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AGGRESSIVE AND NONAGGRESSIVE CHILDREN: THE RELATIONSHIP BETWEEN AFFECT, PERCEPTIONS AND THE LEVEL OF SOCIAL ENGAGEMENT IN CONFLICT AND COOPERATIVE SITUATIONS

by

Donald E. Klumb

A Dissertation Submitted to
the Faculty of The Graduate School at
The University of North Carolina at Greensboro
in Partial Fulfillment
of the Requirements for the Degree
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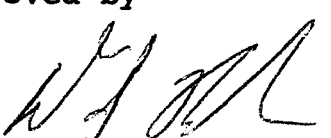

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APPROVAL PAGE

This dissertation has been approved by the following committee of the Faculty of The Graduate School at The University of North Carolina at Greensboro.

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KLUMB, DONALD E., Ph.D. Aggressive and Nonaggressive Children: The Relationship Between Affect, Perceptions and the Level of Social Engagement in Conflict and Cooperative Situations. (1995) Directed by Dr. David Rabiner. 84 pp.

Eighteen aggressive, 18 mixed status (aggressive-nonaggressive), and 19 nonaggressive dyads participated in two experimental tasks. Dyads were composed of third through fifth grade children who were unfamiliar with each other. One task was intended to foster cooperative behavior, and the other task engaged dyads in a conflict situation. Assessment of the predominant behavior and predominant affect displayed by each subject was made for each task. Subjects also rated their perception of their partner after each task. Analyses were completed on the behavioral ratings, ratings of predominant affect, and the peer perception ratings. There were significant differences between the number of aggressive and nonaggressive children assigned a particular behavioral rating across both experimental tasks. Having an aggressive or nonaggressive peer partner also had a significant effect on children's behavior. Significant differences in the predominant affect of aggressive and nonaggressive children was evident in the cooperative task only. The peer perception ratings did not clearly discriminate aggressive and nonaggressive children. However, significant differences in how nonaggressive children rated an aggressive and nonaggressive partner were evident.

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CHAPTER I

INTRODUCTION

Aggression and Children's Peer Relations

A broad spectrum of behavioral and social cognitive characteristics are associated with children having poor peer relations (Parker & Asher, 1987; Hymel, Rubin, Rowden & LeMare, 1990; Kupersmidt, Coie, & Dodge, 1990). This suggests numerous factors that may contribute to the impaired interpersonal functioning and psychological well-being of this population. Aggression is an especially salient behavior that has been found to be the single best predictor of poor peer relations (Wass, 1987).

Aggression's apparent impact on development has made it an integral part of several developmental theories. Distinct in their focus, the possible incompatibility of differing theoretical perspectives has been emphasized. For example, the peer relations literature, dominated by a cognitive-behavioral orientation, has often been placed in contrast to more traditional psychoanalytic theory. The two theories are often regarded as offering unique perspectives on explaining aggression and it's role in development (i.e., Dodge & Crick, 1990). However, contemporary psychoanalytic perspectives are enlightening with regard to better understanding aggressive behavior, and they complement present cognitive-behavioral

frameworks. Contemporary psychoanalytic perspectives, for example, emphasize the adaptive functions of aggression as well as its maladaptive components (Parens, 1989). From this perspective, adaptive aggression is observed soon after birth. Adaptive aggressive behavior serves the infant in obtaining his/her basic needs from the environment. Aggression becomes maladaptive as a response to threats, stress, and neglect in having needs met. According to this perspective, maladaptive aggression is perpetuated by these early negative experiences continuing to influence a child's, and later an adult's, perception of his/her environment. Consequently, children who acquire a destructively aggressive response style are likely to act-out when a situation is perceived as threatening, or when seeking gratification of unmet needs.

The peer relations literature, characterized by a more cognitive-behavioral orientation, also provides insight into understanding aggression's impact on children's peer relationships. Although aggression among children is common, the fact that over half of observed aggressive behavior in play groups is displayed by just 10 percent of the boys in the group indicates that aggression comprises a significant part of some boys' behavioral repertoire (Dodge & Coie, 1987). Aggressive children are regarded by their peers as disruptive, unable to take teasing, less cooperative, less trusting, and less kind, which indicates

that aggression is often used by some children in a maladaptive manner (Parkhurst and Asher, 1987). Cognitive-behavioral perspectives, using a social information-processing model, seek to explain aggressive behavior through the individual's processing of social information in particular situations. These processing steps include encoding and interpreting cues, choosing a response, and enacting the chosen response.

Contemporary psychoanalytic and cognitive-behavioral orientations compliment each other in their contribution towards understanding aggressive behavior. Together, they suggest that a tendency towards aggressive acting-out begins early in life. Aggression results from a biased processing of social information, and threatening or stressful situations are most likely to lead to biased processing of social information. Furthermore, the social information processing model's emphasis on individual processing of social information compliments the contemporary psychoanalytic emphasis on social experience.

The study of children's aggression comprises a large body of research which collectively points to the need to understand the factors which precipitate and maintain aggression so that more successful interventions can be developed. Childhood aggression has been found to predict numerous problems later in life including truancy, criminal activity, and psychiatric problems, and it is highly

correlated with child and spouse abuse (Parker and Asher, 1987; Cowen, Pederson, Babigian, and Izzo, and Trost, 1972; Eron, 1983). Furthermore, aggression is a highly stable behavioral pattern (Olweus, 1979). Although the situations that elicit aggression may change over time, an individual's aggressiveness has been found to be stable relative to the population (Eron, Lefkowitz, & Walder, 1984). This suggests that children whose interpersonal relationships are marked by high levels of aggression will come to rely on aggression as a means to resolve conflicts and get needs met.

A large body of literature has pointed to the relationship between perceptions and aggressive behavior. Compared to nonaggressive children, aggressive children perceive the use of aggression differently. They have reported that it is easier to act aggressively and more difficult to control aggressive impulses, and they are most concerned with prevailing over others (Parkhurst & Asher, 1987). Aggressive children hold an expectation that aggression will reduce mistreatment by others, and they expect that aggressive behavior will be rewarded (Perry, Perry, & Rasmussen, 1986; Boldizar, Perry, & Perry, 1989). Considerable evidence also indicates that aggressive children possess attributional biases. For example, Dodge (1980) showed aggressive and nonaggressive children videotaped provocation situations. Aggressive children who viewed an ambiguous provocation situation, one where the

intent of the perpetrator was not apparent, were 50 percent more likely than nonaggressive children to attribute hostile intent to the perpetrator and report that they would respond with aggression. Furthermore, Dodge and Frame (1982) found that once a hostile attribution is made, aggressive children are more likely to expect aggression from that peer in the future. This hostile attribution bias is robust and has been found in different samples of aggressive children (Milich & Dodge, 1984; Dodge & Newman, 1981; Steinberg & Dodge, 1983). Under conditions of personal threat, the hostile attribution bias is exacerbated (Dodge & Somberg, 1987), and Lochman (1987) found that aggressive boys not only overestimated the aggressiveness of others, but also minimized their own aggressive behavior.

Although aggression is a low frequency behavior, aggressive children appear to possess a unique behavioral repertoire. Behavioral observations of aggressive children indicate that they are more likely than nonaggressive peers to be engaged in off-task classroom behavior (Lochman & Lampron, 1985). Rejected-aggressive boys have also been observed to become angry and assaultive without apparent justification as compared to other boys (Coie and Kupersmidt, 1983). Finally, some evidence suggests that aggressive boys are more impulsive than nonaggressive boys (Camp, 1977).

Behavioral characteristics and perceptual and attributional biases of aggressive children have often been explained as resulting from a skill deficit. However, Renshaw and Asher (1982) have proposed that aggressive children may have different goals (i.e., self-protection, retaliation) than other children (i.e., being liked). This is supported by Boldizar, Perry, and Perry (1989) who found that aggressive children place more value on the tangible rewards of aggression and care less about the negative consequences of aggression. In addition, aggressive children place more value on achieving control over peers with whom they are engaged. Dodge, Asher, and Parkhurst (1988) have further developed the idea of differing goals by hypothesizing that the differences between competence and incompetence are less likely to be found in the endorsement of any single goal, but rather in how a child manages conflicting goals in a given situation. The coordination of goals is argued to depend on the time and energy required to pursue any one goal, and how much one's interactions will be influenced by a particular goal. With regard to aggressive children, the desire to maintain control, reduce mistreatment by others, and obtain tangible rewards suggests that their goals are more self-oriented. A reliance on aggression may reflect that aggressive acting-out has been a successful means to achieving these ends in the past.

Aggression as an Interpersonal Process

Research on aggressive behavior in children has typically focused on the individual child, his/her problem solving ability, reaction to hypothetical social situations, or behavioral impact on others. Much of this research has grown out of the evolving social information processing model developed by Dodge and his colleagues (Dodge, Pettit, McClaskey, & Brown, 1986). However, it is increasingly recognized that aggressive behavior emerges out of dyadic and peer group interactions (Pettit, Bakshi, Dodge, & Coie, 1990). Recent work by Dodge and his colleagues highlights this shifting emphasis from the individual to the collaborative processes of dyads/groups from which aggressive behavior is most likely to emerge. For example, Dodge, Coie, Pettit, and Price (1990) formed small groups of first and third grade unfamiliar boys whose sociometric status was known. The boys met over five consecutive days for 45 minute free-play sessions. Popular, rejected, and neglected boys were evenly distributed in each group. Assessments of social preference were made by play-group members after each play session, and play sessions were videotaped for behavioral coding. Observation of the groups indicated that while popular first graders displayed higher rates of bullying behavior, popular third graders refrained from bullying and coercion. With regard to aggression, peer rejected boys often responded aggressively to "ambiguous-

an escalation in negative behavior. In contrast, nonrejected boys were observed to make efforts to diffuse aggressive confrontations. Using this same data set Dodge, Price, Coie, and Christopoulos (1990) looked at the dyadic relationships which developed in this play group setting. These analyses indicated that peer rejected boys were more likely to establish aggressive dyadic relationships in the play group setting. In addition, while mutually aggressive dyads disliked each other, nonaggressive dyads rated their dyad partner more positively. Observation of asymmetric dyads, those consisting of an aggressive and nonaggressive member, indicated that such relationships were associated with the nonaggressive partner displaying negative behavior to a degree similar to that displayed by the aggressive partner. Finally, it was found that aggressive behavior was unevenly distributed among dyadic relationships, and that even highly aggressive boys aggressed in a differential manner. This suggests that although aggressive children display high levels of disruptive behavior, and negatively influence the behavior of nonaggressive peers, this acting-out is done selectively and not in a random fashion. That is, it appears that particular situations within the free-play setting resulted in aggressive acting-out.

