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Dina M. Casey

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**THE PROCESSING OF AFFECTIVE INFORMATION AMONG
SHY CHILDREN AND AGGRESSIVE CHILDREN**

By

Dina M. Casey

B.A. State University of New York at Plattsburgh, 1989

A THESIS

Submitted in Partial Fulfillment of the
Requirements for the Degree of
Doctor of Philosophy
(in Psychology)

The Graduate School
The University of Maine

May, 2006

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THE PROCESSING OF AFFECTIVE INFORMATION AMONG
SHY CHILDREN AND AGGRESSIVE CHILDREN

By Dina M. Casey

Thesis Advisors: Dr. Donald S. Hayes and Dr. Joel A. Gold

An Abstract of the Thesis Presented
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This research investigated the role of emotion in social information processing and examined whether children with behavior patterns other than aggression process social information in a unique manner. Testing hypotheses derived from Crick and Dodge's (1994) model of social information processing, the first study assessed shy, aggressive, and nonshy/nonaggressive children's beliefs about their emotions and a protagonist's emotions at the model's representation step and at the response search/access step by varying a protagonist's intent in fictional scenarios. The second study assessed whether correct labeling of a protagonist's emotional state would eliminate shy children's tendency to underattribute hostility and

aggressive children's propensity to attribute a hostile intent to a protagonist in social situations.

In the first study, a number of findings indicated that, compared to nonshy/nonaggressive children, both shy and aggressive children process social information differently. First, shy children described themselves as more scared in ambiguous and hostile scenarios, and as more scared after selecting a behavioral response in a hostile scenario than other children. Second, compared to other participants, shy children (especially boys) described a protagonist as madder and sadder in ambiguous scenarios. In addition, aggressive boys rated a protagonist as happier and as more thankful than other children after deciding a protagonist's motive in accidental scenarios. Finally, in a hostile scenario, aggressive children described a protagonist as sadder than nonshy/nonaggressive children after selecting a response.

In the second study, certain labeling effects were found, supporting the suggestion that attending to the emotional state of others affects shy children's and aggressive children's interpretation of others' motives. First, compared to children in a no label condition, shy children were more likely to attribute a hostile intent to

a protagonist described as angry. Second, aggressive children were more apt to exhibit the hostile attribution bias when a protagonist was depicted as sad than when no emotional information was provided.

The results of this research support the importance of examining emotion's role in social information processing and the extension of the model's applicability to the behavior pattern, shyness.

ACKNOWLEDGEMENTS

First, I would like to thank Dr. Don Hayes for his insightful comments and for challenging my theoretical viewpoints and my research decisions, and Dr. Joel Gold for his statistical help and his encouragement. Their assistance was instrumental in shaping this thesis and providing me with opportunities for intellectual growth. I would also like to thank Dr. Cynthia Erdley, Dr. Doug Nangle, and Dr. Janice Zeman for their patience and constructive feedback. Michael Whitney, my research assistant, also deserves thanks for his assistance with data analyses. Finally, I am indebted to the teachers and the students at the Viola Rand School in Bradley, Enfield Station Elementary School, Elm Street School in East Machias, Great Salt Bay Community School in Damariscotta, Milo Elementary School, Canaan Elementary School, Meroby Elementary School in Mexico, SeDoMoCha Middle School in Dover-Foxcroft, Hermon Elementary School, Lincolnville Central School, Academy Hill School in Wilton, Ames Elementary School in Searsmont, Blue Hill Consolidated School, and the counselors and the campers at the Bangor YMCA and YWCA. Their willingness to share their time and

to participate in my studies provided me with some of the most enjoyable and humorous moments during this challenging experience.

This dissertation process has been an arduous one, marked by personal losses and professional uncertainty. As I reflect on this journey, I am reminded of the words of Harriet Tubman:

If you are tired, keep going.

If you are scared, keep going.

If you are hungry, keep going.

If you want a taste of freedom, keep going.

As I end this chapter of my life with a renewed confidence in myself and a sense of pride in my achievement, I would like to thank my friends, my family, and, at times, strangers, who by their words, their acts of kindness, or their presence, propelled me, during moments of self-doubt, to keep going.

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Chapter 1

INTRODUCTION

Overview

Understanding children's cognitive processing in social situations has become an important area of research because researchers assume that "social cognitions are the mechanisms leading to social behaviors that, in turn, are the bases of social adjustment evaluations by others" (Crick & Dodge, 1994, p. 74). Comparing the cognitive processing patterns of children who differ on certain dimensions, such as behavior patterns, may help elucidate the processes that contribute to social adjustment and social maladjustment (Crick & Dodge, 1994). In addition, although emotion has been proposed as an integral part of social information processing (Crick & Dodge, 1994; Dodge, 1991), understanding the interaction of emotions and cognition in the processing of social interactions and its relation to behavior, and, subsequently, social adjustment, has received little attention. The focus of this research is to examine the relation between social information processing and emotion among children who display different patterns of social behavior.

A major model of social information processing proposed by Dodge (Crick & Dodge, 1994; Dodge, 1986) has stimulated

much of the research in this area and provides the theoretical basis for this study. Crick and Dodge (1994) describe six cognitive stages that occur during the interpretation of and/or response to social situations. For each stage, the role of emotion in social information processing is outlined (Crick & Dodge, 1994; Dodge, 1991). Assuming that emotion plays a necessary part in the processing of social information, Dodge (1991, p. 159) states that "emotion is the energy level that drives, organizes, amplifies, and attenuates cognitive activity, and, in turn, is the experience and expression of this activity." Not only can an individual's own emotions affect his or her processing of social information, but an individual's perception of an emotion in another may also bias the overall interpretation of and/or response to a social situation (Lemerise & Arsenio, 2000). Likewise, a person's interpretation of a social situation may lead to changes in a person's own emotional state (Crick & Dodge, 1994). Because research on emotion's role in the processing of social information is very limited, one goal of this project is to examine the relation between the perception of emotion and the interpretation of, and response to, social situations among children whose social behaviors differ.

Because Dodge (1986) assumes that the processing of social information varies as a function of social behavior patterns, aggressive children and shy children will be examined to determine whether these behavior patterns are differentially related to the processing of emotion information. Traditionally, aggression has been defined as behavior that is directed at injuring another (Parke & Slaby, 1983). Aggression also includes the obtainment of an object, territory, or privilege through verbal or physical means, that may result in injury (Hartup, 1974). The bulk of social information processing research has attempted to determine if aggressive children show deficits in the various stages described in Dodge's (1986) model. Two findings have been repeatedly documented. First, compared to nonaggressive individuals, aggressive children exhibit a hostile attributional bias in ambiguous situations (see Crick & Dodge, 1994, for a review). For example, if a child knocks down an aggressive child's tower of blocks, the aggressive child is more likely to interpret the other child's behavior as intentional and not as accidental. Second, aggressive children's solutions to social conflicts are rated as more socially incompetent than nonaggressive children's solutions (Asarnow & Callan, 1985; Dodge, 1986; Milich & Dodge, 1984; Slaby & Guerra, 1988).

Unlike aggression, the social behavioral pattern, shyness, has not been extensively studied in the social information processing literature. Shyness is characterized by a person's discomfort and behavioral inhibition in the presence of others, as well as an undue focus on one's self and a concern about the ability to interact socially (Biemer, 1983; Buss, 1984; Cheek & Briggs, 1990; Cheek & Buss, 1981; Van Der Molen, 1990). As of yet, no one has examined the relation between shy children's perception of emotion and their interpretation of social situations.

Although Dodge (1991) views the interpretation of emotion as an integral part of social information processing, little empirical research has examined its role in children's interpretation of, and response to, social situations. In addition, the applicability of Dodge's model (Crick & Dodge, 1994; Dodge, 1986) to behavior patterns other than aggression remains largely untested. Thus, the primary goals of this research are to (a) evaluate whether aggression and shyness are differentially related to children's cognitive representation of, and response to, social situations, (b) investigate the interaction of cognition and emotion in the processing of social information by aggressive versus shy children, and (c) examine whether the encoding of emotion in others causes

aggressive and shy children to differentially interpret the intent of others.

The introduction to this study is organized in the following manner. First, Crick and Dodge's (1994) theory of social information processing is presented. Second, relevant research on the representation and response search/access processes is discussed in successive subsections. Third, pertinent issues and studies on the role of emotion in the interpretation of social information are presented. Finally, unresolved issues within the social information processing literature are addressed.

Social Information Processing Theory

Much of the interest in social information processing has stemmed from a model proposed by Kenneth Dodge (1986). The overall goal of Dodge's theory is to describe and explain how children interpret and respond to the social behaviors of others. Initially, he suggested that five sequentially-ordered steps occur in the processing of social interactions. At each step, he assumed that children's past experiences and biologically limited capabilities influence the nature of processing, which depends on the perception of internal and external (situational) cues, the attributions about the encoded cues, the generation of solutions in response to the encoded cues, and the decision to make and enact a response (Crick & Dodge, 1994; Dodge, 1986)). In a subsequent article, Crick and Dodge (1994) offer a revision of the social information processing model, introducing a goal selection step. The reformulated social information processing model will be described in this subsection.

The first step of Dodge's (Crick & Dodge, 1994; Dodge, 1986) model is the perception of cues in a social situation. Because of the large amount of information available and because a child cannot attend to all social cues simultaneously, a child must learn how to attend to appropriate cues and to store the social information

efficiently (Dodge, 1986). A child who executes this step competently encodes relevant cues (Dodge, 1986). Failure to encode relevant cues, or attending only to hostile cues, is assumed to hamper further processing, and may eventually result in an inappropriate behavioral response (Dodge, 1986). Dodge and Newman (1981) propose that high arousal levels may interfere with aggressive children's ability to encode relevant cues from the social environment.

Mental interpretation of the selected cues comprises the second step, the representation process (Dodge, 1986). Whereas cues are often objective physical stimuli (e.g., facial expressions and verbalizations), interpretation is the subjective analysis of encoded stimuli. A child's failure to attend to relevant cues may result in an inadequate assessment of a participant's motives, as may attention only to negative cues or overemphasis on hostile intentions (Dodge, 1986). Specific to social behavior patterns, Dodge (1986) suggests that, compared to nonaggressive children, aggressive children interpret ambiguous situations in a hostile manner.

Outside of Dodge's model, it has been theorized that two characteristics of shyness will impede shy people's ability to encode relevant cues in the environment; first, their high arousal level resulting from their anxiety in a

social situation (Easterbrook, 1959) and second, their focus on themselves and their feelings (Mandler & Sarason, 1952). Given that Dodge assumes that each step of social information processing influences, or is influenced by the next step, insufficient encoding may affect shy children's ability to interpret accurately the intent of another in a social interaction. In addition to insufficient encoding, shy people's employment of a self-presentational strategy, defined as a desire to avoid social disapproval (Arkin, Lake, & Baumgardner, 1986; Shepperd & Arkin, 1990), may also bias them to underattribute hostility in social situations (Harrist, Zaia, Bates, Dodge, & Pettit, 1997). The term, underattribution of hostility, refers to shy children's tendency to conclude that a negative outcome is a result of an accident with greater frequency than nonshy children in ambiguous situations (Harrist et al., 1997).

Clarification of goals, step three in the reformulated model (Crick & Dodge, 1994), is defined as a selection of a desired outcome for a social situation (e.g., avoiding embarrassment, maintaining a friendship, or getting even). Children's goals may be influenced by many sources, including children's arousal levels, or others' emotional states (Crick & Dodge, 1994; Lemerise & Arsenio, 2000). Although the function of goals is towards producing a

specific outcome, children can also revise their goals or construct new ones in response to internal and external social cues (Crick & Dodge, 1994). Researchers assume that positive social adjustment is associated with goals that promote positive peer interaction, whereas social maladjustment is related to hostile and competitive goals (Crick & Dodge, 1994; Slaby & Guerra, 1988), or, perhaps, a self-presentational strategy (Arkin et al., 1986).

Once a child has selected a goal, possible responses are accessed in step four (Crick & Dodge, 1994). Deficient processing at this step may be reflected by failure to generate competent responses, or misinterpretation at the representation step (Dodge, 1986). The qualities of aggressive children's response repertoires are assumed to differ from nonaggressive children's response repertoires (Dodge, 1986; Spivack, Platt, & Shure, 1976). The supposition is that aggressive children access responses that are more aggressive and less prosocial than their nonaggressive peers (Asarnow & Callan, 1985; Quiggle, Garber, Panak, & Dodge, 1992; Richard & Dodge, 1982). In contrast, shy children suggest solutions that are less assertive and more passive in nature (e.g., telling an authority; Richard & Dodge, 1982; Rubin, Daniels-Beirness, & Bream, 1984).

The fifth step, the response decision process, requires a child to evaluate each possibility and to select an acceptable (but not always appropriate) response.

Researchers have found that aggressive children evaluate aggressive solutions more positively than their nonaggressive peers (Asarnow & Callan, 1985; Quiggle et al., 1992), and that conversely, shy children evaluate passive responses more favorably than their nonshy counterparts (Rubin et al., 1984). It is assumed that these favorably evaluated responses are also the same responses that children select to enact (Crick & Dodge, 1994).

Once a child has decided on a response, he or she must have the ability to enact it appropriately (Step 6). In order to successfully act out the chosen behavioral response, a child must possess the necessary verbal and motor skills that have developed through rehearsal, feedback, and practice (Dodge, 1986). In addition to enacting the selected behavioral response skillfully, children must also be able to monitor the effect that their behavior has on the social interaction and adjust their response if necessary (Dodge, 1986). Dodge (1986) found that aggressive children were not as proficient in their behavioral enactment, and the outcome of their behavior was less favorable when compared to nonaggressive children.

However, aggressive children believed that aggressive behaviors were easier to perform (Perry, Perry, & Rasmussen, 1986; Quiggle et al., 1992) and were more rewarding (Perry et al., 1986).

Asserting that emotion plays an integral role at each step of social information processing, Crick and Dodge (1994) assume that past emotional experiences, or arousal states that exist within a situation, may affect the accuracy of a child's interpretation of social information. For example, at the representation step, an aggressive child's anger, or a shy child's anxiety, upon meeting a peer may result in an instant dislike for that individual and/or a misinterpretation of that child's motives (Crick & Dodge, 1994). In addition, a child's interpretation of a peer's intent may alter one's present emotional state (Crick & Dodge, 1994).

Crick and Dodge (1994) also suggest that a child's emotional state may influence the types of responses accessed. Evaluating this hypothesis, Graham, Hudley, and Williams (1992) found that anger mediates the relation between the hostile attributional bias and aggressive responses to ambiguous provocation. In turn, the accessed behaviors may lead to changes in a child's affective state. Further, a child who is angry may select aggressive

responses (e.g., hitting, teasing) that, in turn, may result in feelings of happiness (e.g., I'm happy I got him back).

Acknowledging Crick and Dodge's (1994) brief discussion of emotion as an important component of social information processing and using their model as a basis, Lemerise and Arsenio (2000) provide a more detailed description of how emotion processes can be integrated into a social information processing model. They define emotion processes as varying "in duration from briefly experienced feelings resulting from conscious or unconscious appraisal to more enduring affective styles" (Lemerise & Arsenio, 2000, p. 107).

Agreeing with Crick and Dodge (1994) that children's processing of social information is limited by cognitive components, such as memory, speed of processing, social knowledge, and social schemas, Lemerise and Arsenio (2000) also assume that children differ in the intensity with which they experience and express emotions, and in their ability to regulate emotions, that may affect their processing of social information. In addition, Lemerise and Arsenio propose that children enter a social situation with a general level of arousal that may not be associated with the current situation, but instead may be related to a previous incident or to a similar past experience.

Extending Crick and Dodge's (1994) assumption that children encode and interpret their own emotional signals, in addition to situational cues, Lemerise and Arsenio (2000) suggest that it is also important to encode and interpret others' emotional cues in a social interaction. Both of these emotion processes may be important sources of information in monitoring a social situation (Lemerise & Arsenio, 2000), and may contribute to the type of attributions made in ambiguous situations.

Concurring with Crick and Dodge (1994) that different emotional experiences may prompt different responses, Lemerise and Arsenio (2000) also propose that accessing certain responses may activate or modify a particular emotion. For example, if a child experiences anxiety in a social situation, avoidant responses may be activated that may, in turn, decrease a child's anxiety (Lemerise & Arsenio, 2000). Lemerise and Arsenio also assume that children may fail to evaluate or generate all possible responses if they are overwhelmed by the intensity of their emotions, or if they are too self-focused. As a result, a different type of decision making, "preemptive processing", may occur (Crick & Dodge, 1994; Dodge & Somberg, 1987). Preemptive processing is defined as an impulsive response pattern, or "processing without thinking" (Crick & Dodge,

1994; Dodge & Somberg, 1987). When children engage in this type of processing, Lemerise and Arsenio suggest that it is unlikely that a competent response will be chosen. In addition, Crick and Dodge and Lemerise and Arsenio propose that children's beliefs about the emotional consequences of accessed responses may be used to evaluate each response. For example, if a child believes that punching another child will result in an angry response from that child, the aggressive behavior may be evaluated negatively (Crick & Dodge, 1994).

Literature Review of the Representation Step and the Response Access Step

The major purpose of this subsection is to review findings relevant to two steps of Dodge's (1986) model, the representation step and the response access step. These steps were chosen because differences between aggressive and nonaggressive children have been clearly documented at these two steps (Crick & Dodge, 1994). One goal of the present research is to attempt to understand what role emotion plays in these differences.

The most common method used to assess processing at these steps (and one to be used in this investigation) is the hypothetical situation interview. The typical task involves presenting stories about fictional situations describing a protagonist in an interaction with another child. The experimenter manipulates the intention of a protagonist, conveyed in one of four ways: hostile, accidental, prosocial, or ambiguous. To assess the *representation* step, participants are asked why a protagonist did what he or she did in the story. In contrast, asking participants to state their probable reactions indicates how the information is being processed at the *response access* step.

A typical scenario involves asking participants to imagine that they are sitting at their desk working on their art project. Another child walks by, bumps into their desk, and spills paint on their art project. In a story with an accidental cue, the child would say that he was sorry about spilling the paint and that he had not been paying attention to where he was going. A benign intent would be inferred if a participant said that the child did not mean to spill the paint.

Because the intent of others is not always obvious, it is also important to determine how children interpret ambiguous situations lacking a clear hostile, accidental, or prosocial cue. An example of an ambiguous story is asking a participant to imagine that child A is missing his lunch, and child B is seen holding child A's lunch. A participant's statement that the protagonist stole the lunch reflects a hostile representation. A participant's suggestion that the protagonist found a lunch and was trying to find the owner exemplifies a prosocial interpretation.

Representation Step

Interpretation of Social Situations Among Aggressive and Nonaggressive Children

To ascertain if social competence is related to the processing of social information, Dodge (1986) had

kindergarten, first-, and second-grade participants, defined as socially competent or socially incompetent based on peer- and teacher-ratings of sociometric status, view a videotape displaying two children playing a game and another child watching. The five steps of the original model were examined by questioning children about their interpretation of this peer entry situation. To assess the representation step, a participant was asked if the first child, and then the second child, would like the participant to join them and play. To evaluate the response search/access step, each participant was asked to pretend that he or she wanted to play with the two children and to tell the experimenter how this activity could be accomplished. In addition, each child participated in a group entry situation. Individuals were asked to begin playing with two other children who were building something with blocks. Coders assessed participants' success and attempts at entering the group.

Dodge (1986) found that the social information processing variables correlated significantly with children's rating of social competence, and that each social information processing variable made a unique contribution to the model. However, the combination of variables was a stronger predictor of social behavior than was the predictive power of each single variable (Dodge, 1986).

Replicating Dodge's (1986) findings and testing his theoretical assumption that each step can be assessed independently, Dodge and Price (1994) found low, but significant, correlations (r 's ranging from $-.17$ to $.27$) between social information processing variables and peer and teacher measures of behavioral competence, and that the combination of social processing variables was a stronger, and significant, predictor of behavior than the unique contribution of each variable (multiple R 's ranging from $.34$ to $.39$). Because the sample of children was drawn from a non-clinical population, Dodge and Price did not expect to find high correlations.

Although examination of the overall pattern of social information processing in behaviorally competent and less competent populations was informative (Dodge, 1986; Dodge & Price, 1994), it was also important to determine the specific steps at which children who display less competent behavior differed from average children. In an initial study of this type, Dodge (1980) attempted to determine if aggressive children showed a cue-utilization deficiency, an inability to integrate intention information; or a cue distortion deficiency, a distortion in the perception of intention; both of which reflected possible deficiencies at the representation stage of Dodge's (1986) model.

Aggressive and nonaggressive boys from second-, fourth- and sixth-grade were asked to complete a jigsaw puzzle. Halfway through the task, the researcher told each participant to take a break, supposedly showing the puzzle to a fictional competitor. During the break, participants heard a crash and an audiotaped message of the competitor's remarks about the destruction of the puzzle. Three possibilities concerning the stated intent of the fictional competitor were portrayed: hostile, benign (accidental), or ambiguous. Subsequently, the experimenter returned with the broken puzzle and the participant's behavior and statements immediately after seeing his puzzle were recorded.

In accord with a cue-distortion hypothesis, and with Dodge's (1986) assumption that children with certain behavior patterns process social information in a particular way, aggressive boys more frequently than nonaggressive ones attributed a hostile intent to (a) ambiguous social situations, and (b) boys portrayed as aggressive (Dodge, 1980). Nonaggressive boys usually represented an ambiguous situation as benign (Dodge, 1980).

In a follow-up investigation, Dodge (1980) assessed in a more direct manner aggressive and nonaggressive participants' representations of a protagonist's intent. Using the basic fictional situation task described earlier

(pp. 15-16), each participant was told four stories in which a negative outcome resulted for another child. The protagonist was described as aggressive in two stories and nonaggressive in two others, but the intent of the protagonist was portrayed as ambiguous in all four stories. Each participant was asked directly about the peer's intent. Comparable to the findings of the first study, and in accord with social information processing theory, the results once again confirmed that aggressive boys were more likely than nonaggressive ones to represent ambiguous situations hostilely, particularly when the target was an actual peer known to be aggressive.

The propensity to presume hostility in ambiguous situations has come to be known as the hostile attributional/intent bias and it has received widespread support in subsequent research. Studies of this type have extended and/or reconfirmed the hostile intent bias in aggressive grade-school-age children (Quiggle et al., 1992); hyperactive as well as aggressive boys (Milich & Dodge, 1984); aggressive and antisocial adolescents residing in a maximum security facility (Slaby & Guerra, 1988); aggressive adolescents selected from a normal population (Steinberg & Dodge, 1983); and aggressive African-American and Latino adolescents (Graham et al., 1992).

However, as Waldman (1996) reports, the hostile attributional/intent bias has also been defined as the misinterpretation of nonhostile social cues as hostile (Nasby, Hayden, & DePaulo, 1980). The results of research investigating aggressive and nonaggressive children's interpretation of nonhostile (e.g., accidental and prosocial) cues have been inconsistent. Some researchers found that aggressive children misinterpreted benign cues as hostile (Dodge, 1986; Waldman, 1996), whereas other researchers reported no differences between aggressive and nonaggressive children and adolescents' interpretation of intent in accidental or prosocial situations (Dodge, 1980; Dodge & Somberg, 1987; Graham et al., 1992). In the proposed research, the use of the term, hostile attributional/intent bias, refers to children's interpretation of ambiguous situations as hostile.

Although cue distortion may partially explain how aggressive boys misinterpret situations, other factors may also contribute to the attribution of hostile intent in ambiguous situations. Dodge and Newman (1981) proposed that the amount of time taken to make a judgment is a contributing factor, hypothesizing that hostile interpretations would correlate with faster response times. Assuming that the intensity of anger experienced by

aggressive children is greater than that of their nonaggressive peers, their corresponding high state of arousal may cause rapid information processing, resulting in a failure to encode relevant cues and, consequently, quick response rates. Perhaps aggressive children encode only cues related to their own affective state of anger, decide immediately the act was intentional, and respond aggressively. Or, aggressive children may be more likely to attribute a negative emotional state, such as anger, to the protagonist, regardless of other information, decide the protagonist's intent was hostile, and react aggressively. Assuming that aggressive children experience higher arousal than nonaggressive children, aggressive children may fail to inhibit highly available responses such as aggressive reactions (Dodge & Frame, 1982). In short, aggressive children's high arousal state in an ambiguous situation may result in quicker responses, their reliance on past interpretations in similar situations, and on familiar responses.

To test the hypothesis that responding quickly is related to the attribution of intent, Dodge and Newman (1981) conducted the following study. In the guise of a detective game, aggressive and nonaggressive boys in first, third, or fifth grade decided whether a peer had committed a

benevolent or hostile act (Dodge & Newman, 1981).

Participants requested packets of information that included supportive, nonsupportive, or ambiguous statements about the involvement of the protagonist, with the number of packets requested comprising the dependent measure.

In spite of the fact that the number of testimonies heard increased by grade level, Dodge and Newman (1981) found that aggressive boys at all ages chose to hear 30% fewer testimonies prior to making a decision than did the nonaggressive groups. In addition to quick responding, aggressive third- and fifth-graders more often (a) judged that the protagonist had committed the act when the evidence suggested the opposite, and (b) decided that the suspect had committed a hostile act rather than a benevolent one (Dodge & Newman, 1981).

Based on these results, Dodge and Newman (1981) concluded that a quick response, with inattention to many relevant cues, was related to the hostile attributional bias in aggressive boys. Their conclusions provided further support for Dodge's (1986) premise that each step of social information processing affects processing at the following step(s). The results also demonstrated that aggressive children were drawing conclusions at a quicker rate than nonaggressive children.

Possible explanations for aggressive children's quicker response rates are based on the assumption that aggressive children have higher arousal levels than nonaggressive children in social interactions. Due to higher arousal levels, aggressive children may engage in preemptive processing that has been characterized as a rapid and automatic process (Crick & Dodge, 1994). If aggressive children are "processing without thinking", then they may fail to encode relevant cues, or access highly familiar responses that, in turn, may lead to faster response rates.

In the study of motivation, researchers have found that increases in arousal will energize a dominant response (Kimble & Garnezy, 1963; Longstreth, 1968). If a person's responses to a particular task are correct, then moderate increases in arousal are likely to enhance one's performance; but if the responses are mostly incorrect, an increase in arousal is likely to worsen one's performance (Kimble & Garnezy, 1963; Longstreth, 1968). Because a hostile interpretation may be the most salient or frequent interpretation for aggressive children in many situations, increases in their level of arousal may only make it more difficult for them to abandon this response and enact socially appropriate alternatives.

Testing the hypothesis that the hostile attributional bias displayed by aggressive boys would be exacerbated under threatening (and perhaps arousal increasing) conditions, Dodge and Somberg (1987) showed rejected-aggressive boys and adjusted-nonaggressive boys, between 8 and 10 years of age, 12 vignettes varying in intent and condition, threatening vs. relaxed. In the relaxed condition, children were asked to watch stories on a television monitor and to answer some questions for each story. In the threatening condition, participants overheard a prerecorded conversation between the experimenter and another boy that led participants to believe that they might get into a fight when they interacted with the other boy (Dodge & Somberg, 1987).

In accord with their hypotheses, Dodge and Somberg (1987) found that aggressive boys made more hostile attributions than nonaggressive boys, which was highest in the threatening condition. Similar to the mechanisms proposed to account for aggressive children's quick response rates (Dodge & Newman, 1981), Dodge and Somberg suggested several explanations for why aggressive children's performance in the threatening condition was worse than their nonaggressive peers' performance. Aggressive children's experience of discomfort in the threatening condition may have motivated them to reduce this discomfort

by asserting that the protagonist committed the act on purpose (Dodge & Somberg, 1987). Aggressive children may also assume that the experience of negative affect is related to hostility in others (Dodge & Somberg, 1987). Finally, as suggested previously, physiological arousal may result in preemptive processing, disrupting the processing of social information at each step (Crick & Dodge, 1994).

Aggressive children's memory for past experiences in similar situations, stored in what Dodge and Tomlin (1987) refer to as self-schemas, may also partially explain their quick response rates and their inability to interpret accurately the intent of others. Self-schemata are cognitive structures based on information from past events involving the individual (Markus, 1977). They help organize, summarize, and explain one's own behavior and provide a basis for future judgments, decisions, and inferences about the self (Markus, 1977).

Compared to nonaggressive children, aggressive children's self-schemas are assumed to involve more hostility (Dodge & Tomlin, 1987). Dependencies on highly hostile self-schemas, including past interpretations of the emotional state of others, could be related to incompetent processing at both the encoding and representation steps. To assess this possibility, Dodge and Tomlin (1987) examined

the role of self-schemas as a source of the hostile attributional bias. They assumed that the utilization of relevant cues would result in an accurate interpretation, whereas an inaccurate interpretation would follow from a reliance on hostile self-schemas (Dodge & Tomlin, 1987). In addition, Dodge and Tomlin hypothesized that, compared to nonaggressive children, aggressive children would be more likely to rely on self-schemas and less likely to cite relevant cues available in a social situation.

In the first study, socially rejected, aggressive and nonrejected, nonaggressive adolescent boys and girls from sixth- through eighth-grade imagined that they were the target of a peer provocation. The intent of the protagonist was ambiguous. Participants were asked whether the act was hostile or benign and to explain their choice. A participant's citation of a presented cue as a reason for his or her interpretation was scored as relevant cue use. If a participant cited a characteristic of himself or herself or stated that the peer usually behaved this way, the interpretation was assumed to be based on a self-schema (Dodge & Tomlin, 1987).

Regardless of gender, aggressive participants cited fewer relevant cues and more self-schemas than nonaggressive participants (Dodge & Tomlin, 1987), and displayed the

hostile intent bias. In contrast to their expectations, Dodge and Tomlin (1987) found that aggressive participants exhibited a hostile attributional bias both when predominantly relevant cues, as well as when self-schemas, were utilized. Also, contrary to expectations, participants were less likely to make hostile interpretations when self-schemas were cited than when relevant cues were used (Dodge & Tomlin, 1987).

Because the ambiguity of the scenarios in the first study may have contributed to the unexpected findings, Dodge and Tomlin (1987) proposed that weighting the cues in a hostile or benign direction would elicit appropriate cue utilization and accurate interpretation. Similar to the first study, participants were more accurate when they relied on presented cues than self-schemas. Aggressive participants were more likely to cite self-schemas than their nonaggressive peers. Dodge and Tomlin concluded that their findings offer only partial support for a self-schema mechanism as the basis for aggressive children's proclivity to interpret ambiguous situations as hostile, and suggest that aggressive children's processing of social information is characterized by multiple biases. Further investigation is warranted to determine if similar biases are also

exhibited among other personality types, such as shy children.

In the process of completing this dissertation, Orobio de Castro, Veerman, Koops, Bosch, and Monshouwer (2002) conducted a meta-analysis of hostile attribution intent and aggressive behavior. Attempting to explain why effect sizes vary from study to study, Orobio de Castro et al. (2002) evaluated child characteristics (i.e., severity of aggressive behavior, behavior selection criteria, relation between aggression and peer sociometric status, age, gender) and methodological characteristics (i.e., stimulus presentation, stimulus contexts, response formats, hostile attribution scoring) for 41 empirical studies that met selection criteria.

Specific to nonreferred extremes studies, defined as the comparison of two samples drawn from a nonreferred general population that differed extremely in aggressive behavior and had not received any type of intervention for behavior problems (i.e., psychiatric care, special education), Orobio de Castro et al. (2002) found that effect sizes were larger when children were identified as generally aggressive rather than categorized according to the type of aggressive behavior displayed, and when sociometric status was used as a selection criterion, in addition to aggressive

behavior. Compared to other age groups, effect sizes were larger for studies that involved participants from the ages of 8 to 12.

Methodological characteristics that affected effect size were response format and stimulus presentation. Multiple-choice or rating-scale formats were associated with larger effect sizes than open-answer formats. Effect sizes were largest for studies involving an actual social interaction, and smallest for videotaped situations. The following characteristics did not result in larger effect sizes for nonreferred extremes studies: (a) controlling for intelligence, (b) individual versus group presentation, (c) the calculation of hostile attribution scores, and (d) the gender composition of the sample (Orobio de Castro et al., 2002).

