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The Impact of Friendships and Mutual Antipathies on Children's Social Behavior and Social Cognition

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THE IMPACT OF FRIENDSHIPS AND MUTUAL ANTIPATHIES ON CHILDREN’S
SOCIAL BEHAVIOR AND SOCIAL COGNITION

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Elizabeth M. Boulie

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THE IMPACT OF FRIENDSHIPS AND MUTUAL ANTIPATHIES ON CHILDREN’S
SOCIAL BEHAVIOR AND SOCIAL COGNITION

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Mutual antipathies are rare among preschoolers and are common among older school age children, but little is known about the prevalence of mutual antipathies among younger school age children. One goal of this study was to examine the prevalence of mutual antipathies among first graders to determine if they are common among younger children. A second goal of the study was to examine the impact of friendship and mutual antipathies on children’s social behavior and social cognition. A sample of first, third, and fifth graders (N = 512) first completed rating and nomination sociometric assessments to assess participation in friendships and mutual antipathies. On a different day, children viewed video-taped ambiguous provocation stimuli in which provocateur’s emotions were systematically manipulated (happy, angry, and sad). They then rated six different social goals and gave problem-solving responses. Mutual antipathies were found to be common among first through fifth graders, with 42 to 66 percent of children participating in antipathy dyads. Children’s participation in friendship and mutual antipathy relationships had effects on both peer-nominated social behaviors and social cognition, even when statistically controlling for the effect of peer rejection.
Literature Review

Children’s dyadic peer relations are often studied due to the fact that the different relationships (negative or positive) can have not only immediate effects on an individual’s adjustment, but possibly lasting effects later in life (Bagwell, Schmidt, Newcomb, & Bukowski, 2001; Murray-Close & Crick, 2006). “Dyad” is the term used to describe a pair of children who have some sort of relationship (this relationship could be either a friendship or an antipathy; Hundley & Cohen, 1999). Understanding how different relationships affect children is significant in that children’s relationships are important contexts in which children learn social behaviors. This study will focus on two types of relationships, friends and enemies, and the effects they have on children’s peer-nominated social behaviors and their social cognitions. How these two types of relationships are defined and measured will be examined first, followed by possible advantages and/or disadvantages these types of relationships can have for children. Finally, social information processing (SIP) models of social competence and incompetence are briefly reviewed as differences in SIP judgments among children who participate in different kinds of dyadic relationships will be examined in this research.

Defining and Measuring Friendships

Friendship can be defined as a dyadic relationship that is close and reciprocal in nature (Erdley, Nangle, & Gold, 1998; Hundley & Cohen, 1999). When speaking in terms of peer-nomination measures, friendships among children are often defined in reciprocated terms; in other words, a mutual nomination of friendship or “Like Best” between two children identifies them as mutual friends (Hundley & Cohen, 1999). Friendships can be one-sided as well, with a child either receiving (but not giving)
nomination of friendship or giving (but not receiving) the friendship or “Like Best” nomination (Hundley & Cohen, 1999; Peets, Hodges, Kikas, & Salmivalli, 2007). However, it is reciprocated friendships that are the focus in most studies of friendship.

Friendships also can be defined using a peer-rating measure of liking (Erdley et al., 1998) where children rate their peers on a 1 (“not much”) to 5 (“the most”) scale of how much they like to play or work with the peer (Lemerise, Gregory, & Fredstrom, 2005). Mutual ratings of “5” are usually used to define friendship.

Friendships among children are assessed in many ways, which include teacher report and/or parent report, sociometric measures, and observations by trained observers (Hundley & Cohen, 1999). The two most commonly used sociometric methods for assessing children’s peer relations are the peer nomination method and the peer rating method (Asher & Hymel, 1981). These two methods are often used in conjunction with one another to assess peer relations as well as social standing (accepted/rejected) of children in a class.

The peer-rating method utilizes a rating scale, often from 1 to 5, where children rate each peer in their class for how much they like to work or play with that peer (Asher & Hymel, 1981). This method is more commonly used to determine peer acceptance among children; however, it can be used for determining friendships. In most studies that make use of this method for assessing friendships, a Likert scale (typically ranging from 1 to 5) is used, though the scale can go higher (see Hundley & Cohen, 1999) or lower in range (see Yugar & Shapiro, 2001). Also, a mutual rating of 5 (or the highest number on the scale) is typically the necessary criteria used to identify a friendship. However, there are some studies (Berndt, Hawkins, & Hoyle, 1986) that allow for an average rating of 4
or higher to determine a friendship. The peer-ratings measure often allows for unlimited ratings of “5” and thus can yield a higher number of mutual friendships per child if this is the only method used in determining friendships. Yuger and Shapiro (2001) made note that there are a few shortcomings if using only the ratings system to determine friendships. One drawback is that the administration can be time consuming depending on the size of the class; another drawback is that there is no information about the type of relationship, just the amount of liking (Yuger & Shapiro, 2001).

In the nominations method, children are asked to nominate classmates who fit certain categories determined by the examiners, such as nominating those with whom the child likes to play best or those who start fights (Asher & Hymel, 1981; Lemerise, Fredstrom, Kelley, Bowersox, & Waford, 2006; Yuger & Shapiro, 2001). The children usually receive a list of the children in their class to ensure that nominations are not missed based on the fact that a child cannot recall all the peers in his/her class (Yuger & Shapiro, 2001). Typically when using the peer-nomination measure, children are restricted to nominating only 3 peers for “like best” or “like most” (e.g., Erdley et al., 1998; Lemerise et al., 2005). However, there have been studies where children can nominate an unlimited number of peers when nominating those whom they consider their friends or those whom they “like most” (see Hundley & Cohen, 1999).

As mentioned previously, a reciprocated nomination of “like best” is what will determine a mutual friendship when using peer nominations; however, there can be different levels of friendships, not just mutually reciprocated friendships. Hundley and Cohen (1999) conducted a study to examine children’s liking for classmates based on different types of friendship nominations (not just mutual friendships). They wanted to
study a broader range of dyadic relationships between children besides just those that involve mutual reciprocation of nominations/high ratings. The different types of friendships they found include mutual friends (reciprocated nominations), unilateral given nomination (a child gave a nomination for friendship, but did not receive one from that peer), unilateral received nomination (a child received but did not give the friendship nomination to the peer), and not friends (neither child nominated the other one; Hundley & Cohen, 1999).

Although using observers to determine friendships among children is not the most commonly used method, it has been utilized in the past to identify friends. The method of using observers can be referred to as “moving sociometrics,” and does, according to Hartup, Laursen, Stewart, and Eastenson (1988), show similar results as using other sociometric methods of identifying friendships. When using observers, training is required so that observers are able to define and identify “close proximity” or any other construct being used to define a friendship. In one study, conducted by Hartup et al. (1988), observers, throughout a 10-week period, recorded their observations of children quietly into voice recorders. In this study, children were determined to be mutual friends if they spent 25% or more of their time in “close proximity” (determined by coding the observations) with one another (Hartup et al., 1988).

In a study by Yugar and Shapiro (2001), a way of measuring friendships involved sending forms to both the parent and teacher of a student to assess who the child’s friends were. In their study, parents and teachers were asked to write down who they felt their child’s best friend was and also to state who their child liked to play with regularly; they were instructed to do this on their own and not ask their child for the answers (Yugar &
Shapiro, 2001). However, Yugar and Shapiro did not use this method as an independent way of determining who children’s friends were; the results of the parent and teacher reports of friendship were compared to children’s reciprocal nominations. It was found that parents’ nominations of who they thought was their child’s best friend matched their child’s report 35.6% of the time, whereas teachers’ reports matched 38.5% of the time. Both these numbers increased to more than 60% if a child’s top three nominations (as opposed to their top nomination) were examined (Yugar & Shapiro, 2001).

It is generally accepted that most children have/maintain friendships, but the question is how many children (or what percentage) have friendships. In Hartup et al.’s (1988) study, of preschool-age children (ages 3 years, 4 months through 5 years, 4 months), 89% had at least one friend. However, Hartup et al.’s percentage included both mutual and unilateral friendships. Consistent with these numbers, a study by Berndt and Keefe (1995) conducted with seventh and eighth graders, showed that 90% had at least one friend in the fall and 88% had at least one friend in the follow-up in the spring semester. More than 80% of children in grades 7 through 9 were reported by Parker and Gamm (2003) to be involved in a mutual friendship. In their study, they did not include the unilateral friendships in that number. On the higher end, it was reported by Yugar and Shapiro (2001) that only 2 to 4% of the children in their study (which consisted of first through third graders) did not have reciprocated friendships. It can be concluded that the prevalence of friendships ranges from 80 to 98% depending on whether unilateral friendships are counted in with reciprocal friendships.
What Friendships Offer Children

Friendships are said to bring many benefits for children (Burgess, Wojlawowicz, Rubin, Rose-Krasnor, & Booth-LaForce, 2006). These benefits include increased self-esteem, increased self-worth, increased ability in perspective-taking, opportunities to learn social competence skills, better adjustment in adulthood (Bagwell, Newcomb, & Bukowski, 1998; Bagwell et al., 2001; Hartup, 1996), and increased sense of emotional security (Burgess et al., 2006). Burgess et al. (2006) hypothesized that friendships could actually be viewed as protective factors against possible social-cognitive or emotional difficulties that are experienced in the peer group, particularly if it is a mutual friendship.

Bagwell et al. (1998) contended that friendships can assist in building competence in many areas in children that peer acceptance cannot account for simply by itself. One of their hypotheses was that perceived self-worth in adulthood would be associated with having or lacking a mutual friendship in childhood and would be a predictor of adult relationships (romantic and friendly relationships; Bagwell et al., 1998). They found that friendship status in childhood (having friends versus not having friends) was not associated with competence in romantic relationships in adulthood, but that friendship status was a good predictor of self-worth in adulthood (Bagwell et al., 1998). In other words, adults who had friends in childhood often viewed themselves in a more positive way (Bagwell et al., 1998).

Bagwell et al. (2001) argued that friendships help to provide necessary skills that are important in adaptive adjustment. Children with friends experience better adjustment in school and family relationships and also experience less trouble with authorities (Bagwell et al., 1998). Friendships help children to better understand the self and provide
a support system to help with the every day stresses of life (Bagwell et al., 2001). The inability to maintain friendships can be a stressful situation in a child’s life, and those who lack friends also lack the support from a network of peers (Bagwell et al., 2001). These social networks of friends offer support and contribute to children’s abilities to provide support and encouragement to one another (Berndt & Keefe, 1995).

