

## ABSTRACT

Title: The Social Information Processing Patterns of Peer-Victimized Children  
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This study examined social information processing (SIP) in peer-victimized children in ways that considered issues of measurement in what constitutes being a victim. A sample of 107 2nd and 3rd grade students completed self- and peer-reports of victimization and aggression, as well as a measure of SIP. The results indicated that self- and peer- reports of victimization were not significantly correlated. There was a modest but significant positive relationship between victimization and aggression, both within and across informants. Findings about the relationship between victimization and SIP were complicated by overlaps between victimization and aggression, lack of correlations across perspectives, and small sample size. Hostile intent attributions were modestly positively correlated to self-reported victimization, but not to peer-reported victimization. The results suggest that the relationship between victimization and SIP depends on how victimization is measured. Implications of these findings for future research are discussed.

THE SOCIAL INFORMATION PROCESSING PATTERNS OF  
PEER-VICTIMIZED CHILDREN

By

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## Chapter 1: Introduction

### *Rationale for Studying Victimization*

Peer harassment in the schools is a problem that exists across cultures and societies. In schools around the world, a sizeable minority of children are subjected to teasing, taunting, physical aggression, and social ostracism by their peers. Although all incidences of bullying involve two parties (i.e., a bully and a victim), researchers have historically focused on studying the initiators of interpersonal aggression. However, in the last twenty five years, greater attention has been paid to the victims of peer aggression. Figures from various studies suggest that approximately ten percent of school-aged children are repeatedly harassed by their peers (Perry, Kusel, & Perry, 1988). These children have been shown to suffer from a host of psychological and social adjustment difficulties, including peer rejection, low self-esteem, loneliness, depression, and delinquency (for reviews, see Egan & Perry, 1998; Hawker & Boulton, 2000).

These disturbing findings underscore the importance of further investigating victimization so as to better understand the factors that put certain children at risk for being bullied. Several studies have examined the physical and behavioral attributes of victimized schoolchildren. For example, Olweus (1978) found that physical weakness is one factor that may put children at greater risk of being victimized. Perry, Hodges, and Egan (2001) reported that victims of peer harassment lack certain social skills and tend to engage in maladaptive behaviors, such as reactive aggression or submission, that serve to reinforce their aggressors and thus increase their likelihood of being victimized in the future.

## *The Role of Social Information Processing in Children's Social Maladjustment*

While the fact that victimization is linked to certain maladaptive behaviors is fairly well established, little is known about the cognitive processes of victimized children. However, these mental processes are an important focus of study because they may provide insight into a missing link between interpersonal experiences, behavior, and adjustment. The paucity of research in this area is surprising given the large amount of effort that has been devoted to studying the social cognitive patterns of other socially maladjusted youngsters such as aggressive and rejected children.

One particular model of information processing mechanisms in children's social adjustment (Crick & Dodge, 1994) has proven to be a useful heuristic for studying aggression. This model breaks down the complex construct of social functioning into discrete processing components that can be assessed empirically. The model consists of six steps: encoding of cues, interpretation of cues, clarification of goals, response access or construction, response decision, and behavioral enactment. Although the steps occur in sequence, the model is cyclical in structure and the various components influence each other reciprocally. In addition, each step produces an outcome that is stored in memory and shapes the individual's social schema, an organized set of abstracted general knowledge, which may be accessed later to guide the individual's response to a new situation.

Research has consistently shown that certain types of socially maladjusted children, including aggressive and peer-rejected youth, differ from their well-adjusted peers at multiple stages of the social information processing (SIP) cycle (for a review, see Crick & Dodge, 1994). For example, aggressive children have been shown to encode

fewer cues in the immediate environment, and rely more heavily on internal schemas to guide their interpretation of an event, than do non-aggressive children (Dodge & Tomlin, 1987; Matthys, Cuperus, & Van Engeland, 1999). Aggressive children also make more hostile intent attributions than do their well-adjusted peers; that is, they tend to interpret their peers' actions as hostile even when the intent is ambiguous (Crick & Dodge, 1994). Socially maladjusted children also tend to construct more antisocial goals in their social interactions (e.g., revenge and winning over others), while socially well-adjusted children pursue more relationship-enhancing goals (such as trying to be friends with others; Crick & Dodge, 1989). Finally, aggressive and rejected children construct and enact more aggressive responses than do non-aggressive children (Asher, Renshaw, & Geraci, 1980; Matthys et al, 1999). They also tend to believe that aggressive responses will produce favorable outcomes, while non-aggressive children expect unfavorable outcomes from aggressive behavior (Crick & Dodge, 1996).

#### *Social Information Processing and Victimization*

A small number of very recent studies have applied Crick and Dodge's (1994) SIP model to the study of victimized children (Camodeca, Goossens, Schuengel, & Terwogt, 2003; Champion, Vernberg, & Shipman, 2003; Schwartz, Dodge, Doie, Hubbard, Cillessen, Lemerise, & Bateman, 1998; Warden & Mackinnon, 2003). The results of these studies provide preliminary evidence that victims differ from non-victimized children in terms of their social cognitive processes. For example, Schwartz et al. (1998) found that observed victimization during a play-group setting was positively correlated with both hostile intent attributions and submissive responses to aggressive overtures by peers. Champion et al. (2003) found that victimized children (identified



through self- and parent-reports) selected aggressive responses more readily than non-victimized children. Camodeca et al. (2003) found that children who were identified as victims through peer-reports, and who also scored high on a measure of bullying, made more hostile intent attributions than non-bullying victims and control children. In contrast to these studies, Warden and Mackinnon (2003), who used a composite measure of self- and peer-reports of victimization, did not find any significant differences between the SIP patterns of victims and nonvictims.

Although the aforementioned studies are an important starting point for research into the SIP patterns of victimized children, it is difficult to draw definitive conclusions from such a small number of studies. Furthermore, the matter is complicated by some contradictory findings across these studies. In interpreting discrepancies among the results, it is important to note that the studies differed in the ways that they defined and measured victimization. For example, each of the four studies utilized different informants (e.g., trained observers, parents, peers, and/or the children themselves) to measure victimization. In addition, the four studies differed in whether aggressive children were included in the sample of victims. Camodeca et al. (2003) and Champion et al. (2003) excluded aggressive victims from their sample, while Schwartz et al. (1998) and Warden and MacKinnon (2003) did not differentiate between aggressive and non-aggressive victims.

When interpreting studies of victimized children, it is important to consider the ways in which victimization is defined (relational or overt), measured (self or peer identified) and, whether or not the victim is also aggressive. A major purpose of the present study is to examine the SIP patterns of victims while looking at empirically

established sub-constructs of victimization and the ways in which these subconstructs are measured. An overview of the issues involved in assessing and defining victimization is provided in the following section.

### *Issues in the Measurement of Victimization*

It is important to consider that victimization is not a unidimensional variable. For example, victims can be further differentiated by their level of aggression (e.g., aggressive versus passive victims) and by the type of aggressive behavior of which they are a target (e.g., relational versus overt victimization). These dimensions have been used to identify various subtypes of victims, and several recent studies have shown that different victim subtypes display differential patterns of behavior and psychosocial adjustment (Crick & Grotpeter, 1996; Schwartz, Proctor, & Chien, 2001). Such findings support the validity of a multidimensional conceptualization of victimization, and provide reason to hypothesize that different victim subtypes might also differ from one another in their patterns of processing social information.

*Aggressive versus passive victims.* This dimension is of specific interest to the present study because the four reviewed studies on the SIP patterns of victims differed in terms of whether they disaggregated their victims by level of aggression. The distinction between aggressive victims and non-aggressive (or passive) victims is an important one, and has been the focus of several research studies. Aggressive victims have difficulty controlling their anger and tend to display strong emotional reactions when provoked by peers. Their aggression is haphazard and emotionally dysregulated, and differs from that of bullies (non-victimized aggressors), who use aggression as a deliberate means to achieve a goal (Perry, Perry, & Kennedy. 1992). In contrast, passive victims tend to

respond submissively to peer provocation (Olweus, 1978). Although aggressive victims and passive victims differ considerably in terms of the types of behaviors they exhibit in response to provocation, both types of behavior tend to be ineffectual and serve to reinforce the aggressor, thus increasing the likelihood of future peer harassment.

Aggressive and passive victims have also been shown to differ in terms of their social-emotional adjustment. While both types of victims are more socially maladjusted than non-victimized children, there is evidence that aggressive victims experience greater levels of psychological and social problems including depression, anxiety, and peer rejection (Schwartz et al., 2001). Given both the behavioral and social-emotional differences between aggressive and passive victims, researchers should take care to distinguish between these subtypes when studying victimization.

*Self-identified, peer-identified, and self-peer-identified victims.* Currently, there is a small yet significant body of literature that stresses the need for considering a third dimension of victimization, one that is based on the informant providing the rating of victim status. Traditionally, two of the most common methods of assessing a child's victim status are peer-nominations and self reports of victimization. Many studies have shown that the agreement between peer and self ratings is low to moderate. Yet only recently have researchers begun to investigate the possibility that this lack of agreement between the two measurement methods is due to the fact that self- and peer- reports assess different underlying constructs of victimization.

For example, Juvonen, Nishina, and Graham (2001) have argued that self-reports of victimization tap subjective experiences, while peer-reports measure social reputation. Empirical evidence suggests that self- and peer-appraisals may be differential risk factors

for the various forms of maladjustment that are associated with victimization. For example, peer-reported victimization has been linked to interpersonal maladjustment (e.g., peer rejection), while self-reported victimization has been more strongly linked to intra-psychological maladjustment (e.g., depression, loneliness, anxiety; Graham & Juvonen, 1998). Furthermore, there is evidence to suggest that self- and peer-reports of victimization provide unique and non-redundant information about children's experiences, and that children who are identified by both themselves and their peers as victims are more maladjusted than children who are identified as victims by either themselves or their peers, but not both. Given the fact that self- and peer-reports of victimization are linked to different patterns of psychological and social maladjustment, it is reasonable to expect that these two methods of measurement might also be linked to different patterns of social information processing.

#### *Statement of the Problem and Research Questions*

The present study will address the issues raised above. First, it will add to the small yet growing body of research on the social cognitive processes of victimized children. Second, it will address the issues of measurement by examining whether different subconstructs of victimization (i.e., aggressive versus passive, self- versus peer- versus self-peer identified) are associated with different types of social information processing. The study will be conducted in two parts. Part 1 will explore various measures of victimization and aggression, looking at the relationships between different instruments within and across constructs. The specific questions to be addressed in Part 1 are:

1A. What is the relationship of different measures of the same construct (victimization or aggression) within a single informant? Specifically, what is the relationship between different self-report measures of victimization? What is the relationship between different peer-report measures of aggression?

1B. What is the relationship between victimization and aggression within a single informant (self or peer)? Specifically, what is the relationship between self-reports and peer-reports of victimization? What is the relationship between self-reports and peer reports of aggression?

1C. What is the relationship between victimization and aggression, both within and across informants? Does this relationship differ when different instruments are used to define “victimization” and aggression”?

Part 2 will address the central question of this study, that is: what is the relationship between victimization and social information processing? The results of Part 1 of this study will guide the specific instruments to be used in answering this question. The specific questions to be addressed in Part 2 are:

2A. What is the relationship between SIP and each of the victimization measures? Does the relationship between victimization and SIP change when different measures are used to define victimization?

2B. What is the relationship between SIP and each of the aggression measures? Does the relationship between aggression and SIP change when different measures are used to define aggression?

2C. Do victimization and aggression make unique contributions to variance in SIP? This question will be addressed separately for self-reports and peer-reports of victimization and aggression.

2D. Do different informants contribute unique information about victimization as a predictor of SIP? That is, what is the relative contribution of self-reported and peer-reported victimization to variance in SIP?

2E. Do self-identified victims, peer-identified victims, and nonvictims differ with respect to the SIP components of intent attributions, response selection, and outcome expectations?

2F. Do bullies, passive victims, aggressive victims, and comparison children differ with respect to the SIP components of intent attributions, response selection, and outcome expectations? Do the results differ when different measures of victimization and aggression are used to identify the groups?

## Chapter 2: Overview of the Literature

### *Characteristics of Victims*

There is little doubt that children who are repeatedly victimized or bullied by their peers tend to be more socially and psychologically maladjusted than their non-victimized classmates. Research has consistently shown that victimization is linked to various types of psychosocial maladjustment, including peer rejection (Perry et al., 1988; Snyder, Brooker, Patrick, Snyder, Schrepferman, & Stoolmiller, 2003), depression (Boivin, Hymel, & Bukowski, 1995; Callaghan & Joseph, 1995; Neary & Joseph, 1995), anxiety (Boulton & Smith, 1994; Crick & Grotpeter, 1996), low self-esteem (Austin & Joseph, 1996; Callaghan & Joseph, 1995; Boulton & Smith, 1994), loneliness (Boivin & Hymel, 1997; Crick & Grotpeter, 1996), and school avoidance (Kochenderfer & Ladd, 1996). Given the strong, well-established association between victimization and so many forms of psychological, social, and academic maladjustment, a great deal of research has been devoted to uncovering the factors that put children at risk for being bullied.

For many children, the experience of victimization is not a one-time event but rather a chronic and painful part of life. Children who are victimized in one setting are often also victimized in other settings (for example, when they change classrooms, teachers, or schools) (Perry et al., 2001). This fact suggests that chronically victimized children are not randomly selected targets of aggression, but rather they may possess specific characteristics or engage in certain behaviors that make them vulnerable to abuse by their peers. According to Olweus (1978), physical weakness is one characteristic that puts children at risk for victimization. Bullies are more likely to target weaker or smaller children because they are less able to defend themselves.

However, research has shown that compared to their physical characteristics, children's behavior is a better predictor of their victim status. Specifically, certain children may act in ways that encourage abuse from aggressors. Some researchers (e.g. Olweus, 1978) have delineated two types of victims: passive victims, who are socially withdrawn and do little to directly provoke their attackers, and provocative or aggressive victims, who irritate their peers by attention-seeking and disruptive behavior. Passive victims are characterized by internalizing symptoms such as anxiety and depression, which may cause their aggressive peers to view them as easy targets. Provocative victims, on the other hand, tend to exhibit externalizing difficulties and are often aggressive themselves. Although passive and aggressive victims differ considerably in terms of the types of behaviors they exhibit in response to provocation, both types of behavior tend to be ineffectual and serve to reinforce the aggressor. Schwartz, Dodge, and Coie (1993) showed that children who respond assertively to peer conflicts are more effective in discouraging bullies from harassing them in the future. Victimized children, on the other hand, tend to react aggressively or submissively, which only serves to increase the likelihood that they will be victimized again in the future.

While it is clear that victimized children behave in ways that reinforce their status as victims, little is known about the mental processes that underlie their social difficulties and lead to the ineffectual behaviors outlined above. For example, there is a paucity of research investigating how victimized children interpret and encode their peers' actions or generate responses to provocation. Models of social cognition and information processing offer a promising framework through which to view peer victimization. Such models have proven useful for studying aggressive children, but with the exception of a



few very recent studies, they have not been applied to the study of victims. Yet, by investigating the cognitive processes by which children perceive and respond to their peers' actions, researchers may be able to uncover valuable information as to how to better understand the causes of victims' maladaptive social behavior.

### *Victim Subtypes*

Before reviewing the literature on the cognitive processes of victims of peer harassment, it is important to note that the term "victim" is a general label that encompasses various subcategories of children who are harassed by their peers. Research conducted in the last twenty years has pointed to at least two dimensions of victimization: aggressive versus passive victims, and victims of relational versus overt aggression. More recently, there has been some evidence to suggest a third dimension of victimization, based on personal versus peer perceptions of victimization (Juvonen et al., 2001).

