to the participants (i.e., five instrumental and five relational provocation situations). The participants were asked to rate how upset or mad they would be if the hypothetical story were to happen to them. The results of this study demonstrated some of the first knowledge about relational aggression and evidence for the distinction between relational and overt aggression. Specifically, relationally aggressive children demonstrated similar social information processing patterns to that of overtly aggressive children. Relationally aggressive children exhibited a hostile attribution bias for relational, but not instrumental provocation situations. The author also found that emotional factors played a role in relational aggressive behaviors as high levels of distress may contribute to the social information processing and behavioral difficulties of relationally aggressive children, when peers' intentions are perceived as hostile.

Crick and Werner (1998) used peer nomination to identify overtly aggressive, relationally aggressive, and non-aggressive students from a group of 1,166 third through sixth grade students. A hypothetical situation was used to assess instrumental and relational outcome expectations, feelings of self-efficacy, response decisions, and response evaluations. Results of the study revealed that overtly aggressive boys and girls evaluated instrumental conflict situations as positive. During instrumental conflict situations, relationally aggressive boys evaluated relationally aggressive behaviors as positive. During relationally aggressive situations, overtly aggressive girls evaluated overtly aggressive responses as positive. Overall, boys evaluated overt aggression more positive while girls evaluated relational aggression more positive. While these findings support the important role the type of aggressive behavior and the context may have on understanding social information processing patterns, one surprising finding emerged in that the relationally aggressive girls did not demonstrate response decision biases. The authors attributed those results to either underreporting of relational aggression or due to poor scale construction.

Crick et al. (2002) conducted two studies of social information processing and relational and physical aggression. The first study consisted of 825 third grade students and the second consisted of 535 third through sixth grade students. The authors used peer nomination to create groups of relationally aggressive and physically aggressive children. The results of both studies found that both relationally aggressive and physically aggressive children exhibited hostile attribution biases. Relationally aggressive children exhibited biases specific to relational situations and physically aggressive children exhibited biases specific to instrumental provocation situations. However, not all

provocation situations were experienced equally. Physically aggressive children responded to their provocation with anger, while the relationally aggressive youth felt negatively about their provocation. The relational provocation was also more distressing for girls. This study provided further evidence that social information processing could generalize to relational aggression as this group experienced specific hostile attribution biases and emotional distress patterns. Furthermore, this study added a physically aggressive group comparison, expanding results from Crick's 1995 study.

A study done by Hudley and Graham (1993) examined third through eighth grade African American boys' peer and teacher perceptions of aggressive behavior and implemented an attribution intervention. To be considered "aggressive," boys had to score above the median on perceived aggressiveness, have low social preference scores, and have twice as many aggressive nominations by their peers than prosocial nominations. Aggressive boys and their nonaggressive counterparts were placed in an intervention group aimed to reduce hostile attribution bias and aggressive behavior, and a control group. The treatment group of aggressive boys improved in laboratory conditions and in terms of teacher report. However, office referral data did not coincide with treatment improvements for the group. Thus, it can be argued that the social information processing model does not uniformly explain all aggressive youth. Overall, while some research findings have supported the social skills deficit model in understanding behavior, other researchers have criticized this approach on the basis that social understanding is an important aspect of childhood behavior.

Social understanding, aggression, and bullying. Understanding the social complexity of others can be used as a prosocial or antisocial tool (Kaukiainen et al.,

1999) and aggression has been linked with social intelligence (Andreou, 2006; Björkqvist, Österman, & Kaukiainen, 2000; Kaukiainen, Björkqvist, Österman, Lagerspetz, 1996; Kaukiainen et al., 1999) and social competence (Hawley, 2003; Sutton et al., 1999b, Vaughn & Santos, 2007). Based on Flavell's (1979) stage theory of metacognitive development (i.e., knowledge or beliefs about oneself and others), where adolescents at the age of 11 to 12 are able to take on third-person perspective in a social interaction (i.e., "I know that you know that I know"), Björkqvist et al. (2000) investigated social intelligence and aggression among 203 adolescents (mean age 12 years). They found that social intelligence correlated with indirect aggression, withdrawal, verbal aggression, and physical aggression during conflict and peaceful resolutions. The authors noted that social intelligence correlated most with the least risky type of aggressive behavior (i.e., indirect aggression).

Although inconsistent, other studies have reported similar findings regarding the link between aggression and social understanding. For example, Kaukiainen et al. (1999) studied verbal, physical, and indirect aggression in 526, 10-, 12-, and 14-year-old Finnish students. They conducted peer ratings on four components of social intelligence and eight empathy items. Based on theory and research, they defined social intelligence as "understanding of self, others, and the social situation" (p. 82). Social intelligence was significantly correlated with indirect aggression, while direct aggression was not correlated with social intelligence. Similarly, Andreou (2006) found social intelligence predicted relational aggression while overt aggression was predicted by social skills deficits. Kaukiainen et al. (1996) found a relationship between indirect aggression and social intelligence in older, but not younger children.

Social knowledge also applied to bullying behavior. A short term longitudinal study by Camodeca, Goosens, Schuengel, and Terwogt (2003) investigated social knowledge in those identified along the bully-victim continuum (i.e., bullies, victims, bully-victims, not involved). Their sample consisted of 236 students at Time one and 242 students at Time two, with the mean age of eight. At Time one, based on the social information processing model, the authors provided the participants with six provocation situations. They were asked what their initial response would be, what other responses they could think of, and what the best thing to do would be in order to test their social knowledge. At Time two, the participants were presented with four ambiguous situations and asked about the intentions of the perpetrator. Their responses were categorized as aggressive (physical and verbal), asking for help, assertiveness (e.g., "I'd ask for an explanation"), avoidance (e.g., "I'd do something else"), and irrelevance (e.g., no answer or one that did not make sense). There were no differences between the groups in terms of the social knowledge solutions, meaning youth who bully may actually possess social knowledge but not always apply it. This suggests that not all youth who bully can be described as having social skills deficits and some may have enhanced social skills and understanding of others. Supporting the finding that not all perpetrators of aggression and bullying possess social skills deficits; some researchers have proposed that social skills are used for both prosocial and antisocial means (e.g., Björkqvist et al., 2000). This has become obvious in those youth who compete to control resources (social dominance goals) as they are able to balance aggressive and prosocial strategies to get ahead (Hawley, 1999). Competition for resources is at the center of resource control theory (Hawley, 1999; Stump et al., in press).

Resource Control Theory

Resource control refers to individuals' access of social, informational, or material resources (Hawley, 1999). Resource control theory (RCT; Hawley, 1999) is based on individual adaptations to circumstances. Successfully controlling resources is done by coercive or prosocial strategies. Hawley (2003, 2007) refers to individuals who employ prosocial and antisocial techniques as bistrategic controllers or Machiavellians. Drawing on the theory of evolution and social dominance, Hawley described bistrategic controllers as those who combine coercive and prosocial strategies to meet their needs and gain access to resources. Aggression in this context serves an adaptive function as a bistrategic controller or Machiavellian meets his or her social needs through a balance of coercive and prosocial behaviors. Coercive controllers engage in threatening, aggressive, and bullying behaviors. On the other hand, prosocial controllers are socially skilled, morally astute, and socially appealing. The balance of these strategies make bistrategic controllers more socially skilled and socially prominent than their coercive controlling peers. These individuals become socially dominant and successful at competing for resources.

Resource control theory focuses on the function rather than the form of behavior (Hawley, 2007). Hawley (2003) established groups based on function (resource control groups) using a sample of 1,723 students in grades 5-10 using self-report coercive and prosocial strategies validated by peer report. Prosocial controllers were those students above the 66th percentile on prosocial strategies, while coercive controllers were those students above the 66th percentile on coercive strategies. Bistrategic controllers were above the 66th percentile on both prosocial and coercive strategies. Noncontrollers were those below the 33rd percentile on both strategies. Typical controllers used as the control

group comparison, were between the 33rd and 66th percentile on both strategies. Five resource control groups were defined (1) bistrategic controllers (Machiavellians), (2) prosocial controllers, (3) coercive controllers, (4) noncontrollers (i.e., not resource directed), and (5) typical controllers.

Hawley (2003) found that the bistrategic controllers reported an ability to read the effect their behavior had on their peers. The combination of aggression and prosocial behaviors were related to positive characteristics and positive outcomes. This finding is similar to others who have linked aggressive behavior with socially desirable outcomes such as popularity (LaFontana & Cillessen, 1998; Rodkin et al., 2000). As evidence that bistrategic controllers are skilled at hiding their aggression, this study showed that teachers did not report the bistrategic youth as more aggressive. In fact, teachers found them to be just as socially accepted as prosocial controllers (Hawley, 2003).

Resource control theory, aggression, and bullying. Bistrategic adolescents have described themselves as more physically and relationally aggressive relative to their peers. They reported hostility and cheating behavior; however, they also endorsed positive social skills (Hawley, 2003). These youth are highly successful in controlling resources from their own point of view and that of their peers. They are well-liked, socially central, and others desire to be their friends. Bistrategic controllers effectively balance prosocial and coercive behaviors and seem to be both intrinsically and extrinsically motivated for interpersonal gain (i.e., motivated to pursue relationships). Importantly, these individuals do not suffer as a result of their aggressive actions. In fact, the social skills they display aid in keeping their aggressive strategies from the detection of adults (Hawley, 2007).

A study of resource control was conducted by Hawley, Little, and Card (2007) with German youth in grades 7 through 10. Sociometric assessments using nomination procedures (participants could nominate up to three of their peers in each category) were used to gain information about peer regard, reputation, aggression, and resource control. Resource control groups were evenly distributed among males and females and positively related to perceived popularity. Prosocial controllers received the most best-friend nominations. Bistrategic controllers were the next highest group, receiving significantly more nominations than typical controllers. Both coercive and non-controllers received significantly less nominations than the other groups. The relationships of bistrategic controllers were characterized as intimate and fun, but also as containing conflict. The authors did not find a relationship between overt and relational aggression with perceived popularity, liking, nor disliking. However, resource control and aggression were modestly correlated. This study concluded that not all aggressive children are at risk for relationship problems. The case was made that peers put their bistrategic controllers in a position to be socially dominant as they regard them with high social status. These findings do not lead to the conclusion that aggression is "good," but it certainly gives credence to the notion that aggression is profitable for the perpetrator (Hawley, 2006; Hawley et al, Little, & Card, 2007).

Similar to the studies on bistrategic controllers, Andreou (2004) found a link between bullying and Machiavellian beliefs. In a Greek sample of 186 fourth through sixth grade students, boys scored higher on Machiavellian beliefs than girls. Boys also reported more self-efficacy for their aggressive tactics. Additionally, higher levels of manipulation were associated with bullying for girls. Aggressors have also been found to

be attractive to their peers. In a study of 138 adolescents, aged 12 to13 years, Pelligrini and Long (2003) reported a relationship between social dominance and aggression in dating. For boys, dating popularity was associated with social dominance. However, for girls, dating popularity correlated with relational aggression.

Social dominance also influences the bullying dynamic. As evidenced by the onlookers to bullying episodes, bullies often receive help or encouragement from their peers. Since bullies often enjoy a high social status, their peers are often willing to support their behavior (Atlas & Pepler, 1998; Craig, Pepler, & Atlas, 2000). Victims of bullying and aggression, on the other hand, have less social power or influence over their peers (Salmivalli et al., 1996). The ability to influence individuals and social structures is evidence of high levels of social competence as Sutton et al. (1999a) reasoned.

Theory of Mind

Based on the idea that aggressive and bullying behaviors are associated with social competence, some researchers have found that it is plausible that at least some youth who bully others have social understanding of their behavior and may have superior social skills or an enhanced theory of mind. Sutton et al. (1999a) questioned whether the social information processing model applies to all types of aggressive and bullying behavior and were the first to challenge the social information processing model in relation to bullying, which was later followed by others with similar views who believed aggressive behavior could not be completely explained by deficits in processing (e.g., Archer, 2001; Smith, 2007).

Definition of theory of mind. Theory of mind has been defined in the developmental literature by Premack and Woodruff (1978), as an individual who

"imputes mental states to himself and others" (p. 515). Theory of mind is therefore viewed as the ability to attribute mental states (e.g., beliefs, desires, intentions, and emotions) to others in order to predict and explain their behavior (Baron-Cohen, 1995; Leslie, 1987) and requires the understanding that others' mental states may differ from one's own and their behavior is a result of those mental states (Wellman, 1990). Theory of mind has been referred to as mentalizing, mindreading, and belief-desire psychology (Leslie, 1987; Premack & Woodruff, 1978; Wellman, 1990). Theory of mind overlaps, but is less broad than mentalizing. Mentalizing employs theory of mind framework and refers to the ability to read the internal state of your self and others. Theory of mind is less focused on the self, rather considered a product of developing mentalizing activity (Allen, Fonagy, & Bateman, 2008). Theory of mind has been related to role taking and perspective taking, but it is more tightly specified and distinct (Blair, 2003) as well as neurocognitively different (Baron-Cohen, 1989). Moreover, theory of mind is multifaceted and related to a variety of constructs, including visual perspectives, desires, intentions, imagination, knowledge, remembering and forgetting, appearances versus reality recognition, verbal ambiguity, and understanding deception (Slaughter & Rapacholi, 2003).

Most recent studies of theory of mind have focused on early childhood development, including infants and young children (Villanueva, Clemente, & Garcia, 2000; Walker, 2005), focusing for the most part on children from the ages of 3 to 5 years (Slaughter & Repacholi, 2003). Theory of mind understanding in preschool experimental tasks has been associated with social understanding in the naturalistic setting. For example, in Astington and Jenkins' (1995) cross-sectional study of 3 to 5-year-old

children, higher false-belief understanding (theory of mind) was associated with real world behaviors that were not better accounted for by age, sex, or language. These included observations in the natural setting of explicit role play assignments in pretend play and joint proposals in pretend play. Their study supports the notion that those who score higher on theory of mind tasks differ from those who are not successful in their real world social understanding. These findings were independent of the measurement task.

Historically, theory of mind research has focused on children diagnosed with autism (see Baron-Cohen, 2003). Over 20 years ago, Baron-Cohen, Leslie, and Frith (1985) linked theory of mind deficits to children diagnosed with autism, a pervasive developmental disorder characterized by deficits in reciprocal social interaction, communication, and repetitive behaviors and interests (APA, 2000). This began a surge of research explaining the link between theory of mind and social difficulties in children diagnosed with autism (Baron-Cohen et al., 1985; Baron-Cohen, Tager-Flusber, & Cohen, 2000; Happé, 1995). In addition, theory of mind has been studied in children diagnosed with Asperger's Disorder (also called Asperger's Syndrome or AS), a disorder similar to autism, but usually characterized by normal intellectual ability (APA, 2000). While individuals diagnosed with Asperger's Disorder have also been found to fail theory of mind tasks, they typically perform better than children with autism. Other research has been conducted on patients diagnosed with schizophrenia (Frith, 1994) and conduct disorder (Happé & Frith, 1996; Sharp, 2008). Interest has also been aroused in the theory of mind of psychopaths (Baron-Cohen, 2003; Blair, Sellars, Strickland, & Clark, 1996) and bullies (Sutton et al., 1999a, 1999b).

Measures of theory of mind. While it is difficult to measure theory of mind, the most widely used measurement of theory of mind is the false-belief task. A false-belief task examines an individual's use of a false-belief or misrepresentation to predict behavior. In a classic false-belief test, the Sally-Ann task (e.g., Baron-Cohen et al., 1985), Sally (a doll) puts her marble in a box and leaves the room. When she leaves, Ann moves her marble from the box to the basket. Children are asked to predict where Sally will search for her marble when she returns. Typically developing children at age four have historically represented Sally's mental state with accuracy, whereas children diagnosed with autism have not (Baron-Cohen et al., 1985; Wimmer & Perner, 1983).

A "second order" false-belief task has been used to measure theory of mind in older children, which requires an individual to predict a behavior or mental state based on his or her belief of another person's belief (Wimmer & Perner, 1983). This task is not typically passed by children until they reach the age of 6 or 7 years (Slaughter & Repacholi, 2003). Other tests of theory of mind have risen from the autism literature, including the use of cartoons (Baron-Cohen et al., 1985), stories to identify deception, and interpreting facial expression from the direction of an eye gaze (Baron-Cohen, Wheelwright, Hill, Raste, & Plumb, 2001; Baron-Cohen, Wheelwright, Spong, Scahill, & Lawson, 2001).