The work of Dodge and his colleagues demonstrates the salience of aggressive behavior and how quickly it emerges

when children are introduced to a new setting. This work suggests that what an individual brings into a dyad or group will influence the process and outcome of the relationships that form. Thus, both the dyadic context and individual influences on the dyad appear to be important in understanding social competence. However, this dyadic or group focus does not inform us about the type of situations which arise in the free-play context that contribute to peer acceptance or rejection. Aggressive behavior appears to have a negative impact on acceptance, especially by third grade. This suggests a developmental change in what children recognize/accept as socially competent. The differential use of aggression by even highly aggressive children suggests that only certain situations are likely to elicit aggressive behavior.

Affect Regulation and Children's Peer Relations

Although aggression is a strong predictor of peer rejection, this relationship is less clear as children get older. Whereas younger children associate overt forms of aggression with dislike, older children associate indirect forms of aggression and hypersensitivity to criticism with peer rejection (Coie, Dodge & Kupersmidt, 1990). Not all aggressive children are rejected, and some are even popular and seen as leaders within their peer group (Coie, Dodge, & Copotelli, 1982). This suggests that other factors interact with aggressive behavior to contribute to negative peer

status.

Emotional regulation, its influence on behavioral and social cognitive functioning, is one factor receiving a resurgence of interest. Campos, Campos, and Barrett (1989), for example, have proposed a functional approach where emotions are "...processes of establishing, maintaining, or disrupting the relations between the person and the internal or external environment, when such relations are significant to the individual" (pp. 395). Studies in areas such as infant development (e.g. Emde & Buchsbaum, 1984), social referencing (e.g. Walden, 1991), and development in at-risk populations (e.g. Ciccheti, Ganiban, & Barnett, 1991) have provided insight into understanding the role of emotions in social development. Recently, Putallaz and Sheppard (1990) studied the relationship between observed affect and sociometric status. Although not investigating the more complex process of affect regulation, their assessment of affective display is informative. High and low status dyads of children interacted in "limited resource" situations. These were situations in which there was only one toy for two children. Children were rated by independent observers on the predominant affect displayed during social interaction. High status dyads were found to display a more positive affect than low status dyads.

While acknowledging the importance of affect and its role in social development, the peer relations literature

has been largely devoid of empirical work in this area (Coie, 1990). However, some have recently speculated on the interplay between affective development and social competence. Looking at children's friendships, Gottman and Mettetal (1986) and Parker and Gottman (1989) have identified three distinct developmental periods: early childhood, middle childhood, and adolescence. Each period is marked by the unique organization and content of conversational processes, as well as a characteristic manner for dealing with emotions and emotional issues. Of interest to this discussion is middle childhood which ranges from approximately 8 to 12 years. Observations of these children's friendships suggest that avoidance of peer rejection is the most salient interpersonal concern at this time. This is accomplished largely through negative gossip about others, which serves to solidify an ongoing relationship. Parker and Gottman's (1989) observations indicate that, unlike younger children who are affectively labile, middle childhocd is a period when emotions are controlled with the desire of appearing "cool". Sentimentality is avoided, as it can lead to peer rejection. Emotional regulation is viewed as a manifestation of burgeoning cognitive development, and it is achieved through reliance on the structure provided by rules and games, both formal and informal. The ability to think in an abstract and hypothetical manner develops at this time, and there are

increasingly sophisticated goal coordinating skills which allow children to avoid being emotionally overwhelmed. Social competence thus requires the necessary skills to negotiate rules and adhere to them. This active negotiation between peers provides information to a child about his/her own affective experiences, as well as information about the responses of others to one's experience.

Few researchers have examined the issue of emotional regulation in aggressive children. However, the perceptual and attributional biases and behavioral characteristics of aggressive children suggests immaturity in social skills development and affect regulation. The hostile attribution biases, tendency to become angry without justification, and low self-esteem of aggressive children would likely make affect regulation difficult. Rabiner and Gordon's (1992) recent study of children's concerns is telling in this area. When presented with hypothetical vignettes of competitive and cooperative peer interactions, aggressive-rejected children were found to care less about another's feelings than other children. Given that children acquire affect regulation capabilities though their interactions with others, aggressive children's unresponsiveness to a peer's feelings suggests that they would not effectively monitor their own expressions of emotion. They might be less effective in negotiating the formal and informal rules of social exchanges. Consequently, they may be less likely to

engage a peer in a prosocial manner.

Conflict as a Context for Aggressive Children's Interpersonal Difficulties

The above studies are representative of a large body of research focusing on the relationship between social cognition, aggressive behavior, emotional regulation, and social adjustment. Much of this research has identified children based on a criterion (i.e., aggression, peer acceptance) and then assessed behaviors or perceptual biases associated with this criterion. While this research has been productive and informative with regard to peer relations, there is an emerging literature that considers the process variables involved in the formation of adaptive and maladaptive peer relations (i.e., Dodge et al., 1990). It is increasingly recognized that understanding the collaborative processes, the give and take between children which influences the outcome in a particular situation, is critical for understanding the development of peer relationships. Social conflict may be a situation that is especially difficult for aggressive children to successfully negotiate.

Conflict is an integral part of several developmental theories. The relative paucity of studies on social conflict is surprising given its recognized importance in areas such as the formation and maintenance of friendships (Hartup, Laursen, Stewart, and Eastenson, 1988), the

establishment of group cohesiveness (Maynard, 1985), and the development of discussion skills (Eisenberg & Garvey, 1981). Conflict provides a context to understand two central processes of social development, namely feeling connected and forming close relationships with others, while simultaneously maintaining a sense of individuality (Shantz & Hobart, 1989; Cooper, Carlson, Keller, Kock, and Spradling, 1991; Dunn and Slomkowski, 1992). Individuality emerges from processes that distinguish one from others, and this can be seen in self-assertions or disagreements. Connectedness, in contrast, involves processes that link one to others, and this is evident through acknowledgment and responsiveness to others (Cooper et al., 1991). Engaging in conflict indicates that another's behavior is significant. It demonstrates the interdependence of social engagement, that the interpersonal negotiation of tasks depends on how each individual contributes to the process. Furthermore, individuation is enhanced by allowing oneself to stand in opposition to another. Depending on one's state of development, conflict provides a context where an individual can understand psychological separateness from others, as well as the uniqueness of one's wishes and abilities. Competent conflict resolution is believed to enhance individuality, preserve and enhance a sense of connectedness, and foster social development.

One reason for the empirical neglect of social conflict may be the negative connotation with which conflict is often associated. Often equated with fighting, conflict is viewed as a situation that should be avoided. However, in the context of this discussion conflict is defined as a situation of incompatibility between goals or behavior that is evident when two or more individuals overtly oppose each other (Shantz, 1987). In addition, conflict is seen as an emotionally arousing situation with the potential to produce negative affect in partners engaging in an interaction (Miller, Danaher and Forbes, 1986, Dunn and Slomkowski, 1992). Behavioral, cognitive, and affective components are considered, as all are important in understanding the developmental significance of conflict engagement. This definition does not label conflict as positive or negative since either outcome is possible. Whether a conflict is resolved successfully or not depends on social cognitive ability, the utilization of appropriate behaviors, and adaptive affective regulation.

There is also a tendency to ignore conflict as a context for development because it is often used interchangeably with aggression. However, aggression comprises less than 25 percent of toddler's conflicts (Hay and Ross, 1982), and verbal and physical aggression has been found in only nine percent of young children's conflicts (Shantz and Shantz, 1982). The body of research on social conflict, which has

been largely done with toddlers and preschoolers, indicates that the majority of conflicts revolve around issues of object control and social control (Shantz & Hobart, 1989). Toddlers, for example, are more likely to be engaged in object conflicts. However, as children mature the proportion of social conflicts increase so that by four or five years conflict engagement is evenly split between social and object control (Shantz, 1987). This proportion has been found to be stable through at least the age of six and seven (Shantz and Shantz, 1985). Although it is recognized that the behavioral and affective regulation associated with peer acceptance evolves throughout childhood, there has been little direct study of how older children manage social conflict.

Two approaches have been used to study children's conflicts, observing naturally forming groups and evaluating responses to hypothetical conflict situations. Observation of young children's play groups has been prevalent. Observing three to five year olds, Laursen and Hartup (1989) found that children were more likely to interact following a conflict if they had been engaged prior to the conflict. Furthermore, affective intensity, aggression, and inequitable outcomes were associated with discontinuation of interaction. When comparing friends and nonfriends Hartup et al. (1988) found that conflict frequency, length, or the arousing situation that led to the conflict did not differ

between friends and nonfriends. However, conflicts between friends were less intense, were resolved more frequently, and were more likely to be resolved with equitable outcomes. With regard to preschoolers, little negative affect has been observed following conflict; however, this may not be true of older children who are more likely to view peers based on personality traits (Shantz and Hobart, 1989). Presently, there has been no investigation of the relationship between affect and conflict in older children.

Although not specifically investigating conflict, the work of Selman and his colleagues is informative in this area. Using a structural-developmental framework, Selman proposes that interpersonal competence develops gradually over years of interaction between biological and social growth (Selman, 1981). Interpersonal competence depends not only on the cognitive development of interpersonal understanding, but according to Selman, interpersonal competence also requires "...analysis of affect and intention, as well as the interactional analysis of the orientation between the self and other in a defined context." (p. 405). The ability to coordinate differing social perspectives, according to Selman, reflects the child's capacity to differentiate and coordinate points of view through an understanding of the relationship between a peer's and the self's thoughts, feelings, and wishes (Selman, 1980). This is proposed to occur hierarchically

from a state of "undifferentiated egocentrism at the lowest level to increasing capacity for reflection on and an integrated coordination of perspectives, both within the self and between the self and other." (Lyman & Selman, 1985, pp. 86).