*Aggressive versus passive victims.* There is a great deal of evidence supporting the distinction between "aggressive" victims and "passive" victims. This distinction was first reported by Olweus (1978), who noted that in his sample of victimized children, most were characterized by submissive and withdrawn behavior, but a small yet substantial subset displayed aggressive behaviors. This observation led Olweus to distinguish his sample into passive victims – those children who yielded to bullies without conflict, and provocative victims – those children whose irritating behavior led to abuse by peers. This distinction has been supported in more recent studies (Boulton & Smith, 1994; Perry et al., 2001; Pellegrini, Bartini, & Brooks, 1999; Schwartz, Dodge, Pettit & Bates, 1997). Although various terms have been used to describe these subtypes,

the terms “aggressive victim” and “passive victim” will be used throughout this paper. Non-victimized aggressors will be referred to as “bullies.” The purpose of using these terms is that, unlike some previously proposed terminology, they do not carry implications regarding the psychological attributes of the individuals (Schwartz et al., 2001).

Perry et al. (1992) described aggressive victims as “ineffectual aggressors” who are characterized by emotional dysregulation. When faced with a conflict or potential conflict with peers, these children have difficulty controlling their anger and become emotionally distressed and frustrated. This strong emotional response usually leads to escalation rather than resolution of the conflict, and makes the ineffectual aggressor a likely target for further bullying in the peer group. This impulsive and disorganized behavior stands in contrast to the more controlled and goal-oriented actions of aggressive children who are not victimized, or who are bullies.

Although the distinction between aggressive victims, passive victims, and non-victimized aggressors (bullies) is defined based on behavioral characteristics, these subgroups also differ in terms of their patterns of psychosocial adjustment (Schwartz et al., 2001). There is evidence to suggest that aggressive victims are more maladjusted than other aggressive or victimized youth. First, aggressive victims are more highly disliked than bullies or passive victims (Kupersmidt et al., 1989, cited in Schwartz et al., 2001; Schwartz, 2000). In addition, there is evidence that they experience higher levels of depression (Kumpulainen et al., 1998) and anxiety (Schwartz, 2000) than bullies or passive victims. However, the evidence is somewhat inconclusive; another study (Bijttebier & Vertommen, 1998) found that passive victims scored higher than aggressive

victims on a measure of internalizing problems. Although the current body of research strongly supports the existence of these two subgroups of victims, the majority of research on the psychosocial outcomes associated with peer victimization has treated victimization as a unidimensional variable, and thus the evidence to date is not sufficient to conclusively describe the psychological and social developmental trajectories associated with passive versus aggressive victimization. However, the preliminary evidence suggests that among aggressive victims, passive victims, and bullies, the aggressive victims are the most maladjusted.

*Overt versus relational victimization.* The vast majority of research has focused on victims of overt aggression, which includes physical or verbal attacks, or global, unspecific forms of mean behavior (Crick, Nelson, Morales, Cullerton-Sen, Casas, & Hickman, 2001). Recently, however, some researchers have argued that another subgroup of victims exists which may be overlooked when the traditional conceptualization of victimization is used to identify victims of peer harassment. Specifically, some children are the targets of relational aggression, which is behavior in which the aggressor manipulates interpersonal relationships with the intent to cause harm to another individual, such as purposefully excluding a child from the peer group (Crick et al., 2001). It has been shown that victims of relational aggression exhibit problems with social and psychological maladjustment (e.g., loneliness, depression, and social anxiety), above and beyond what is accounted for by overt (physical or verbal) victimization (e.g., Crick & Grotpeter, 1996). Thus, studies that examine only victims of overt aggression appear to be overlooking an important subset of victims who may be suffering from equally negative adjustment problems.

Some studies have suggested that girls are more relationally victimized than boys (e.g., Crick & Bigbee, 1998; Crick, Casas, & Ku, 1999), whereas others have shown no significant gender differences (e.g., Crick & Grotpeter, 1996; Paquette & Underwood, 1999). Despite these mixed findings, it is fairly well established that relational victimization is more salient and distressing for girls than for boys. In a review of the research on relational victimization, Crick et al. (2001) stated that “Findings from several lines of research indicate that, relative to boys and men, girls and women are more distressed by relational slights, and are more likely to incorporate information through social interaction into their self-views” (p. 203). This evidence would suggest that girls who are relationally victimized experience more negative social and psychological outcomes than boys who experience similar victimization. Crick and Bigbee (1998) found that for both boys and girls, relational victimization contributed to peer rejection, submissive behavior, loneliness, social avoidance, and emotional distress. For girls, but not for boys, relational victimization was also associated with lower levels of peer acceptance and self-restraint. Thus, while both genders are negatively affected by relational victimization, girls may experience negative consequences in more domains of social and emotional functioning than boys.

### *Attribution Theory*

One aspect of social cognition involves the way in which individuals explain the causes of their own experience. People attribute the causes of events to certain factors, which may be perceived as internal or external to the individual, stable or unstable over time, and controllable or uncontrollable. Individuals who attribute negative events to internal, stable, and uncontrollable factors tend to experience feelings of guilt,

helplessness, and low self-esteem. Graham and Juvonen (1998) were the first researchers to apply attribution theory to the study of victimization. Specifically, they investigated whether children's causal attributions were a mediating factor between victimization and psychological maladjustment. They measured participants' subjective appraisals of hypothetical victimizing incidents through an attributional questionnaire. Self-blaming attributions were categorized into two levels: characterological self-blame and behavioral self-blame. According to attribution theory, individuals who engage in characterological self-blame attribute negative events to internal characteristics of themselves that are stable and can not be changed. Individuals who engage in behavioral self-blame, on the other hand, attribute negative events to internal behaviors that can be changed in the future rather than static traits. Because behavioral self-blame is more adaptive (i.e., it motivates individuals to change their behaviors rather than causing them to believe that there is nothing they can do about their predicament), Graham and Juvonen (1998) hypothesized that characterological self-blame would be more strongly related to chronic victimization and social maladjustment. Indeed, they found that characterological self-blame was related positively to social anxiety and loneliness, and negatively to low-self-worth. Furthermore, victims endorsed significantly more characterological self-blame than nonvictims. Thus, children's causal attributions appear to moderate the relationship between the experience of victimization and interpersonal and social maladjustment. Specifically, children who perceive their victim experience as resulting from stable internal traits are more likely to experience loneliness, anxiety, and low self-esteem than children who view the same experiences as resulting from specific behaviors.

While this study is important in that it provides insight into the social cognitive styles of victims, it does not address the social cognitive patterns that lead to ongoing victimization in the first place. Causal attributions are formed based on an individual's past experiences of encoding and processing information. For example, a stable internal attribution suggests that on the basis of prior encounters the individual has concluded that he or she is to blame and that there is nothing he or she can do about it. Therefore, it is important to understand the sources of these attributional biases and the situations in which they occur.

### *Social Information Processing Models*

Graham and Juvonen's (1998) attributional analysis makes a valuable contribution to our understanding of one aspect of the social cognitive processes of victims. However, causal attributions are a product of many interacting cognitive processes that need to be examined. The mechanisms by which children interpret and respond to events involve a number of other mental processes which are important to consider in victimization research. Crick and Dodge (1994) proposed a more comprehensive model of children's social information processing (SIP). This model consists of six steps: encoding of cues, interpretation of cues, clarification of goals, response access or construction, response decision, and behavioral enactment. Although the steps occur in sequence, the model is cyclical in structure and the various components influence each other reciprocally. In addition, each step produces an outcome that is stored in memory and shapes the individual's *social schema*, an organized set of abstracted general knowledge, which may be accessed later to guide the individual's response to a new situation. Although all of these components are interrelated,

researchers have defined them separately for the purpose of examination. This concept of discrete processing steps is artificial, but the distinction is important because it allows researchers to investigate specific processes, and thus specific areas of individual deficit, in the incredibly complex task of interpreting and responding to one's social environment.

A major advantage of the social information processing model is that the specific processing components are relatively easy to assess, usually by having people respond to hypothetical scenarios of social situations. The model has also proven to be successful in predicting social adjustment (Crick & Dodge, 1994). Finally, because the specific processes can be taught to children, the model may serve as a guide for interventions to improve social competence (Crick & Dodge, 1994).

This social-information processing model has been applied extensively in the study of aggressive and socially rejected children, and has proven to be a useful framework for conceptualizing these constructs. The most commonly used method of assessing the social information processing steps is to present subjects with hypothetical vignettes of problematic or ambiguous social situations. Following these vignettes, subjects are asked a series of questions designed to elicit responses that are relevant to each stage of the social problem solving process. The hypothetical scenario method has been used in numerous studies, a selection of which are reviewed below, and has led many researchers to conclude that socially maladjusted children process social information differently than do their more well-adjusted peers.

*Cue encoding.* According to Crick and Dodge (1994), cue encoding is guided by both external cues in the immediate environment as well as relevant internal knowledge

that individuals acquire through previous experience and store in the form of schemas or social scripts. These schemas serve to organize information in a meaningful way and thus allow the individual to process information efficiently. However, individuals who are highly reliant on their internal memory structures may fail to attend to important information in the immediate environment, which can lead to misinterpretation of social stimuli and inappropriate social responses. Dodge and Tomlin (1987) examined cue encoding and interpretation in aggressive and non-aggressive children by asking the children to infer the intent of a provocateur in a hypothetical social situation, and then to state why they came to that conclusion. It was found that aggressive children were less likely than their non-aggressive peers to use information that was present in the immediate situation, suggesting that they relied more heavily on information from their internal schemas to guide their interpretation of the event.

A more recent study by Matthys et. al., (1999) used a similar methodology to examine the number of cues that were encoded by seven- to twelve-year old boys who had been diagnosed with Oppositional Defiant Disorder/Conduct Disorder, (ODD/CD), Attention-Deficit Hyperactivity Disorder (ADHD), both disorders (ODD/CD+ADHD) and normal controls. The boys with psychiatric disorders were recruited from an outpatient clinic, while the normal controls were recruited from regular elementary schools. The subjects were presented with videotaped vignettes of three types of provocation scenarios (being disadvantaged, coping with competition, and social expectations), asked to interpret the provocateur's intent, and then to state how they knew that was the peer's intent. The ADHD, ODD/CD, and ADHD+ODD/CD groups all encoded significantly fewer cues in all three of the problem-solving domains than the



normal control group. Taken together, these findings suggest that children who exhibit aggression or externalizing behavioral disorders may rely heavily on their social schemas when sizing up a novel social situation, and thus fail to process important relevant social cues.

*Cue interpretation.* Social problem-solving is determined not only by how environmental cues are encoded, but also by how those cues are interpreted. Attributions of causality, discussed in the previous section, fall into the domain of cue interpretation. Whether children blame themselves or others for negative events will influence the goals and behaviors they construct in response to a given situation. Prior to Graham and Juvonen's (1998) work on the causal attributions of victims, it had been demonstrated that children who are rejected by their peers are more likely to make causal attributions that lead to negative self-evaluation, while socially adjusted children are more likely to make attributions that lead to positive self-evaluation. That is, socially rejected children tend to attribute negative events to internal causes and positive events to external causes, whereas non-rejected children are more likely to show the opposite pattern of attributions (Ames, Ames, & Garrison, 1977; Aydin & Markova, 1979; for review see Crick & Dodge, 1994). Although attribution would seem to fall under cue interpretation, the data base for these appraisals are schemas from past encounters and likely involve all of the processes included within SIP.

Attributions of intent are another aspect of cue interpretation in aggressive and socially maladjusted children, and have been investigated extensively by researchers. How children interpret the motives of their peers in a given social situation influences the processing of subsequent information and the goals and strategies that children develop in

response to the situation. A robust finding in the research is that aggressive children tend to interpret their peer's intentions as more hostile than do non-aggressive children. Typically, attributions of intent are assessed via the hypothetical social scenario method described earlier, by asking children to state the intent of the hypothetical peer (e.g., did the peer act on purpose or by accident? Was the intent hostile or benign?). In Dodge and Tomlin's (1987) study, the aggressive group made significantly more hostile intent attributions than the non-aggressive group. According to the review by Crick and Dodge (1994), this tendency to attribute hostile intent has been demonstrated consistently in the literature in both aggressive, rejected, and aggressive-rejected children from kindergarten through eighth grade.

More recently, researchers have begun to show that patterns of intent attribution may serve to distinguish between various subtypes of aggressive children. For example, many researchers have distinguished between proactive aggression, which is deliberate behavior enacted to attain a desired goal, and reactive aggression, which is an emotionally charged response to provocation or frustration (Dodge & Coie, 1987; Crick & Dodge, 1996). Crick and Dodge (1996) examined the intent attributions of proactively and reactively aggressive children and their non-aggressive peers (all identified through teacher ratings of aggressive behavior). Children were presented with an ambiguous provocation situation and then asked questions about whether the provocation was hostile or benign and whether the behavior was intentional or accidental. It was found that reactively aggressive fifth and sixth graders made significantly more hostile attributions than did their non-aggressive peers. They also made more hostile intent attributions than proactively aggressive children, although this difference was not significant. Thus, in

terms of intent attributions, it appears that reactive and proactive aggressive children make similarly hostile appraisals of their peers' intent. However, as will be discussed later in this section, this study found that the two subgroups of aggressive children did differ in other steps of the processing sequence.

In another study, Crick, Grotpeter, and Bigbee (2002) distinguished between relationally and physically aggressive children using a peer nomination instrument. In response to hypothetical scenarios involving instrumental provocations, physically aggressive children made significantly more hostile attributions than relationally aggressive and non-aggressive children. In response to scenarios involving relational provocations, relationally aggressive children made more hostile attributions than physically aggressive and non-aggressive children. The results of these studies support previous findings that aggressive children have a tendency to interpret their peers' actions as hostile even when the intent is ambiguous. Furthermore, the differentiation of various subtypes of aggressive behavior (proactive versus reactive, physical versus relational) in these studies suggests that measures of intent attribution and other social information processing steps may help clarify the social-cognitive styles that are associated with different forms of aggression.

*Clarification of goals.* Crick and Dodge (1994) defined goals as “focused arousal states that function as orientations toward producing (or wanting to produce) particular outcomes” (p. 24). In a given situation, the goals that children construct are influenced by their general goal orientations or tendencies (as influenced by feelings, temperament, adult instruction, cultural or subcultural norms, and the media) and are revised according to the perceived demands of the immediate situation. Research on children's social goals

has supported the hypothesis that “children who construct and pursue goals that are inappropriate to particular social situations are more likely to become socially maladjusted” (Crick & Dodge, 1994). For example, socially maladjusted youngsters are more likely to construct and pursue relationship-damaging goals (e.g., revenge, winning over others), while well-adjusted children tend to pursue relationship-enhancing goals such as providing help to others (Crick & Dodge, 1989). Slaby and Guerra (1988) found that adolescents who were highly aggressive (based on teacher ratings) were more likely than low-aggressive adolescents to select a hostile goal in response to an ambiguous provocation scenario. In another study (Lochman, Wayland, & White, 1993), adolescent boys were asked to rate the importance of four different goals in response to an ambiguous provocation scenario. Compared to their non-aggressive counterparts, aggressive boys (identified through teacher ratings of aggressiveness) rated the goals of dominance and revenge as high in value, while they rated the goal of affiliation relatively low.

A more recent study (Erdley & Asher, 1996) tested a model in which children’s social goals had a moderating effect between attribution of intent and response to provocation. The preferred behavioral responses of fourth and fifth grade children were measured by the children’s reports of how they would respond to a peer conflict situation. Based on their responses, the children were classified into groups: aggressive responders, withdrawn responders, and problem-solving responders.