Initial theory of mind assessments found that some adults diagnosed with autism and Asperger's Disorder pass theory of mind tasks (e.g., second order false-belief tasks), but also reach a ceiling on those tasks as they may not be developmentally appropriate. Therefore, Baron-Cohen, Jolliffe, Mortimore, and Robertson (1997) sought to establish a theory of mind measure more appropriate for adults. They wanted to assess theory of

mind ability using a task asking individuals to infer a mental state from a series of photographs of people's eyes. Therefore, Baron-Cohen et al. (1997) tested three groups of adults to compare their results on the task. The groups consisted of adults diagnosed with autism/Asperger's Disorder, normal adults, and a clinical sample of adults diagnosed with Tourettes syndrome. They were administered the Reading of the Mind in the Eyes, also called the Eyes Task. The Eyes Task required subjects to look at 25 photographs of the eye region of the face and make a decision as to which word provided best described how that person was thinking or feeling. It was a forced choice decision, with two adjectives to choose from. The Eyes Task was designed to be a pure theory of mind task to assess understanding of mental state terms. Therefore, mental state terms were asked to be matched to the facial expressions. The authors found that among the normal sample, females scored better on the Eyes Task. As hypothesized, the autism/AS group showed impairments on the task, whereas the Tourettes group did not show impairments. To establish validity of the measure, the authors compared the performance on the Eyes Task to the participants' performance on Happé's (1994) Strange Stories, an established advanced measure of theory of mind involving story comprehension. Similar results were found across groups in both tasks, leading the authors to conclude that the Eyes Task is a valid measure of theory of mind. Additionally, the authors concluded that the Eyes Task taps theory of mind because the task includes mental state terms that are cognitive as well as emotional in nature. Finally, the deficits found with the task were only found with the autism/Asperger's Disorder group suggesting the task discriminates between the groups as the theoretical perspective of theory of mind suggests. The task was not found to be biased according to intelligence.

Although Baron-Cohen et al. (1997) do not mention psychometric problems in their study, Baron-Cohen and colleagues (2001) replicated a similar study using the Eyes Task citing psychometric difficulties with their previous study. They reported the 1997 study was problematic because it was a forced choice between only two responses and it did not have a wide enough range to detect individual differences above chance. Additionally, it was not a good discriminator between groups and possible ceiling effects limited individual differences that could be detected. So, the authors increased the number of items on the Eyes Task from 25 to 36 and increased the number of options from two to four. They also changed the cognitive mental state terms to be more challenging to increase the range of performance. Gender was also controlled for in the 2001 study, using an equal number of male and female faces. The incorrect options were made to be more "close imposters" to the correct term than the previous study which encompassed opposite terms (e.g., positive vs. negative). It was not clear from the previous 1997 study whether comprehension of the terms was a problem, but the authors also gave the participants a glossary of terms to aid them in this study. The study consisted of four groups, (1) adults with Asperger's Syndrome (AS) or high-functioning autism (HFA; $N = 15$, all male); (2) normal adults in community classes ($N = 122$), (3) normal adult undergraduate students ($N = 103$); and (4) randomly selected individuals from the community who were matched by IQ with the first group $N = 14$). There was no difference between the groups in glossary usage on the Eyes Task, and no one checked more than two words. Group 1, comprised of AS and HFA adults scored significantly worse than the other three groups on the Eyes Task. A trend towards a sex differences was detected ($p = .067$) with Groups 2 and 3, with females scoring higher than males on

the Eyes Task. The task detected meaningful differences, with the normal population performing below the ceiling. There was no significant skew reported in the distribution of the scores on the Eyes Task among Group 2 and 3 (normal controls) and the graphical depiction of the scores appear to be normally distributed. Thus, the authors concluded that the Eyes Task was a valid measure of impairments in social intelligence in AS and HFA adults, replicating other findings that adults with AS or HFA are impaired on tests of social intelligence (Baron-Cohen, Wheelwright, Hill et al., 2001).

The Reading of the Mind in the Eyes Test was adapted from the adult version (Baron et al., 1997) in a study by Baron-Cohen, Wheelwright, Spong et al. (2001) for use with children. A group of 15 male children from the ages of 8 to 14 years, diagnosed with Asperger's Syndrome (AS) were compared to students without special education needs (normal controls). The authors found that children diagnosed with AS demonstrated impairments in the Eyes Task. This measure was also extended to individuals with psychopathy, a disorder of callousness, impulsivity, and low remorse. Based on the argument that those with impaired theory of mind may have antisocial, aggressive, and psychopathic behavior, Richell et al. (2003) studied two groups of incarcerated men from London forensic units. Their groups consisted of 19 men who met psychopathic criteria based on the Psychopathy Checklist-Revised (PCL-R; Hare, 1991) and 18 non-psychopathic controls (mean age = 32.7 years). They assessed the participants' theory of mind using the revised version of the Reading the Mind in the Eyes Test. They were also given Raven's Advanced Progressive Matrices (Raven, 1976) to measure intelligence and the ability to think clearly. There were no significant differences between the two groups in the number of correctly identified items on the Eyes Task. There were no significant

findings in terms of age, Raven's assessment scores, or the Eyes Task. Thus, the authors found evidence that theory of mind was intact in psychopathic adults.

This line of research has been investigated among conduct disordered youth as well. Happé and Frith (1996) investigated theory of mind in 6 to 12-year-old children diagnosed with conduct disorder. They utilized the standard false-belief task and the Vineland Adaptive Behavior Scales and found that none of the conduct disordered youth failed the false-belief theory of mind task. However, communication and socialization as reported from teacher completion of the Vineland indicated that these children suffered some social impairment. These authors proposed a delay in understanding others and a theory of 'nasty minds,' suggesting that conduct disordered youth have intact theory of minds, but less than normal social functioning. While differences in the way individuals think about others' thinking have been documented, it is not clear what role gender differences play in theory of mind.

Theory of mind, gender, and development. Most theory of mind studies have not traditionally addressed the issue of gender (Bosacki & Astington, 1999; Villanueva et al., 2000; Walker, 2005). Differences in the way children think have been discovered as early as preschool in terms of social problems and interpersonal conflict. Several researchers have found that, overall; girls are more interpersonally competent than boys (e.g., Rudolph & Conley, 2005). For example, girls are more able to determine the intentions of others and better able to generate effective problem solving in social situations.

Some view gender differences as a result of boys and girls being raised and growing up in different cultures. According to the Two Cultures Theory (Maccoby,

1998), distinct cultures emerge among all-girl and all-boy groups, the boy group more often vying for dominance and status. Maccoby (2000) indicated the two genders are polarized due to boys' rough and tumble play and girls' inability to influence boys during play. In other words, boys are unresponsive to the suggestions made by girls. Similarly, gender differences may be more salient during preadolescence as a result of increased pressure to take on characteristics of specific gender roles (i.e., gender intensification hypothesis; see Hill & Lynch, 1983). The gender intensification hypothesis views the onset of puberty as a time of increased pressures to conform to traditional sex roles, either masculine or feminine (Worrell, 1981). Gender type activities include more aggressive behavior for males than females (Lytton & Romney, 1991). Males are confronted with the pressure to be dominant in their interactions, while girls are taught to be more socially binding and agreeable. Bosacki (2000) asserted that females are essentially trained through socialization to have a higher theory of mind than males. For example, understanding others' thoughts and emotions is emphasized among female groups. Studies have noted the socialization of males includes being independent, competitive, and strong; while females are socialized be nurturing, agreeable, and expressive (Maccoby, 2000). A three year longitudinal study by Galambos, Almeida, and Petersen (1990) found partial support for the gender intensification hypothesis. They found that during early adolescence, gender differences increased masculinity and attitudes toward sex roles over time. This may be the result of males feeling more societal pressure to fit into typical male stereotyped roles. Surprisingly, these authors found that both female and male femininity increased at the same rate. This finding might be explained by males being more comfortable with holding feminine attributes as the definition of femininity

has become less rigid recently. In addition, females may be aware of the disadvantages femininity holds in being a powerful member of society and thus hypothesized increases in femininity were not seen. Overall, girls were found to be more feminine and boys more masculine. Additionally, due to the importance females place on relationships and the evaluation of their merit among their peers, developmental social-cognitive processes become especially potent (Rudolph & Conley, 2005). Other studies have found girls to feel more guilty about engagement in aggressive acts (Eagly & Steffen, 1986) and more sympathetic and empathetic than males, making them less likely to engage in aggression in the first place (Carlo, Raffaeli, Laible, & Meyer, 1999).

From the age of three, girls tend to be ahead of same aged boys in theory of mind tasks (Baron-Cohen, 2003). Female superiority in theory of mind ability has been found in studies of emotional tasks (Brown, Donelan-McCall, & Dunn, 1996), white lie, deception tasks (Villanueva et al., 2000), social narratives (Bosacki, 2000), and the Reading of the Mind in the Eyes Test (Baron-Cohen et al., 1997). Walker (2005) examined gender and age group differences in theory of mind with 3 to 5-year-old Australian children. Using two false-belief tasks, the author used the aggregate score of the two tasks to measure theory of mind. Teachers rated student's engagement in cooperative play, verbal aggression, and physical aggression using a rating scale of peer relations. The older age group (i.e., 4 to 5-year-olds) scored higher on theory of mind than the younger age group (i.e., 3 to 4-year-olds). Furthermore, the author examined whether social competence, age, and theory of mind were different for boys and girls. Girls scored higher than boys on theory of mind tasks. Of the boys who scored higher on

the theory of mind tasks, they were rated as more likely to be aggressive or disruptive by their teachers.

Children have been found to acquire higher levels of theory of mind with age, but this phenomenon develops in the context of their environment. Consistent with the socio-cultural view, children are thought to acquire theory of mind through participation in socio-cultural activities, with adult guidance, and peer collaboration. The presence of older siblings (Perner, Ruffman, & Leekam, 1994), quality of sibling relationships (Dunn, Brown, Slomkowski, Tesla, & Youngblade, 1991), engagement in fantasy play (Astingon & Jenkins, 1995), and the mother-child relationship (Symons & Clark, 2000) have been found to predict theory of mind ability. Daily family and peer interactions provide a certain incentive or opportunity to develop a greater theory of mind. Villanueva et al. (2000) examined the socio-cultural view of theory of mind development in 313 children 4 to 6-years old. In examining the social experiences within a peer system, they found significant sex differences on theory of mind understanding. These authors found that girls performed better than boys on the white lie task and deception task. Popular girls, scored the highest on the deception task, compared to rejected or average girls. The authors asserted that these results mean that popular girls have the ability to use deception in a more sophisticated way than others; however, the authors noted that the results do not mean they will necessarily use deception as a means of social manipulation. However, from a socio-cultural framework, if social interactions are vital to asserting a social understanding than it may be assumed that those who are rejected are deprived of these social interactions and their understanding and theory of mind are limited. Looking at the peer rejected population, Villanueva and colleagues (2000) hypothesized a

difference would exist between rejected and average children. However, rejected children performed relatively similar to average children on theory of mind tasks; although rejected boys performed less well on a positive motivation task (i.e., white lie task) and interpreted intentions as negative, hostile, and aggressive. Therefore, this study suggests the negative experiences in rejected children can affect their mind understanding, lending support to Happé and Frith's (1996) theory of 'nasty minds.'

Some researchers have linked theory of mind to positive social outcomes, including experiencing more successful social relationships. Dunn and Cutting (1999) conducted an observational study in London of 128, 4-year-old children, investigating their friendship quality and conflict behavior. They studied pairs of friends and found that those who measured high on the theory of mind scale and had high levels of emotional understanding were those who talked to more friends and were more successful in their attempts to engage with friends than those who scored lower on the theory of mind scale. Conversely, those who scored low on theory of mind had more frequent conflict behavior, fewer affective perspective taking abilities, and less narrative abilities in play.

Cognitive aspects of social competence may be empirically linked to theory of mind. When aggression is implemented in appropriate ways and during suitable times and contexts, it is considered socially competent (Vaughn & Santos, 2007). Rubin and colleagues defined social competence as "the ability to achieve personal goals in social interaction while simultaneously maintaining positive relationships with significant others" (Rubin et al., 1991, p. 222). Evidence of a complex relationship between theory of mind and social competence was found in a study of 128 preadolescents in Canada. Bosacki and Astington (1999) found theory of mind and social competence were

significantly related to peer ratings of problem solving abilities during hypothetical situations, but not related to peer popularity. Cognitive aspects of social competence were more robust than the emotional aspects.

In a study of theory of mind and social competence in preadolescents, Bosacki and Astington (1999) measured theory of mind in 128 students, ages 10 to 13 years using ambiguous social vignettes. The social vignettes measured theory of mind ranging from simple surface characteristics to psychological concepts and perspectives. They found that social understanding was related to peer-related social-interaction skills, independent of general vocabulary skills. Significant differences emerged related to gender, as girls scored significantly higher than boys on both the social understanding and social competence measures.

Theory of mind, aggression, and bullying. Sutton and colleagues (1999a, 1999b) suggested that some aggressive youth, particularly bullies, may not have a social skills deficit, but may actually have superior social skills which they use to their advantage. As Sutton (2003) contended, “What I think you think I think can be the difference between sitting alone at lunch or being the leader of the gang – it is survival of the fittest in the playground and theory of mind is a vital weapon” (p. 102). Sutton et al. (1999a, 1999b) acknowledged that bullies have a superior “theory of mind” as they are able to make attributions of their own and others’ mental states. This argument is based on the fact that bullies plan their behavior as they carefully select their victims. They select those individuals who tolerate victimization and are often disliked and unsupported by the peer group (Salmivalli et al., 1996). Moreover, victims’ individual characteristics often make them vulnerable targets, including passive behavior, anxiety, weakness, lower

peer status, decreased self-esteem, depression, and loneliness (Olweus, 1991; Swearer et al., 2001).

Bullies often have a sense of the social status of the victim. For example, in an observational study by Atlas and Pepler (1998), 51 of 60 observed bullying situations included peer witnesses; but, a witness intervened only 10% of the time. This study indicates that bullies chose victims who they know do not have peers who are likely to support or help them. Another observational study of first through sixth grade students revealed that peers were involved in 79% of the bullying episodes on the playground and 85% of the episodes in the classroom (Craig et al., 2000), indicating peers reinforce bullying behavior.

In light of evidence regarding bullies' ability to understand the dynamics of social relationships and manipulate them to their advantage, Sutton et al. (1999a) explored whether theory of mind explains some bullies' aggressive behavior. In a pilot study done by Sutton and his colleagues (1999a), a second order theory of mind test was given to 34, 6 to 7-year-old students identified as bullies and 34 matched controls. Passing scores indicated higher theory of mind. Ten male bullies and seven male controls passed the theory of mind task. Five female bullies passed the task, while two female controls passed. Results of this study support the viewpoint that bullies have an enhanced theory of mind, which may contribute to superior rather than inferior social skills.

A study by Farley (1999) supported the findings by Sutton et al. (1999a). Farley (1999) examined what type of bullying behavior (relational, verbal, and physical bullying) was related to social perception, social intelligence, and empathy among 116 eighth and ninth grade Australian students. Social perception was measured by the

Reading of the Mind in the Eyes Test (Baron-Cohen et al., 1997). After controlling for verbal intelligence and word knowledge, Farley (1999) found that the Eyes Task predicted bullying behavior in males only, indicating support for both an enhanced theory of mind among those identified as bullies. Low performance on the Eyes Task was predictive of physical bullying for both males and females. Furthermore, in a study of psychiatric inpatients by Goldberg et al. (2007), physically aggressive patients exhibited significantly lower levels of theory of mind, compared to non-aggressive patients. In Walker's (2005) study of 111, 3 to 5-year-old children, theory of mind scores predicted aggressive or disruptive behavior in boys and prosocial behavior in girls.

It has been hypothesized that greater theory of mind can add to the repertoire of relational aggression (Sutton, 2003) as theory of mind involves understanding the mental states of others which can be a component of manipulation (Premack & Woodruff, 1978). The strategic and deceptive nature of effective indirect aggression calls for more complex theory of mind skills than direct aggression (Baron-Cohen, 2003). For example, thoughts about others' thinking can lead to manipulation seen in social exclusion (e.g., "I know Lisa wants to hang out with us"), and reputation enhancement ("If Lana thinks I don't like Lisa, then Lana will like me").

Sutton, Reeves, and Keogh (2000) suggested that an understanding of others' mental states might be related to persuasion seen in the avoidance of responsibility. In other words, an individual who possesses an enhanced theory of mind may be able to escape punishment because of their superior social skills. This may be especially relevant to the subtle and therefore deniable participation in relational aggression. Yiwen, Chongde, and Wenxin (2004) found children who displayed indirect aggression had a

higher theory of mind ability than those who displayed physical aggression. However, Farley found non-significant relationships between verbal bullying, relational bullying and performance on the Eyes Task.