Selman's observations of interacting dyads are relevant in attempting to understand aggressive children's social competence. Following children longitudinally, Selman has found that the interpersonal negotiation strategies of troubled children tend to be developmentally delayed. Conflict is often managed with an impulsive reliance on fight or flight strategies (Lyman & Selman, 1985). A moderate relationship between social status and social competence has also been found. Namely, children with higher social preference scores tend to demonstrate greater social competence on an interpersonal negotiation strategy task (Yeates, Schultz & and Selman, 1991). Similarly, Rabiner and Gordon (1992) found that when presented with interpersonal dilemmas, peer rejected boys were more likely than nonrejected boys to provide self-centered solutions to the dilemma. Many of the observed behaviors and social cognitive biases found in aggressive children parallel developmentally lower levels of Selman's framework, suggesting that aggressive children's ability to understand and negotiate perspectives is not as developmentally advanced as nonaggressive peers.

The relationship between sociometric status and responses to hypothetical social conflict has also been explored (i.e., Rabiner & Gordon, 1992; Shantz & Shantz, 1985; Renshaw & Asher, 1983). However, direct investigation of children's social conflicts, as it relates to sociometric status, has received scant attention. Observation of six and seven year old play groups by Shantz and Shantz (1985) indicated a relationship between sociometric status and social conflict. Those children with high social visibility were more likely to be engaged in conflict, and highly visible children were more likely to engage in physical aggression during conflict. In addition, more popular children engaged in fewer conflicts and used less physical aggression during periods of conflict. Putallaz and Shepherd (1990) compared high and low status dyads in three limited resource situations where there was only one toy for two children. Low status children were found to be more competitive, while high status children were more interested in obtaining mutual benefit from the limited resources available.

Conflicts are often ambiguous and require the interpretation of a situation and the coordination of goals and strategies in order to reach a resolution. Given the perceptual biases and behavioral difficulties of aggressive children, engagement in social conflict may be a salient context where aggressive acting-out is most evident.

Research described above suggests that the balance between individuality and connectedness may be skewed for aggressive children during social conflict. Given that aggressive children are more concerned with prevailing over others, having their needs met, and maintaining control, conflict may be a context where such goals are especially threatened. Together with perceptual biases that are likely to exacerbate a perceived threat to individuality, aggressive children finding themselves in conflict with another may be more likely to rely on the aggressive stance that has succeeded in the past.

Statement of Purpose

Aggressive behavior is of special interest to clinical researchers because of its stability and association with negative outcomes. The extensive literature on aggressive children indicates perceptual and attributional biases and behavioral characteristics that are likely to contribute to poor peer relations. However, these biases seem to be most evident during a relatively small proportion of the time. Research suggests that ambiguous provocation situations (Dodge, 1980; Dodge et al. 1990), as well as personal threats (Dodge & Somberg, 1987), are most likely to elicit biases in aggressive children. Such findings are consistent with contemporary theoretical perspectives on aggression. Recognition of the interpersonal context in which aggression is most likely to occur indicates that understanding

aggressive behavior requires assessment of the individual characteristics brought into a situation, the nature of the situation itself, and the dyadic context in which these characteristics emerge. Although little empirical work exits, there is increased recognition of the importance of emotional regulation in competent social engagement. It was proposed that the negotiation of social conflict, often ambiguous in nature, is a context where perceptual and affective biases and behavioral characteristics associated with aggressive children will be most evident.

This study attempted to build on the social conflict literature, the research on aggression as it emerges in dyadic relationships, and proposals on the relationship between affect regulation and social competence. Expanding on Dodge et al. (1990) aggressive, nonaggressive, and mixed (aggressive-nonaggressive) dyads interacted in specific contexts. Recognizing the importance of individual biases affecting dyadic engagement (Pettit et al., 1990), children's perception of their dyad partner was assessed following engagement in each experimental task. As discussed above, aggressive children possess perceptual and attributional biases; however, these likely do not act independently of their setting and behavior.

Unlike prior research in which children were observed in free-play sessions, this study assessed dyadic engagement in cooperative play and social conflict tasks. By creating

specific contexts - cooperative play and conflict - comparisons between children's behavior in each context could be made, allowing for more direct inferences about the significance of social conflict and the conditions in which it is most likely to occur. The two tasks were chosen because of the demands placed on children in each. The cooperative play task structured a common goal for both subjects to achieve - creating something unique from a set of legos. In contrast, the conflict task required children to develop a single list which rank ordered their preferences on a provided topic (i.e., "best television programs"). Children entered the conflict task holding opinions that differed from their partner. Sharing a common goal, children negotiated how their individual preferences were incorporated into the single list. Although each setting was uniquely structured and children were explicitly provided a goal, the established contexts were naturalistic, allowing them to be approached in a positive or negative manner. Consistent with the theoretical work of Gottman, Parker, and Selman on the importance of affect in understanding social competence, and building on Putallaz and Sheppard's (1990) work concerning affect and social conflict in young children, children's predominant affect in both social conflict and cooperative play contexts was assessed. Theoretical work on affect focuses on children's ability to effectively modulate affect displays. Assessing

the predominant affect only crudely measures a child's affect regulation capability. However, it was considered a valid approach as a first step toward understanding the relationship between affective display and children's behavioral engagement in different settings.

This investigation built on the present literature by directly studying the behavioral engagement, predominant affect, and the perceptions of older children. Social conflict has been widely studied in this population using hypothetical vignettes, while most direct observation of conflict has occurred with younger children, typically in preschool.

Hypotheses

Aggressive acting-out is a relatively low frequency behavior, even among aggressive children. Some research indicates that aggression is used selectively (Dodge et al., 1990); however, no study has examined how children's interpersonal behavior is related to the context in which it is embedded. This study compared aggressive and nonaggressive children who participated with either an aggressive or nonaggressive partner in two experimental conditions, a cooperative task and a conflict task. Each child's predominant behavior, their predominant affect, and their perception of their partner during each task was assessed. Because aggressive children are more concerned with prevailing over others, having their needs met, and

maintaining control, social conflict may be a situation where such goals are threatened. Based on the premise that social conflict situations may be especially difficult for aggressive children to negotiate, the following hypothesis was proposed:

H1. When engaged in a cooperative play task, the interpersonal orientation (Appendix B) of aggressive and nonaggressive subjects in aggressive, mixed (aggressive-nonaggressive), and nonaggressive dyads was not expected to differ. However, when engaged in a social conflict task, more aggressive subjects in aggressive and mixed dyads were expected to be rated as competitive. In contrast, more nonaggressive subjects were expected to be rated as compromising and/or collaborative with their partner.

The capacity to regulate affect was proposed to be an important component of social competence (Gottman & Mettetal, 1986). Little research has directly investigated the relationship between children's affect regulation and social competence. However, the finding that aggressive-rejected children care less about a peer's feelings (Rabiner & Gordon, 1992), and the fact that low status dyads display more negative affect in limited resource situations (Putallaz & Sheppard, 1990) suggests a link between affective display and behavioral engagement. Therefore, the following hypothesis was proposed:

H2. When engaged in cooperative play, subject's affective display was not expected to differ among the three dyad groups (aggressive, mixed, nonaggressive). However, when engaged in the social conflict task, aggressive subjects in aggressive and mixed dyads were expected to display more negative affect than were nonaggressive subjects.

The present literature suggests a relationship between perceptions and aggressive behavior. Because aggressive children have reported that it is easier to act aggressively (Parkhurst & Asher, 1987), that aggressive children expect aggression to reduce mistreatment (Perry, et al., 1986), and that aggressive children have been found to hold a "hostile attribution bias" (Dodge, 1980), the following hypotheses were proposed:

H3. Aggressive subjects in aggressive and mixed dyads were expected to rate their partner more negatively following the social conflict task than the cooperative play task. In contrast, the ratings of subjects in nonaggressive dyads were not expected to significantly change between the cooperative play and the social conflict context.

H4. Nonaggressive children were expected to rate aggressive partners more negatively than nonaggressive partners. **H5.** Following the social conflict task, it was expected that aggressive subjects would rate nonaggressive partners more negatively than would nonaggressive subjects.

CHAPTER II

METHOD

Design

A comparison between aggressive, nonaggressive and mixed (aggressive-nonaggressive) dyads was made in two experimental conditions, a cooperative task and a conflict task. Following participation in these tasks each subject's predominant behavior toward their partner, their predominant affect during the task, and their perception of their partner was assessed. The order in which subjects participated in these tasks was counterbalanced.

Of particular interest, we examined how aggressive and nonaggressive children were affected by being paired with an aggressive or nonaggressive partner. Incorporating the three dyad groups allowed for an investigation of not only the two experimental tasks, but also of the effect of having an aggressive or nonaggressive partner. This is the case because aggressive children paired with an aggressive partner were compared to aggressive children paired with a nonaggressive partner. Similarly, nonaggressive children paired with an aggressive partner were compared to nonaggressive children paired with a nonaggressive partner. In order to consider these partner effects, each dyad member was randomly designated as the target subject or the partner. The data collected on target subjects was used in

the analyses, and the partner's status as aggressive or nonaggressive served as an independent variable.

Both subjects of the mixed status (aggressive-nonaggressive) dyads were considered targets. However, they could not be included as separate samples in one analysis, as this would violate the independence of observations. In order to accommodate for this, two analyses were completed for each hypothesis. One analysis addressed hypotheses looking at **aggressive** targets with aggressive partners, **nonaggressive** targets with nonaggressive partners, and **nonaggressive** targets with aggressive partners. The other analysis used the same **aggressive** targets with aggressive partners and **nonaggressive** targets with nonaggressive partners, and also the **aggressive** targets with nonaggressive partners. While statistical methods do not allow for comparison of subjects within the mixed dyads, stronger inferences could be drawn because the same targets from aggressive and nonaggressive dyads were used in both sets of analyses. Reported results, then, reflect two sets of analyses. Significant findings, as well as noteworthy nonsignificant results, are reported.