The children’s social goals were assessed in a follow-up interview, in which the subjects were reminded of the hypothetical conflict situation that had been presented to them earlier, and asked the question, “What would you be trying to do?” The children

were asked to rate eight goal alternatives that fell into the following goal categories: revenge, peaceful resolution, avoidance, hurting the person's feelings, protecting the self, taking care of the problem, maintaining the relationship, and maintaining an assertive reputation.

An analysis of the relationship between children's preferred behavioral responses to provocation and their social goals revealed that aggressive responders placed high value on goals that involved revenge, making the other person feel bad, protecting the self, and looking strong. Problem-solving and withdrawn responders, on the other hand, chose goals that were more prosocial in nature: taking care of the problem, resolving the problem peacefully, and maintaining the relationship. Withdrawn responders differed from problem-solving responders in that they gave a high rating to the goal of avoidance. Thus, the results suggest that the particular type of social goals endorsed by children is related to their behavioral responses to provocation.

Interestingly, similar patterns emerged in children who had attributed hostile intent and children who attributed benign intent (as assessed via the ambiguous provocation scenario). That is, children who responded aggressively to provocation, regardless of whether they had attributed the intent as hostile or benign, endorsed more aggressive social goals than children who responded in a withdrawn or problem-solving manner. Thus, regardless of their intent attributions, children who placed high value on hostile social goals tend to engage in more aggressive behavior in response to provocation. This finding confirms Erdley and Asher's (1996) hypothesis that social goals have a moderating effect on intent attributions.

*Response access or construction.* Aggressive and rejected children also have been shown to be deficient in their ability to generate appropriate responses to peer conflicts. Research has focused on both the number of responses that children are able to generate in response to a given situation and the nature of these responses. Pettit, Dodge, and Brown (1988) found that socially rejected children generated fewer responses to hypothetical scenarios than did non-rejected children. Other studies have shown that the responses that these children do access tend to be more aggressive, more avoidant, and less friendly than the responses of their well-adjusted peers (Asher, Renshaw, & Geraci, 1980). These patterns have been shown to apply to boys with externalizing disorders meeting DSM-III criteria. For example, Matthys et al. (1999) found that boys with ODD/CD, with and without ADHD, selected aggressive responses to ambiguous provocation scenarios more frequently than children in a psychiatric control group.

*Response decision.* After potential responses have been accessed or constructed, the individual must select a response to enact behaviorally. The actual selection of the response is influenced by three factors: response evaluation, outcome expectations, and self-efficacy evaluation. Deviant processing patterns in each of these domains has been shown to be associated with social maladjustment in children. In evaluating potential responses, socially maladjusted (aggressive and rejected) children tend to believe that maladaptive behaviors will produce positive outcomes. Specifically, they have been shown to evaluate aggressive responses more favorably than their peers (e.g., Crick & Ladd, 1990).

These findings were supported by a more recent study by Hall, Herzberger, and Skowronski (1998), who investigated outcome expectancies and outcome values as

predictors of children's aggression. Children between the ages of ten and fifteen were classified as aggressive or non-aggressive based on a self-report measure of aggression. They were presented with a hypothetical provocation situation, and then were asked to imagine responding aggressively. Their outcome expectations for the aggressive response were assessed by asking them what outcome was likely to occur: punishment, bad feelings, or social benefits. Correlational analyses revealed that the more aggressive children were less likely to expect aggression to result in punishment or feeling bad, and were more likely to expect aggressive behavior to result in social benefits (i.e., being respected by peers). The same study also assessed outcome values by asking the children how much they cared about the potential outcomes. It was found that less aggressive children cared more about bad feelings and punishment than did more aggressive children. Thus, Hall et al.'s (1998) study shows that both outcome values and expectancies appear to contribute to children's self-reported aggression.

Aggressive children have also been shown to differ from withdrawn and prosocial children in terms of their self-efficacy perceptions. For example, after presenting children with eight possible social goals in relation to a hypothetical scenario, Erdley and Asher (1996) asked the children, "do you think you would be good at doing each of these things if you tried?" They found that aggressive responders, when presented with the hypothetical peer conflict situation, believed that they would be good at accomplishing antisocial goals, including revenge, making the other person feel bad, and looking strong. These children were less confident in their ability to achieve prosocial goals such as working things out peacefully, getting along with the other person, and taking care of the

problem. In contrast, withdrawn and prosocial children reported that they would be good at achieving prosocial goals and not as good at achieving antisocial goals.

It has also been shown that proactively aggressive children have more positive outcome expectations for aggressive responses than do non-aggressive children as well as reactively aggressive children (Crick & Dodge, 1996). As reported previously in this section, the same group of reactive and proactive aggressive children did not differ significantly in their attributions of intent. Thus, it appears that both types of aggressors tend to attribute ambiguous provocations as hostile, yet they differ in their expectations for enacting different responses, which may partially account for their divergent behavioral characteristics. Reactively and proactively aggressive children appear to process information similarly at the earlier stages of the social information processing cycle (e.g., intent attributions) but differ in later stages (e.g., outcome expectations/response decision).

*The role of social knowledge.* At the center Crick and Dodge's (1994) model is the "data base" of social interactions that includes memories of prior interactions, acquired rules, social schemas, and social knowledge. Each step of the social information processing sequence, from cue encoding to response decision, is influenced not only by the previous step in the sequence, but also by the data base that comprises one's knowledge and memories about the social world. This process of influence is reciprocal; that is, the data base itself is also influenced by each of the processing steps as well as by the output of social behavior. The interpretations that an individual makes about peer's responses to his or her behavior may shape that individual's schemas and thus his or her future behaviors.



Schemas are defined as “any macro knowledge structure encoded in memory that represents substantial knowledge about a concept, its attributes, and relations to other concepts” (Huesmann, 1998, p. 79). Schemas are referred to as *scripts* when they are used to link a cue or an event to an expected action (Huesmann, 1998). Such scripts are based on internalized rules that the individual has acquired through learning and socialization as well as through previous experiences in similar situations (Huesmann, 1998). When faced with a given situation, individuals access relevant scripts which serve to regulate their behavior.

There is evidence that habitually aggressive individuals tend to access more aggressive scripts than do non-aggressive individuals (Huesmann, 1998). As children learn, and repeatedly use, aggressive scripts, those scripts are reinforced, making it more likely that the child will engage in aggressive behaviors in certain types of situations. An essential component of aggressive scripts is the *normative belief* that aggression is a legitimate behavior. Using a longitudinal design and a large sample of elementary school children, Huesmann and Guerra (1997) showed that children’s normative beliefs (that is, their beliefs about the legitimacy of aggressive behavior) in the early elementary school years influenced actual aggressive behaviors in the later elementary school years. As the children became older, their normative beliefs became stronger and more stable. Children who endorsed beliefs about the legitimacy of aggression in the first year of the study showed an increase in aggressive behavior two years later. Interestingly, this increase was beyond what would be expected based on the children’s level of aggressive behavior in the first year. Based on their results, the authors concluded that children

develop stable normative beliefs about the legitimacy of aggression around the third grade. From this point on, these normative beliefs predict future aggressive behavior.

To explain their findings, Huesmann and Guerra (1997) hypothesized that beliefs about aggression affect actual aggressive behavior by influencing the ways in which individuals process and respond to social situations. The theory that social information processing is a mediating factor between aggressive beliefs and aggressive behavior was tested by Zelli, Dodge, Lochman, and Laird (1999). In this study, the authors measured children's beliefs about aggression, their processing patterns (intent attributions, response access, and response evaluation), and their aggressive behavior (as reported by teachers, parents, and the children themselves). These measures were obtained at three time points: at the end of third grade, fourth grade, and fifth grade. It was found that stronger beliefs about the legitimacy of aggression in Grade 3 significantly predicted more hostile social information processing patterns (i.e., hostile intent attributions, access of aggressive responses, and positive evaluation of aggressive response) a year later. Further, greater access of aggressive responses predicted aggressive behavior the following year. However, when the authors controlled for the mediating effect of processing, stronger beliefs about the legitimacy of aggression did not predict later aggressive behavior. These findings support the authors' proposed mediation model in which children's beliefs about aggression influence aggressive behavior through the intervening effect of deviant processing. The authors also tested the opposite model, in which beliefs about aggression mediated the link between processing and aggressive behavior, but found stronger support for the first mediation model. Thus, broadly speaking, social knowledge that is acquired in early childhood through learning and

social interactions affects social behavior via the development of deviant (i.e., more hostile) patterns of social information processing.

In sum, aggressive and rejected children have been shown to differ from well-adjusted children in terms of their social cognitive styles. They often fail to interpret, or misinterpret important social cues, and perceive neutral actions by their peers as hostile. They may also generate antisocial goals such as revenge or maintaining a reputation rather than helping others or resolving the situation peacefully. Their tendency to make hostile intent attributions and antisocial goals results in the generation of maladaptive responses such as aggression. Children may also choose aggressive responses because they do not feel confident in their ability to resolve the situation peacefully, or because they have developed a social schema that legitimizes aggression. Thus, children with deviant social information processing styles often react aggressively or submissively, perhaps believing that this type of response will produce a favorable outcome. These findings are well-documented in the literature, and have proven to be useful in conceptualizing childhood maladjustment.

#### *Social Information Processing and Victimization*

Despite the vast body of research on the SIP patterns of aggressive and rejected children, there is a paucity of research investigating these patterns in victims. Only four studies were identified that applied Crick and Dodge's (1994) model to the study of victimized children, and three of them were published in the last year. Most of these studies have focused on the response selection and response evaluation components of the SIP model.

Schwartz, Dodge, Coie, Hubbard, Cillessen, Lemerise, and Bateman (1998) examined the social-cognitive and behavioral correlates of aggressive and victimized third-grade boys. Specifically, they tested the various relationships between aggression, victimization, attribution style, and expectations for aggressive and assertive behavior. To identify the aggressive and victim subgroups, the researchers set up contrived play groups and recorded instances of aggression and victimization. Participants were selected based on peer-nominated aggressiveness such that each of the eleven play groups consisted of two boys identified as mutually aggressive as well as four controls. Trained observers calculated the number of intervals in which each boy either exhibited or was the target of aggressive behavior. Submissive responses to aggressive overtures by a peer were also recorded. Instances of aggressive behavior were further differentiated into proactive aggression (nonangry goal-oriented aggressive behavior) and reactive aggression (angry aggressive behavior). SIP patterns (intent attribution and outcome expectations for aggressive and assertive behavior) were assessed through interviews in which the boys were presented with hypothetical vignettes of social situations.

First, it was found that victimization was significantly positively correlated with reactive aggression but not with proactive aggression. This finding is consistent with the literature that shows that reactive aggressors tend to be emotionally dysregulated and are often victimized themselves (e.g., Dodge & Coie, 1987). Despite this finding, the authors did not separate reactively aggressive victims from passive victims in their subsequent analyses, despite the fact that they separated reactively and proactively aggressive boys. As will be discussed later in this section, the lack of distinction between the two victim subtypes could be an important factor to consider in interpreting the results of this study.

In terms of the relationship between behavior and SIP, Schwartz et al. (1998) found that hostile attribution bias was positively correlated with victimization. In contrast, hostile intent attributions were marginally positively correlated with reactive aggression, and not significantly correlated with proactive aggression. In addition, a positive relationship was found between victimization and negative outcome expectancies for aggressive and assertive responses, whereas the proactive aggression was associated with positive outcome expectations for aggressive and assertive behavior. There was no significant relationship between reactive aggression and outcome expectations. The behavioral responses associated with victimization during the contrived play group situation were consistent with this finding: victimization was associated with submissive responses to aggressive behavior by their peers in the play group situation, while both proactive and reactive aggression were negatively correlated with submission. These findings indicate that victimized boys tend to display hostile behavior when provoked, but do not display such behavior deliberately as a means to achieve a goal.

Champion, Vernberg, and Shipman (2003) also examined the cognitive characteristics of victimized children; however, their study differed from that of Schwartz et al. (1998) in several respects: first, their sample was older (early adolescents) and included both males and females. Second, victims were identified not through direct observation of behavior, but through self- and parent-reports. Children who scored high on both the victimization measure *and* a measure of bullying were excluded from the analysis (thus, the study focused on non-aggressive victims, or “non-bullying victims of

bullies”). Finally, Champion et al. (2003) examined group differences rather than using correlational analyses, as was done by Schwartz et al. (1998).

The authors assessed the response selection process through a social cognitive interview in which the children responded to ambiguous social scenarios. After being presented with the potential conflict situation, participants were instructed to rank five possible responses. The categories of response were: physical aggression, verbal aggression, information seeking, avoidance of confrontation, and problem solving.

The results indicated that the non-bullying victims selected aggressive responses sooner than nonvictims, while nonvictims more readily selected information-seeking strategies. These results appear to be inconsistent with those of Schwartz et al. (1998), who found that victimization was associated with negative outcome expectations for aggressive behavior, and negatively correlated with actual aggressive behavior in response to peer provocation. On the contrary, Schwartz et al. found that victimization was positively associated with submissive responses to provocation. Several factors may account for the seemingly discrepant findings between the two studies. First, the two studies tapped different social cognitive processes: Schwartz et al. looked at outcome expectations and behavioral enactment, while Champion et al. examined response selection. While both outcome expectations and response selection are components of the response evaluation step in Crick and Dodge’s SIP model, they are different processes and have been distinguished in the literature (Crick & Dodge, 1994). Nevertheless, given the cyclical and sequential nature of the model, one would expect that outcome expectations would be associated with response selection, which in turn would influence behavioral enactment. For example, favorable expectations for aggressive behavior

should lead to the selection of an aggressive response, which would likely result in an aggressive behavioral output. Why, then, were Champion et al.'s victims so quick to select aggressive strategies, when the victims in Schwartz et al.'s study evaluated aggressive responses negatively and behaved more submissively in response to provocation than their peers? One possible explanation is that in Champion et al.'s procedure, there was no "submissive" response option available to the participants. The inconsistency may also be due to the differences in the selection of participants (in terms of age and gender) across the two studies, or the measures used to identify the victims (behavioral observation versus self- and parent-reports). Further research is needed to clarify the effects of these variables. However, despite the discrepant findings, the results of both studies indicate that victimized children may have difficulties generating appropriate solutions to peer provocations.

In contrast to the results of both of the studies reviewed above, Warden and Mackinnon (2003) found that in a sample of nine- and ten-year old males and females, victimized children did *not* differ significantly from prosocial children in terms of the solutions they generated in response to a hypothetical peer conflict (response access), their preferred solution (response selection), or how they perceived the outcomes of the preferred solution (outcome expectations). Although these findings are inconsistent with the results of Schwartz et al. (1998) and Champion et al. (2003), it is again important to note the measurement differences across the studies. Warden and Mackinnon (2003) used a composite of self- and peer-nominations in order to identify their samples of victims, bullies, and prosocial children. A child was classified as a victim even if he or she also fulfilled the criteria for being categorized as prosocial or a bully. This method of

classification is a possible limitation of the study because aggressive victims and non-aggressive victims might be expected to respond very differently to peer provocation. However, because they were combined into a single group, the results may not reveal these differences in their SIP patterns.