Many view friendships as over all protective factors against stress or conflict in children’s relationships (Bagwell et al., 2001; Burgess et al., 2006; Hundley & Cohen, 1999). It is felt that friendships may shield children from social-cognitive and emotional difficulties (alleviating negative emotional reactions to conflict in social situations) due to the benefits friendships bring and their supportive nature (Burgess et al., 2006). The study by Burgess et al. (2006) showed that children chose fewer vengeful and passive strategies as well as fewer hostile attributions of intent (for aggressive children) and fewer attributions of self-blame (among withdrawn children) when dealing with conflict with a friend (as opposed to someone who is not a good friend), showing that perhaps close friendships can benefit children in the area of perspective-taking or social competence. Hundley and Cohen (1999) stated that conflict with a friend (as compared to a non-friend) brought about more positive changes because children were able to find better ways to problem solve. Hartup et al. (1988) found that children who are friends manage their conflicts differently than do children who are not friends; friends often disengaged more than non-friends and had less intense conflicts. Friends who were in conflict were also more likely to maintain proximity with their friends afterwards (Hartup et al., 1988).

Children who are liked more in general within the classroom often have more reciprocated friendships than do those who are less accepted, showing that popularity
may be a result (and benefit) of having friends (Hundley & Cohen, 1999). Abecassis, Hartup, Haselager, Scholte, and Van Lieshout (2002) found that children who have a larger network of friends and only one antipathy (as opposed to a larger network of enemies) are at lower risk for adjustment difficulties. Having friendships (which provided a structure for learning social competence) shows that a child may already be socially skilled, as self-confident children tend to make friends with peers more easily than do less confident peers (although it might be noted that having friends factors into higher self-esteem in children; Bagwell et al., 2001; Hartup, 1996). Also, children who have and maintain friendships throughout the school year are more apt to have better attitudes toward school (Hartup, 1996). Despite all the benefits that friendships may offer, Hartup (1996) stated that the actual developmental impact of friendships on children varies with each child and cautioned that there are both advantages and disadvantages to having friends.

Although it can be said that being generally disliked by the peer group can be seen as a risk factor, friendship can also be related to maladjustment later in adulthood (Bagwell et al., 2001; Hartup, 1996). The quality of friendships and with whom a child is friends can impact development. For example, although supportive relationships do positively impact development, those relationships that are troubled and full of conflict may actually lead to disadvantages developmentally (Hartup, 1996). Children who are aggressive and/or rejected will often form friendships with others who are similar to them (Bagwell et al., 2001). When both individuals in a dyad are aggressive and/or rejected, it becomes difficult to learn social competence from one another. These individuals often simply reinforce the aggressive and antisocial behavior (Bagwell et al., 2001).
In a study by Bagwell et al. (2001) it was found that friendship status predicted trouble with the law later in life more so than social status (popular/accepted or unpopular/rejected). In their longitudinal study of children into adulthood, they found that children who had more trouble with the law were the ones who had a close friend in childhood. Therefore, they stated, having a close friendship does not always lead to social competence in life (Bagwell et al., 2001). These results are likely due to friendships formed between aggressive and/or rejected children; the reinforcement of aggressive or antisocial behavior may have led to the children partaking in delinquent behavior that carried on later in life (Bagwell et al., 2001). Hundley and Cohen (1999) stated that poor peer relationships are associated with adult psychopathology; so when two antisocial peers become friends and encourage delinquent behavior in each other, they have limited opportunities for practicing prosocial behavior and building social competence (Bagwell et al., 2001).

**Defining and Measuring Enemy Relationships**

When speaking in terms of sociometric measures, the term “mutual antipathy” is used in classifying two children who share a mutual dislike for each other. According to Abecassis (2003), the term “antipathy” refers to a broader category of relationships that are based on reciprocated dislike. The types of antipathies vary widely based on the many reasons children have for the social aversion of certain peers. Types of antipathies include the loss of a friendship, a bully/victim dyad, or rivals (“being enemies”), which is the most intense form of antipathy (Abecassis, 2003; Hartup, 2003). Abecassis (2003) points out that “enemies” often involve higher levels of hostility than other forms of antipathy (such as the simple aversion of another individual) and that we cannot yet distinguish
between types of antipathies simply through mutual nominations of “like least.”

Generally speaking, when studies are conducted concerning “mutual antipathies,” it does not necessarily mean children are “enemies” despite the fact that the two terms are often interchanged. The history of interactions between children in antipathies also varies, thus resulting in how intense an antipathy a dyad may experience.

The question of the prevalence of mutual antipathies among children has been asked by many researchers, though there is no real clear answer. Mutual antipathies are rare among preschoolers, but are common by third grade; however, their prevalence in younger school-age children is unknown. Rodkin, Pearl, Farmer and Van Acker (2003) found that mutual antipathies did become more common by the fourth grade, with 20 to 40% of third and fourth grade children being involved in at least one mutual antipathy. Pope (2003) also found that 28% of third and fourth grade children were involved in at least one mutual antipathy, with the number jumping to 38% by fifth and sixth grade, showing that older middle-school-age children are more likely to take part in an antipathy relationship than younger children (these results are from the nomination method of identifying mutual antipathies). Forty-eight percent of Card and Hodges’ (2003) sample of fourth through eighth graders were involved in at least one mutual antipathy, whereas Parker and Gamm (2003) found that over half of their seventh through ninth grade sample had a mutual antipathy. Rodkin et al. (2003) did find, however, that antipathies are usually short-lived, at least in middle childhood, with less than one of every five antipathies they discovered in the fall for their fourth graders maintained into the spring of that year. One conclusion that can be drawn from these data is that mutual antipathies are a common part of childhood and early adolescence. Despite the commonality of
mutual antipathies, it is still far more common for children to take part in a friendship, with some 80% of children in grades seven through nine being a part of a friend relationship (Parker & Gamm, 2003).

Mutual antipathies are typically measured using the sociometric measures of peer ratings or peer nominations. When using the nominations-based measure, mutual antipathies are generally defined by two children saying they do not like each other, which is indicated by reciprocated negative nominations (nominations of dislike; Abecassis, 2003; Pope, 2003; Witkow, Bellmore, Nishina, Juvonen, & Graham, 2005). There is a question as to whether or not using nominations may be unethical, possibly causing some form of social or emotional harm to children (Hartup, 2003). However, previous research has shown no support for that assumption, stating that children neither said negative things nor interacted more negatively with their peers after a sociometric task (Bell-Dolan, Foster, & Sikora, 1989; Hayvren & Hymel, 1984).

When using the peer rating measure of identifying mutual antipathies, reciprocated “like least” or “not at all” ratings (a rating of 1) are used to identify a mutual antipathy (Pope, 2003). The advantage of using the ratings-based measure to identify antipathies is that it allows the opportunity for a child to identify more than 3 mutual antipathies, which is the typical limit when using the nomination method (Pope, 2003). Ratings also allow for all classmates who are disliked by a child to be identified because a list of all classmates is provided for the child, whereas with peer nominations the child has to try and recall all of their classmates in order to identify their enemies (Pope, 2003).

Results may vary based on which method is used to identify antipathies. For example, Pope (2003) compared the rating versus nomination methods. Results showed
that when using peer nominations to define antipathies, 33% of the sample of third through sixth grade students had at least one mutual antipathy; however, that number more than doubled to 67% when peer ratings were used to identify mutual antipathies with the same sample (Pope, 2003). Thus, using the rating method, antipathies can be seen as more common among children than when using the nomination method, due to the fact that children had more opportunities than the three allowed with nominations to identify disliked peers. Abecassis (2003) encouraged the use of both measures together in order to yield more information on mutual antipathies and in hopes to help identify the intensity of the antipathy (based on the order children nominate each other and the rating each child in the dyad receives). Little is known about the prevalence of antipathies in younger school-age children (for example, those in 1st grade); this study will contribute to the data on prevalence rates among children in this age range.

Effects of Mutual Antipathies

Hartup (2003) pointed out that some of the most well known school shooters in recent history have been children who were involved in mutual antipathies. This is, however, an extreme outcome of involvement in mutual antipathies, as most children involved in antipathies are not going to become school shooters. Although mutual antipathies do generally present disadvantages to children participating in them, most antipathy relationships, as Rodkin et al. (2003) pointed out, often only last a short period in a child’s life, as enemy relationships tend to be episodic in nature. It can also be argued, however, that involvement in mutual antipathies may be of some importance in childhood for some individuals (Abecassis, 2003; Hartup, 2003).
Among the disadvantages that are presented to children who take part in a mutual antipathy relationship are peer rejection, developmental challenges, withdrawal, antisocial behavior, poor school achievement, depression, and victimization (Abecassis, 2003; Hartup, 2003; Pope, 2003; Witkow et al., 2005). The effects of participating in an enemy dyad may vary across children as well as gender and the type of enemy relationship (mixed-sex or same-sex antipathy; Pope, 2003).

In a study by Rodkin et al. (2003), both boys and girls who had more than one enemy were less popular and liked among their peers when compared with the children who had only one enemy or no enemy relationships. Rodkin et al. (2003) also found that these children with multiple enemy relationships tended to be viewed as more aggressive; these results were similar for children in same- and mixed-sex antipathies. When looking more directly at the gender of a child, girls with mutual antipathies were found to manifest more depression, aggression, immaturity and withdrawal from peers compared to girls who were not involved in an antipathy relationship (Pope, 2003; Witkow et al., 2005). Additionally, girls with enemy relationships were reported to have lower social preference and likeability among peers and were reported by teachers to have poorer work habits and cooperation (Pope, 2003; Witkow et al., 2005). In Pope’s (2003) study, boys with enemy relationships (when viewed through a ratings-based measure) also had lower social preference and likeability as well as more withdrawal and immaturity; however, unlike girls, in boys, enemy relationships were not correlated with sadness.

It should be noted that in Rodkin et al.’s study (2003) the negative effects found (that children in enemy relationships were less likable and more aggressive) could not be differentiated from general peer rejection. Results from Pope’s (2003) study supported
this finding; when following up a year later with the participants, results showed that being the target of dislike (regardless of having mutual enemy relationships or not) was a more accurate predictor of adjustment problems than were enemy relationships when used alone as a predictor. After controlling for general peer rejection, Rodkin et al. (2003) found that boys who actually lost enemies throughout the school year made gains in likeability and became less aggressive. However, as mentioned previously, negative effects of enemy relations do differ between the genders, and it was found in Rodkin et al.’s study that girls who lost enemies throughout the course of the school year actually became more aggressive. Despite the fact that having many enemies may lead a child to be liked less by the peer group, being liked by the peer group does not necessarily mean a child will not have any enemy relationships, as even popular and average children take part in enemy relationships (Hartup, 2003; Pope, 2003).

Many studies have made note of the differences that may be seen among children who partake in same- versus mixed-sex antipathies (see Abecassis, 2003; Murray-Close & Crick, 2006; Pope, 2003; Witkow et al., 2005). It has been hypothesized that same-sex antipathies may have more negative effects on children than mixed-sex antipathies based on the fact that children tend to befriend same-sex peers more often in childhood (Pope, 2003). Murray-Close and Crick (2006) hypothesized that involvement in same-sex enemy relationships would be associated with more withdrawal, immaturity and sadness and less likeability among peers than mixed-sex enemy relationships. However, they found that boys in mixed-sex enemy relationships experienced more physical victimization, although this was only marginally related to boys’ same-sex enemy relationships. Murray-Close and Crick (2006) also found that increases in both same- and mixed-sex
enemy relationships were related to both physical (among boys) and relational (among girls) aggression. Pope (2003) found that boys in same- and mixed-sex mutual antipathy relationships had higher levels of withdrawal and immaturity and lower levels of social preference and likeability. Boys’ same-sex antipathies also showed positive correlations with over-activity, and mixed-sex enemy relationships were negatively correlated with helpfulness. Abecassis’s (2003) study supported the finding that boys in same-sex mutual antipathies showed more withdrawn behavior (though this was not found among boys in mixed-sex antipathies). In Pope’s (2003) study, same-sex enemy relationships among girls were correlated with low social preference, social impact, withdrawal, immaturity (nomination-based enemies) and aggression (ratings-based enemies); although she did note that results for girls with same-sex enemy relationships were the same as for those who were in mixed-sex enemy relationships.