Purpose of the Study

Aggression has been described as both maladaptive and adaptive. While Crick and Dodge (1999) rejected the notion that "competent social cognitions can result in incompetent behaviors" (p. 131), Sutton (2003) argued that undesirable behaviors are not necessarily incompetent. In fact, while they may be undesirable to some, some behaviors may be competent in certain situations and under certain circumstances (Vaughn & Santos, 2007). The literature has historically supported the social information processing deficit viewpoint of aggression and found significant relationships between aggression, bullying, and negative consequences. However, studies also suggest aggression is associated with superior social skills and markers of social success, finding evidence that the perpetrator benefits from his or her aggression especially in terms of social dominance and social status (e.g., Hawley et al., 2007).

The purpose of this study is to examine the relationship between gender, theory of mind, and self-reported physical aggression, relational aggression, and bullying. Although some preliminary findings have been reported in this area (e.g., Farley, 1999; Sutton et al., 1999a; Walker, 2005; Yiwen et al., 2004), this research area remains relatively unexplored (Sutton, 2003). While evidence exists that some aggressive children and adolescents have information processing and social skills deficits (e.g., Crick & Dodge, 1994); this has not been found to be uniformly true. For example, Kaukiainen et al. (1999) found a positive relationship between social intelligence, social competence,

and relational aggression. Hawley (2003, 2007) found a relationship between engagement in prosocial and coercive strategies, suggesting an individual who knows how to balance both sets of behaviors is at a social advantage. Other studies have linked high performance on theory of mind tasks to being female (Baron-Cohen et al., 1997; Bosacki, 2000; Brown et al., 1996; Villanueva et al., 2000), indirect aggression (Yiwen et al., 2004), and bullying behaviors (Sutton et al., 1999a). Low theory of mind has been linked to physical aggression (e.g., Farley, 1999). This study seeks to add to the literature on the cognitive processes involved in aggressive and bullying behaviors, by elucidating the relationship between theory of mind, gender, and engagement in physical aggression, relational aggression, and bullying.

Overall research question and hypotheses. Based on the review of the existing research on aggression, bullying, gender, and theory of mind, the current study addressed the following research question: Does theory of mind mediate the relations between gender and physical aggression, gender and relational aggression, and gender and bullying? Three main hypotheses were made following Baron and Kenny's (1986) mediation model steps. *Hypothesis 1a:* Adolescent females will endorse higher levels of relational aggression compared to adolescent males. *Hypothesis 1b:* Adolescent males will endorse higher levels of physical aggression compared to adolescent females. *Hypothesis 1c:* Adolescent males and adolescent females will report similar engagement in bullying behaviors. *Hypothesis 2:* Adolescent females will have higher theory of mind scores than adolescent males. *Hypothesis 3:* Theory of mind will mediate the relationship between gender and relational aggression, gender and physical aggression, and gender and bullying. The hypothesized mediation model is presented in Figure 1.

Chapter Three: Methods

Participants

Participants for this study were recruited as part of a larger longitudinal investigation examining school experiences in the United States, Japan, Korea, Australia, and Canada. Data were gathered in the Fall of 2005 (Time 1), Spring of 2005 (Time 2), and the Fall of 2006 (Time 3). The sample at Time 1 included 1173 students in the fifth through ninth grade, from nine Midwestern schools (i.e., two elementary schools, three middle schools, and two high schools). Inclusion criteria included being from the United States, in middle school, ages 11-14, being male or female. Exclusionary criteria included being in special education, except for those verified as gifted students. Therefore, the sample for this study consisted of 810 students (see Table 1) from three schools. Three hundred and twenty-eight participants were in sixth-grade (40.5%), 270 were in seventh-grade (33.3%), and 210 were in the eighth-grade (26.2%). The students' ages ranged from 11 to 14-years old (M = 12.14; SD = .95). Four hundred and fifty-three students were female (55.9%) and 357 were male (44.1%; see Table 2). Most students self-identified as European- American (74.4%), with the remaining identifying as Mixed Minority (6.7%), African-American (5.1%), Latino(a) (4.6%), Asian/Asian American (4.1%), "other" (1.9%), Middle Eastern (1.2%), Native American (1.1%), and Eastern European (0.4%; see Table 2).

Instrumentation

All participants completed a survey created for the larger longitudinal international study of social interactions and bullying behaviors. The data for the present study utilized four sections of the survey. The entire United States survey contained ten

sections, including: (1) demographics, (2), Pacific-Rim Bullying Measure (Konishi et al., 2009), (3) Children's Social Behavior Scale (CSBS; Crick & Grotpeter, 1995), (4) Children's Experiences Questionnaire – Self Report (Crick & Grotpeter, 1996), (5) Loneliness and Social Dissatisfaction Questionnaire (LSDQ; Cassidy & Asher, 1992), (6) The Moral Disengagement Scale (MDQ; Bandura, 1995; Bandura, Barbaranelli, Caprara, Patorelli, 1996), (7) Children's Depression Inventory – Short Form (CDI-S; Kovacs, 1985, 1992), (8) Multidimensional Anxiety Scale for Children -10 (MASC; March, 1997), (9) Reading of the Mind in the Eyes (Folk Psychology) Test Revised (Baron-Cohen, Wheelwright, Hill et al., 2001), and (10) Bully Survey-Short (BYS-S; Swearer, 2006). Each of these instruments is a self-report assessment of their respective constructs. The specific demographics gathered and the three instruments utilized in the present study are described in more detail below.

Demographic variables. The demographic variables collected included self-reported age, gender, race, grade, language, and academic grades. The self-reported variables were cross-referenced with school reported demographics which were collected following survey completion. For the purposes of the present study, only gender will be analyzed with the other study variables.

Children's Social Behavior Scale (CSBS; Crick & Grotpeter, 1995). The Children's Social Behavior Scale was used to assess participant's aggressive behaviors. The CSBS was first adapted from the Children's Peer Relations Scale (Crick & Grotpeter, 1995) which assesses children's perceptions of their peer interactions. The CSBS is a self-report measure used to assess how often children engage in various aggressive and prosocial behaviors. The CSBS consists of 15 items and covers six basic

scales (i.e., Relational Aggression, Physical Aggression, Prosocial Behavior, Verbal Aggression, Inclusion, and Loneliness). Items are rated on a five-point Likert-type scale (1 = *Never*, 2 = *Almost Never*, 3 = *Sometimes*, 4 = *Almost all the Time*, and 5 = *All the Time*). Responses to items are summed to derive total scores. Higher scores indicate participants engage in the behaviors of the subscale more frequently. Data from the subscales have shown acceptable internal consistency, ranging from .66 to .94 (Crick & Grotpeter, 1995, 1996). Total scores for the relational aggression and physical aggression subscales were used for the current study. Coefficient alphas for the present study are .73 for the total score and .82 and .78 for the relational and physical aggression subscales, respectively. The relational aggression items for the CSBS include: (1) "Some kids tell lies about a classmate so that the other kids won't like the classmate anymore. How often do you do this?" (2) "Some kids try to keep certain people from being in their group when it is time to play or do an activity. How often do you do this?" (3) "When they are mad at someone, some kids get back at the person by not letting the person be in their group anymore. How often do you do this?" (4) "Some kids tell their friends they will stop liking them unless the friends do what they say. How often do you tell friends this?" and (5) "Some kids try to keep others from liking a classmate by saying mean things about the classmate. How often do you do this?" The physical aggression items include: (1) "Some kids hit other kids at school. How often do you do this?" and (2) "Some kids push and shove other kids at school. How often do you do this?" (see Appendix E).

The Pacific-Rim Bullying Measure (Konishi et al., 2009). This scale is a 27-item self-report questionnaire designed for the study of peer relationships in the larger, longitudinal international sample. The measure was designed to assess the frequency of

bullying behaviors and other social interactions without using the word "bullying," especially because the word means different things in different cultures. The Pacific-Rim Bullying Measure was translated into French, Japanese, and Korean for the purpose of international use and cross-cultural comparisons. Prior to completing the questionnaire, the following instructions were given:

> There are many different ways students can be mean and use negative behavior against others in the group who cannot defend themselves easily. We are interested in how often over the past two months you have taken part in being mean or negative to others (Konishi et al., 2009, pg. 86).

Six questions were asked to measure involvement in bullying, by endorsing frequency of behaviors, ranging from *never* to *several times a week.* The items are summed, with higher scores indicating higher involvement in bullying. The scale includes two physical bullying items (1) "…by pushing, hitting, or kicking or other physical ways (jokingly)?" (2) "…by pushing, hitting, or kicking or other physical ways (on purpose)?"; one property damage item (3) "…by taking things from them or damaging their property?"; one verbal bullying item (4) "…by teasing, calling them names, threatening them verbally, or saying mean things to you"; one social/relational bullying item (5) "….by excluding or ignoring them, spreading rumors or saying mean things about them to others, or getting others not to like them?"; and one cyber-bullying item (6) "…by using computer, email or phone text messages" (see Appendix F).

Since the Pacific-Rim Bullying Measure was created for the purposes of international comparisons, few psychometric reports exist. Konishi et al. (2009) found evidence that the measure tapped the same overall structure and factor loading across five

countries (i.e., Australia, Canada, Japan, Korea, and United States). In a study of bullying and moral disengagement with a similar population to the current study, Turner (2008) reported an internal consistency of .72 and a factor analysis which explained 46.30% of the variance, with item loadings of .51 or higher. The coefficient alpha for the current study is .71 for the six items. All of the item loadings were statistically significant, with one item (i.e., "by pushing, hitting, or kicking or other physical ways, jokingly?) loading lower than the rest of the items (0.48). The coefficient alpha was only minimally increased (.73) when the item was deleted; therefore, the item was retained for the study.

To examine the validity of this measure, a correlation between the number of office referrals and the bullying scale items was conducted. Three items (two physical bullying items and the verbal bullying item from the Pacific-Rim Bullying Measure were significantly correlated with number of office referrals ($p < .05$). The remaining three items (i.e., property damage, relational/social bullying, and cyber/electronic bullying) were not significantly correlated with office referrals ($p > .05$). The validity of office referral data has been noted in the literature. Irvin, Tobin, Sprague, Sugai, and Vincent (2004) reviewed empirical studies of office referrals finding evidence that office referral data is associated with problem behaviors. Other studies on bullying behavior have found that bullying behaviors correlate with the number of office referrals, with bullies receiving the highest number of office referrals (Siebecker, Swearer, & Givens, 2007; Swearer & Cary, 2003; Swearer et al., in press). However, not all of the items on the scale significantly correlated with office referral data (i.e., property damage item, social/relational bullying item, and cyber/electronic bullying item). This is not surprising since the disruptive nature of physical aggression is so antithetical to the school

environment that individuals who engage in physical aggression receive a large number of the total office referrals (Rusby, Taylor, & Foster, 2007). For example, a study of 11,001 middle school students found that fighting was the most frequent referral resulting in suspension, receiving only 10.7% of office referrals. Vandalism only accounted for 0.7% of referrals and there was no mention of social/relational or cyber bullying (Skiba, Peterson, & Williams, 1997).

Reading of the Mind in the Eyes (Folk Psychology) Test Revised (Baron-Cohen, Wheelwright, Hill et al., 2001). The Reading of the Mind in the Eyes was used to assess participant's ability to make social judgments using stimuli such as the eye region of another person's face. This test was adapted from an adult version of the task (Baron-Cohen et al., 1997). The Reading of the Mind in the Eyes is a 28-item measure (the original measure includes 36 items) which includes 28 black-and-white photographs of the eye region of faces from just above the eyebrows to halfway down the bridge of the nose, accompanied with four words describing mental states (three distracters and one correct adjective). Participants were asked to select the word that best describes the mental state exhibited in the eyes, by circling their desired response. The participants were asked to pick which of the four words best describes what the person in the photo is thinking or feeling. This test is often used in studies of children diagnosed with autism; however, the Eyes Task was piloted with a small group of typically developing children (n = 6; ages 8-12) to identify target and foil terms. Three of the four words presented are foil mental state terms and the other word is deemed 'correct.' Position of the four words is randomized for each item. This test is both a complex test of emotion recognition and a cognitive analysis, as the mental state words include affective and non-affective mental

state terms. Items are summed together to compute a total score. Higher scores indicate higher theory of mind.

The Eyes Task taps cognitive and affective perspective taking, capacities central to theory of mind. Most theory of mind tasks were developed for children ages 4 to 5-years-old or younger and do not assess for emotional understanding (e.g., "Sally-Anne" tests; Smorti et al., 1999). For this study, the Eyes Task was chosen as a measure to assess theory of mind because of its ability to tap both cognitive and affective states. Additionally, it was chosen in lieu of narrative vignettes due to possible confounds of readability and subjectivity in scoring. Additional considerations were given to the age ranges of the participants, the international comparisons, and time constraints of data collection in the schools. Studies have reported that the Eyes Task is a valid measure of theory of mind, as performance on the Eyes Task has been found to be correlated with Happé's (1994) Strange Stories (Baron-Cohen et al., 1997). Farley (1999) reported a moderate reliability (.62) in her study using the Eyes Task. The coefficient alpha for the 28 items in the current study is .48.

Procedures

Approval for this study was granted in August 2005 from the University of Nebraska Institutional Review Board (IRB; see Appendix A). All elementary, middle, and high schools in Lincoln, Nebraska were offered participation in this study via a letter through the principal investigator. Nine schools chose to participate in the study, including two elementary schools, three middle schools, and two high schools.

Support was granted from each of the participating schools through a letter from the principal and a letter from the school district. All students in each school were eligible

to participate in the study and were given a letter signed by the principal of the students' respective school describing the nature of the study and a parental/guardian consent form to take home to their parent/guardian (see Appendix B and C). The consent form described the nature and purpose of the study and potential risks and benefits of the study. It was explained that the results of the study were confidential, that no identifying information about their child would be provided to school personnel, and they could withdraw from the study at any time without penalty. The consent rate for the three schools was 53%.

Upon receiving parental consent, the rationale of the study was explained to the participants and their written assent was obtained (see Appendix D). The assent form explained the purpose of the study, procedures to ensure confidentiality, and potential risks and benefits of the study. They were informed that their participation was voluntary and told of their ability to withdraw from the study at any time without penalty. The assent rate for was 96%. The total number of students who withdrew from the study after reading the assent form was 29.

Once consent and assent were obtained, the participants completed a series of instruments via paper and pencil surveys. The surveys were completed in either a large group format at a designated area of the school or in individual students' classrooms, depending on participating school procedures. The instruments on the surveys were counterbalanced and took approximately 45 minutes to one hour to complete, depending on reading fluency. Graduate students were available to answer questions participants had during survey administration. Each survey was checked for complete data. If data was

incomplete, participants were asked to complete the missing items. Following data entry, interrater reliability was completed on 25% of the surveys.

Chapter Four: Results

Overview of Analyses

Missing data. Overall, 93% of the cases had complete data (complete; *n* = 753). Eighty-six percent (*n* = 49) of the cases with missing data were only missing one or two data points (total incomplete; *n* = 57). Full information maximum likelihood (FIML; see Enders & Bandalos, 2001) estimation in Mplus was used to address missing data, allowing cases with partially missing data to be considered in the analyses. Full information maximum likelihood estimation is widely used and assumes missing data are missing at random (Little & Rubin, 2002).

Descriptive statistics. Descriptive statistics were calculated to provide summary information and guide analyses. Univariate skew, univariate kurtosis, and multivariate kurtosis were used to assess the distribution of the variables. Data with a skew above an absolute value of 3.0 and kurtosis above an absolute value of 8.0 are considered problematic (Kline, 1998). Highly skewed data and excessive kurtosis can affect overall fit, standard errors, and parameter estimates (Bagozzi & Yi, 1988). However, there has not been a clear consensus established regarding “acceptable” non-normality and no general cutoff for acceptable multivariate normality exists (Finney & DiStefano, 2006).

Upon examination of the data, the variable distributions were found to be positively skewed. The skew of the Pacific-Rim Bullying Measure items ranged from 1.22 to 5.63, while the kurtosis values ranged from 1.00 to 37.83, indicating problematic skew and kurtosis among three items. The skew of the CSBS relational aggression items ranged from 0.81 to 2.99, while the kurtosis values ranged from 0.02 to 9.33, indicating one item on this measure had problematic skew and kurtosis. The two CSBS physical

aggression items' had a skew of 1.40 and 1.68 and a kurtosis of 1.41 and 2.59, indicating acceptable skew and kurtosis among these items. The theory of mind total scale had a skew of -0.87 and a kurtosis of 1.76.