Aggressive and non-aggressive victims were distinguished in a study by Camodeca et al (2003). Peer reports were used to identify bullies, victims, and not-involved children from a sample of eight-year old boys and girls. Children who scored above the cutoff point on both the bullying and the victimization scale were classified into a fourth group, labeled bully/victims. The authors assessed the children's responses to ambiguous hypothetical social situations, as well as their attributions of intent. It was found that both bullies and victims generated less assertive strategies in response to provocation compared to students not involved in bullying. In terms of intent attributions, bully/victims attributed more blame to and were angrier with the perpetrators than were other children. These results provide further evidence that victimized children do process social information differently from their more well-adjusted peers. However, non-bullying victims did not make more hostile intent attributions than uninvolved children. This finding is inconsistent with Schwartz et al. (1998), who found that victimization was associated with hostile attribution bias. In order to understand this discrepancy, it may be important to consider the fact that in Schwartz et al.'s study, victimization was associated with reactive aggression, while Camodeca et al. excluded aggressive children from their sample of victims. One possible explanation for this finding is that certain victims may be more depressed (perhaps as a consequence of prior victimization) and thus perceive the negative actions of others' as their own fault (i.e.,



they have an internal locus of control). These children, believing that they “deserve” maltreatment, would then be more likely to react with submission, rather than assertion, to instances of bullying. However, perhaps other children respond to their victimization by developing a social schema in which others are hostile; thus, they begin to react aggressively in response to even mild or ambiguous provocation. Although these are two very different ways of responding to the experience of victimization, in that one leads to submission and the other to reactive aggression, both types of response behaviors would serve to reinforce one’s victim status. Research that does not account for the possibility of these different victim subtypes may overlook important differences in the SIP patterns of victims.

Taken together, the results of these four studies provide some preliminary evidence that victimized children do indeed have deficient patterns of social information processing. Some victims may interpret peers’ actions as hostile, even when the intent is ambiguous. In addition, there is mixed evidence to suggest that victims generate different types of problem solving strategies in response to provocation than their non-victimized peers. However, the fact that the studies present some contradictory findings raises some important questions. For example, how can we account for the fact that one study found that victims differed from nonvictims in terms of their response construction and evaluation processes, while another study found no difference between the two groups? As stated previously, this discrepancy could be due in part to the fact that two of these studies excluded aggressive victims from their sample (Champion et al., 2003; Camodeca et al., 2003), while the other two combined this group with non-aggressive victims (Schwartz et al., 1998; Warden & Mackinnon, 2003). The body of research on

the SIP patterns of aggressive children (as discussed in the previous section) suggests that divergent processing patterns at various steps in the SIP cycle may aid in the differentiation of subtypes of aggression, such as proactive versus reactive (Crick & Dodge, 1996) and relational versus overt (Crick et al., 2001). Thus, there is reason to hypothesize that non-aggressive or passive victims may show different patterns of SIP than aggressive or provocative victims.

Another important consideration is that all four of the studies described above used different methods for measuring victimization. Schwartz et al. (1998) used direct observation; Champion et al. (2003) used self- and parent-reports; Warden and Mackinnon (2003) used a composite measure of self- and peer-nominations; and Camodeca et al. (2003) relied solely on peer nominations. It has been suggested by other researchers in the field that these measures tap different underlying constructs of victimization and thus may identify different types of children. Therefore, it is crucial that the measurement method used to identify the sample of victims be considered in interpreting the results of these studies. The present study will address this issue by examining multiple measures of victim status and by separating aggressive and non-aggressive victims.

#### *Caveats in the Measurement of Victimization*

*Methods of assessing victimization.* With few exceptions (e.g., Schwartz et al., 1998), research on peer victimization has traditionally relied on two types of instruments to measure victim status: self-reports and peer nominations. Self-reports of victimization are usually in the form of individually administered questionnaires. One common procedure is to present respondents with various scenarios of “things some children do to

other children” (Multidimensional Peer Victimization Scale; Mynard & Joseph, 2000). Items may include actions such as name-calling, making fun of other children, and beating children up. Respondents are then asked to indicate whether anyone has done these things to them once, more than once, or never. Variations on this type of questionnaire obtain a measure of frequency by asking the respondent to report whether each behavior happens to them never, once in a while, pretty often, or very often (e.g., Perry et al., 1988). An alternative procedure is to present the respondent with a description of two types of children (e.g., “Some kids are often picked on by other kids, BUT other kids are *not* picked on by other kids”) and asked to judge which type of person is more like them (Peer Victimization Scale; Austin & Joseph, 1996).

Peer perceptions of victimization, on the other hand, are measured by presenting each child with the names or pictures of students in their class. Respondents are asked to choose which students fit certain descriptive items such as “others call these kids names” and “others make fun of these kids.” Victimization items are usually embedded with items that assess other dimensions of behavior including aggression and prosocial behavior. Instructions may vary by limiting the number of nominations that a respondent can make, or by limiting possible nominations to same-sex peers. Each student receives a victimization score based on the number of nominations they received (usually by averaging or summing nominations across items and standardizing the scores).

There is some controversy in the field as to which method is superior for assessing victimization. A major advantage of self-reports is that children are assumed to have the most information regarding their own experiences, and thus are more knowledgeable about their victimization than parents, teachers, or even peers. Because

harassment can occur in a variety of settings, other informants' perspectives may be restricted to specific contexts. Thus, it is likely that self-reports may be the most valid indicators of peer victimization (Ladd & Kochenderfer-Ladd, 2002). However, because they rely on a single informant, self-reports are generally considered less reliable than peer nominations (Achenbach, McConaughy, & Howell, 1997). Children may have different interpretations of peer interactions and thus may differ in the criteria they use for identifying acts of aggression. In addition, some children may be less likely than others to report harassment due to embarrassment about such experiences or inability to encode painful events (Ladd & Kochenderfer-Ladd, 2002). In terms of reliability, peer nominations are more advantageous because the aggregated peer judgments minimize the effects of individual rater bias and increase the statistical reliability of the measure (Perry et al., 1988). In addition, peers generally have greater knowledge about incidents of harassment than other informants such as teachers or parents because they have access to unsupervised situations in which bullying is likely to take place. However, their reports may be influenced by reputational biases or prejudice toward certain peers. In other words, they may be more likely to nominate students for whom they have a general dislike.

*Subconstructs of victimization.* Both self-reports and peer nominations can be used to assess different subconstructs of victimization. For example, recent research has focused on victims of relational versus overt aggression (e.g., Crick & Bigbee, 1998), and aggressive versus non-aggressive victims (e.g. Schwartz et al., 2001). These different victim subtypes have been clearly delineated in several empirical studies, and there is general agreement in the field that these groups represent true subconstructs of

victimization and merit further attention in the literature. More recently, however, some researchers have begun to question whether there is yet another dimension of victimization that is tied to the measurement method itself. Traditionally, peer-reports and self-reports have been viewed as different means of assessing the same broad construct of victimization. Yet in the last six years, there has been some evidence to suggest that the two measures may actually measure different constructs. This evidence leads to several questions. For example, are the children identified as victims through self-report different from those who are identified through peer reports? Are the antecedents, correlates, and consequences of peer-reported victimization different from those of self-reported victimization? Do children whose self- and peer-reports are discrepant represent different victim subtypes? Finding the answers to these questions is crucial for better understanding the nature of victimization, identifying differential risk factors, and improving prevention and intervention efforts.

The controversy over whether or not self-reports and peer-reports of victimization measure different constructs may be viewed as stemming from different explanations for the finding that self-reports and peer nominations of victimization are only moderately correlated. Correlation coefficients from various studies range from .2 to .4, which indicates that the two measures share only about 16% of the variance (Juvonen et al., 2001). Furthermore, self-reports generally indicate higher prevalence rates than do peer nominations (Osterman et al., 1994). Explanations for the lack of consistency between the two measures have been a source of contention among researchers in the field. Some researchers interpret the low intercorrelation between measures to mean that one method is an inadequate index of victimization (e.g., Perry et al., 1988). They generally believe

that peer nominations should be used as the true index of victimization because they are more statistically reliable than self reports. From this perspective, the discrepancy can be explained by the fact that self-reports are simply an inadequate measure of victimization. For example, Perry et al. (1988) suggested that “the lack of correspondence between... self-reports and the perceptions of others raises questions about the wisdom of relying on a self-report measure of victimization.” (p. 810). Consistent with this view, many researchers have relied primarily on peer nominations in their investigations of peer victimization (e.g., Boulton & Smith, 1994; Hodges, Malone, & Perry, 1997; Egan & Perry, 1998).

However, other researchers have taken a different perspective. Juvonen et al. (2001) argue that self-reports and peer nominations are correlated only moderately because they measure different subconstructs of victimization. Specifically, they propose that self-reports assess the subjective experiences of children, while peer nominations assess social reputation. Conceptually, subjective experience of victimization should lead to intrapsychological maladjustment such as loneliness, social anxiety, and low self-worth, while social reputation should influence interpersonal maladjustment, specifically peer acceptance and rejection. Thus, studies that rely on only one measure of victimization may under- or over-identify children who are truly victimized. Furthermore, they may overlook important differences between groups of children whose self-views differ from their peers’ perceptions of their victim status.

Graham and Juvonen (1998) empirically tested this hypothesis by differentially examining the relationship between self- and peer-reports of victimization, and intrapersonal (psychological) and interpersonal (social) adjustment outcomes. They

found that self-perceived victimization was a significant predictor of intrapsychological maladjustment factors, such as loneliness, social anxiety, and low-self worth. However, it was not significantly related to social adjustment factors such as peer acceptance or rejection. Conversely, peer-perceived victimization was found to be unrelated to social anxiety and self-worth, and only moderately correlated with loneliness. However, it was a significant negative predictor of peer acceptance, and a positive predictor of peer rejection. These findings suggest that self-perceived victim status and peer reputation as a victim are two independent risk factors for the different types of maladjustment associated with victimization. Self-views appear to predict intrapsychological consequences of victim status, such as loneliness, low self worth, and anxiety, whereas peer perceptions appear to predict interpersonal consequences such as peer rejection.

In addition to examining the correlates of self-perceived and peer-perceived victimization, Graham and Juvonen (1998) also divided their sample into different victim subgroups based on the correspondence between participants' self- and peer-reports. They investigated the hypothesis that the two measures can be used to identify various victim subtypes – not just victims and nonvictims – that may be characterized by different risk factors and suffer from different types of adjustment problems. In a previous study, Perry et al. (1988) identified a group of participants who considered themselves as victims (as indicated by their self-reports) but were not identified as victims by their peers. Perry et al. labeled these children as “paranoids” and excluded them from the analysis based on the belief that this group reflected the statistical inadequacy of the self-report measure. However, Graham and Juvonen (1998) proposed that this subgroup may be important to study because even though these “paranoid”

children are not viewed as victims by their peers, their subjective experiences of victimization may put them at risk for the negative psychological and interpersonal outcomes that are associated with victimization.

The authors divided the sample into four subgroups, which they labeled as “true victims” (those children perceived as victims by both themselves and their peers), “paranoids” (those who perceived themselves as victims but were not viewed as victims by their peers), “deniers” (children who were considered victims by their peers but not by themselves), and nonvictims (children who were not perceived as victims by either themselves or their peers). If these different subgroups do in fact represent different subconstructs of victimization, it would be expected that each group would be associated with different patterns of psychological and interpersonal maladjustment. Indeed, it was found that in terms of the intrapsychological variables (loneliness, social anxiety, and self-worth), true victims and paranoids were more maladjusted than nonvictims and deniers. However, in terms of interpersonal correlates, true victims and deniers were more rejected by their peers than were nonvictims and paranoids.

The authors also found that in addition to being associated with different forms of maladjustment, the different victim subgroups could also be characterized as having different styles of cognitive attributions. Specifically, true victims and paranoids were more likely to engage in characterological self-blame. In other words, these children tended to attribute negative events to factors that were internal, stable, and uncontrollable. In contrast, nonvictims and deniers were more likely to engage in behavioral self-blame, meaning that they attributed negative events to external, unstable, and controllable factors. This finding provides further support for the view that self-



perceived victimization, more so than reputational status as a victim, is indicative of internalizing problems. Conversely, reputational status is more indicative of peer acceptance and rejection. Taken together, the results of Graham and Juvonen's (1998) study suggest that self- and peer-reports of victimization do indeed assess different constructs. Specifically, self-appraisals and reputational status might be two independent risk factors for the different types of maladjustment associated with victimization.

*Shared method variance.* Despite these findings, many researchers remain skeptical of the notion that self- and peer-reports of victimization actually assess different constructs. Several studies have indeed demonstrated relationships between self-reported victimization and interpersonal/social consequences, and between peer-reported victimization and psychological maladjustment. For example, peer-reported victimization has been shown to be moderately correlated with depression and loneliness (e.g., Boivin et al., 1995), while self-reported victimization has been linked to peer rejection (Neary & Joseph, 1994). Thus, peer-reports of victimization do appear to provide information that may predict intrapsychological consequences, while self-reports provide some information regarding peer rejection. However, the relationship between victimization and psychological adjustment variables tends to be weaker when peer-reports rather than self-reports are used as the index of victim status. Likewise, the relationship between victimization and rejection is weaker when self-reports rather than peer-reports are used.

While this could be interpreted as evidence for a differential risk hypothesis, as proposed by Graham and Juvonen (1998) (that is, that peer-reports and self-reports of victimization assess different constructs and thus are associated with different types of

maladjustment) it is important to consider that the above findings are likely confounded by shared method variance. Essentially, the relationship between two variables that are measured using the same method, or data source (e.g., self-reports of victimization and self-reports of depression) is naturally likely to be stronger than the relationship between two variables that are measured using different methods or data sources (e.g., peer-reports of victimization and self-reports of depression). Since most measures of psychological maladjustment factors such as loneliness, depression, and anxiety, rely on self-reports, it is natural that self-reported depression is correlated more strongly with self-reported victimization than with peer-reported victimization. Thus, it is possible that the observed correlations between self-perceived victimization and self-reported depression do not reveal a true relationship between victimization and depression, but rather may be due to the common variance of the informant.

The issue of shared method variance was addressed in a recent meta-analysis (Hawker & Boulton, 2000). This review examined the results of several cross-sectional studies of the relationship between victimization and various indices of psychosocial maladjustment, including depression, loneliness, anxiety, and global and social self-worth. Studies were grouped based on whether or not they avoided shared method variance (i.e., whether the same informants were used to determine both victim status and psychosocial maladjustment). The results of the meta-analysis indicated that effect sizes were stronger when the same informants were used to assess both variables. However, even when different informants were used, effect sizes of the relationship between victimization and all of the adjustment variables were significant. Thus, although the relationship between victimization and psychological maladjustment may not always

reach significance in individual studies (e.g., Graham & Juvonen, 1998), the aggregation of several studies suggests that peer reports of victimization do indeed predict depression, loneliness, anxiety, and low self-worth.

The results of this meta-analysis indicate that while self- and peer-reports do differ in terms of their relationship with psychological maladjustment, there is also some overlap between self- and peer-reports in terms of psychological maladjustment variables. However, the findings raise an important question: Is the strength of the relationship between self-perceived victimization and intrapsychological maladjustment due solely to shared method variance? Or do self reports predict maladjustment above and beyond what can also be accounted for by peer reports or by shared method variance? That is, do self-reports provide unique and valid information about the psychological correlates of victimization that can not be inferred from peer reports alone? The same question can be asked regarding the relationship between peer-reports of victimization and peer rejection/acceptance: are peer nominations a better predictor of peer rejection simply because of shared method variance, or do they truly provide a better assessment of interpersonal/social consequences of victimization? The present study will address the issue of whether different informants provide unique information about victimization.

These questions were addressed in a longitudinal study conducted by Ladd and Kochenderfer-Ladd (2002). Self- and peer-reports of victimization were obtained from a sample of children over five consecutive years: kindergarten, grade 1, grade 2, grade 3, and grade 4. The authors found that in young children (kindergarteners and first graders), self-perceived victimization was equally predictive of both self-reported psychological

maladjustment (e.g. loneliness) and peer-reported relational adjustment (e.g., peer rejection). However, in middle childhood (grades 2 and 3), the results were more consistent with the findings of Graham and Juvonen (1998): self-reported victimization was more closely linked to loneliness, while peer-reported victimization was more closely linked to peer rejection. These findings held true even after statistically controlling for shared method variance. Thus, the results are partially consistent with the view that subjective experiences and reputational status represent distinct subconstructs of victimization.