Children who have more enemies have fewer prosocial skills than other children and are more aggressive, but when children show deficits in social skills, they tend to be more disliked by the peer group (Parker & Gamm, 2003). When children participate in mutual antipathies, they are also at risk for showing deficits in social information processing. Abecassis (2003) stated that once a child views a peer as an enemy, the way that child behaves towards the peer is most likely going to change. The child may begin viewing the peer’s behavior as having more hostile intent than if the peer were not categorized as an enemy, or the child may just view the peer as having more negative qualities in general (Abecassis, 2003; Parker & Gamm, 2003). Parker and Gamm (2003) stated that this bias may be one way that enemy relationships are maintained; the anticipation that the peer viewed as an enemy will behave in a negative manner causes a
child to behave negatively toward that peer thus perpetuating the cycle of anticipated negative behavior from both parties. Another theory is that there is a negative history that is unique between two children that may help to maintain that enemy relationship (Parker & Gamm, 2003). Both males and females in their study reported lower prosocial skills and more aggression for their enemies than their non-enemies (Parker & Gamm, 2003).

Parker and Gamm (2003) predicted that preadolescents would report more negative views of their enemies than would the peer group as a whole (who may not view the particular peer as an enemy), which may be due in part to the history of the relationship between the individuals. Results supported this as well; although children rated their mutual friends generally the same as the whole peer group did, mutual enemies were rated particularly more negatively compared to ratings by the overall peer group (Parker & Gamm, 2003). This supports a clear bias that children hold for their friends (positive bias) and their enemies (negative bias); in this way, they are claiming that their enemies may possess fewer prosocial skills than they actually do whereas they possibly rate their friends as having more positive qualities than they may in fact have.

Another bias noted by Abecassis (2003) is a self-serving bias which allows children to blame their enemies for the start of the enemy relationship, which may serve to maintain the enemy relationship as well, due to each child in the relationship being able to pass blame on to the other. One of the reasons the peer group as a whole may not rate a child’s enemy as negatively as the child did may be because the negative behaviors are directed only from one enemy to the other, thus the entire peer group may not see the negative behaviors being rated by a child’s enemy (Parker & Gamm, 2003). However, generally speaking, the more enemies a child has, the lower their acceptance within the peer group,
although it must be noted that even well accepted children have enemies, so it may not be a total lack of social skills that relates to whether or not a child has any enemies.

There are many studies that document how taking part in an enemy relationship may be a risk factor for many children, but can being a part of an antipathy dyad be beneficial or important in any way or do antipathy relationships always cause negative outcomes for the children participating in them? Witkow et al. (2005) tested the hypothesis that results of other studies claiming the maladaptive power of antipathy relationships might not be the same with a different, more carefully chosen comparison group. Results for the study showed that if the factor of peer rejection is controlled for statistically, effects seen among children in an enemy relationship are, in fact, different from that of other studies (Witkow et al., 2005). No significant effects were seen for boys in mutual antipathy relationships in the Witkow et al. (2005) study whereas girls in the study had less aggression and more coolness (when peer rejection was controlled). Pope (2003) even found in her study that generally, depression, sadness and anxiety were not highly correlated with having enemies. Another result from Witkow et al. (2005) shows that opposite-sex enemy relationships (among both genders) were positively correlated with coolness, popularity and nonphysical aggression; same sex enemy relationships were positively correlated with compliant classroom behavior and less delinquent behavior among boys in the study. Rodkin et al. (2003) pointed out that there is a possibility that antipathies may only be a risk factor for children under certain circumstances and may not be considered a general risk factor for all children.

Some argue that there may be some positive aspects to being involved in a mutual antipathy (see Abecassis, 2003; Hartup, 2003; Parker & Gamm, 2003; Witkow et al.,
2005). Witkow et al. (2005) stated that a child choosing to dislike a classmate who dislikes him/her may be a way of showing awareness of the classmate’s negative feelings and disliking them back may help them feel balanced and establish symmetry in the relationship. Parker and Gamm (2003) point out this may serve as a self-protective method among children, as it may be easier to be disliked by someone whom a child already dislikes. Another hypothesis is that the function of antipathies may be to help an individual cope with the disliked parts of the self by projecting those disliked parts of the self onto those peers, or by seeing those disliked parts of the self already in the peer, and thus choosing to dislike the person (Abecassis, 2003). Enemy relationships may also serve the purpose of drawing friends closer, as they may share the common view of disliking the same person, thus strengthening what they may have in common as friends (Abecassis, 2003). Hartup (2003) therefore argues that there is a possibility with what antipathies can offer, enemies may actually have some importance (perhaps in the development of social competence) for children.

This study is going to examine the prevalence of mutual antipathies among younger school age children for whom little information is available currently (first grade). The correlates of mutual antipathies in school age children will be examined as well, specifically their relations with children’s social goals and their problem solving skills (for example, the hostility/friendliness of their problem solving skills).

Social Information Processing Model

Social information processing (SIP) refers to a theoretical model in which children take in and interpret social cues in order to arrive at a socially competent decision in a social situation (Lemerise & Arsenio, 2000). The SIP model describes the steps of social
information processing that occur when interpreting social cues. These proposed steps are said to occur separately from one another; however, the processing of each step occurs quickly (Lemerise & Arsenio, 2000).

The first step of the SIP model involves an individual encoding (or taking in) the cues of the current situation. Step two involves interpreting those cues (why did that just happen?). The third step is where the individual clarifies his/her goals (such as choosing between instrumental or prosocial goals). The fourth and fifth steps involve generating possible solutions and choosing a response based on the goals and possible outcomes to the situation; step six is enacting that chosen response (Crick & Dodge, 1994; Lemerise & Arsenio, 2000). It is assumed that the better a child is at processing each step of SIP, the more competent his or her choices will be (Crick & Dodge, 1994). When children understand and can then correctly interpret a situation, their behavior will likely be more socially competent than if they misunderstand and therefore misinterpret social cues (Arsenio & Lemerise, 2004). Standard methods for measuring social information processing have been used in three decades of research on children’s social competence and aggression.

Many things can affect a child’s reaction to a given situation; the past experiences of a child are accessed during a social encounter and may affect the goals or outcome (Lemerise et al., 2006). Individual differences can also play a role in how children interpret and react in social situations; for example, differences in aggressiveness, social status in the peer group, and even a child’s interpretation of the situation can affect how a situation is handled (Lemerise et al., 2006). Differences in the context of the situation also help to determine how a child will react in a given situation; in other words, what
past experiences is a child bringing to the situation and with whom is the child dealing (friends/enemies, popular, aggressive, rejected peers; Dorsch & Keane, 1994). Lemerise & Arsenio (2000) hypothesized that others’ emotions could affect SIP as well, based on the fact that the emotions presented by another individual might affect how a child interprets why something occurred (interpretation of cues; step 2) and thus may have an effect on the child’s goals for that situation (step 3). When a peer displays more positive affective cues, it is more likely that more positive and prosocial goals will be promoted, whereas negative cues will likely lead toward more instrumental goals (Lemerise & Arsenio, 2000). A study by Lemerise et al. (2005) found that children’s SIP was directly influenced by the emotional display of the provocateur in stimulus videos viewed by children in the study; this difference was seen in children’s interpretation of cues. More hostile attributions were made when the provocateurs were displaying angry emotions than when they were happy or sad (Lemerise et al., 2005). Also affecting SIP was the social adjustment of the child involved; Lemerise et al. (2005) found that rejected-aggressive children often chose more hostile problem solving responses than did average- and popular-nonaggressive children, although this occurred more often when provocateurs displayed negative emotions and children were not specifically asked about the provocateurs’ emotion.

This study will focus on steps 3 (goal clarification) and 5 (response decision) of the SIP model and how children’s participation in friend and enemy relationships is related to how they choose goals and solve problems when in an ambiguous social situation. The most common way to address social goals when studying SIP is to break them down into relational goals and instrumental goals (Crick & Dodge, 1996; Nelson &
Relational goals could be defined as being prosocial, for example, choosing to stay friends with a peer rather than hitting him/her. Instrumental goals are less socially competent; an example of an instrumental goal would be a child choosing to get a toy that a peer is playing with by hitting him or her (Lemerise & Arsenio, 2000).

Many factors can affect how children generate their goals in a social situation, such as grade differences, attribution of intent, and emotional ties between those involved. Grade differences found in children show that older children tend to favor social relational goals compared to instrumental goals more so than younger children (Crick & Dodge, 1996). Findings also show that prosocial individuals demonstrate social relational goals more than they do instrumental goals (Crick & Dodge, 1996). In the context of ambiguous provocation situations, children who are aggressive will tend to attribute hostile intent to the provocateur more often than a non-aggressive child (Crick & Dodge, 1996); this kind of attribution is what could directly affect the outcome of a situation, leading a child who attributes hostile intent to generate more hostile goals. The child is able to make a guess at how the situation is evolving based on the emotion cues provided by the provocateur. Thus, in an ambiguous situation it is up to the child to interpret the situation (which may or may not be correctly interpreted) in order to generate goals and enact the selected goal (Lemerise & Arsenio, 2000; Lemerise et al., 2005). According to Lemerise and Arsenio (2000), another factor that could lead to a bias in goal selection and problem solving is the emotional ties between the children involved, where friendships may promote more social relational goals and lack of friendship could lead to more instrumental goals.
In the SIP model, the later steps can depend on how children clarify and choose their goals (Crick & Dodge, 1994; Lemerise & Arsenio, 2000); generating goals and then choosing from those goals can have a direct influence on the problem solving skills of children (Lemerise et al., 2006). Past research has shown that children who prefer instrumental goals to relational goals are more likely to choose aggressive solutions (Arsenio & Lemerise, 2004; Crick & Dodge, 1994). The direct result of goal clarification is problem solving; children can only act on the goals they generate and thus the one they justify as the best option. The emotion display of a provocateur, gender, and social adjustment can also all have an effect on children’s problem solving skills. Rejected-aggressive children had problem-solving responses that were more hostile than children who were average- and popular-nonaggressive (Dorsch & Keane, 1994; Lemerise et al., 2005, 2006). In Lemerise et al. (2006), sad and angry emotional displays by provocateurs also led rejected-aggressive children to make less friendly problem-solving responses than other non-aggressive children. As for gender, in a study by Dorsch and Keane (1994), gender only showed a significant difference when the story type was provocation, as opposed to peer group entry; they did caution, however, that gender of the provocateur may have affected this result. 