Subjects

One hundred and ten third through fifth grade subjects were recruited from four Guilford county schools. Subjects comprising these grades were incorporated into the study because this age range corresponds to middle childhood,

which has been identified as a distinct developmental period (Gottman & Mettetal, 1986; Parker & Gottman, 1989). Aggressive and nonaggressive status was determined through a slightly modified version of the sociometric procedure described by Coie, Dodge, & Copotelli (1982). The group administered sociometric procedure provided each student a roster listing the names of every student in their grade, along with code numbers that were assigned to each child. Subjects nominated three children they liked the most (LM), three children they liked the least (LL), three children who start fights (AG), and three children who are easy to push around (PA). The number of LM, LL, AG, and PA votes was totaled for each child, and scores were standardized within grade, school, and gender. With the obtained standard scores, a social preference score (ZLM-ZLL) was also obtained. Social status based on this procedure has been found to be relatively stable over time (Asher, Singleton, Tinsley, & Hymel, 1979; Roff, Sells & Golden, 1972), even after five years (Coie & Dodge, 1983), and school-based sociometric nominations correspond to social status assessed in other settings (Durrant & Henggeler, 1986). In addition, peer nominated aggression ratings are significantly correlated with teacher-rated aggression (Coie & Dodge, 1983), and as discussed above, aggressive behavior has been found to be highly stable over time (Olweus, 1979; Eron, Lefkowitz, & Walder, 1984).

Aggressive subjects were defined as those children possessing a standard score > .80 on the "starting fights" nomination. The mean aggression Z score of subjects in aggressive dyads was 1.79 (standard deviation = .88). Aggressive subjects in mixed dyads had a mean aggression Z score of 1.84 (standard deviation = .67). Because aggression is highly correlated with peer rejection, aggressive subjects had a lower social preference score (Z = -.59; standard deviation = 1.37). Nonaggressive subjects were identified as those with a start fights standard score < .50. Subjects in nonaggressive dyads had a mean aggression z score of -.33 (standard deviation = .39). These subjects had a mean social preference z score of .39 (standard deviation = 1.02). Nonaggressive subjects in mixed dyads had a mean aggression z score of -.26 (standard deviation = .42) and a social preference z score of -.13 (standard deviation = .99). The socioeconomic status (SES) of subjects was assessed with the Hollingshead four-factor index of social status (Hollingshead, 1975). There was no significant SES difference between the experimental dyad groups. Table 1 provides more descriptive statistics of subjects comprising the different pair types.

A total of 55 male and female dyads participated in the study: 18 aggressive pairs, 18 mixed status (aggressive-nonaggressive) pairs, and 19 nonaggressive pairs (Table 2). Dyads members were unfamiliar with each other. Subjects

within each dyad were matched by gender, school, and grade, and this was balanced across groups. Fewer aggressive female subjects were identified, but the same proportion of female to male dyads were included in each group. It was not possible to balance by race, and aggressive dyads were predominantly African American (13 of 17).

Measures

Peer Beliefs Inventory

Prior to participating in the experimental tasks, and following completion of each task, subjects completed a 12 item measure assessing their perception of their dyad partner (Appendix A). Items on this questionnaire are evenly divided between positive and negative characteristics and are rated on a five point Likert scale ranging from 1 (not at all) to 5 (very much). In order to derive a total score, the rating provided for the six negative questions is reversed so that all questions reflect a higher score being more positive. The ratings for all 12 questions are then summed, and the total score derived may range from 12 to 60. Lower scores reflect a more negative peer perception while higher scores reflect a more positive peer perception. Designed to assess children's beliefs about peers in general, this measure was slightly modified to specifically tap children's beliefs about their peer partner following each task. The Peer Beliefs Inventory has adequate internal consistency (i.e., alpha = .80) and moderate stability over

time (r = .56) (Rabiner, Keane, and MacKinnon-Lewis, 1993).

Behavioral Coding

The behavioral categories used in this study were developed by Thomas (1976) and are based on the adult conflict literature. Categories are derived from a two-dimensional array assessing the need to have one's goals met (individuality) and the degree to which someone is concerned with another's goals (connectedness). For example, the competing category reflects an interpersonal orientation of striving to have one's goals met to the exclusion of consideration for another. In contrast, the collaborative category reflects an orientation of balance between expressing one's goals, and at the same time considering another's perspective in arriving at a mutually acceptable outcome (see Appendix B for definition of each category).

The predominant behavior of each dyad member was assessed for each of the two experimental tasks. Behavioral ratings were based on viewing the videotaped interactions of dyads. Ratings were made by the primary investigator on all subjects, as he was blind to the subject's status. In order to establish inter-rater reliability, a graduate student involved in this research area independently rated 64 percent of the subjects. Prior to this independent rating being made, reliability was established between the primary investigator and graduate student rater by viewing and discussing videotapes of pilot data that was collected.

Inter-rater reliability, based on the coding of actual data, was .84 using a kappa statistic. This is consistent with the inter-rater reliability achieved by Putallaz and Sheppard (1990) in their study of social conflict in six year old children.

Subjects were initially assigned to one of five mutually exclusive categories: competing, avoiding, accommodating, compromising, or collaborating. Because of a lower frequency of some of the observed categories, four categories were collapsed into two for data analysis. Compromising and collaborative categories were combined into one category. Both are more adaptive forms of interaction that required the subject to interact with his/her partner and to consider another's perspective. The accommodating and avoiding categories were also combined, as these reflect more passive interactive styles. Collapsing the original five categories, then, resulted in three behavioral categories that were used in the analyses: competing, accommodating/avoiding, and compromising/ collaborative.

Assessment of Predominant Affect

The predominant affect of each dyad member was assessed for each of the two experimental tasks. Affect ratings were based on viewing the videotaped interactions of dyads. The affect rating ranged from high negative affect (-2) to high positive affect (+2) (see Appendix C for definitions). When used by Putallaz and Sheppard (1990), an inter-rater

reliability of .72 was obtained using Cohen's kappa.

Similar to the behavioral ratings, assessment of children's predominant affect was made by the primary investigator on all subjects. Inter-rater reliability was determined by having another graduate student independently rate 64 percent of the subjects. Reliability was established by having both raters view and discuss affect ratings for pilot data that was collected. An inter-rater reliability of .86, based on the coding of actual data, was obtained using a kappa statistic.

Procedure

Following the completion of the sociometric procedure parents were contacted by telephone or in person to request their child's participation. Parents were given a brief description of the study during the telephone contact, and this was followed-up with a written consent form (Appendix D). Subjects were brought to the UNCG Psychology Department and paired according to their status classification in order to form either aggressive, mixed, or nonaggressive dyads. Upon arrival, subjects were introduced to each other and given a brief explanation of what they would be doing. Subjects were asked to discuss their interests or respective schools so that they could begin to get to know each other.

After this introductory period, subjects were separated and they completed the Peer Beliefs Inventory based on their initial contact with their peer partner. This initial

assessment provided a baseline for later comparison of the ratings subjects made of their partner after each experimental task. Although this initial meeting was for only five minutes, children had no difficulty completing this initial rating. Next, each subject was told that the experimenter was interested in better understanding their preferences on a variety of topics. S/he was given a piece of paper with a topic of interest on it and asked to rank from one to five their preferences for the topic. For example, subjects were asked to rank television programs, academic classes, musical groups, and leisure activities. Rankings were completed on a variety of topics so that several preference lists could be compared between subjects in order to find a topic on which subjects disagreed. This was necessary in order to establish the nature of the "conflict" experimental manipulation.

Once the preference lists were completed subjects were brought together to participate in the first of two interactions. These interactions were videotaped for later coding, but subjects were not told about the videotaping prior to their taking part in the study. The order in which subjects participated in the interactions was counterbalanced. Each interaction was introduced by an experimenter who was blind to the dyad's status. The two interactions in which dyads took part were situations initially structured by the experimenter to be a cooperative

play or a conflict interaction.

In the cooperative play session subjects were provided with a set of legos. They were told that many pairs of children had been brought to UNCG, and that the experimenter was trying to see which pair could best work together to develop the most innovative creation in five minutes. Subjects were told that in the past kids who worked together and talked about their ideas created the most interesting things. Subjects were informed that the experimenter would leave them alone to work and come back in five minutes to see what had been built (See Appendix E for specific instructions). After five minutes the experimenter returned. Subjects were separated, and the Peer Beliefs Inventory was completed so that each subject's perception of their partner following the cooperative interaction could be assessed.

When both subjects completed the questionnaire, they were brought together again for the conflict interaction. Subjects were told that the experimenter was interested in children's preferences on the topic that was chosen for discussion (based on earlier matching of preference lists which were most discrepant). They were also told that the experimenter had surveyed over 100 other children, that the preferences of most Greensboro children was known, and that the experimenter wanted to know how closely this dyad would match what other children think. Subjects were given the

preference list that they completed earlier and instructed that both must develop a combined preference list on which they both agreed. After five minutes the interaction was ended and subjects were separated so that they could complete the Peer Belief Inventory again. Subjects were told to base their ratings on the conflict interaction only, and that their ratings could be the same or different than the ratings they gave following the cooperative interaction.

CHAPTER III

RESULTS

Relationship between interpersonal orientation and task

The first question examined the predicted task by dyad group interaction when looking at subject's behavior. It was expected that the behavior ratings for aggressive and nonaggressive subjects would not differ for the cooperative task, but that more aggressive children would be rated as competitive during the conflict task. In contrast, more nonaggressive subjects were expected to be rated as compromising and/or collaborative. As discussed above, two analyses were completed for each of the three behavioral categories so that the effect of having an aggressive or nonaggressive dyad partner could be more fully explored.

The dependent variable in these analyses was categorical and dichotomous - whether or not the target subject was rated as competitive, avoiding/accommodating, or compromising/collaborative. Each behavioral category, competitive, avoiding/accommodating, and compromising/collaborative, was subjected to a 3 X 2 X 2 logistic analysis[1]. Experimental task served as a within subjects variable, and dyad group and race served as between subjects variables.

Race was included in the analyses in order to consider possible ethnic differences in the behavior ratings, and

because Black subjects were disproportionately represented in the aggressive/aggressive dyads. Few race effects were found. Black subjects were more likely to be rated as compromising/collaborative than were White subjects across the two experimental tasks, Chi-Square(1)=38.30, $p<.0001$. More nonaggressive Black subjects were also rated as accommodating/avoiding across tasks when paired with an aggressive partner, Chi-Square(1)=12.26, $p<.0005$.

Another possible confound evident after collecting the data was that aggressive subjects had a significantly lower social preference score than nonaggressive subjects (See table 2). To control for this difference in social preference between aggressive and nonaggressive subjects, the logistic analyses were initially run with dyad group and social preference score serving as independent variables. Subject's social preference score did not have an appreciable impact on the group differences found. Consequently, children's social preference score was not used in the logistic analyses reported below.