In summary, although child and methodological characteristics may affect the magnitude of the results (Orobio de Castro et al., 2002), the most consistent finding in the social information processing literature has been that aggressive children represent ambiguous situations hostilely (see Crick & Dodge, 1994, for a review). These results support Dodge's (1986) assumption that a child's social behavior is related to his or her processing of social information at the representation step. In addition,

an individual's affective state, or state of arousal, and the ability to identify the emotional state of others have been proposed as possible mechanisms to partially explain the hostile intent bias.

Interpretation of Social Situations Among Shy, Depressed, and Anxious Children

As apparent in the previous section, strong support for Dodge's model is based on the relation between aggression and social information processing (Crick & Dodge, 1994). Little is known about the relevance of the model for other types of behavior patterns, such as shyness.

Defining Shyness. A variety of terms have been used interchangeably with shyness, including withdrawn (e.g., Rubin, Hymel, & Mills, 1989), socially anxious (e.g., Daly, 1978; Glass & Shea, 1986; Halford & Foddy, 1982; Leary, 1982), inhibited (e.g., Daniels & Plomin, 1985; Honig, 1987; Kagan, Reznick, & Snidman, 1988; Kagan, Reznick, Snidman, Gibbons, & Johnson, 1988), and isolate (e.g., Richard & Dodge, 1982; Rubin et al., 1984). Defining these terms as equivalent to shyness is misleading and, if used for participant sampling, would presumably result in a heterogeneous group of children. According to Harrist et al. (1997), a withdrawn group might include children who like to play alone, children whose peers do not want to play with

them, children who are depressed, and children who would like to play with other children, but are afraid. Therefore, defining all withdrawn children as shy would be inappropriate. In addition, a heterogeneous grouping could mask any relation between shyness and later adjustment problems or biases in the processing of social information.

As a result of analyzing different subtypes of social withdrawal, Harrist et al. (1997) identified a passive/anxious group, composed of children who avoid social interaction with others because they are fearful of interacting with peers. The passive/anxious group, also referred to as shy by Harrist et al., differed from other socially withdrawn groups at the representation step of social information processing. Because Harrist et al.'s finding provides an important basis for predictions in this research, a shy child will be defined as a withdrawn child who wants to interact with others, but is afraid to do so.

Depressed, Anxious, and Shy Children's Interpretation of Intent. Because very few researchers have investigated the social information processing of shy children, and because researchers have found a positive relation between shyness and depression and anxiety (Jones & Russell, 1982; Rubin et al., 1989; Russell, Cutrona, & Jones, 1986; Traub, 1983), research examining the social information processing

of depressed and anxious, as well as shy children, will be summarized.¹ Because shyness is related to depression and anxiety, it is possible that shy children process information similarly to depressed and anxious children.

To explore possible differences among children with various childhood problems, Quiggle et al. (1992) studied the processing of social information among four groups of children: aggressive, depressed, both aggressive and depressed, and neither aggressive nor depressed. The participants, ages 9 to 12 years old, listened to stories involving three themes: peer group entry, peer provocation, and task failure. Quiggle et al. found that depressed as well as aggressive boys and girls exhibited the hostile attributional bias.

The extension of the social information processing theory to populations other than aggressive individuals has expanded to include anxious children. In the following study, Bell-Dolan (1995) classified children as anxious or nonanxious based on their scores on the Revised Children's Manifest Anxiety Scale. Because socially withdrawn behavior was not measured, the anxious group could have included

¹ Jones and Russell (1982), Russell et al. (1986), and Traub (1983) defined shy people as those who experience high levels of anxiety in social situations. In addition to anxiety, Rubin et al. (1989) also identified withdrawn behavior as a component of shyness.

children who were withdrawn, and children whose frequency of peer interactions were similar to a nonanxious child.

Believing that anxious children are as accurate as nonanxious children in identifying hostile intent, but that they exhibit the hostile attributional bias in nonhostile (accidental) situations, Bell-Dolan (1995) investigated anxious children's representation of social situations. To assess representation, anxious and nonanxious boys and girls from fourth and fifth grade were shown Dodge's peer interaction vignettes. Analyses revealed no differences between anxious and nonanxious children's identification of hostile intent (Bell-Dolan, 1995). However, compared to nonanxious participants, anxious boys and girls were less accurate at identifying nonhostile intent, and their errors often presumed hostile intentions (Bell-Dolan, 1995).

Contrary to Bell-Dolan's (1995) prediction, anxious children were not any more likely to identify ambiguous situations as hostile than nonanxious children. However, girls were more likely to attribute a hostile intention in ambiguous situations than boys, regardless of anxiety level (Bell-Dolan, 1995). Bell-Dolan attributes the lack of the hostile intent bias among the anxious group to the fact that both the anxious and nonanxious children interpreted an ambiguous situation as hostile a majority of the time. Also,

the use of only two ambiguous situations may have resulted in a failure to detect any differences between the two groups (Bell-Dolan, 1995).

A recent study by Harrist et al. (1997) evaluated the social information processing of two cohorts of socially withdrawn and nonwithdrawn children from kindergarten to third grade, one subgroup of whom were passive-anxious (or shy). Similar to prior studies, children were presented with a series of hypothetical dilemmas and asked questions assessing their ability to encode information and their interpretation of the encoded cues. Compared to other groups of withdrawn children and to nonwithdrawn children, the passive/anxious (or shy) group, described as timid, anxious, and self-isolating by their teachers, underattributed hostility in hypothetical situations (Harrist et al., 1997). Specifically, the passive/anxious group was less likely to attribute a hostile intent and more likely to attribute a benign intent to a protagonist in a social situation than any other group of withdrawn children and nonwithdrawn children. This result was found at all age levels and regardless of gender, demonstrating that shy children interpret social information in a unique way (Harrist et al., 1997).

Because social situations arouse anxiety in shy children, they may underattribute hostility to reduce their feelings of anxiety and to avoid social disapproval. It is also possible that shy children's affective-perspective taking may be compromised in social situations because of their high arousal levels, and because of their focus on themselves and their feelings. Therefore, shy children may misperceive, ignore, or distort information about emotions that, in turn, may influence their representation of a protagonist's intent in a social dilemma, resulting in the underattribution of hostility.

In summary, although it was initially assumed that anxious, depressed, and shy children would interpret social situations similarly, this belief has not been supported. Depressed children displayed the hostile intent bias (Quiggle et al., 1992), but the anxious group was more likely to misinterpret a nonhostile intent as hostile (Bell-Dolan, 1995); whereas shy children were found to underattribute hostility (Harrist et al., 1997).

Although the ability to identify the emotional state of others in social dilemmas has been proposed as a mechanism to partially explain the hostile intent bias displayed by aggressive children and the underattribution of hostility exhibited by shy children, the lack of research makes it

difficult to determine if shy children and aggressive children process emotional information in a different, or, possibly, a similar manner. Because shy children want to avoid social disapproval and keep their feelings of social anxiety at a minimum (Arkin et al., 1986; Shepperd & Arkin, 1990), they may ignore or distort emotional information that is contradictory to their desire to interpret a negative outcome as an accident. On the other hand, aggressive children are quick to assume that a negative outcome was committed on purpose. They may also ignore or distort emotional information and that may also contribute to a hostile interpretation.

Response Access Step

As indicated earlier, another goal of this research is to assess the nature of responses endorsed by children exhibiting different behavioral patterns in solving social dilemmas. Prior to this step, children have already encoded social cues in a situation, interpreted those cues, and selected a goal before accessing possible behavioral responses to a social situation. In order to determine what types of responses aggressive children and shy children might consider favorable, the content of their response repertoires will be examined. It is possible that children evaluate each response as it is generated, rather than

considering all possible responses and then evaluating and selecting one response (Crick & Dodge, 1994).

Generation of Responses Among Aggressive and Nonaggressive Children

Although not always stemming from a social information processing perspective, researchers have been interested in a child's ability to solve social problems, especially in comparing the quality of solutions generated by aggressive and nonaggressive children. In terms of social information processing, incompetent processing at the response access step is assumed to be related to a child's interpretation of the encoded cues (Dodge, 1986). Inadequate search skills may also limit a child's ability to access responses (Dodge, 1986). For example, if a child feels a peer acted intentionally, only aggressive responses may be generated. However, Erdley and Asher (1996) did find that although some children who attributed hostile intentions in ambiguous situations endorsed aggressive responses, other children endorsed avoidant or prosocial behavioral responses. This finding suggests that other components of social information processing might contribute to the type of responses endorsed. These components may include goal selection, outcome expectations, and self-efficacy evaluation (Erdley & Asher, 1996). As with all other steps of social information

processing, it is also assumed that a child comes to a social situation with a biologically limited set of capabilities and a data base of past experiences (Crick & Dodge, 1994; Dodge, 1986).

In an extensive study, Shure, Spivack, and Jaeger (1971) tested the relation between social adjustment and problem-solving among disadvantaged children. They hypothesized that children displaying poor school adjustment would conceptualize fewer solutions, and a narrower range of solutions to hypothetical problems, than better adjusted classmates. African-American boys and girls were classified as "acting out" if their overall rating on seven behavioral items exceeded the average child or "inhibited" if their overall rating fell below that of the average child (Shure et al., 1971).² First, participants were given the Preschool Interpersonal Problem Solving (PIPS) test, which examines children's ability to generate solutions to object acquisition problems and authority situations.

² The behavioral items addressed a child's aggressive acts, inability to delay gratification (e.g., demands, repeatedly asks for something), and emotional reaction to negative social interactions (e.g., reacts with anger if another child interrupts playtime) (Shure et al., 1971). Therefore, in this study an inhibited child refers to a child who is below average on these behavioral items. An inhibited child would not be considered equivalent to a shy child, defined in the proposed research as a child who is withdrawn and

Both acting out and inhibited boys and girls suggested fewer solutions, less relevant solutions, a narrower range of solution categories, and a higher ratio of forceful solutions than better adjusted peers (Shure et al., 1971). Children with the narrowest range of solution categories were more likely to express no solution (i.e., irrelevant or substitute) responses than no responses at all (Shure et al., 1971). Thus, Shure et al. (1971) concluded that the ability to conceptualize solutions is related to social adjustment. Replicating these findings and extending them to older children between the ages of nine and twelve, Spivack et al. (1976) found that better adjusted children generated more alternative solutions than their poorly adjusted counterparts. Spivack et al. concluded that it was the ability to think of a wide range of solutions, rather than the specific content of the solutions, that most directly accompanies competent behavior.

The conclusions drawn by Shure et al. (1971) and Spivack et al. (1976) must be qualified because their findings may not have accurately represented children's ability to generate responses. They did not credit "no solution" responses to a child's score. No solution responses were defined as related goals (e.g., get another

anxious in peer interactions.

toy), substitute goals (e.g., play with another game), and irrelevant solutions (e.g., break the toy; Shure et al., 1971). It is possible that the quantity of solutions generated by low problem solvers would not have differed from the high problem solvers if "no solution" responses had been considered.

Not all researchers, however, have found that children exhibiting inhibited or acting out behaviors have smaller response repertoires. For example, Gouze (1987) evaluated the social problem solving of nonaggressive and aggressive boys, 46 to 64 months of age. Each participant was given the PIPS test. Contrary to the findings of Shure et al. (1971) and Spivack et al. (1976), Gouze found that aggressive participants generated more solutions than their nonaggressive counterparts. Aggressive boys also generated more aggressive solutions and tended to give an aggressive solution as their first response. Based on her findings, Gouze concluded that the content of the solutions was a better predictor of behavior than the number of solutions generated. Similarly, Dodge (1986) found that although aggressive boys' responses were not as effective or as competent, they generated as many solutions as nonaggressive boys.

One of Dodge's (1986) basic assumptions is that, although each step can be measured independently, the processing at one step can influence (or be influenced by) the processing at a later step. He asserts that a participant's interpretation of a social situation is predictive of the type of responses that are accessed. Many of the studies discussed previously in the Representation section (pp. 16-28) also evaluated children's responses to social situations. These researchers (Dodge, 1980; Milich & Dodge, 1984; Waldman, 1996) found that aggressive boys, who perceived intent as hostile rather than benign, were more likely than nonaggressive boys to respond aggressively. Dodge and Somberg (1987) also found that third-, fourth-, and fifth-grade aggressive boys were more likely than nonaggressive peers to endorse aggressive responses in scenarios portrayed as accidental. Dodge and Somberg suggested that an aggressive boy's arousal level may have affected his ability to access more appropriate behavioral responses.

Supporting the assumption that social behavior is related to the processing of social information (Dodge, 1986), researchers have found differences in the quality of aggressive and nonaggressive children's responses (Asarnow & Callan, 1985; Dodge, 1980; Dodge & Frame, 1982; Slaby &

Guerra, 1988). Compared to nonaggressive peers, aggressive children's responses are less competent and less effective (Dodge, 1986; Gouze, 1987; Waldman 1996). These findings offer support for Dodge's (1986) assumption that incompetent processing at the response access step may be due to a child's bias to access only maladaptive responses.

Generation of Responses Among Shy, Depressed, and Anxious Children

It is assumed by Dodge (1986) that at the response access step, children's past experiences and biologically limited capabilities will influence the quality of children's response repertoires. Although the literature has provided relatively strong support for qualitative differences in aggressive children's response repertoires, this assumption has not been extensively studied among shy children.

In one of the first studies of this type, Richard and Dodge (1982) investigated isolated, aggressive, and popular boys' thinking about initiating a friendship and resolving a conflict. The isolated boys are referred to as isolated, and not shy, because of the nomination procedure that was used in this study. Children were asked to nominate peers who acted shy and played alone most of the time. It is possible that nominations included children who were withdrawn but

not shy. In addition to shy children (children who play alone because they are afraid to interact with others), the isolated group may have included children who want to play alone, or children whose peers do not want to play with them (Harrist et al., 1997).

Three skills were assessed in this study: (a) the generation of solutions, (b) the generation and sequencing of effective solutions, and (c) the evaluation of each solution. Overall, participants' (8 and 10 year-old boys) performance for all three skills was good. When compared to popular boys, however, both isolated and aggressive boys were less able to generate alternative solutions and to suggest effective ones (Richard & Dodge, 1982).

Believing that peer interaction promotes the development of social cognition, Rubin et al. (1984) predicted that the ability to solve social problems would correlate negatively with isolate behavior and positively with sociable behavior. Kindergartners were classified as isolate or sociable based on their play behavior. For the same reason as discussed in the Richard and Dodge (1982) study, boys and girls in the isolate group will be referred to as isolate, not shy. Participants were administered the Preschool Interpersonal Problem Solving (PIPS) test in kindergarten and one year later given a modified version of

the PIPS described earlier (p. 39). Flexibility was measured by a child's ability to offer different alternatives.

Concurrent correlations revealed that children who displayed isolate behavior in kindergarten were less flexible than their sociable peers (Rubin et al., 1984). Isolate behavior also correlated positively, $r = .29$, $p < .01$, with the proportion of adult-intervention strategies suggested (Rubin et al., 1984). At grade one, isolate behavior correlated positively, $r = .21$, $p < .04$, with the proportion of agonistic responses generated, whereas sociable behavior correlated positively, $r = .23$, $p < .03$, with the proportion of prosocial strategies accessed, and negatively, $r = -.20$, $p < .05$, with the proportion of agonistic strategies (Rubin et al., 1984). No gender differences were reported. The data suggest that, compared to sociable children, the response repertoires of isolate children differed qualitatively, both in kindergarten and in first grade.

Interested in whether isolate children would also exhibit qualitatively different response strategies in a naturalistic setting, Rubin et al. (1984) observed isolate and social children's ability to get peers to do what they wanted. Compared to sociable children, isolates produced fewer utterances and requests. Isolate behavior was

negatively correlated with the number of direct requests (e.g., give me the truck), $r = -.46$, $p < .001$, and with the number of indirect requests (e.g., can you give me the truck), $r = -.27$, $p < .03$. Again, no gender differences were reported. Rubin et al. concluded that isolate children's social interactions in kindergarten were characterized by a "nonassertive, nonconfrontational style."

Contrary to their prediction that passive/anxious children would generate more withdrawn responses, and contrary to previous findings (Richard & Dodge, 1982; Rubin et al., 1984), Harrist et al. (1997) did not find that the quality of the response repertoires of passive/anxious children differed from nonwithdrawn children. In interpreting this result, they proposed that shy children might be reluctant to talk in front of strangers. Harrist et al. also reported that their definition of socially withdrawn children (as those that were more than one-half of a standard deviation above the sample mean) not only included children who interacted significantly less than the average, but also children who experienced extreme social isolation. It is possible that only children identified as extremely withdrawn have difficulty processing social information.

Because shyness has been linked with anxiety and depression (Jones & Russell, 1982; Rubin et al., 1989; Russell et al., 1986; Traub, 1983), research examining the responses of depressed and anxious children to social situations will be summarized. Doerfler, Mullins, Griffin, Siegal, and Richards (1984) and Mullins, Siegal, and Hodges (1985) found that depressed students in fourth- through sixth-grade generated as many solutions to social and emotional problems as nondepressed students. However, regardless of gender, students with high depression scores generated more irrelevant solutions than their nondepressed peers (Doerfler et al., 1984; Mullins et al., 1985).

Investigating normal, depressed, aggressive, and comorbid children's ability to generate responses to social problems, Quiggle et al. (1992) found that, compared to the aggressive group, depressed children were less likely to generate assertive responses. Although depressed children were not any more likely to generate passive or withdrawn responses, they evaluated withdrawal more favorably and expected it would lead to more favorable outcomes (Quiggle et al., 1992). No gender differences were reported for depressed children.

Extending the response decision bias to anxious children, Bell-Dolan (1995) hypothesized that they would be

more likely to suggest passive, unassertive responses in perceived hostile situations than nonanxious peers.

Consistent with this hypothesis, Bell-Dolan found that anxious boys and girls were more likely to respond that they would tell a teacher than nonanxious children. In contrast, nonanxious children were more apt to suggest both adaptive and aggressive strategies and less likely to propose appeals to authority than their anxious peers (Bell-Dolan, 1995).

A significant gender effect was found. Overall, boys were more likely than girls to propose aggressive responses to perceived hostility in social situations (Bell-Dolan, 1995). However, it was also found that the proposal of aggressive responses varied as a function of both gender and anxiety level. In particular, Bell-Dolan (1995) found that nonanxious boys were more likely to suggest aggressive responses to perceived hostility, and less likely to propose adaptive responses. Anxious boys were less likely to suggest starting over (Bell-Dolan, 1995). Nonanxious girls were more likely to propose adaptive strategies and less likely to suggest appeals to authority (Bell-Dolan, 1995). Anxious girls showed the opposite pattern, being more likely to suggest appeals to authority and less likely to suggest adaptive responses. Anxious girls were also less likely to suggest aggressive responses, and nonanxious girls were less

likely to propose passive responses (Bell-Dolan, 1995). Similar to Bell-Dolan's initial findings, Rubin and Clark (1983) also found that anxious-fearful preschool-age boys and girls were more likely to suggest adult intervention strategies.

One of the basic tenets of Dodge's (1986) theory is that children come to a social situation with a set of biologically determined capabilities and with memories of past experiences that influence and are influenced by the processing of social information. The research has supported this assumption, but also clarified how different social behavioral patterns are related to the types of interpretations made and the type of responses accessed. At the representation step, similarities existed among anxious, depressed, and aggressive children. Their misrepresentations of intent were of presumed hostility (Bell-Dolan, 1995; Dodge, 1980; Quiggle et al., 1992). In contrast, compared to nonwithdrawn children and to other withdrawn groups of children, shy children were less likely to attribute a hostile intent to a protagonist in ambiguous situations, also referred to as the underattribution of hostility (Harrist et al., 1997). The response access step was marked by differences between aggressive and depressed, anxious, and shy children. Compared to nonaggressive children,

aggressive children generated more aggressive responses (Dodge, 1980; Gouze, 1987; Milich & Dodge, 1984).

Withdrawn/passive solutions were evaluated more favorably by depressed children (Quiggle et al., 1992) and accessed more by anxious and isolate children (Bell-Dolan, 1995; Richard & Dodge, 1982; Rubin & Clark, 1983).

The Function of Gender in the Experience and Expression of Emotion

Emotional development, the study of emotional functioning across the lifespan, involves several components, including the experience and the expression of an emotion (Brody, 1985; Saarni, 1999). Although the experience and expression of emotion have sometimes been subsumed under one term, emotional, they are two distinct components by definition. Experience refers to the intensity with which an emotion is felt, and expression is defined as the outward display of an emotion (Brody & Hall, 1993). Many factors, such as type of observer, type of emotion, age, and gender, may influence the experience and expression of an emotional state. In turn, how emotion is expressed and experienced may affect the processing of social information. Because Dodge (1986) assumes that children's past experiences influence how social information is processed in a current situation, and because participants in the present studies included both boys and girls, research examining the influence of gender on these two emotional components will be summarized briefly.

Investigating whether children's experience of emotion is a function of their age, gender, and the type of emotion witnessed, Strayer (1989) showed three groups of children

(5-year-olds, 8- to 9-year olds, and 12- to 13-year-olds) six videotaped stories depicting the emotions of surprise, happiness, fear, anger, sadness, and disgust. Children were asked if the story protagonist felt neutral, happy, sad, surprised, angry, afraid, and/or disgusted and to rate the intensity of each emotional state. Children were also asked to describe how they felt.

Addressing only the emotion categories, happy, sad, angry, and afraid, Strayer (1989) found that neither boys nor girls differed in the emotions attributed to the story protagonist. In contrast, when examining emotions attributed to the self, boys reported more anger than girls, and girls reported more sadness and fear than boys, regardless of age (Strayer, 1989). No gender differences were found for happiness (Strayer, 1989).

Examining preadolescents' (11-12 years) and adolescents' (13-15 years) reactions to hypothetical situations evoking anger, Whitesell and Harter (1996) manipulated the peer relationship (best friend or classmate), the absence or presence of an apology, and the occurrence of provocation. Focusing on emotional responses, Whitesell and Harter found that scenarios involving best friends elicited higher ratings of negative emotions (anger, sadness, and fear) than classmate situations. Specifically,

girls reported significantly more sadness, and slightly more anger than boys (Whitesell & Harter, 1996). There were no gender differences for fear (Whitesell & Harter, 1996). Similar findings were reported by Underwood, Hurley, Johanson, and Mosley (1999), who found that girls felt sadder in response to losing a computer game than did boys, but they found no gender differences for feelings of anger.

Investigating whether socialization figures (i.e., mother, friend), type of emotion, age, and gender are related to children's decisions to express or mask their emotions, Zeman and her colleagues (Zeman & Garber, 1996; Zeman & Shipman, 1996) read elementary school children stories, varying the type of emotion elicited by the story and the type of audience present. Focusing on findings relevant to gender, Zeman and her colleagues found that girls were more likely to endorse the expression of sadness than boys, replicating Fuchs and Thelen's (1988) previous finding. However, contrary to Zeman and her colleagues' finding that boys and girls did not differ in their display of anger, Fuchs and Thelen found that girls were less likely to express anger than boys.

Zeman and her colleagues (Zeman & Garber, 1996; Zeman & Shipman, 1996) also asked children how they would express or not express their feelings. Compared to girls, boys were

more likely to report using aggressive behaviors to express their feelings of anger (Zeman & Garber, 1996; Zeman & Shipman, 1996) and sadness (Zeman & Garber, 1996). Girls were more likely to express emotion through verbal, rather than physical, means (Zeman & Shipman, 1996).

The behavioral expression of an emotion may also lead to the experience of emotion. Based on Saarni's (1997) research on children's expectations of the best and the worst coping strategies, children chose aggressive responses as the "worst" thing to do in a social situation, and expected that they would feel even worse (cited in Saarni, 1999). However, Saarni found that a small group of children reported that they would feel happy or relieved after responding aggressively to a situation that evoked anger, even though they recognized that this strategy was the worst thing to do (cited in Saarni, 1999).

Gender differences in social situations seem to occur, not in children's ability to understand other's emotions, but in their own experience and behavioral expression of emotion (Saarni, 1999; Strayer, 1989). Consistently throughout this literature, girls felt more sadness (Strayer, 1989; Underwood et al., 1999; Whitesell & Harter, 1996) and were more likely to express sadness than boys (Fuchs & Thelen, 1988; Zeman & Garber, 1996; Zeman &

Shipman, 1996). Reports of gender differences in the experience of fear and the experience and expression of anger, however, have been inconsistent.

The Role of Emotion in Social Information Processing

A person's ability to function competently in social situations is assumed to involve many skills, including the ability to perceive and interpret emotional expressions in others and to express one's own emotional response in adaptive ways that are sensitive to the social contextual cues (Crick & Dodge, 1994; Dodge, 1991; Lemerise & Arsenio, 2000; Walden & Field, 1990). The following example incorporates several emotion processes identified by Crick and Dodge (1994) and Lemerise and Arsenio (2000) that are assumed to influence, and be influenced by, later steps of social information processing. During recess Jack is sitting alone, angry that he failed his spelling test. Without warning, a ball hits Jack on the back of his head. Jack turns around and sees Tom staring at him. Jack looks at Tom, encodes Tom's facial features and interprets them as angry. Because Tom is angry, Jack concludes that Tom hit him on purpose. Jack is angry that Tom hit him with the ball on purpose, decides he wants to retaliate, and accesses a variety of responses. Jack decides to hit Tom with the ball. After hitting Tom with the ball, Jack's feelings of anger diminish.

The example above depicts how emotions and cognition may interact at each step of social information processing.

In addition, children with different social behavior patterns may interpret their emotions, and the emotions of others, in a unique way. However, extensive research on the role of emotion in the processing of social information among children with different behavior patterns is lacking.

Two studies have investigated children and adolescents' emotions in social situations with negative outcomes. Graham et al. (1992) found that, in response to ambiguous provocation situations, aggressive seventh- and eighth-grade boys and girls experienced more anger than their nonaggressive peers. When third- through sixth-graders were asked how they would feel in fictional social situations, Quiggle et al. (1992) reported that depressed children expressed more anger, more sadness, and less happiness in the given situations than nondepressed children. Because sad affect ratings were higher for girls than boys, gender was covaried in the analysis of affect. There were no significant main effects for aggression, and no significant interactions between aggression and depression (Quiggle et al., 1992).

Contrary to expectations, aggressive children did not report more anger than nonaggressive or aggressive/depressed children. In trying to understand this finding, Quiggle et al. (1992) proposed that aggressive children might have been

less likely to report negative emotions. It is also possible that aggressive participants experienced an increase in arousal level that would be associated with anger, but were unable to label the affective state appropriately (Quiggle et al., 1992). A third possibility is that aggressive children did not experience more anger than their nonaggressive peers, but were unable to cope with their anger in an appropriate manner (Quiggle et al., 1992).

Although the following studies did not classify children as aggressive, or shy, they illustrate the point that children with social adjustment problems experience difficulties in accurately identifying emotional states. For example, in Vosk, Forehand, and Figueroa's (1983) study, accepted and rejected boys and girls, between the ages of 8 and 11, viewed child and adult actors portraying the emotional states of happiness, sadness, and anger. Regardless of gender, accepted children were more accurate at identifying portrayed emotions than rejected children.

Assessing the ability of children with emotional and/or behavior problems to understand multiple emotions, Meerum Terwogt (1989) found that, compared to normal children, disordered children, between the ages of 6-7 and 10-11 years, either judged stories to be completely nonemotional or ascribed all the negative emotions to the stories. The

disordered children also judged the emotions in the story as more intense than normal children (Meerum Terwogt, 1989). Meerum Terwogt posited that these findings may be indicative of disordered children's reluctance to analyze a situation at length, or simply viewing a situation as negative and applying all the negative emotions to it.

In a later study, Keane and Parrish (1992) examined the role of emotion at the representation step of social information processing. They hypothesized that the ability to interpret emotion in others correctly influences the interpretation of intent in others (Keane & Parrish, 1992). They further assumed that if rejected children's tendency to perceive hostile intent is due to their failure to accurately interpret the emotional states in others, then adult labeling of a story character's emotional state in an ambiguous situation should minimize the attributional differences between the rejected and popular groups (Keane & Parrish, 1992). When explicitly stated verbal information about the protagonist's emotion is absent, Keane and Parrish predicted that rejected children would show the hostile intent bias.

Popular and rejected boys and girls in the fourth grade viewed two ambiguous situations with a negative outcome and the same emotional information. The three emotion

information conditions were happy, angry, and no information. In one condition, prior to viewing the ambiguous situations, the experimenter told a participant that the protagonist was either happy or angry. In the no information condition, participants were given no information about the emotional state of the protagonist. Differences between groups were found in the happy and no information conditions. In the happy condition, popular participants were more likely to attribute a benign intention than rejected participants (Keane & Parrish, 1992). In the no information condition, both rejected male and female participants displayed the hostile attributional bias. Contrary to Keane and Parrish's (1992) hypothesis, rejected children did not alter their interpretation of intent when emotional information was given, once again showing the hostile intent bias.

In regard to the latter finding, it is possible that rejected children did not make the link between how people feel and how they behave, because they have not learned the connection between emotion and behavior (Keane & Parrish, 1992). Also, the ability to relate emotion and behavior may develop at a later age for rejected children (Keane & Parrish, 1992). Considering these possibilities, Keane and Parrish (1992) concluded that, whereas a child's knowledge

of emotional states may be an important component in social information processing, competent social information processing involves more than knowledge of another's emotional state.

In addition to Keane and Parrish's (1992) stated concerns, it is also possible that the emotional state ascribed to the protagonist was not encoded accurately by rejected children. Because participants were not asked to recall the emotional state of the protagonist, they may have distorted or ignored the information provided. The selection of the sample also may have affected the outcome of the study. A rejected sample can include both aggressive and withdrawn children (French, 1988, 1990; Milich & Landau, 1984; Peery, 1979; Rubin & Mills, 1988; Waas, 1988), who may interpret emotion in others very differently. Thus, sampling procedures may have obscured the role of emotional interpretation in the determination of intent. Given these methodological concerns, further investigation is warranted to determine how emotion is interpreted in social situations; and to ascertain if the utilization of a more homogenous sample (e.g., only aggressive children) would provide support for Keane and Parrish's assumption that when the emotional state of a protagonist is labeled for participants, all participants, regardless of

classification, will identify a protagonist's intent similarly.

In sum, these studies (Graham et al., 1992; Keane & Parrish, 1992; Meerum Terwogt, 1989; Quiggle et al., 1992) have begun to examine the role of emotion in social information processing. Yet to be examined are children's perceptions of others' emotional states in social situations, that may be influenced by social behavior patterns (e.g., shyness or aggression) and may be related to the type of interpretations made and the type of responses endorsed. In addition, even though problems in interpreting emotional states in others may contribute to the hostile intent bias as Keane and Parrish (1992) proposed, experimenter labeling of the protagonist's emotionality did not eliminate the bias in rejected participants. Because of the concerns outlined previously, further investigation is warranted to determine the role of emotion interpretation in the determination of intent.

Subsequent to Keane and Parrish's (1992) study and the completion of this research, Lemerise, Gregory, and Fredstrom (2005) evaluated whether decoding a protagonist's intent accurately affects children's processing of social information at the representation step and the response access step. Lemerise et al. (2005) believed that children,

even at a very young age, are able to modify their behavior when emotional information is available in a situation, and that provision of a protagonist's emotional state will affect their processing of social information, regardless of whether the emotional state was encoded accurately. In addition, querying children about a protagonist's emotional state may result in the processing of social information in a conscious, reflective manner, thereby minimizing individual differences (Lemerise et al., 2005). Lemerise et al. also suggested that the following issues may have contributed to Keane and Parrish's findings: (a) the heterogeneity of their rejected sample, and (b) the incongruency between a protagonist's emotional state provided prior to the presentation of the ambiguous situation and the lack of emotional cues in the ambiguous situation.

In order to address the concern that selecting children solely on the basis of peer rejection could result in a heterogeneous group of children, Lemerise et al. (2005) identified four groups of children in first- through fourth-grade based on rating and nomination sociometric techniques: Rejected-aggressive, rejected-nonaggressive, average-nonaggressive, and popular-nonaggressive. Children viewed seven videotaped ambiguous vignettes, one practice story and

six stimulus stories. A protagonist's emotional state was portrayed as happy, sad, or angry and was equally represented among the six stories. Instead of telling a child that a protagonist was happy, sad, or angry, prior to the ambiguous situation, a protagonist's emotional state was depicted in his or her tone of voice, body language, and facial expression from the beginning to the end of the videotaped ambiguous situation. Half of the children were asked about a protagonist's emotional state, the remaining children were not asked.