Research Questions

The first goal of this study was to investigate the prevalence rates of mutual antipathies in first grade children to find out if mutual antipathies are as common among younger school age children as they are in older school age children. Prevalence rates in older school age children will be compared with previous research to determine whether there is consistency between the results of this study and those of past studies. To add to
previous research on involvement in friendships and antipathies, this study will also look at the effects that these types of relationships have on children’s goal clarification and problem-solving skills. This study will focus on whether involvement in a mutual antipathy is associated with less socially competent choices. There are two hypotheses: (a) it is expected that when controlling for the effects of peer rejection, children who have enemies and no friends will rate instrumental goals as more important and prosocial goals as less important than will children with friends, regardless of enemy status; (b) it is predicted that when controlling for the effects of peer rejection, children who have enemies will have problem-solving skills that are rated as more hostile than those of children who have no enemies, regardless of grade.
Method

Participants

A total of 512 children \((n = 239\) boys; 81% European-American, 14% African American, 5% other) in 1\textsuperscript{st} grade \((n = 170)\), 3\textsuperscript{rd} grade \((n = 190)\) and 5\textsuperscript{th} grade \((n = 152)\) from 4 schools in a small southern town participated in the study. Data from a subset \((n = 231)\) of these children were analyzed in a published study of individual differences in children’s social information processing (Lemerise et al., 2006). In the current study, the entire sample of children is used to examine a research question that is different from the one examined by Lemerise et al. (2006). Written parental consent and child assent were obtained before beginning each session. The participation rate averaged 81 percent.

Overview of Procedure

Children in the study participated in two interview sessions. In the first session, participants were interviewed using a rating and nomination sociometric interview in order for them to rate each classmate and nominate them for certain categories of social behaviors. Interviews were conducted at least two to three months into the school year to ensure children’s familiarity with their classmates. First-graders were individually interviewed, whereas third- and fifth-graders participated in group sessions where an experimenter led the whole class through the interview as they independently filled out protocols. The second session was completed individually with every participant. In this session, children viewed ambiguous provocation videotapes where the provocateur’s emotion display was varied across happy, angry, and sad. After viewing the videotapes, children were asked for their understanding of the situation on the video. Then they rated
the importance of six social goals in relation to the provocation and answered an open-ended problem-solving question.

Sociometric Interview: Reciprocal Friendships and Mutual Antipathies

In the first session, children were interviewed in order to rate and nominate classmates. Children in the first grade were individually interviewed, whereas older children participated in group sessions. The children rated classmates with regard to how much they liked to play and work with each classmate on a 5-point scale (1 = “like least;” 5 = “like most”). After rating each classmate, the children were then asked to nominate up to three classmates for each of four different categories of social behavior. These categories consisted of those classmates “they like to play with the very best of all,” those “who fight, say or do mean things, or push and hit other kids” (the children who are most aggressive), those “who don’t talk or play with other kids very much; they are shy or bashful,” and those who are “easiest to get along with; they get along with everyone, and everybody likes them” (children who are socially competent). The “like least” ratings of “1” and the “like best” nominations were used to determine mutual antipathies and friendships among the students in a classroom.

Dyadic status criteria. Participants were selected to represent one of four different types of dyadic status based on friendships and mutual antipathies (enemy relations). Friendships were defined by reciprocated “like most” nominations. Mutual antipathies were defined by reciprocated “like least” ratings. Based on children’s friendships and mutual antipathies (or lack thereof), four dyad statuses were created: Friends Only ($n = 167; 64$ 1st grade, $45$ 3rd grade, $58$ 5th grade), No Friends and No Enemies ($n = 82; 39$ 1st grade, $19$ 3rd grade, $24$ 5th grade), At Least One Friend and At
Least One Enemy \((n = 201; 51 \text{ 1st grade}, 95 \text{ 3rd grade}, 55 \text{ 5th grade})\) and Enemies Only \((n = 74; 24 \text{ 1st grade}, 33 \text{ 3rd grade}, 15 \text{ 5th grade})\). It should be noted that this study is looking at mutual antipathies as a general category, but the word “enemies” may be used interchangeably with “antipathies” throughout the text. Because cross-gender dyads were uncommon in this study (2%), they were discarded and only same-sex dyads are examined.

*Social Cognitive Interview: Social Goals and Problem-Solving*

In the second session, children participated in an interview individually with an experimenter blind to the sociometric scores from the previous interview. Each child viewed one at a time seven videotaped ambiguous provocations (1 for practice and 6 stimulus stories) from Lemerise et al. (2005, 2006). The provocateurs’ emotion displays in the video were varied across the stories (2 stories each of happy, sad and angry). Order of the videos was counterbalanced across three versions of the videotapes. The materials and procedures are standard in SIP research and have been demonstrated to be reliable and valid (Crick & Dodge, 1994, Lemerise et al., 2005, 2006).

When children viewed the videos, they were told to imagine being a particular child in the video; this child was always the victim of the provocation in each story. The practice story was presented first with the purpose of familiarizing each child with the task at hand. After viewing each video, the experimenter asked the child what happened in the story; this ensured that the child comprehended the provocation. If they did not notice the provocation, the experimenter showed the video again, and the comprehension check was repeated.
After viewing each provocation and checking that each child understood the provocation, the children were asked to rate six social goals on a 5-point scale (1 = “not important”, and 5 = “most important”). These six goals pertained to dominance (“get own way or look strong”), revenge (“get back at the provocateur”), avoiding trouble (“avoid any kind of problems or trouble”), avoiding the provocateur (“stay away from the provocateur”), focusing on the problem (“fix the problem in the story”), and social relational goals (“be/stay friends with the provocateur”). Order of presentation of the goals was counterbalanced across stories.

After rating goals, the children were asked an open-ended problem-solving question that was rated by coders for friendliness/hostility and passivity/assertiveness (kappas > .80; Lemerise et al., 2006). Friendliness/hostility was rated on a 5 point scale by coders with 1 = highly hostile and/or unfriendly, 3 = neutral; and 5 = highly friendly. Passivity/assertiveness was also rated on a 5-point scale: 1 = passive (child does nothing in response to provocation); 3 = neutral; and 5 = assertive (child reacts in an appropriately assertive manner to get what they want, hostility/friendliness not taken into account).
Results

Overview of Analyses

Chi square tests were run to determine whether race, grade, or gender had any effect on children’s dyad status classification. Two multivariate analyses of covariance (MANCOVAs) were performed with gender, dyad status, and grade as the independent variables. Dependent variables for MANCOVAs were: (a) peer nominated behaviors (aggression, shyness, and social competence), and (b) goal importance ratings for each of the six goals (dominance, revenge, avoiding trouble, avoiding the provocateur, focusing on the problem, and social relational). Two ANCOVAs with problem-solving, hostility/friendliness and passivity/assertiveness as dependent variables and gender, dyad status, and grade as the independent variables were performed. The variable of peer rejection, indicated by “like least” ratings, was a covariate in the MANCOVAs and ANCOVAs to control for peer rejection. Provocateur emotion displayed on the videotapes was a within-subjects repeated measure in the MANCOVAs and ANCOVAs with social cognitive dependent variables (goals and problem-solving). Significant effects were followed up with univariate analyses (with peer rejection as a covariate) and Tukey’s HSD tests. Results show means adjusted for the peer rejection covariate.

Descriptive Data

Friendship was defined as reciprocated “like best” nominations. Children could have from 0 to 3 friends. Seventy percent of children in the study had at least one friend. Mutual antipathies were defined as mutual ratings of “like least.” In the sample as a whole, 51% of children had at least one mutual antipathy. When examining the prevalence of children by grade involved in at least one enemy relationship, 42% of first
graders participated in an enemy relationship (42 males, 33 females). There was a higher percentage of third graders participating in enemy relationships, with 66% (57 males, 71 females) of third graders in an antipathy dyad. Forty-six percent of fifth graders (27 males, 45 females) had at least one enemy. Children participating in a mutual friendship ranged from 64% (first grade) to 73% (third and fifth grades).

Based on the participation of children in friendships and mutual antipathies, children’s dyad status was classified as: (a) friends only \( (n = 167; 77 \text{ boys}) \), (b) no friends and no enemies \( (n = 82; 43 \text{ boys}) \), (c) at least one friend and at least one enemy \( (n = 201; 88 \text{ boys}) \), and (d) enemies only \( (n = 74; 38 \text{ boys}) \). Chi square tests showed no effects of gender or race on dyad status, but there was a significant grade by dyad status effect \( \chi^2 (6, N = 524) = 28.57, p < .01 \). Post hoc z-tests were used to examine significant effects; results are reported in Table 1. Third graders were less likely than expected to be in the friends only group, \( z = 2.66, p < .01 \). First graders were less likely than expected to be in the friends and enemies group, \( z = 3.13, p < .01 \), whereas third graders were more likely than expected to be in the friends and enemies group, \( z = -3.17, p < .01 \).

*Peer-Nominated Aggression, Shyness, and Social Competence*

Peer-nominated sociometric behaviors were examined in a 4 (dyad status) \( \times \) 2 (gender) \( \times \) 3 (grade) MANCOVA with number of like least ratings as the covariate. The covariate was significant at \( F (3, 497) = 65.40, p < .0001 \). Significant multivariate effects of dyad status \( F (9, 1210) = 3.35, p < .0001 \) and gender \( F (3, 497) = 12.90 \) were found. Univariate ANCOVAs and Tukey’s HSD tests were then performed. For all analyses described in this section, dependent variables are z-scores.
Table 1

Results of Chi Square Analysis of Grade and Participation in Dyadic Status: Observed Proportions Versus Expected Values

<table>
<thead>
<tr>
<th>Dyad status</th>
<th>Grade 1</th>
<th></th>
<th>Grade 3</th>
<th></th>
<th>Grade 5</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Obs</td>
<td>Exp</td>
<td>Obs</td>
<td>Exp</td>
<td>Obs</td>
<td>Exp</td>
</tr>
<tr>
<td>Friends only</td>
<td>0.36</td>
<td>0.32</td>
<td>0.23</td>
<td>0.32</td>
<td>0.38</td>
<td>0.32</td>
</tr>
<tr>
<td>No Friend/enemies</td>
<td>0.22</td>
<td>0.16</td>
<td>0.10</td>
<td>0.16</td>
<td>0.16</td>
<td>0.16</td>
</tr>
<tr>
<td>Friends/enemies</td>
<td>0.29</td>
<td>0.38</td>
<td>0.50</td>
<td>0.38</td>
<td>0.36</td>
<td>0.38</td>
</tr>
<tr>
<td>Enemies only</td>
<td>0.14</td>
<td>0.14</td>
<td>0.17</td>
<td>0.14</td>
<td>0.11</td>
<td>0.14</td>
</tr>
</tbody>
</table>

Note. Bold observed values differ significantly from expected values at \( p < .01 \).