The first hypothesis concerning the interaction between the target subject's display of competitive behavior and their participation in the cooperative and conflict task was not supported, Chi-Square(2)=0, $p<1.00$. The number of aggressive subjects displaying competitive behavior did not significantly vary from the cooperative to the conflict task in comparison to nonaggressive subjects. However, a main

effect for dyad group across tasks was found, Chi-Square(2)=10.64, $p<.005$. Group comparisons indicated that aggressive subjects with aggressive partners were more likely to be rated as competitive than were nonaggressive subjects with aggressive partners, Chi-Square(1)=6.23, $p<.01$. In addition, more nonaggressive subjects with aggressive partners were rated as competitive than were nonaggressive subjects with nonaggressive partners, Chi-Square(1)=6.23, $p<.01$. Similarly, more aggressive subjects with nonaggressive partners were rated as competitive than were nonaggressive subjects with nonaggressive partners, Chi-Square(1)=9.49, $p<.002$. However, the number of aggressive subjects with aggressive partners rated as competitive did not differ from the number of aggressive subjects with nonaggressive partners rated as competitive, Chi-Square(1)=.32, $p<.57$. These results are summarized in table 3.

An interaction between subject's display of compromising/collaborative behavior and their participation in the cooperative and conflict task was also not evident, Chi-Square(2)=.49, $p<.78$. Again, the number of aggressive subjects rated as compromising/collaborative did not vary between the cooperative and conflict task in comparison to nonaggressive subjects. However, a main effect for dyad group was found, Chi-Square(2)=53.17, $p<.0001$. Group comparisons indicated that more nonaggressive subjects with

nonaggressive partners were rated as compromising/collaborative than were nonaggressive subjects with aggressive partners, Chi-Square(1)=26.48, $p<.0001$, as well as than aggressive subjects with nonaggressive partners, Chi-Square(1)=41.95, $p<.0001$. More nonaggressive subjects with aggressive partners were rated as compromising/collaborative than were aggressive subjects with aggressive partners, Chi-Square(1)=30.92, $p<.0001$, and more aggressive subjects with nonaggressive partners were also rated as compromising/collaborative than were aggressive subjects with aggressive partners, Chi-Square(1)=10.24, $p<.001$. These results are summarized in table 4.

Although group differences in accommodating/avoiding behavior had not been predicted, a logistic analysis was completed to compare the three dyad groups on accommodating/avoiding behavior. A main effect for dyad group was found, Chi-Square(2)=16.64, $p<.0002$. Group comparisons indicated that more aggressive subjects with nonaggressive partners were rated as accommodating/avoiding than were nonaggressive subjects with nonaggressive partners, Chi-Square(1)=16.68, $p<.0001$. The number of aggressive subjects with nonaggressive partners who were rated as accommodating/avoiding did not significantly differ from the number of aggressive subjects with aggressive partners, Chi-Square(1)=.91, $p<.34$. However, there tended

to be more aggressive subjects with aggressive partners rated as accommodating/avoiding than nonaggressive subjects with aggressive partners, Chi-Square(1)=2.96, $p<.09$. In addition, more nonaggressive subjects with aggressive partners were rated as accommodating/avoiding than were nonaggressive subjects with nonaggressive partners, Chi-Square(1)=15.45, $p<.0001$. These results are summarized in table 5.

By pairing aggressive and nonaggressive target children with both aggressive and nonaggressive partners, the possible effect one's partner may have had on a target child could be considered. The above results suggest that nonaggressive subjects were influenced by whether or not their partner was aggressive or nonaggressive. In contrast, the number of aggressive subject's displaying competitive and accommodating/avoiding did not significantly differ regardless of the status of their partner.

In order to further explore the relationship between aggressive and nonaggressive target children's behavior and that of his/her partner, contingency tables were derived. These tables plotted the number of aggressive or nonaggressive target subjects given a particular behavior rating and the corresponding behavior rating of their partner (tables 6 and 7). The correspondence between the behavioral rating assigned to nonaggressive target subjects and the rating assigned to their partner in the cooperative

and the conflict task was similar, kappa=.60. The correspondence between the behavioral rating given to aggressive target subjects and the rating given to their partner was less in both the conflict, kappa=.55, and the cooperative task, kappa=.40. These findings are consistent with the logistic analyses reported above in suggesting the significant of the target child's status and that of their partner. The behavior of aggressive children is more likely to be independent of their partner's behavior, and they may be less sensitive to the interpersonal dynamics of a given situation. In comparison, the rated behavior of nonaggressive children is more consistent with their partner. Nonaggressive children may be more sensitive to the interpersonal demands of a situation, and they appear to be more attune with whom they are interacting.

Relationship between predominant affect and task

The second question examined the predicted task by dyad group interaction when looking at subject's predominant affect. The assessment of predominant affect was subjected to a 3 X 2 X 2 X 2 analysis of variance (ANOVA) with dyad group, race, gender, and order of participating in tasks as between-subjects variables. Contrasts were made between the target subject's predominant affect in the cooperative and conflict task. Because of the possible confound presented by aggressive and nonaggressive subjects having significantly different social preference scores, these

analyses were also first run with social preference in the ANOVA model. Similar to the behavioral analyses, the inclusion of social preference scores did not change the results.

It was proposed that when engaged in the cooperative play task, the rated affect of subjects would not differ. However, it was expected that aggressive subjects would have a more negatively rated affect than nonaggressive subjects in the conflict task. The interaction between dyad group and the repeated measure task was not significant, $F(2,47)=1.68$, $p<.20$. However, a main effect for the within subjects effect of task was found, $F(1,47)=11.22$, $p<.002$. Subject's rated affect, independent of their group classification, was higher in the conflict task than it was in the cooperative task.

Although not hypothesized, a significant effect for dyad group across both experimental tasks was found, $F(2,47)=4.96$, $p<.01$. Post-hoc group comparisons of the cooperative task indicate that aggressive subjects with aggressive partners had a lower rated affect than nonaggressive subjects with nonaggressive partners, $t(36)=3.46$, $p<.001$. Aggressive subjects with aggressive partners also had a lower rated affect than nonaggressive subjects with aggressive partners, $t(34)=2.70$, $p<.01$, as well as aggressive subjects with nonaggressive partners, $t(34)=2.22$, $p<.03$. These results are summarized in table 8.

Relationship between peer perception rating and task

The third question examined the predicted interaction between dyad group and task when looking at the peer perception rating. It was expected that aggressive subjects would rate their partner more negatively following the social conflict task than the cooperative play task. In contrast, nonaggressive subjects were not expected to have significantly different ratings between the cooperative play and the social conflict context. The peer perception measure was subjected to a 3 X 2 X 2 X 2 analysis of variance (ANOVA) with dyad group, race, gender, and order of participating in tasks as between-subjects variables. Contrasts were made between the initial ratings and post-conflict task ratings and the initial ratings and post-cooperative task ratings. Again, because of the possible confound of social preference it was initially included as a control variable. However, similar to the other analyses this did not affect the results.

It was expected that the peer perception rating made by aggressive subjects would be significantly different between the conflict and cooperative tasks while the ratings made by nonaggressive subjects would not differ across tasks. The interaction between dyad group and the repeated peer perception measure across tasks was not significant, $F(4,96)=.54$, $p<.54$. However, a within-subjects effect for the peer perception measure across tasks was found,

$F(2,48)=13.00$, $p<.0001$. Subject's peer perception rating of their partner increased in both the conflict and the cooperative task compared to the initial rating, regardless of status classification. There was no significant effect for dyad group, $F(2,49)=2.22$, $p<.12$. The last two hypotheses were more specific examinations of the perceptions of aggressive and nonaggressive children that follows from the literature indicating aversive behavioral characteristics and perceptual biases associated with aggressive children. It was expected that nonaggressive subjects would distinguish aggressive from nonaggressive partners based on their perception ratings. This hypothesis was subjected to a 2 X 2 X 2 X 2 analysis of Variance Model (ANOVA) with cooperative peer perception rating and conflict peer perception rating serving as dependent variables and race, gender, dyad group, and order of participating in tasks serving as independent variables. It was predicted that nonaggressive subjects would hold a more negative perception of an aggressive peer partner, as compared to nonaggressive children who are paired with a nonaggressive peer. A significant main effect for group was found for the cooperative task, $F(1,31)=4.02$, $p<.05$, and a marginal main effect for group was found in the conflict task, $F(1,31)=3.59$, $p<.07$. Post-hoc analyses indicated that nonaggressive subjects rated an aggressive partner lower than did nonaggressive subjects with a nonaggressive partner

in the cooperative task, $t(35)=2.00$, $p<.05$ task, and they also tended to do this in the conflict task, $t(35)=1.90$, $p<.07$. These results are summarized in table 9.

The last analysis examined how aggressive subjects rated a nonaggressive partner as compared to nonaggressive subjects with a nonaggressive partner. It was predicted that aggressive children would perceive a nonaggressive partner more negatively than would nonaggressive children with a nonaggressive partner following the conflict task. This hypothesis was subjected to a 2 X 2 X 2 X 2 Analysis of Variance (ANOVA) model with conflict peer perception rating serving as the dependent variable, and gender, race, order of participating in tasks, and dyad group serving as independent variables. This hypothesis was not supported, $F(1,31)=.24$, $p<.63$. The peer perception ratings made by aggressive subjects with nonaggressive partners did not differ than those made by nonaggressive subjects with nonaggressive partners.

CHAPTER IV

DISCUSSION

This study attempted to contribute to the research literature that indicates unique behavioral characteristics and perceptual and affective biases in aggressive children. The need to better understand the contexts that are likely to elicit aggressive children's biases has been stressed (Perry, Perry, and Kennedy, 1992), and this study attempted to examine specific contexts in which these biases might be more evident. Given that aggression is a low frequency behavior, even among aggressive children, it was proposed that social conflict would be difficult for aggressive children to negotiate. It was expected that the biases of aggressive children would be most evident when engaged with a partner in conflict, but that aggressive and nonaggressive children would look similar when engaged in a cooperative task. However, the expected interaction between the task in which children participated and their status as aggressive or nonaggressive was not evident when looking at behavior, predominant affect, or peer perceptions.