*Utility of peer nominations and self-reports.* The study also investigated an important question regarding the utility of the two different methods of assessing victimization. Although there is general consensus among investigators in the field that peer-reports are more statistically reliable than self reports (due to the aggregation of multiple informants), Ladd and Kochenderfer-Ladd (2002) found that for younger children (i.e., kindergarten and grade 1) self-reports were actually more reliable and valid indicators of victimization than were peer nominations. It is possible that younger children may have difficulty identifying the victims in their classrooms because they lack the skills and cognitive maturity to encode and recall incidences of harassment or bullying, and their schemas for victimization may not be fully developed. Although this finding does not provide support, one way or the other, for the notion that the two measures tap different victimization subconstructs, it is important because it challenges the idea, still held by many investigators, that peer-reports are statistically superior than self-reports. In fact, it appears that the utility of each type of measure might depend on the population with which it is being used. As indicated by results of this study, the

developmental level of the population is clearly an important factor to consider when evaluating the measurement method that is used to identify victimized children.

Another question that was addressed by Ladd and Kochenderfer-Ladd (2002) was whether a multiple-informant assessment of victimization would provide a better estimate of relational adjustment than any single-informant measure. The authors developed a questionnaire based on information from children, their peers, teachers, and parents. It was found that in middle childhood, self-, peer-, and teacher-reports of victimization were moderately correlated, and also produced unique, nonredundant information relating to children's relational adjustment. Because the multi-informant report was more strongly related to maladjustment than any of the single-informant reports, it may be concluded that a multi-source approach may provide the best estimate of relational adjustment and thus may be the most accurate way to measure the broad construct of victimization.

The conclusion favoring multiple informants is also supported by the findings of a previous study by Crick and Bigbee (1998), who employed a multi-informant approach to examine relational and overt victimization. Similar to the method used by Graham and Juvonen (1998), participants were classified into four groups based on their self- and peer-perceived victimization. These groups were self-identified victims (analogous to the "paranoids" in Graham and Juvonen's work), peer-identified victims (akin to the "deniers"), self-peer-identified victims ("true victims"), and nonvictims. These groups were compared in terms of type of victimization (relational versus overt) as well as their self-reported psychological adjustment (loneliness, social anxiety, avoidance, emotional distress, and self-restraint) and their peer-reported social adjustment (rejection,

acceptance, and submissiveness). It was found that self-peer identified overt victims were significantly more lonely and socially dissatisfied than all other groups, while self-identified overt victims were more lonely than peer-identified overt victims and nonvictims, and peer-identified victims were more lonely than nonvictims. Similar patterns were found for victims of relational aggression. In terms of peer rejection (an indicator of interpersonal maladjustment), self-peer identified victims were more rejected by peers than all other groups. Peer-identified victims were more rejected than self-identified victims and nonvictims, and self-identified victims were more rejected than nonvictims.

Overall, self-peer-identified victims, self-identified victims, and peer-identified victims were significantly more maladjusted than their nonvictimized peers. However, the self-peer-identified victims (those who had a reputational status as a victim, and perceived themselves as such) were significantly more maladjusted than any of the other three groups. These findings underscore the importance of using multiple sources of information in identifying victims. First, using only one method may overlook children who are suffering the consequences of victimization, whether they experience subjective appraisal of victimization, or reputational status as a victim. Second, the use of both peer- and self-reports allows for the identification of three important victim subtypes, who appear to differ in their patterns of psychological and social adjustment. The identification of these subgroups has important implications for research as well as intervention efforts.

Collectively, the recent research suggests that both peer-reports and self-reports provide unique information regarding the nature of children's victimization. Specifically,

the measures appear to tap into different underlying constructs (subjective experience versus reputational status), and assess differential risk factors for various types of maladjustment. Given these findings, it is reasonable to expect that peer-perceived and self-perceived victimization might also be associated with different types of social cognitive styles. Indeed, Graham and Juvonen (1998) found that causal attributions in response to peer conflict differed among self-peer-perceived victims, self-perceived victims, and peer-perceived victims. However, the issue of measurement has not been sufficiently addressed in other studies investigating social cognition in victimized children. In particular, the few studies that have examined victimization from the framework of Crick and Dodge's (1994) SIP model all used different methods to identify their sample of victims, yet the findings of these studies were not interpreted in light of the particular measures used. If peer-reports and self-reports of victimization do indeed tap into different underlying constructs, then it would be expected that studies utilizing different instruments to measure victimization would produce different results.

#### *Statement of the Problem and Research Questions*

The usefulness of the SIP model for studying childhood maladjustment has been clearly demonstrated in research on aggression and peer rejection. Unfortunately, there is a dearth of research investigating the SIP patterns of peer-victimized children. It is important that the model be applied to the study of victimized children because it allows investigators to empirically examine the various interacting components of social cognition, and may yield information from which to develop prevention and intervention efforts. The few studies that have investigated the relationship between SIP patterns and victimization are an important starting point for this line of research; however, they have

not sufficiently distinguished between different types of victims (e.g., aggressive vs. non-aggressive, self-perceived vs. peer perceived).

The present study will address this problem by examining the relationship between victimization and SIP (particularly the cue interpretation, response selection, and outcome expectation components of Crick and Dodge's 1994 model) in light of the definitional and measurement issues outlined above. The specific questions that will be addressed are as follows:

*Part 1: Exploration of measures of victimization and aggression.*

1A. What is the relationship of different measures of the same construct (victimization or aggression) within a single informant? Specifically, what is the relationship between different self-report measures of victimization? What is the relationship between different peer-report measures of aggression?

1B. What is the relationship between victimization and aggression within a single informant (self or peer)? Specifically, what is the relationship between self-reports and peer-reports of victimization? What is the relationship between self-reports and peer reports of aggression?

1C. What is the relationship between victimization and aggression, both within and across informants? Does this relationship differ when different instruments are used to define "victimization" and aggression"?

*Part 2: Investigation of the relationship between social information processing, victimization, and aggression.* The second part of the study addresses questions about the relationship between victimization and social information processing. The results of Part 1 of this study will guide the specific instruments to be used in answering this question.



Questions 2A through 2D use the data as continuous variables, and Questions 2E and 2F designate groups with different combinations of self and peer ratings on aggression and victimization. Specific questions are:

2A. What is the relationship between SIP and each of the victimization measures?

Does the relationship between victimization and SIP change when different measures are used to define victimization?

2B. What is the relationship between SIP and each of the aggression measures?

Does the relationship between aggression and SIP change when different measures are used to define aggression?

2C. Do victimization and aggression make unique contributions to variance in SIP? This question will be addressed separately for self-reports and peer-reports of victimization and aggression.

2D. Do different informants contribute unique information about victimization as a predictor of SIP? That is, what is the relative contribution of self-reported and peer-reported victimization to variance in SIP?

2E. Do self-identified victims, peer-identified victims, and non-victims differ with respect to the SIP components of Intent Attributions, Response Selection, and Outcome Expectations?

2F. Do bullies, passive victims, aggressive victims, and comparison children differ with respect to the SIP components of Intent Attributions, Response Selection, and Outcome Expectations? Do the results differ when different measures of victimization and aggression are used to identify the groups?

Due to the lack of previous research addressing these questions, this study is primarily exploratory. However, given the fact that some studies have found differences between aggressive and non-aggressive victims (e.g., Camodeca et al., 2003) and between peer-identified and self-identified victims (e.g., Graham & Juvonen, 1998), it was expected that these different victim subgroups would show different patterns of social information processing.

## Chapter 3: Methods

### *Purpose*

The purpose of this study is to examine the social information processing (SIP) patterns of victims of peer aggression. Attention was given to the way in which victimization is measured in terms of informant (self versus peer) and empirically established subconstructs of types of victims (aggressive versus passive) and the nature of the victimization (relational versus overt). For the purpose of comparison, SIP patterns and measurement issues were also examined in bullies (non-victimized aggressive children) and normal controls (neither victimized nor aggressive children). Of primary interest was whether SIP patterns differed not only among victimized children and non-victimized children, but whether they differed among different types of victimized children, including passive versus aggressive victims and self-identified versus peer identified versus self-peer identified victims. In addition, the nature of the victimization was considered (relational or overt).

### *Participants*

Participants were recruited from three second grade and three third grade classrooms in a racially and culturally diverse elementary school in Prince George's County, Maryland. The study sample consisted of a total of 107 participants (57 second graders and 50 third graders). There were 63 male participants (59%) and 44 female participants (41%). Of the 107 participants, 67% were African American, 17% were Hispanic, 11% were Asian American, and 5% were White. Parental permission was obtained for all participants. In addition, all participating students signed assent forms that described the study in clear and age-appropriate language.

## *Measures*

*Victimization.* The Multidimensional Peer Victimization Scale (MPVS; Mynard & Joseph, 2000) is a self-report questionnaire measures children's experiences of victimization. It consists of 16 items in written format and consists of 4 subscales including physical victimization, verbal victimization, social manipulation, and attacks on property. Each subscale includes 4 items. Students are presented with a list of "things that some children do to other children" and asked to respond on a 3 point scale (not at all, once, more than once) to indicate how often that thing has been done to them. Sample items include "punched me" and "made fun of me for some reason." Possible scores on this measure range from 0 to 8 for each subscale and 0 to 32 for the total victimization scale. Mynard and Joseph (2000) used a sample of 812 students to determine the psychometric properties of the MPVS. Internal reliability (using Cronbach's alpha) of each subscale was found as follows: physical victimization .85, verbal victimization .75, social manipulation .77, and attacks on property .73.

The Peer Victimization Scale (PVS; Austin & Joseph, 1996) is a six-item, self-report measure that is embedded within the Self-Perception Profile for Children (SPCC; Harter, 1985) so as to reduce the saliency of the six victimization items. Children were presented with items such as "Some children are often teased by other children but other children are not teased by other children" and asked to choose which description is most like them. They then rate that choice as to whether it is "sort of true for me" or "really true for me." Each item is scored on a 4-point scale, with higher scores indicating lower experience of victimization. The final score was calculated using the same system used by Harter (1985) and Austin and Joseph (1996) by dividing the sum of the 6 items by 6 so

that each total scale score can range from 1 to 4. To make this score consistent with other measures (in which higher scores were more negative, indicating greater aggression or victimization experience), the sign of the correlation coefficients will be reversed. Using a sample of 425 children ranging in age from 8 to 11, Austin and Joseph (1996) found that internal reliability for the Peer Victimization Scale was satisfactory (Cronbach's  $\alpha = 0.83$ ).

One peer-report measure of victimization, the Peer Nomination Scale, was used in this study. Students were presented with the names of all students in their class and asked to select classmates who best fit a list of 36 descriptive items such as "others make fun of these kids," "kids who hit others," and "kids you would ask to help you with a problem." Each item assessed one of 4 dimensions: victimization, overt aggression, relational aggression, and prosocial behavior. The 36 items presented were combined from several individual scales (Crick & Werner, 1998; Perry et al., 1988). Five items assessed victimization. A peer-identified victimization score was calculated for each participant in a class by summing the total number of nominations received for the victim items, and standardizing the scores within classrooms by converting them to z-scores so that they were comparable across classes.

*Aggression.* The Bullying-Behavior Scale (BBS; Austin & Joseph, 1996) was embedded in the SPPC (Harter, 1985) along with the Peer Victimization scale. The self-report measure consists of six items presented in the same format as the Peer Victimization Scale such that children were presented with items such as "Some children do not hit and push other children but other children do hit and push other children." The children chose which description was most like them, and then stated whether it was

“really true for me” or “sort of true for me.” Each item was scored on a scale of 1 to 4 with higher scores indicating greater bullying behavior. The final self-reported bullying score was computed by dividing the sum of the 6 items by 6. Using a sample of 425 children ranging in age from 8 to 11, Austin and Joseph (1996) found that internal reliability for the BBS was satisfactory (Cronbach’s alpha = 0.82).

The same peer-nomination instrument used to assess victimization was also used to assess aggression. Five items assessed overt aggression and five items assessed relational aggression. Each participant received a separate score for overt aggression and relational aggression, based on the sum of nominations they received for each item. As with the peer-identified victimization score, peer-identified aggression nominations (one for relational and one for overt) were converted into z-scores for each participant within each classroom. A “Total Aggression” score was calculated by combining the total number of nominations received for both overt and relational aggression and converting to z-scores.

*Social Information Processing.* The Social Information Processing measure (SIP; Dodge, Laird, Lochman, & Zelli, 2002) assessed three components of SIP: Intent Attributions, Response Selection, and Outcome Expectations. Intent Attributions were specifically assessed by reading children four short vignettes followed by asking the children to state why the hypothetical peer acted the way he or she did. Responses were coded as hostile (2 points) or non-hostile (1 point) attributions. An intent attribution score was calculated for each child by summing the responses across all four stories. The range of possible scores is 4-8, with 4 being least hostile and 8 being most hostile. Interrater reliability was established for each component of the SIP by having three

trained raters score 10 randomly selected items from each scale. For the Intent Attributions scale, interrater reliability was calculated to be 90% amongst three scorers (i.e., all three scorers agreed 90% of the time). For each component of the SIP scale, the score given by the original rater was kept because of the high consistency among the raters.

The Response Selection component of the SIP measure specifically assessed responses to peer relationship dilemmas by asking children to state “what would you do or say if this were happening to you?” Responses were coded into one of five categories, on a continuum of least to most aggressive: do nothing (1 point), make a comment or question (2 points), make a request, demand, or ask an adult to intervene (3 points), make a threat or ask an adult to punish (4 points), or retaliate verbally/physically (5 points). An aggression response score was calculated for each child by summing the value of his or her responses across the four stories. The range of possible scores is 4 through 20, with 4 being least aggressive and 20 being most aggressive. Interrater reliability for the Response Construction component of the SIP scale was found to be 80% across the three scorers.

The Outcome Expectations component of the SIP measure specifically assessed the children’s evaluations of aggressive responses to peer relationship dilemmas. After reading a story aloud, the interviewer asked the child to answer two sets of questions about how effective an aggressive response would be in that situation. First, the child was asked what would happen if they responded to the situation aggressively. Responses were coded as undesirable (1 point) or desirable (2 points). The child was then presented with three additional questions and prompted to answer yes or no to indicate whether the

aggressive response was effective at achieving friendship goals, instrumental goals and social acceptance goals. “Yes” responses, which indicate positive outcome expectations for aggressive behavior, were assigned 2 points; “No” responses, which indicate negative outcome expectations for aggressive behavior, were assigned 1 point. A total outcome expectation score was assigned to each participant by summing the values of his or her responses to each of the four questions in each of the four scenarios. The range of possible scores is 16 (least aggressive) to 32 (most aggressive). Interrater reliability for the Outcome Expectations component of the SIP scale was found to be 90% across three scorers.

### *Procedures*

This study was part of a larger longitudinal project during which various other measures were administered. Initially, the school psychologist and two graduate students visited each classroom and spoke briefly with the children about the purpose of the study. During both the fall and spring of the school year, data were collected in two individual interviews, each about one hour in length. A standardized administration procedure was developed for the interview and carried out by graduate student interviewers. At the beginning of the interview, children were presented with the student assent form. They were told that they did not have to participate if they did not want to, and could go back to their classrooms instead. Once the interviewer had obtained the child’s assent, the child was asked to sign the assent form as an acknowledgement of willingness to participate. The interviewer then administered the instruments described above in the “measures” section. The interviewer introduced each measure by providing a description



of what the student would be asked to do and the types of questions or items involved. Written items were read aloud to the students.

### *Data Analysis*

For each of the questions in Part 1, which explored the relationship between the various measures of victimization and aggression, Pearson's correlation coefficients were calculated to determine the relationship between the variables of interest. Because many of the constructs of interest were measured by multiple instruments, it was determined that scores from multiple instruments would be combined if the correlation between the measures met or exceeded the criterion level of  $+0.80$ .