Extreme positive skew is due to the limited frequency in which the behaviors of interest, particularly the behaviors specified by the items on the Pacific-Rim Bullying Measure, were self-reported by the participants. Other studies have described these phenomena as non-normally distributed (Turner, 2008; Zimmer-Gembeck, Geiger, & Crick, 2005). In other words, a large proportion of the participants reported either no, or infrequent involvement in these behaviors. The Pacific-Rim Bullying Measure was problematic in particular, with an average of 81% reporting "never" being involved with these behaviors. See Table 3 for descriptive statistics, including variable means, standard deviations, factor loadings, skew, and kurtosis. See Table 4 for latent variable correlations.

Mardia's test for multivariate normality was also used to assess normality. Mardia's test ($p < .01$) indicated non-normality among the constructs. This was not surprising, considering data in the social sciences are often not multivariate normal (Finney & DiStefano, 2006) and because of the skew and kurtosis values discussed previously. Moderate-to-major normality violations can affect the chi-square statistic, resulting in rejecting a model when it is correct or unnecessarily modifying a model in order to reach an acceptable chi-square statistic (Curran, West, & Finch, 1997). Although parameter estimates in maximum likelihood are relatively robust against non-normality, Type I error can be inflated resulting in positively biased significance tests. It is recommended to use a corrected test statistic to reduce bias when the data are non-normal

(Kline, 1998). Therefore, accommodations were made using bootstrapping to reduce some of the problems associated with the non-normality of the data.

Analytic Strategy

Bootstrapping. Bootstrapping is a popular method used to accommodate non-normal data. Bootstrapping does not make the assumptions of normal theory associated with SEM such as theoretical sampling distributions (Finney & DiStefano, 2006) and instead empirically estimates the sampling distribution (Preacher & Hayes, 2008; Shrout & Bolger, 2002). Many researchers (e.g., Cheung & Lau, 2008; MacKinnon, Lockwood, Hoffman, West, & Sheet, 2002; Preacher & Hayes, 2008) recommend employing bootstrap methods to test mediation when data are not normally distributed. Cheung and Lau found that the bootstrap method more accurately produces confidence intervals than other methods which assume the data follows a normal distribution (e.g., Sobel test; Sobel, 1982). This recommendation is supported by findings from MacKinnon et al. (2002) who recommend bootstrapping be implemented over the Sobel test (or causal steps approach) to maintain power and control over Type I error. Finney and DiStefano (2006) recommend this method because even under extreme non-normality, bootstrapping outperforms other methods used to adjust or rescale the non-normal data, including the Satorra-Bentler (Finney & DiStefano, 2006) and Yuan-Bentler (Bollen & Stine, 1992).

Bootstrapping randomly samples cases with replacement, from the original data in order to create a bootstrap sample. This method adjusts the chi-square and standard error of path estimates to help with non-normality (Bollen & Stine, 1992). Bootstrapping can be repeated numerous times and mimics collecting numerous samples from a population

(Kline, 1998). In the current study, empirical standard errors were obtained through 500 bootstrap samples and the model was fit to each bootstrap sample.

Structural equation modeling. Latent-variable structural equation modeling (SEM) was used to test the model using bootstrapping with the statistical software Mplus version 4.2 (Muthen & Muthen, 1998-2007). SEM is intended to shed light on the rationality of a model a researcher makes based on knowledge, theory (Pedhazur, 1997), and a priori hypotheses (Kline, 1998, 2005). SEM is recommended over regression because it is more flexible, capable of controlling for more measurement error (Baron & Kenny, 1986; Shrout & Bolger, 2002), and is more useful when investigating latent variables with multiple indicators (Holmbeck, 1997). SEM simultaneously estimates the direct and indirect effects, rather than traditional regression-based analysis (or causal steps approach; e.g., Baron & Kenny, 1986) which takes place in four separate steps. This method has been recommended over the causal steps approach which has been said to suffer from lower power in simple mediation since two null hypotheses must be rejected rather than one in order to determine whether or not a variable serves as a mediator in a given model (MacKinnon et al., 2002).

The hypothesized relationships in the model are depicted in Figure 1. Circles represent latent constructs and squares represent measured variables. Solid lines indicate expected significant positive associations and dotted lines indicate where there are no expected significant associations. Gender is an observed variable with one indicator. Bullying is a continuous latent variable with six indicators, physical aggression is a continuous latent variable with two indicators, and relational aggression is a continuous latent variable with five indicators. Theory of mind is a single indicator latent variable.

The Eyes Task was disattenuated to adjust for the unreliability in the model, by setting the residual term to 1 – reliability.

Model Fit

Measurement model. Model fit is a global measure of the overall adequacy of a model (Bagozzi & Yi, 1988). A measurement model was constructed (using paths between latent variables and corresponding manifest indicators) and tested using the chi-square test statistic, the comparative fit index (CFI; see Bentler, 1990) and the root-mean-square error of approximation (RMSEA; see Steiger, 2007) and its 90% confidence interval (CI) as indexes of fit. The CFI is an index of fit of the hypothesized model relative to the null model. A CFI value above .90 is considered acceptable, while a value above .95 is considered a good fit (Kaplan, 2000). The RMSEA takes the model degrees of freedom into account and is sensitive to model complexity. RMSEA signifies a discrepancy between optimal fit of the hypothesized model to the population covariance matrix. The CI represents the precision of the estimate. A small RMSEA with a large CI indicates a lack of precision. RMSEA values below .06 are acceptable, between .06 and .08 are fair fit, and between .08 and .20 represent mediocre fit (Kaplan, 2000).

In examining the modification indexes for covariances, it was determined that the residual of two of the Pacific-Rim Measure items (i.e., item 3 and 6) are highly correlated. Thus, the model was respecified to allow the two error terms to covary, leading to a reduction of the model chi-square, and an improved model fit. Causes of correlated error include redundant content of items, method bias, or an unanalyzed association (see Kline, 2005). In the current study, it is hypothesized that these two items have something in common other than the latent constructs represented the model,

possibly due to the behaviors they query (i.e., property damage and electronic bullying) which vary in content from the other items which query relational and physical behaviors. Thus, using correlated error, the overall fit of the measurement model as measured by chi-square χ^2 (df = 71, *N* = 810) = 388.209, *p* = < .001, CFI = .910, and RMSEA = .074 (CI = .067, .082) indicates an acceptable fit according to Kaplan (2000).

Standardized factor loadings are reported because coefficient α is not relevant with latent variable analysis. Standardized factor loadings of .40 and higher are generally considered reliable in SEM (Stevens, 1996). The model produced significant factor loadings, exceeding .40 for all items on their respective latent constructs. The standardized factor loadings are shown in Table 3.

Test of the Structural Model

The purpose of the model testing was to examine the direct and indirect effects of the study variables and test whether theory of mind mediated the associations between gender and physical aggression, gender and relational aggression, and gender and bullying. Analysis was conducted based on *a priori* hypotheses in accordance with SEM and following a review of the existing research on aggression, bullying, gender, and theory of mind. A parameter estimate divided by the standard error greater than the absolute value of 1.96 indicates a significant relationship at the .05 level (Sirkin, 2005). The simultaneous SEM model results are reported first and then a follow-up test of mediation using Baron and Kenny's (1986) steps is reported.

Direct effects. Maximum likelihood with bootstrapping was implemented in SEM to test the model. The model demonstrated an acceptable fit to the data, χ^2 (df = 81, *N* = 810) = 417.113, *p* = < .001, CFI = .906, and RMSEA = .072 (CI = .065, .078). Analysis

of the model revealed a significant direct effect between gender and physical aggression (*Est*. = 0.26, Est./*S.E* = 5.02) and between gender and theory of mind (*Est*. = -0.64, Est./*S.E* = -2.86). As expected, there was no direct effect between gender and bullying (*Est*. = 0.05, Est./*S.E* = 1.11). There was also no direct effect between gender and relational aggression (*Est*. = 0.01, Est./*S.E* = 0.12). Theory of mind did not have a significant predictive relationship with physical aggression (*Est*. = -0.01, Est./*S.E* = -0.81), relational aggression (*Est*. = -0.02, Est./*S.E* = -1.21) or bullying (*Est*. = -0.03, Est./*S.E* = -1.56). Table 5 summarizes bootstrapped estimates of paths and standard errors. The full model is presented in Figure 2.

Indirect effects. An indirect effect is defined as the product of the two unstandardized paths linking X to Y through a mediator (M). Estimates of indirect effects and their standard errors are used to determine the significance of the effect through a mediator (Preacher & Hayes, 2008). Support for mediation relies on whether the indirect pathway from X to M to Y is statistically significant (Shrout & Bolger, 2002). A resampling method (bootstrapping) was used to determine the significance of the indirect effect in the current study. No significant indirect relationships were detected in the model (see Figure 2).

Test of Mediation Model

Although the terms mediation and indirect effects are sometimes used interchangeably, there is an important distinction between these terms (Holmbeck, 1997). Mediation exists when a predictor indirectly affects a dependent variable through a mediating variable (Preacher & Hayes, 2008). There are a number of methods of evaluating mediation; the most widely used being the causal steps approach

recommended by Baron and Kenny (1986). In order to examine the study hypotheses, Baron and Kenny's (1986) approach to testing mediation was implemented. Baron and Kenny (1986) specified, a "mediator…accounts for the relationship between the predictor and the criterion" (p. 1176). A mediating variable specifies how an effect occurs. Mediation is widely used in psychological research when a theoretical rational suggests there is a relationship between two variables (i.e., X → Y), where one of the variables (i.e., X) is proposed to have an indirect effect on the other (i.e., Y) through a mediator (i.e., M; Baron & Kenny, 1986). Both direct effects (e.g., X→Y) and indirect effects through a mediating variable (e.g., X→ M →Y) are measured. Mediation can be conducted using multiple regression or SEM, although SEM is usually the preferred method (Baron & Kenny, 1986) and the one utilized in the current study.

Baron and Kenny (1986) discussed the necessary criteria for establishing mediation, including: (1) the independent variable (i.e., gender) must be significantly correlated with the dependent variable (i.e., physical aggression, relational aggression, bullying), (2) the independent variable (i.e., gender) must be significantly correlated with the mediator (i.e., theory of mind), (3) the mediator must be significantly correlated with the dependent variables while holding constant any direct effect of the independent variable on the dependent variable, (4) when the effect of the mediator on the dependent variable is removed, the independent variable is no longer correlated with the dependent variable for complete mediation or the correlation between the independent and dependent variable should be reduced for partial mediation. Models can be partially or completely mediated (Kline, 1998, 2005; Shrout & Bolger, 2002). These four steps were

tested separately using bootstrapping and are presented below according to each research hypothesis.

Mediation Results According to Research Hypotheses

Step one. The first step in mediation requires that the independent variable (i.e., gender) be significantly correlated with the dependent variable(s). A significant relationship was hypothesized for gender and relational aggression and gender and physical aggression, but not for gender and bullying. The model for step one demonstrated an acceptable fit to the data χ^2 (df = 71, N = 810) = 398.625, p = < .001, CFI = .908, and RMSEA = .075 (CI = .068, .083).

Hypothesis 1a. It was hypothesized that adolescent females would endorse higher levels of relational aggression compared to adolescent males. Contrary to the hypothesis that adolescent females would be involved in relational aggression to a greater degree than adolescent males, the relationship between gender and relational aggression was not significant (*Est.* = 0.02, Est./S.E. = 0.40; see Figure 3).

Hypothesis 1b. It was hypothesized that adolescent males would endorse higher levels of physical aggression compared to adolescent females. In accordance with the hypothesis, a significant relationship between gender and physical aggression emerged (*Est.* = 0.28, Est./S.E. = 5.36). Specifically, males were found to be more physically aggressive than females (see Figure 3).

Hypothesis 1c. It was hypothesized that adolescent males and adolescent females would report similar engagement in bullying behaviors. As hypothesized, there were no significant gender differences for students' involvement in bullying (*Est.* = 0.07, Est./S.E. = 1.66; see Figure 3).

Step two. The second step in mediation requires the independent variable (i.e., gender) to be significantly correlated with the mediator (i.e., theory of mind). The model for step two indicated a perfect fit χ^2 (df = 0, *N* = 810) = 0.00, *p* = < .001, CFI = 1.00, and RMSEA = 0.00 (CI = 0.00, 0.00).

Hypothesis 2. It was hypothesized that adolescent females would have higher theory of mind scores than adolescent males. As hypothesized, there was a significant relationship between gender and theory of mind (*Est.* = -0.64, Est./S.E. = -2.85, *p* < .01). The significance was in the hypothesized direction. As expected, adolescent females scored higher on the theory of mind measure than adolescent males (see Figure 4).

Step three. Significant relationships were established in the first two steps, which are necessary precursors in testing the third step in mediation. Therefore, the final step was to examine the model fit when theory of mind was incorporated into the model. The third step in mediation requires the mediator to be significantly correlated with the dependent variables while holding constant any direct effect of the independent variable on the dependent variable. The model demonstrated an acceptable fit to the data χ^2 (df = 81, *N* = 810) = 417.113, *p* = < .001, CFI = .906, and RMSEA = .072 (CI = .065, .078).

***Hypothesis 3*.** It was hypothesized that theory of mind would mediate the relationship between gender and relational aggression, gender and physical aggression, and gender and bullying. After theory of mind was added to the model, the relationships between gender and relational aggression (*Est*. = 0.01, Est./*S.E* = 0.12) and gender and bullying (*Est*. = 0.05, Est./*S.E* = 1.11) remained non-significant. The relationship between gender and physical aggression (*Est*. = 0.26, Est./*S.E* = 5.02) remained significant. The

results indicate that theory of mind was not a significant predictor for any of the outcome variables (see Figure 2).

Step four. During the last step of mediation, the results were analyzed for either no, partial, or complete mediation in the model. According to the analysis, there is neither partial nor full mediation present among the constructs. That is, the direct effects did not decrease following the addition of the mediating variable to the model. Overall, these results do not support the hypothesis that theory of mind is a mediating variable in the relations between gender and physical aggression, gender and relational aggression, and gender and bullying. The implications of these results are discussed in the next chapter.

Chapter Five: Discussion

Overview

The present study adds to the growing body of literature in the area of theory of mind and social functioning in youth. Aggression has historically been studied through the social skills deficit model, conceptualizing aggressive youth as poor social-information processors. Proponents of the social information processing model (e.g., Crick and Dodge, 1994), have asserted that at some point while aggressive youth are moving through a series of social processing steps they fail to process social information as it was intended. In other words, these youth may interpret a behavior as intentional when there was no purposeful intent, leading to engagement in aggressive behaviors. Others have criticized this model, claiming that not all aggressive behavior is the result of failed processing and actually some aggressive youth are able to use aggression to their advantage, achieving social success. A number of researchers (e.g., Farley, 1999; Sutton et al., 1999a; Yiwen et al., 2004; Walker, 2005) have posited that some youth possess a superior theory of mind. As a result of understanding others' mental states, they are at a social functioning advantage and are able to manipulate situations in their favor.

The current study examined the relationship between theory of mind and aggressive and bullying behaviors, with the goal of evaluating the hypothesis that some aggressive youth are not necessarily incompetent social information processors. It was hypothesized that theory of mind would mediate the relationship between gender and physical aggression, gender and relational aggression, and gender and bullying. The direct and indirect pathways in the hypothesized model were analyzed first using a simultaneous SEM model and then Baron and Kenny's (1986) step-by-step mediation

model. Corrections for the non-normality of the data included the use of latent variables and bootstrapping. This chapter will discuss the significant and non-significant study findings and the relevance of these findings for the current literature. Study limitations, directions for future research, and practical implications for understanding aggressive and bullying behavior will also be discussed.

Study Findings

Direct effect of gender on aggression and bullying: Hypotheses 1a, 1b, and 1c. The first hypothesis made predictions about the relationship between gender and aggressive and bullying behavior. One direct effect was detected among these constructs and two findings were supported. Hypothesis 1a, adolescent males will report a higher level of physical aggression compared to adolescent females was supported. As expected, males endorsed significantly higher levels of physical aggression than females. This finding is consistent with the literature as a number of studies have found that males tend to display higher rates of physical aggression than females (Archer & Côté, 2005; Björkqvist et al., 1992; Crick, 2000; Crick & Grotpeter, 1995; Crick et al., 1997; French et al., 2002; Karriker-Jaffe, Foshee, Ennett, & Suchindran, 2008; Lagerspetz et al., 1988; Pepler et al., 2005; Rys & Bear, 1997). This finding is also consistent with evolutionary theory, as competition for resources using physically vigorous means is historically more salient in males who are using more dangerous and costly means to access resources than their female counterparts (see Pellegrini, 2007).