Although most of the proposed hypotheses were not supported, the results are still enlightening with regard to our understanding of aggressive children. The behavioral differences between aggressive and nonaggressive children across experimental tasks were consistent. More aggressive

children were competitive or accommodating/avoiding than were nonaggressive children. This is consistent with the present research utilizing both hypothetical vignettes and observation of aggressive children. Especially interesting is the fact that the number of aggressive children rated as competitive or accommodating/avoiding did not significantly vary between those aggressive children who had an aggressive partner and those who had a nonaggressive partner. In contrast, the number of nonaggressive children given a particular behavioral rating varied between those who had an aggressive partner and those who had a nonaggressive partner. More nonaggressive children from mixed dyads were competitive and accommodating/avoiding and fewer were compromising/collaborative than were nonaggressive subjects from nonaggressive dyads. These findings may suggest that aggressive children are less sensitive to the contributions of peers in dyadic exchanges, especially those interactions that are perceived as more competitive.

Fewer aggressive children were also rated as compromising/collaborative compared to nonaggressive children. However, unlike competitive and accommodating/avoiding behavior, the number of aggressive children rated as compromising/collaborative did appear to vary according to whether their partner was aggressive or nonaggressive. More aggressive children from mixed dyads were compromising/collaborative than were aggressive

children from aggressive dyads. It appears that when they are paired with a child who is prone to relate in a collaborative manner, aggressive children may be more likely to act in a compromising/collaborative manner. Comparisons between aggressive and nonaggressive children in aggressive, nonaggressive, and mixed status dyads indicated the significance of the dyadic context. The type of partner engaged with an aggressive or nonaggressive child appeared to influence their behavior. How this influence is evident, the process by which the behavioral differences emerged, would be the next issue to explore. This issue could be addressed by a more specific behavioral coding of the dyad interactions. For example, looking at assertions, demands, agreements, disagreements, etc. made by dyad members may provide information to better explain how each child influenced the other. An assessment of causality to determine which child initiates and which child reacts in a given interaction would be informative. Such an assessment would allow for a more specific understanding of the role aggressive children play in situations. Finally, looking at the variability or lack of variability in children's behavior over the course of an interaction could provide information on the behavioral flexibility of aggressive and nonaggressive children. Assessments of behavior at the beginning of the interaction, during the middle, and again towards the end may begin to address this issue.

Although speculative, given the available data at this time, several possibilities may explain the results of this study. One explanation for the behavioral differences that were found between aggressive and nonaggressive children is that aggressive children may engage in more "aversive" behaviors when they are less sensitive to peer influences during a dyadic interaction. Valsiner and Cairns' (1992) discussion of conflict, comparing positive and negative components, may be informative on this issue. While conflict can foster growth and the emergence of new ideas, it can also be detrimental by contributing to the cessation of interactions, and thus inhibit growth. The tendency of aggressive children to display more aversive behaviors, regardless of their partner, would appear to make them more prone to negative interactions, and thus prone to maintaining behavioral and perceptual biases. This suggests the complexity in attempting to ameliorate aggressive behavior.

In contrast to aggressive subjects, the behavior of nonaggressive subjects appeared to have been more influenced by whom they interacted with. This was supported by the contingency tables showing the correspondence between the target subject's behavior and that of their partner, as the correspondence between nonaggressive target children's behavior and that of their partner appeared greater than the correspondence between aggressive target children and their

partner. These findings are consistent with Dodge et al. (1990) who found that nonaggressive children were more likely to match an aggressive partner in a free-play situation. Nonaggressive children may be better able to balance their own interests with those of their partner. The present literature suggests that this is a positive quality. However, it could also be maladaptive if a child alters his/her behavior in order to be accepted into a more anti-social peer group. For example, such a dynamic may be operating when children become involved with gangs.

The behavioral differences between aggressive and nonaggressive subjects found in this study may also reflect different goals in action (Renshaw and Asher, 1982; Dodge et al., 1988). A combination of differing goals and behavioral characteristics associated with aggressive children, operating in conjunction with a lack of flexibility in achieving their interests, may have been operating in both tasks. For example, some children seemed especially appreciative of and responsive to the attention they received from taking part in this study. Although children were involved in completing often mundane tasks for almost three hours (several studies were run in conjunction with this one), some were hesitant to leave and asked if they could return. If aggressive subjects were more sensitive to the attention received from being in the study and more concerned with impressing the experimenter, they may have

been less concerned with the interests and possible contributions of their peer partner. In addition, they may have been overly-sensitive in perceiving threats to achieving this goal. A peer partner offering suggestions and input could have threatened an opportunity to impress the experimenter. In effect, the goal of impressing the experimenter may have superseded the goal of working with a peer. Aggressive children may have been less skilled in coordinating the implicit goals provided by the tasks and their own more personal goals. Because experimenters were blind to children's status at the time the study was run, the possible effect adult attention may have had on aggressive children is speculative. However, some children who presented as being aggressive were especially sensitive to their relationship with the experimenter. Incorporating an assessment of aggressive and nonaggressive children's goals into future research designs may be worthwhile.

While this study demonstrated that the partner's status as aggressive or nonaggressive differentially influenced aggressive and nonaggressive target children, the situation in which they engaged did not appear to make a difference. Several possibilities may explain why aggressive children did not respond to the experimental tasks as predicted. The most obvious explanation may be that social conflict is not an especially salient situation for aggressive children, and that it is not more likely to elicit aversive behavioral and

perceptual biases. This explanation seems premature given the available evidence, especially since behavioral and affective differences between aggressive and nonaggressive children were found. In contrast, the findings of this study may indicate the complexity of social conflict. The importance of understanding the interpersonal and intrapersonal aspects of conflict has been stressed (Valsiner and Cairns, 1992). Aspects of both the conflict and cooperative tasks may have influenced children in a manner counter to what was expected, and both tasks may have lacked necessary components to elicit the expected results. For example, simply being in opposition to another was not sufficient to arouse behavioral, affective, and perceptual biases in aggressive children to a degree that would make such a context unique. Watching children participate in the "conflict" task, it appeared that the intended conflict was not especially salient to them. Although subjects entered this task holding differing opinions from their partner, the apparent lack of investment in the outcome of the interaction may have been a critical missing component. This lack of investment in the outcome may have lessened the possibility for negative affect and allowed the interaction to be more benign (Miller, Danaher and Forbes, 1986, Dunn and Slomkowski, 1992).

In contrast, subjects appeared to be more invested in contributing to the process of making something with the

legos, the goal of the cooperative task. It is significant that encouraging subjects to work together on a common goal did not ensure that they necessarily engaged in a cooperative manner. It appeared that children in this context were often very invested in the legos, at times to the exclusion of their partner. For these children, working together with a peer was not especially important. The greater degree of investment in the cooperative task, and thus the greater potential for affective arousal, seemed to make the potential for conflict greater in this situation.

Investment or lack of investment in the two experimental tasks may also reflect basic differences between them. The cooperative task with the legos was more of a perceptual-motor task that provided a concrete focus to the interaction. Achieving the stated goal required the building of an object. In contrast, the conflict task was more of a verbal interaction that provided a rather abstract focus to the interaction. Engaging in the conflict task required more of a reliance on dialogue.

Although the original hypothesis was not supported, behavioral differences between aggressive and nonaggressive subjects were evident. This is especially significant given the nature of the tasks and the interactions involved. Unlike Putallaz and Sheppard's (1990) study, subjects in this study did not have to negotiate for "limited resources". In contrast, subjects were explicitly told to

work together in one task, and their interactions in each task were brief (five minutes). More aggressive children assumed self-centered (competitive) or passive (avoiding/accommodating) stances as a way to deal with peers, even when involved in a situation structured to be benign and cooperative. The fact that more aggressive children engaged in less "pro-social" behaviors may suggest the pervasiveness of attributional biases affecting their behavioral enactment. Consistent with the conflict literature, these behavioral characteristics suggest the difficulty that aggressive children have in balancing one's own needs with those of another. A competitive stance is more self-involved, inhibiting contributions from others to an ongoing process. An avoiding/accommodating stance, on the other hand, is a more passive and resigned approach that prevents one from effectively contributing to an ongoing process. This makes is it less likely that one will have his/her needs met.

The fact that more aggressive children exhibited competitive and avoiding/accommodating behaviors may also suggest the heterogeneity of aggressive children. Recent approaches to understanding aggressive children have involved attempts to subtype this population. Distinctions made between effective and ineffective aggressors (Perry, Perry, & Kennedy, 1992), and proactive and reactive aggression (Coie and Dodge, 1987) highlight some of these

efforts. A follow-up to this study might benefit from an attempt to subtype aggressive children into more homogeneous groups.

The results regarding affective display were consistent with the behavioral findings in that no interaction between subject's status and the task in which they participated was evident. This again suggests that the two tasks were not approached by subjects in the manner that was expected. However, clear differences in the predominant affect displayed by aggressive and nonaggressive subjects were evident in the cooperative task. Aggressive subjects from aggressive dyads had a lower rated affect than all other dyad types. In contrast to the behavioral data, the affective display of both aggressive and nonaggressive subjects did appear to be influenced by the status of their partner. Although speculative, the behavioral and affective data together may suggest that while aggressive children may be somewhat responsive to their partner, they may lack the flexibility or the repertoire to alter their behavior.

The findings on affective display in this study expand on results reported by Putallaz and Sheppard (1990) who found that high status dyads had a higher rated affect than low status dyads in "limited resource" situations. By assessing the affective display of the individual subject and including mixed status dyads, these findings suggest that one's partner also influences affective display.

However, the process by which this influence occurs is an issue that remains to be explored. It is significant that the differences in rated affect found in this study can be related to children's aggression, independent of their social preference. Given that a tendency to act aggressively may impair sensitivity to interpersonal dynamics, and that adaptive affect regulation is proposed to depend of the feedback provided in interpersonal situations, both popular and unpopular aggressive children may be at-risk for difficulties in their affect regulation ability.

The questionnaire data collected in this study did not clearly discriminate between aggressive and nonaggressive subjects. Subjects did not differ in their initial ratings of their partner, and all subjects rated their partner more positively with increasing interaction. Consistent with other research, this suggests that aggressive and nonaggressive subjects may enter a new situation without preconceived biases (Rabiner, Keane, and MacKinnon-Lewis, 1993). In addition, the more positive ratings following interactions may reflect the benign nature of the tasks used in this study, and that interaction with peers was perceived as an overall positive experience.