The same analyses were used to answer questions 2A and 2B, which examined the relationship between victimization, aggression, and SIP. For questions 2C and 2D multiple regression analyses were performed to determine the unique contribution of victimization and aggression to variance in SIP scores.

To examine differences between subgroups of victims, aggressors, and comparison children (Questions 2E and 2F), groups were defined using a cut-off criterion of 70%. First, children were identified as self-identified victims, peer-identified victims, self-peer-identified victims, or nonvictims. Children who scored above the 70<sup>th</sup> percentile on a self-report measure of victimization (PVS) but not the Peer Nomination Scale were classified as self-identified victims, children who scored above the 70<sup>th</sup> percentile on the Peer Nomination Scale but not the PVS were classified as peer-identified victims, children who scored above the 70<sup>th</sup> percentile on both instruments were classified as self-peer-identified victims, and children who scored below the 70<sup>th</sup> percentile on both instruments were classified as nonvictims.

Next, children were identified as bullies, passive victims, aggressive victims, or comparison children. Children who scored above the 70<sup>th</sup> percentile on victimization scores but not the aggression scores were classified as “passive victims,” children who scored above the 70<sup>th</sup> percentile on aggression but not victimization were classified as bullies, children who scored above the 70<sup>th</sup> percentile on both measures were classified as aggressive victims, and children who scored below the 70<sup>th</sup> percentile on both measures were classified as comparison children. Three sets of groups were identified, each using a different measure of victimization and aggression. First, groups were identified on the basis of self-reported victimization (PVS) and aggression (BBS). Second, groups were identified on the basis of peer-reported victimization and aggression (victimization and total aggression subscales of the Peer Nomination scale). Third, groups were identified on the basis of self-reported physical victimization (MPVS-Physical Scale) and peer-reported overt aggression (the overt aggression subscale of the Peer Nomination Scale). For each set of groups, three one-way ANOVAs were performed, with each SIP component (Intent Attributions, Response Selection, and Outcome Expectations) as the dependent variables.

## Chapter 4: Results

### *Part 1: Exploration of Victimization and Aggression Measures*

One goal of this study was to investigate the relationship between various measures of victimization and aggression, within and across constructs and informants. Multiple measures of victimization and aggression were used in this study, and constructs were examined in several ways: a) the agreement between different measures intended to assess the same construct using the same informant; and b) the relationship between different measures intended to assess the same construct (i.e., victimization or aggression) using different informants (i.e., self or peer); and c) the relationship between the constructs of aggression and victimization within and across informant.

*Question 1A: Correlations among different measures of the same construct, within informant.* Two self-report measures (the Peer Victimization Scale [PVS] and the Multidimensional Peer Victimization Scale [MPVS]) were used to assess victimization. The MPVS yielded a total victimization score as well as scores on four subscales designed to measure distinct dimensions of victimization (physical victimization, social manipulation, verbal victimization, and attacks on property). Because various measures were used to assess the construct of self-perceived victimization, it was important to first assess the agreement among these measures. Pearson correlation coefficients between each self-report measure of victimization were calculated. Tests of statistical significance were conducted using an alpha of .05. Although multiple tests were performed, no corrections were made for multiple comparisons since the analysis was primarily exploratory.

As illustrated in Table 1, each self-report measure of victimization was significantly positively correlated with each of the other self-report measures of victimization. The highest correlations were found among the four MPVS subscales, indicating significant positive relationships between self-perceived physical, verbal, social, and property victimization. The correlations ranged from  $r = .501$  for verbal victimization and social manipulation, to  $r = .726$  for attacks on property and the total victimization scale. Although all of these correlations reached statistical significance beyond the  $p = .01$  level, none of them exceeded  $+0.80$  and thus it was determined that the total MPVS score and each of the subdimensions would be examined separately in subsequent analyses of the relationship between self-reported victimization and peer-reported victimization, aggression, and social information processing.

Table 1

*Pearson Correlation Coefficients among Six Self-Report Measures of Victimization*

	PVS	MPVS: Total	MPVS: Physical	MPVS: Social	MPVS: Verbal	MPVS: Property
PVS		.297**	.319**	.303**	.396**	.322**
MPVS: Total			.681**	.671**	.637**	.726**
MPVS: Physical				.586**	.618**	.656**
MPVS: Social					.501**	.529**
MPVS: Verbal						.606**

*Note.* PVS = Peer Victimization Scale. MPVS = Multidimensional Peer Victimization Scale

\*\* $p < .01$

Each of the four MPVS subscales, as well as the total MPVS, was also significantly positively correlated with the PVS, another self-report measure of victimization. These correlations were moderate, ranging from an  $r$  of  $.297$  between the

PVS and the MPVS Total Scale, to an  $r$  of .396 between the PVS and the MPVS Verbal Victimization Scale. In sum, among the self-report measures of victimization, there were significant positive correlations among all measures, with the strongest correlations found within a particular instrument (i.e., the MPVS). Because none of the correlations exceeded the criterion level of  $+.80$ , it was determined that each of the scales would be examined separately in subsequent analyses.

Correlation coefficients were also calculated to determine the relationship between the three peer-report measures of aggression. The aggression items on the Peer Nomination Scale were organized into two distinct categories: relational aggression and overt aggression. Thus, three peer-reported aggression scores were obtained from the peer nomination scale: overt aggression, relational aggression, and combined (overt plus relational) aggression. For each student, total number of nominations received on aggression items were converted into z-scores calculated within classroom. These standardized scores were intended to be comparable across classes regardless of class size. Pearson's correlation coefficients were calculated to determine the relationship between these three peer-reported indices of aggression. Peer reported overt aggression and relational aggression were highly positively correlated,  $r = .681$ ,  $p < .001$ . As expected, the combined scale was strongly correlated with both overt aggression,  $r = .954$ ,  $p < .001$ , and relational aggression,  $r = .857$ ,  $p < .001$ . Because the correlation between overt aggression and relational aggression did not meet the criterion level of  $+.80$ , it was determined that these scales would be examined separately in subsequent analyses.

*Question 1B: Agreement among informants.* Table 2 illustrates Pearson's correlations between peer-reported victimization (as measured by the Peer Nomination Victimization Scale) and each of the six self-report measures of victimization. None of the correlations between peer-reported victimization and self-reported victimization scores reached significance, indicating virtually no agreement between informants.

Similar findings emerged when comparing self- and peer-reports of aggression. Self-reported aggression, as measured by the BBS, was not significantly correlated with either peer-reported overt aggression ( $r = .096, p > .05$ ), peer-reported relational aggression ( $r = -.056, p > .05$ ), or combined (relational + overt) peer-reported aggression ( $r = .035, p > .05$ ). In sum, there was virtually no agreement between informants (self and peer) for either victimization or aggression. Thus, peer-reports and self-reports were examined separately in subsequent analyses.

Table 2

*Correlations between Peer-Reported and Self-Reported Victimization*

	PVS	MPVS: Total	MPVS: Physical	MPVS: Social	MPVS: Verbal	MPVS: Property
Peer Nomination Scale	.100	.113	.077	-.007	.129	.067

*Note.* PVS = Peer Victimization Scale. MPVS = Multidimensional Peer Victimization Scale

*Question 1C: Relationship between victimization and aggression.* Table 3 presents the correlation coefficients between each measure of victimization and each measure of aggression. Significant, moderate correlations were found between peer-reported aggression and peer-reported victimization, with Pearson's  $r$  ranging from .482 to .539 ( $p < .001$ ). It was also found that there was a small yet significant positive correlation between self-reported victimization, as measured by the PVS, and self-

reported aggression as measured by the BBS,  $r = .219$ ,  $p < .05$ . It is important to note that both of these measures were embedded within the same instrument, the Self-Perception Profile for Children (SPPC). When the MPVS was used as the measure of self-perceived victimization, there was not a significant correlation between self-perceived victimization and self-perceived aggression.

When the subscales of the MPVS were examined, small yet significant correlations were found among some of the subtypes of victimization and peer-reported aggression. Self-reported physical victimization, verbal victimization, property victimization, and overall victimization, were all positively correlated with all three types of peer-nominated aggression. The results of these correlational analyses suggest that there is significant overlap between the constructs of victimization and aggression. This finding is particularly true when the same informants are used to assess each construct; however, even when different informants are used, there is still a significant overlap between various types of self-reported victimization and peer-perceived aggression. Interestingly, a stronger relationship was found between self-reported victimization and peer-reported aggression than between self- and peer-reported victimization or between self- and peer-reported aggression.

Of all correlations obtained between the different victimization and aggression measures, the strongest relationship was found between the self-reported physical victimization, as measured by the MPVS-Physical scale, and peer-reported aggression, as measured by the combined aggression scale of the Peer Nomination measure ( $r = .307$ ). This correlation coefficient was significantly greater than the correlation between the self-reported victimization and peer-reported victimization,  $t(98)=2.57$ ,  $p=.01$ , as well as

the correlation between the self-reported aggression and peer-reported aggression  
 $t(98)=2.13, p=.036$ .

Table 3  
*Correlations between Aggression and Victimization*

Victimization	<u>Aggression</u>			
	Self-BBS	Peer-Overt	Peer-Rel	Peer-Overt +Rel
PVS	.219*	.283**	.074	.194
MPVS-Total	.117	.206*	.252*	.237*
MPVS-Physical	.117	.293**	.266*	.307**
MPVS-Social	.119	.140	.178	.172
MPVS-Verbal	.103	.261**	.308**	.284**
MPVS-Property	.189	.223*	.202	.234*
Peer Nomination	.012	.539**	.482**	.562**

*Note.* BBS=Bullying Behavior Scale; Peer-Overt = Peer Nomination – Overt Aggression Scale; Peer-Rel = Peer Nomination – Relational Aggression Scale; Peer-Overt+Rel – Peer Nomination – Combined Overt and Relational Aggression Scale; PVS = Peer Victimization Scale; MPVS = Multidimensional Peer Victimization Scale  
 \* $p<.05$  \*\* $p<.01$

*Part 2: Victimization, Aggression, and SIP*

To examine the relationship between victimization, aggression, and SIP patterns, correlational analyses, multiple regression analyses, and analyses of group differences were conducted. The results of each of these analyses are presented below.

Three measures of SIP were examined in this study: Intent Attributions, Response Selection, and Outcome Expectations. The correlations among the three SIP variables are



presented in Table 4. Each measure shared a significant but modest amount of variance with the others.

Table 4

*Correlations among Three Components of Social Information Processing*

	Intent Attributions	Response Selection	Outcome Expectations
Intent Attributions	--	.352**	.269**
Response Selection	--	--	.386**
Outcome Expectations	--	--	--

\*\*p < .01

*Question 2A: Relationship between victimization and SIP.* Pearson's correlation coefficients were calculated to determine the relationship between each of the three continuous SIP variables (Intent Attributions, Response Selection, and Outcome Expectations) and each measure of victimization (6 self-report scales and one peer-report scale). The results are presented in Table 5.

The majority of these correlations were insignificant. However, self-perceived victimization, as measured by the PVS, was significantly correlated with hostile intent attributions ( $r = .205, p < .05$ ), suggesting that children who perceive themselves as victims may interpret others' ambiguous actions as hostile. Among the five MPVS scales, which also measured self-perceived victimization, only one dimension (physical victimization) was significantly correlated with hostile intent attributions,  $r = .237, p < .05$ . None of the other MPVS scales, or the peer-reported victimization scale, was significantly correlated with Intent Attributions. The other two SIP variables, Response Selection and Outcome Expectations, were not significantly correlated with any of the victimization measures. These findings suggest that greater experiences of self-perceived

or peer-perceived victimization are not associated with the selection of more hostile responses to provocation, or with more favorable outcome expectations for aggressive behavior.

Table 5  
*Correlations among SIP, Victimization, and Aggression*

	Intent Attributions	Response Selection	Outcome Expectations
<u>Victimization</u>			
PVS	.205*	.081	.043
MPVS-Physical	.237*	.179	.107
MPVS-Social	.067	-.021	.058
MPVS-Verbal	-.038	.040	.012
MPVS-Property	.151	.126	.104
MPVS-Total	.052	.049	.061
Peer Nomination	.018	.089	.010
<u>Aggression</u>			
BBS	.207*	.143	.250**
Peer-Overt	.059	.139	.125
Peer-Rel	-.001	.093	.088
Peer-Overt+Rel	.055	.147	.142

*Note.* BBS=Bullying Behavior Scale; Peer-Overt = Peer Nomination – Overt Aggression Scale; Peer-Rel = Peer Nomination – Relational Aggression Scale; Peer-Overt+Rel – Peer Nomination – Combined Overt and Relational Aggression Scale; PVS = Peer Victimization Scale; MPVS = Multidimensional Peer Victimization Scale

\*p<.05 \*\*p<.01

*Question 2B: Relationship between aggression and SIP.* Table 5 also illustrates the correlations among the three SIP variables and four measures of aggression. None of the peer-reported aggression measures (overt, relational, or combined) were significantly

correlated with any of the SIP variables. However, small yet significant correlations were found between self-reported aggression and Intent Attributions,  $r = .207$ ,  $p < .05$ ; and self-reported aggression and Outcome Expectations,  $r = .250$ ,  $p < .05$ . There was not a significant relationship between self-reported aggression and Response Selection. Thus, it appears that greater self-perceived aggressive behavior is associated with more hostile intent attributions as well as more favorable outcome expectations for aggressive behavior. However, these associations do not hold true when peers are used as the informant for aggression.

*Question 2C: Unique contributions of aggression and victimization to SIP.* The previous correlational analyses indicated that both self-reported aggression and self-reported victimization are significantly related to hostile intent attributions. However, since self-reported aggression and self-reported victimization are overlapping constructs (as demonstrated in Part 1 of this study), it is important to determine how much of the variance in Intent Attributions is due exclusively to self-reported aggression and how much is due exclusively to self-reported victimization. To address this question, multiple regression analyses were performed with Intent Attributions as the dependent variable. In the first analysis, self-reported victimization (PVS) was entered first, and self-reported aggression (BBS) was entered second. The results are presented in Table 6. When entered first, self-reported aggression contributed to variance in intent attributions, but did not make a unique contribution when entered second,  $F$  change (1, 97) = 2.882,  $p = .093$ . In the subsequent analysis, the order of entry was reversed. After accounting for self-reported victimization, the additional contribution of self-reported aggression to intent attributions was not significant,  $F$  change (1, 97) = 2.782,  $p = .099$ .

Table 6

*Regression of Intent Attributions on Self-Reported Aggression and Self-Reported Victimization*

	Beta	R square	F change	F change sig
Entered First: BBS	.170	.043	4.388	.039
Entered Second: PVS	.167	.070	2.782	.099
Entered First: PVS	.167	.042	4.285	.041
Entered Second: BBS	.170	.070	2.882	.093

*Note.* BBS = Bullying Behavior Scale. PVS = Peer Victimization Scale.

*Question 2D: Unique contributions of self-reported victimization and peer-reported victimization to SIP.* Because peer-reported victimization had no significant relationship with SIP, it was not necessary to investigate its relative contribution after self-reported victimization.

The final goal of this study was to examine whether group difference in SIP patterns exist among different subtypes of victims. The subgroups of interest were based on the overlapping constructs of (a) self-reported victimization and peer-reported victimization, (b) self-reported victimization and aggression, and (b) peer-reported victimization and aggression.

*Question 2E: SIP differences among groups based on informant.* The sample was divided into four groups based on informant: self-identified victims, peer-identified victims, self-peer-identified victims, and nonvictims. The victim subscale of the PVS was used to identify peer-identified victims. Although there were a variety of measures available to identify self-identified victims, the PVS was chosen for use in this analysis because it was shown in previous analyses to be more strongly correlated with SIP (specifically, intent attributions) than was the MPVS.