Peer-nominated aggression. The univariate ANCOVA revealed a significant effect of gender, \( F(1, 499) = 33.20, p < .0001 \) and a significant interaction of dyad status x grade, \( F(6, 499) = 2.87, p < .01 \). Even with the effects of peer rejection controlled, boys (\( M = .27 \)) were significantly more likely to be nominated as aggressive than were girls (\( M = -.21 \)), \( p < .05 \). The significant interaction between dyad status and grade was examined with Tukey’s HSD tests. Despite the significance of the interaction, post hoc Tukey’s HSD tests revealed no significant effects.

Peer-nominated shyness. The univariate ANCOVA revealed significant effects of dyad status, \( F(3, 499) = 3.45, p < .05 \), and gender, \( F(1, 499) = 10.57, p < .01 \). Girls (\( M = .12 \)) were significantly more likely to be nominated as being shy than were boys (\( M =
A significant interaction was also found for dyad status and gender, $F(3, 499) = 3.37, p < .05$. The significant effects were followed up with Tukey’s HSD tests; results are reported in Table 2. With the effects of peer rejection controlled, girls with no friends and no enemies were found to be significantly more shy than those with enemies only.

Table 2

*Interaction of Dyadic Status and Gender for Peer-Nominated Shyness Controlling for Peer Rejection*

<table>
<thead>
<tr>
<th>Dyad status</th>
<th>Males</th>
<th>Females</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Friends only</td>
<td>-0.18</td>
<td>0.17</td>
<td></td>
</tr>
<tr>
<td>No Friend/enemies</td>
<td>-0.20</td>
<td><strong>0.66</strong></td>
<td></td>
</tr>
<tr>
<td>Friends and enemies</td>
<td>-0.25</td>
<td>-0.07</td>
<td></td>
</tr>
<tr>
<td>Enemies only</td>
<td>-0.15</td>
<td>-0.26</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Bold means differ significantly from italicized means at $p < .05$.

*Peer-nominated social competence.* Significant effects of dyad status, $F(3, 499) = 4.35, p < .01$, and gender, $F(1, 499) = 5.99, p < .05$ were found. Even with the effects of peer rejection controlled, girls ($M = .08$) were significantly more likely to be nominated as socially competent than were boys ($M = -.17$), $p < .05$. The significant effect of dyad status was followed up with Tukey’s HSD tests, but no significant effects were found.
Social Cognition: Goal Importance Ratings

Goal importance ratings were examined in a 4 (dyad status) x 3 (grade) x 2 (gender) x 6 (goal type) x 3 (emotion) MANCOVA with number of like least ratings as the covariate. Goal type and emotion were within-subjects repeated measures; all other independent variables were between subjects. The covariate was significant at $F(1, 487) = 8.74, p < .05$. A significant multivariate effect of goal type, $F(5, 2435) = 263.58, p < .0001$, was modified by significant multivariate interactions of goal type and grade, $F(10, 2435) = 2.70, p < .01$, and goal type and gender, $F(5, 2435) = 5.03, p < .0001$. Also, a significant multivariate effect of emotion, $F(2, 974) = 5.40, p < .01$, was modified by significant interactions of emotion and grade, $F(4, 974) = 4.11, p < .01$, and emotion, dyad status, grade, and gender, $F(12, 974) = 1.93, p < .05$. A significant multivariate interaction was also found between goal type and emotion, $F(10, 4870) = 4.44, p < .0001$. Follow up univariate ANCOVAs and Tukey’s HSD tests were run on each goal type.

Passive/avoidant goals. No significant effects were found for the univariate ANCOVA on the “avoid trouble” goal. The peer rejection covariate was not significant for the “avoid trouble” or the “avoid provocateur” goals. The univariate analysis for the “avoid provocateur” goal revealed a significant effect of emotion, $F(2, 974) = 6.66, p < .01$. With the effect of peer rejection controlled, the “avoid provocateur” goal was rated as significantly more important when the provocateur was angry ($M = 2.64$) compared to when the provocateur was happy ($M = 2.46$) or sad ($M = 2.47$), $ps < .05$. A significant main effect was also found for grade, $F(2, 487) = 4.18, p < .05$. With the effects of peer rejection controlled, fifth graders rated the “avoid provocateur” goal as being less
important ($M = 2.30$) than did those in first ($M = 2.67$) and third grades ($M = 2.59$), $ps < .05$.

**Prosocial goals.** Prosocial goals included the social relational (“be friends”) and problem focus (“fix problem”) goals rated by children. The peer rejection covariate was not significant for either of the prosocial goals. The univariate analysis for the social relational goal revealed a significant within-subjects main effect of emotion, $F(2, 974) = 9.86, p < .0001$. Even with the effects of peer rejection controlled, children rated “be friends” goal as significantly less important when the provocateur’s emotion display was angry ($M = 3.56$) than when the provocateur was happy ($M = 3.74$) or sad ($M = 3.74$) $ps < .05$. Significant between subjects effects were found for grade, $F(2, 487) = 7.86, p < .0001$, and gender, $F(1, 487) = 13.51, p < .0001$. First graders rated the “be friends” goal as more important ($M = 3.98$) than did those in third ($M = 3.56$) and fifth grades ($M = 3.50$), $ps < .05$. Also, girls rated being friends as more important ($M = 3.89$) than did boys ($M = 3.47$). A significant interaction for the social relational goal was found between dyad status and grade, $F(6, 487) = 2.18, p < .05$. Post hoc Tukey’s HSD tests were run for the significant interaction of dyad status and grade, but no significant effects were found.

The univariate analysis for the fix problem goal revealed only one significant main effect of emotion, $F(2, 974) = 3.12, p < .05$. When the provocateur was angry, the “fix problem” goal was rated as more important ($M = 3.89$) than when the provocateur was happy ($M = 3.78$) or sad ($M = 3.80$), $ps < .05$.

**Hostile goals.** The peer rejection covariate was significant at $F(1, 487) = 6.51, p < .01$ for the dominance goal. The univariate analysis for the dominance goal (“get way”)...
revealed significant main effects of grade, $F(2, 487) = 3.56, p < .05$, and gender, $F(1, 487) = 3.86, p < .05$. With the effects of peer rejection controlled, first graders ($M = 2.47$) rated the dominance goal as being significantly more important than did fifth graders ($M = 2.06$), $p < .05$. Boys ($M = 2.37$) also rated the dominance goal as more important than did girls ($M = 2.11$).

Many significant effects and interactions were found for the importance rating of the revenge goal. The peer rejection covariate was significant at $F(1, 487) = 7.34, p < .01$. Significant main effects were seen for emotion $F(2, 974) = 4.61, p < .01$, and grade $F(2, 487) = 12.08, p < .0001$. When the provocateur was angry the revenge goal was rated as significantly more important ($M = 2.05$) than when the provocateur was happy ($M = 1.92$) or sad ($M = 1.94$), $ps < .05$. The revenge goal was also rated as more important by first graders ($M = 2.34$) than by third ($M = 1.84$) and fifth graders ($M = 1.74$), $ps < .05$.

Significant interactions were found for emotion and grade, $F(4, 974) = 2.57, p < .05$; emotion, dyad status, and grade, $F(6, 974) = 2.31, p < .05$; emotion, dyad status, grade, and gender, $F(12, 974) = 1.79, p < .05$; and grade and gender $F(2, 487) = 4.13, p < .01$. Post hoc Tukey’s HSD tests were run for the significant emotion x dyad status x grade x gender interaction; results are reported in three tables divided by grade, (Table 3, Table 4, and Table 5). All means are adjusted for the peer rejection covariate.

Results for first-graders are reported in Table 3. When provocateurs were happy, first grade boys with friends and enemies rated revenge as less important than did first grade boys with no friends and no enemies and first grade boys with friends only. In contrast, there were no significant effects of dyad status for girls when provocateurs were
happy. When provocateurs were angry, first grade boys with friends and enemies rated revenge as being significantly less important than boys with friends only and with no friends and no enemies. Boys with enemies only rated the revenge goal as less important than did boys in the no friends and no enemies group. When the provocateur was angry, first grade girls with enemies only rated revenge as more important than did girls in all other dyad statuses. When the provocateur was sad, first grade boys in the friends and enemies group rated revenge as being less important than boys with neither friends nor enemies and those with friends only. Also, when the provocateur was sad, boys in first grade in the enemies only group rated revenge as less important than those in the no friends and no enemies group. In contrast when the provocateur was sad, girls in the no friends and no enemies group rated revenge goal significantly lower than did those in the friends only and enemies only groups.

Results for third grade are reported in Table 4. No significant effects were found for boys in the third grade across any of the dyad statuses, regardless of provocateur emotion. Third grade girls in the no friends and no enemies group rated revenge as less important than girls in the friends only group, but only when the provocateur was happy. No effects were found for third grade girls when the provocateur was angry or sad. For fifth grade boys, no significant effects of dyad status were found with happy provocateurs, but there were effects when the provocateur was angry and sad.

Results for fifth grade are reported in Table 5. When the provocateur was angry, boys in the fifth grade with both friends and enemies rated the revenge goal significantly lower than boys with enemies only. When the provocateur was sad, boys with no friends and no enemies rated revenge significantly lower than boys with enemies only. No
significant effects of dyad status were found regardless of provocateur emotion for girls in the fifth grade.

Table 3

Importance Ratings of Revenge Goal: Interaction of Provocateur Emotion, Dyadic Status, Grade, and Gender for First Grade

<table>
<thead>
<tr>
<th>Provocateur emotion</th>
<th>Dyad status</th>
<th>Happy (M)</th>
<th>Angry (M)</th>
<th>Sad (M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adj M (M)</td>
<td>Adj M (M)</td>
<td>Adj M (M)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boys</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friends only</td>
<td></td>
<td>2.52 (3.19)</td>
<td>2.33 (3.18)</td>
<td>2.27 (3.05)</td>
</tr>
<tr>
<td>No friends/enemies</td>
<td></td>
<td>2.54 (3.35)</td>
<td>2.71 (3.35)</td>
<td>2.64 (3.48)</td>
</tr>
<tr>
<td>Friends/enemies</td>
<td></td>
<td>1.86 (3.19)</td>
<td>1.73 (3.13)</td>
<td>1.66 (3.10)</td>
</tr>
<tr>
<td>Enemies only</td>
<td></td>
<td>2.17 (3.14)</td>
<td>2.18 (3.03)</td>
<td>2.20 (3.11)</td>
</tr>
<tr>
<td>Girls</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friends only</td>
<td></td>
<td>2.35 (3.33)</td>
<td>2.45 (3.38)</td>
<td>2.56 (3.35)</td>
</tr>
<tr>
<td>No friends/enemies</td>
<td></td>
<td>2.93 (3.27)</td>
<td>2.07 (3.09)</td>
<td><strong>1.80</strong> (3.10)</td>
</tr>
<tr>
<td>Friends/enemies</td>
<td></td>
<td>2.37 (3.08)</td>
<td>2.24 (3.06)</td>
<td>2.42 (3.17)</td>
</tr>
<tr>
<td>Enemies only</td>
<td></td>
<td>2.42 (3.22)</td>
<td><strong>3.13</strong> (3.20)</td>
<td>2.63 (3.17)</td>
</tr>
</tbody>
</table>