Hypothesis 1b, adolescent females will endorse higher levels of relational aggression compared to adolescent males, was not supported. Contrary to the hypothesis, the current study found no significant gender differences for endorsements of relational

aggression. While the literature regarding gender and relational aggression is less consistent overall compared to that of gender and physical aggression, this finding differs from several studies which have found higher rates of relational aggression in females (Crick, 1996; Crick et al., 1997; Crick & Grotpeter, 1995; Rys & Bear, 1997). However, this finding mirrors conclusions from several other studies that have found no (Card et al., 2008; Espelage et al., 2003; Karriker-Jaffe et al., 2008; Prinstein et al., 2001; Rose et al., 2004) or weak (Kuppens, Grietens, Onghena, Michiels, & Subramanian, 2008) gender differences in relational aggression A study of middle school students by Espelage et al. (2003), which measured relational aggression using Crick and Grotpeter's (1995) Children's Social Behavior Scale, also found no gender differences in relational aggression. Another study by Karriker-Jaffe et al. (2008) found that males and females were socially aggressive at the same rate. A meta-analytic review of 148 studies on aggression found no meaningful gender differences for indirect aggression (Card et al., 2008). Kuppens et al. (2008) found a weak gender difference, favoring girls as more relationally aggressive. Adding to the inconsistent findings, others (e.g., Tomada & Schneider, 1997) have found relational aggression is more prevalent among boys. These inconsistent findings highlight the problem of the gender dichotomy and historical oversimplification of relational aggression as a "female issue" in the literature (see Swearer, 2008). Since relational aggression may not be only characteristic of females, it is important to explore the larger context of the development and maintenance of relational aggression in both males and females.

First, it is important to look at gender differences developmentally. The lack of gender differences in relational aggression in the current study may represent diminished

gender differences that are a function of development into adolescence. Relational aggression has been found to be more common than physical aggression, overall, in adolescence (Crick, 1996; Rys & Bear, 1997). Adolescents develop relational aggression later than physical aggression since relational aggression is related to the development of advanced cognitive and verbal capacities (Björkqvist et al., 1992) and advanced social skills (Pepler & Craig, 2005). Thus, indirect or relational aggression often peaks (Björkqvist, 1994; Cairns et al., 1989) and direct forms of aggression tend to decline during adolescence (Cairns & Cairns, 1994; Cairns et al., 1989; Loeber & Hay, 1997). Relational aggression is also a less costly strategy for adolescents to employ, because of its covert and social nature. Relational aggression is not as easily detected as the overt nature of physical aggression, leading to fewer negative consequences for relationally manipulative strategies (Xie, Cairns et al., 2002, Xie et al., 2005). Even when an individual uses relationally manipulative strategies, he or she can appear socially skilled on the surface by engaging in prosocial strategies (e.g., compliments, imitation) to obtain social dominance (Hawley, 1999). These prosocial strategies reduce the possibility that he or she will be blamed for negative behaviors (Sippola, Paget, & Buchanen, 2007). While individual differences account for some differences in relational aggression, so do environmental influences. Kuppens et al. (2008) found that relational aggression was higher in classrooms where aggression was a normative behavior. Relational aggression may also decline once social hierarchies within peer groups have been established (Pellegrini & Long, 2003).

Hypothesis 1c, engagement in bullying will not differ based on gender, was supported. As expected, no significant gender differences in perpetrating bullying

behavior emerged in the current study. This finding is similar to others who have indicated no gender differences in their study of engagement in bullying and aggressive behavior (Card et al., 2008; Craig, 1998; Espelage et al., 2003; Galen & Underwood, 1997; Storch et al., 2003). Although the literature is also inconsistent in conclusions regarding gender and involvement in bullying, several researchers (e.g., Boulton & Underwood, 1992; Nansel et al., 2001; & Sharp & Smith, 1991) have found bullying to be more frequent among males. Ultimately, these finding highlight similar inconsistencies as have been found in the relational aggression literature.

Overall, the lack of gender differences in relational aggression and bullying found in the current study support other studies in the literature which have found that gender differences are less meaningful and less discernable than some initial studies postulated. For example, Espelage et al. (2004) cautioned researchers about drawing conclusions from studies on gender differences in bullying behavior. Swearer (2008) further noted the problem with the gender dichotomy in relational aggression and bullying, emphasizing a need for using a social-ecological framework to conceptualize these behaviors, including individual, peer, classroom, school, family, and cultural contexts (see Garbarino & deLara, 2002; Swearer, 2008; Swearer & Doll, 2001; Swearer & Espelage, 2004; Swearer et al., 2009). Moreoever, as Pellegrini (2007) noted, contextual and environmental factors largely influence how behaviors are expressed, above that which has been decided through evolution. For example, through peer groups, individuals learn which behaviors are acceptable. Specifically, males and females learn through their social peer groups which behaviors are endorsed by their respective gender (Pellegrini, 2007). Conforming to the social stereotype of female behavior, socially skilled behavior is often demanded

by peer groups, but also characteristic of social aggression (Sippola et al., 2007). In a study looking at the social ecology of relational aggression, Kuppens et al. (2008) found the classroom environment to be significantly associated with relational aggression. Thus, gender differences themselves are less meaningful than the contextual and environmental influences encouraging and shaping behaviors.

Secondly, due to definitional differences and methodological issues in various studies, it is difficult to ascertain what gender differences actually exist and it is even more difficult to compare these differences across studies (Underwood, Galen, & Paquette, 2001). Archer's (2004) meta-analysis revealed that studies using direct observation methods have found females to be more indirectly aggressive than males, while peer nomination studies have found no gender differences. Similarly, Crick et al. (1997) found teacher reports and peer nomination correlations to be small in assessing aggressive behavior. In the current study, the use of self-report methodology limits the ability for the study to be compared across other studies without similar assessment strategies.

Direct effect of gender on theory of mind: Hypothesis 2. It was hypothesized that females will have higher theory of mind scores than males. Consistent with this hypothesis, females in this study endorsed significantly higher theory of mind scores than their male counterparts. This finding is supported by other studies which have found that females are superior on theory of mind tasks (e.g., Baron-Cohen et al., 1997; Bosacki, 2000; Brown et al., 1996; Villanueva et al., 2000). The consistency of this finding with the literature is encouraging and adds to the growing evidence that females display superior theory of mind. Bosacki (2000) connected gender differences in theory of mind

to the gender intensification hypothesis (see Hill & Lynch, 1983 for further information on the gender intensification hypothesis) purporting that as social roles are internalized during childhood, role expectations of females are related to more nurturing tendencies as well as understanding others' thoughts and feelings. As Bosacki (2000) suggests, these gender differences may exist because females traditionally receive more training in theory of mind abilities compared to males.

Direct and mediated effect of theory of mind: Hypothesis 3. It was hypothesized that theory of mind will mediate the relationship between gender and physical aggression, gender and relational aggression, and gender and bullying. This hypothesis is consistent with the suggestions of Espelage and colleagues (2004) who recommended that more than mean level gender differences be considered among these constructs, including the consideration of factors pertinent to promoting and maintaining bullying and aggressive behaviors. It has been suggested that theory of mind is a phenomenon that serves to promote and/or maintain certain aggressive and bullying behaviors, therefore, it was hypothesized that theory of mind would mediate the relationship between gender and physical aggression, gender and relational aggression, and gender and bullying. However, no direct effects emerged between theory of mind and physical aggression, relational aggression, or bullying. Moreover, no significant indirect effects were detected in the model. The same results were found in the mediation analysis.

Following the analysis of indirect effects in SEM, Baron and Kenny's (1986) steps of mediation were implemented with the same hypotheses as the previously examined simultaneous model. The first step examined whether the independent and

dependent variables were significantly related. Like the previous model, only gender and physical aggression were significantly related in this step. The second step examined whether or not the dependent variable and the mediating variable were significantly related. Also like the previous model, gender and theory of mind were significantly related. Following the significant findings for gender and physical aggression and gender and theory of mind in the first two steps of the analysis, the third mediation step was tested. Theory of mind was entered into the model; however, it was not significantly related to any of the outcome variables and did not prove to mediate the relationship between gender and physical aggression, relational aggression, and bullying.

The lack of direct and indirect effects of theory of mind is contrary to a number of other studies that have found a significant relationship between low levels of theory of mind and physical aggression and bullying (e.g., Farley, 1999; Goldberg et al., 2007; Walker, 2005) and between high levels of theory of mind and relational aggression and bullying (e.g., Sutton et al., 1999a; Yiwen et al., 2004). Specifically, these results failed to replicate Farley's (1999) study which found that the Eyes Task predicted physical bullying in males and females and predicted bullying behavior in males. Moreover, Sutton et al. (1999a) found that those individuals identified as bullies scored higher on a theory of mind task than controls. Yiwen et al. (2004) found that indirect aggression was related to an enhanced theory of mind compared to physical aggression. However, not all studies have yielded significant relationships between these constructs. The non-significant relationships evidenced by the current study are similar to some of Farley's (1999) findings. Farley (1999) found performance on the Eyes Task was not related to relational bullying or verbal bullying. A related finding by Happé and Frith (1996) found

theory of mind was intact, but skewed in students diagnosed with conduct disorder. This is meaningful since physical aggression and bullying are criteria for the diagnosis of conduct disorder (APA, 2000). Possible explanations for the unexpected findings are discussed further in the next section.

Possible Explanations for Unexpected Findings

Hypotheses were made based on theory and the current literature on aggression, bullying, and its correlates. However, the bullying literature is plagued with definitional and measurement inconsistencies (see Swearer et al., in press). Attempts to reconcile these differences and move beyond mean level differences were made in this study by exploring theory of mind as a potential underlying variable in the promotion and maintenance of bullying and aggressive behaviors. However, several of the study findings were not as hypothesized. Possible explanations for the unexpected findings are explored.

One explanation is that social-information processing deficits and theory of mind are not mutually exclusive phenomena. Studies of theory of mind and conduct disordered youth (e.g., Happé & Frith, 1996; Slaughter & Repacholi, 2003; Repacholi, Slaughter, Pritchard, & Gibbs, 2003) have suggested that some individuals possess a theory of mind that is intact, but skewed. This has been called “theory of nasty minds” (Happé & Frith, 1996; Slaughter & Repacholi, 2003). Happé and Frith (1996) posited that hostile attribution biases are not necessarily an indication of deficits in theory of mind, but may instead be related to a “theory of nasty minds.” These youth are able to attribute mental states to others, but individual differences in interpretation of others’ behavior and mental states lead to manipulative strategies. While an intact, nasty (skewed) theory of mind was

not able to be measured in the current study; possible support for this notion can be found by the participants' theory of mind scores. The mean score obtained in this study was 19.5 (range = 3 to 26), with 66% of the participants scoring at or above the mean. It would have been advantageous to assess the multidimensional construct of theory of mind, however, few if any reliable measures are capable of such a feat. This calls attention to the multidimensional construct of theory of mind and the important role that context and individual differences in empathy, morality, and personality play in explaining individual behavior (Repacholi et al., 2003). It has been argued that theory of mind may itself inhibit aggression or may lead to empathy which, in turn, inhibits aggression (Eisenberg et al., 1996; Feshbach, 1987). Therefore, differences in the development of theory of mind and concurrent social-cognitive factors may also be a significant factor in the non-significant findings.

Aggression can also be characterized as multidimensional, further increasing assessment complications as behaviorally distinct subgroups of aggressive children exist (Parkhurst & Asher, 1992). Aggressive behavior has been associated with rejection (Cillessen, van Ijzendoorn, van Lieshout, & Hartup, 1992) and rejection has been associated with a lack of social skills (Newcomb, Bukowski, & Patee, 1993). However, this outcome is not consistently present as some aggressive youth have proven to successfully implement strategic and adaptive strategies (e.g., Hawley, 1999, 2007; Pellegrini & Long, 2003; Stump et al., in press) making these youth capable of exhibiting behaviors that lead to prosocial and protective factors as outcomes, including advanced social status and reciprocal friendships (Parker & Asher, 1993). Thus, it has been suggested that some aggressive youth posses a set of social skills which compensate for

their socially undesirable behavior (Newcomb et al., 1993). The current study may have found support for the hypothesis if the multidimensional aspects of aggression and its adaptive consequences had been measured.

Limitations of the Present Study

The current study is not without limitations, which impacted the findings. Study limitations include the cross-sectional nature of the research design, self-report measurement, low reliability, and non-normality. The discussion and interpretation of findings are cautioned due to the limitations of the current study.

Cross-sectional design. A limitation of the current study includes the cross-sectional design of the study which includes a convenience sample taken from one period of time. Surveying these youth at another period of time during the school year may have yielded different results. Since cross-sectional designs are a snapshot of a period of time, changes over time were not captured. Moreover, cause and effect could not be determined among these constructs because of the cross-sectional nature of the study.

Self-report. Another concern is the self-report nature of the study. Self-report data are based on the students' perspective and therefore may be positively or negatively biased. Self-report studies are often criticized in the literature (Eyesenck, 1994). Potential problems with self-report include the influence of social desirability on the data as most individuals want to present themselves in a positive light (Eyesenck, 1994). Youth may be less likely to report engagement in aggressive behavior since this behavior is seen as undesirable in many environments. Furthermore, frequency of endorsing bullying behaviors has been found to vary depending on whether a definition of bullying is provided at the beginning of the measure (e.g., Vaillancourt et al., 2008). However, self-

report was useful in the current study because of its feasibility and due to the discrete nature of some of the constructs being measured. Ideally, multiple assessments from multiple informants should be obtained. Therefore, future studies using multi-informant methods are needed before the findings can be generalized to other populations and to other settings.

Reliability flaws. The low reliability of the Reading of the Mind in the Eyes may have contributed to the non-significant findings and is a significant limitation in the current study. Due to the low reliability as measured by coefficient alpha, the total variance of the scale is 5.13, with only 48% reliable variance and 52% unreliable. Thus, little variance was explained by the items, concluding that the items did not function properly in the scale or they were poorly written items. Therefore, the unreliability of the measure was adjusted for in the model by taking the residual into account.

The measure suffered from a ceiling effect and was unable to discriminate between participants with high and low theory of mind. In other words, most individuals in the study "passed" the Eyes Task. Since the measure was normed with normal functioning children, ages 8-12; the task was likely too easy for the older participants in this study (ages 11-14). However, the developers of the measure (Baron-Cohen et al., 1997) did not report a ceiling effect in their study which included normal adults. In fact, their study reported sex differences among normal adult participants, indicating that normal females had a higher theory of mind than males. Their study also differentiated between the normal group and the Autism/AS group, finding the latter group had impaired levels of theory of mind. These authors validated their results using Happé's (1994) Strange Stories, an established advanced measure of theory of mind involving

story comprehension. Moreover, Farley (1999) reported a moderate reliability (.62) of the Eyes Task in her study of eighth and ninth grade students. Unlike Farley's study, the reliability of the Eyes Task in the current study is .48 and thus could not predict differences more than chance. The amount of random and systematic measurement error should be small in order to be a reliable and valid psychometric scale, however, the Eyes Task in the current study represents significant measurement error. Therefore, the results of this study should be interpreted with caution. The measure was chosen for this study because it is a non-verbal test of theory of mind, which limited language based difficulties in comparing students across cultures.

Non-normality. Non-normality suggests the data are relatively unstable and cannot be generalized to other populations. Due to the nature of the phenomena being measured, most individuals reported no or very little involvement in the behaviors of interest, leading to significantly skewed data. Much of the data from the Pacific-Rim Bullying Measure suffered from extreme skew and kurtosis, with an average of 81% of the participants' responses being "never" to each of the items. Since normality is an assumption in SEM; attempts were made to help with the non-normality by implementing the bootstrapping method. However, it has been discussed that data are commonly non-normal in social science research (Finney & DiStefano, 2006). Others have noted similar non-normality (e.g., Turner, 2008; Zimmer-Gembeck et al., 2005); in studies of aggression and bullying. This non-normality may reflect the fact that few individuals are perpetrating the majority of the aggression in this sample. Referred to as the Pareto's Principle, or the eighty-twenty rule, it is the notion that eighty percent of offenses are committed by twenty percent of the population (Homans & Curtis, 1934). In accordance

with this principle, only 19% of the participant responses in the current study endorsed bullying behaviors. Caldwell, Vitacco, and Rybroek (2006) further discuss this as a general rule in the delinquency literature, that a small number of offenders commit most of the delinquency acts. Future research should be done in order to address the non-normality and other limitations in the current study.