Children who scored above the 70<sup>th</sup> percentile on the PVS but not the Peer Nomination Scale were classified as “self-identified victims,” children who scored above the 70<sup>th</sup> percentile on the Peer Nomination Scale but not the PVS were classified as “peer-identified victims,” children who scored above the 70<sup>th</sup> percentile on both instruments were classified as “self-peer-identified victims,” and children who scored below the 70<sup>th</sup> percentile on both instruments were classified as “nonvictims.”

After grouping the sample based on the above criteria, there were 17 self-identified victims, 22 peer-identified victims, 8 self-peer-identified victims, and 54 nonvictims. A series of univariate ANOVAs was conducted with victim group as the independent variable and each SIP variable as the dependent variable. The results are presented in Table 7. The ANOVAs revealed no effect of group on Intent Attributions or Outcome Expectations. However, there was a significant effect of group on Response Selection,  $F(3, 97) = 2.826, p = .043$ . A follow-up Tukey HSD revealed that peer-identified victims selected significantly more aggressive responses than did nonvictims. No other group differences were found to be significant.

Because the sample size was small, it was of interest to examine whether additional significant differences would emerge if self-identified and peer-identified victims were combined into a single group. A one-way ANOVA revealed a significant difference between victims and nonvictims in Response Selection,  $F(1, 101) = 7.267, p = .008$ , but again, victims and nonvictims did not differ significantly in terms of Intent Attributions,  $F(1, 100) = 1.915, p = .170$ , or Outcome Expectations,  $F(1, 101) = .788, p = .377$ .

Table 7

*Mean SIP Scores (and Standard Deviations) of Self-Identified, Peer-Identified, and Self-Peer-Identified Victims, and Nonvictims*

	<u>Intent Attributions</u>	<u>Response Selection</u>	<u>Outcome Expectations</u>
Self-identified Victims ( <i>n</i> =17)	6.53 (1.01)	10.65 (2.64)	20.18 (3.23)
Peer-identified Victims ( <i>n</i> =22)	6.14 (1.13)	11.09* (3.42)	19.50 (3.22)
Self-peer-identified Victims ( <i>n</i> =8)	6.50 (1.41)	9.75 (2.12)	20.38 (3.46)
Nonvictims ( <i>n</i> =54)	6.00 (1.32)	9.15* (2.84)	19.31 (3.32)
Total ( <i>n</i> =101)	6.16 (1.24)	9.87 (2.98)	19.58 (3.27)
Effect Size	.030	.080	.014
Observed Power	.267	.663	.140

*Question 2F: SIP differences between bullies, passive victims, aggressive victims, and comparison children.* The second set of ANOVAs examined the differences between bullies, passive victims, aggressive victims, and comparison children. Because multiple measures were used to assess victimization and aggression, there were several ways to define these groups. Three sets of groups were identified. In the first set, participants were classified as bullies, passive victims, aggressive victims, or comparison children, based on their scores on self-report measures of victimization and aggression (specifically, the PVS and the BBS). Children who scored above the 70<sup>th</sup> percentile on the PVS but not the BBS were classified as “passive victims,” children who scored above the 70<sup>th</sup> percentile on the BBS but not the PVS were classified as “bullies,” children who

scored above the 70<sup>th</sup> percentile on both measures were classified as “aggressive victims,” and children who scored below the 70<sup>th</sup> percentile on both measures were classified as “comparison children.”

Table 8

*Mean SIP Scores (and Standard Deviations) of Bullies, Passive Victims, Aggressive Victims, and Comparison Children, Identified Through Self-Reports of Victimization and Aggression*

	Intent Attributions	Response Selection	Outcome Expectations
Bullies ( <i>n</i> =13)	6.23 (1.36)	10.54 (4.01)	21.23 (2.86)
Passive Victims ( <i>n</i> =16)	6.37 (0.81)	10.25 (2.79)	19.88 (2.94)
Aggressive Victims ( <i>n</i> =9)	6.78 (1.56)	10.56 (1.94)	20.89 (3.79)
Comparison ( <i>n</i> =63)	6.00 (1.24)	9.54 (2.92)	18.98 (3.24)
Effect Size	.038	.022	.070
Observed Power	.333	.197	.580

The total number of children in each subgroup was as follows: 13 bullies, 16 passive victims, 9 aggressive victims, and 63 comparison children. No main effects of victim/bully group (based on self-reported aggression and victimization) were found for any of the three SIP variables. However, the effect of group on Outcome Expectations approached (but did not reach) significance,  $F(3, 97) = 2.432$ ,  $p = .070$ . A follow-up test of this trend revealed that the difference between the Outcome Expectation scores of the bullies and the comparison group approached significance ( $p = .104$ ), with bullies expressing more favorable expectations for aggressive behavior. When the passive

victims and aggressive victims were combined into a single group ( $n=25$ ), the effect of group on outcome expectations reached significance,  $F(2, 101) = 3.373$ ,  $p = .038$ . The bullies held more favorable outcome expectations for aggressive behavior than did the comparison group.

The second set of subgroups identified was identical to that described above, except peer-reports of (as opposed to self-reports) of aggression were used to identify the aggressive subgroups. Specifically, children were classified as bullies, passive victims, aggressive victims, or comparison children based on their scores on the victim subscale and the combined aggression subscale of the Peer Nomination Scale. When the peer-reports were used to identify the subgroups, the total number of children in each subgroup was as follows: 14 bullies, 14 passive victims, 16 aggressive victims, and 57 controls.

Table 9

*Mean SIP scores (and Standard Deviations) of Bullies, Passive Victims, Aggressive Victims, and Comparison Children, Identified through Peer Reports of Victimization and Aggression*

	Intent Attributions	Response Selection	Outcome Expectations
Bullies ( $n=14$ )	6.57 (1.16)	9.43 (1.70)	19.93 (2.87)
Passive Victims ( $n=14$ )	6.57 (1.09)	10.50 (2.24)	19.14 (3.09)
Aggressive Victims ( $n=16$ )	5.94 (1.24)	10.94 (3.84)	20.25 (3.40)
Comparison ( $n=57$ )	6.02 (1.27)	9.53 (3.08)	19.42 (3.41)
Effect Size	.044	.037	.012
Observed Power	.379	.327	.127



The univariate ANOVAs revealed that there was no significant main effect of victim/bully group (based on peer-reported aggression and victimization) on any of the three SIP variables. When the aggressive and passive victims were combined into a single victim group ( $n=30$ ), the groups were not found to differ significantly on any of the three SIP variables.

The final analysis of group differences grouped children on the basis of their scores on the physical victimization subscale of the MPVS and the overt aggression subscale of the Peer Nomination Scale. The rationale for using this particular combination of measures was that the analyses in Part 1 of this study revealed that the MPVS-Physical subscale was significantly positively correlated with peer-reported overt aggression. Thus, the purpose of this analysis was to investigate whether group differences would emerge when the groups were defined solely on the constructs of physical/overt victimization and aggression, excluding other (social/relational) forms of victimization and aggression. The results are presented in Table 10.

Although no group differences were found at the .05 level, the effect of group on Intent Attributions did approach significance,  $F(3, 97) = 2.373, p = .075$ . A follow-up Tukey HSD revealed that the greatest difference in intent attribution scores occurred between passive victims and comparison children, although this difference was not significant (mean difference = 7.373,  $p = .105$ ). No significant effects of bully/victim group on Response Selection or Outcome Expectations were found.

Table 10

*Mean SIP Scores (and Standard Deviations) of Bullies, Passive Victims, Aggressive Victims, and Comparison Children, Identified through Self-Reports of Physical Aggression and Peer-Reports of Overt Aggression*

	Intent Attributions	Response Selection	Outcome Expectations
Bullies ( <i>n</i> =15)	6.20 (1.21)	10.27 (2.09)	20.20 (3.19)
Passive Victims ( <i>n</i> =20)	6.60 (1.31)	10.50 (3.33)	20.10 (3.64)
Aggressive Victims ( <i>n</i> =15)	6.53 (1.19)	10.67 (3.65)	20.20 (3.39)
Comparison ( <i>n</i> =51)	5.86 (1.18)	9.27 (2.79)	19.02 (3.10)
Effect Size	.068	.043	.031
Observed Power	.578	.372	.272

When aggressive victims and passive victims were collapsed into a single group, the effect of group on Intent Attributions reached significance,  $F(2, 98) = 3.582, p = .032$ . A follow-up Tukey HSD revealed a significant difference between the Intent Attribution scores of victims and comparison children (mean difference = .7087,  $p = .024$ ).

The four sets of analyses presented in Part 2 provide evidence for group differences in intent attributions between various types of victims (self-perceived vs. peer-perceived vs. self-perceived vs. nonvictims). However, no significant differences in SIP patterns were found among bullies, passive victims, aggressive victims, and comparison children. Because of the small sample size, it was of interest to investigate whether group differences would emerge when aggressive and passive victims were combined into a single group. When only three groups were used, two significant effects

did emerge. First, when groups were defined on the basis of self-reports of victimization and aggression, the bullies were found to differ significantly from comparison children in terms of Outcome Expectations. Second, when groups were defined based on self-reports of physical victimization and peer nominations of overt aggression, victims were found to differ significantly from comparison children in terms of Intent Attributions. Despite these findings, it is important to note that effect sizes were generally small. Even for those comparisons that did reach statistical significance, effect sizes did not exceed 0.1, indicating that the difference in SIP scores among the various bully/victim groups was minimal.

## Chapter 5: Discussion

The purpose of this study was to examine the social information processing (SIP) patterns of children involved in bullying, with particular emphasis on the victims. An important goal was to address shortcomings in previous studies of victimization and SIP which failed to account for certain variables, specifically how victims are defined and identified. Thus, the present study examined the constructs of victimization and aggression by using a variety of measures, examining the relationships among them, and examining whether they were differentially related to social cognitive variables.

### *Part 1: Exploration of Measures of Victimization and Aggression*

*Correlations within constructs in self- and peer-reports.* Six self-report measures of victimization were administered, and each was significantly positively correlated with the others. However, the relationships of measures of self-reported victimization were higher within a single scale (e.g., the correlations among subscales of the Multidimensional Peer Victimization Scale [MPVS] ranged from  $r = .501$  to  $r = .726$ ) than when two different scales were used (e.g., the correlations among the Peer Victimization Scale [PVS] and the subscales of the MPVS ranged from  $r = .297$  to  $r = .396$ ). In contrast, when the relationship between self-reports and peer-reports of victimization was examined, the correlation was nearly zero. Similar findings were found for the construct of aggression: there was virtually no agreement between self- and peer-reports of aggression. These findings indicate that the children who rate themselves as aggressors (or victims) are not necessarily the same children who are nominated as such by their peers. This finding has serious implications for researchers who may

believe that self- and peer-reports essentially measure the same construct and thus can be used interchangeably. In the present sample, this was not the case.

What could account for the absence of significant relationships between self- and peer-reports of victimization and aggression? Previous studies have shown that agreement between self- and peer-reports of victimization is less than perfect, but most of these studies have demonstrated at least small correlations between self- and peer-reports, ranging from .2 to .4. (Juvonen et al., 2001). The results of the present study appear to lend support to Juvonen et al.'s (2001) hypothesis that self-reports and peer-reports of victimization actually measure different constructs. That is, self-reports measure subjective experiences of victimization, whereas peer-reports measure one's reputational status as a victim. These appear to be distinct forms of victimization, and research suggests that they are associated with different behaviors and adjustment outcomes (Graham & Juvonen, 1998; Ladd & Kochenderfer-Ladd, 2002). The present study supports this view. Children who identified themselves as victims were, for the most part, not the same children who were identified as victims by their peers. Further, self-reported victimization showed a stronger relationship with SIP (particularly intent attributions) than did peer-reported victimization. This finding bolsters support for the hypothesis that self-reports and peer-reports of victimization assess different constructs because it suggests that the two measures are differentially related to social cognitive variables. Future studies, with larger samples, may determine whether different definitions of victimization (subjective vs. reputational) might correlate differentially with different dimensions of social information processing. (For instance, self-reported victimization may be more pertinent to intent attributions whereas reputational

victimization may be more pertinent to response selection). Other questions that need to be addressed are: which aspects of SIP are most strongly linked to actual behaviors and how SIP variables relate to one another and combine to shape behavior.

Another possible explanation for the lack of correlation among informants is the age of the participants. The children studied in this investigation were in grades 2 and 3, which is young in comparison to most other studies of bullying. Ladd and Kochenderfer-Ladd (2002) demonstrated that the agreement between self- and peer-reports of victimization increases with age. They found little concordance among informants for children in grades K-1, and only modest agreement in grades 2 and 3. For boys and girls, the concordance between self- and peer-reports of victimization was .02 in Kindergarten, .17 in grade 1, .26 in grade 2, and .27 in grade 3. Agreement increased significantly from grades 2 and 3 to grade 4, when the correlation reached .50. Thus, Ladd and Kochenderfer-Ladd (2002) concluded that the utility of self- or peer-reports varies with the age or developmental level of the informant. There are several possible explanations for these findings. First, young children may not be reliable informants of their peers' experiences of victimization because they have not yet developed the skills needed to monitor, encode, and recall the identities of the victims, or the schemas needed to understand the concept of 'victim.' Second, peers may overlook many victims who tend to be shy, submissive, or withdrawn. Third, young children may have difficulty discriminating between the perpetrators and the recipients of aggressive acts. These explanations argue that for children in the early elementary grades, peer-reports may be less reliable than self-reports. As a result, the concordance between self- and peer-reports is low in younger children. The greater utility of self reported than peer reported

victimization in this age group is supported by the findings in the present study showing that self reported victimization was more closely related to social cognition (discussed in more detail later in this chapter). This finding supports the hypothesis that self-reports may be more meaningful when examining victimization in younger children.

*Correlations across constructs within self- and peer-reports.* Despite the lack of agreement within constructs across informants, the present study found that there was agreement across constructs, both within and across informants. That is, self-reported victimization was significantly positively correlated with self-reported aggression, and peer-reported victimization was significantly positively correlated with peer-reported aggression. Moreover, there was a significant positive correlation between self-reported victimization and peer-reported aggression.

The strong relationship among victimization and aggression when peers were used as the informant, and the lack of a relationship between self-and peer-reports of victimization, suggest the possibility of shared method variance, or same-source bias. It is likely that at least some of the shared variance between the PVS and the BBS, for example, is due to the fact that both were self-reports and that children who reported high levels of victimization may have also reported high levels of bullying. As discussed in Chapter 2, the problem of shared method variance has been used by some researchers to explain the findings that self-perceived victimization is related to self-reported adjustment variables, while peer-reported victimization is related to peer-reported adjustment variables (Hawker & Boulton, 2000).

However, additional findings raise questions about viewing the overlap between victimization and aggression as attributable solely to shared method variance. As shown

in Chapter 4, there was a significant positive correlation between self-reported victimization and peer-reported aggression. This correlation is especially interesting in light of the fact that there was virtually no correlation between self-reported aggression and peer-reported aggression, or between self-reported victimization and peer-reported victimization. It appears that children identified by their peers as aggressors were more likely to perceive themselves as victims than they were to perceive themselves as aggressors.

There are a few plausible explanations that can account for the finding that the relationship between victimization and aggression is stronger *across* informants than *within* informants. One of these explanations is based in the findings of Ladd and Kochenderfer-Ladd (2002), who found that peer-reports of victimization were less reliable in the younger grades. Because young children may have difficulty distinguishing between the perpetrators and the recipients of aggressive acts, they may have perceived the recipients (the victims) as aggressors, which would be reflected in their nominations.

Another plausible explanation is that some children who display aggressive behavior, and are thus nominated as aggressive by their peers, actually see themselves as victimized and thus perceive their aggressive behavior as justified. If they believe that this behavior is justified, they may not report themselves as being aggressive, even if their peers consider them as such.