*Note:* Within a column, values in *italics* differ significantly from those in **bold** by *p < .05.*

Also for angry and sad provocateur conditions, boys’ ratings for enemies only are significantly lower than for no friends/no enemies group.
Table 4

*Importance Ratings of Revenge Goal: Interaction of Provocateur Emotion, Dyadic Status, Grade, and Gender for Third Grade*

<table>
<thead>
<tr>
<th>Provocateur emotion</th>
<th>Happy</th>
<th>Angry</th>
<th>Sad</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dyad status</td>
<td>Adj M(M)</td>
<td>Adj M (M)</td>
<td>Adj M (M)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Boys</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Friends only</td>
<td>1.67 (2.87)</td>
<td>1.66 (2.87)</td>
<td>1.87 (2.84)</td>
</tr>
<tr>
<td>No friends/enemies</td>
<td>1.55 (2.85)</td>
<td>2.08 (3.09)</td>
<td>2.08 (2.97)</td>
</tr>
<tr>
<td>Friends/enemies</td>
<td>1.89 (3.00)</td>
<td>2.16 (3.09)</td>
<td>1.77 (3.04)</td>
</tr>
<tr>
<td>Enemies only</td>
<td>1.82 (3.04)</td>
<td>2.18 (3.23)</td>
<td>2.26 (3.04)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Girls</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Friends only</td>
<td>2.03 (2.89)</td>
<td>2.02 (2.98)</td>
<td>1.98 (2.91)</td>
</tr>
<tr>
<td>No friends/enemies</td>
<td><strong>1.45</strong> (2.83)</td>
<td>1.72 (2.88)</td>
<td>1.48 (2.93)</td>
</tr>
<tr>
<td>Friends/enemies</td>
<td>1.63 (2.88)</td>
<td>1.89 (2.96)</td>
<td>1.81 (2.89)</td>
</tr>
<tr>
<td>Enemies only</td>
<td>1.78 (2.99)</td>
<td>1.61 (2.91)</td>
<td>1.70 (3.00)</td>
</tr>
</tbody>
</table>

*Note: Within a column, values in italics differ significantly from those in bold by p < .05.*
Table 5

Importance Ratings of Revenge Goal: Interaction of Provocateur Emotion, Dyadic Status, Grade, and Gender for Fifth Grade

<table>
<thead>
<tr>
<th>Provocateur emotion</th>
<th>Happy</th>
<th>Angry</th>
<th>Sad</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dyad status</td>
<td>Adj M(M)</td>
<td>Adj M (M)</td>
<td>Adj M (M)</td>
</tr>
<tr>
<td>Boys</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friends only</td>
<td>1.80 (2.84)</td>
<td>2.23 (2.93)</td>
<td>1.89 (2.86)</td>
</tr>
<tr>
<td>No friends/enemies</td>
<td>1.72 (2.80)</td>
<td>2.22 (2.87)</td>
<td><strong>1.67</strong> (2.72)</td>
</tr>
<tr>
<td>Friends/enemies</td>
<td>1.64 (2.87)</td>
<td><strong>1.82</strong> (2.89)</td>
<td>1.71 (2.95)</td>
</tr>
<tr>
<td>Enemies only</td>
<td>2.32 (3.07)</td>
<td>2.65 (3.25)</td>
<td><strong>2.51</strong> (2.88)</td>
</tr>
<tr>
<td>Girls</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friends only</td>
<td>1.27 (2.72)</td>
<td>1.50 (2.78)</td>
<td>1.33 (2.78)</td>
</tr>
<tr>
<td>No friends/enemies</td>
<td>1.61 (2.85)</td>
<td>1.47 (3.06)</td>
<td>1.44 (2.92)</td>
</tr>
<tr>
<td>Friends/enemies</td>
<td>1.45 (2.88)</td>
<td>1.62 (2.96)</td>
<td>1.41 (2.78)</td>
</tr>
<tr>
<td>Enemies only</td>
<td>1.35 (2.78)</td>
<td>1.49 (2.99)</td>
<td>1.52 (2.81)</td>
</tr>
</tbody>
</table>

*Note: Within a column, values in italics differ significantly from those in **bold** by $p < .05$. 
**Social Problem-Solving Hostility/Friendliness**

Hostility/friendliness and passivity/assertiveness of problem-solving responses were examined in two 4 (dyad status) x 3 (grade) x 2 (gender) x 3 (provocateur emotion display) repeated measures ANCOVAs with number of like least ratings as the covariate. Emotion display was a within-subjects variable; all others were between-subjects variables. No significant effects were found for the passivity/assertiveness ratings so no further analyses were performed for this variable. For the hostility/friendliness ratings a significant effect was seen for gender, \( F(1, 487) = 7.16, p < .01 \), and provocateur emotion display, \( F(2, 974) = 3.04, p < .05 \). The covariate was not significant for hostility/friendliness of problem-solving responses. Main effects of gender and emotion were modified by interactions of emotion display and gender, \( F(2, 974) = 3.35, p < .05 \), and emotion, dyad status, grade, and gender, \( F(12, 974) = 1.82, p < .05 \). There was a significant interaction of dyad status and grade, \( F(6, 487) = 2.59, p < .05 \). Results for the Tukey HSD tests on the emotion x dyad status x grade x gender interaction can be seen in Table 6, Table 7, and Table 8 (tables are divided by grade).

Results for first grade are reported in Table 6. When provocateurs were happy, first grade boys with no friends or enemies had more hostile problem-solving responses than did boys with friends only. When the provocateur was happy, first grade girls with enemies only had more hostile problem-solving responses than first grade girls with friends only and those with no friends and no enemies. When the provocateur was angry, first grade boys with no friends and no enemies had significantly more hostile problem solving responses than those with friends only and those enemies only. When the provocateur was angry, first grade girls with enemies only had more hostile problem
solving responses than did those in all other dyads. When the provocateur was sad, boys who had no friends and no enemies had more hostile problem solving responses than did those with friends only and enemies only. Also, boys in the friends only group had problem solving responses that were significantly friendlier than those in the friends and enemies group. There were no significant findings for first grade girls when the provocateur was sad.

Results for third grade are reported in Table 7. For boys in the third grade, no significant results were found when the provocateur was angry or sad, but significant results were found when the provocateur was happy. When the provocateur was happy, third grade boys with neither friends nor enemies had significantly friendlier problem-solving responses than those with friends only and those with both friends and enemies. There were no significant results found for girls in the third grade. No significant effects seen for dyad status with students in the fifth grade regardless of provocateur emotion or gender; results are reported in Table 8.
<table>
<thead>
<tr>
<th>Provocateur emotion</th>
<th>Happy</th>
<th>Angry</th>
<th>Sad</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dyad status</td>
<td>Adj M (M)</td>
<td>Adj M (M)</td>
<td>Adj M (M)</td>
</tr>
<tr>
<td><strong>Boys</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friends only</td>
<td>3.23 (3.22)</td>
<td>3.30 (3.31)</td>
<td>3.39 (3.41)</td>
</tr>
<tr>
<td>No friends/enemies</td>
<td><strong>2.50</strong> (2.50)</td>
<td><strong>2.54</strong> (2.55)</td>
<td><strong>2.47</strong> (2.48)</td>
</tr>
<tr>
<td>Friends/enemies</td>
<td>2.83 (2.83)</td>
<td>2.82 (2.81)</td>
<td>2.83 (2.81)</td>
</tr>
<tr>
<td>Enemies only</td>
<td>2.85 (2.86)</td>
<td>3.12 (3.08)</td>
<td>3.06 (2.97)</td>
</tr>
<tr>
<td><strong>Girls</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friends only</td>
<td>3.19 (3.18)</td>
<td>3.27 (3.28)</td>
<td>2.56 (3.18)</td>
</tr>
<tr>
<td>No friends/enemies</td>
<td><strong>3.15</strong> (3.15)</td>
<td><strong>3.06</strong> (3.06)</td>
<td>1.80 (3.50)</td>
</tr>
<tr>
<td>Friends/enemies</td>
<td>2.77 (2.77)</td>
<td>2.92 (2.92)</td>
<td>2.42 (3.17)</td>
</tr>
<tr>
<td>Enemies only</td>
<td><strong>2.40</strong> (2.40)</td>
<td><strong>2.00</strong> (2.00)</td>
<td>2.63 (3.10)</td>
</tr>
</tbody>
</table>

*Note:* Responses were rated on a 5 point scale from hostility to friendliness; higher values indicate greater friendliness/less hostility. Within a column, values in **bold** differ significantly from values in *italics* by at least $p < .05$. Also for the boys’ sad provocateur condition, the friends only group’s problem solving was significantly friendlier than that of the friends and enemies group.
Table 7

*Hostility/Friendliness of Problem Solving Responses: Interaction of Provocateur Emotion, Dyadic Status, Grade, and Gender for Third Grade*

<table>
<thead>
<tr>
<th>Provocateur emotion</th>
<th>Happy</th>
<th>Angry</th>
<th>Sad</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dyad status</td>
<td>Adj M (M)</td>
<td>Adj M (M)</td>
<td>Adj M (M)</td>
</tr>
<tr>
<td>Boys</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friends only</td>
<td>3.09 (3.09)</td>
<td>2.90 (2.91)</td>
<td>3.15 (3.18)</td>
</tr>
<tr>
<td>No friends/enemies</td>
<td><strong>3.66 (3.67)</strong></td>
<td>3.34 (3.33)</td>
<td>2.94 (2.92)</td>
</tr>
<tr>
<td>Friends/enemies</td>
<td>2.95 (2.95)</td>
<td>2.83 (2.83)</td>
<td>3.08 (3.07)</td>
</tr>
<tr>
<td>Enemies only</td>
<td>3.29 (3.30)</td>
<td>3.06 (3.03)</td>
<td>2.94 (2.87)</td>
</tr>
<tr>
<td>Girls</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friends only</td>
<td>2.88 (2.88)</td>
<td>3.03 (3.05)</td>
<td>2.99 (3.04)</td>
</tr>
<tr>
<td>No friends/enemies</td>
<td>3.34 (3.33)</td>
<td>3.24 (3.25)</td>
<td>3.64 (3.67)</td>
</tr>
<tr>
<td>Friends/enemies</td>
<td>3.27 (3.26)</td>
<td>3.06 (3.07)</td>
<td>3.08 (3.09)</td>
</tr>
<tr>
<td>Enemies only</td>
<td>3.16 (3.17)</td>
<td>3.36 (3.33)</td>
<td>3.36 (3.31)</td>
</tr>
</tbody>
</table>

*Note:* Responses were rated on a 5 point scale from hostility to friendliness; higher values indicate greater friendliness/less hostility. Within a column, values in **bold** differ significantly from values in *italics* by at least *p* < .05.
Table 8