Lemerise et al. (2005) found that, regardless of whether children were asked about a protagonist's emotional state or not asked, all children were more likely to attribute a hostile intent to a protagonist who was depicted as angry rather than happy or sad. Compared to children in the not asked condition, asking children about a protagonist's feelings resulted in fewer hostile attributions associated with a protagonist's portrayal as happy or sad (Lemerise et al., 2005). Social adjustment groups did not differ in their interpretation of a protagonist's intent (Lemerise et al., 2005).

Because all participants were given information about a protagonist's emotional state, it is not known how children would have interpreted a social situation if a protagonist's

emotional state had not been available in the ambiguous situation. Assuming that social adjustment groups would have differed when no emotional information was provided, it would have been informative to compare the following three conditions: (a) no emotional information, (b) emotional information/not asked, and (c) emotional information/asked. Although Lemerise et al.'s (2005) findings were not published at the time this research was initiated and completed, because of the pertinence of their work, their findings have been included and are integrated into the discussion of this research.

Unresolved Issues

To date, research in the area of social information processing has focused primarily on the cognitive processes involved in social interactions, comparing aggressive children's ability to interpret and respond to social situations with that of their nonaggressive peers. As described previously, the following findings have been documented. Aggressive children consistently interpret ambiguous situations as hostile, and endorse more aggressive solutions to such situations, than do nonaggressive children. Compared to withdrawn and nonwithdrawn children, shy children, defined as children who want to interact with others, but are afraid to do so, have been found to underattribute hostility in a similar context (Harrist et al., 1997). It has yet to be determined if emotion plays a role in producing these behaviors, or what that role might be. It is possible that children with distinct behavioral patterns experience different emotional states in certain social contexts that, in turn, may be related to their interpretation of a peer's motive and to their evaluation and selection of a response. The evaluation of one's own emotional state, and the interpretation of a protagonist's emotional state, in response to a negative outcome and after

a behavioral response has been endorsed, have not been adequately studied.

Although the ability to encode and to interpret the emotional state of others accurately has been posited as a skill necessary to function competently in social situations (Lemerise & Arsenio, 2000), little empirical research has been conducted in this area. Shy children and/or aggressive children may misinterpret or experience difficulty encoding the emotional state of a protagonist. Such inaccurate interpretation of emotion in others may predispose aggressive children to attribute a hostile intent and shy children to underattribute hostility to a protagonist in an ambiguous situation. Keane and Parrish (1992) manipulated the emotional state ascribed to a protagonist to determine if its interpretation is partially causing the hostile intent bias displayed by aggressive children. Unfortunately, the results of this study were inconclusive; but, due to methodological concerns, this possibility warrants reexamination. Two studies evaluated the issues described above.

Chapter 2

UNRESOLVED ISSUES AND PREDICTIONS: EXPERIMENT 1

Unresolved Issues

Although Crick and Dodge (1994) assume that emotion plays a role in each step of social information processing, only aggressive adolescents' and children's (3rd-6th grades) feelings in response to a negative outcome have been explored (Graham et al., 1992; Quiggle et al., 1992). Another important component of social information processing, children's evaluation of a protagonist's emotional state in response to interpreting the situation as benign or hostile, has received very little research attention. Aggressive children may judge a protagonist's emotional state more negatively than their nonaggressive peers, which may compound their already hostile attitudes about the motives of others. In addition, aggressive children may experience more negative emotion during social information processing than do their nonaggressive peers. If aggressive children display a higher level of negative emotion in social situations, then emotional states may also be related to the type of attribution made and the type of responses endorsed. Yet to be examined are aggressive children's emotional state after responding and their perception of a protagonist's emotional state after a

behavioral response has been selected. If aggressive children experience an aggressive response as rewarding, then they may feel happier than nonaggressive/nonshy peers in a similar situation.

Although researchers have explored aggressive individuals' feelings after they have been a target of a negative outcome (Graham et al., 1992; Quiggle et al., 1992), research has yet to examine shy children's emotions in response to a negative outcome, and their perception of a protagonist's emotional state in response to a negative outcome. It is possible that shy children's emotional experience in social situations may be related to their interpretation of a protagonist's intent and to the type of responses endorsed.

Shy children's ability to interpret accurately the intent of a protagonist may be compromised by their high levels of anxiety (Easterbrook, 1959), their desire to avoid social disapproval (Arkin et al., 1986), or their focus on themselves and their feelings (Mandler & Sarason, 1952). Thus, shy children's perception of their emotional state may be related to their underattribution of hostility in ambiguous situations, and, consequently, their response selection. Yet to be examined are shy children's emotions after they have responded and their perception of a

protagonist's emotional state after their response. It is possible that after responding, shy children experience a decrease in their level of anxiety.

Predictions

The first study attempted to provide a more complete description of how children with shy or aggressive behavior patterns perceive their emotional state and the emotional state of others, and how this information is associated with their interpretation of, and response to, social situations. In addition, because females' experience of sadness is more intense than males' experience (Strayer, 1989; Whitesell & Harter, 1996), the first study examined gender differences in shy and aggressive children's social information processing.

Fourth- and fifth-graders participated in this experiment for the following reasons. First, the participation of fourth- and fifth-graders extended Graham et al.'s (1992) work on emotion and social information processing, which focused on adolescents, to a younger age level. Second, social interactions may elicit more than one emotion (Polivy, 1981), and fourth- and fifth-grade children are capable of reporting multiple emotions (Wintre, Polivy, & Murray, 1990). Third, because previous studies have not reported any age effects, developmental differences in the

processing of social information were not expected for this age group (Dodge & Somberg, 1987; Quiggle et al., 1992). Finally, the processing of social information has been evaluated in this age group in many previous studies (Dodge, 1980; Dodge & Somberg, 1987; Quiggle et al., 1992; Waldman, 1996).

Groups of shy, aggressive, and nonshy/nonaggressive children read eight stories that depicted a protagonist's intent as accidental, hostile, prosocial, or ambiguous. Participants were asked what the intent of a protagonist was, and how they would respond, in each story. In addition, after each of these questions, the participants responded to questions eliciting (a) their own emotions, and (b) their interpretation of a protagonist's emotions.

Ambiguous Scenarios

In replication of many previous findings (see Crick & Dodge, 1994, for a review), it was expected that aggressive children would exhibit the hostile intent bias in ambiguous situations. In co-occurrence with the hostile intent bias, it was also predicted that, in response to a negative outcome, aggressive children would report higher personal levels of anger than shy or nonaggressive/nonshy children. This prediction was based on Crick and Dodge's (1994) theoretical assumption that emotions influence a child's

attribution of intent in a social situation, and the fact that aggressive adolescents have reported more anger in ambiguous provocation situations than nonaggressive peers (Graham et al., 1992). Although gender differences in the experience of anger have been inconsistent, it was expected that aggressive boys' and aggressive girls' ratings of anger would not differ based on the findings of previous researchers who utilized similar methods (Graham et al., 1992) and similar age groups (Underwood et al., 1999; Zeman & Garber, 1996; Zeman & Shipman, 1996). Even though aggressive children's perception of emotion in others has not been examined, it was hypothesized that aggressive children would be more likely to describe a protagonist as angry in ambiguous situations than shy or nonshy/nonaggressive children because portraying a protagonist as angry has been associated with a hostile attribution (Keane & Parrish, 1992).

Similar to previous findings (Dodge, 1986; Dodge & Somberg, 1987; Waldman, 1996), it was hypothesized that aggressive children would endorse more aggressive responses in resolution of the stories than nonaggressive/nonshy or shy children. Crick and Dodge (1994) proposed that after children have accessed particular behaviors, they may experience a change in their own emotional state. Based on

Saarni's finding that a small group of children described themselves as feeling happy or relieved after responding aggressively in a social situation (cited in Saarni, 1999), it was predicted that, after selecting a behavioral response, aggressive children's experience of anger would diminish and happiness would be experienced. Because of the dearth of existing research examining children's interpretation of others' emotions after responding to social dilemmas, no prediction was made on this issue.

Because shy children experience a higher arousal level than nonshy children in social situations (Easterbrook, 1959), it was hypothesized that shy children would feel more afraid in response to a negative outcome than aggressive or nonshy/nonaggressive children. If fear was the dominant emotion identified by shy children, it was possible that girls would experience this emotion more intensely than boys (Strayer, 1989). Although shy children's perception of another's emotional state in a social situation has not been studied, it was expected that shy children would not attribute feelings of anger to a protagonist because of their desire to avoid social disapproval (Arkin et al., 1986; Shepperd & Arkin, 1990). Because prior-existing arousal states are assumed to affect the accuracy of children's interpretation of intent in social situations

(Crick & Dodge, 1994), and because of shy children's desire to avoid social disapproval (Arkin et al., 1986; Shepperd & Arkin, 1990), it was expected that Harrist et al.'s (1997) finding that shy children underattributed hostility in social situations would be replicated.

Assuming that one's interpretation of a protagonist's intent is related to the type of responses endorsed (Dodge, 1986), it was further predicted that interpreting a protagonist's intent as nonhostile would be associated with the positive evaluation of passive/withdrawn responses. Crick and Dodge (1994) also proposed, as stated previously, that selecting certain responses may alter a child's emotional state. Thus, if shy children experience more anxiety than nonaggressive/nonshy and aggressive children in social situations, then shy participants' level of anxiety may decrease after responding. Although no firm prediction was made, shy children's interpretation of a protagonist's emotional state was also evaluated after responding.

Nonambiguous Scenarios

The predictions above were based on the use of ambiguous scenarios because previous researchers have primarily used ambiguous hypothetical situations to examine the steps of social information processing (Dodge, 1980; Graham et al., 1992; Quiggle et al., 1992; Slaby & Guerra,

1988; Steinberg & Dodge, 1983). However, scenarios describing the intent of a protagonist as hostile, prosocial, and accidental were included in the first study to examine the type of emotion ascribed to a protagonist, and children's emotional experience, when the intent of a protagonist was stated. Shy, aggressive, and nonshy/nonaggressive children were not expected to differ in the type of attributions made in the hostile, prosocial, or accidental scenarios or the type of responses endorsed in the prosocial and hostile situations (Dodge & Somberg, 1987; Graham et al., 1992; Strayer, 1989). Based on Dodge and Somberg's (1987) previous finding, aggressive children were expected to endorse more aggressive responses in the accidental situation than shy and nonshy/nonaggressive children.

Differences were expected when children rated the intensity of the emotion experienced. Because shy children and aggressive children are assumed to experience higher arousal levels than nonshy/nonaggressive children (Dodge & Frame, 1982; Dodge & Somberg, 1987; Easterbrook, 1959), it was hypothesized that they would rate their emotional experiences as more intense than nonshy/nonaggressive children in response to a negative outcome. Based on the findings of Graham et al. (1992), it was expected that

aggressive children would be angrier than nonshy/nonaggressive children. Because shy children are afraid to interact with others (Harrist et al., 1997), it was assumed that they would be more afraid than aggressive or nonshy/nonaggressive children. After selecting a response, it was hypothesized that there would be a marked decrease in shy children's rating of fear and that they would experience more relief than other children. If the primary emotion experienced in the scenarios was sad, girls were expected to rate this emotion more intensely than boys (Strayer, 1989). Due to the lack of research, it was not known how aggressive, shy, and nonaggressive/nonshy children would depict a protagonist's emotion after a response had been endorsed.

Chapter 3

METHOD: EXPERIMENT 1

Participants

Seventy elementary schools and two summer recreational camps in Maine were contacted to participate in this study. Administrators at four schools, located in Bradley, Enfield, East Machias, and Damariscotta, and at both summer camps, located in the Bangor area, agreed to allow their fourth- and fifth-grade classes or, in the case of the summer camps, children entering the fourth- or fifth-grade in the autumn, to partake in this study. Children's participation was based on written permission received from legal guardians (see Appendix A for parental consent form). Of the 310 consent forms distributed, 231 forms (75%) were returned. A total of 168 students and campers (73%) received parental permission to take part in this study (see Appendix B for detailed information regarding the percentage of students and campers per classroom or camp group receiving parental permission). The majority of these children were Caucasian and from lower- to middle- income families.

Children with special needs and children with English as their second language were not excluded from the study if they received parental permission and if they wanted to participate. However, in order to maintain the homogeneity

of the sample, data from eight children, identified as having a learning disability (i.e., problems with long term or short term memory, reading difficulties) or as having a psychiatric diagnosis (i.e., Major Depression, Attention Deficit Hyperactivity Disorder, Attention Deficit Disorder) were not included in the analyses. Therefore, a total of 160 children (M age = 121.94 months, SD = 8.43), 35 children from the summer camps and 125 children from the elementary schools, participated in this study. The number of children identified as aggressive, shy, or nonshy/nonaggressive will be presented after the selection criteria have been discussed.

Task Overview

The purposes of the first study were to determine if differences existed between children with shy and aggressive social behavior patterns in their interpretation of emotion in others and in themselves, and to examine the role of cognition and interpretation of emotion in the processing of social information. Prior to data collection, and in order to develop rapport with participants who may be wary of a stranger, the experimenter spent approximately two hours sharing activities (e.g., recess, art) with the fourth- and fifth-grade children. In order to classify children as aggressive, shy, or nonaggressive/nonshy, teachers and camp

counselors completed the behavior rating scale developed by Cassidy and Asher (1992). Based on these ratings, children were selected to participate in a small group session with the experimenter. Prior to the start of the group session, participants were informed about the study and asked to give their assent. In the small group session, children were given a booklet and asked to answer questions eliciting how they would feel and think in various hypothetical social dilemmas. The following subsections will describe the nature of the group sessions in greater detail.

Materials

Classification Instrument

Classification of children as shy, aggressive, or nonshy/nonaggressive was based on a modified version of a behavior instrument developed by Cassidy and Asher (1992). The modified instrument (see Appendix C for verbatim questionnaire) was composed of three behavioral dimensions, instead of the four dimensions in the original instrument. The fourth dimension, the disruptive dimension, was not included because it was not used to classify children. The aggressive dimension consisted of three statements rating the frequency with which a child started fights, hurt other children, and was mean to other children. Rating how often a child behaved shyly, did not play or work much with other

children, and seemed fearful about being with other children assessed the behavioral dimension of shyness. Rating how often a child helped other children, shared and took turns, and was friendly and nice to other children were statements used to determine the frequency of prosocial behavior. The prosocial behavioral statements were included to add a positive dimension to rating participants and to function as distracter items.

Teachers and camp counselors were instructed to rate, on a scale of one to five, each child's display of prosocial, aggressive, and shy behavior, as depicted by the nine statements that were a part of the Cassidy and Asher (1992) behavior instrument. A rating of one indicated that the behavior was very **un**characteristic of a child. A score of five meant that a behavior was very characteristic of a child. Because children's participation could have occurred during (a) two months at summer camp, (b) the start of a school year, or (c) the latter part of a school year, teachers' and counselors' familiarity with the participants varied. However, teachers and counselors had supervised and interacted with the participants for at least four weeks prior to completing the behavior instrument (see Appendix B for information regarding the time of year each school and each camp participated).

Spitzer, Cupp, Bentley, and Parke (1994, cited in Boyum & Parke, 1995) established the test-retest reliability of this instrument, which ranged from .83 to 1.0 over a period of one month. Each behavioral dimension of Cassidy and Asher's (1992) instrument also demonstrated satisfactory internal consistency. Cronbach's alpha ranged from .91 for the aggressive behavioral dimension to .62 for the shy behavioral dimension (Boyum & Parke, 1995; Cassidy & Asher, 1992; Sletta, Sobstad, & Valas, 1995; Sletta, Valas, Skaalvik, & Sobstad, 1996). The construct validity of this behavior rating instrument was established by Cassidy and Asher and Spitzer et al. (1994, cited in Boyum & Parke, 1995).

Scenarios

The experimental booklet contained eight fictional situations, each followed by a series of questions (see Appendix D for instructions and a complete description of scenarios). Used by Graham et al. (1992), four of the eight fictional situations portrayed a protagonist's intent as ambiguous, one described the intent of a protagonist as prosocial, one depicted the intent as hostile, and two of the scenarios suggested that the outcome was accidental. For example, in one scenario with an ambiguous intent, a participant was instructed to imagine that he or she was

sitting at a desk working on a painting project during Art. Just then, another kid walked by and bumped into his or her desk, spilling green paint all over the participant's hands (Graham et al., 1992). The majority of stories used by Graham et al. portrayed a protagonist's intent as ambiguous because much of the research in the area of social information processing has focused on ambiguous social dilemmas. To minimize order effects, the eight stories were presented in four orders. Intent type was presented equally in the first position across the four orders. For each order, an ambiguous story was selected randomly and assigned to the last position, and the remaining six stories were assigned randomly to positions two through six.

Testing Procedure

Teachers and camp counselors completed the modified Cassidy and Asher (1992) instrument. The experimenter gave each teacher and camp counselor a booklet containing the nine statements, which comprised the aggressive, shy, and prosocial behavioral dimensions on the Cassidy and Asher behavior rating scale. Each statement was presented on a separate page with a list of all the participants who received parental permission. Written instructions were provided to ensure that teachers and camp counselors

understood the procedure. They were thanked for their cooperation.

For each class, a mean score was derived from the three statements reflecting the aggressive and the shy behavioral dimensions. Children who scored three-quarters of a standard deviation above their class mean on the shy/withdrawn behavioral dimension and below the mean on the aggressive behavioral dimension were classified as shy. Children who scored three-quarters of a standard deviation above their class mean on the aggressive behavioral dimension and below the mean on the shy/withdrawn behavioral dimension were classified as aggressive. Children who scored below their class mean on both the aggressive and shy behavioral dimensions comprised the nonshy/nonaggressive group. A research assistant identified which children met the above criteria for inclusion in Experiment 1. The experimenter had no knowledge about a participant's shy, aggressive, or nonshy/nonaggressive status.

Ideally, children's identification as shy, aggressive, or nonshy/nonaggressive would have been based on the entire sample of children who received parental permission to participate in this study. However, because of the school calendar and because schools' policies regarding research differed, it was not practical to wait until a number of

schools had agreed to participate. Therefore, a child's classification as shy, aggressive, or nonshy/nonaggressive was based on the number of children in each child's classroom/camp group who received parental permission. If the number of children who received permission to participate in a particular classroom or camp group was less than five, their data were included with the next smallest classroom or camp group. As a result, classroom/camp group size, means, and standard deviations varied (see Appendix F for detailed information about classroom/camp group size, the rater's gender, means, and standard deviations).

Of the 160 participants assessed, 85 children (M age = 122.49 months, SD = 8.81), 13 boys and girls from the summer camps and 72 boys and girls from the four elementary schools, met the criteria to participate in small group sessions. Twenty boys and seven girls were identified as aggressive (M age = 122.79 months, SD = 10.09). Sixteen children (5 boys and 11 girls) were classified as shy (M age = 123.50 months, SD = 10.60) and 42 children (18 boys and 24 girls) were identified as nonshy/nonaggressive (M age = 121.93 months, SD = 7.25). See Table 3.1 for the aggressive ratings and shy ratings for each behavior pattern. Internal consistency for the aggressive dimension (α = .92) and the shy dimension (α = .77) was

demonstrated in this study. Prior to participating in the small group sessions, children were asked to give their assent (see Appendix E for the verbal script).

Table 3.1

Mean Ratings for the Aggressive and Shy Behavioral Dimensions for Aggressive Boys and Girls, Shy Boys and Girls, and Nonshy/Nonaggressive Boys and Girls

Behavior Pattern	Age	Rating Type	
		Aggressive Rating	Shy Rating
	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>
Aggressive			
Boys	123.85 (9.89)	3.48 (0.64)	1.47 (0.50)
Girls	119.74 (10.80)	2.71 (0.73)	1.10 (0.16)
Shy			
Boys	129.20 (10.69)	1.33 (0.47)	2.87 (0.56)
Girls	120.91 (9.96)	1.46 (0.67)	3.06 (0.89)
Nonshy/Nonaggressive			
Boys	121.50 (8.79)	1.24 (0.39)	1.33 (0.54)
Girls	122.25 (6.02)	1.28 (0.53)	1.47 (0.54)

The small group sessions occurred outside the classroom in a quiet area of each school or in a quiet area at the

summer camp with a maximum of four participants in each group. Based on participants' availability, the gender composition of each group session varied. Each child received a booklet containing the eight hypothetical scenarios and questions. The experimenter read each story and the follow-up questions aloud while participants followed along and answered the questions. The experimenter instructed children to raise their hand if they had questions and to refrain from sharing their answers with each other. The intent of a protagonist, not identified by gender and referred to as "this kid," was presented as hostile, prosocial, accidental, or ambiguous in the scenarios. After each story was read, participants answered questions identifying (a) the intent of a protagonist, (b) how he or she (the participant) felt when the negative outcome occurred, (c) how a protagonist felt after the negative outcome was committed, (d) how he or she would respond, (e) how he or she would feel after responding, and (f) how a protagonist would feel after he or she responded.

To assess children's interpretation of the intent of a protagonist, the experimenter read aloud the question posed in the participant's booklet regarding whether the negative outcome was committed on purpose or by accident. Children were asked to circle either the statement "on purpose," or

the statement "by accident," in their booklet. Then, they were asked to rate on a scale of 1 (*a little sure*) to 5 (*very sure*) how sure they were. The choice, "by accident," was scored as a 1, and the response, "on purpose," was scored as a -1. Then, these two scores were multiplied, resulting in a range of values from -5 to +5 and reflecting the direction and the intensity of a participant's decision.

To answer questions about their emotions and a protagonist's emotions in response to a negative outcome, and after a behavioral response had been chosen, children were asked to rate on a scale of 1 (*not at all*) to 5 (*a whole lot*) the intensity of their experience for the following emotions: Angry, thankful, sad, happy, scared, and relieved. They were also asked to choose which emotion they or a protagonist would feel the most (see Appendix D for a complete description of the questions). The emotion alternatives presented were chosen to reflect a range of different positive or negative emotional states (e.g., thankful, angry, sad, afraid, and happy), most of which have been used in previous research (Graham et al., 1992; Quiggle et al., 1992, Strayer, 1989). Participants recorded their answers in their booklet.

Children's behavioral responses to a negative outcome were evaluated by asking them to indicate, on a scale of 1

(*definitely not*) to 5 (*definitely would*), how likely it is that they would enact the following six behaviors: Do nothing, just forget it (neutral response); ask the kid why he or she did it (instrumental); do something to get even (indirectly hostile); tell an adult (appealing to authority); do something nice for the kid (prosocial); and have it out with the kid right then and there (directly hostile; Graham et al., 1992). Participants were also asked to place an "X" beside the behavioral response they would most likely do first (see Appendix D for a complete description of the questions). At the conclusion of each small group session, children were asked if they had any questions. All questions were answered; then, children were thanked for their participation and taken back to the classroom or the camp group. The small group sessions lasted approximately 45-60 minutes.

Chapter 4

RESULTS: EXPERIMENT 1

The goal of this study was to describe how children with shy or aggressive behavior patterns perceive their emotional state and the emotional state of others, and how this information is associated with their interpretation of, and response to, social situations. The dependent variables were children's cognitive and affective responses to eight hypothetical scenarios that described the intent of a protagonist as hostile, accidental, prosocial, or ambiguous. Specifically, after each story was read, children answered questions assessing (a) the intent of a protagonist, (b) how he or she (the participant) felt when a negative outcome occurred, (c) how a protagonist felt after the negative outcome was committed, (d) how he or she would respond, (e) how he or she would feel after responding, and (f) how a protagonist would feel after he or she responded.

Behavioral Status

Prior to analyzing children's responses to the hypothetical situations, the distribution of gender in the shy, aggressive, and nonshy/nonaggressive group was reviewed. Based on previous research (see Parke & Slaby, 1983, for a review), the majority of aggressive children were expected to be male. Past results for shy children in

relation to gender are mixed. In Harrist et al.'s (1997) study, the majority of children identified as passive/anxious (shy) were male. On the other hand, Volling, MacKinnon-Lewis, Rabiner, and Baradaran (1993) found that teachers rated girls as more shy than boys. In this study, shy boys and aggressive boys were expected to outnumber shy girls and aggressive girls. As expected, the majority of children in the aggressive group were male (20 boys, 7 girls). However, the majority of children identified as shy were female (5 boys, 11 girls). Gender was distributed more evenly among the nonshy/nonaggressive group (18 boys, 24 girls). When teachers' and camp counselors' aggressive and shy ratings for boys and girls were compared, a significant result was obtained for the aggressive ratings only, although the shy ratings were consistent with Volling et al.'s (1993) finding. Teachers and camp counselors rated boys ($M = 2.29$, $SD = 1.24$) as more aggressive than girls ($M = 1.56$, $SD = .79$), $t(83) = 3.25$, $p = .002$, whereas the shy ratings for girls ($M = 1.83$, $SD = .97$) and boys ($M = 1.57$, $SD = .70$) did not differ significantly, $t(83) = -1.38$, $p = .172$.

Concerned that teachers' and camp counselors' familiarity with the children may have affected their behavioral ratings, the counselors' ratings, the teachers'

ratings at the East Machias and the Enfield elementary schools, and the teachers' ratings at the Bradley and the Damariscotta elementary schools were compared. These groupings were based on the length of time counselors and teachers had spent with the children. Camp counselors had known the children for approximately four weeks. The teachers at the East Machias and the Enfield schools had spent two to three months with the students, whereas the teachers at the Bradley and the Damariscotta schools had known the children for five to eight months. Only one significant result was obtained. Teachers at the East Machias and the Enfield schools ($M = 2.31$, $SD = 1.17$) rated children as more aggressive than teachers at the Bradley and the Damariscotta schools ($M = 1.72$, $SD = 1.00$), $t(70) = -2.24$, $p = .028$.

Initial Analysis of Ambiguous Scenarios

Because children's responses to the ambiguous scenarios were of major interest in this study, the four ambiguous scenarios were analyzed to determine if each behavioral group interpreted the intent of a protagonist in a similar manner for each ambiguous situation. If, as expected, the responses for each behavioral group were similar, then children's decisions about the intent of a protagonist could be collapsed across the four situations, resulting in a

composite score. Based on this premise, children's decisions about whether a negative outcome was committed on purpose or by accident in the four ambiguous scenarios were expected to be intercorrelated. The only significant correlation obtained was for the drinking fountain (DF) and the homework paper (HP) ambiguous scenarios, $r = .26$, $p = .015$.

To further evaluate participants' interpretation of intent and to examine the frequency of their responses across behavior pattern, participants' dichotomous choices (-1 = on purpose, 1 = by accident) were crossed with behavior pattern (shy, aggressive, and nonshy/nonaggressive). For the ambiguous scenario involving a line at the school bus stop (SB), 86% of the entire sample interpreted the situation hostilely, whereas only 14% of the participants thought that the negative outcome was an accident. The same pattern was found for the ambiguous scenario involving a new haircut (H). Ninety-one percent of the entire sample thought that a protagonist committed the negative act on purpose, and only 9% of the children thought that a protagonist's intent was unintentional.

Children's choices began to diverge by behavior pattern when the ambiguous scenarios involving a homework paper or a drinking fountain were examined. Reviewing the homework paper scenario, 52% of the aggressive children decided that

the negative outcome was an accident. In contrast, 81% of the shy children and 71% of the nonshy/nonaggressive children thought that the negative outcome in the homework paper story was an accident. For the drinking fountain ambiguous scenario, 56% of the aggressive children and 60% of the nonshy/nonaggressive decided that the negative outcome was not intentional. Similar to the homework paper scenario, 75% of the shy children interpreted the protagonist's intent as benign in the drinking fountain scenario. Based on the aforementioned results, the responses for the homework paper and the drinking fountain situations were collapsed across these scenarios, and the responses for the school bus stop and the new haircut situations were combined.

Initial Analysis of Accidental Scenarios

The same procedure was conducted to determine if the responses in the two accidental scenarios could be collapsed. Children's dichotomous choices were intercorrelated, and a significant correlation was found, $r = .28$, $p = .009$. Consequently, participants' choices were crossed with behavior pattern to examine the frequency of shy, aggressive, and nonshy/nonaggressive children's responses. A similar pattern was obtained for both accidental situations. Regardless of behavior pattern, the

majority of children thought that a negative outcome was unintentional (81% and 75%, respectively, for each scenario). As a result, the responses to each question were combined across the two accidental scenarios.

Analyses of Dependent Variables for the Ambiguous, Accidental, Hostile, and Prosocial Scenarios

For each scenario combination, children's interpretation of intent, their behavioral choice, their perception of their feelings and a protagonist's feelings before and after a behavioral response was chosen, were analyzed using a 3 x 2 (Behavior pattern: Aggressive, shy, and nonshy/nonaggressive x Gender) Multivariate Analysis of Variance (MANOVA). To determine if the predictions outlined previously were supported, univariate effects were examined and significant results were further analyzed using t-tests. Otherwise, significant multivariate and univariate effects (Wilks's Λ) were followed with Scheffé tests for post-hoc comparisons. The findings are presented according to scenario type.

Ambiguous Scenarios (Homework Paper [HP] and Drinking Fountain [DF] Scenarios)

Interpretation of Intent. Based on Dodge and Newman's (1981) assumption that aggressive children experience higher arousal levels than nonshy/nonaggressive children, thereby

disrupting the processing of social information, and previous research findings (see Crick & Dodge, 1994, for a review), aggressive children were predicted to display the hostile intent bias in ambiguous situations. Shy children's ability to interpret the intent of a protagonist accurately was also assumed to be hampered by their high levels of anxiety in social situations (Easterbrook, 1959) and by their desire to avoid social disapproval (Arkin et al., 1986; Shepperd & Arkin, 1990). Based on these notions and on Harrist et al.'s (1997) finding that shy children were less likely to attribute a hostile intent in social situations than nonwithdrawn children, shy participants were predicted to underattribute hostility in ambiguous situations.

Although it was not significant, the univariate test for behavior pattern did approach significance, $F(2, 79) = 2.78$, $p = .068$ (see Table 4.1 for children's mean intentionality ratings). Moreover, the pattern of results was in accord with the hypotheses: Shy children were the most likely to think that a negative outcome was an accident ($M = 2.13$, $SD = 3.07$), whereas the aggressive group was the least likely to believe that a protagonist's intention was benign ($M = 0.28$, $SD = 3.44$). Similar to the shy group, the nonshy/nonaggressive group thought that a negative outcome

was an accident ($M = 1.16$, $SD = 3.05$), but they were not as confident.

Table 4.1

Mean Intentionality Ratings

Intent Type	Behavior Pattern			<i>F</i>
	Aggressive	Shy	Nonschy/	
			Nonaggressive	
	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	
Ambiguous (HP/DF)	0.28 (3.44)	2.13 (3.07)	1.16 (3.05)	2.78
Ambiguous (SB/H)	-3.63 (1.60)	-3.34 (1.95)	-3.38 (1.95)	0.62
Accidental	1.13 (2.93)	3.66 (1.39)	2.51 (2.86)	2.78
Hostile	-2.48 (3.74)	-3.25 (2.82)	-3.48 (2.68)	0.59
Prosocial	2.11 (3.34)	2.50 (3.10)	1.98 (3.67)	0.26

Note. None of the reported *F*s were significant, $ps > .05$.

Interpretation of Emotion (Self). Based on the assumption that one's emotional state is an important cue that may be encoded and interpreted (Crick & Dodge, 1994; Lemerise & Arsenio, 2000), and that shy children and aggressive children experience higher arousal levels in social situations (Dodge & Newman, 1981; Easterbrook, 1959), their emotional experiences were expected to differ from nonschy/nonaggressive children (see Appendix G for complete

information about children's ratings for each of the six emotions after determining intent). Assuming that shy children experience anxiety in social interactions, shy children were predicted to describe themselves as more scared than aggressive or nonshy/nonaggressive children. Based on Graham et al.'s (1992) findings, aggressive children were predicted to report higher personal levels of anger in ambiguous situations than their shy or nonshy/nonaggressive peers.

Although the main effect for behavior pattern was not significant for the emotion, scared, $F(2, 79) = 2.01, p = .141$ (see Table 4.2 for mean ratings of the emotion, scared), the means were in the expected direction. Shy children ($M = 2.09, SD = 1.02$) rated the emotion, scared, higher than the aggressive group ($M = 1.48, SD = 0.87$) and the nonshy/nonaggressive group ($M = 1.86, SD = 0.85$).