Future Research

The literature on the factors that contribute to aggression and bullying is growing, but not yet consistent nor well understood. Although the current study found no evidence for a link between theory of mind and aggressive and bullying behaviors; theory and previous research have supported the role of social-cognitions and social competence in aggressive and bullying behavior. In particular, theory posits that individuals are able to combine both antisocial and prosocial strategies to achieve their goals (e.g., bistrategic controllers, Hawley, 2007). Studies have also found significant links between aggression and socially successful outcomes, including, popularity (Andreou, 2006; LaFontana & Cillessen, 1998; Lease et al., 2002; Rodkin et al., 2000; Rose et al., 2004; Xie, Cairns et al., 2002; Xie, Swift et al., 2002), social acceptance (Salmivalli et al., 2000), and status improvement (Pellegrini & Bartini, 2001; Salmivalli et al., 2000; Sandstrom, 1999). However, some aggressive youth still experience negative outcomes such as rejection (Cillessen et al., 1992). Thus, it is clear that aggressive youth are not a homogeneous group (e.g., Hawley et al., 2002; Rodkin et al., 2000) and the heterogeneity of aggression may not lend itself to one or two explanations for the development and maintenance of aggressive and bullying behavior.

Preliminary evidence of multiple underlying social-cognitive factors has been found in studies of moral disengagement. Arsenio and Lemerise (2001) described bullies with advanced social skills, as having a "moral and emotional asymmetry" (p.70). These students are thought to ignore right and wrong when they engage in bullying behavior, yet have a moral sense when they are the targets of victimization. Studies have found that moral disengagement is related to engagement in aggressive and bullying behaviors (Hymel, Rocke-Henderson, & Bonanno, 2005). This construct has also been found to mediate the relationship between gender, aggressive subtypes, and bullying (Turner, 2008). Thus, while it has been hypothesized that aggression may be adaptive, other phenomena such as morality cannot be excluded as an issue important to aggressive behavior. Future studies would benefit from examining multiple social-cognitive factors that may help explain aggressive and bullying behavior.

The ecological processes involved in aggressive and bullying behavior are also important considerations for future research. Bullying and victimization have been referred to as ecological phenomena (e.g., Garbarino & deLara, 2002; Swearer, 2008; Swearer & Doll, 2001; Swearer & Espelage, 2004; Swearer et al., 2009) and since aggressive and bullying behavior do not happen in isolation, ecological variables may affect those behaviors. The ecological framework introduces the influence of a variety of considerations, including individual, family, peer, school and community variables. Swearer and Espelage (2004) call for a more complete understanding of the social ecology surrounding bullying behaviors in order to implement effective prevention and intervention programs in schools. Thus, it is possible that other social cognitive factors (e.g., thinking bias; Repacholi et al., 2003) and ecological phenomena (e.g., classroom

normative behavior; Kuppens et al., 2008) in combination with theory of mind might better explain aggressive and bullying behavior. The focus of peer relationships was examined in a study by Caravita, Di Blasio, and Salmivalli (in press). These authors found theory of mind skills were positively associated to peers defending victims of bullying.

Since theory of mind may be a factor underlying the development and maintenance of aggression and bullying, future research should use a more reliable measure of theory of mind to explore these relationships. Due to the unreliability of the Eyes Task in measuring theory of mind in this study, future studies should seek to improve the reliability of this measure for children and adolescents' use by adding more discriminating items. Alternatively, it may be more advantageous to use a more sophisticated test of theory of mind with a normal adolescent sample. A more sophisticated test may be more capable of assessing higher levels of theory of mind among adolescents, by reducing the ceiling effect found in the current study. More sophisticated assessments have been documented in the literature, including assessments that measure the ability to interpret abstract or nonliteral language such as sarcasm, irony, or deceit (Baron-Cohen, O'Riordan, Stone, Jones, & Plaisted, 1999), measure a participant's ability to distinguish lies from jokes (Wimmer, Brownell, Happe, Blum, & Pincus, 1998), or identify a faux pas (Baron-Cohen, O'Riordan et al., 1999). For example, Baron-Cohen, O'Riordan et al.'s faux pas task examined whether an individual understands why a speaker should not have said what he/she said, that the speaker does not realize his/her mistake, and why the listener would feel hurt or insulted (by the faux

pas). These tasks measure higher level mental state attributions and are more complex and sensitive to differences in theory of mind.

Since the behaviors of interest are so complex and limited by self-report, future studies should implement a variety of assessment tools to measure the complexity of aggression, bullying, and theory of mind. Peer and teacher reports would be useful in substantiating the self-report provided by the students. As Repacholi et al. (2003) point out, theory of mind is not a unidimensional construct and researchers should use a variety of measures to assess the diversity of theory of mind. Finally, because of the limitations of the Pacific-Rim Bullying Measure, it is recommended that the scale not be used to assess bullying behavior until scale revisions are completed and supported by statistical evidence that the items are able to discriminate differences in bullying behavior.

Implications of the Current Study

Caution should be taken when making recommendations from the current study findings due to the limitations, especially those involving reliability and non-normality. Despite its limitations, this study contributes to the extant literature by acknowledging the need to look beyond the dichotomous classification of aggressive males and females. Boulton, Trueman, and Flemington (2002) discussed that interventions should be implemented to address a diverse pattern of behaviors. Thus, prevention and intervention efforts in practice should be targeted toward the behavior itself, not a group of individuals (males or females) since the manifestation may not be specific to that gender. Since specific behaviors should be targeted for intervention and prevention, the mechanisms which may lead to and/or maintain these behaviors, such as theory of mind, should be thoroughly examined.

Many youth have the ability to use knowledge to their advantage in aggressive ways and this understanding of the social complexity of others can be used as a prosocial or antisocial tool (Kaukiainen et al., 1999). Practically speaking, it is often difficult to discern individuals who are prosocial from those who are combining prosocial and antisocial strategies (bistrategic controllers/Machiavellians; Hawley, 2007) since the results of both phenomena result in similar social success. Moreover, the social successes and reinforcement socially skilled aggressors receive make it difficult to ascertain whether their behaviors are capable of remediation. Shifting the contingencies for these youth can be a purposeful point of intervention, as they will likely find it difficult to continue their aggressive strategies when they are no longer tolerated or reinforced by those around them (Cillessen & Mayeux, 2007).

Determining the role or function of antisocial behaviors is important, especially since bistrategic controllers/Machiavellians do not respond to interventions targeted toward unskilled aggressors (Hawley, 2007). Failing to distinguish adaptive from maladaptive strategies of aggression may have negative consequences for the child or adolescent (Connor, 2002). Prevention and intervention efforts focused on social skills deficits have been implemented in schools (Fox & Boulton, 2003) which could mistakenly teach those with an intact theory of mind how to enhance their manipulative strategies. As Sutton and colleagues (1999a) note, improving the social cognitive skills of individuals who bully others is not an efficient intervention strategy. Dishion, McCord, and Poulin (1999) found that peer-group interventions often inadvertently reinforce problem behavior. A group contagion effect can have a negative impact in that it serves as “deviancy training” and promotes risky rather than prosocial behaviors. In other

words, as Cairns and Cairns (1994) noted, “aggression begets aggression.” So, teaching perpetrators how to improve their social skills may make them more powerful and refined in achieving social dominance. However, teaching them how to be prosocial may be an advantageous prevention and intervention focus. This may be especially relevant given that impairments in theory of mind have been linked to an inability to identify socially normative behavior and represents a risk for increased levels of reactive aggression in males (Blair & Cipolotti, 2000).

Researchers (e.g., Sutton et al., 1999a, 1999b) have argued that an ability to understand others’ state of mind is relevant for intervention and prevention efforts. While the theory of mind measure in the current study was not sensitive enough to detect individual differences in theory of mind (i.e., 66% of the participants scored at or above the mean on the Eyes Task), it should not detract from the relevance of theory of mind in the study of aggression and bullying. Even though most participants passed the theory of mind task, as Repacholi and colleagues (2003) discuss, not all individuals with the ability to understand others’ mental states use that understanding in a competent way. In fact, Caravita et al. (in press) found youth with high levels of theory of mind defend their victimized peers. Since theory of mind is most accurately characterized as a neutral social tool (Kaukiainen et al., 1999), interventions focused on the individual and contextual differences in individuals’ theory of mind would be most effective. In other words, focusing on the content of mentalizing ability places attention on the factors that determine how an enhanced theory of mind is used, including context, empathy, morality, and personality (Repacholi et al., 2003). It may also be advantageous to measure behaviors often correlated with theory of mind and related constructs (i.e., mentalizing),

such as coercion. Twemlow, Fonagy, and Sacco (2005), for example, noted a relationship between mentalizing ability and past experiences of coercion. Thus, measuring an individual's mentalizing ability and experiences with coercion would be useful in understanding how to best intervene, such as changing the interactions between family members to improve mentalizing ability. Mentalizing ability can also be enhanced through psychotherapy (see Allen et al., 2008).

Finally, the majority of school-based intervention programs do not have empirical support for their use (Swearer & Espelage, 2004). In addition, a recent meta-analysis found that the results of school-wide bullying interventions often do not result in meaningful, positive differences in students' behavior (Merrell, Isava, Gueldner, & Ross, 2008). A blanket whole-school approach is unlikely to positively affect the heterogeneous group of aggressive youth. Therefore, understanding of the underlying social-cognitive and ecological factors involved in aggressive and bullying behavior is needed. Implementing a social-cognitive model of intervention based on this understanding would be helpful in specifically targeting relevant behavioral and cognitive processes of the aggressor (Doll & Swearer, 2006; Swearer & Givens, 2007), including cognitive distortions (Doll & Swearer, 2006). Individually administered programs, such as *Bully Busters* (Horne, Bartolomucci, & Newman-Carlson, 2003), target cognitions as well as positive alternatives to negative thoughts. Antecedents, behaviors, and consequences have also proven useful targets of this program. This study also highlights the need to engage bystanders in helping to deter aggression and bullying behavior, as a small minority (19%) of students' responses endorse aggressive behavior, while the majority (81%) of responses indicate no involvement in these behaviors. Therefore, bystanders are

an important point of intervention, especially since bystanders often have a large influence over aggressive youth (Doll & Swearer, 2006). Overall, the provision of services targeted at an individual or subgroup level (e.g., bystanders), has promising future research and practical implications for the individual perpetrator and his or her peer group.

In summary, much of what is known about aggressive and bullying behavior is not clear-cut or easily measured. The results from this study emphasize the importance of investigating aggression, bullying, and related constructs using multi-method assessments. Since youth who engage in aggressive and bullying behaviors are not a homogenous group, their behaviors must not be studied in isolation or oversimplified as a behavior only characteristic of a particular trait. This study provides thought-provoking directions for future research in evaluating whether an underlying cognitive process such as theory of mind supports or enhances engagement in aggressive and bullying behavior. Further illustrated is the need for school personnel, teachers, parents, and other interventionists to consider how acquiring and controlling social resources functions to maintain aggressive and bullying behavior. However, it is clear that tests sensitive enough to detect subtle differences in higher ordered thinking are difficult to develop. Finally, these findings highlight the need to evaluate the variables that contribute to the ability to control resources, such as individual differences in theory of mind and other higher ordered thinking processes, in order to provide effective prevention and intervention strategies.

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Table 1

Demographic Characteristics of Participants across Schools

	Schools			
	School A	School B	School C	Total
Gender				
Male	165 (45.1%)	91 (45.5%)	101 (41.4%)	357
Female	201 (54.9%)	109 (54.5%)	143 (58.6%)	453
Grade				
6th	127 (34.7%)	81 (40.5%)	120 (49.2%)	328
7th	147 (40.2%)	67 (33.5%)	56 (23.0%)	270
8th	92 (25.1%)	52 (26.0%)	68 (27.9%)	212
Age				
Range	11-14	11-14	11-14	
M (SD)	12.18 (.94)	12.14 (.96)	12.06 (.95)	12.13 (.95)
Race				
European American	315 (86.1%)	151 (76.3%)	137 (56.8%)	603
Mixed Minority	19 (5.2%)	11 (5.6%)	24 (10.0%)	54
African American	8 (2.2%)	9 (4.5%)	24 (10.0%)	41
Latino/Hispanic	6 (1.6%)	9 (4.5%)	22 (9.1%)	37
Asian/Asian American	8 (2.2%)	8 (4.0%)	17 (7.0%)	33
Other	3 (.8%)	5 (2.5%)	7 (2.9%)	15

Middle Eastern	1 (.3%)	1 (.5%)	8 (3.3%)	10
Native American	5 (1.4%)	2 (1.0%)	2 (.8%)	9
Eastern European	1 (.3%)	2 (1.0%)	0 (0%)	3

Table 2

Demographic Characteristics of Total Participants

Participants			
Gender	Grade	Age	Race
Female (*n*=453) 55.9%	6 (*n*=328) 40.5%	11 (*n*=249) 30.7%	European American (*n*=603) 74.4%
Male (*n*=357) 44.1%	7 (*n*=270) 33.3%	12 (*n*=265) 32.7%	Mixed Minority (*n*=54) 6.7%
	8 (*n*=212) 26.2%	13 (*n*=232) 28.6%	African American (*n*=41) 5.1%
		14 (*n*=64) 7.9%	Latino/Hispanic (*n*=37) 4.6%
			Asian/Asian American (*n*=33) 4.1%
			Other (*n*=15) 1.9%
			Middle Eastern (*n*=10) 1.2%
			Native American (*n*= 9) 1.1%
			Eastern European (*n*=3) 0.4%

Table 3

Means, Standard Deviations, Factor Loadings, Skew, and Kurtosis for Latent Indicators

Latent Variable	Indicator	Mean (SD)	Factor loading	Skew	Kurtosis
Bullying					
	….by pushing, hitting or kicking or other physical ways (jokingly)?	1.66 (.82)	0.48	1.22	1.00
	….by pushing, hitting or kicking or other physical ways (on purpose)?	1.12 (.408)	0.66	3.90	17.22
	….by taking things from them or damaging their property?	1.07 (.328)	0.63	5.63	37.83
	…by teasing, calling them names, threatening them verbally, or saying mean things to them?	1.29 (.57)	0.63	2.03	37.83
	….by excluding or ignoring them, spreading rumors or saying mean things about them to others, or getting others not to like them?	1.22 (.53)	0.56	2.70	7.90
	…by using computer, email or phone messages	1.10 (.37)	0.55	4.64	25.15
Relational aggression					
	Some kids tell lies about a classmate so that they other kids won't like the classmate anymore. How often do you do this?	1.51 (.81)	0.75	1.68	2.84

	Some kids try to keep certain people from being in their group when it is time to play or do an activity. How often do you do this?	1.84 (.90)	0.67	0.81	0.02
	When they are mad at someone, some kids get back at the person by not letting the person be in their group anymore. How often do you do this?	1.72 (.93)	0.69	1.11	0.46
	Some kids tell their friends they will stop liking them unless the friends do what they say. How often do you tell friends this?	1.25 (.66)	0.61	2.99	9.33
	Some kids try to keep others from liking a classmate by saying mean things about the classmate. How often do you do this?	1.43 (.75)	0.76	1.84	3.19
Physical aggression					
	Some kids hit other kids at school. How often do you do this?	1.52 (.84)	0.75	1.68	2.59
	Some kids push and shove other kids at school. How often do you do this?	1.61 (.88)	0.84	1.40	1.41
Theory of Mind	Eyes Task	19.51 (3.15)	0.69	-0.87	1.76

Table 4

Estimated Latent Variable Correlations

Variable	1	2	3	4
1. Bullying				
2. Relational Aggression	0.48***			
3. Physical Aggression	0.50*	0.76***		
4. Theory of Mind	-0.18	-0.07	-0.08	

Note. * $p < .05$; ** $p < .01$; *** $p < .001$

Table 5

Bootstrapped Direct and Indirect Effects. Estimating the Effect of Theory of Mind on the Relations between Gender and Physical Aggression, Gender and Relational Aggression, and Gender and Bullying.