The significant findings obtained on the peer perception rating data are consistent with the research literature. The finding that aggressive subjects from aggressive dyads rated their partner lower than

nonaggressive subjects with nonaggressive partners following the cooperative task is not surprising. This was a comparison between extreme groups, which are most likely to show a difference if it is present. The ratings made by aggressive subjects of their aggressive partner may not reflect a perceptual bias. Instead, a lower rating is consistent with the fact that the behavior of aggressive subjects was rated as more negative. This finding is consistent with Dodge et al. (1990), but it is more striking because rating differences were evident after only two brief interactions.

It is more telling that nonaggressive subjects distinguished between aggressive and nonaggressive partners in their ratings following both the conflict and cooperative task. This suggests that the behavioral and affective differences between aggressive and nonaggressive subjects observed by raters were also evident to nonaggressive subjects and impacted their ratings of peers.
It also indicates how readily children can interpret the behavior of peers and develop an opinion of them.

While some of the findings of this study are informative, several limitations are evident. Most notably, the attempt to identify situations in which aggressive children display behavioral, affective, and perceptual biases was not successful. The fact that biases were especially evident in a task designed to be cooperative is

somewhat puzzling. However, in retrospect it appears that the demands of the cooperative task were somewhat ambiguous. Although children were told to work together, what was created and how this came about was left up to them. This may have resulted in conflict being more likely. In contrast, the "conflict" in the conflict task was clearly defined and the way to achieve the goal of the task was more explicit. Subsequently, aggressive children may have found it easier to interact with their peer partner.

Instead of attempting to develop a "conflict" situation, an alternative research design might be to develop situations that correspond to children's everyday experiences. Aggressive and nonaggressive children could be compared on the amount of conflict evident in these situations. Assessment of behavioral, perceptual, and affective differences could also be collected and comparisons made between situations that are "high" conflict and those that are "low" conflict could be made. Research indicating that object-disputes (Hartup, 1974) and rough and tumble play (Humphreys & Smith, 1987) are more likely to result in aggressive behavior suggests situations that may be especially difficult for aggressive children to negotiate.

Another limitation of this study was suggested above. Namely, there is increased recognition of the diversity within the aggressive population. These findings may not be

germane to subtypes of aggressive children. For example, socially skilled aggressive children will likely engage peers in situations differently than will aggressive children having poor social skills. In addition, this study was not able to account for the possible cultural differences affecting children's approach to the situations. This may be especially significant since Black children dominated the aggressive dyads, and Black subjects had a lower socioeconomic status than White subjects. Although controlling for subject's race did not change the results of this study, appreciating cultural factors such as race and socioeconomic factors may allow for a better understanding of the pathways by which aggression emerges as a significant behavioral style for some children. Future studies that evenly distribute Black and White subjects across dyad groups, and that match dyad subjects based on their SES, may begin to address this issue.

Although there were no SES differences between the experimental groups, socioeconomic factors may have affected the interactions between dyad members. For example, if one dyad partner had more enrichment experiences afforded by having a greater SES this may have affected the quality of his/her interactions in a manner that is independent of aggression. Likewise, a child with a low SES may have struggled with the experimental tasks because of a lack of enrichment, and this may have impacted his/her interactions.

Future research designs would benefit from controlling for SES differences when creating dyad pairs.

This study was an initial attempt to better understand aggressive children's perceptual and affective biases, behavioral characteristics, and the contexts in which they are most evident. Significant behavioral differences between aggressive and nonaggressive children were found across both experimental tasks, and some evidence of affective and perceptual differences was also apparent. These findings are noteworthy because they emerged relatively quickly, and they were observed in a task structured to be cooperative. By using same status and mixed status dyads, this study adds to the present literature by demonstrating the importance of the dyadic context in which children's behavior emerges. The differences between aggressive and nonaggressive children and the apparent significance of the peer partner is especially informative. In addition, this study points to the complexity of trying to understand situations most likely to prove troublesome for aggressive children. Continued efforts to better understand situations most likely to elicit aggressive children's biases and the role of conflict is worthwhile. While unable to clearly identify a situation that is more problematic for aggressive children, this study suggests several situational factors that should be considered in future research designs. These

include children's personal investment in the outcome of a situation, as well as children's goals.

The design of this study was more preliminary and atheoretical in the sense that it was not designed to test the tenant of any theory. However, the results of this work are not inconsistent with either social-cognitive or psychoanalytic perspectives. Building on this study from a more psychoanalytic approach could incorporate a retrospective of longitudinal method. Either approach would assess both a child's peer relationships and earlier, primary relationships. A goal of research from this perspective would be to better explain how early influences in development that would support aggression's diversion to more maladaptive pathways and how this would be evident in later peer relationships.

This study is especially amenable to further exploration from a social-cognitive perspective. The above discussion of behavioral coding dyad interactions, of assessing causal influences of one dyad member on the other, and of exploring behavioral flexibility in aggressive and nonaggressive children is consistent with research by Dodge and his colleagues. Such approaches may allow for greater understanding of the way children interpret interpersonal cues, as well as provide insight into the interpersonal dynamics influencing behavioral enactment.

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NOTE

[1] A logistic analysis is analogous to the more commonly known logit analysis. It is similar to a repeated measures ANOVA model, but the logistic analysis requires that the dependent variable be dichotomous. In addition, a logistic analysis assumes that the distribution of errors is logistic. The significance of effects are determined by a Chi-Square statistic, but in the context of a model where other variables are controlled.

Appendix A

Peer Perception Questionnaire

1. Some kids try to be friendly and nice to other kids. How much do you think this kid was friendly and nice?

not at all not very much some pretty much very much

2. Some kids get angry easily and start fights with other kids. How much do you think this kid gets angry easily and starts fights?

not at all not very much some pretty much very much

3. Some kids care a lot about other kids and try not to hurt their feelings. How much do you think this kid cares about other kids and tries not to hurt their feelings?

not at all not very much some pretty much very much

4. Some kids like to share things with other kids. How much do you think this kid likes to share?

not at all not very much some pretty much very much

5. Some kids like to pick on other kids and tease them. How much do you think this kid likes to pick on other kids and tease them?

not at all not very much some pretty much very much

6. Some kids try to help other kids when they need it. How much do you think this kid tries to help other kids when they need it?

not at all not very much some pretty much very much

7. Some kids like to show off and think they are better than other kids. How much do you think this kid likes to show off and thinks he's better than other kids?

not at all not very much some pretty much very much

8. Some kids try to be fair and play by the rules. How much do you think this kid tries to be fair and play by the rules.

not at all not very much some pretty much very much

(Appendix continues)

9. Some kids act mean and hurt other kids feelings. How much do you think this kid acts mean and hurts other kids feelings?

not at all not very much some pretty much very much

10. Some kids like to boss other kids around. How much do you think this kid likes to boss other kids around?

not at all not very much some pretty much very much

11. Some kids can be counted on and trusted. How much do you think this kid can be counted on and trusted?

not at all not very much some pretty much very much

12. Some kids try to blame someone else when they've done something wrong. How much do you think this kid tries to blame someone else when he's done something wrong?

not at all not very much some pretty much very much

Appendix B

Behavioral Coding

1. **Competing:** The child pursues his or her own concerns at the other child's expense. This is a power-oriented mode in which the child uses whatever power (e.g., physical strength, intimidation, ability to argue) as available to keep the resource.

2. **Avoiding:** The child does not immediately pursue his or her own concerns or those of the other person (i.e. does not address the conflict), but instead withdraws from a threatening situation.

3. **Accommodating:** The child neglects his or her own concerns to satisfy the concerns of the other person. There is an element if self-sacrifice to this orientation as the child exhibits selfless generosity, or yielding to the other child's requests.

4. **Compromising:** The child finds some expedient, mutually acceptable solution that partially satisfies both parties. The compromising child gives up more than the competing child but less than the accommodating child, addresses the issue more directly than the avoiding child, but does not explore it in as much depth as the collaborating child. While both collaborating and compromising involve seeking a mutually satisfactory solution to the problem, the compromising child is acting as if it is not possible for both children to receive all that they wish (i.e. zero-sum focus is taken to the problem).

5. **Collaborating:** The child attempts to work with the other child to find some solution that satisfies the concerns of both persons. This often involves mutual commentary and rule intervention by both children.

Appendix C

Predominant Affect Ratings

+2 High Positive Affect: This rating is made when positive affect is observed in a subject for a majority of the session, with minimal display of negative affect. Facial features indicating positive affect include smiling and laughing. Verbalizations which may indicate positive affect include supportive/empathic comments, offers of assistance, and agreement. Behavior suggesting positive affect includes maintaining proximity and engagement in the task. When evaluating verbalizations and behavior the manner in which they are offered must be considered.

+1 Positive Affect: This rating is made when observed affect is positive for the majority of the engagement. Significant amounts of negative affect may be evident, but significantly more positive affect is displayed. Facial features, verbalizations, and behaviors, as described above, are considered.

0 Neutral: This rating is made under one of two conditions. Either affective displays are not observed in the subject, or the balance of negative and positive affect is such that a judgement as to which occurs more often can not be made.

-1 Negative Affect: This rating is made when observed affect is negative for the majority of the engagement. Significant amounts of positive affect may be evident, but significantly more negative affect is displayed. Facial features, verbalizations, and behaviors, as described below, are considered.

-2 High Negative Affect: This rating is made when negative affect is observed in a subject for a majority of the session, with minimal display of positive affect. Facial features indicating negative affect include frowning, crying, pouting, whining, or scowling. Verbalizations which may indicate negative affect include threats, teasing, name-calling, disagreement, and complaining. Behavior suggesting negative affect includes maintaining distance and disengagement in the task. When evaluating verbalizations and behavior the manner in which they are offered must be considered.

Appendix D

Consent Form

Dear Parent:

We are doctoral graduate students at the University of North Carolina at Greensboro (UNCG). We are presently working on a research project, and I would like to ask if you and your child would help us in this study.

The focus of this study is to better understand how children get along with other kids. Your child would be asked to do several things. S/he would play a game with another child who they do not know. Your child would also be asked to discuss a topic on which they do not share the same opinion as another child. In addition, s/he would be asked to complete several questionnaires. The questionnaires would ask your child his/her opinion about the child with whom they are playing, as well as ask about their relationship with their parents and their life experiences. All information given by your child will be strictly confidential, and it is being used solely for research purposes. You would be asked to complete several questionnaires about your child. You and your child may cease participating in this study at any time, and your child will be informed of this at the beginning of the study.