Table 4.2

Mean Ratings of How Scared Children Felt After Determining Intent

Intent Type	Behavior Pattern			<i>F</i>
	Aggressive	Shy	Nonschy/	
			Nonaggressive	
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	
Ambiguous (HP/DF)	1.48 (0.87)	2.09 (1.02)	1.86 (0.85)	2.01
Ambiguous (SB/H)	1.26 (0.53)	2.13 (1.15)	1.51 (0.77)	9.19***
Accidental	1.50 (1.07)	1.53 (0.92)	1.44 (0.79)	0.14
Hostile	1.63 (0.93)	2.63 (1.26)	1.71 (0.92)	7.55***
Prosocial	1.59 (0.89)	1.69 (0.95)	1.62 (1.04)	0.26

*** $p < .001$.

Contrary to Graham et al.'s (1992) previous finding that aggressive adolescents reported more anger in ambiguous situations than their nonaggressive peers, aggressive children ($M = 3.89$, $SD = 0.91$) did not describe themselves as angrier than shy ($M = 3.72$, $SD = 1.25$) or nonschy/nonaggressive children ($M = 3.70$, $SD = 1.05$), $F(2, 79) = 0.39$, $p = .677$ (see Table 4.3 for mean ratings of the emotion, anger). MANOVA revealed no significant effects for gender, $F(6, 74) = .754$, $p = .608$, or the interaction of behavior and gender, $F(12, 148) = 1.02$, $p = .432$.

Table 4.3

Mean Ratings of How Angry Children Felt After Determining Intent

	Behavior Pattern			
	Nonshy/			
Intent Type	Aggressive	Shy	Nonaggressive	
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>F</i>
Ambiguous (HP/DF)	3.89 (0.91)	3.72 (1.25)	3.70 (1.05)	0.39
Ambiguous (SB/H)	3.87 (1.02)	3.50 (1.02)	3.81 (0.98)	0.39
Accidental	3.00 (1.14)	2.72 (1.11)	2.66 (0.99)	0.54
Hostile	3.59 (1.55)	3.75 (1.13)	4.10 (0.93)	0.93
Prosocial	3.04 (1.58)	2.94 (1.61)	2.71 (1.40)	1.03

Note. None of the reported *F*s were significant, *ps* > .05.

Interpretation of Emotion (Other). Because Lemerise and Arsenio (2000) suggested that the perception and interpretation of other's emotional cues in a social situation is an important component in the type of attribution made, and because Keane and Parrish (1992) found that a hostile attribution was associated with portraying a protagonist as angry, it was hypothesized that aggressive children would rate a protagonist as angrier than shy children or nonshy/nonaggressive children.

A significant main effect for the emotion, angry, was obtained, $F(2, 79) = 4.37, p = .016$. Although none of the comparisons between behavior groups were significant, examination of the means indicated that, contrary to the hypothesis that aggressive children would describe a protagonist as angrier than shy children, the shy group ($M = 1.97, SD = 1.16$) rated a protagonist as angrier than the aggressive group ($M = 1.46, SD = 0.72$), and the nonshy/nonaggressive group ($M = 1.57, SD = 0.71$),.

MANOVA indicated that gender, $F(6, 74) = 2.35, p = .039$, and the interaction of behavior and gender, $F(12, 148) = 1.88, p = .041$, reached significance. Boys ($M = 1.71, SD = 0.91$) rated a protagonist as angrier than girls ($M = 1.51, SD = 0.72$). Further analysis of the interaction of behavior pattern and gender yielded a significant result for the emotion, anger, $F(2, 79) = 3.82, p = .026$. As can be seen in Table 4.4, shy boys ($M = 2.90, SD = 1.43$) described a protagonist as angrier than shy girls ($M = 1.55, SD = 0.76$), $F(1, 79) = 5.45, p = .022$.

Table 4.4

Mean Ratings of How Angry Boys and Girls of Different Behavior Patterns Described a Protagonist After Determining Intent

Gender	Behavior Pattern		
	Aggressive	Shy	Nonshy/ Nonaggressive
			<i>M(SD)</i>
Male	1.45 (0.65)	2.90 (1.43) ^a	1.67 (0.79)
Female	1.50 (0.96)	1.55 (0.76) ^a	1.50 (0.66)

Note. The two means that share the same superscript are significantly different at $p < .05$.

Although not predicted, a significant interaction was found for the emotion, sad, $F(2, 79) = 3.90$, $p = .024$. As is evident in Table 4.5, shy boys ($M = 3.80$, $SD = 1.15$) rated a protagonist as sadder than shy girls ($M = 2.36$, $SD = 0.78$), $F(1, 79) = 3.97$, $p = .05$ (see Appendix H for additional information about children's ratings of a protagonist's emotion after determining intent).

Table 4.5

Mean Ratings of How Sad Boys and Girls of Different Behavior Patterns Described a Protagonist After Determining Intent

Gender	Behavior Pattern		
	Aggressive	Shy	Nonshy/ Nonaggressive
			<i>M(SD)</i>
Male	2.40 (1.27)	3.80 (1.15) ^a	2.33 (0.92)
Female	2.93 (1.57)	2.36 (0.78) ^a	2.56 (0.95)

Note. The two means that share the same superscript are significantly different at $p = .05$.

Behavioral Response. Based on Dodge's (1986) assumption that each step of social information processing influences, or is influenced by the next step, interpretation of a protagonist's intent or the experience of an emotion may affect the type of responses accessed. As documented in previous research (Dodge, 1986; Dodge & Somberg, 1987; Waldman, 1996), aggressive children were predicted to endorse more aggressive responses in social dilemmas than shy or nonshy/nonaggressive children. Drawing from previous findings (Bell-Dolan, 1995; Richard & Dodge, 1982; Rubin & Clark, 1983), shy children were predicted to evaluate

withdrawn/passive solutions more favorably than aggressive or nonshy/nonaggressive children. Neither of these predictions received support. MANOVA indicated that behavior pattern, $F(12, 148) = 1.04$, $p = .415$, gender, $F(6, 74) = 1.58$, $p = .165$, and the interaction of behavior pattern and gender, $F(12, 148) = .539$, $p = .886$, failed to reach significance.

Interpretation of Emotion (Self After Responding).

Assuming that accessing a particular response may modify an emotion and that retrieval of a particular behavioral response could evoke certain emotions (Lemerise & Arsenio, 2000), shy, aggressive, and nonshy/nonaggressive children were queried as to how angry, sad, happy, scared, relieved and thankful they felt after selecting a behavioral response (see Appendix I for mean ratings of each emotion after children have selected a behavioral response). MANOVA revealed no significant effects for behavior pattern, $F(12, 148) = .461$, $p = .934$, gender, $F(6, 74) = .335$, $p = .916$, or the interaction of behavior pattern and gender, $F(12, 148) = .464$, $p = .933$.

Interpretation of Emotion (Other After Responding).

Based on Lemerise and Arsenio's (2000) premise that encoding and interpreting others' emotional states provides ongoing information about how a social interaction is proceeding,

shy, aggressive, and nonshy/nonaggressive children's responses about how the other child would feel after a behavioral response was chosen were evaluated (see Appendix J for mean ratings of a protagonist's emotions after a response has been chosen). MANOVA indicated that behavior pattern, $F(12, 148) = 1.01, p = .440$, gender, $F(6, 74) = .531, p = .783$, and the interaction of behavior pattern and gender, $F(12, 148) = 1.36, p = .193$, failed to reach significance.

Ambiguous Scenarios (School Bus Line [SB] and Haircut [H] Scenarios)

Interpretation of Intent. Assuming that children of certain social behavior patterns process social information in a particular way (Crick & Dodge, 1994), aggressive children's and shy children's attributions of intent were predicted to differ. Similar to previous findings (see Crick & Dodge, 1994, for a review), aggressive children were predicted to display the hostile attribution bias in ambiguous situations. Based on Harrist et al.'s (1997) finding, shy children were expected to exhibit more confidence that a protagonist's intent was benign in ambiguous social situations than aggressive children and nonshy/nonaggressive children.

As expected, analyses indicated that aggressive children were very sure that a protagonist had acted intentionally in these ambiguous situations ($M = -3.63$, $SD = 1.60$). However, as reported in Table 4.1 (p. 96), both shy children ($M = -3.34$, $SD = 1.95$) and nonshy/nonaggressive children ($M = -3.38$, $SD = 1.95$) also believed that a protagonist had committed the negative outcome on purpose. Although aggressive children were more confident that a protagonist had acted intentionally, the difference between aggressive children's intentionality ratings and shy or nonshy/nonaggressive children's intentionality ratings was not significant, $F(2, 79) = .616$, $p = .543$.

Interpretation of Emotion (Self). Because higher arousal levels are attributed to shy children and aggressive children (Dodge & Newman, 1981; Easterbrook, 1959), shy children were predicted to feel more scared than aggressive or nonshy/nonaggressive children in social situations, whereas aggressive children were predicted to describe themselves as angrier than shy or nonshy/nonaggressive children in similar scenarios.

Analyses revealed a significant main effect for behavior pattern related to the emotion, scared, $F(2, 79) = 9.19$, $p = .000$. As can be seen in Table 4.2 (p. 98), further examination found that shy children ($M = 2.13$, $SD = 1.15$)

were more scared than aggressive children ($M = 1.26$, $SD = 0.53$), $t(41) = -3.39$, $p = .002$, and nonshy/nonaggressive children ($M = 1.51$, $SD = 0.77$), $t(56) = 2.35$, $p = .022$. The difference between aggressive children and nonshy/nonaggressive children was not significant, $t(67) = -1.50$, $p = .139$. Contrary to the prediction that aggressive children would report feeling angrier than shy or nonshy/nonaggressive children and as reported in Table 4.3 (p. 99), no significant results emerged for the emotion, angry (see Appendix G for a complete description of the six emotions after determining intent).

Although MANOVA indicated that the interaction of behavior pattern and gender, $F(12, 148) = 1.20$, $p = .291$, failed to reach significance, the multivariate effect for gender, $F(6, 74) = 2.37$, $p = .038$, was significant. Examination of the univariate effects revealed that boys ($M = 1.71$, $SD = 1.06$) were more likely to describe themselves as relieved than girls ($M = 1.36$, $SD = 0.61$), $F(1, 79) = 4.79$, $p = .032$.

Interpretation of Emotion (Other). Assuming that perceiving and encoding a protagonist's emotional state is an important factor in social information processing (Lemerise & Arsenio, 2000) and that depicting a protagonist's emotional state as angry is associated with a

hostile attribution (Keane & Parrish, 1992), aggressive children were predicted to describe a protagonist as angrier than other children. As can be seen in Table 4.6, no significant effects were obtained for behavior pattern, $F(12, 148) = .758, p = .693$, gender, $F(6, 74) = 1.47, p = .200$, or the interaction of behavior pattern and gender, $F(12, 148) = .896, p = .553$, (see Appendix H for a complete description of a protagonist's emotions after determining intent).

Table 4.6

Mean Ratings of How Angry Children Described a Protagonist After Determining Intent

Intent Type	Behavior Pattern			F
	Aggressive	Shy	Nonschy/	
			Nonaggressive	
	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	
Ambiguous (HP/DF)	1.46 (0.72)	1.97 (1.16)	1.57 (0.71)	4.37*
Ambiguous (SB/H)	1.46 (0.76)	1.69 (1.08)	1.38 (0.76)	1.62
Accidental	1.59 (0.77)	1.66 (0.65)	1.89 (0.86)	0.87
Hostile	1.78 (1.37)	2.06 (1.39)	1.64 (1.23)	0.92
Prosocial	1.93 (1.21)	1.88 (1.20)	1.80 (1.14)	0.32

* $p < .05$.

Behavioral Response. Two of the basic tenets of social information processing are that children of varying social behavior patterns will process social information in different ways and that each step of social information processing influences, or is influenced by, the previous step (Dodge, 1986). Based on these assumptions and on previous findings (Bell-Dolan, 1995; Dodge, 1986; Dodge & Somberg, 1987; Richard & Dodge, 1982; Rubin & Clark, 1983; Waldman, 1996), it was hypothesized that behavior patterns would be related to the type of responses participants endorsed. Specifically, it was expected that aggressive children would view aggressive responses favorably, whereas shy children would be more apt to endorse passive or withdrawn responses. Data analyses revealed no significant results for behavior pattern. MANOVA indicated that the interaction of behavior pattern and gender, $F(12, 148) = 1.44$, $p = .154$, did not reach significance, but the result for gender, $F(6, 74) = 2.79$, $p = .017$, was significant. Significant univariate ANOVAs were obtained for three behavioral responses: tell an adult, $F(1, 79) = 3.87$, $p = .053$, ask a kid, $F(1, 79) = 4.53$, $p = .036$, and have it out with this kid, $F(1, 79) = 7.31$, $p = .008$. Girls were more likely to tell an adult ($M = 3.61$, $SD = 1.00$) and ask a protagonist ($M = 3.86$, $SD = 0.99$) than boys ($M = 2.95$, $SD =$

1.57; $M = 3.07$, $SD = 1.42$). Boys ($M = 2.48$, $SD = 1.33$) were more likely to endorse having it out with this kid than girls ($M = 1.74$, $SD = 0.88$).

Interpretation of Emotion (Self After Responding).

Because selecting a behavioral response may alter one's emotion (Lemerise & Arsenio, 2000), and because social behavior pattern may influence the type of emotion experienced (Dodge, 1986), shy, aggressive, and nonshy/nonaggressive children's emotional experience after they had selected a response was assessed (see Appendix I for a complete description of each emotion after a behavioral response has been chosen). MANOVA indicated that neither behavior pattern, $F(12, 148) = .495$, $p = .915$, nor the interaction of behavior pattern and gender, $F(12, 148) = .752$, $p = .699$, reached significance, but the main effect for gender, $F(6, 74) = 3.63$, $p = .003$, was significant. Although no specific predictions were made, univariate ANOVAS revealed a significant effect for the emotion, angry, $F(1, 79) = 12.79$, $p = .001$). The results indicated that boys ($M = 2.67$, $SD = 1.29$) described themselves as angrier after selecting a behavioral response than girls ($M = 1.76$, $SD = 0.79$).

Interpretation of Emotion (Other After Responding).

Based on Lemerise and Arsenio's (2000) belief that other's

emotional cues provide important information in the evaluation of social situations, shy, aggressive, and nonshy/nonaggressive children were questioned about a protagonist's emotions after a behavioral response was selected. MANOVA revealed no significant effects for behavior pattern, $F(12, 148) = .464$, $p = .933$, gender, $F(6, 74) = .410$, $p = .870$, or the interaction of behavior pattern and gender, $F(12, 148) = .817$, $p = .632$. See Appendix J for a complete description of a protagonist's emotions after a behavioral response was selected.

Accidental Scenarios

Interpretation of Intent. Based on previous findings (Dodge, 1980; Dodge & Somberg, 1987; Graham et al., 1992), aggressive and nonaggressive children were predicted to interpret a protagonist's intent as unintentional when an accidental cue was provided. Because of shy children's propensity to interpret ambiguous situations as benign (Harrist et al., 1997), the provision of an accidental cue was expected to reinforce shy children's proposed bias to underattribute hostility in social situations. As predicted, all participants believed that a negative outcome was unintentional when an accidental cue was provided. Although the finding was not significant, $F(2, 79) = 2.78$, $p = .068$, compared to aggressive children's ($M = 1.13$, $SD = 2.93$) and

nonshy/nonaggressive children's ($M = 2.51$, $SD = 2.86$) intentionality ratings, shy children ($M = 3.66$, $SD = 1.39$) were the most confident of their decision (see Table 4.1, p. 96, for mean intentionality ratings).

Interpretation of Emotion (Self). Assuming that shy children and aggressive children experience higher arousal levels than nonshy/nonaggressive children (Dodge & Newman, 1981; Easterbrook, 1959), a general prediction was made that shy children and aggressive children would experience emotions more intensely than their nonshy/nonaggressive peers. Based on the notion that shy children experience a higher level of anxiety in social interactions than nonshy children (Easterbrook, 1959), shy children were expected to be more afraid than aggressive children or nonshy/nonaggressive children. As documented in previous research (Graham et al., 1992), aggressive children were expected to describe themselves as angrier than shy or nonshy/nonaggressive children in social interactions. These hypotheses were not substantiated (see Appendix G for the mean ratings of each emotion). MANOVA showed no significant effects for gender, $F(6, 74) = .581$, $p = .744$, or the interaction of behavior pattern and gender, $F(12, 148) = 1.20$, $p = .290$.

Interpretation of Emotion (Other). Because Lemerise and Arsenio (2000) suggested that the perception and interpretation of other's emotional cues is an important component in determining intent, children were queried about their beliefs regarding a protagonist's emotional state in accidental situations. MANOVA indicated that behavior pattern, $F(12, 148) = 1.73$, $p = .065$, and gender, $F(6, 74) = 1.00$, $p = .431$, failed to reach significance (see Appendix H for the mean ratings of a protagonist's emotions after determining intent). However, the interaction of behavior pattern and gender, $F(12, 148) = 1.89$, $p = .039$, was significant. Further analysis of the interaction between behavior pattern and gender yielded significant findings for the following emotions: sad, $F(2, 79) = 3.66$, $p = .030$, happy, $F(2, 79) = 5.11$, $p = .008$, and thankful, $F(2, 79) = 6.23$, $p = .003$. As seen in Table 4.7, compared to aggressive boys ($M = 2.28$, $SD = 1.28$), aggressive girls ($M = 2.93$, $SD = 0.84$) rated a protagonist as sadder. However, aggressive boys described a protagonist as happier and as more thankful ($M = 2.33$, $SD = 1.39$ and $M = 2.35$, $SD = 1.51$) than aggressive girls ($M = 1.14$, $SD = 0.38$ and $M = 1.07$, $SD = 0.19$; see Table 4.7 for the mean ratings of the emotions, happy and thankful).

Table 4.7

Mean Ratings of How Sad, Happy, and Thankful Boys and Girls of Different Behavior Patterns Described a Protagonist After Determining Intent

Behavior Pattern	Emotion		
	Sad	Happy	Thankful
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)
Aggressive			
Males	2.28 (1.21) ^a	2.33 (1.39) ^b	2.35 (1.51) ^c
Females	2.93 (0.84) ^a	1.14 (0.38) ^b	1.07 (0.19) ^c
Shy			
Males	3.90 (1.48)	1.20 (0.45)	1.10 (0.22)
Females	2.59 (0.83)	1.91 (0.58)	2.18 (0.85)
Nonshy/Nonaggressive			
Males	2.81 (1.15)	1.58 (0.79)	1.61 (0.93)
Females	3.04 (0.99)	1.35 (0.52)	1.56 (0.67)

Note. The means sharing the superscript, a, are significantly different at $p < .05$. The means sharing the superscript, b or c, are significantly different at $p < .01$.

Behavioral Response. Based on a previous finding (Dodge & Somberg, 1987), it was predicted that aggressive children would be more likely to endorse aggressive responses in

accidental scenarios. However, the effects for the behavioral responses, get even, $F(2, 79) = .093$, $p = .912$, and have it out with this kid, $F(2, 79) = 1.55$, $p = .219$, were not significant. Although MANOVA did not reach significance for the interaction of behavior pattern and gender, $F(12, 148) = .871$, $p = .578$, the effect for gender, $F(6, 74) = 2.51$, $p = .029$, was significant.

Examination of univariate ANOVAs yielded significant effects for the behavioral responses, get even, $F(1, 79) = 5.68$, $p = .020$, and have it out with this kid, $F(1, 79) = 8.30$, $p = .005$. Boys ($M = 2.31$, $SD = 1.24$) were more likely to endorse getting even as something that they would do than girls ($M = 1.75$, $SD = 0.91$). They ($M = 1.84$, $SD = 0.92$) were also more likely to consider having it out with a protagonist as an option than girls ($M = 1.44$, $SD = 0.67$).

Interpretation of Emotion (Self After Responding).

Because Lemerise and Arsenio (2000) posit that accessing a particular response may be associated with a particular emotion, it was suggested that, after a behavioral response was selected, the anxiety that shy children are proposed to experience in a social situation would dissipate and be replaced with feelings of relief (see Appendix I for the mean ratings of each emotion after a behavioral response has been selected). Although this prediction was not

substantiated, MANOVA indicated significant effects for behavior pattern, $F(12, 148) = 2.06, p = .023$, and gender, $F(6, 74) = 2.92, p = .013$. As can be seen in Table 4.8, the effect for behavior pattern was based in the emotion, scared, $F(2,79) = 8.40, p = .000$. Contrary to expectations, Scheffé tests indicated that shy children ($M = 1.91, SD = 0.88$) described themselves as more scared after responding than aggressive children ($M = 1.32, SD = 0.54$) and nonshy/nonaggressive children ($M = 1.33, SD = 0.53$). The effect for the interaction of behavior pattern and gender was not significant, $F(12, 148) = 1.29, p = .228$.

Table 4.8

Mean Ratings of How Scared Children Felt After Selecting a Behavioral Response

Intent Type	Behavior Pattern			
	Aggressive	Shy	Nonshy/	
			Nonaggressive	
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>F</i>
Ambiguous (HP/DF)	1.54 (0.95)	1.44 (0.54)	1.70 (0.89)	0.60
Ambiguous (SB/H)	1.56 (0.70)	1.81 (0.66)	1.49 (0.72)	1.62
Accidental	1.32 (0.54)	1.91 (0.88)	1.33 (0.53)	8.40***
Hostile	1.59 (0.89)	2.31 (1.20)	1.71 (0.94)	3.75*
Prosocial	1.48 (0.94)	1.56 (1.03)	1.62 (0.96)	0.37

* $p < .05$. *** $p < .001$.

Significant main effects for gender were found for the emotions: angry, $F(1, 79) = 5.43$, $p = .022$, and relieved, $F(1, 79) = 4.41$, $p = .039$. After a behavioral response was chosen, boys ($M = 1.93$, $SD = 1.08$) described themselves as angrier than girls ($M = 1.56$, $SD = 0.66$). Girls ($M = 3.04$, $SD = 1.00$) were more likely to describe themselves as relieved than boys ($M = 2.73$, $SD = 1.44$).

Interpretation of Emotion (Other After Responding).

Based on the notion that others' emotional cues provide important information about how the social interaction is

proceeding (Lemerise & Arsenio, 2000), participants' ratings of how the other child in the social situation would feel after a participant had enacted a behavioral response were evaluated in the accidental scenarios (see Appendix J for the mean ratings of a protagonist's emotions after a behavioral response was selected). MANOVA indicated that behavior pattern, $F(12, 148) = .680, p = .769$, gender, $F(6, 74) = 1.80, p = .110$, and the interaction of behavior pattern and gender, $F(12, 148) = .604, p = .836$, failed to reach significance.

Hostile Scenario

Interpretation of Intent. Based on the assumption that children with certain behavior patterns exhibit a cue distortion deficiency, not an inability to integrate intention information (Dodge, 1980), and on previous findings that children, regardless of behavior pattern, interpret a protagonist's intent as intentional when a hostile cue is provided (Bell-Dolan, 1995; Dodge, 1980; Dodge, 1986; Dodge & Somberg, 1987; Graham et al. 1992), aggressive, shy, and nonshy/nonaggressive children were predicted to decide that a protagonist had acted intentionally when a hostile cue was stated explicitly in a scenario. As predicted, all participants interpreted a protagonist's intent as hostile (see Table 4.1, p. 96, for

mean intentionality ratings). Although the finding was not significant, $F(2, 79) = .59$, $p = .559$, the means indicated that shy children ($M = -3.25$, $SD = 2.82$) and nonshy/nonaggressive children ($M = -3.48$, $SD = 2.68$) were more confident of their decision than aggressive children ($M = -2.48$, $SD = 3.74$).

Interpretation of Emotion (Self). Because children with certain behavior patterns (i.e., aggressive, shy) are assumed to experience higher arousal levels in threatening social situations (Dodge & Newman, 1981; Easterbrook, 1959), it was hypothesized that shy children and aggressive children would rate their emotional experiences as more intense than nonshy/nonaggressive children. Because shy children have been defined as children who are afraid to interact with others (Harrist et al., 1997), the shy group was predicted to describe themselves as more scared than aggressive or nonshy/nonaggressive children. Also, based on Graham et al.'s (1992) previous finding, aggressive children were predicted to be angrier than shy or nonshy/nonaggressive children.

Consistent with the hypothesis that shy children would feel more scared than other children in a threatening situation, a significant main effect for behavior pattern was obtained for the emotion, scared, $F(2, 79) = 7.55$, $p =$

.001. As is evident in Table 4.2 (p. 98), shy children ($M = 2.63$, $SD = 1.26$) described themselves as more scared than aggressive children ($M = 1.63$, $SD = 0.93$), $t(41) = -2.98$, $p = .005$, and nonshy/nonaggressive children ($M = 1.71$, $SD = 0.92$), $t(56) = 3.04$, $p = .004$. No significant results were obtained for the emotion, angry (see Table 4.3, p. 99, for mean ratings; see Appendix G for a complete description of the mean ratings of each emotion after determining intent).

Although MANOVA did not reveal a significant effect for gender, $F(6, 74) = 1.61$, $p = .156$, it did reveal a significant effect for the interaction of behavior pattern and gender, $F(12, 148) = 1.99$, $p = .029$. Further analysis of univariate ANOVAs yielded a significant finding for the emotion, scared. As can be seen in Table 4.9, aggressive girls ($M = 2.14$, $SD = 1.22$) were more scared than aggressive boys ($M = 1.45$, $SD = 0.76$).

Table 4.9

Mean Ratings of How Scared Boys and Girls of Different Behavior Patterns Felt After Determining Intent

Gender	Behavior Pattern		
	Aggressive	Shy	Nonschy/
			Nonaggressive
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)
Male	1.45(0.76) ^a	3.40(1.67)	1.56(0.92)
Female	2.14(1.22) ^a	2.27(0.91)	1.83(0.92)

Note. The two means that share the same superscript are significantly different at $p < .01$.

Interpretation of Emotion (Other). Based on the notion that others' emotions provide an important source of information in social situations (Lemerise & Arsenio, 2000), participants' interpretation of a protagonist's emotional state was evaluated. MANOVA indicated that behavior pattern, $F(12, 148) = .781$, $p = .669$, gender, $F(6, 74) = .908$, $p = .494$, and the interaction of behavior pattern and gender, $F(12, 148) = .293$, $p = .990$, failed to reach significance (see Appendix H for a complete description of the mean ratings of a protagonist's emotions after determining intent).

Behavioral Response. Based on previous findings (Dodge & Somberg, 1987; Graham et al., 1992), regardless of behavior pattern, participants were not predicted to differ in the types of responses endorsed in the hostile scenario. Consistent with this prediction, MANOVA revealed no significant differences for behavior pattern, $F(12, 146) = .574$, $p = .860$, gender, $F(6, 73) = 1.52$, $p = .184$, or the interaction of behavior pattern and gender, $F(12, 146) = .929$, $p = .520$.

Interpretation of Emotion (Self After Responding).

Lemerise and Arsenio (2000) suggested that accessing certain responses may modify or cue particular emotions. Therefore, participants' emotions after a behavioral response was endorsed were assessed (see Appendix I for a complete listing of the mean ratings of each emotion after selecting a behavioral response). Although no predictions were made, a MANOVA effect for behavior pattern, $F(12, 148) = 1.80$, $p = .053$, was significant. Further examination of univariate ANOVAs yielded significant effects for the emotions, sad, $F(2, 79) = 9.36$, $p = .000$, and scared, $F(2, 79) = 3.75$, $p = .028$. As is apparent in Table 4.10, Scheffé tests indicated that, after a behavioral response had been selected, shy children ($M = 2.94$, $SD = 1.34$) felt sadder than the

aggressive group ($M = 1.74$, $SD = 1.29$) and the nonshy/nonaggressive group ($M = 1.81$, $SD = 1.02$).

Table 4.10

Mean Ratings of How Sad Children Felt After Selecting a Behavioral Response

Behavioral Response				
	Behavior Pattern			
	Nonshy/			
Intent Type	Aggressive	Shy	Nonaggressive	
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>F</i>
Ambiguous (HP/DF)	2.07 (1.20)	2.22 (1.03)	2.13 (0.92)	0.14
Ambiguous (SB/H)	1.85 (1.05)	2.13 (1.15)	1.77 (0.70)	1.26
Accidental	1.65 (0.73)	1.81 (0.98)	1.77 (0.84)	0.74
Hostile	1.74 (1.29)	2.94 (1.34)	1.81 (1.02)	9.36***
Prosocial	1.63 (1.21)	2.00 (0.82)	1.79 (1.09)	0.67

*** $p < .001$.

As can be seen in Table 4.8 (p. 116), shy children ($M = 2.31$, $SD = 1.20$) described themselves as more scared after selecting a behavioral response in the hostile scenario than aggressive children ($M = 1.59$, $SD = 0.89$) and nonshy/nonaggressive children ($M = 1.71$, $SD = 0.94$). Scheffé tests ($p = .05$), however, indicated that no two groups were significantly different. Thus, the source of the significant

behavior pattern effect for this emotion reported on page 121 remains unclear. MANOVA indicated that gender, $F(6, 74) = 1.26$, $p = .287$, and the interaction of behavior pattern and gender, $F(12, 148) = 1.63$, $p = .088$, failed to reach significance.

Interpretation of Emotion (Other After Responding).

Based on the assumption that others' emotion cues are important sources of information in social information processing (Lemerise & Arsenio, 2000), participants were asked to interpret a protagonist's emotional state after a behavioral response had been chosen (see Appendix J for a complete listing of the mean ratings of a protagonist's emotions after responding). A significant MANOVA effect was obtained for behavior pattern, $F(12, 148) = 2.19$, $p = .015$. Examination of univariate ANOVAs yielded a significant effect for the emotion, sad, $F(2, 79) = 3.98$, $p = .023$. Table 4.11 presents mean ratings for the emotion, sad. Although Scheffé tests indicated that no two groups were significantly different, the means were in the expected direction. Compared to nonshy/nonaggressive children ($M = 1.88$, $SD = 1.17$), both shy children ($M = 2.56$, $SD = 1.09$) and aggressive children ($M = 2.52$, $SD = 1.63$) described a protagonist as sadder after a behavioral response had been selected in the hostile scenario.

Table 4.11

*Mean Ratings of How Sad Children Described a Protagonist
After Selecting a Behavioral Response*

Intent Type	Behavior Pattern			F
	Aggressive	Shy	Nonshy/ Nonaggressive	
	M(SD)	M(SD)	M(SD)	
Ambiguous (HP/DF)	2.46 (1.33)	2.78 (1.20)	2.42 (1.08)	1.10
Ambiguous (SB/H)	2.33 (1.35)	2.63 (1.07)	2.13 (1.05)	1.67
Accidental	2.11 (1.14)	2.16 (0.96)	2.11 (0.85)	0.22
Hostile	2.52 (1.63)	2.56 (1.09)	1.88 (1.17)	3.98**
Prosocial	2.26 (1.40)	2.69 (1.35)	2.41 (1.23)	0.79

** $p < .05$.

A significant main effect for behavior pattern for the emotion, thankful, was also obtained, $F(2, 79) = 4.11$, $p = .020$. As is evident in Table 4.12, aggressive children ($M = 2.04$, $SD = 1.58$) described a protagonist as significantly more thankful than nonshy/nonaggressive children ($M = 1.36$, $SD = 0.76$). MANOVA indicated that gender, $F(6, 74) = 1.55$, $p = .173$, and the interaction of behavior pattern and gender, $F(12, 148) = .839$, $p = .610$, failed to reach significance.

Table 4.12

*Mean Ratings of How Thankful Children Described a
Protagonist After Selecting a Behavioral Response*

	Behavior Pattern			
	Nonshy/			
Intent Type	Aggressive	Shy	Nonaggressive	
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>F</i>
Ambiguous (HP/DF)	1.69 (1.11)	1.50 (0.71)	1.68 (0.90)	0.75
Ambiguous (SB/H)	1.70 (0.96)	1.50 (0.78)	1.57 (0.78)	0.29
Accidental	2.43 (1.34)	2.81 (0.83)	2.25 (1.06)	0.71
Hostile	2.04 (1.58)	1.44 (0.63)	1.36 (0.76)	4.11**
Prosocial	1.85 (1.38)	1.88 (1.09)	1.93 (1.20)	0.15

** $P < .05$.

Prosocial Scenario

Interpretation of Intent. Assuming that children interpret the intent of a protagonist accurately when a cue is stated clearly (Dodge, 1980), and based on previous findings (Dodge & Somberg, 1987; Graham et al., 1992), shy, aggressive, and nonshy/nonaggressive children were not predicted to differ in the type of attribution endorsed in a prosocial scenario. As can be seen in Table 4.1 (p. 96), regardless of behavior pattern, participants interpreted a protagonist's intent as benign in this scenario type. There

was little variation among aggressive children's ($M = 2.11$, $SD = 3.34$), shy children's ($M = 2.50$, $SD = 3.10$) and nonshy/nonaggressive children's ($M = 1.98$, $SD = 3.67$) intentionality ratings, $F(2, 79) = .26$, $p = .774$.