Model paths	Est	S.E.	Est/ S.E.	Stand. Est.
Direct effects				
Gender→Physical aggression	0.26	0.05	5.02**	0.21
Gender→Relational aggression	0.01	0.05	0.12	0.01
Gender→Bullying	0.05	0.04	1.11	0.06
Gender→Theory of Mind	-0.64	0.23	-2.86**	-0.15
Theory of Mind→Physical aggression	-0.01	0.02	-0.81	-0.05
Theory of Mind→Relational aggression	-0.02	0.02	-1.21	-0.07
Theory of Mind→Bullying	-0.03	0.02	-1.56	-0.16
Indirect effects via Theory of Mind				
Gender→Physical aggression	0.01	0.01	0.74	0.01
Gender→Relational aggression	0.01	0.01	1.06	0.01
Gender→Bullying	0.02	0.01	1.34	0.02

Note. *p <.05; **p <.01; ***p <.001

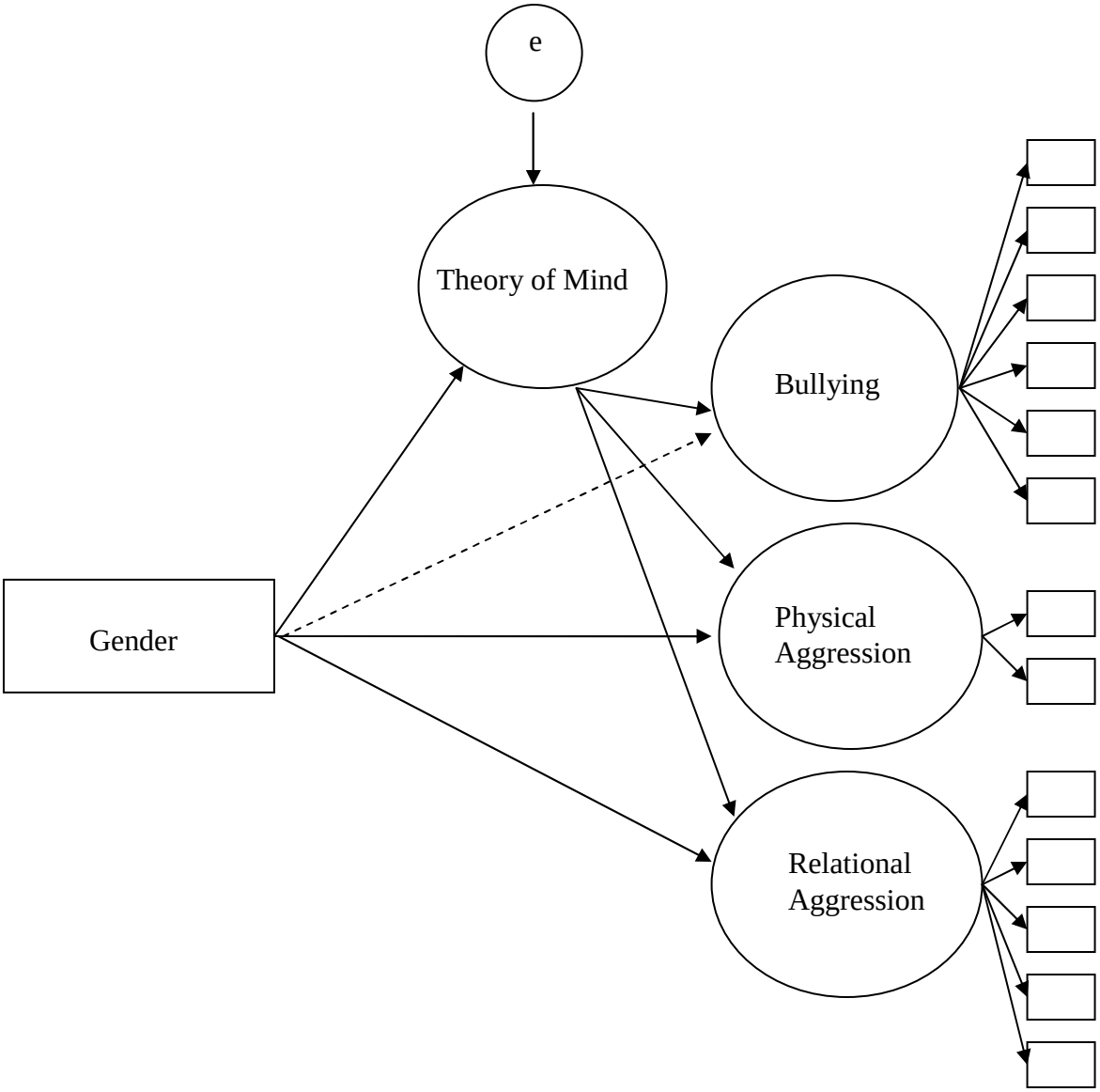

Figure 1. Structural equation model. Model of the hypothesized effect of theory of mind on the relations between gender and physical aggression, gender and relational aggression, and gender and bullying. The model will treat theory of mind, bullying, relational aggression, and physical aggression as latent variables to reduce measurement error.

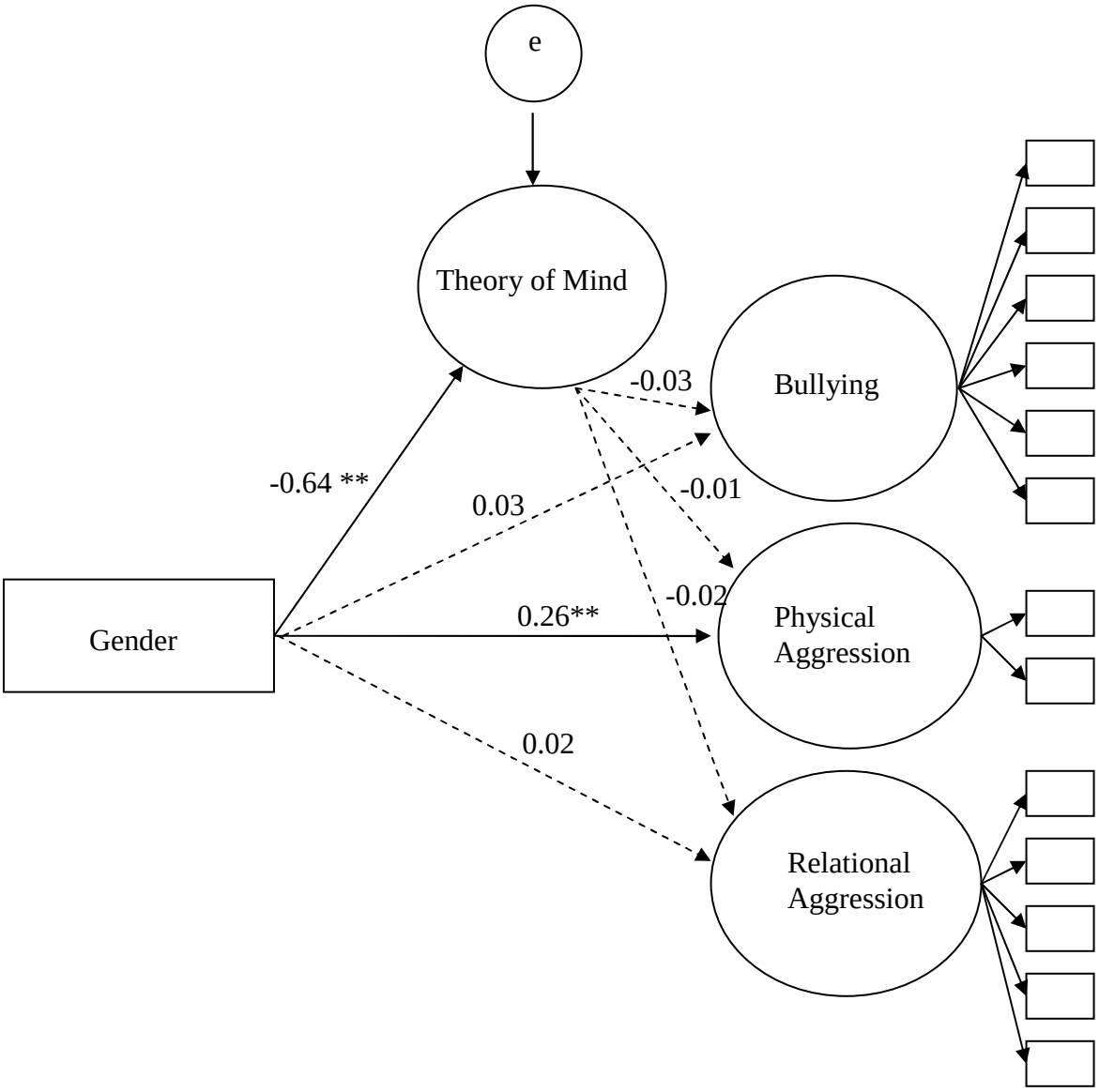

Figure 2. Full model of direct and indirect effects. Direct and indirect effects of gender, bullying, relational aggression, physical aggression, and theory of mind. Model fit, χ^2 (df = 81, *N* = 810) = 417.113, *p* = < .001, CFI = .906, RMSEA = .072 (CI = .065, .078); ***p*<.01.

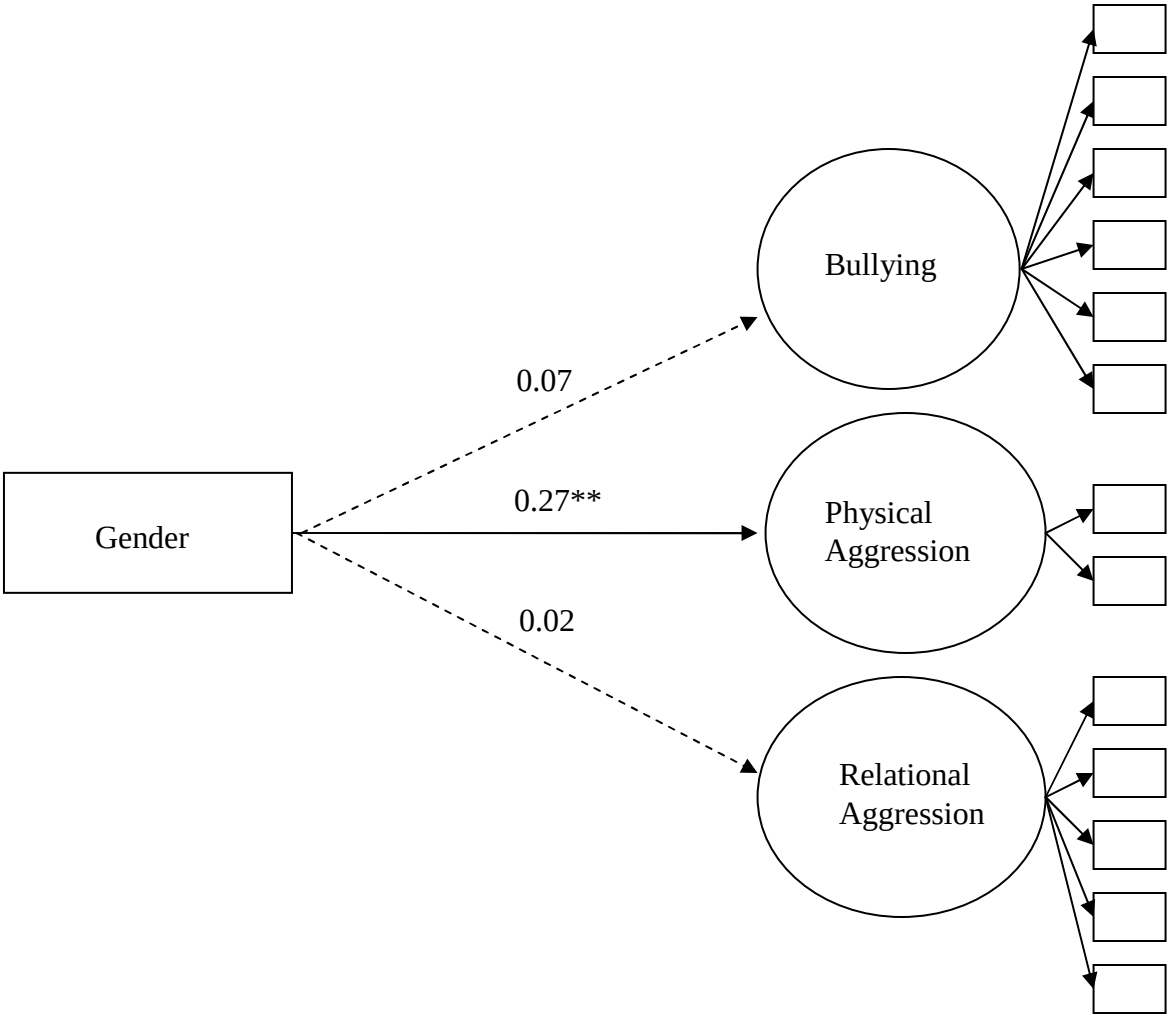

Figure 3. Model of the direct effects of gender on the outcome variables in the mediation model. Direct effects of gender on bullying, physical aggression, and relational aggression in the mediation model. Model fit, χ^2 (df = 71, *N* = 810) = 398.625, *p* = < .001, CFI = .908, RMSEA = .075 (CI = .068, .083); ***p*<.01.

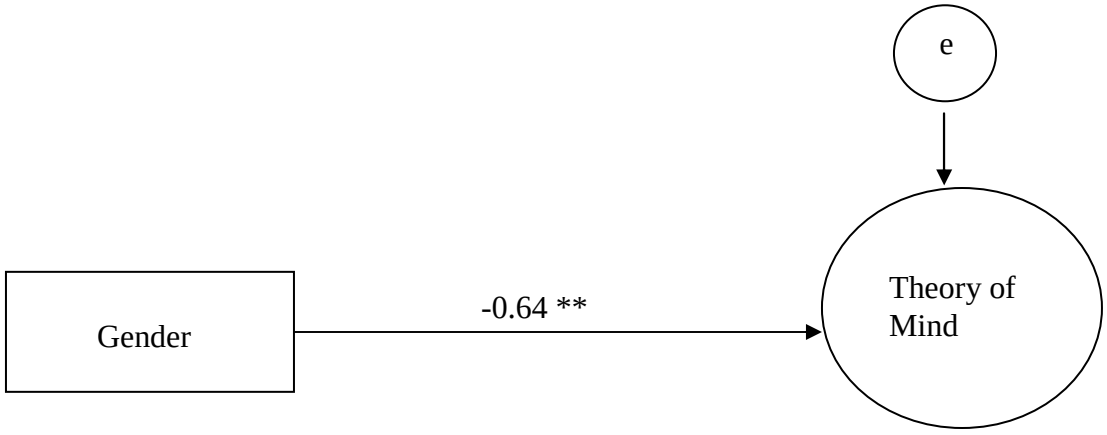

Figure 4. Model of the direct effects of gender on theory of mind in the mediation model. Model fit, χ^2 (df = 0, *N* = 810) = 0.00, *p* = < .001, CFI = 1.00, TLI = 1.00, RMSEA = 0.00 (CI = 0.00, 0.00); **p<.01.

Appendix A

Institutional Review Board Approval

UNIVERSITY OF Nebraska Lincoln

UNL IRB Protocol Template.

1. Describe the significance of the project.

Defined as any form of aggression in which one student or one group of students repeatedly harasses a victim verbally or physically without provocation, characterized by an imbalance of power (Olweus, 1993), bullying among school-aged youth is increasingly being recognized as an important problem facing schools world wide. It is recognized that bullying occurs in a variety of forms including physical, verbal and relational bullying. Understanding and alleviating bullying is important both in terms of improving students' experience and education within schools, as well as preventing future aggression that affects society at large. Bullying has negative effects on its participants, including academic difficulties, school dropout, psychological problems, and a potential rise of overall aggressive behavior (Smith et al., 1993). While it is still unclear whether the effects are short- or long-term, there is a sufficient amount of research indicating that victims report significant levels of depression and diminished self-esteem after victimization (Fox & Boulton, 2003; Olweus, 1994; Smith & Ananiadou, 2003, Swearer et al., 2001). In an effort to address this issue, schools are eager to put into place bullying intervention programs; however, there are few empirically supported programs, with little research of the cultural, interpersonal and environmental factors that foster or inhibit bullying behaviors (Nansel et al., 2001). In order to effectively mitigate bullying, researchers must further explore cultural and interpersonal characteristics that contribute to this phenomenon.

The purpose of this study is to examine the phenomenon of bullying within our schools, specifically with regard to cognitive constructions of bullying and peer relationships. The study will be part of an international effort to study bullying, with results compared across similar investigations in Canada, Japan, Australia, and Korea. It is hypothesized that while bullying will be a common phenomenon across the aforementioned countries, the prevalence of types of bullying will vary across countries and across bullying subtypes. Additionally, it is hypothesized that cognitive constructions and peer influences about bullying will vary across bully countries.

By further examining attitudes towards bullying, researchers and school personnel can use this information to develop more effective strategies for dealing with this form of aggressive behavior before it escalates to tragedy. Only when we begin to take a closer look at cognitive, peer and cultural correlates can we begin to decrease bullying.