#### *Part 2: Relationship between Victimization, Aggression, and SIP*

The second part of this study investigated the relationship between victimization, aggression, and SIP, while paying careful attention to the measurement issues examined



in Part 1. Three aspects of the SIP model described by Crick and Dodge (1994) were assessed using a hypothetical provocation scenario method: Attributions of Intent, Response Selection, and Outcome Expectations. As expected, these three SIP variables were moderately positively correlated with one another, sharing between 7 and 14% of their variance. Because each step in the SIP cycle is moderated by, and influences, the other steps, one would expect that the various components would share some, but not all, of their variance.

*Correlational analyses: SIP and aggression.* Although the relationship between aggression and SIP is well-established in the literature, the present study revealed significant correlations only between self-reported aggression and two of the SIP variables (Intent Attributions and Outcome Expectations). There was no significant relationship between peer-reported aggression and any of the three SIP variables. Certain methodological variables may help to explain the discrepancy between the present findings and the prior literature. First, much of the support for the link between SIP and aggression comes from studies that examined clinically referred children meeting DSM criteria for behavioral disorders (e.g., Matthys et al., 1999) or adolescent offenders (e.g., Slaby & Guerra, 1988). It is expected that these populations would show more pronounced differences in their social information processing patterns than non-referred children identified as aggressive through self- or peer-reports.

However, many studies have shown significant correlations between peer-reported aggression and SIP in non-referred children (e.g., Dodge & Tomlin, 1987; Erdley & Asher, 1996; Crick et al., 2002). These studies used measures similar to the peer-nomination instrument used in the present study. How can the discrepancy between

these findings and the present results be explained? Once again, the age of the present sample may be an important factor in interpreting the results. Most of the studies investigating aggression and SIP used older children in their sample. For example, Dodge and Tomlin (1987) and Erdley and Asher (1996) measured SIP and aggression in children in the fourth grade or above. Thus, the finding that peer-reports are less reliable in the younger grades (Ladd & Kochenderfer-Ladd, 2002) may explain why the present study did not produce similar results.

*Correlational analyses: SIP and victimization.* In addition to investigating the relationship between SIP and aggression, this study also examined the relationship between SIP and victimization. The research on SIP and victimization is much more recent and less conclusive than the research on SIP and aggression. The present study found a small yet significant positive correlation between two measures of self-reported victimization (the PVS and the MPVS-Physical) and one SIP variable (Intent Attributions). The finding that self-reported victimization, but not peer-reported victimization, is linked to hostile intent attributions supports the notion that self- and peer-reports assess different subconstructs of victimization. Self-identified victims may misperceive social situations, believing that neutral actions are intended as hostile. On the other-hand, peer-identified victims may not recognize (or may be reluctant to report) that their peers are actually acting aggressively toward them. Clearly, these two types of victimization would yield very different intrapersonal experiences. The third type of victim – those who are identified as victims by both self- and peer-reports – may be the most “in touch” with reality, as their peers confirm their own accounts of victimization. At the same time, research suggests that they also may be the most maladjusted, as they

are likely to experience both the intrapsychological maladjustment associated with self-perceived victimization and the interpersonal maladjustment associated with peer-perceived victimization (e.g., Crick & Bigbee, 1998).

The observed relationship between self-perceived victimization and hostile intent attributions may also help to explain the finding that self-reports of victimization were significantly correlated with both self- and peer-reports of aggression. Children who perceive neutral actions as hostile are likely to see themselves as victims, and may also be more likely to react aggressively to acts that they perceive as hostile. Thus, erroneous interpretation of social cues (i.e., hostile intent attributions) may account for the relationship between aggression and self-reported victimization.

*Multiple regression analyses.* The results of the multiple regression analyses illustrate the large degree of overlap between victimization and aggression with respect to the prediction of SIP. Because self-reports of victimization and self-reports of aggression were both significantly correlated with hostile intent attributions, it was of interest to see whether either measure contributed uniquely to intent attributions. The results of these analyses indicate that when self-reported aggression is accounted for, self-reported victimization does not contribute significantly to variance in intent attributions, and vice versa. The results of the present study suggest that, at least at young ages, the constructs of aggression and victimization are closely linked and discriminant validity is low. The implications of this finding are that differentiating between self-reported and peer-reported victimization (or self-reported and peer-reported aggression) may actually be more useful than differentiating between victimization and aggression from a single informant.

In sum, victimization was significantly related to attribution bias, but not to the other two SIP variables, Response Selection and Outcome Expectations. The concordance of these findings with the findings from other studies of SIP and victimization are mixed. The correlation between victimization and hostile intent attributions is consistent with the findings of Camodeca et al. (2003) and Schwartz et al. (1998). However, some findings in the previous studies were not replicated in the present investigation. For example, Schwartz et al. (1998) also found that victimization was associated with negative outcome expectancies for aggressive and assertive responses, and Champion et al. (2003) found that victimization was associated with aggressive response selection. The lack of concordance with previous research may be due to methodological variables. For example, Schwartz et al. (1998) used a different method for identifying victims (independent observations) than the present study; while Champion et al. (2003) used a sample much older than the one used in this study (early adolescents).

The results of the present study are consistent with the results of Camodeca et al. (2003), who found a relationship between victimization and hostile intent attributions, but not between victimization and response selection. This study used a sample that was similar in age to the present sample (eight year old children). Interestingly, however, victims in the Camodeca et al. (2003) study were identified via peer-report. Warden and Mackinnon (2003) used a sample of nine- and ten-year olds and identified victims through a composite measure of self- and peer-reports. Their lack of finding of a relationship between victimization and SIP may have been due to the fact that they

collapsed peer- and self-reports. In the present study, self- and peer-reports did not agree, and thus it would not have been appropriate to combine them.

*Analyses of group differences.* This study also investigated group differences in SIP. First, participants were classified into four groups based on the informant providing the victimization data: self-perceived victims, peer-perceived victims, self-peer-perceived victims, and nonvictims. In the subsequent analyses, participants were divided into bully-victim subgroups: bullies, passive victims, aggressive victims, and comparison children. Three sets of the four bully/victim subgroups were identified, each using a different combination of aggression and victimization measures to identify the subgroups. Given the low correlations between different measures of the same construct, it was expected that the sizes of the subgroups would differ according to the ways that the variables were measured and combined. Such measurement differences have important implications for interpreting findings in the literature, and will be discussed later in this section.

It was anticipated that group sizes would be too small to yield significant findings with ANOVA analyses. Indeed, the analyses revealed few significant differences among groups. Effect sizes were small, indicating that the true differences among bully and victim groups with respect to their SIP scores are minimal, and thus may be difficult to detect even when larger sample sizes are used. However, when examining self-identified, peer-identified, self-peer-identified, and nonvictims, it was found that peer-identified victims selected significantly more aggressive responses than did nonvictims. A plausible explanation for this finding is that children who selected highly aggressive

responses on the SIP measure are the most visibly aggressive children and thus are more likely to be nominated by their peers.

When examining differences between bullies, passive victims, aggressive victims, and comparison children, no significant differences emerged, regardless of whether the groups were defined based on peer reports, self reports, or a combination of the two. However, when self-reported passive victims and self-reported aggressive victims were combined into a single group, it was found that the effect of group on outcome expectations was significant. The bullies held more favorable outcome expectations for aggressive behavior than did the comparison group. The fact that this difference emerged when self-reports were used to define the groups, but not when peer-reports were used to define the groups, provides support for the idea that self-reports of aggression and victimization may be more useful for investigating the relationship between victimization/aggression and internal criteria such as SIP.

Although few significant SIP differences emerged among bullies, passive victims, aggressive victims, and comparison children, there was interest in examining the proportion of the sample falling into the respective groups. In this study, three sets of bully/victim groups were established, each using a different combination of self- and peer-report measures. As might be expected, the number of children falling into each group differed depending on the source providing the data. Table 11, which summarizes some of the data presented in Chapter 4, illustrates these findings.

Table 11

*Group Sizes of Bullies, passive victims, aggressive victims, and comparison children as a function of the measures used to define the groups*

		Bullies	Passive Victims	Aggressive Victims	Comparison Children
<u>Measure of Victimization</u>	<u>Measure of Aggression</u>				
PVS	BBS	13	16	9	63
Peer Nom. (Victim Scale)	Peer Nom (Total Agg.)	14	14	16	57
MPVS-Phys	Peer Nom (Overt Agg.)	15	20	15	51

When self-reports were used to define the groups, only 9 children were identified as aggressive victims; yet when peer-reports were used, the number of aggressive victims jumped to 16. However, four chi-square goodness-of-fit tests indicated that the size of each group did not differ significantly across the three different identification methods (Bullies:  $X^2(2) = 0.143$ ,  $p > .10$ ; Passive Victims:  $X^2(2) = 1.120$ ,  $p > .10$ ; Aggressive Victims:  $X^2(2) = 2.151$ ,  $p > .10$ ; Comparison Children:  $X^2(2) = 1.263$ ,  $p > .10$ ).

Nevertheless, researchers should exercise caution in classifying their sample into groups based on a single source. Given the low correlations among peer- and self-reports, not only the number of children in each group, but also who the children are, may differ.

#### *General Discussion and Implications for Future Research*

Compared to other forms of social maladjustment, peer victimization is a relatively recent area of interest to researchers, and the construct is still not fully understood. Future research is needed to clarify how victimization is defined and measured. Several questions need to be answered. For example, are children considered victims if they perceive themselves as such but are not considered victims by their peers?

The present study demonstrates that, at least in the younger grades, self-identified victims and peer-identified victims are not necessarily the same children. Further, self- and peer-reports of victimization were shown to be differentially associated with SIP. Specifically, self-reported victimization, but not peer-reported victimization, was associated with hostile intent attributions. These findings build on previous research showing that self-identified and peer-identified children differ in terms of their social and psychological adjustment outcomes (Graham & Juvonen, 1998), by providing evidence that these victim subtypes also differ in terms of their social cognitive processes. Thus it appears that using only one source to assess victimization is inadequate. Although some have argued that peer-reports are statistically superior to self-reports (e.g., Perry et al., 1988), it is important to consider that self-reports may be more useful when studying younger children, and when examining the relationship between victimization and internal criteria such as intrapsychological adjustment and social information processing.

Another important question is whether children should be considered victims if they also engage in aggressive behavior. One of the most striking findings of the present study was the large overlap between victimization and aggression, both within and across informants. There are several plausible explanations for this overlap, all of which must be investigated further. The overlap may be due to young children's inability to adequately discriminate between victimization and aggression. But it is also likely that victimization and aggression are interrelated, and perhaps inseparable, constructs. An individual's perception of being victimized, whether or not it is perceived by peers, may lead to the belief that aggression is justified. This line of reasoning is strengthened by the correlation between self-perceived victimization and hostile intent attributions.



To fully study subgroups of victims and aggressors, large sample sizes are needed to account for all of the distinctions (and combinations) that characterize children's experiences of victimization and aggression. Large sample sizes will also allow researchers to identify groups of children reporting and/or exhibiting more extreme levels of aggression or victimization. The present study defined aggressive and victimized children as those whose scores fell above the 70<sup>th</sup> percentile. Although this criterion has been used by other researchers in the field, it is relatively liberal. A more conservative criterion might yield more pronounced differences, as the victim and bully groups would include only the children at the extreme ends of the sample. In the present study, the more liberal cutoff criterion may have weakened the results. However, given the small sample size it was necessary to choose a criterion that would yield a sufficient number of children in each group. Larger sample sizes will allow researchers to examine the SIP patterns, and other variables of interest, in children reporting or displaying extreme levels of aggression or victimization.

Another important consideration for future research is the age of the sample. The results of Part 1 of this study, considered in the context of prior research, suggest that the validity and utility of peer-reports and self-reports of victimization and aggression vary with age. Similarly, SIP variables may also be influenced by age. It is likely that the role of social information processing changes as children get older. Children's perceptions, expectations, and ways of responding are shaped by their experiences. It may be that early, repeated experiences of victimization gradually lead children to perceive neutral actions as hostile. They may also develop a consistent pattern of responding to provocative situations, such as submission or aggression. Finally, children may develop

specific expectations of the outcomes for aggressive or submissive behavior in response to provocation. In sum, young children may not have consistent social cognitive patterns. However, as they get older, their schemas for responding to provocation are likely become more well-defined and consolidated. Thus, it is possible that stronger relationships between bully or victim status and SIP may emerge as children enter the upper elementary and middle school grades.

Another factor that may be important in the interpretation of the results of this study is the racial and ethnic composition of the sample. The present sample consisted primarily of African American children in an urban school district. This factor may be important to consider when comparing the present results to the existing literature. In prior studies of the relationship between SIP and victimization and/or aggression, demographic variables such as race, ethnicity, and socioeconomic status have not been systematically explored. Of the four reviewed studies that examined SIP in victimized children, two studies used a sample of primarily Caucasian children (Champion et al., 2003; Warden & Mackinnon, 2003), one study used a sample of primarily African American children (Schwartz et al., 1999), and one study used a sample of Dutch children, although the ethnic breakdown of the sample was not reported (Camodeca et al., 2003). Further, several of the measures used in the present investigation, including self-reports of bullying and victimization, were developed using a sample of primarily Caucasian British children (Austin & Joseph, 1996). Thus, the validity of these measures with racially diverse, urban American samples has not yet been established.

The importance of examining the influence of demographic variables such as race and socioeconomic status when assessing bully and victim status is underscored by the

findings of Nansel et al. (2001), who examined the prevalence of bullying and victimization in a sample of over 15,000 American children. In this study, Hispanic youth reported marginally higher involvement in bullying of others, and African American youth reported being bullied with significantly less frequency overall (Nansel et al., 2001). Such patterns should be considered when comparing results across studies that differ in the demographic composition of their samples.

Social information processing patterns may also be influenced by demographic variables. One study (Pettit, Dodge, & Brown, 1988) which looked at the relationship between SIP and aggression in a sample of children from economically disadvantaged and stressed families found that, contrary to prior literature, all children (both aggressive and nonaggressive) showed hostile intent attributions. The authors suggested that these children may have learned to attribute hostility to others, regardless of their behavioral style. To better understand the development of victim and aggressive behavior, it may be necessary to further investigate the role of demographic variables, including race and socioeconomic status, particularly with regard to how these factors relate to social information processing.

Another important consideration is the possibility that the standard method of measuring SIP (the hypothetical scenario method) is limited in its usefulness in studying victims. In this study, like in many other studies of SIP, participants' responses to the hypothetical scenarios were rated in terms of their aggressiveness. However, the design of the scale does not allow for other maladaptive responses, such as passivity, to be adequately captured. New measures of SIP may need to be developed that adequately account for the range of responses that children may produce when confronted with

provocation. Just as there was poor agreement across measures of aggression and victimization, it is likely that various measures of SIP may not be correlated.

In sum, the distinctions between self-identified and peer-identified victims, and between aggressive victims, passive victims, and bullies, have important implications for both research and practice. The present study provides some insight into the factors that need to be examined in future research on victimization. First, findings must be considered in light of the measures used. Ideally, studies will employ multiple measures using a variety of sources. Second, age appears to be an important variable that influences the identification of victims and aggressors as well as the variables associated with victimization and aggression. Studies are needed to examine victimization and aggression in children from a variety of age groups, to test the validity of different measures with different age groups, and to examine how social information processing varies with age. Likewise, other demographic variables such as race and socioeconomic status should be systematically examined with regard to their influence on measures of aggression, victimization, and social information processing. Finally, the cognitive and social-emotional adjustment variables associated with different types of victimization, and different combinations of aggression and victimization, should be researched further in order to provide information on the validity and the utility of victimization sub-constructs.

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