Interpretation of Emotion (Self). Because shy and aggressive children are assumed to experience higher arousal levels than nonshy/nonaggressive children (Dodge & Newman, 1981; Easterbrook, 1959), they were predicted to rate their emotional experiences as more intense. MANOVA indicated that behavior pattern, $F(12, 148) = .724$, $p = .726$, gender, $F(6, 74) = .314$, $p = .928$, and the interaction of behavior pattern and gender, $F(12, 148) = 1.42$, $p = .162$, failed to reach significance (see Appendix G for a complete description of the mean ratings for each emotion).

Interpretation of Emotion (Other). Based on the assumption that others' emotional states are important cues in social situations, children's interpretation of a protagonist's emotional state was assessed (see Appendix H for a complete description of the mean ratings of a protagonist's emotions). Although MANOVA failed to reach significance for behavior pattern, $F(12, 144) = 1.56$, $p = .109$, and gender, $F(6, 72) = .965$, $p = .455$, a significant effect was obtained for the interaction of behavior pattern and gender, $F(12, 144) = 1.89$, $p = .040$. Examination of

univariate analyses yielded a significant interaction for the emotion, sad, $F(2, 79) = 2.96, p = .058$. Table 4.13 presents the mean ratings for the emotion, sad. Simple effects tests did not yield significant differences for gender within behavior pattern.

Table 4.13

Mean Ratings of How Sad Boys and Girls of Different Behavior Patterns Described a Protagonist After Determining Intent

Gender	Behavior Pattern		
	Aggressive	Shy	Nonschy/ Nonaggressive
	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>
Male	2.60 (1.64)	3.80 (1.30)	2.06 (0.97)
Female	2.43 (1.40)	2.73 (1.10)	2.87 (1.22)

Note. Further analysis of the interaction did not yield significant differences for gender within behavior pattern.

Behavioral Response. Previous findings indicated that children, regardless of behavior pattern, do not differ in the type of responses endorsed in prosocial situations (Dodge & Somberg, 1987; Graham et al., 1992; Strayer, 1989). Therefore, aggressive, shy, and nonschy/nonaggressive children were not predicted to differ in their endorsement

of the six behavioral responses. As predicted, MANOVA indicated that behavior pattern, $F(12, 144) = .986$, $p = .465$, gender, $F(6, 72) = 1.86$, $p = .100$, and the interaction of behavior pattern and gender, $F(12, 144) = .849$, $p = .600$, failed to reach significance.

Interpretation of Emotion (Self After Responding).

Because Lemerise and Arsenio (2000) posited that endorsing a particular behavioral response may modify or cue a particular emotion in a child, children's interpretation of their own emotional states after a behavioral response had been selected was evaluated. No significant MANOVA effects were obtained in the prosocial scenario for behavior pattern, $F(12, 148) = 1.07$, $p = .387$, gender, $F(6, 74) = .436$, $p = .852$, or the interaction of behavior pattern and gender, $F(12, 148) = 1.46$, $p = .146$, (see Appendix I for a complete listing of the mean ratings of each emotion).

Interpretation of Emotion (Other After Responding).

Assuming that evaluating the emotional consequences of a selected response is an important factor in social information processing (Lemerise & Arsenio, 2000), participants were asked to answer questions about a protagonist's emotional state after a behavioral response had been selected. MANOVA revealed only one significant effect for behavior pattern, $F(12, 148) = 1.79$, $p = .054$,

which further analyses demonstrated to be based in the emotion, relieved, $F(2, 79) = 3.27, p = .043$. As can be seen in Table 4.14, Scheffé tests indicated that shy children ($M = 3.00, SD = 1.41$) described a protagonist as more relieved than aggressive children ($M = 1.85, SD = 1.41$) and nonshy/nonaggressive children ($M = 1.98, SD = 1.16$). MANOVA indicated that gender, $F(6, 74) = .748, p = .613$, and the interaction of behavior pattern and gender, $F(12, 148) = 1.54, p = .114$, failed to reach significance (see Appendix J for a description of the mean ratings of each emotion).

Table 4.14

Mean Ratings of How Relieved Children Described a Protagonist After Selecting a Behavioral Response

Intent Type	Behavior Pattern			
	Nonshy/			F
	Aggressive	Shy	Nonaggressive	
	M(SD)	M(SD)	M(SD)	
Ambiguous (HP/DF)	1.82 (1.06)	1.94 (0.85)	1.56 (0.81)	0.81
Ambiguous (SB/H)	1.94 (0.99)	2.00 (0.80)	1.98 (0.98)	0.00
Accidental	2.63 (1.24)	2.91 (0.86)	2.39 (1.11)	1.15
Hostile	1.74 (1.38)	2.00 (1.03)	1.50 (0.83)	0.72
Prosocial	1.85 (1.41)	3.00 (1.41)	1.98 (1.16)	3.27**

** $p < .05$.

Chapter 5

DISCUSSION: EXPERIMENT 1

Researchers in the area of social information processing have focused their efforts on comparing the cognitive processes of children who differ on various dimensions, such as behavior patterns, assuming that this knowledge will help clarify the processes that lead to social maladjustment and social adjustment (Crick & Dodge, 1994). Although emotion has been proposed as an integral part of social information processing (Crick & Dodge, 1994; Dodge, 1991), understanding the role that emotion plays in the type of attribution made and in the type of behavioral responses accessed in social interactions has received little examination. Therefore, the purpose of this study was to learn more about children's interpretation of emotion in themselves and others for social situations in which the intent of others is clearly hostile, prosocial, accidental, or ambiguous.

Interpretation of Intent

Half of the situations in this study portrayed the intent of a protagonist as ambiguous due to the prevalent use of this type of scenario in previous research (Dodge, 1980; Dodge & Tomlin, 1987; Graham et al., 1992). Based on previous findings (Graham et al., 1992), it was assumed that

children with the same behavior pattern (e.g., aggressive children) would interpret a protagonist's intent in a similar manner for the four ambiguous scenarios, allowing their responses to be collapsed into a composite score. Unfortunately, analyses revealed that children's decisions about the intent of a protagonist were not consistent across the ambiguous scenarios.

Because social behavior patterns have been found to be related to children's attribution of intent (see Crick & Dodge, 1994, for a review; Harrist et al., 1997), it was predicted that, compared to nonshy/nonaggressive children, shy children would underattribute hostility and aggressive children would exhibit the hostile attribution bias in ambiguous situations. Approaching significance, the pattern of results for two of the four ambiguous scenarios, the homework paper and the drinking fountain scenarios, was consistent with these predictions. In accord with previous findings (Dodge, 1980; Harrist et al., 1997), shy children were the most confident that a negative outcome was an accident, whereas aggressive children were the least likely to believe that a negative outcome was an accident.

In contrast, an overwhelming majority of children, regardless of behavior pattern, believed that a protagonist had acted intentionally in the other two scenarios involving

a haircut (77 out of 85 children) or standing in line at the school bus stop (73 out of 85 children). Aggressive children's decision that a protagonist had committed the negative outcome intentionally was, in fact, predicted. Shy and nonshy/nonaggressive children's display of the hostile attribution bias in these two ambiguous situations, and their confidence in their decision, was unexpected.

Although the majority of previous researchers reported that nonaggressive children and shy children interpret ambiguous situations as benign (see Crick & Dodge, 1994, for a review; Harrist et al., 1997), Bell-Dolan (1995) did find that anxious children and nonanxious children were more likely to interpret an ambiguous situation as hostile than nonhostile. She suggested that both anxious and nonanxious children use the rule, "when in doubt, interpret as hostile," when interpreting ambiguous situations (Bell-Dolan, 1995, p. 7). In accord with Bell-Dolan's finding, Lemerise et al. (2005) also found that children, regardless of social adjustment classification, attributed a hostile intent to a protagonist in an ambiguous situation about half of the time. It is possible that children place more emphasis on the negative outcome than the ambiguity of a protagonist's intent, associating a negative outcome with a hostile intent (Lemerise et al., 2005).

In an attempt to understand why children thought a protagonist had acted on purpose in these particular ambiguous scenarios, contents of each were compared to that of the hostile scenario. In both the haircut and the hostile scenario, a protagonist was described as laughing. Although the laughter was not directed at a participant in the haircut scenario, perhaps laughing, in conjunction with a negative outcome, serves as a hostile cue. Assuming that most children do not like to be "laughed at," participants, for this reason, may have decided that a negative outcome was intentional. In the school bus scenario, a protagonist was described as "cutting in line." The phrase, "cutting in line," might be associated with a negative interpretation, particularly if the relationship between a protagonist and a participant is unknown. If a protagonist had been described as a friend or a best friend, perhaps participants would have judged a protagonist's intent as nonhostile. It is also possible that children's self-schemas were based on their previous experiences with a particular negative outcome, not the ambiguity of a social situation portrayed.

Based on comparisons with the hostile scenario, the two ambiguous scenarios involving the haircut and the school bus line may have inadvertently provided information that was construed as hostile, resulting in children, regardless of

their classification, attributing a hostile intent to a protagonist. Assuming that this premise is plausible, it is also feasible that the two ambiguous scenarios involving the homework paper and the drinking fountain provided more cues that could be interpreted as accidental. Both of these scenarios involved a protagonist engaging in some type of motor movement that caused the negative outcome. Perhaps, a participant interpreted this information as indicative of a protagonist's clumsiness, and, therefore, accidental in nature.

Alternatively, perhaps the scenarios involving the homework paper and the drinking fountain are truly ambiguous. If participants pretend that a negative outcome is happening to them, as they were instructed to do in this study, then their attention may be directed at their task in the scenario, tying their shoe or getting a drink of water. Other than the experimenter's information that a protagonist stepped on their homework paper or bumped them, spilling water on their clothing, participants may not be aware of any additional cues in their surroundings. The pattern of results for these two stories is consistent with the depiction of a protagonist's intent as ambiguous.

Consistent with previous findings that shy children and aggressive children do not exhibit a cue-utilization

deficiency (Bell-Dolan, 1995; Dodge, 1980; Dodge & Somberg, 1987; Graham et al., 1992), participants in this study, regardless of behavior pattern, decided that a protagonist had acted intentionally in the hostile scenario, and that a protagonist's intentions were benign in the prosocial scenario and the accidental scenarios.

Interpretation of Emotion (Self)

In this study, shy children were defined as children who want to interact with others but are afraid. Because of shy children's high arousal level in social situations (Easterbrook, 1959) and their focus on themselves and their feelings (Mandler & Sarason, 1952), shy children were predicted to rate themselves as more afraid in social situations than aggressive or nonshy/nonaggressive children. Consistent with this prediction and Lemerise and Arsenio's (2000) assumption that children differ in the intensity with which they experience and express emotions, shy children were found to describe themselves as more scared than aggressive and nonshy/nonaggressive children in the ambiguous and the hostile scenarios, but not in the accidental and the prosocial situations. Because the latter stories portrayed clearly a protagonist's intent as unintentional, supporting shy children's tendency to underattribute hostility in social situations, shy children

may have found these situations less arousal provoking than the ambiguous or the hostile scenarios and, consequently, may not have felt as scared.

Because describing a protagonist as angry has been associated with a hostile attribution (Keane & Parrish, 1992), and because aggressive adolescents have been reported as feeling angrier than nonaggressive adolescents (Graham et al., 1992), aggressive children were predicted to describe themselves as angrier than shy or nonshy/nonaggressive children. Regardless of scenario type, however, aggressive children's reports of anger did not differ from shy children's or nonshy/nonaggressive children's ratings of anger. All participants described themselves as very angry. Although this result is not consistent with Graham et al.'s (1992) finding that aggressive adolescents were angrier than their nonaggressive peers, it is in accord with Quiggle et al.'s (1992) finding that aggressive children, 9 to 12 years of age, did not report feeling angrier than the nonaggressive group. They proposed that aggressive children may experience similar levels of anger as nonaggressive children, but may not be able to regulate their angry feelings which, in turn, may compromise their ability to select and to enact an appropriate behavioral response (Quiggle et al., 1992).

Compared to the hostile and the ambiguous scenarios, feelings of anger did decrease slightly, but not significantly, when the negative outcome was depicted as an accident or as benefiting a participant. In deciding that a negative outcome was an accident, children may have understood that these particular situations did not justify extremely high levels of anger.

Because shy children described themselves as more scared than aggressive children or nonshy/nonaggressive children in the ambiguous and the hostile scenarios, their description of themselves as angry may seem contradictory. However, the findings are congruent with Polivy and her colleagues' (Polivy, 1981; Wintre et al., 1990) earlier findings that fourth- and fifth-grade children are capable of reporting multiple emotions and that social interactions may elicit more than one emotion. For example, children's experience of anger may be in reaction to the negative outcome, and, in addition, shy children may also describe themselves as more scared than their peers because of the anxiety shy children are assumed to experience in social situations.

A methodological problem may also have contributed to the similar ratings offered by shy, aggressive, and nonshy/nonaggressive children for anger. Children were asked

to rate how angry they would feel on a scale of one to five. The narrow range of this scale may have limited children's responses, and, consequently, the variability among shy, aggressive, and nonshy/nonaggressive children. In addition, aggressive children may not have reported higher levels of anger than shy or nonshy/nonaggressive children, particularly in the ambiguous and hostile scenarios, because they did not find these situations any more threatening than other children, and, as a result, did not experience an increase in their arousal level.

Interpretation of Emotion (Other)

Because a hostile attribution was expected to be associated with a protagonist's feelings of anger (Keane & Parrish, 1992; Lemerise et al., 2005), and because aggressive children were expected to experience higher arousal levels in threatening situations (Dodge & Newman, 1981), it was hypothesized that aggressive children would rate a protagonist as angrier than other children in ambiguous situations. Contrary to these expectations, shy children described a protagonist as angrier than aggressive or nonshy/nonaggressive children in the ambiguous situations involving the homework paper or the drinking fountain. Perhaps, shy children viewed a protagonist as more threatening (i.e., angrier) than other children because they

were more scared in scenarios in which a protagonist's intent was unclear which, in turn, increased their ratings of a protagonist's negative affect. By deciding that a negative outcome was unintentional, even though they thought a protagonist was very angry, shy children might have been attempting to diffuse the situation and to avoid social disapproval.

It is also possible that aggressive children did not attribute feelings of anger to a protagonist because they did not understand the relation between emotion and cognition, instead seeing them as separate entities. Aggressive children may not consider another child's emotional state important when interpreting a social situation or they may lack the ability to understand that other children's experience of emotion may provide important information in a social interaction. Additionally, in most school systems, children are often reminded by staff that aggressive behaviors are not acceptable solutions to conflicts. Because aggressive children are often identified as the ones that start fights, are mean to other children, and hurt other children (Cassidy & Asher, 1992; Hartup, 1974; Parke & Slaby, 1983), their behaviors are more likely to be targeted as inappropriate by teachers and other adults. If anger leads to aggressive behavior, as proposed

by Graham et al. (1992), then aggressive children may have also assumed that anger was an unacceptable feeling for themselves, and others, and not reported it. Because aggressive behaviors are not characteristic of shy children, it is likely that shy children are not the focus of this type of staff intervention. Therefore, their biases in social information processing are unlikely to be modified.

Although not predicted, shy boys rated a protagonist as angrier and as sadder than shy girls in the homework paper and the drinking fountain ambiguous scenarios, and as sadder in the prosocial scenario. In addition, aggressive girls rated a protagonist as sadder in the accidental scenarios than aggressive boys. These results contradict a previous finding which indicated that neither boys nor girls differed in the emotions attributed to a protagonist (Strayer, 1989). It was not clear how a child's behavior pattern contributed to these gender differences, although Crick and Dodge (1994) proposed that children with behavior patterns that are gender atypical (i.e., shy boys, aggressive girls) may be more apt to process social information in a manner that is particularly deviant. It is also possible that the boys identified as shy and the girls identified as aggressive in this study are not representative of the populations of shy boys and aggressive girls.

In the accidental scenarios, aggressive boys rated a protagonist as happier and as more thankful than aggressive girls. Due to the lack of previous research in this area, it is not clear what contributed to this finding. Perhaps, aggressive boys, realizing that a negative outcome was unintentional, suppress the tendency to retaliate aggressively, and this decision leads them to believe that a protagonist would feel happy and thankful about their decision not to retaliate.

Behavioral Responses

Contrary to predictions and previous research findings (Bell-Dolan, 1995; Dodge, 1980; Dodge & Somberg, 1987; Gouze, 1987; Milich & Dodge, 1984; Richard & Dodge, 1982; Rubin & Clark, 1983), aggressive children were not more likely to endorse aggressive responses, and shy children were not more likely to favor passive/withdrawn responses in the ambiguous scenarios. Considering that one of Dodge's (1986) basic tenets of social information processing is that each step influences, or is influenced by, the next step, and that shy, aggressive and nonshy/nonaggressive children's attributions of intent did differ in the two scenarios involving the homework paper and the drinking fountain, it is not clear why children's endorsement of various behavioral responses did not reflect this divergence.

One possible explanation is that with the introduction of bullying programs in many schools, aggressive children, in particular, might have been more aware than shy children or nonshy/nonaggressive children that inappropriate responses to challenging situations (i.e., fighting, tattling) are not socially acceptable, and decided to choose a behavioral response that they have been instructed is acceptable. Supporting the feasibility of this explanation, Richard and Dodge (1982) found that popular, aggressive, and isolate children recognized and chose the most socially appropriate response a majority of the time in social situations. Children may be more likely to recognize the appropriate response when provided with various behavioral possibilities, and tailor their responses to reflect this understanding. Therefore, the format used for this question may have minimized differences among shy, aggressive, and nonshy/nonaggressive children. An open-ended question format or observation of children's actual behavior in social situations may provide a more accurate assessment.

In accord with previous research findings showing that boys were more likely to endorse aggressive responses than girls (see Parke & Slaby, 1983, for a review), it was not surprising that, in general, boys rated "having it out with this kid right then and there" and "get even with this kid"

more favorably than girls in the ambiguous scenarios and the accidental scenarios.

Interpretation of Emotion (Self After Responding)

Assuming that children with certain behavioral patterns will process social information in a particular way (Crick & Dodge, 1994), and that accessing a behavioral response may modify one's emotional state or cue a particular emotion (Lemerise & Arsenio, 2000), children's evaluation of their emotional state after choosing a behavioral response was assessed. Although it is difficult to draw conclusions because there was no effect of behavior pattern on the type of responses endorsed, gender does seem to be a factor at the behavioral response step and at this step.

As noted previously, boys rated aggressive responses more favorably than girls. In addition, after selecting a behavioral response, boys described themselves as angrier than girls in the accidental and the ambiguous scenarios involving the line at the school bus and the haircut, replicating Strayer's (1989) previous finding that boys report more anger than girls. Based on Lemerise and Arsenio's (2000) premise that accessing a particular behavioral response may cue certain emotions, it is plausible that endorsement of an aggressive response may cue feelings of anger.

In both the hostile scenario and the accidental scenarios, shy children described themselves as feeling more scared after choosing a behavioral response than aggressive or nonshy/nonaggressive children. Although shy children were predicted to experience more anxiety in social situations than other children, the selection of a behavioral response was expected to decrease their level of anxiety and, perhaps, to correspond with an experience of relief. It is possible that shy children continue to consider the situation threatening, concerned that a protagonist will continue the interaction in an aggressive manner. Shy children also described themselves as sadder than other children in the hostile scenario. Because shy children seek social approval in social situations, as a target of a negative outcome that was caused intentionally, shy children may assume that a protagonist does not like them, which, in turn, results in feelings of sadness.

Interpretation of Emotion (Other After Responding)

Based on the assumption that emotion plays an important role in social information processing (Crick & Dodge, 1994; Dodge, 1991), it was deemed important to determine if children with certain social behavior patterns differ in their evaluation of another child's emotional state after a behavioral response has been selected. A protagonist's

emotional state after a response has been chosen could provide important information about how the social situation is proceeding, and whether a situation was a success or a failure (Lemerise & Arsenio, 2000). Crick and Dodge (1994) also assumed that children's responses at the response step would influence their interpretation of a protagonist's emotional state.

Unfortunately, support for these assumptions is limited because, in the present study, there were no major effects of behavior pattern on the type of responses endorsed. Although the source of the significant behavior pattern could not be determined, both aggressive and shy children described the protagonist as sadder in the hostile scenario than nonshy/nonaggressive participants. Perhaps due to higher arousal levels, shy children and aggressive children's experience of emotion was more intense than nonshy/nonaggressive children. However, attributing feelings of sadness to a protagonist in a hostile situation was unforeseen. It is possible that the sadness ascribed to a protagonist was associated with regret at causing the negative outcome or regret at directing a negative outcome towards a participant. In addition, the aggressive group described a protagonist as more thankful than the shy group

and the nonshy/nonaggressive group. It is not clear what contributed to this finding.

Pertinent to the prosocial scenario, depicted as another child saving a participant from getting hit with an easel in art class, shy children described a protagonist as more relieved than aggressive or nonshy/nonaggressive children. Based on the scenario description, a protagonist's feelings of relief would be considered an appropriate emotional response, and shy children's higher arousal levels in social interactions may have contributed to their higher ratings of a protagonist's experience of relief.

Chapter 6

UNRESOLVED ISSUES AND PREDICTIONS: EXPERIMENT 2

Unresolved Issues

Although the first study yielded some useful information about shy children's and aggressive children's differences in processing social information, it constitutes a quasi-experimental design. As such, its findings can be used only for predicting behavior differences and not for explaining why they occur. Differing knowledge of others' emotional states could cause aggressive children to exhibit a hostile intent bias and shy children to underattribute hostility in social situations. By manipulating the emotional state ascribed to a protagonist in an experimental paradigm, the second study attempted to determine if interpretation of emotion in others plays a causal role in the attribution of hostile versus benign intent.

As stated previously, Lemerise et al.'s (2005) findings had not been published at the time this research was initiated and completed. Therefore, as the only controlled experimental study available at the time this research design was conceived, Keane and Parrish (1992) did not find that rejected children altered their interpretation of hostile intent when the emotional state of the protagonist was labeled for them. Thus, they obtained no support for the

hypothesis that misinterpretation of emotion in others causes rejected/aggressive participants to infer hostile intentions. However, reexamination of this possibility is warranted because of the following methodological problems with their study.

The major concern involves verification of whether participants actually perceived a protagonist's true emotional state. Although Keane and Parrish (1992) verified that participants actually saw the actions of the protagonist, they did not ask children to recall the emotional information provided by the experimenter just prior to inferring intent. It is possible that rejected children (a) rapidly forgot the emotional information given by the experimenter, or (b) reinterpreted it in a distorted form.

A second methodological problem with Keane and Parrish's (1992) study involves the identification of participants. Children identified as rejected were not classified as aggressive or withdrawn. Previous researchers have found that rejected children can include children who display aggressive, withdrawn, or aggressive and withdrawn behavior (French, 1988, 1990; Milich & Landau, 1984; Peery, 1979; Rubin & Mills, 1988; Waas, 1988). Because withdrawn participants may underattribute hostility and aggressive

participants overattribute it, it is possible that any differences found in the Keane and Parrish study were confounded and diluted. The identification of a more homogenous sample, such as only aggressive children, would address this concern.

Another issue warranting study is whether Keane and Parrish (1992) utilized too few emotional states to adequately test whether aggressive children (or possibly shy children) are unable to (a) integrate emotional information or (b) exhibit a distortion in the perception of emotions. Keane and Parrish used only two emotional states, anger and happiness, to examine emotion's role in the determination of intent. Children with different behavior patterns may ignore or distort some emotional states, but not others. For example, it is possible that aggressive children do not encode or interpret happiness accurately in others, but attend to and interpret anger, fear, or sadness correctly.

The emotional state, sadness, has been selected for interpretation, in conjunction with happiness and anger (as utilized by Keane and Parrish, 1992), because children's interpretation of intent in response to a protagonist's emotional state of sadness has not been studied. In addition, sadness and anger are often both experienced in reaction to a loss or an aversive state (Stein, Trabasso, &

Liwag, 1993). For example, a young girl watches her best friend break her favorite toy. She experiences sadness because her toy cannot be fixed, but she is also angry because her best friend broke the toy on purpose. This example also illustrates how sadness and anger differ. Sadness is experienced when the loss or aversive state is irreversible, whereas anger is felt because a person believes that the conditions surrounding a loss or an unpleasant state are changeable (Stein et al., 1993). Stearns (1993) also describes sadness as an emotion that arises when nobody is at fault, whereas anger is more frequently displayed when someone else is responsible for a situation. Therefore, if the protagonist's emotional state is labeled as sad, the intent of a protagonist would most likely be considered accidental, whereas labeling the protagonist's emotion as angry would likely result in a hostile interpretation.

If interpretation of a protagonist's emotional state is a partial cause of the attributional bias exhibited by aggressive children and shy children, then asking them to recall a protagonist's emotional state may help elucidate if, and how, they are encoding the emotional information. If a shy child or an aggressive child responds, "I don't know," this answer would suggest that the emotional state of a

protagonist is not being encoded. If an aggressive child responds, "The kid is angry," when the actual state of a protagonist was described as sad, this response would suggest that the information is being distorted. Anger would be the expected distortion because a hostile intent is associated with an angry emotional state (Keane & Parrish, 1992). Likewise, it would be expected that if a shy child is distorting a protagonist's emotional state, a possible response would be, "The kid is sad," when the actual state was described as angry. Sad would be the expected response because sadness is related to an accidental cause, thereby avoiding social disapproval.

Predictions

The second study examined whether misperception of the emotional state of others is a partial cause of the hostile intent bias, as well as the underattribution of hostility in social situations. Fourth- and fifth-grade children were asked to participate in this study because Keane and Parrish (1992) utilized a similar age group and because the basic emotions of happy, sad, and angry are clearly understood at this age. Developmental differences were not expected between these two grades because previous research with fourth- and fifth-grade children has not found any age effects (Dodge & Somberg, 1987; Quiggle et al., 1992).

Children were categorized as aggressive, shy, or nonaggressive/nonschy and then assigned to either a labeling condition or a no labeling condition. In the labeling condition, the experimenter provided the emotional state of a protagonist in a social situation and participants restated that label just prior to inferring intent. It was assumed that the requisite of relabeling ensured participants' correct encoding of a protagonist's emotional state. In the no labeling condition, the emotional state of a protagonist was not given to a participant. In both conditions, children were asked if a protagonist committed the negative outcome on purpose or if it was an accident.

If the attributional biases shown by aggressive children and shy children were due to their misinterpretation of a protagonist's emotion, then it was hypothesized that when they reaffirmed and relabeled a protagonist's true emotional state just prior to interpretation, aggressive children would not display the hostile attribution bias and shy children would not underattribute hostility in social situations. When the emotional state of a protagonist was described as angry, all participants in the labeling condition were expected to make a hostile attribution. When the protagonist's emotional state was depicted as happy or sad, all participants were

expected to respond that the negative outcome was an accident. Because boys and girls did not differ in the type of emotions attributed to a protagonist (Strayer, 1989), and because Keane and Parrish's (1992) findings were not dependent on gender, no gender differences were predicted. In the no labeling condition, it was predicted that aggressive children would exhibit the hostile attribution bias in all of the stories and shy children would attribute an accidental intent to a protagonist in all of the stories.

Chapter 7

METHOD: EXPERIMENT 2

Participants

Over 60 elementary schools were invited to partake in the second study. Administrators at eight schools, located in Canaan, Mexico, Dover-Foxcroft, Hermon, Lincolnville, Wilton, Searsmont, and Blue Hill, Maine agreed to allow their fourth- and fifth-grade classes to participate. Children's participation in the study was based on written consent from legal guardians (see Appendix K for parental consent form) and children's assent (see Appendix E for the verbal script). Fourth- and fifth-graders had not participated in the first study and had no knowledge of the first study. Of the 650 consent forms distributed, 465 consents (72%) were returned, and a total of 352 (76%) students received permission to take part in this study (see Appendix L for detailed information regarding the percentage of students participating from each classroom). The majority of these participants were Caucasian and from lower- to middle- income families.

Similar to the first study, children with special needs and children with English as their second language were able to participate, but their data were not included in the analyses to ensure that the sample was as homogenous as

possible. Data from 12 children were not included because of a learning disability or a psychiatric diagnosis (i.e., Major Depression, Autism, Asperger's Syndrome, Attention Deficit Disorder, short term memory problems). As a result, 338 children (M age = 125.35 months, SD = 7.96) participated in this study. The number of children identified as aggressive, shy, or nonshy/nonaggressive will be presented after the selection criteria have been discussed.

Task Overview

The purpose of the second experiment was to determine if interpretation of emotion was a source of the hostile intent bias in aggressive children and the underattribution of hostility in social situations by shy children. In order to elucidate the role that emotion may play in the determination of intent, the emotional state of a protagonist in a social situation was provided to some participants, but not others. Similar to the first experiment, rapport with the fourth- and fifth-graders was established by spending approximately two hours with them during their school day.

As in the first study, a modified version of Cassidy and Asher's (1992) behavior rating scale was given to classroom teachers to complete. Based on these results, a research assistant identified children as shy, aggressive,

or nonshy/nonaggressive. Based on gender and on similarity of teacher ratings for the shy and the aggressive behavioral dimensions, children were paired within each behavior pattern. Once children were paired, they were randomly assigned to the label condition or the no label condition. Then, children were asked to participate in an individual session. The experimenter had no knowledge of a participant's behavior pattern in the individual sessions.

As stated previously, in the individual session, children of each behavior pattern were assigned to either a label condition, or a no label condition. In the label condition, prior to the experimenter reading a story about a fictional social situation, participants were told the emotional state of a protagonist. In the no label condition, children were not given any information about a protagonist's emotional state. In both conditions, after the story was read, the experimenter asked the child if the protagonist committed the negative outcome on purpose or by accident. The participant was also asked to rate, on a scale of 1 (*a little sure*) to 5 (*very sure*), how sure he or she was. In addition, in the label condition, just prior to questioning a child about the intent of a protagonist, each participant was asked to recall the emotional state of a protagonist. The experimenter recorded all responses,

including "I don't know." If their response was incorrect or noncommittal, participants were reminded of the correct emotional state of a protagonist. Once participants had been reminded of the correct emotion, they were asked again how a protagonist felt to ensure that the emotion label was being encoded correctly. This process was repeated until a participant recalled the emotional state accurately. The number of reminders given to a participant also was recorded.

Materials

The Cassidy and Asher (1992) instrument, described in the first experiment, was also used in the second experiment to categorize children as aggressive, shy, or nonaggressive/nonshy (pp. 79-81). In addition, seven fictional stories were prepared. One of the seven stories was used as a practice story to familiarize participants with the procedure. The intent of a protagonist was portrayed as ambiguous in all the scenarios. One version of each story contained no information about a protagonist's emotional state (see Appendix M for a complete description of each scenario). In a second version of each story, the emotion of a protagonist was identified as scared (for the practice story only), angry, happy, or sad (for two stories each) prior to reading the story (see Appendix N for a

complete description of each scenario). Each of the six scenarios used for data analyses was presented in the first position twice with the remaining five scenarios presented in random order.

Testing Procedure

Classroom teachers were given the modified Cassidy and Asher (1992) behavior rating scale to complete for each student that had received parental permission. The same instructions given in Experiment 1 for the Cassidy and Asher (1992) instrument were also used in Experiment 2. At the conclusion, teachers were thanked for their support and help.

The same screening procedure used in Experiment 1 was also used for Experiment 2 (p. 83). Of the 338 fourth- and fifth-graders participating in the screening process, 188 students were classified as aggressive, shy, or nonshy/nonaggressive, (see Appendix O for descriptive statistical information and rater information). After children were classified as aggressive, shy, or nonshy/nonaggressive, they were paired based on gender and similarity of aggressive and shy ratings. The matching procedure resulted in 26 aggressive pairs (16 boys and 10 girls), 29 shy pairs (12 boys and 17 girls), and 37 nonshy/nonaggressive pairs (17 boys and 20 girls). Within

each pair, one child was randomly assigned to either the no label condition or the label condition, and the remaining child was assigned to the other condition by default (see Table 7.1 for mean aggressive and shy ratings for each behavioral pattern in the no label condition; see Table 7.2 for mean aggressive and shy ratings for each behavioral pattern in the label condition). Similar to the first study, the aggressive and the shy behavioral dimensions of Cassidy and Asher's (1992) behavior rating scale demonstrated satisfactory internal consistency, ($\alpha = .96$ and $\alpha = .85$, respectively).