*Hostility/Friendliness of Problem Solving Responses: Interaction of Provocateur Emotion, Dyadic Status, Grade, and Gender for Fifth Grade*

<table>
<thead>
<tr>
<th>Provocateur emotion</th>
<th>Happy</th>
<th>Angry</th>
<th>Sad</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dyad status</td>
<td>Adj M (M)</td>
<td>Adj M (M)</td>
<td>Adj M (M)</td>
</tr>
</tbody>
</table>

**Boys**

- Friends only: 2.99 (2.98), 2.99 (3.00), 2.71 (2.74)
- No friends/enemies: 2.78 (2.78), 2.95 (2.94), 2.67 (2.67)
- Friends/enemies: 2.93 (2.93), 3.09 (3.07), 3.22 (3.19)
- Enemies only: 2.69 (2.70), 2.55 (2.50), 3.01 (2.90)

**Girls**

- Friends only: 3.60 (3.60), 3.37 (3.38), 3.62 (3.65)
- No friends/enemies: 3.10 (3.10), 2.94 (2.93), 3.41 (3.40)
- Friends/enemies: 3.61 (3.61), 3.45 (3.46), 3.54 (3.55)
- Enemies only: 3.54 (3.54), 3.10 (3.08), 3.12 (3.08)

*Note:* Responses were rated on a 5 point scale from hostility to friendliness; higher values indicate greater friendliness/less hostility. Within a column, values in **bold** differ significantly from values in *italics* by at least $p < .05$. 
Discussion

One purpose of this study was to examine prevalence rates of mutual antipathies in younger school age children. There had been little research thus far on the prevalence rates of enemy relationships among children in the first grade. This study showed that first graders do participate in mutual antipathy relationships in addition to friendships at approximately the same rate as older school-age children (see Card and Hodges, 2003). Another purpose of the study was to determine the effects that friend and antipathy relationships could have on children’s social goals and problem-solving skills. The results of the current study show that children’s participation in friend and enemy relationships was associated with how they rate the importance of social goals and how they solve problems in hypothetical ambiguous provocation situations. Differences in the importance ratings of the six social goals were associated with provocateur emotion, grade, gender, and dyad status of the children participating in the study. Evidence was also provided for effects of dyadic status on the hostility and friendliness of how children problem-solve in ambiguous social situations; however, no significant results were obtained for the passivity or assertiveness of children’s problem-solving skills.

Prevalence of Friendships and Antipathies

With friendship being defined by reciprocated “like best” nominations, 70% of the children in the study had at least one friend. Past studies had found that between 80 and 98 percent of children had reciprocated friendships. Hartup et al. (1988) conducted a study of preschool age children showing that 89% had at least one friendship, which were determined through the use of trained observers identifying those children who spent 25% or more time in close proximity with one another. Hartup et al.’s (1988) study only
looked at those friendships that were reciprocated. Yugar and Shapiro’s (2001) study found that only two to four percent of their first through third grade sample lacked a reciprocated friendship; however, friendships were defined in multiple ways including peer nominations and peer ratings. This study showed lower prevalence of reciprocated friendships in the first grade, with just over 64% of first grade children participating in mutual friendships. In the third and fifth grades, 72 to 73 percent of children participated in friendships. The lower rates of friendship in our study are most likely due to the fact that children could only nominate up to three children for liked best.

The prevalence rate of mutual antipathies among children in the study was not as high as friendships, which was to be expected, but they were still common throughout the sample. Mutual antipathies in this study were defined by reciprocated “like least” ratings among children. The overall sample of first through fifth grade students in this study revealed that 51% of children were participating in at least one mutual antipathy relationship. Third graders in this study were found to have higher participation rates in mutual antipathies than those children in the first and fifth grades. Forty-two percent of children in the first grade in this study were found to take part in at least one mutual antipathy relationship. Fifth grade children in this study had similar numbers of children participating in enemy relationships, with just more than 46% of children in the fifth grade having at least one enemy. Numbers in the third grade were higher in this study with more than 66% of the third grade sample taking part in at least one mutual antipathy relationship.

The high participation rate of third-graders in mutual antipathies was a bit surprising given findings from previous studies. Rodkin et al. (2003) found that 20 to 40
percent of third and fourth grade children were involved in at least one mutual antipathy, which was defined in the same manner as in this study. Pope (2003) used peer-nominations to identify antipathy relationships and found that only around 28% of children in her third and fourth grade sample were involved in mutual antipathies. However, when Pope (2003) examined mutual antipathy relationships with the peer-rating method, 63% of third- and fourth-graders were found to participate in mutual antipathy relationships, showing that prevalence was found to be higher using the peer-rating method. This number is higher and more similar to what was found in this study’s sample of third graders (which also used the peer-rating method to determine antipathy relationships). Also the third graders in this study were less likely than expected to be in the Friends Only group but more likely than expected to participate in the Friends and Enemies dyad showing that more children than expected who had friendships also had antipathy relationships. Another contrast between this study and the findings of Pope’s (2003) study were that in her sample, she found it more common for older children (fifth and sixth grades) to take part in enemy relationships as compared to younger grades (third and fourth grades). However, this study clearly shows enemy relationships to be more common among the third graders in the sample as compared to the fifth graders. Pope’s (2003) fifth and sixth grade sample showed 38% of the children participated in an enemy relationship, which is a lower participation rate than this study found among any of the grade levels sampled (first, third, and fifth grades). Card and Hodges (2003) sample of fourth through eighth graders had more similar findings to that in this study, with 48% of their fourth through eighth graders participating in antipathy relationships.
The findings of this study support previous findings that mutual antipathy relationships are common among older school age children (grades three and five). This study also clearly demonstrates that mutual antipathy relationships are common among younger school age children in the first grade.

Children in this study were classified as fitting into one of four different dyad statuses based on their participation in (or lack of) friendship and antipathy relationships. Often studies have classified children on the basis of being rejected, neglected, popular, or average and on the basis of being aggressive or non-aggressive for the purpose of studying steps in the SIP model. Some studies have simply classified children into two groups of being friends and non-friends (Hundley & Cohen, 1999). This study, however, chose to control for the effect of peer rejection in order to determine whether participation in friendships and antipathies had effects that went beyond that of peer rejection on the social information processor. The first dyad was Friends Only, which represented those children who participated in at least one mutual friendship but had no mutual antipathies. Those who were in the No Friends/No Enemies dyad had no reciprocated friendships or antipathies. The Friends and Enemies dyad was for those children who participated in at least one reciprocated friendship and at least one reciprocated antipathy, and the Enemies Only dyad included children who participated in at least one mutual antipathy relationships but had no reciprocated friendships. There were no effects on dyad classification due to gender or race, but it was affected by grade. Results showed that children in the first grade were less likely than expected to be in the friends and enemies group whereas third graders were more likely to be in this group than
was expected. Also, third graders were shown as being less likely than expected to be in the Friends Only group.

**Peer–Nominated Behaviors**

Peer-nominated behaviors were investigated to determine whether there were effects of gender, grade, race, or dyad status on how children nominated one another for the different behaviors of aggression, shyness or social competence, even when the effects of peer rejection were controlled. Gender had an effect on nominations of aggression, shyness, and social competence. Boys were more likely to be nominated as aggressive, whereas girls were more likely to be nominated as both shy and socially competent than boys were. Not surprisingly, girls with no friends and no enemies were particularly more likely to be nominated as shy than were those with enemies only, even when the effects of peer rejection were controlled.

**Goal Importance Ratings**

Across the provocateur emotions, there were no effects of dyadic status for the “avoid trouble” goal importance ratings. The other passive goal, “avoid provocateur,” was affected by emotion and grade but not by children’s dyadic status. Children in the fifth grade rated the importance of avoiding the provocateur as less important than did those in the first and third grade. Also, when the provocateur was angry the “avoid provocateur” goal was rated as being more important than when the provocateur was happy or sad. In fact, the majority of the goals were more often affected by provocateur emotion (though not all of them) and grade (again, not all of the six were affected by this variable) than they were by dyadic status. Interactions with dyadic status and other
variables were found for two of the goals, the “be friends” goal (which yielded no significant findings) and the revenge goal.

As for the prosocial goals, provocateur emotion was the only factor affecting the importance of the “fix problem” goal. When the provocateur was angry, the goal was actually rated as being more important than when the provocateur was happy or sad. This is similar to findings by Lemerise et al. (2006) in which this goal was rated as being more important when the provocateur was angry than sad. However, in Lemerise et al. (2006) that result was only found to be significant among first-graders. Emotion also played a factor in the social relational goal, with the goal being rated as less important when the provocateur was angry than when the provocateur was happy or sad. Again, this is similar to findings from Lemerise et al. (2006) in which fifth graders rated the social relational goal in the same manner; those in third grade rated it as less important than when the provocateur was happy only. Also affecting the importance rating of the social relational goal were grade and gender. First graders as well as girls (across grades) often rated this goal as being more important than did children in the third and fifth grades and boys, respectively.

Lemerise and Arsenio (2000) had proposed the integration of emotion into the SIP model in which they hypothesized the affective nature of relationship with the peer would have an effect on how children clarify goals. The results of this study showing that provocateur emotion affected nearly all the goals support the finding that provocateur emotion can affect goal clarification. Four of the six goals looked at in the study had a main effect of emotion. This shows that in an ambiguous provocation situation with a
peer, a child’s goals can be directly affected by the emotion display of the provoking child.

The dominance goal was surprisingly not affected by provocateur emotion, being only one of two goals in which the provocateur emotion had no effects on importance ratings. This result was also seen in Lemerise et al. (2006), where provocateur emotion neither affected the “avoid trouble” goal nor the dominance goal. However, grade and gender did have an effect on the dominance goal. Specifically, it was the younger children, those in first grade, who rated this goal as being significantly more important than did fifth graders. Boys also rated this goal as being more important.

Emotion and grade both affected the importance ratings of the revenge goal. Generally, first graders rated the revenge goal as more important than did fifth graders; boys also rated the revenge goal as more important than did girls. A significant interaction of emotion, dyadic status, grade, and gender could more specifically elaborate on the importance ratings of the revenge goal. Although there were a few results found within the third and fifth grades, the majority of the significant results found were within the first grade. One reason first grade children may have had more variance in their ratings of the revenge goal is that the provocateur emotions may have presented a challenge to these younger children who are not as skilled at regulating their emotions. Older school age children may be better able to regulate their emotions, as demonstrated in the finding that fifth graders rated avoiding the provocateur as being less important than the younger children in the study. This shows older children may be better able to handle arousing social situations than younger children. Regardless of provocateur emotion, boys in the first grade with both friends and enemies rated revenge as being less
important than those who had no enemies (this includes the no friends/no enemies dyad as well as the friends only dyad) when controlling for peer rejection. Surprisingly, when the provocateur was angry or sad, boys in the first grade with enemies only rated the goal as less important than those with no friends and no enemies. Considering that children who have more enemies have fewer prosocial skills and boys with enemies are typically viewed as being more hostile, it would have been expected that these first grade boys with enemies only would have rated revenge as more important than all other groups, but this was not the case (Parker & Gamm, 2003; Rodkin et al., 2003). This study did not, however, specify the number of enemy relationships a child had. To be in the Enemies Only group a child merely needed to have one reciprocated antipathy and no reciprocated friendships.