It will take approximately 3 hours to complete this study. Because we are asking pairs of children to participate, it is necessary that this occur at the UNCG psychology department. We would appreciate you bringing your child to campus at a convenient time, and you will be paid $5.00 for your time. Transportation can also be provided by UNCG psychology graduate students. Your child will be given toys and McDonalds coupons for his/her time. Your child's participation in this study is voluntary, and I would appreciate your consideration of this matter. We would be glad to answer any questions you may have, and meet with you beforehand if you like. Thank you for your consideration of this matter.

Sincerely,

Andrea Dorsch, MA Logan Gordon, MA Don Klumb, MA

Susan P. Keane, PhD
Faculty advisor

David Rabiner, PhD
Faculty advisor

(Appendix continues)

I,_____, agree to allow my child to participate in this study if they wish to take part.

I,_____, agree to take part in this (parent) study, understanding that I may withdraw at any time.

I,_____, agree to take part in this (child) study, understanding that I may withdraw at any time.

_____

Witness Date

Appendix E

Task Instructions

Cooperative Task:

"I am interested in seeing how kids your age can work together on a project. On the table are some leggos which can be used to build many things. I would like to two of you to build the most interesting thing you can think of in five minutes. I have found that when other kids have done this, they do a better job when they talk about ideas and work together. I'll come back in five minutes to see what you have made - I want to see if you can make something better than other kids who have done this."

Conflict Task:

"When we first met I had each of you rate your preferences on several different topics. During the next five minutes I would like the two of you to develop a single preference list for "sports" (whichever topic is chosen). I've asked over 100 kids in Greensboro how they would rate this topic, so I know what most kids think is the best. I want to see if you can come up with a similar list. The two of you should come up with one list which ranks the different sports from best to worst. Here are the preference lists each of you completed when I met with you earlier. I have found that kids can best develop a single list when they talk about their ideas. I'll be back in five minutes to see what kind of list you arrived at."

Table 1

Descriptive Statistics on Subjects Used in Data Analyses

subject / **partner**

aggressive

		Mean	Std Dev	Min	Max
aggressive	Zaggression	1.79	.88	.92	4.16
	Zsocial pref.	-.59	1.37	-2.50	2.18
	WISC III Voc.	7.25	2.93	4.00	16.00
	SES	31.55	19.23	14.00	66.00

nonaggressive

		Mean	Std Dev	Min	Max
aggressive	Zaggression	1.84	.67	.83	2.75
	Zsocial pref.	-.58	.95	-2.39	.92
	WISC III Voc.	7.50	1.71	5.00	11.00
	SES	31.47	14.30	4.00	54.00

aggressive

		Mean	Std Dev	Min	Max
nonaggressive	Zaggression	-.26	.42	-1.00	.57
	Zsocial pref.	-.13	.99	-2.16	1.24
	WISC III Voc.	9.00	3.63	5.00	15.00
	SES	34.93	13.41	19.00	55.00

nonaggressive

		Mean	Std Dev	Min	Max
nonaggressive	Zaggression	-.33	.39	-.78	.49
	Zsocial pref.	.40	1.02	-1.48	2.01
	WISC III Voc.	10.53	4.77	4.00	19.00
	SES	37.13	16.21	14.00	58.00

Table 2

Composition of subjects in the dyad groupings

Nonaggressive - Nonaggressive

Gender		Race		Grade		Order	
male:	12	black:	2	3rd:	6	coop:	11
female:	7	white:	4	4th:	8	con:	8
		mixed:	13	5th:	5		

Nonaggressive - Aggressive

Gender		Race		Grade		Order	
male:	11	black:	9	3rd:	7	coop:	9
female:	7	white:	1	4th:	6	con:	9
		mixed:	8	5th:	5		

Aggressive - Aggressive

Gender		Race		Grade		Order	
male:	11	black:	14	3rd:	7	coop:	10
female:	7	white:	0	4th:	6	con:	8
		mixed:	4	5th:	5		

Table 3

Logistic Analysis: Competing Behavior

Source	df	Chi-Square	*p* value
Between-subjects			
Group	2	10.64	.005
Race	1	0.00	.98
Within-subjects			
Task	1	0.00	1.00
Task x Group	2	0.00	1.00

Chi-Square and *p* values correspond to group comparisons.

	*aggressive/ aggressive	aggressive/ nonaggressive	nonaggressive/ nonaggressive	nonaggressive/ aggressive
aggressive/ aggressive		.32, p<.57		6.23, p<.01
aggressive/ nonaggressive			9.49, p<.002	
nonaggressive/ nonaggressive				
nonaggressive/ aggressive			6.23, p<.01	

* Significant results are read as the underlined group on the left being more competitive than the group listed across the top of the table. For example, more aggressive subjects with aggressive partners were rated as competitive than were nonaggressive subjects with aggressive partners.

Table 4

Logistic Analysis: Compromising/Collaborative Behavior

Source	df	Chi-Square	*p* value
Between-subjects			
Group	2	53.17	.0001
Race	1	38.30	.0001
Within-subjects			
Task	1	.01	.94
Task x Group	2	.01	1.00

Chi-Square and *p* values correspond to group comparisons.

	*aggressive/ aggressive	aggressive/ nonaggressive	nonaggressive/ nonaggressive	nonaggressive/ aggressive
aggressive/ aggressive				
aggressive/ nonaggressive	10.24, p<.001			
nonaggressive/ nonaggressive		41.95, p<.0001		26.48, p<.0001
nonaggressive/ aggressive	30.92, p<.0001			

* Significant results are read as the underlined group on the left being more compromising/collaborative than the group listed across the top of the table. For example, more aggressive subjects with nonaggressive partners were rated as compromising/collaborative than were aggressive subjects with aggressive partners.

Table 5

Logistic Analysis: Accommodating/Avoiding Behavior

Source	df	Chi-Square	*p* value
Between-subjects			
Group	2	16.64	.0002
Race	1	12.26	.0005
Within-subjects			
Task	1	2.51	.11
Task x Group	2	2.50	.29

Chi-Square and *p* values correspond to group comparisons.

	*aggressive/ aggressive	aggressive/ nonaggressive	nonaggressive/ nonaggressive	nonaggressive/ aggressive
aggressive/ aggressive		.91, p<.34		2.96, p<.09
aggressive/ nonaggressive			16.68, p<.0001	
nonaggressive/ nonaggressive				
nonaggressive/ aggressive			15.45, p<.0001	

* Significant results are read as the underlined group on the left being more accommodating/avoiding than the group listed across the top of the table. For example, more aggressive subjects with aggressive partners were rated as accommodating/avoiding than were nonaggressive subjects with nonaggressive partners.

Table 6

The Behavioral Rating of Nonaggressive Subjects Compared to the Behavioral Rating of their Partner in the Cooperative and the (Conflict) Task.

	partner's behavior			
nonaggressive subject's behavior	Compete	Accommodate/ Avoid	Compromise/ Collaborate	
Compete	0 (0)	1 (2)	0 (0)	1 (2)
Accommodate/ Avoid	5 (3)	5 (1)	2 (0)	12 (4)
Compromise/ Collaborate	0 (1)	2 (4)	20 (24)	22 (29)
	8 (4)	22 (7)	35 (24)	5 (35)

Cells represent a comparison between the number of nonaggressive subjects given a particular behavior rating and the corresponding behavior ratings of their partners. For example, one nonaggressive target subject was rated as competitive in the cooperative task when his/her partner was rated as accommodating/avoiding. Two nonaggressive target subjects were rated as competitive in the conflict task when their partners were rated as accommodating/avoiding.

Table 7

The Behavioral Rating of Aggressive Subjects Compared to the Behavioral Rating of their Partner in the Cooperative and the (Conflict) Task.

	partner's behavior			
aggressive subject's behavior	Compete	Accommodate/ Avoid	Compromise/ Collaborate	
Compete	1 (1)	6 (4)	0 (1)	7 (6)
Accommodate/ Avoid	3 (3)	7 (2)	3 (3)	13 (8)
Compromise/ Collaborate	3 (0)	2 (1)	10 (20)	15 (21)
	7 (4)	15 (7)	13 (24)	35 (35)

Cells represent a comparison between the number of aggressive subjects given a particular behavior rating and the corresponding behavior ratings of their partners. For example, six aggressive target subjects were rated as competitive in the cooperative task when their partners were rated as accommodating/avoiding. Four aggressive target subjects were rated as competitive in the conflict task when their partners were rated as accommodating/avoiding.

Table 8

Hypothesis 2: The Relationship between Predominant Affect and Dyad Group in the Cooperative Task, $F(2,47)=6.75$, $p<.003$.

Post-Hoc Group Comparisons:

	AFFECT LSMEAN	Aggressive/ Aggressive
Aggressive/ Aggressive	.045	
Aggressive/ Nonaggressive	.621	$t(34)=2.22$, $p<.03$
Nonaggressive/ Aggressive	.832	$t(34)=2.70$, $p<.01$
Nonaggressive/ Nonaggressive	.996	$t(36)=3.65$, $p<.0007$

Table 9

Hypothesis 4: The Relationship Between the Peer Perception Ratings Made by Nonaggressive Subjects with Aggressive Partners and Nonaggressive Subjects with Nonaggressive Partners in the **Cooperative** Task, $F(1,31)=4.02$, $p<.05$.

Post-Hoc Group Comparisons:

	COOPERATIVE PEER RATING LSMEAN	Nonaggressive/ Nonaggressive
Nonaggressive/ Aggressive	56.61	$t(34)=2.00$, $p<.05$
Nonaggressive/ Nonaggressive	58.71	

Hypothesis 4: The Relationship Between the Peer Perception Ratings Made by Nonaggressive Subjects with Aggressive Partners and Nonaggressive Subjects with Nonaggressive Partners in the **Conflict** Task, $F(1,31)=3.59$, $p<.07$.

Post-Hoc Group Comparisons:

	COOPERATIVE PEER RATING LSMEAN	Nonaggressive/ Nonaggressive
Nonaggressive/ Aggressive	56.07	$t(34)=1.90$, $p<.07$
Nonaggressive/ Nonaggressive	58.42	