Table 7.1

Mean Ratings for the Aggressive and Shy Behavioral Dimensions for Aggressive Boys and Girls, Shy Boys and Girls, and Nonshy/Nonaggressive Boys and Girls in the No Label Condition

		Rating Type	
Behavior		Aggressive	Shy
Pattern	Age	Rating	Rating
	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>
Aggressive			
Boys	127.94 (10.92)	3.23 (0.91)	1.31 (0.41)
Girls	127.20 (6.44)	2.94 (1.17)	1.30 (0.41)
Shy			
Boys	124.33 (9.25)	1.14 (0.22)	2.58 (0.68)
Girls	122.00 (7.59)	1.08 (0.19)	2.71 (0.54)
Nonshy/Nonaggressive			
Boys	126.18 (6.79)	1.04 (0.11)	1.12 (0.26)
Girls	121.50 (7.62)	1.02 (0.08)	1.23 (0.35)

Table 7.2

Mean Ratings for the Aggressive and Shy Behavioral Dimensions for Aggressive Boys and Girls, Shy Boys and Girls, and Nonshy/Nonaggressive Boys and Girls in the Label Condition

		Rating Type	
Behavior		Aggressive	Shy
Pattern	Age	Rating	Rating
	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>
Aggressive			
Boys	126.50 (8.48)	3.21 (0.82)	1.35 (0.33)
Girls	126.36 (7.92)	3.21 (0.67)	1.36 (0.43)
Shy			
Boys	127.75 (7.77)	1.00 (0.00)	2.89 (0.85)
Girls	123.47 (8.16)	1.14 (0.24)	2.77 (0.77)
Nonshy/Nonaggressive			
Boys	123.82 (9.56)	1.04 (0.11)	1.29 (0.35)
Girls	123.21 (7.04)	1.02 (0.08)	1.23 (0.37)

After children were randomly assigned to one of two conditions, the experimenter saw each child individually. In the no label condition, a child was instructed to imagine that he or she was the target of the negative outcome in each of the seven stories that the experimenter was going to

read. No information about the emotion of a protagonist was given. Immediately after hearing each story, the experimenter asked a child if a protagonist committed the negative outcome on purpose or by accident. Children were also asked to rate on a scale of one to five how sure they were. The higher the rating, the more confident a participant was about the intent of a protagonist. Participants recorded their answers in a booklet.

In the label condition, participants were also asked to imagine themselves as the target of the negative outcome in the stories that the experimenter was going to read. Although the intent of a protagonist in each social dilemma was portrayed as ambiguous, the type of emotion ascribed to a protagonist varied. The emotional state of a protagonist was identified as scared (practice story only), happy, angry, or sad. The emotion information was provided to a participant before each scenario was read.

After the experimenter read a story, and to determine if the emotion had been encoded accurately, each participant was asked to identify the emotional state of the protagonist. If a response was correct, then a child was told that he or she was right. If a participant's answer was incorrect, he or she was reminded of the protagonist's

emotional state, and asked again to state the protagonist's mood. The experimenter recorded children's responses.

Next, children were asked if a negative outcome was committed on purpose or by accident, and then to indicate their confidence in the response. As in the no label condition, participants recorded their answers in a booklet provided by the experimenter (as shown in Question 2 of Appendix N).

At the conclusion of each individual session, participants were asked if they had any questions. Once all questions had been answered, participants were thanked for their help and cooperation and taken back to the classroom.

Chapter 8

RESULTS: EXPERIMENT 2

Initial Multivariate Analyses of Variance

Analysis of the Ambiguous Practice Story

To familiarize participants with the protocol and questions for the second study, all participants received a practice story. The practice story was chosen randomly from the first study, depicting the intent of a protagonist as ambiguous and the outcome of the scenario as negative. The emotional state ascribed to a protagonist in the label condition was scared. Children's responses to the practice story were analyzed using a 3 x 2 x 2 (Behavior pattern: Aggressive, shy, and nonshy/nonaggressive x Gender x Condition: Label and no label) Multivariate Analysis of Variance (MANOVA) with condition treated as a within subjects factor because children were paired according to their identification as shy, aggressive or nonshy/nonaggressive and their gender. No significant differences were found, $F(1, 86) = 2.14, p = .147$. Similar to the finding in the first study, specific to this scenario, all participants interpreted a protagonist's intent as hostile.

Analysis of the Six Ambiguous Scenarios Utilized for the Label/No Label Condition

Initially, all of the children's responses in each of the six stories were analyzed using a 3 x 2 x 2 (Behavior pattern: Aggressive, shy, and nonshy/nonaggressive x Gender x Condition: Label versus no label) Multivariate Analysis of Variance (MANOVA). It was predicted that labeling the emotional state of a protagonist would eliminate aggressive and shy children's attributional biases in ambiguous situations. All participants were expected to attribute a hostile intent to a protagonist when the emotional state was labeled as angry, and an accidental intent when a protagonist's emotional state was depicted as happy or sad. When no emotional label was provided, it was expected that aggressive children would display the hostile attribution bias and that shy children would decide that a protagonist had not acted intentionally.

The multivariate tests were not significant for behavior pattern, gender, or interactions between behavior pattern, gender, and condition. They were significant for condition, $F(6, 171) = 3.25, p = .005$. Examining univariate tests, a significant finding was obtained in the story about a child's new shoes getting muddy as a result of being bumped, $F(1, 176) = 9.40, p = .003$. Children were more

likely to interpret the intent of a protagonist as hostile when a protagonist's emotional state was labeled as angry than when no label was provided.

Possible Confounding Factor of Story Order. Because only one significant effect was found when all of the children's responses were analyzed, it is possible that the order of the stories may have been a confounding factor. Of the 144 possible orders, 87 of them had a sample size equal to, or less than, one. Therefore, it was not practical to complete a MANOVA with order as a factor. However, knowing that the order of the stories may be a problem, each of the six stories was presented in the first position twice with the remaining five stories presented in different orders. Within each behavior pattern, one child in each pair received information about a protagonist's emotional state, and the other child in the pairing received the stories in the same order but without any emotional information. As a result, participants' responses to the first story in each order were not contaminated by order, and a decision was made to analyze children's responses to the first story only.

In addition, to assess whether stories presented in the first position and labeled with identical emotions could be treated as reflecting a common emotion, a conservative

approach was taken. T-tests were performed between each pair of happy stories, each pair of angry stories, and each pair of sad stories within each behavior pattern (aggressive, shy, and nonshy/nonaggressive), and within each condition (label and no label). Because only one such test reached significance out of a possible eighteen comparisons, the decision was made to collapse the pairs of stories.

Multivariate Analysis of Variance Utilizing Children's Responses to the First Story Only

Examining participant's responses to the first story only, and combining the stories with the same emotions, resulted in a $3 \times 3 \times 2 \times 2$ (Behavior pattern: Aggressive, shy, or nonshy/nonaggressive \times Scenario \times Gender \times Condition: No label or label) Multivariate Analysis of Variance (MANOVA) with condition treated as a within subjects factor because same sex participants with similar behavior ratings were paired within each behavioral group (see Table 8.1 for complete analysis of variance). For shy, aggressive, and nonshy/nonaggressive children, all predictions were based on analysis of the three-way interaction between behavior pattern, scenario, and condition. Given that the three-way interaction between behavior pattern, scenario, and condition was significant, $F(4, 74) = 3.90, p = .006$, each prediction was examined

further with simple effects tests. The results are presented according to behavior pattern, starting with the predictions for each group.

Table 8.1

MANOVA Summary Table for Behavior Pattern, Scenario Type, Gender, and Condition

Source	df	F	p
Between subjects			
B	2	5.17**	.008
S	2	6.93**	.002
G	1	2.91	.092
B x S	4	0.28	.889
B x G	2	1.13	.327
S x G	2	0.31	.735
B x S x G	4	1.02	.404
Error term 1	74	(7.61)	
Within subjects			
C	1	8.12**	.006
B x C	2	6.19**	.003
S x C	2	6.40**	.003
G x C	1	2.48	.120
B x S x C	4	3.90**	.006
B x G x C	2	8.49***	.000
S x G x C	2	0.93	.401
B x S x G x C	4	1.78	.142
Error term 2	74	(6.69)	

Note. Values in parentheses are mean square errors. B =

behavior pattern; S = scenario type; G = gender; C = condition. $**p < .01$. $***p < .001$.

Shy Children Comparisons: Label Versus No Label Condition

As documented in earlier research (Harrist et al., 1997), shy children were expected to respond that a negative outcome was committed by accident in ambiguous situations (i.e., the no label condition). Based on Crick and Dodge's assumption that emotion is an integral part of each step of social information processing, and Keane and Parrish's (1992) hypothesis that labeling the emotional state of a protagonist would alter children's interpretation of others' intent, shy children's responses were predicted to differ from the no label condition when a protagonist's emotional state was labeled as angry. That is, shy children were expected to display a hostile attribution when they were told that a protagonist was angry. Labeling a protagonist's emotional state as sad or happy was not predicted to alter the type of attribution shy children made. As in the no label condition, a benign interpretation was expected.

As can be seen in Table 8.2, shy children were significantly more likely to interpret the intent of a protagonist as accidental when no emotional information was provided ($M = 3.20$, $SD = 1.23$), whereas when the emotional

state was labeled as angry, shy participants attributed a hostile intent to a protagonist ($M = -1.40$, $SD = 2.99$), $F(1, 74) = 15.81$, $p = .000$. This finding supports Crick and Dodge's (1994) assumption that emotion plays an integral role in social information processing and Lemerise and Arsenio's (2000) belief that the emotional state of others is an important cue when processing information in social interactions. It also provides evidence that the provision of emotional information can modify a child's interpretation of intent in social situations (Keane & Parrish, 1992).

Table 8.2

Mean Intentionality Ratings

Scenario	Condition	Behavior pattern		
		Aggressive	Shy	NS/NA
	No Label	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)
Scenario 1:	none	0.40 (3.34)	3.10 (2.33)	2.58 (2.15)
Scenario 2:	none	0.56 (3.21)	3.20 (1.23) ^a	1.00 (3.67)
Scenario 3:	none	3.29 (0.95) ^b	1.56 (2.92)	0.54 (3.36)
	Label			
Scenario 1:	Happy	2.60 (3.31)	3.60 (1.43)	3.17 (1.12)
Scenario 2:	Angry	-1.22 (3.66)	-1.40 (2.99) ^a	1.25 (3.52)
Scenario 3:	Sad	-3.29 (2.43) ^b	0.11 (3.92)	2.08 (2.29)

Note. NS/NA = Nonshy/nonaggressive. Identical superscripts indicate significant mean differences within the 3-way interaction at $p < .001$.

Although not predicted, it is also possible that the provision of an emotional state that is congruent with a particular attributional bias may strengthen a participant's confidence in his or her response (Kimble & Garnezy, 1963; Lemerise & Arsenio, 2000; Longstreth, 1968). Therefore, if shy children have a propensity to underattribute hostility in ambiguous situations, the provision of the emotion

labels, happy and sad which are assumed to be associated with a benign intent, may have increased children's confidence in their decision about a protagonist's intent. Although not significant, $F(1, 74) = .19, p = .667$, as is apparent in Table 8.2 (p. 172), shy children were more sure that a negative outcome was an accident when a protagonist was described as happy ($M = 3.60, SD = 1.43$) than when no label was provided ($M = 3.10, SD = 2.33$). An opposite pattern was evident when a protagonist's emotional state was labeled sad. Although the difference was not significant, $F(1, 74) = 1.40, p = .240$, shy children were less confident that a negative outcome was an accident when a protagonist was described as sad ($M = 0.11, SD = 3.92$) than when no emotional information was given ($M = 1.56, SD = 2.92$; see Table 8.2, p. 172).

Aggressive Children Comparisons: Label Versus No Label Condition

Based on the assumption of social information processing theory that children with certain behavior patterns process social information in a particular way (Crick & Dodge, 1994), and also on previous research findings (see Crick & Dodge, 1994, for a review), it was predicted that aggressive children would interpret a protagonist's intent as hostile in the no label condition.

Because encoding and interpreting another person's emotional state in a social situation is assumed to affect children's attributions of intentionality (Keane & Parrish, 1992; Lemerise & Arsenio, 2000), labeling a protagonist's emotional state as sad or happy was expected to reduce or eliminate aggressive children's propensity to interpret the intent of a protagonist as hostile in ambiguous situations. Aggressive children were expected to respond more frequently that a negative outcome was unintentional when a protagonist's emotional state was labeled as sad or happy. Therefore, differences between the label and no label condition were expected for the emotions, sad and happy; whereas no differences were predicted between the label and no label condition for the emotion, angry.

As shown in Table 8.2 (p. 172), the results indicated that aggressive children were confident that a negative outcome was intentional when a protagonist's emotional state was labeled as sad ($M = -3.29$, $SD = 2.43$), and they were equally confident that a protagonist had committed a negative outcome by accident when no emotional information was provided in the corresponding stories ($M = 3.29$, $SD = 0.95$), $F(1, 74) = 22.59$, $p = .000$. Although this finding was significant, and provided support for Keane and Parrish's (1992) assumption that manipulating an emotional state of a

protagonist would modify children's interpretation of a protagonist's intent, it was in the opposite direction of the original prediction. Nevertheless, this finding supports Crick and Dodge's (1994) assumption that variation in the interpretation of affect in others affects aggressive children's interpretation of the motives of others.

Comparing situations in which a protagonist's emotional state was labeled as happy to the corresponding scenarios that provided no emotional information, aggressive children's responses did approach significance, $F(1, 74) = 3.62$, $p = .061$. As can again be seen in Table 8.2 (p. 172), and consistent with the prediction that labeling a protagonist's emotional state as happy would alter aggressive children's attribution of intent, aggressive children were more sure that a protagonist's intent was benign when a protagonist's emotional state was labeled as happy ($M = 2.60$, $SD = 3.31$) than in the no label condition ($M = 0.40$, $SD = 3.34$).

As expected there were no differences between the label and the no label condition when a protagonist's emotional state was labeled as angry, $F(1, 74) = 2.13$, $p = .149$. Although the finding was not significant, aggressive children were more sure of a protagonist's motive when a protagonist's emotional state was described as angry ($M =$

-1.22, $SD = 3.66$) than when no emotional information was provided in the corresponding stories ($M = 0.56$, $SD = 3.21$). It is possible that providing children with an emotional cue that is congruent with their attribution bias may strengthen their dominant response (Kimble & Garnezy, 1963; Lemerise & Arsenio, 2000; Longstreth, 1968).

Nonschy/Nonaggressive Children Comparisons: Label Versus No Label Condition

One of the assumptions of social information processing theory is that emotional cues influence children's interpretation of intent in social situations (Crick & Dodge, 1994; Lemerise & Arsenio, 2000). Providing support for this assumption, Keane and Parrish (1992) found that popular children were more likely to decide that a negative outcome had been committed on purpose when a protagonist's emotional state was described as angry than when an emotional state was labeled as happy or when no emotional information was provided. Based on this finding, nonschy/nonaggressive children in this study were also expected to endorse a hostile interpretation when a protagonist's emotional state was labeled as angry. Therefore, the only difference expected between the label and the no label condition was for the emotion, angry. Nonschy/nonaggressive children's responses were not expected

to differ from the no label condition when a protagonist was depicted as happy or sad.

Contrary to expectations, nonshy/nonaggressive children did not attribute a hostile intent to a protagonist when an emotional state was labeled as angry. As can be seen in Table 8.2 (p. 172), they believed that a protagonist committed a negative outcome accidentally both in the label ($M = 1.25$, $SD = 3.52$) and in the corresponding no label condition ($M = 1.00$, $SD = 3.67$), $F(1, 74) = .06$, $p = .814$.

As expected, nonshy/nonaggressive children's responses did not differ significantly between the no label and the label condition for the emotions, happy, $F(1, 74) = .31$, $p = .582$, and sad, $F(1, 74) = 2.30$, $p = .134$. Although the findings were not significant, nonshy/nonaggressive children were more sure that a negative outcome was an accident when a protagonist's emotional state was labeled as happy ($M = 3.17$, $SD = 1.12$) or sad ($M = 2.08$, $SD = 2.29$) than when no information was provided about a protagonist's emotional state ($M = 2.58$, $SD = 2.15$ and $M = 0.54$, $SD = 3.36$). As presented in Table 8.2 (p.172), this pattern of results is consistent with Lemerise and Arsenio's (2000) notion that emotional cues can facilitate attributional biases, and with Keane and Parrish's (1992) finding that popular children are more likely to decide that a negative outcome was an

accident when a protagonist was described as happy than when a protagonist was labeled as angry or when no emotional information was provided.

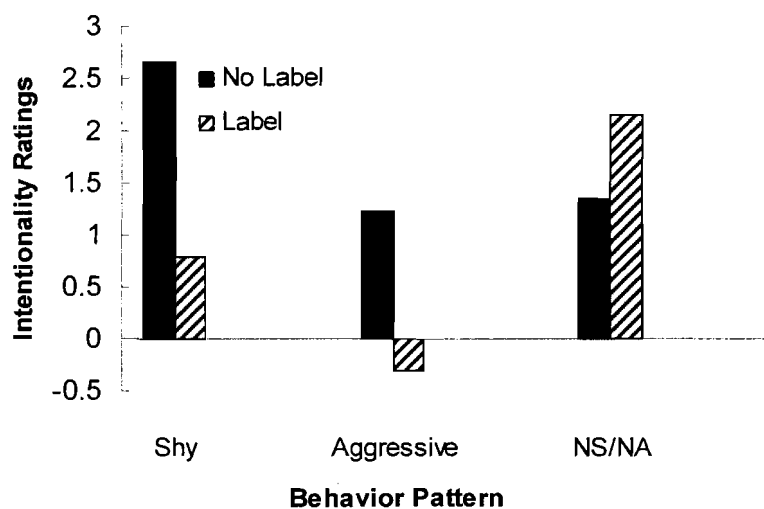
Additional Findings

Significant Main Effects and Two-Way Interactions

A significant main effect for behavior pattern, $F(2, 74) = 5.17, p = .008$, was obtained and qualified by a significant interaction between behavior pattern and condition, $F(2, 74) = 6.19, p = .003$, (see Figure 1). Further analysis of the significant interaction with simple effects tests revealed that aggressive children were more likely to interpret the intent of a protagonist as accidental in the no label condition ($M = 1.23, SD = 3.02$), whereas the hostile attribution bias was exhibited in the label condition ($M = -0.31, SD = 3.98$), $F(1, 74) = 4.60, p = .035$. A significant finding also emerged for shy children. Shy participants were more confident that a negative story outcome was an accident in the no label condition ($M = 2.66, SD = 2.29$), than in the label condition ($M = 0.79, SD = 3.55$), $F(1, 74) = 7.51, p = .008$. No significant difference for the nonshy/nonaggressive group was obtained, $F(1, 74) = 1.82, p = .182$.

Figure 1. Intentionality Ratings as a Function of Children's Behavior Pattern and Label Versus No Label Condition.

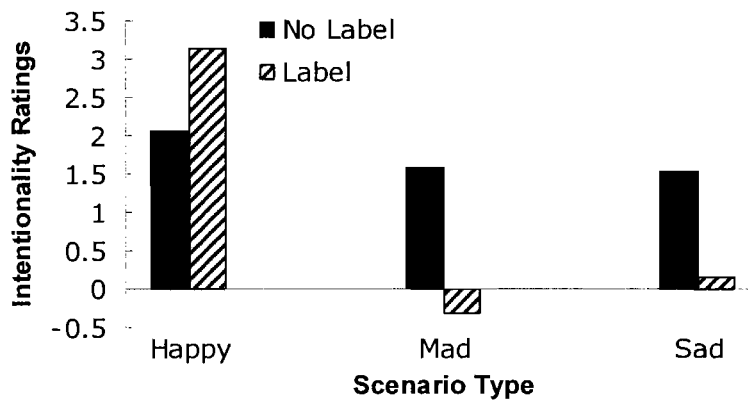
NS/NA = nonshy/nonaggressive.



As is apparent in Figure 2, a significant main effect for scenario type was also found, $F(2, 74) = 6.93, p = .002$, and also qualified by a significant interaction between story type and condition, $F(2, 74) = 6.40, p = .003$. Further analysis of the significant interaction with simple effects tests found that children were more likely to attribute a hostile intent to a protagonist when an emotional state was labeled as angry ($M = -0.32, SD = 3.53$) than when no label was provided ($M = 1.58, SD = 3.07$), $F(1, 74) = 8.39, p = .005$. Subsequent to this study, researchers have supported

this finding, confirming that children are more likely to attribute a hostile intent to an angry protagonist (Lemerise et al., 2005). The findings also indicated that children were less confident that a negative outcome was an accident when an emotional state was described as sad ($M = 0.17$, $SD = 3.55$) than when no emotional information was given ($M = 1.52$, $SD = 2.95$), $F(1, 74) = 3.92$, $p = .051$. No significant effect was found for the label, happy, when contrasted with the no label condition, $F(1, 74) = 3.92$, $p = .105$. Contrary to these findings, Lemerise et al., (2005) found that children made fewer hostile attributions when a protagonist was depicted as happy or sad.

Figure 2. Intentionality Ratings as a Function of Emotional State and Label Versus No Label Condition.



Gender Differences

Although no gender differences were predicted, a significant three-way interaction emerged between behavior pattern, gender, and condition, $F(2, 74) = 8.49, p = .000$. Further examination with simple effects tests revealed that, in contrast to aggressive boys, aggressive girls were more likely to believe that a negative outcome was an accident in the no label condition ($M = 1.90, SD = 2.18$), whereas when an emotional state of a protagonist was labeled, aggressive girls displayed the hostile attribution bias ($M = -2.60, SD = 3.31$), $F(1, 74) = 15.13, p = .000$. Likewise, in contrast to shy boys, shy girls were more confident that a negative outcome was an accident in the no label condition ($M = 3.47, SD = 1.42$), but were more apt to attribute a hostile intent to a protagonist in the label condition ($M = -0.06, SD = 3.40$), $F(1, 74) = 15.83, p = .000$. Compared to nonshy/nonaggressive boys, nonshy/nonaggressive girls were more sure that a negative outcome was an accident in the label condition ($M = 2.25, SD = 2.49$) than the no label condition ($M = 0.05, SD = 3.27$), $F(1, 74) = 7.23, p = .009$.

Participant's Recall of a Protagonist's Emotional State in the Labeled Condition

Because the ability to encode and to interpret the emotional state of others accurately has been proposed as an

important skill in social information processing (Lemerise & Arsenio, 2000), it was important to determine if the attributional biases that aggressive children and shy children exhibit were caused by difficulty encoding and/or misinterpreting a protagonist's emotional state. Analysis of children's recall/labeling errors found no difference between shy, aggressive or nonshy/nonaggressive children's correct recall of a protagonist's emotional state. Regardless of behavior pattern, children were proficient at recalling whether a protagonist was labeled as scared, happy, angry, or sad.

Chapter 9

DISCUSSION: EXPERIMENT 2

Overview

The majority of research in the area of social information processing has focused on children's cognitive processing in social situations, assuming that children with certain behavior patterns will process social information in a particular way (Crick & Dodge, 1994; Dodge, 1986). Although emotion has been proposed as an integral part of social information processing, only recently has an integrated model involving emotion and cognitive processing been defined and articulated (Lemerise & Arsenio, 2000). Specific to the second step of social information processing, the representation process, a person's ability to encode and to interpret the emotional state of others has been put forth as an important source for misinterpretation of social behavior in others (Keane & Parrish, 1992; Lemerise & Arsenio, 2000; Lemerise et al., 2005). For example, portraying a protagonist as angry in an ambiguous social situation may facilitate a hostile interpretation (Lemerise & Arsenio, 2000; Lemerise et al., 2005). In an initial study examining this assumption, Keane and Parrish (1992) manipulated a protagonist's emotional state to determine if its interpretation was partially causing

aggressive children's bias to decide that a protagonist had acted intentionally in ambiguous social situations. Although the results were inconclusive, perhaps due to methodological concerns stated previously (pp. 147-150), reexamination of this possibility seemed warranted.

Evidence supporting the notion that awareness of a protagonist's emotional state affects the attribution of intent in ambiguous social situations is demonstrated by several findings of Experiment 2. In general, children were more confident that a negative outcome was an accident when a protagonist's emotional state was not provided, than when it was. In particular, they were more likely to conclude that a protagonist had committed a negative outcome on purpose (i.e., engaged in a hostile act) when a protagonist was portrayed as angry or sad. These findings are consistent with the hypothesis that consideration of the emotional state of a protagonist contributes to attributions of intent, particularly when an emotional state is depicted as negative. Subsequent to this study, Lemerise et al. (2005) also found that children were more likely to attribute a hostile intent to an angry protagonist, and were less likely to attribute a hostile intent to a happy protagonist. However, when a protagonist was portrayed as sad, they found

that children were more likely to interpret a protagonist's intent as benign (Lemerise et al., 2005).

The ability to perceive and to interpret the emotional state of others is assumed to be an important source of information in social information processing. Supporting this notion, additional findings from Experiment 2 detail the differences between shy participants and aggressive participants.

Shy Children

Consistent with Lemerise and Arsenio's (2000) notion that other's emotional cues provide important information in a social interaction, the provision of an emotional cue affected shy children's interpretation of a protagonist's intent in ambiguous social scenarios. When the emotional state of a protagonist was not provided, they more frequently judged that a negative story outcome was an accident. However, describing a protagonist's emotional state as angry resulted in a marked change in participants' belief about a protagonist's intent. Compared to the no label condition, shy participants exhibited the hostile attribution bias when a protagonist was portrayed as angry. This finding is consistent with the prediction that depicting a protagonist's emotional state as angry would lead to a hostile interpretation; which was based on

Stearns' (1993) assumption that anger is experienced when someone else is responsible for the situation, and Keane and Parrish's (1992) contention that the ability to identify a protagonist's emotion affects children's interpretation of intent in social situations.

It was also predicted that describing a protagonist's emotional state as sad would be associated with a benign interpretation of a protagonist's intent, perhaps, even strengthening shy children's proclivity to underattribute hostility in social situations. Although not significant, shy children were actually less sure that a negative outcome was an accident when a protagonist's emotional state was labeled as sad. It is possible that shy children interpret nonhostile cues (e.g., sadness) as hostile. This explanation receives some support from Bell-Dolan's (1995) finding that, compared to their nonanxious peers, anxious children were less accurate at identifying nonhostile intent, and their errors presumed hostility.

Aggressive Children

Based on the assumption that social information processing varies as a function of social behavior pattern and children's interpretation of a protagonist's emotional state (Dodge, 1986; Lemerise & Arsenio, 2000), aggressive children were expected to display the hostile attribution

bias when no emotional information was given. The provision of an emotional cue, specifically the emotional states, sad and happy, was predicted to eliminate aggressive children's propensity to interpret ambiguous situations as hostile. In general, aggressive children were more likely to attribute an accidental intent to a protagonist when no emotional information was provided, contradicting previous findings (see Crick & Dodge, 1994, for a review); whereas when a protagonist's emotional state was given, aggressive children more frequently judged a protagonist's intent as hostile.

Specifically, labeling a protagonist's emotional state as sad was expected to provide information that a negative outcome was an accident, thereby decreasing aggressive children's tendency to infer hostile intent in ambiguous situations. Contrary to this prediction, aggressive children more often judged that a protagonist had acted intentionally when his or her emotional state was described as sad. The finding, although unexpected, is consistent with a small number of previous studies that found aggressive children misinterpret nonhostile cues (e.g., sadness) as hostile (Dodge, 1986; Waldman, 1996).

In accord with the prediction that aggressive children would modify their decision about motive when a protagonist was depicted as happy, aggressive participants were more

confident that a negative outcome was an accident when a protagonist was labeled happy. Their increase in confidence suggests that they modified their responses based on the emotional cue, happy. Perhaps, labeling a protagonist as happy provides evidence that a negative outcome was benign (i.e., happy people don't commit hostile acts).

Because a majority of the previous research has found that aggressive children attribute a hostile intent in ambiguous situations (see Crick & Dodge, 1994, for review), it is important to consider why aggressive children did not exhibit the hostile attribution bias in this study when a protagonist's emotional state was not provided. Although not recorded at the time participants were tested, bullying programs appeared to be prominent at the participating schools. Currently, seven of the eight participating schools include a bullying program as part of their curriculum. Such programs usually involve lessons on bullying, poster contests, speakers from the community, and/or skits performed by students. Many of the schools' programs also address bullying on an individual basis. Involvement in these programs may have made children, particularly aggressive children, more conscious of their inappropriate behavior and more aware of how others perceive their behavior. Due to participation in programs of this type,

aggressive children may have made an effort to suppress familiar aggressive responses in ambiguous situations in which no additional information was available (e.g., the no label condition).

Nonshy/Nonaggressive Children

Similar to shy children, nonshy/nonaggressive children were predicted to alter their interpretation of a protagonist's intent when a protagonist was portrayed as angry. Contrary to expectations, nonshy/nonaggressive children did not modify such interpretation. They were just as sure that a negative outcome was an accident when a protagonist was described as angry as when no emotional information was provided. Nonshy/nonaggressive children's pattern of results is consistent with Dodge and Newman's (1981) finding that nonaggressive boys based their interpretation of a protagonist's intent on more pieces of evidence than aggressive boys. Labeling a protagonist's emotional state as angry may not have been sufficient information to justify nonshy/nonaggressive children altering their original decision that a negative outcome was an accident.

Examination of Sad, Angry, and Happy Labels

Regardless of social behavior pattern, describing a protagonist's emotional state as sad was expected to be

associated with a benign intent. However, nonshy/nonaggressive children were the only group that exhibited the expected outcome. In an attempt to understand why aggressive children, and to some extent shy children, associated the label, sad, with a hostile attribution, the following possibilities are suggested. First, defining sadness as an emotional state that is experienced when no one is at fault may have been an oversimplification. In particular, Stearns (1993) suggested that anger, guilt, and sadness can be experienced together, and what causes a person to choose one emotion over another is unclear. It is possible that shy children and aggressive children equate sadness with anger and guilt and, in turn, associate those emotions with a hostile intent. The increase in confidence that nonshy/nonaggressive children experienced when a protagonist's emotional state was depicted as sad suggests that they view sadness as an emotion that occurs when no one is at fault. Depicting a protagonist as sad may have offered supporting evidence to nonshy/nonaggressive children's initial inclination that a negative outcome was an accident, resulting in higher intentionality ratings.

In addition, one's cultural background may influence how a child reacts to sadness. Stearns (1993) indicated that some cultures resolve their sadness through aggressive

behavior, whereas in other cultures, sadness may elicit help from others. Relative to the participants in this study, perhaps an aggressive child's display of sadness elicits a different response from family members than a nonshy/nonaggressive child's display. This information may contribute to the formation of self-schemas which, in turn, may contribute to how sadness in others is interpreted, and its relation to the attribution of intent in others.

Assuming that the emotional state of others is incorporated into children's self-schemas, perhaps children, depending on their social behavior pattern, categorize emotions (i.e., angry, sad, and happy) differently. Emotions can be conceptualized along a number of dimensions, including positive or negative (Shaver, Schwartz, Kirson, & O'Connor, 1987). Based on this classification, angry and sad would be considered negative emotions, and happy would be considered a positive emotion. If, as Dodge and Somberg (1987) suggest, aggressive children assume that negative affect is associated with hostility in others, then the emotions, angry and sad, would result in a hostile attribution, and happy, a positive emotion, would be associated with a benign intent.

Categorizing emotions as negative or positive, however, may be considered a less mature analysis, reflecting a

younger developmental level and an unawareness of the value of discriminating between the actual content of emotional states. Children's difficulty in understanding emotions may also lead to difficulties in regulating emotion and in social information processing (Saarni, 1999). Because aggressive children and shy children are assumed to experience higher arousal levels than nonshy/nonaggressive children (Dodge & Newman, 1981; Easterbrook, 1959), which, in turn, may disrupt the processing of social information, aggressive children and shy children may lack the necessary experience to discriminate between different emotions with the same valence and to understand the relation between emotion and intent. If nonshy/nonaggressive children are aware that emotions can differ on more than one dimension and incorporate that information into their self-schemas, along with their past experiences, then nonshy/nonaggressive children's assessment of a protagonist's motive may differ, depending on the emotional state attributed to a protagonist in a social situation.