Contrary to what was found in the Enemies Only group among first grade boys, first grade girls in the Enemies Only group rated the revenge goal as more important than those in all other dyads when the provocateur was angry (which is more consistent with what would be expected given past research findings). Also contrary to what was found with first grade boys, girls with no friends and no enemies rated revenge as less important than those with friends only or enemies only. It may be that controlling for peer rejection had a bigger effect in the results for boys than for girls, which can be seen in the differences between the adjusted means and regular means in Table 3. Once the peer rejection variable was controlled, there were large differences found in the means for first grade boys as compared to first grade girls, so controlling for peer rejection did not change results as much for girls as for boys. Girls, who typically have friendships that are closer and more intimate in nature, may have been more affected by the negativity of
antipathy relationships as compared to boys (Maccoby, 1990). Boys tend to have larger networks of friends that are not as close in nature (Maccoby, 1990). Negative effects of antipathies in girls consist of higher depression, aggression, immaturity, and withdrawal (Witkow et al., 2005).

Of the few effects seen among children in older grades, third grade girls with no friends and no enemies rated revenge as being less important that those with friends only or enemies only but only when the provocateur was happy. In the fifth grade, boys with friends and enemies rated revenge as less important than did boys with enemies only. This finding is, again, what one might expect to see given that those with enemies are typically viewed as more aggressive.

All the results reported were with the variable of peer rejection controlled. Past research has shown that the social adjustment of a child can impact their goal selection as well (Lemerise et al., 2006). For example, in Lemerise et al. (2006), rejected-aggressive children endorsed more hostile goals and had more hostile problem-solving responses that were not dependent upon provocateur emotion display. Lemerise et al. (2005) also found that children who were rejected-aggressive chose more hostile problem-solving responses than those children who were average and popular nonaggressive. Because of these findings, the current study controlled for the peer rejection variable in order to see if there would be differences in children’s social information processing based on their participation in friend and enemy relationships that was unrelated to the effects caused by peer rejection. Past research has revealed that when controlling for the factor of peer rejection, results vary from studies in which peer rejection was not controlled (Witkow et al., 2005). In the Witkow et al. (2005) study, no significant effects were seen for boys
who participated in mutual antipathy relationships and girls showed less aggression when peer rejection was controlled. Similar results were seen in this study in which few significant results were seen (at least outside of the first grade).

It was hypothesized that children who have enemies only would rate instrumental goals (such as dominance or revenge) as being more important and prosocial goals (such as fixing the problem or being friends) as less important than children with friends regardless of whether or not they had enemies (friends and enemies or friends only groups). This hypothesis was supported with results found in first grade girls where enemies only did rate the revenge goal as being more important than other dyads. However, this was not always the case, as seen with boys in the first grade who were in the enemies only group that rated the importance of revenge as lower than those with neither friends nor enemies. Children with no friends and no enemies often rated the revenge goal as being less important than other groups, as was the case with girls in first grade when the provocateur was sad, girls in the third grade when the provocateur was happy, and boys in the fifth grade when the provocateur was sad.

*Social Problem-Solving Hostility/Friendliness*

There were effects of children’s dyad status in the hostility/friendliness of problem-solving skills, although most differences found were contained within the first grade. Similar to results found for goal importance, some results were surprising whereas others agreed more with what was hypothesized. For example, when the provocateur was happy, girls in the first grade with enemies only had more hostile problem-solving responses than those who lacked enemies (such as those girls in the friends only group and those in the no friends no enemies group). Boys in the first grade with no friends or
enemies had more hostile problem-solving responses than those with friends only when the provocateur was happy; contrary to that, boys in the third grade with no friends or enemies had *friendlier* problem-solving responses than those with friends only and those with both friends and enemies. For girls in the first grade, when the provocateur was angry, those with enemies only again had more hostile problem-solving responses than those in all other dyads, but for boys, those with no friends and no enemies had more hostile responses than even those with enemies only (which was also seen for boys when the provocateur was sad).

As there are no significant findings for those children in the fifth grade, it is apparent that differences are present between grades, namely the fact that first graders tend to vary more in hostility and friendliness of their problem-solving skills in ambiguous social situations. As suggested with differences in goal importance ratings, a reason for this finding could be due to first graders not having emotional regulation skills that are as developed as children in older grades. Emotional regulation is defined by Hubbard and Coie (1994) as someone being able to modify his/her emotional response in situations that may be provocative (or ambiguous, such as in this study). Children who are socially competent appear to be better able to deal with anger in less hostile ways because they are better able to regulate their emotions (Eisenberg, Fabes, Nyman, Bernzweig, & Pinuelas, 1994; Hubbard & Coie, 1994). In a study by Fabes, Eisenberg, Karbon, Troyer, and Switzer (1994), a study of kindergarten through second grade children revealed that children who were able to better regulate their emotions (typically the older children) were more likely to behave prosocially and comfort a crying baby, whereas those who could not regulate their emotions tended to withdraw from the
distressed baby or become irritated. These results may account for the reasoning that older children in this study (those in third and fifth grades) had few to no significant results for problem-solving responses across all provocateur emotions.

Summary

This study supports previous findings that mutual antipathies are common among school age children, beginning in the first grade. Previous results have shown lower numbers of mutual antipathies among older school age children when using the peer-nomination method to determine enemy relationships than those found in this study for children in the third grade (66% prevalence among third graders); however, when using the peer-rating method (such as in this study), prevalence was found to be higher (see Pope, 2003). This could also be due to the higher than expected participation of third grade children in the friend and enemy dyad and lower than expected participation in the Friends Only group.

It was hypothesized that with the effects of peer rejection controlled, children with enemies and no friends would rate instrumental goals as being more important, which was seen in certain situations depending on the gender of the child and the provocateur emotion, although the result was not consistent across all grades, genders, or provocateur emotion displays. It was important to control for the effects of peer rejection because it has been found in previous (see Lemerise et al., 2006) studies that rejected-aggressive children tend to choose more hostile goals, such as dominance, than those who are average- and popular-nonaggressive. This study was interested in discovering if there would be differences between children’s problem-solving responses based on friendship and enemy dyad statuses beyond that which could be accounted for by peer rejection.
There were times that children with enemies only would actually rate a goal such as revenge lower (first grade boys when the provocateur was angry or sad). This shows that the importance ratings of goals will actually vary across dyadic statuses depending on the situation and the gender of the child.

It was also hypothesized that children who had enemies (regardless of whether or not they had friends) would have more hostile problem-solving responses than those who did not have enemies, regardless of grade. This was not actually the case. Children in fifth grade showed no differences among dyads across provocateur emotions, nor did girls in the third grade. First grade was again the grade that yielded more significant results. The hypothesis was supported at times depending on the gender of the child (female) and the provocateur emotion (happy or angry), but at other times the hypothesis was not supported, with those who lacked both friends and enemies having more hostile responses.

Limitations

An important factor that should be noted is that the data set used in the current study was archived data, and the study was not designed to look at friendship and antipathies specifically. The information measured was originally collected for a different study (see Lemerise et al., 2006). That study was specifically exploring how provocateur emotion might affect children’s goals and problem-solving in ambiguous provocation situations. However, the data collected allowed us to examine some questions that had yet to be researched in this area.

Another limitation is that this study had to utilize ratings of “1” to define enemy relationships. As pointed out earlier, types of antipathies cannot be distinguished simply
using mutual ratings of “1” (Abecassis, 2003). For this reason, the relationships in this study only referred to the broad category of “mutual antipathies” and not specifically to “enemies,” or any other specific category of antipathy (such as loss of friendship) because the type of relationship could not be revealed with only a rating of “1.” Also, where mutual antipathies were identified using mutual ratings of “1,” mutual friendships were identified using mutual “like best” nominations, which were limited to three; ratings of “1” were not limited to three, so a child had more opportunities to identify disliked peers than they did with liked peers. Pope (2003) pointed out that results could vary based on the method used to identify antipathy relationships, demonstrating that using the peer-rating method antipathies were more common (67%) than using the nominations method (33%). Results or percentage of children participating in each dyad may have changed had friends and antipathies been identified in the same manner (mutual ratings of “1” for antipathies and “5” for friendships or nominations of “like best” and “like least”). As suggested by Abecassis (2003), future research may want to utilize a combination of peer ratings and nominations to identify antipathy (and friendship) relationships in order to determine the intensity of the relationship.

One last limitation that should be noted involves children’s reasoning about the hypothetical provocation situations. Children in this study were rating goals and giving problem-solving responses based on ambiguous provocation situations that involved hypothetical individuals. The children may have reasoned differently about the importance of goals (or suggested different problem-solving responses) in these ambiguous situations if they were dealing with a friend or enemy as the provocateur (e.g. Peets et al., 2007). Specific information could have been gained about how children deal
with their friends and enemies as opposed to only knowing how they deal with unfamiliar individuals based on the knowledge of the child having (or lacking) friends or enemies. A goal for future research is to examine how children would react in ambiguous provocation situations if they are told the provocateur is either a mutually identified enemy or friend of that specific child.
References


Appendix

Human Subjects Review Board Approval Letter
In future correspondence, please refer to HS09-253, July 8, 2009

Elizabeth Boulie
c/o Dr. Lemerise
Psychology
WKU

Elizabeth Boulie:

Your research project, *The Impact of Friendships and Mutual Antipathies on Children’s Social Behavior and Social Cognition*, was reviewed by the HSRB and it has been determined that risks to subjects are: (1) minimized and reasonable; and that (2) research procedures are consistent with a sound research design and do not expose the subjects to unnecessary risk. Reviewers determined that: (1) benefits to subjects are considered along with the importance of the topic and that outcomes are reasonable; (2) selection of subjects is equitable; and (3) the purposes of the research and the research setting is amenable to subjects’ welfare and producing desired outcomes; that indications of coercion or prejudice are absent, and that participation is clearly voluntary.

1. In addition, the IRB found that you need to orient participants as follows: (1) signed informed consent is not required; (2) Provision is made for collecting, using and storing data in a manner that protects the safety and privacy of the subjects and the confidentiality of the data. (3) Appropriate safeguards are included to protect the rights and welfare of the subjects.

   **This project is therefore approved at the Exempt Review Level.**

2. Please note that the institution is not responsible for any actions regarding this protocol before approval. If you expand the project at a later date to use other instruments please re-apply. Copies of your request for human subjects review, your application, and this approval, are maintained in the Office of Sponsored Programs at the above address. Please report any changes to this approved protocol to this office. A Continuing Review protocol will be sent to you in the future to determine the status of the project. Also, please use the stamped approval forms to assure participants of compliance with The Office of Human Research Protections regulations.

Sincerely,

[Signature]

Paul J. Mooney, M.S.T.M.
Compliance Manager
Office of Sponsored Programs
Western Kentucky University

cc: HS file number Boulie HS09-253