2. Describe methods and procedures.

Participant consent or assent will be obtained through school mailing (i.e., parental consent), and in-class (i.e., student assent) (see also recruiting procedures and informed consent sections). Data will be collected from all students through the completion of several self-report questionnaires and will be completed in class. Data will be analyzed using the statistical package of SPSS, utilizing descriptive statistics, analysis of variance, regression

and SEM procedures.

After obtaining parental consent and youth assent, the student participants will be administered a series of self-report instruments, which take approximately 45-60 minutes to complete and are done during the school day. These instruments will include the International Bully Survey (a.k.a. Getting Along with Other People); the Loneliness and Social Dissatisfaction Scale (LSDA); the Children's Depression Inventory (CDI-Short Form); the Reading the Mind in the Eyes Test, Child Version; the Multidimensional Anxiety Scale for Children (MASC-Short Form); the Children's Self Experiences Questionnaire; the Moral Disengagement Scale; and the Children's Social Behavior Questionnaire (see attached). These instruments query students about their experiences with bullying and obtain the students' perception of their relationships with peers. The participating students will be given the names of counselors and teachers available to address concerns related to bullying and victimization at the end of the survey completion. In cases where the student's parent has not given consent for participation or the student chooses not to participate (declined youth assent), the student will be given the opportunity to complete his or her homework or do seatwork during data collection. Participating students' grades, attendance reports, office referrals, standardized testing results. Height/weight records, and verification of special education status will be obtained by analyzing school records. Data collection will occur in November, 2005, May, 2006, and November, 2006.

3. Describe participants.

Participants will include 5th, 6th, 7th, 8th and 9th grade students from Lincoln Public Elementary, Middle and High Schools: These include: Lincoln East, Lincoln Southeast, Culler Middle School, Lefler Middle School, Irving Middle School, Park Middle School, Fredstrom Elementary, Eastridge Elementary, Prescott Elementary, and Clinton Elementary. The approximate age range of the student participants will be 9 – 14 years. Participation will not be limited on the basis of gender, race, and/or ethnicity.

4. Describe benefits and risks.

By obtaining further information from students regarding bullying across cultures and across age groups, researchers and school personnel can better respond to these issues with appropriate interventions. As a result of participating in this research, it is possible that student participants will learn new coping skills for dealing with bullying and often the act of writing about an experience is helpful. Additionally, student participants will be given a referral list of counselors who are available to talk with students about bullying. An additional benefit to all participants in this study is the knowledge of their contribution to a study that will help shape international and national policy regarding the treatment of bullies and victims in the schools.

The risk classification for this study is greater-than-minimal. Participants may feel uncomfortable when responding to questions concerning bullying behaviors. However, self-examination of these issues may encourage an individual at risk to seek additional resources within the school (i.e., intervention with the school counselor), or additional outside resources. A school counselor will be available to meet with students on a group and individual basis. In addition, an in-service explaining resource options for students will be

provided to all teachers and school staff.

5. Describe recruiting procedures.

The opportunity to participate in the study will be presented to all current students in the fifth, sixth, seventh, eighth and ninth grades at the following Lincoln Public Schools: Lincoln East, Lincoln Southeast, Culler Middle School, Lefler Middle School, Irving Middle School, Park Middle School, Fredstrom Elementary, Eastridge Elementary, Prescott Elementary, and Clinton Elementary. Through collaboration with each school's administration, a joint letter from the school principal and principal investigator will be distributed to all parents along with the appropriate consent form (see attached example of recruiting letter).

6. Describe compensation.

There is no monetary compensation for participation in this study; however, all participants will be entered into a raffle drawing for a pair of tickets to a Nebraska Husker football game.

7. Copy of the informed consent form.

See attached Parental Consent Form, Youth Assent Form, for the participating schools.

8. State how informed consent will be obtained.

As all the student participants will be under 19 years of age, both parental/guardian consent forms and youth assent forms will be distributed and collected at each of the participating schools. Each form will describe the nature and purpose of the study, the potential risks and benefits of the study, the opportunity to withdraw at any time without penalty, and confidentiality concerns.

In the fall of 2005, parents and guardians of students at the participating schools will be sent, through a school mailing, a letter informing them of the research study as well as two copies of the parental/guardian consent form. Parents will be asked to complete one copy of the consent form for their son/daughter and return it to the school office. Students whose parents have given consent for their participation will be given a youth assent form during a pre-determined class period at the time of the research; the assent form will be distributed to those eligible students in a class format, with a researcher explaining the research study and reviewing the content of the assent form with the students and allowing time for the students to read and complete the youth assent. Students will be given a second copy of the youth assent which they may keep.

9. Describe how confidentiality will be maintained.

To ensure confidentiality, each participant will be assigned a code number, with all identifying information being removed from the completed measures (i.e., names blackened out if participant writes name on the measure) prior to data analyses. Signed consent and assent forms will be kept separately from the completed survey packets, will only be accessible to the researchers, and will be kept in a locked cabinet locked in Dr. Susan Swearer's office (40 Teachers College). The student survey packets will be kept in Dr. Susan

Swearer's office in a separate locked cabinet and will be only accessible to the researchers. Data will be kept for five years per guidelines established by the American Psychological Association.

10. Copy of questionnaires, survey, or testing instrument.

See attached.

11. Copies of institutional or organizational approval.

See attached letters from the participating schools and from Dr. Leslie Lukin, director of evaluation at Lincoln Public Schools;

12. Copy of funding proposal.

Not applicable.

Appendix B

Individual School Letters of Support

Dear Parents and Guardians of students at (fill in the blank) school,

We are writing to let you know about an exciting research opportunity that is taking place between the Lincoln Public Schools and the University of Nebraska-Lincoln. We have been studying bullying in several schools in Lincoln and Omaha over the past decade. As a result of this successful partnership, this year, we have been asked to participate in an international study on school experiences and bullying. The other countries who are participating in this study are Canada, Japan, Australia, and Korea. An international group of researchers is interested in studying student's experiences across cultures and we are looking forward to being part of this larger study.

Students in the 5th, 6th, 7th, 8th, and 9th grades in 10 participating schools in LPSDO will be asked to complete a series of questionnaires that ask about ways students act toward one another, and about their experiences with sadness, loneliness, and anxiety. These questionnaires will be completed during the school day and will probably take between 45 and 60 minutes. Students will be asked to complete the questionnaires once this fall, once in the spring, and once again in the fall of the 06/07 school year. Not only will the research help us understand international differences in bullying and school experiences; we will also be able to learn more about students' social experiences in our own schools.

We need your help. If you would be interested in letting your child or adolescent participate, please sign the enclosed consent form and return it to your child's school, or send it in the enclosed envelope to Dr. Swearer at 40 Teachers College Hall, University of Nebraska, Lincoln, Lincoln, NE 68588-0345.

Your student's name will not be on any questionnaire that he/she fills out. There will be no way for school personnel to know how your student has responded to any of the questions. ALL RESPONSES ARE CONFIDENTIAL AND ARE USED FOR RESEARCH PUPOSES ONLY. All of the forms are kept at the University of Nebraska-Lincoln in Dr. Susan Swearer's office.

Thank you in advance for your consideration of allowing your child or adolescent to participate in this important international study. If you have any questions, please feel free to call me at 402-472-1741, or email me at: sswearer@unlserve.unl.edu.

Sincerely,

_____	_____
Susan M. Swearer, Ph.D.	Name
Principal Investigator	School Principal

Appendix C

Parental/Guardian Consent Form

Parental/Guardian Consent Form

School Experiences Across Cultures: An International Study

Dear Parent or Guardian:

You are invited to allow your child to participate in a research study; School Experiences Across Cultures: An International Study. The following information is provided in order to help you make an informed decision about whether or not to allow your child to participate. If you have any questions please do not hesitate to ask.

Your child is eligible to participate in this study because he/she is a student in the Lincoln Public Schools. The research project will take place at your child's school during school hours. The purpose of this study is to investigate social behavior and school experiences among school-aged students.

This study will take approximately 45-60 minutes of your child's time. He/she will be asked to complete several questionnaires concerning his or her experiences at school, as well as questions about his/her emotional status including social dissatisfaction, loneliness, depression, anxiety and bullying. While his/her responses will be kept confidential, he/she will be asked to provide basic demographic information including gender, age, grade, school, teacher's name, race and an estimate of his/her grades (i.e. "mostly A's," "A's and B's," "mostly B's," etc). The questionnaires will be administered in November and May of the 2005/2006 school year and in November 2006. Additionally, your child's school records will be accessed to look at grades, standardized testing, special education status, attendance, and height and weight documentation.

Your child may experience mild discomfort when completing the questionnaires (for example, questions asking them to describe any aggression they may have personally experienced). However, as a result of participating in this research, it is possible your child will learn new coping skills for dealing with school aggression, as he/she will be given a referral list of counselors who are available to talk to them about school experiences. If you should choose to access any of these services, you will be responsible for payment. If your child reports any acts of harm committed to him or her self or others, the principal investigator (Dr. Susan Swearer) will contact you and together we will come up with a plan of action to help your child.

Any information obtained during this study which could identify your child will be kept strictly confidential. Every participant will be given a code number so he/she will not be able to be identified by researchers or school personnel. The information obtained in this study may be published in scientific journals or presented at scientific meetings, but your child's identity will be kept strictly confidential. Study records will be kept for five years in a locked file cabinet in the principal investigator's office at the University of Nebraska-Lincoln.

Parent's/Guardian's Initials_____

You are free to decide not to enroll your child in this study or to withdraw your child at any time without adversely affecting his or your relationship with the investigators, the University of Nebraska-Lincoln, or with Lincoln Public Schools. Your decision will not result in any loss of benefits to which your child is otherwise entitled.

Your child's rights as a research subject have been explained to you. If you have any questions about this study, please contact Dr. Susan Swearer at (402) 472-1741. If you have any questions concerning your child's rights as a research participant that have not been answered by the investigator, or to report any concerns about the study, you may contact the University of Nebraska-Lincoln Institutional Review Board (UNL IRB), telephone (402) 472-6965.

DOCUMENTATION OF INFORMED CONSENT

YOU ARE VOLUNTARILY MAKING A DECISION WHETHER OR NOT TO ALLOW YOUR CHILD TO PARTICIPATE IN THIS RESEARCH STUDY. YOUR SIGNATURE CERTIFIES THAT YOU HAVE DECIDED TO ALLOW YOUR CHILD TO PARTICIPATE HAVING READ AND UNDERSTOOD THE INFORMATION PRESENTED. YOU WILL BE GIVEN A COPY OF THIS CONSENT FORM TO KEEP.

_____ YES, My child can participate

_____ NO, I do not want my child to participate

_____ _____
SIGNATURE OF PARENT/GUARDIAN DATE

_____
PRINT YOUR CHILD'S NAME

IN MY JUDGEMENT THE PARENT/LEGAL GUARDIAN IS VOLUNTARILY AND KNOWINGLY GIVING INFORMED CONSENT AND POSSESSES THE LEGAL CAPACITY TO GIVE INFORMED CONSENT TO PARTICIPATE IN THIS RESEARCH STUDY.

_____ _____
SIGNATURE OF INVESTIGATOR DATE

IDENTIFICATION OF PRIMARY INVESTIGATOR

Susan M. Swearer, Ph.D. Office: 472-1741

Appendix D

Youth Assent Form

YOUTH ASSENT FORM

School Experiences Across Cultures: An International Study

We are inviting you to be in this study because you are a student at Lincoln Public Schools, and we are interested in your social behavior and school-based experiences.

This research will take you about 45 to 60 minutes to do. We will ask you to fill out several questionnaires that ask questions about how you and other students in your school get along with each other. Some of the questions will ask about loneliness, feelings of depression or anxiety and bullying. We will ask you to complete the questionnaires in November, 2005, May, 2005 and November, 2006. We will also look at your school records to find out information about your grades, standardized testing, special education status, attendance, and height and weight records. The questionnaires will also include some basic questions about your age, sex, grade, school, your teacher's name and what kind of grades you get.

Some of the questions may cause you to feel uncomfortable as they may touch on personal subjects. If you report that you have been physically harmed or that you intend to harm yourself or others, Dr. Susan Swearer will talk with you and your parents about this. Together we will come up with a plan to make sure that you are safe. Being in the study may help you think about some of your feelings and concerns you experience at school. We will provide you with a list of teachers and counselors who may be able to further help you. If you choose to access counselors outside of school, your family will be responsible for paying for that service. We hope the information from this research will help us better understand the struggles and challenges students may experience. Additionally, we hope to gain an understanding of how to help students feel safer in school.

Your responses will be kept strictly confidential. There will be no way for us to know which responses belong to you or someone else after we have coded each questionnaire. Each questionnaire will have a code number that we will use to organize the data. We may publish a summary of everybody's responses or present a summary at a scientific meeting, but your identity and your responses will be totally confidential.

We will also ask your parents or guardians for their permission for you to do this study. You may talk this over with them before you decide whether or not to participate.

_____Student's Initials

You are free to decide not to participate in this study or to withdraw at any time without negatively affecting your relationship with the investigators, the University of Nebraska, or Lincoln Public Schools. Your decision will not result in any loss of benefits to which you are otherwise entitled.

If you have any questions at any time, please ask one of the researchers, or you may call Dr. Susan Swearer at (402) 472-1741.

If you check "yes", it means that you have decided to participate and have read everything that is on this form. You and your parents or guardians will be given a copy of this form to keep.

_____ Yes, I would like to participate in the study.

_____ No, I do not want to participate in the study.

_____ _____

SIGNATURE OF SUBJECT **DATE**

_____

PRINT YOUR NAME

_____ _____

SIGNATURE OF INVESTIGATOR **DATE**

INVESTIGATOR

Susan Swearer, Ph.D. **Office: 472-1741**

Appendix E

Children's Social Behavior Scale

We are interested in how kids get along with one another. Please think about your relationships with other kids and how often you do these things while you're with them.

CRA	*Things I Do At School*	Never	Almost Never	Sometimes	Almost All The Time	All The Time
CRA1	Some kids tell lies about a classmate so that the other kids won't like the classmate anymore. How often do you do this?	①	②	③	④	⑤
CRA2	Some kids try to keep certain people from being in their group when it is time to play or do an activity. How often do you do this?	①	②	③	④	⑤
CRA3	Some kids try to cheer up other kids who feel upset or sad. How often do you do this?	①	②	③	④	⑤
CRA4	When they are mad at someone, some kids get back at the person by not letting the person be in their group anymore. How often do you do this?	①	②	③	④	⑤
CRA5	Some kids hit other kids at school. How often do you do this?	①	②	③	④	⑤
CRA6	Some kids let others know that they care about them. How often do you do this?	①	②	③	④	⑤
CRA7	Some kids help out other kids when they need it. How often do you do this?	①	②	③	④	⑤
CRA8	Some kids yell at others and call them mean names. How often do you do this?	①	②	③	④	⑤
CRA9	Some kids push and shove other kids at school. How often do you do this?	①	②	③	④	⑤
CRA10	Some kids tell their friends they will stop liking them unless the friends do what they say. How often do you tell friends this?	①	②	③	④	⑤
CRA11	Some kids have a lot of friends in their class. How often do you have a lot of friends in your class?	①	②	③	④	⑤
CRA12	Some kids try to keep others from liking a classmate by saying mean things about the classmate. How often do you do this?	①	②	③	④	⑤
CRA13	Some kids wish that they had more friends at school. How often do you feel this way?	①	②	③	④	⑤
CRA14	Some kids say or do nice things for other kids. How often do you do this?	①	②	③	④	⑤
CRA15	Some kids have a lot of classmates who like to play with them. How often do the kids in your class like to play with you?	①	②	③	④	⑤

Appendix F

Pacific-Rim Bullying Measure

There are many different ways students can be mean and use negative behavior against others in the group who cannot defend themselves easily. We are interested in how often over the past two months you have taken part in being mean or negative to others.

22.	In the past two months, how often have you taken part in being mean or negative to others…	Never	Once or twice	About once a week	Several times a week
22.1	….by pushing, hitting or kicking or other physical ways (jokingly)?	①	②	③	④
22.2	….by pushing, hitting or kicking or other physical ways (on purpose)?	①	②	③	④
22.3	….by taking things from them or damaging their property?	①	②	③	④
22.4	…by teasing, calling them names, threatening them verbally, or saying mean things to them?	①	②	③	④
22.5	….by excluding or ignoring them, spreading rumors or saying mean things about them to others, or getting others not to like them?	①	②	③	④
22.6	…..by using computer, email or phone text messages?	①	②	③	④

Appendix G

Reading of the Mind in the Eyes

thinking about something

upset

excited

happy

feeling sorry

bored

interested

joking