Therefore, if aggressive and shy children classify emotions as negative or positive, associating negative affect with a hostile intent and positive affect with a benign intent, then describing a protagonist as angry or sad would facilitate a hostile attribution, and depicting a

protagonist as happy would be associated with a benign intent. On the other hand, if nonshy/nonaggressive children differentiate between negative emotions, in particular, and incorporate that information into their self-schemas, then portraying a protagonist as angry, sad, or happy may elicit different attributions of intent, particularly between the two negative emotions, angry and sad.

Certain findings of Experiment 2 support this explanation. When a protagonist was portrayed as angry or sad (both considered negative emotions), shy children and aggressive children were more confident that a negative outcome was committed on purpose, suggesting that they categorized angry and sad in a similar manner. Nonshy/nonaggressive children's decision about a protagonist's intent differed for the emotions, angry and sad. They were more confident that a negative outcome was an accident when a protagonist's state was described as sad than when a protagonist was portrayed as angry. Thus, it would appear that nonshy/nonaggressive children discriminate between negative emotions. Regardless of behavior pattern, all children associated a happy emotional state with a benign intent.

Based on Keane and Parrish's (1992) notion that provision of an angry label is associated with a hostile

attribution, it was predicted that all participants, regardless of behavior pattern, would decide that a protagonist had acted intentionally when he or she was depicted as angry. In other words, labeling a protagonist as angry would provide clear evidence that the negative outcome was committed on purpose. Consistent with the assumption that misinterpretation of intent in ambiguous situations is in part caused by how one interprets emotion in others (Keane & Parrish, 1992; Lemerise & Arsenio, 2000), aggressive children and shy children modified their decisions about a protagonist's intent when the label, angry, was given, believing that a protagonist had acted intentionally. In contrast, nonshy/nonaggressive children did not modify how they interpreted the action of others or the certainty of that decision when a protagonist was described as angry.

It is possible that, even though a protagonist's emotional state, angry, was a relevant cue, nonshy/nonaggressive children may have been reluctant to draw a conclusion about a protagonist's intent based on one piece of evidence. This possibility is consistent with Dodge and Newman's (1981) finding that nonaggressive/nonrejected children consider more pieces of evidence when deciding a person's guilt or innocence than aggressive children. Due to

higher arousal levels, aggressive and shy children may be engaging in preemptive processing, a rapid and automatic process, and deciding whether a protagonist committed a negative outcome on purpose or by accident based on one piece of information, rather than withholding judgment as nonshy/nonaggressive children's mean intentionality ratings seem to suggest.

Gender Differences

Compared to boys, labeling the emotional state of a protagonist was more effective in altering fourth- and fifth-grade girls' attribution of intent. Aggressive and shy girls were more likely to attribute a hostile intent to a protagonist in the label condition, whereas nonshy/nonaggressive girls were more confident that a negative outcome was an accident when a protagonist's emotional state was provided. Social learning theorists suggest that the emotional development of boys and girls may differ as a result of parental influences or as a consequence of children's observation that the emotional reactions of adult males and females differ (Brody, 1985). If children observe that the emotional reactions of males and females differ, then they may also imitate those differences (Brody, 1985). In addition, Brody (1985) found that girls report a greater sensitivity to emotions and that

girls consider emotions an integral part of relationships. Based on these possibilities, girls and boys participating in this study may have interpreted the emotional states ascribed to a protagonist differently or may have valued an emotional cue differently due to socialization practices (Brody, 1985).

Chapter 10

GENERAL DISCUSSION: EXPERIMENT 1 AND EXPERIMENT 2

Emotion has been proposed to play an integral role in social information processing (Crick & Dodge, 1994; Dodge, 1991). Although the importance of emotion in the processing of social interactions has been acknowledged, the inclusion of emotion in models of social information processing (e.g., Crick & Dodge, 1994) has received little attention, and the majority of research has focused on the cognitive aspects of social information processing. Recently, Lemerise and Arsenio (2000) provided a detailed account of the influence that emotion processes may have at each step of social information processing. Based on their revision of Crick and Dodge's (1994) model, and Keane and Parrish's (1992) research, the goals of this dissertation were to (a) determine whether shy children and aggressive children represent and respond to social situations differentially, (b) examine other aspects of the possible interaction of emotion and cognition in interpreting social situations, and (c) investigate whether misinterpretation of affect in others causes aggressive children to infer hostile intent and shy children to underattribute hostility in ambiguous social situations.

A number of findings support the notion that, compared to nonshy/nonaggressive participants, both shy children and aggressive children process social information in their own unique styles. First, in accord with Harrist et al.'s (1997) previous finding that, compared to nonshy/nonaggressive children, shy children underattribute hostility in social situations, the shy group in this study was more confident than aggressive children or nonshy/nonaggressive children that a negative outcome was an accident in ambiguous social situations. Second, in the first finding of its kind, shy children described themselves as more scared than aggressive or nonshy/nonaggressive children in the ambiguous and hostile stories. In addition, compared to other participants, shy children (especially boys) were also more likely to describe a protagonist as sadder and angrier in two of the ambiguous situations and as sadder in the prosocial scenario. Moreover, after selecting a behavioral response, shy children were more apt to judge themselves as more scared and as sadder in the hostile scenario and the accidental scenarios than other children. Finally, they were more likely to describe a protagonist as sadder in the hostile scenario and as more relieved in the prosocial scenario after choosing a behavioral response than the aggressive children and the nonshy/nonaggressive children.

The following findings address aggressive children's unique processing of social information. First, consistent with previous findings that aggressive children interpret ambiguous situations in a hostile manner (see Crick & Dodge, 1994, for a review), the aggressive group in this study exhibited the hostile attribution bias in the ambiguous scenarios, although its magnitude varied depending on the scenarios involved. Second, compared to shy children and nonshy/nonaggressive children, aggressive boys described a protagonist as happier and as more thankful than aggressive girls in the accidental scenarios. In the same scenarios, aggressive girls rated a protagonist as sadder than aggressive boys. Finally, the aggressive group described a protagonist as sadder and as more thankful after selecting a behavioral response in the hostile scenario.

The first study evaluated not only the extension of Dodge's (1986) social information processing model to shy children, but also children's feelings after a behavioral response had been selected. In addition, children's beliefs about a protagonist's emotional state after deciding the intent of a protagonist and after a behavioral response had been chosen across scenarios varying a protagonist's intent were examined. The majority of these findings are the first to document that social behavior patterns are related to

children's emotional responses and their interpretation of others' emotional responses.

The third purpose of this research (based in the second study) was to investigate whether a child's interpretation of a protagonist's emotional state is a causal factor in his or her attribution of intent. It was hypothesized that labeling a protagonist's emotional state would eliminate shy children's tendency to underattribute hostility and aggressive children's propensity to attribute a hostile intent to a protagonist in ambiguous social interactions.

Certain labeling effects were found, supporting the notion that attending to the emotional state of others affects aggressive children's and shy children's interpretation of the motives of others. In particular, aggressive children were more likely to attribute a hostile intent to a protagonist when he or she was described as sad than when no emotional information was provided. Second, aggressive children were more confident that a negative outcome was an accident when a protagonist was described as happy than when no emotional information was given. Finally, shy children's propensity to underattribute hostility in ambiguous situations was affected when a protagonist was portrayed as angry. Specifically, they were more likely to

attribute a hostile intent to a protagonist depicted as angry.

The patterns of results, as outlined above, for shy children and aggressive children show that labeling a protagonist's emotional state modifies children's interpretation of a protagonist's intent. In accord with Lemerise et al.'s (2005) recent findings, children were also more likely to attribute a benign intent to a happy protagonist, and a hostile intent to an angry protagonist, in ambiguous social situations. Contrary to Lemerise et al.'s findings, however, modifications varied depending on social behavior patterns, supporting both Lemerise and Arsenio's (2000) assumption that emotional cues may cause attributional biases and Crick and Dodge's (1994) assumption that children with different social behavior patterns process social information (i.e., emotional cues) in a unique manner.

The purpose of this research was to examine the relation between social information processing and emotion among children who display different patterns of social behavior. In addition to extending the applicability of Dodge's model (Crick & Dodge, 1994; Dodge, 1986) to behavior patterns other than aggression (i.e., shyness), the results of these two studies indicated that, depending on children's

behavior patterns and on the type of social scenario, children's emotional experiences and their interpretation of others' emotions differed. In addition, provision of an emotional cue altered children's attributional biases, depending on the behavior pattern and on the emotional label.

Chapter 11

LIMITATIONS OF THESE STUDIES AND DIRECTIONS FOR FUTURE
RESEARCH

Over the last 25 years, social information processing models have provided a basis for understanding social adjustment and social maladjustment in children, resulting in significant research in this area. As a result of these advances, social information processing theory has continued to evolve, incorporating a goal selection step and defining emotion's role in this model. The major focus of this research was to investigate the role of emotion in social information processing among children who exhibit different behavior patterns. The following sections will discuss several methodological concerns with my research and issues for future study.

Methodological Limitations of These Studies

One possible methodological problem that may have contributed to the lack of findings in the first study, and the unexpected results in both studies, is the tool used to assess behavior may not have been an adequate measure of aggression or shyness. Cassidy and Asher's (1992) behavior rating scale was designed initially to assess the behavioral characteristics of lonely children, not as a means of classifying shy, aggressive, and nonshy/nonaggressive

individuals. Although the items comprising the shy and the aggressive dimensions (e.g., this child starts fights, this child seems fearful about being with other children) have been identified as components of these behaviors (Harrist et al., 1997; Hartup, 1974), the use of only three items to assess each dimension may have promoted inclusion of children who were only marginally shy, or marginally aggressive, into the samples. In addition, teachers' and camp counselors' views of aggressive and shy behavior may have varied depending on their tolerance for these particular behaviors, their personal experience, and the socioeconomic background of the community. Finally, teachers' and camp counselors' gender and familiarity with students or campers may have influenced their ratings for the shy and the aggressive behavioral dimensions.

A second concern involves the construct, shyness, and its relation to depression. In the past, shyness has been defined in a number of ways, resulting in a heterogeneous group of children. In addition to shy children, a socially withdrawn group of children may include children who are depressed. In an attempt to address this concern, and to ensure that the shy group was as homogenous as possible, classroom teachers and camp counselors were asked to provide information about participants who had been diagnosed with a

psychiatric disorder. Children identified as depressed (one child in the first study and one child in the second study) were not included in the shy group. Nevertheless, because depression was not assessed in a direct manner, it is feasible that some children classified as shy may have been depressed. Inclusion of depressed children in the shy group may have masked the relation between shyness and the processing of social information at the representation step. For example, researchers have found that shy children underattribute hostility (Harrist et al., 1997), whereas depressed children exhibit the hostile attribution bias in ambiguous social situations (Quiggle et al., 1992).

As a result, these methodological problems may have affected the assessment of shyness, aggression, and depression, obscuring true personality characteristics. Assessment of children using a multi-method approach (i.e., peer reports, behavioral observations) might improve the identification of a homogenous group of children and increase the magnitude of effect sizes (Orobio de Castro et al., 2002). For example, Harrist et al.'s (1997) observations of children's social behavior were instrumental in identifying four different types of withdrawn behavior.

Thirdly, in both studies, it is possible that children's social information processing varied according to

the hypothetical scenario used. In the first study, each story was associated with the same intent, making it impossible to ascertain if the significant findings were due to the type of intent that was depicted or the scenario content itself. In the second study, although each story was randomly assigned an emotion label, each story was always assigned the same label. Therefore, it is possible that the story elicited the attribution instead of the emotional label. Moreover, instead of portraying a protagonist's emotional state throughout the situation and using a multimodal approach, the emotional label was provided prior to the reading of a story. It cannot be determined if a participant interpreted a protagonist's emotion as a stable or as a transitory state due to a negative outcome.

Other methodological issues may have affected or limited the findings in these studies. On average, it took 45 minutes to administer the eight stories and the related questions in the first study. It is plausible that participants became bored and restless, predisposing them to answer randomly or to manipulate the answers. In both studies, even though directions stated that there were no right or wrong answers, some children may have believed that there was a "right" answer to the questions; and repeatedly asking them the same questions across different stories may

have caused them to modify their initial judgments to alternatives that they thought were the "right" responses. It was not the experimenter's impression that children were responding in a socially desirable manner. However, these possibilities may explain the unusual nature of some of the findings and/or the failure to replicate previously well established findings.

In addition to the length of the group session in the first study and to the repetitiveness of the questions in both studies, asking children to rate their decisions about intentionality, likelihood of responding, and emotional intensity on a scale of 1-10, rather than a scale of 1-5, could have resulted in better differentiation of true feelings among shy, aggressive, and nonshy/nonaggressive children. For example, regardless of behavior pattern, children described themselves as very angry in the hostile and ambiguous scenarios. The narrow scale may have limited children's responses, whereas a scale with a larger range may have resulted in a wider variation between shy, aggressive, and nonshy/nonaggressive children.

Finally, although each step of social information processing can be assessed independently, when the sample of children was drawn from a non-clinical population, the correlations between teacher measures of behavioral

competence and social information processing variables were significant, but low (Dodge & Price, 1994). Because social situations involve many variables (e.g., relationship with a protagonist, personality of a protagonist), controlling some of these variables may have lead to less variability among participants within a particular social behavior pattern. For example, when listening to the ambiguous situations, some participants may have decided that a protagonist was a friend rather than a stranger, or decided that a protagonist was of the opposite gender rather than of the same gender; either of which may have biased children's processing of the social situation. It is also possible that, in addition to imagining themselves as the target of the negative outcome, children may have attributed their own behavior characteristics (e.g., shy, aggressive) and emotions (e.g., scared, sad) to a protagonist who was identified only as "this kid."

Likewise, asking participants to imagine that a scenario was actually happening to them may not have been sufficient to increase their arousal level in the social situation about which they were asked. Increasing children's involvement in a social situation (e.g., staging a real-life social interaction) might result in stronger relations between behavior patterns and social information processing

variables (Orobio de Castro et al., 2002). Therefore, controlling as many scenario variables as possible, and ensuring that the social situations evoked a higher arousal level among certain behavioral groups, might have increased the magnitude of group differences and the significance of the findings.

Issues for Future Study

The reformulation of the social information processing model addresses both cognitive and emotional processes; however, revised or expanded assumptions of this model may also need to account for changes in our society. Because of increasing awareness of violence and aggression in our environment, and because of increasing evidence that aggression in childhood is related to a number of negative outcomes in adolescence and adulthood (see Parker & Asher, 1987, for a review), a large number of schools have adopted programs that target aggressive behavior and create a "no tolerance" environment for aggression. As a result, children, particularly aggressive children, may be more conscious of socially inappropriate actions (i.e., aggressive behavioral responses) and assume that hostile thoughts are also inappropriate. Therefore, how children process social information and/or respond to questions assessing their ability to process social information may

have changed since research was originally initiated in this area. Perhaps this possibility explains the lack of replication of previously documented findings for aggressive children, even though the scenarios that were used in these studies were utilized in previous research.

With the implementation of programs that target aggressive behavior, the question arises whether children are also aware that, in some situations, a hostile interpretation is an accurate assessment of another child's intent, and that deciding that a negative outcome was committed intentionally does not mean that one has to respond in an aggressive manner. In the first study, compared to shy and nonshy/nonaggressive children, aggressive children's lack of conviction that a protagonist had acted intentionally when a hostile cue was provided raises the possibility that aggressive children may question their ability to differentiate between a hostile versus benign intent even when a hostile cue has been given. Perhaps bullying programs or other programs that target aggressive behavior, although laudable, do not validate children's hostile interpretations when those decisions are accurate ones.

Competent processing of social information involves many components, and children, perhaps dependent on social

behavior patterns or gender, may deem one component more relevant than another one. To clarify the role of emotion at the representation step and the response search/access step, it may be helpful to determine the importance of various factors (e.g., a protagonist's emotional state, a participant's goal in a social situation, the type of negative outcome) in children's decision-making. For example, based on the finding in the second study that girls were more likely to modify their interpretation of a protagonist's intent when an emotional state was provided, girls may be more likely to incorporate, and place more importance on, emotional information when deciding a protagonist's motive than do boys.

In conclusion, in attempts to elucidate the role that emotion plays in the processing of social information, these studies provide a starting point for future research. The extension of the social information processing model to behavior patterns other than aggression provides insight into certain aspects of shy children's awareness of their emotional state in social interactions and the effect of labeling a protagonist's emotional state at the representation step. Further clarification is needed to understand what properties of an emotional state lead children with certain behavior patterns to decide that a

protagonist's intent was hostile or benign. For example, compared to nonshy/nonaggressive children, shy and aggressive children modified their attribution of intent when a protagonist's emotional state was depicted as sad, but in a different direction than predicted. Understanding why children experience a particular emotion, and what that emotion is in response to, may be important in understanding emotion's role in social information processing and in clarifying why children with certain behavior patterns process emotion in a particular manner.

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Appendix A

Parental Consent Form: Experiment 1

Dear Parent or Guardian:

Your child, along with other fourth and fifth grade children, is invited to participate in a University of Maine research project. Dina Casey, a graduate student in the Department of Psychology, will be conducting this study under the supervision of her advisor, Dr. Donald Hayes. The purpose of this project is to learn more about how children with different behaviors interpret feelings in themselves and in others.

What Will Your Child Do?

The study will be conducted in two parts. In the first part, classroom teachers will rate children on nine behaviors (e.g., "shares and takes turns with other children," "seems to be fearful of other children," "gets into many fights"). Children will have no knowledge of their ratings. In the second part of the study, children will meet in small groups with me (Dina Casey) outside the classroom during a time specified by the teacher. In this session, lasting approximately 30 minutes, eight situations will be read aloud (e.g., Pretend that you are at your desk working

on your art project when another child walks by your desk, bumps it, and spills paint on your hands.). After each story, children will be asked to respond to questions about their interpretation of the story (e.g., Do you think the other child spilled the paint on purpose or by accident?), their reaction to the situation (e.g., What would you do after the other child spilled the paint?), their feelings (e.g., How would you feel after the paint spilled on your hands?), and the feelings of others (e.g., How would the other child feel after spilling the paint on your hands?). Children will write their answers in booklets.

Risks

There are no risks to your child in this study, other than those encountered in everyday life.

Benefits

Although this research project will have no direct benefit to your child, understanding how children think and feel in situations involving peers will allow teachers and other adults to better help children having difficulty getting along with peers.

Confidentiality

All the information gathered from the teachers and the children will be kept confidential. Only the researchers will see the information that is collected. Children's names will not be associated with their answers. Instead, an identification number will be assigned to the data collected from each child. The information will be used for research purposes only and will be kept in a locked area. The data will be kept indefinitely.

Voluntary

Even if you give permission for your son/daughter to participate, your child can decide to stop at any time during the study.

Contact Information

If you have any questions, please contact me (942-1742, 5742 Little Hall, University of Maine, Orono, ME 04469-5742, or e-mail dina_casey@umit.maine.edu) or my faculty advisor, Dr. Donald Hayes (581-2055, 5742 Little Hall, University of Maine, Orono, ME 04469-5742, or e-mail donald_hayes@umit.maine.edu). Also you may contact Gayle

Anderson, Assistant to the University of Maine's Protection of Human Subjects Review Board, if you have any questions about your child's rights as a participant (581-1498, or e-mail gayle@maine.edu).

We would appreciate you returning the permission slip, indicating whether your child can participate, so that we know the information has reached you. We hope that you will allow your child to be involved in this study. Thank you for your help and your support.

Sincerely,

Dina M. Casey
Graduate Student

Donald S. Hayes, Ph.D.
Associate Professor

Parent/Guardian consent form for the University of Maine research study examining the thoughts and feelings of children with different behaviors conducted by Dina Casey and Dr. Donald Hayes (Study 1). Your signature indicates that you have read and understand the information that has been provided to you about the study.

Please check the appropriate line and send this form back to the school with your son or daughter:

_____ Yes, my child may participate.

_____ No, my child may not participate.

Parent/Guardian signature_____

Date_____

Child's name_____

Thank you for your help!

Appendix B

Parental Consent Information per Classroom/Camp Group:

Experiment 1

<u>School</u>	<u>Date of Participation</u>	<u>Grade</u>	<u>Class Size</u>	<u>Number of Returned Consents</u>	<u>Number of Affirmative Consents</u>
Viola Rand School (Bradley)	April 2002	4	18	16 (89%)	15 (94%)
		5	13	10 (77%)	6 (60%)
Enfield Station Elementary School (Enfield)	September 2002	4	16	12 (75%)	11 (92%)
		4	17	16 (94%)	9 (56%)
		4	16	12 (75%)	8 (67%)
		5	21	21 (100%)	13 (62%)
		5	19	14 (74%)	10 (71%)
		5	20	11 (55%)	11 (100%)
Elm Street School (East Machias)	October 2002	4	14	10 (71%)	8 (80%)
		5	19	13 (68%)	10 (77%)
Great Salt Bay Community School (Damariscotta)	January 2003	4	17	17 (100%)	13 (76%)
		4	18	14 (78%)	11 (79%)
Camp Pierce Webber - YMCA (Bangor)	July 2002	4	22	18 (82%)	14 (76%)
		5	35	25 (71%)	16 (64%)
Camp Molly Molasses - YWCA (Bangor)	July 2002	4	20	8 (40%)	7 (88%)
		5	25	14 (56%)	7 (50%)

Appendix C

Teacher Questionnaire

Using a modified version of the Cassidy and Asher (1992) scale, teachers were asked to rate their students on nine statements describing different behaviors. In the original instrument, there was a disruptive dimension that was not included in this version. All students who received parental permission were listed, as signified by A-D below.

TEACHER QUESTIONNAIRE

I appreciate your help in providing information about your students' behavior. Based on your personal observations and impressions of your students' behavior, please circle the number that best describes how often you think the student behaves like this.

1 = None of the time

2 = A little

3 = Some of the time

4 = Most of the time

5 = All of the time

1. This child is cooperative with other children—he/she shares and takes turns.

<u>Students</u>	Very		Neutral	Very	
	Uncharacteristic			Characteristic	
A	1	2	3	4	5
B	1	2	3	4	5
C	1	2	3	4	5
D	1	2	3	4	5

2. This child starts fights (verbal and/or physical).

3. This child is shy.

4. This child is friendly and nice to other children.

5. This child is mean to other children.

6. This child is nervous when playing or working around other children.

7. This child is helpful toward other children.

8. This child hurts other children (emotionally and/or physically).

9. This child seems fearful about being with other children.

Appendix D

Hypothetical Scenarios: Experiment 1

The following eight stories were used to assess aggressive, shy, and nonaggressive/nonshy children's perception of emotion in themselves and in others. Questions following the scenarios examined children's attributional style and responses to the negative outcome. Verbatim statements are boldfaced. In addition, children were asked to write their answer from question 4B in the spaces provided in questions 5 and 6. Except for changing the negative outcome, the questions were the same for each scenario. Therefore, the questions are listed for the first scenario only.

Directions

Hi, _____, my name is Dina. I am going to read eight stories to you. I want you to imagine that what is happening in the story is actually happening to you. After each story, I want you to answer some questions about how you would think and feel in each situation. I am the only one who will know what you wrote. Nobody else will see your answers. There are no right or wrong answers, so I want you to tell me what you really think and feel. If you don't want to answer the questions anymore, or get tired, just tell me and I'll take you back to your classroom.

HOMEWORK PAPER: Ambiguous

Imagine that you are on your way to school one morning. You are walking onto the school grounds. At that moment, you happen to look down and notice that your shoelace is untied. You put the notebook that you are carrying down on the ground to tie your shoelace. An important homework paper that you worked on for a long time falls out of your notebook. Just then, another kid walks by and steps on your paper, leaving a muddy footprint right across the middle. The other kid looks down at the homework paper that is all muddy and then looks at you.

1. Do you think that this kid stepped on your homework paper:

- A. on purpose?
- B. by accident?

How sure are you?

A little		Some		Very
sure		sure		sure
1	2	3	4	5

2. Now remember, this kid stepped on your homework paper. Some kids say that they would feel mad, or glad, or some other feeling. For questions A-F, circle the number that shows how much you would feel each feeling.

A. Would you feel mad?

1	2	3	4	5
not at all	a little	some	a lot	a whole lot

B. Would you feel happy?

1	2	3	4	5
not at all	a little	some	a lot	a whole lot

C. Would you feel relieved?

1	2	3	4	5
not at all	a little	some	a lot	a whole lot

D. Would you feel scared?

1	2	3	4	5
not at all	a little	some	a lot	a whole lot

E. Would you feel thankful?

1	2	3	4	5
not at all	a little	some	a lot	a whole lot

F. Would you feel sad?

1	2	3	4	5
not at all	a little	some	a lot	a whole lot

Circle the emotion that you would feel the most.

Thankful Relieved Happy Mad Scared Sad

3. Now remember, this kid stepped on your homework paper. Some kids say that this kid would feel happy, or mad, or some other feeling. For questions A-F, circle the number that shows how much this kid would feel each feeling after stepping on your homework paper.

A. Would this kid feel sad?

1	2	3	4	5
not at all	a little	some	a lot	a whole lot

B. Would this kid feel mad?

1	2	3	4	5
not at all	a little	some	a lot	a whole lot

C. Would this kid feel relieved?

1	2	3	4	5
not at all	a little	some	a lot	a whole lot

D. Would this kid feel thankful?

1	2	3	4	5
not at all	a little	some	a lot	a whole lot

E. Would this kid feel happy?

1	2	3	4	5
not at all	a little	some	a lot	a whole lot

F. Would this kid feel scared?

1	2	3	4	5
not at all	a little	some	a lot	a whole lot

Circle the emotion that this kid would feel the most.

Sad Relieved Thankful Scared Mad Happy

4. Below are some things that other kids say they would do right away if this happened to them. For questions A-F, circle the number that best describes how likely you would do something.

A. Do nothing; Just forget it.

Definitely	Probably		Probably	Definitely
Not	Not	Maybe	Would	Would
1	2	3	4	5

B. Do something to get even.

Definitely	Probably		Probably	Definitely
Not	Not	Maybe	Would	Would
1	2	3	4	5

C. Have it out with this kid right then and there.

Definitely	Probably		Probably	Definitely
Not	Not	Maybe	Would	Would
1	2	3	4	5

D. Do something nice for this kid.

Definitely	Probably		Probably	Definitely
Not	Not	Maybe	Would	Would
1	2	3	4	5

E. Tell an adult.

Definitely	Probably		Probably	Definitely
Not	Not	Maybe	Would	Would
1	2	3	4	5

F. Ask this kid why he or she did it.

Definitely	Probably		Probably	Definitely
Not	Not	Maybe	Would	Would
1	2	3	4	5

4B. Put an "X" in the space next to the sentence that shows the first thing that you would do.

- _____ Do nothing; Just forget it.
- _____ Do something to get even.
- _____ Do something nice for this kid.
- _____ Tell an adult.
- _____ Have it out with this kid right then and there.
- _____ Ask this kid why he or she did it.

5. Some kids say they would feel mad, or glad, or some other feeling after they _____. For questions A-F, circle the number that shows how much you would feel each feeling after you _____.

A. Would you feel scared?

1	2	3	4	5
not at all	a little	some	a lot	a whole lot

B. Would you feel mad?

1	2	3	4	5
not at all	a little	some	a lot	a whole lot

C. Would you feel thankful?

1	2	3	4	5
not at all	a little	some	a lot	a whole lot

D. Would you feel happy?

1	2	3	4	5
not at all	a little	some	a lot	a whole lot

E. Would you feel sad?

1	2	3	4	5
not at all	a little	some	a lot	a whole lot

F. Would you feel relieved?

1	2	3	4	5
not at all	a little	some	a lot	a whole lot

Circle the emotion that you would feel the most.

Sad Happy Relieved Scared Mad Thankful

6. Some kids say that this kid would feel happy, or mad, or some other feeling after you _____. For questions A-F, circle the number that shows how much this kid would feel each feeling after you _____.

A. Would this kid feel relieved?

1	2	3	4	5
not at all	a little	some	a lot	a whole lot

B. Would this kid feel scared?

1	2	3	4	5
not at all	a little	some	a lot	a whole lot

C. Would this kid feel happy?

1	2	3	4	5
not at all	a little	some	a lot	a whole lot

D. Would this kid feel sad?

1	2	3	4	5
not at all	a little	some	a lot	a whole lot

E. Would this kid feel thankful?

1	2	3	4	5
not at all	a little	some	a lot	a whole lot

F. Would this kid feel mad?

1	2	3	4	5
not at all	a little	some	a lot	a whole lot

Circle the emotion that this kid would feel the most.

Thankful Sad Relieved Mad Happy Scared

DRINKING FOUNTAIN: Ambiguous

Imagine that you are standing at the water fountain during recess, filling a paper cup with water to have a drink. Just then, another kid in line behind you, bumps into you, knocking the cup out of your hand and spilling water all over the jacket that you are wearing.

SCHOOL BUS LINE: Ambiguous

Imagine that you are lined up to get on the school bus to take a field trip with your school. Kids are getting on the bus one at a time. Just as you get to the front of the line, another kid steps in front of you to claim the last seat on the bus. This other kid looks at you and then walks up the steps of the bus.

NEW HAIRCUT: Ambiguous

Imagine that you come to school one day with a new haircut. It's very different from any way you've worn your hair before. You wonder what the other kids are going to think about it. As you get to school, some kids from your class are standing out by the front door talking. As you walk by the group, this kid starts laughing. The bell rings and everyone goes inside.

VIDEO GAME: Accidental

Imagine that you lent your favorite video game to another kid. This kid kept it over the whole Christmas vacation even though he or she promised to return it the next day. You really wanted the video game back. Imagine that the first day after Christmas vacation, you see this other kid at lunch with your video game. This kid comes up to you and says, "I'm really sorry. I forgot and my family left for vacation before I had a chance to return the video game to you." The kid gives you the game back.

MAKING PLANS: Accidental

Imagine that you make plans to meet another kid on Saturday afternoon to do something—like go to a movie or play at the park, or some other activity that kids your age like to do. You and this kid agree to meet at the school playground at noon. You are there on time. You wait for a long time. You look at your watch. It's two o'clock already and the other kid still has not shown up. You decide to leave. As you are walking back home, you see the kid coming toward you. He says, "I'm sorry. I thought we were meeting at the park. I just remembered that you said the playground."

PLAYING KICKBALL AT RECESS: Hostile

Imagine that it's recess and you are out on the playground. You're watching some of the other kids play kickball. Just then, one of the players runs into you, pushing you hard and you almost fall down. This other kid who ran into you laughs and says, "Get out of my way."

ART PROJECT: Prosocial

Imagine that you are sitting at your desk working on your painting during art. Just then another kid walks by and bumps into your desk, spilling paint all over your hands. This other kid says, "You almost got hit." You look up and see that this other kid has caught the easel that was about to fall over and hit you on the head.

Appendix E

Assent Script for Experiment 1 and Experiment 2

Hi _____, my name is Dina. I am going to read some stories to you about situations that kids your age sometimes experience. For each story, I want you to imagine that the situation actually happened to you. Then, I am going to ask you some questions about how you would feel and what you would do in different stories. There are no right or wrong answers, and everything you write or say will not be told to anyone else. You do not have to answer any question that you don't want to, and you can stop at any time. You can ask questions at any time.

Do you have any questions? Would you like to participate in this study?

Appendix G

Emotion (Self) - Mean Ratings of Children's Emotions
After Determining Intent

Mean Ratings for the Emotion, Anger

Intent Type	Behavior Pattern			<i>F</i>
	Aggressive	Shy	Nonshy/	
			Nonaggressive	
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	
Ambiguous (HP/DF)	3.89 (0.91)	3.72 (1.25)	3.70 (1.05)	0.39
Ambiguous (SB/H)	3.87 (1.02)	3.50 (1.02)	3.81 (0.98)	0.39
Accidental	3.00 (1.14)	2.72 (1.11)	2.66 (0.99)	0.54
Hostile	3.59 (1.55)	3.75 (1.13)	4.10 (0.93)	0.93
Prosocial	3.04 (1.58)	2.94 (1.61)	2.71 (1.40)	1.03

Note. None of the reported *F*s were significant, *ps* > .05.

Emotion (Self)

Mean Ratings for the Emotion, Sad

Intent Type	Behavior Pattern			
	Nonschy/			
	Aggressive	Shy	Nonaggressive	
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>F</i>
Ambiguous (HP/DF)	2.96 (1.39)	3.34 (1.30)	2.90 (1.10)	1.37
Ambiguous (SB/H)	2.82 (1.22)	3.28 (1.06)	3.05 (1.05)	0.46
Accidental	2.02 (1.01)	2.66 (1.29)	2.30 (0.94)	2.82
Hostile	2.56 (1.48)	3.19 (1.33)	2.71 (1.29)	1.22
Prosocial	2.41 (1.31)	2.56 (1.32)	2.19 (1.23)	1.35

Note. None of the reported *F*s were significant, *ps* > .05.

Mean Ratings for the Emotion, Scared

Intent Type	Behavior Pattern			
	Nonschy/			F
	Aggressive	Shy	Nonaggressive	
	M(SD)	M(SD)	M(SD)	
Ambiguous (HP/DF)	1.48 (0.87)	2.09 (1.02)	1.86 (0.85)	2.01
Ambiguous (SB/H)	1.26 (0.53)	2.13 (1.15)	1.51 (0.77)	9.19***
Accidental	1.50 (1.07)	1.53 (0.92)	1.44 (0.79)	.14
Hostile	1.63 (0.93)	2.63 (1.26)	1.71 (0.92)	7.55***
Prosocial	1.59 (0.89)	1.69 (0.95)	1.62 (1.04)	.26

****p* < .001.

Emotion (Self)

Mean Ratings for the Emotion, Happy

Intent Type	Behavior Pattern			<i>F</i>
	Aggressive	Shy	Nonshy/	
			Nonaggressive	
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	
Ambiguous (HP/DF)	1.19(0.68)	1.09(0.27)	1.10(0.28)	0.07
Ambiguous (SB/H)	1.19(0.44)	1.38(0.62)	1.24(0.47)	1.76
Accidental	1.57(0.90)	2.13(1.01)	1.88(1.02)	1.66
Hostile	1.33(0.96)	1.31(1.01)	1.12(0.50)	0.34
Prosocial	1.56(1.19)	2.00(1.51)	1.79(1.26)	0.97

Note. None of the reported *F*s were significant, $ps > .05$.

Mean Ratings for the Emotion, Relieved

Intent Type	Behavior Pattern			<i>F</i>
	Aggressive	Shy	Nonshy/	
			Nonaggressive	
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	
Ambiguous (HP/DF)	1.19(0.48)	1.31(0.48)	1.19(0.52)	0.74
Ambiguous (SB/H)	1.57(1.10)	1.69(0.83)	1.45(0.74)	0.97
Accidental	2.15(1.26)	2.16(1.23)	2.13(1.04)	0.25
Hostile	1.56(1.19)	1.88(1.15)	1.36(0.85)	0.98
Prosocial	2.00(1.41)	2.44(1.63)	2.33(1.30)	1.58

Note. None of the reported *F*s were significant, $ps > .05$.

Emotion (Self)

Mean Ratings for the Emotion, Thankful

Intent Type	Behavior Pattern			<i>F</i>
	Aggressive	Shy	Nonshy/	
			Nonaggressive	
	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	
Ambiguous (HP/DF)	1.15 (0.46)	1.22 (0.45)	1.02 (0.11)	1.02
Ambiguous SB/H)	1.26 (0.58)	1.47 (0.96)	1.20 (0.59)	2.32
Accidental	1.78 (0.99)	2.09 (1.13)	1.75 (0.87)	0.46
Hostile	1.37 (0.84)	1.19 (0.54)	1.05 (0.31)	1.11
Prosocial	1.74 (1.26)	2.31 (1.58)	1.79 (1.20)	1.18

Note. None of the reported *F*s were significant, *ps* > .05.

Appendix H

Emotion (Other) - Mean Ratings of Children's Beliefs
About a Protagonist's Emotions After Determining Intent

Mean Ratings for the Emotion, Anger

Intent Type	Behavior Pattern			<i>F</i>
	Aggressive	Shy	Nonshy/	
			Nonaggressive	
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	
Ambiguous (HP/DF)	1.46 (0.72)	1.97 (1.16)	1.57 (0.71)	4.37*
Ambiguous (SB/H)	1.46 (0.76)	1.69 (1.08)	1.38 (0.76)	1.62
Accidental	1.59 (0.77)	1.66 (0.65)	1.89 (0.86)	0.87
Hostile	1.78 (1.37)	2.06 (1.39)	1.64 (1.23)	0.92
Prosocial	1.93 (1.21)	1.88 (1.20)	1.80 (1.14)	0.32

* $p < .05$.

Emotion (Other)

Mean Ratings for the Emotion, Sad

Intent Type	Behavior Pattern			<i>F</i>
	Aggressive	Shy	Nonshy/	
			Nonaggressive	
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	
Ambiguous (HP/DF)	2.54 (1.34)	2.81 (1.11)	2.46 (0.93)	1.80
Ambiguous (SB/H)	1.56 (0.85)	1.81 (0.75)	1.64 (1.00)	0.49
Accidental	2.44 (1.15)	3.00 (1.20)	2.94 (1.06)	1.49
Hostile	1.33 (0.88)	1.88 (1.15)	1.41 (0.96)	2.43
Prosocial	2.56 (1.55)	3.06 (1.24)	2.53 (1.18)	2.05

Note. None of the reported *F*s were significant, $ps > .05$.

Mean Ratings for the Emotion, Scared

Intent Type	Behavior Pattern			<i>F</i>
	Aggressive	Shy	Nonshy/	
			Nonaggressive	
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	
Ambiguous (HP/DF)	2.02 (1.08)	2.34 (0.93)	2.11 (1.08)	0.09
Ambiguous (SB/H)	1.63 (1.03)	2.06 (0.81)	1.55 (0.83)	2.85
Accidental	2.02 (1.17)	2.44 (0.96)	1.92 (0.85)	2.72
Hostile	1.59 (1.01)	2.06 (1.29)	1.71 (1.20)	1.61
Prosocial	2.37 (1.47)	2.00 (0.97)	2.23 (1.21)	0.77

Note. None of the reported *F*s were significant, $ps > .05$.

Emotion (Other)

Mean Ratings for the Emotion, Happy

Intent Type	Behavior Pattern			<i>F</i>
	Aggressive	Shy	Nonshy/	
			Nonaggressive	
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	
Ambiguous (HP/DF)	2.20 (1.33)	1.75 (1.11)	1.75 (0.99)	1.29
Ambiguous (SB/H)	3.41 (1.42)	2.94 (1.25)	3.31 (1.23)	0.46
Accidental	2.02 (1.31)	1.69 (0.63)	1.45 (0.65)	0.65
Hostile	3.30 (1.64)	2.88 (1.63)	3.02 (1.49)	0.45
Prosocial	1.78 (1.28)	1.63 (1.09)	1.65 (0.89)	0.11

Note. None of the reported *F*s were significant, $ps > .05$.

Mean Ratings for the Emotion, Relieved

Intent Type	Behavior Pattern			<i>F</i>
	Aggressive	Shy	Nonshy/	
			Nonaggressive	
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	
Ambiguous (HP/DF)	1.78 (1.18)	1.53 (0.79)	1.35 (0.52)	2.27
Ambiguous (SB/H)	2.35 (1.37)	2.16 (1.00)	2.06 (0.92)	0.41
Accidental	2.00 (1.12)	2.34 (0.93)	1.71 (0.86)	1.73
Hostile	2.30 (1.66)	2.63 (1.41)	2.12 (1.17)	0.40
Prosocial	1.63 (1.04)	2.38 (1.36)	1.75 (0.93)	3.49

Note. None of the reported *F*s were significant, $ps > .05$.

Emotion (Other)

Mean Ratings for the Emotion, Thankful

	Behavior Pattern			
	Nonshy/			
Intent Type	Aggressive	Shy	Nonaggressive	
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>F</i>
Ambiguous (HP/DF)	1.74 (1.26)	1.63 (0.89)	1.41 (0.76)	1.47
Ambiguous (SB/H)	2.41 (1.27)	2.16 (0.98)	2.32 (1.04)	0.48
Accidental	2.02 (1.41)	1.84 (0.87)	1.58 (0.78)	0.11
Hostile	2.37 (1.57)	1.81 (1.28)	2.07 (1.26)	0.42
Prosocial	1.89 (1.31)	1.81 (1.33)	1.70 (1.04)	0.03

Note. None of the reported *F*s were significant, *ps* > .05.

Appendix I

Emotion (Self After Responding) - Mean Ratings of
Children's Emotions After a Behavioral Response Has Been
Selected

Mean Ratings for the Emotion, Anger

Intent Type	Behavior Pattern			<i>F</i>
	Aggressive	Shy	Nonshy/	
			Nonaggressive	
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	
Ambiguous (HP/DF)	2.41 (1.26)	2.22 (1.15)	2.37 (1.14)	0.14
Ambiguous (SB/H)	2.50 (1.31)	2.16 (1.19)	2.07 (1.03)	0.26
Accidental	1.82 (1.05)	1.63 (0.92)	1.75 (0.82)	0.08
Hostile	2.44 (1.65)	2.69 (1.62)	2.52 (1.50)	0.87
Prosocial	2.33 (1.49)	2.13 (1.36)	1.95 (1.17)	0.99

Note. None of the reported *F*s were significant, *ps* > .05.

Emotion (Self After Responding)

Mean Ratings for the Emotion, Sad

Intent Type	Behavior Pattern			<i>F</i>
	Aggressive	Shy	Nonshy/	
			Nonaggressive	
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	
Ambiguous (HP/DF)	2.07 (1.20)	2.22 (1.03)	2.13 (0.92)	0.14
Ambiguous (SB/H)	1.85 (1.05)	2.13 (1.15)	1.77 (0.70)	1.26
Accidental	1.65 (0.73)	1.81 (0.98)	1.77 (0.84)	0.74
Hostile	1.74 (1.29)	2.94 (1.34)	1.81 (1.02)	9.36***
Prosocial	1.63 (1.21)	2.00 (0.82)	1.79 (1.09)	0.67

****p* < .001.*Mean Ratings for the Emotion, Scared*

Intent Type	Behavior Pattern			<i>F</i>
	Aggressive	Shy	Nonshy/	
			Nonaggressive	
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	
Ambiguous (HP/DF)	1.54 (0.95)	1.44 (0.54)	1.70 (0.89)	0.60
Ambiguous (SB/H)	1.56 (0.70)	1.81 (0.66)	1.49 (0.72)	1.62
Accidental	1.32 (0.54)	1.91 (0.88)	1.33 (0.53)	8.40***
Hostile	1.59 (0.89)	2.31 (1.20)	1.71 (0.94)	3.75*
Prosocial	1.48 (0.94)	1.56 (1.03)	1.62 (0.96)	0.37

p* < .05. **p* < .001.

Emotion (Self After Responding)

Mean Ratings for the Emotion, Happy

Intent Type	Behavior Pattern			<i>F</i>
	Aggressive	Shy	Nonschy/	
			Nonaggressive	
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	
Ambiguous (HP/DF)	2.28 (1.46)	2.66 (0.93)	2.25 (1.13)	0.49
Ambiguous (SB/H)	2.59 (1.46)	2.47 (1.23)	2.73 (1.17)	0.15
Accidental	2.61 (1.30)	3.19 (0.96)	2.51 (1.15)	1.68
Hostile	3.00 (1.75)	2.31 (1.49)	2.60 (1.36)	1.12
Prosocial	2.41 (1.55)	2.31 (1.54)	2.88 (1.63)	0.73

Note. None of the reported *F*s were significant, *ps* > .05.

Mean Ratings for the Emotion, Relieved

Intent Type	Behavior Pattern			<i>F</i>
	Aggressive	Shy	Nonschy/	
			Nonaggressive	
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	
Ambiguous (HP/DF)	2.33 (1.41)	2.50 (1.24)	2.23 (1.22)	0.18
Ambiguous (SB/H)	2.78 (1.24)	2.72 (1.06)	2.86 (1.18)	0.28
Accidental	3.04 (1.32)	3.22 (1.17)	2.66 (1.20)	1.24
Hostile	3.04 (1.68)	2.44 (1.09)	3.00 (1.38)	1.37
Prosocial	2.93 (1.71)	2.88 (1.31)	2.64 (1.41)	0.59

Note. None of the reported *F*s were significant, *ps* > .05.

Emotion (Self After Responding)

Mean Ratings for the Emotion, Thankful

Intent Type	Behavior Pattern			<i>F</i>
	Aggressive	Shy	Nonshy/	
			Nonaggressive	
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	
Ambiguous (HP/DF)	2.04 (1.48)	2.09 (1.02)	2.04 (1.10)	0.04
Ambiguous (SB/H)	2.30 (1.33)	2.50 (1.14)	2.44 (1.25)	0.05
Accidental	2.24 (1.26)	2.69 (1.00)	2.21 (1.17)	1.03
Hostile	2.56 (1.60)	2.13 (1.26)	2.45 (1.25)	0.69
Prosocial	2.33 (1.62)	2.38 (1.36)	2.52 (1.33)	0.11

Note. None of the reported *F*s were significant, *ps* > .05.

Appendix J

Emotion (Other After Responding) - Mean Ratings of
Children's Beliefs About a Protagonist's Emotions After a
Behavioral Response Has Been Selected

Mean Ratings for the Emotion, Anger

Intent Type	Behavior Pattern			<i>F</i>
	Aggressive	Shy	Nonshy/	
			Nonaggressive	
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	
Ambiguous (HP/DF)	1.96 (1.20)	2.56 (1.20)	2.11 (0.91)	2.23
Ambiguous (SB/H)	2.63 (1.31)	2.78 (1.41)	2.76 (1.21)	0.15
Accidental	2.02 (0.99)	1.91 (1.14)	1.68 (0.81)	0.90
Hostile	2.63 (1.57)	3.00 (1.51)	3.00 (1.51)	0.77
Prosocial	2.04 (1.43)	2.25 (1.48)	2.00 (1.23)	0.66

Note. None of the reported *F*s were significant, *ps* > .05.

Emotion (Other After Responding)

Mean Ratings for the Emotion, Sad

Intent Type	Behavior Pattern			<i>F</i>
	Aggressive	Shy	Nonshy/	
			Nonaggressive	
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	
Ambiguous (HP/DF)	2.46 (1.33)	2.78 (1.20)	2.42 (1.08)	1.10
Ambiguous (SB/H)	2.33 (1.35)	2.63 (1.07)	2.13 (1.05)	1.67
Accidental	2.11 (1.14)	2.16 (0.96)	2.11 (0.85)	0.22
Hostile	2.52 (1.63)	2.56 (1.09)	1.88 (1.17)	3.98**
Prosocial	2.26 (1.40)	2.69 (1.35)	2.41 (1.23)	0.79

** $p < .05$.Mean Ratings for the Emotion, Scared

Intent Type	Behavior Pattern			<i>F</i>
	Aggressive	Shy	Nonshy/	
			Nonaggressive	
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	
Ambiguous (HP/DF)	2.07 (1.17)	2.56 (0.95)	2.38 (1.17)	1.18
Ambiguous (SB/H)	2.39 (1.42)	2.47 (0.96)	2.35 (1.05)	0.17
Accidental	1.96 (1.04)	1.75 (0.75)	1.86 (0.89)	0.09
Hostile	2.37 (1.71)	2.31 (1.20)	2.45 (1.38)	0.03
Prosocial	2.33 (1.54)	2.06 (1.00)	2.24 (1.28)	0.15

Note. None of the reported *F*s were significant, $ps > .05$.

Emotion (Other After Responding)

Mean Ratings for the Emotion, Happy

Intent Type	Behavior Pattern			<i>F</i>
	Aggressive	Shy	Nonshy/	
			Nonaggressive	
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	
Ambiguous (HP/DF)	1.80 (1.12)	1.69 (0.98)	1.69 (0.80)	0.36
Ambiguous (SB/H)	1.93 (1.12)	1.72 (0.73)	1.93 (0.98)	0.44
Accidental	2.35 (1.25)	2.78 (0.93)	2.31 (1.16)	0.64
Hostile	2.33 (1.73)	1.81 (1.11)	1.62 (1.10)	1.11
Prosocial	1.56 (1.05)	2.25 (1.48)	1.95 (1.25)	1.65

Note. None of the reported *F*s were significant, *ps* > .05.

Mean Ratings for the Emotion, Relieved

Intent Type	Behavior Pattern			<i>F</i>
	Aggressive	Shy	Nonshy/	
			Nonaggressive	
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	
Ambiguous (HP/DF)	1.82 (1.06)	1.94 (0.85)	1.56 (0.81)	0.81
Ambiguous (SB/H)	1.94 (0.99)	2.00 (0.80)	1.98 (0.98)	0.00
Accidental	2.63 (1.24)	2.91 (0.86)	2.39 (1.11)	1.15
Hostile	1.74 (1.38)	2.00 (1.03)	1.50 (0.83)	0.72
Prosocial	1.85 (1.41)	3.00 (1.41)	1.98 (1.16)	3.27**

***p* < .05.

Emotion (Other After Responding)

Mean Ratings for the Emotion, Thankful

Intent Type	Behavior Pattern			<i>F</i>
	Aggressive	Shy	Nonshy/	
			Nonaggressive	
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	
Ambiguous (HP/DF)	1.69 (1.11)	1.50 (0.71)	1.68 (0.90)	0.75
Ambiguous (SB/H)	1.70 (0.96)	1.50 (0.78)	1.57 (0.78)	0.29
Accidental	2.43 (1.34)	2.81 (0.83)	2.25 (1.06)	0.71
Hostile	2.04 (1.58)	1.44 (0.63)	1.36 (0.76)	4.11**
Prosocial	1.85 (1.38)	1.88 (1.09)	1.93 (1.20)	0.15

***P* < .05.

Appendix K

Parental Consent Form: Experiment 2

Dear Parent or Guardian:

Your child, along with other fourth and fifth graders, is invited to participate in a University of Maine research study. Dina Casey, a graduate student in the Department of Psychology, will be conducting this study under the supervision of her advisor, Dr. Donald Hayes. The purpose of this study is to determine if children's behaviors and their interpretation of feelings in others are related to how they react to other children.

What Will Your Child Do?

This study involves two parts. In the first part, classroom teachers will rate children on nine behaviors (e.g., who "shares and takes turns with others," "seems fearful to be around others." and "gets in many fights"). In the second session, lasting approximately 15 minutes, each child will meet individually with me (Dina Casey) outside the classroom at a time determined by the teacher. Six stories will be read aloud (e.g., Pretend that you are walking to school in your new shoes. Suddenly, you are bumped from behind by another child. You stumble, fall into

a mud puddle, and your new shoes get muddy.). After each story has been read, a child will be asked what happened in the story (e.g., Do you think the child bumped into you on purpose or by accident?). Some children will be asked how the other child felt in the story (e.g., How did the child in the story feel?).

Risks

There are no risks to your child in this study, other than those encountered in everyday life.

Benefits

Although this research project will have no direct benefit to your child, the knowledge gained from this study will allow teachers and other adults to better help children who experience difficulty interacting with their peers.

Confidentiality

All information collected from the teachers and the children will be kept confidential. Only the researchers will see the data that has been gathered. Children's names

will not be associated with their answers. Instead, an identification number will be assigned to the data collected from each child. The information will be used for research purposes only and will be kept in a locked area. The data will be kept indefinitely.

Voluntary

Even if you give permission for your son/daughter to participate in the study, your child can decide to stop at any time during the study.

Contact Information

If you have any questions, please contact me (942-1742, 5742 Little Hall, University of Maine, Orono, ME 04469-5742, or e-mail dina_casey@umit.maine.edu) or my faculty advisor, Dr. Donald Hayes (581-2055, 5742 Little Hall, University of Maine, Orono, ME 04469-5742, or e-mail donald_hayes@umit.maine.edu). Also, you may contact Gayle Anderson, Assistant to the University of Maine's Protection of Human Subjects Review Board, if you have any questions about your child's rights as a participant (581-1498, or e-mail gayle@maine.edu).

We would appreciate you returning the permission slip, indicating whether your child can participate, so we know the information has reached you. We hope that you will allow your child to be involved in this study. Thank you for your help and your support.

Sincerely,

Dina M. Casey
Graduate Student

Donald S. Hayes, Ph.D.
Associate Professor

Parent/Guardian consent form for the University of Maine research study examining children's thoughts and feelings and their relation to behaviors conducted by Dina Casey and Dr. Donald Hayes (Study 2). Your signature indicates that you have read and understand the information that has been provided to you about the study.

Please check the appropriate line and send this form back to the school with your son or daughter.

_____ Yes, my child may participate.

_____ No, my child may not participate.

Parent/Guardian signature_____

Date_____

Child's Name_____

Thank you!

Appendix L

Parental Consent Information per Classroom: Experiment 2

<u>School</u>	<u>Date of Participation</u>	<u>Grade</u>	<u>Class Size</u>	<u>Number of Returned Consents</u>	<u>Number of Affirmative Consents</u>
Canann Elementary School	October 2002	4	17	16 (94%)	12 (75%)
		4	16	15 (94%)	15 (100%)
		5	15	12 (80%)	10 (83%)
		5	16	12 (75%)	11 (92%)
MeroBy Elementary School	November 2002	4	21	19 (90%)	19 (100%)
		4	23	21 (91%)	15 (71%)
(Mexico)		5	23	6 (26%)	5 (83%)
		5	20	11 (55%)	11 (100%)
		5	22	16 (73%)	14 (88%)
SeDoMoCha Middle School	October 2002	5	21	18 (86%)	15 (83%)
		5	20	6 (30%)	5 (83%)
(Dover-Foxcroft)		5	21	13 (62%)	13 (100%)
		5	21	8 (38%)	6 (75%)
Hermon Elementary School	November 2002	4	18	13 (72%)	9 (69%)
		4	19	17 (89%)	14 (82%)
		4	18	9 (50%)	6 (67%)
		4	21	12 (57%)	7 (58%)
		5	18	16 (89%)	7 (44%)
		5	18	14 (78%)	2 (14%)
		5	19	12 (63%)	2 (17%)

Lincolnville	January 2003	4	12	10 (83%)	10 (100%)
Central School		4	13	9 (69%)	9 (100%)
		5	14	14 (100%)	12 (86%)
		5	13	5 (38%)	4 (80%)
Academy Hill	March 2003	4	20	17 (85%)	16 (94%)
School		4	20	14 (70%)	12 (86%)
(Wilton)		4	6	3 (50%)	3 (100%)
		5	21	21 (100%)	14 (67%)
		5	19	17 (89%)	15 (88%)
		5	19	15 (79%)	13 (80%)
Ames Elementary	March 2003	4	23	19 (83%)	12 (63%)
School		4	23	13 (57%)	6 (46%)
(Searsmont)		5	17	12 (71%)	7 (58%)
		5	16	12 (75%)	10 (83%)
Blue Hill	April 2003	4	10	6 (60%)	3 (50%)
Consolidated		4	8	5 (63%)	4 (80%)
School		4	9	7 (78%)	5 (71%)

Appendix M

Hypothetical Scenarios - No Label Condition

The following scenarios were used to ascertain if labeling the affective state of the protagonist is a determinant in the interpretation of intent in social dilemmas. Because no affective information was provided in these scenarios, it was expected that aggressive children would exhibit the hostile intent bias and shy children would underattribute hostility. Verbatim statements are boldfaced. Except for changing the negative outcome, the questions were the same for each scenario. Therefore, the questions are listed for the first scenario only.

Directions

Hi _____, my name is Dina. I am going to read some stories to you about situations that kids your age sometimes experience. For each story, I want you to imagine that the situation actually happened to you. Then, I am going to ask you some questions about each story. There are no right or wrong answers. Your answers might all be the same or they might all be different. Everything you write or say will not be told to anyone else. You do not have to answer a question unless you want to, and you can stop at any time. You can also ask questions at any time. Thank you for helping me.

The first story is going to be a practice story.

SCHOOL BUS LINE (PRACTICE STORY)

Imagine that you are lined up to get on the school bus to take a field trip with your school. Kids are getting on the bus one at a time. Just as you get to the front of the line, another kid steps in front of you to claim the last seat on the bus. This other kid looks at you and then walks up the steps of the bus.

1. Did the girl/boy claim your seat on the bus:

- A. on purpose
- B. by accident

How sure are you?

A little		Some		Very
sure		sure		sure
1	2	3	4	5

PLAYING CATCH

Imagine that you are standing on the playground, playing catch with a group of children. You throw the ball to a girl/boy and the girl/boy catches it. You turn around, and the next thing you know is that the girl/boy has thrown the ball and hit you in the middle of your back. The ball hits you hard, and it hurts a lot.

MATH ASSIGNMENT

Imagine that you are working on a math assignment at your desk. You go to sharpen your pencil, and as you walk back to your desk there's a girl/boy walking just in front of you. The girl/boy passes your desk before you get there. The next thing you know, the girl/boy has knocked off the papers on your desk, and they are all over the floor.

BIKE RIDE

Imagine that you are riding your bike down a quiet street. You ride past a car parked on the side of the street. A girl/boy is sitting in the car. After you ride past the girl/boy, the girl/boy honks the horn of the car. It startles you and you fall off the bike and skin your hands and knees.

NEW SHOES

Imagine that you are walking to school and you're wearing your new shoes. You really like your new shoes and this is the first day you have worn them. Suddenly, you are bumped from behind by a girl/boy. You stumble and fall into a mud puddle and your new shoes get muddy.

LUNCH

Imagine that you are sitting at the lunch table at school, eating lunch. You look up and see a girl/boy coming over to your table with a carton of milk. You turn around to eat your lunch, and the next thing that happens is that the girl/boy spills milk all over your back. The milk gets your shirt all wet.

ART PROJECT

Imagine that you have finished an art project for school. You've worked on it a long time and you're really proud of it. A girl/boy comes over to look at your project. The girl/boy is holding a jar of paint. You turn away for a minute and when you look back the girl/boy has spilled paint on your art project. You worked on the project for a long time and now it's ruined.

Appendix N

Hypothetical Scenarios - Label Condition

In the following scenarios, the emotional state of the protagonist was provided to participants. Participants were questioned to verify that they encoded the affective state correctly. If it was recalled incorrectly, they were reminded of the correct affective state. As a result of labeling the affective state of a protagonist, it was expected that there would be no differences between aggressive, shy, nonaggressive/nonshy children at the representation step. Verbatim statements are boldfaced or in quotations. Except for changing the negative outcome, the questions were the same for each scenario. Therefore, the questions are listed for the first scenario only.

Directions

Hi _____, my name is Dina. I am going to read some stories to you about situations that kids your age sometimes have. For each story, I want you to imagine that the situation actually happened to you. Then, I am going to ask you some questions about what you would think and feel in each story. There are no right or wrong answers. Your answers might all be the same or they might all be different. Everything that you write or say will not be told to anyone else. You do not have to answer a question unless

you want to, and you can stop at any time. You can also ask questions at any time. Thank you for helping me.

The first story is going to be a practice story.

SCHOOL BUS LINE (PRACTICE STORY)

In this story that I am going to read to you, this kid is very scared.

Imagine that you are lined up to get on the school bus to take a field trip with your school. Kids are getting on the bus one at a time. Just as you get to the front of the line, another kid steps in front of you to claim the last seat on the bus. This other kid looks at you and then walks up the steps of the bus.

1. In this story, how did the girl/boy feel?

If the elicited response is correct, the experimenter will tell a child "That's right" and continue to Question 2.

If a child's response is incorrect, he or she will be told "No, don't you remember that, in this story, the girl/boy was very scared?"

"Now, tell me again, how the girl/boy was feeling in this story."

2. Did the girl/boy claim your seat on the bus:

A. on purpose

B. by accident

How sure are you?

A little

Some

Very

sure

sure

sure

1

2

3

4

5

PLAYING CATCH

In this story that I am going to read to you, the girl/boy is very happy.

Imagine that you are standing on the playground, playing catch with a group of children. You throw the ball to the girl/boy and the girl/boy catches it. You turn around, and the next thing you know is that the girl/boy has thrown the ball and hit you in the middle of your back. The ball hits you hard, and it hurts a lot.

MATH ASSIGNMENT

In this story that I am going to read to you, the girl/boy is very happy.

Imagine that you are working on a math assignment at your desk. You go to sharpen your pencil, and as you walk back to your desk there's the girl/boy walking just in front of you. The girl/boy passes your desk before you get there. The next thing you know, the girl/boy has knocked all of your papers off your desk, and they are all over the floor.

BIKE RIDE

In this story that I am going to read to you, the girl/boy is very mad.

Imagine that you are riding your bike down a quiet street. You ride past a car parked on the side of the street. The girl/boy is sitting in the car. After you ride past the girl/boy, the girl/boy honks the horn of the car. It startles you and you fall off the bike and skin your hands and knees.

NEW SHOES

In this story that I am going to read to you, the girl/boy is very mad.

Imagine that you are walking to school and you're wearing your new shoes. You really like your new shoes and this is the first day you have worn them. Suddenly, you are bumped from behind by the girl/boy. You stumble and fall into a mud puddle and your new shoes get muddy.

LUNCH

In this story that I am going to read to you, the girl/boy is very sad.

Imagine that you are sitting at the lunch table at school, eating lunch. You look up and see the girl/boy coming over to your table with a carton of milk. You turn around to eat your lunch, and the next thing that happens is that the girl/boy spills milk all over your back. The milk gets your shirt all wet.

ART PROJECT

In this story that I am going to read to you, the girl/boy is very sad.

Imagine that you have finished an art project for school. You've worked on it a long time and you're really proud of it. The girl/boy comes over to look at your project. The girl/boy is holding a jar of paint. You turn away for a minute and when you look back the girl/boy has spilled paint on your art project. You worked on the project for a long time and now it's ruined.

Appendix O

Descriptive Statistical Information Used to Determine
Children's Classification as Aggressive, Shy, or
Nonshy/Nonaggressive: Experiment 2

<u>School</u>	Group		Rater's <u>Gender</u>	Aggressive			Shy		
	<u>Grade</u>	<u>Size</u>		<u>Mean</u>	<u>SD</u>	<u>¼ SD</u>	<u>Mean</u>	<u>SD</u>	<u>¼ SD</u>
Canaan Elementary	4	12	M	1.36	0.63	1.83	1.44	0.41	1.75
School	4	14	F	1.98	1.22	2.90	1.48	0.96	2.20
	5	10	M	1.50	0.91	2.18	1.83	0.88	2.49
	5	11	F	1.48	0.82	2.10	2.58	1.19	3.47
Meroby Elementary	4	19	M	1.51	1.04	2.29	1.58	0.49	1.95
School	4	11	F	2.09	1.02	2.86	1.76	0.84	2.39
(Mexico)	5	5	M	1.87	1.32	2.86	1.67	0.91	2.35
	5	11	F	1.39	0.55	1.80	1.27	0.33	1.52
	5	13	F	1.33	0.43	1.65	1.69	0.94	2.40
SeDoMoCha Middle	5	15	F	1.58	0.95	2.29	1.89	0.54	2.30
School	5	5	F	1.27	0.60	1.72	1.07	0.15	1.18
(Dover-Foxcroft)	5	13	F	1.33	0.72	1.87	1.59	0.39	1.88
	5	6	F	1.00	0.00	1.00	1.67	0.47	2.02
Hermon Elementary	4	9	F	1.37	0.56	1.79	1.93	0.40	2.23
School	4	14	F	1.10	0.24	1.28	1.43	0.73	1.98
	4	6	F	2.17	1.17	3.05	1.22	0.54	1.63
	4	5	F	1.47	0.73	2.02	2.00	0.24	2.18
	5	11	M/F/F	1.48	0.74	2.04	2.21	0.99	2.95

BIOGRAPHY OF THE AUTHOR

Dina M. Casey was born in Plattsburgh, New York on August 17, 1967. She was raised in AuSable Forks, New York and graduated from AuSable Valley High School in 1985. She attended the State University of New York at Plattsburgh and graduated in 1989 with a Bachelor of Arts degree in Psychology. She entered the Developmental Psychology graduate program at The University of Maine in the Fall of 1989. Dina is a candidate for the Doctor of Philosophy degree in Psychology from The University of Maine in May, 2006.