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Distorted perceptions in dyadic interactions of aggressive and nonaggressive boys: Effects of prior expectations, context, and boys' age

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Abstract

This study examined distorted self- and peer perceptions in aggressive and nonaggressive boys at preadolescent and early adolescent age levels. Subjects completed semantic differential ratings of themselves and of their peer partners following two brief dyadic discussion tasks with competitive inductions and a game-playing task with a cooperative induction. Subjects also rated their expectations for self- and peer behavior prior to the two competitive interaction tasks. Research assistants later rated videotapes of the interactions. Aggressive boys had more distorted perceptions of dyadic behavior as they overperceived aggression in their partners and underperceived their own aggressiveness. These distorted perceptions of aggression carried over for aggressive boys into the third interaction task with a cooperative induction, indicating these boys' difficulty in modulating these perceptions when the overt demand for conflict is no longer present in the situation. Results also indicated that aggressive boys' perceptions of their own behavior after the first interaction task is substantially affected by their prior expectations, in comparison to nonaggressive boys who rely more on their actual behavior to form their perceptions.

Research in the last decade has consistently found distortions in the appraisal stages of aggressive children's social information processing. Using laboratory tasks, Dodge (1980) and Nasby, Hayden, and De Paulo (1980) found aggressive children to perceive more hostile intentions in others in ambiguous situations than nonaggressive children. The presence of this bias has been replicated with aggressive adolescents, with aggressive psychiatrically referred boys, and in simulated interactions with peers (e.g., Dodge & Newman 1981; Dodge & Somberg, 1987; Graham, Hudley, & Williams, 1992; Hudley & Graham, 1993; Lochman & Dodge, 1994; Steinberg & Dodge, 1983; Wass, 1988). The hostile attributional bias has been found to be more associated with reactive aggression rather than with proactive aggression (Crick & Dodge, 1996; Dodge, 1990; Dodge, Lochman, Harnish, Bates, & Pettit, 1997).

These social information processing distortions and deficiencies suggest that aggressive children would be likely to have distorted interpersonal perceptions during actual interactions, but this hypothesis has been rarely examined. In live dyadic conflict interactions, moderately aggressive boys have displayed distortions in their perceptions of their own and their partner's aggressive behavior, as they underestimate their own aggressiveness

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and overestimate their peer's aggressiveness (Lochman, 1987). These distortions in perceptions only occurred in their ratings of interpersonal aggression and not in their ratings of dominance. However, it is not apparent whether these perceptual distortions are evident in the adolescent age range. Also, it has not been documented whether these distorted perceptions are affected by prior expectations or by contextual factors such as children's race, whether they occur in noncompetitive interactions or whether boys' distorted perceptions influence their subsequent behavior. These questions were addressed in this study.

Developmentally, it is not clear whether both preadolescent and adolescent aggressive children will display distorted perceptions in dyadic interactions. Most previous studies have been conducted with preadolescent samples (e.g., Lochman, 1987) although developmental changes have been found in specific aspects of social cognition, such as social problem solving (Spivack, Platt, & Shure, 1976). The transition between preadolescence and early adolescence is an important period of time to assess social cognition differences because children's cognitive processing becomes more hypothetical, future-oriented, and influenced by contextual differences during this time period (Neimark, 1982). In addition, aggressive children begin to emit a wider range of severe antisocial behavior (Loeber, 1990), and aggressive-rejected children become more influenced by the values and beliefs of deviant peer groups (Coie, 1990). Because of these cognitive, behavioral, and social changes, adolescents' social–cognitive difficulties could be different than preadolescents' (Lochman & Dodge, 1994).

The mental processes leading to biased perceptions have not been explicated. It is unclear whether the encoding and attribution difficulties and the subsequent perceptual distortion by aggressive children are due only to distortions in how information is attended to, perceived, and interpreted during social information processing, or whether the social cognition dysfunction is due, at least in part, to preexisting expectations for peer and self-behavior. Children's perceptions of current events could be influenced by their prior expectations in addition to their processing of the events themselves. These expectations derive from children's schemas about their own and others behavior. Recent conceptualizations of social information-processing models have suggested that children's schemas, acquired through prior socialization, may have powerful effects on how children appraise the meaning of interpersonal behavior and how they decide to respond to perceived social problems (e.g., Crick & Dodge, 1994; Lochman & Lenhart, 1995; Lochman, White, & Wayland, 1991).

Schemas and expectations serve similar functional roles in social–cognitive models as individuals' internalized representations and working models do in attachment theory (Lochman & Lenhart, 1995). Disorganized early attachment patterns have been found to predict children's increasingly controlling behavior (Lyons–Ruth, 1996) and their subsequent aggressive behavior (Greenberg, Speltz, & DeKlyen, 1993; Lyons–Ruth, 1996; Shaw & Bell, 1993). The quality of the attachment relationship between caretaker and child has been found to be due to caregivers' sensitivity, cooperation, and provision of a secure base for exploration. Children's sense of self-reliance and their internal working models are derived from their relationship with their caregivers (Bretherton, 1995). These "working models" provide children with basic expectations about their interpersonal environment, including the availability and responsiveness of others (Shaw & Bell, 1993). The internal working models represent a set of active constructions which are open to change, depending upon subsequent interpersonal relationships (Mash & Dozois, 1996). Because of their working expectations about their environment, an insecurely attached child may interpret neutral and even positive behavior as hostile (Shaw & Bell, 1993). These expectations and perceptual biases in children may thus have substantial intergenerational links. For example, Crittendon (1993) has suggested that neglectful parents may have a perceptual bias against processing affective information because of their experiences as children that they were powerless in eliciting loving and caring responses from adults. In a similar vein

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in social–cognitive research, mothers of aggressive children have been found to display the same types of hostile attributional biases as their aggressive children (Dix & Lochman, 1990).

Social cognitive models of the social inference process and of self-schemata (Canter & Zirkel, 1990; Fiske & Taylor, 1984; Neimeyer, 1985) can provide a conceptual framework for understanding how expectations influence perceptions of selves as well as their perceptions of others. The social inference process is regarded as conservative, because preexisting beliefs are accepted over new ones, and social inferences are self-centered, because they draw on personal beliefs over information provided from other sources (Fiske & Taylor, 1984). Schemas covering certain dimensions (e.g., aggressiveness) then lead to filtering of incoming information about those dimensions (Fiske & Taylor, 1984). Individuals seek and recall information that is consistent with their concepts of the self and of others. Perceptions become more filtered, and potentially distorted, when schemas are strongly held, and are more salient when the information to be perceived is ambiguous (Catrambone & Markus, 1987; Fiske & Taylor, 1984; Weyer et al., in press). When an individual maintains strong schemas about traits that the self or other possesses, then the individual becomes a rapid judge of the presence of these traits. In this case, schemas can operate quickly outside of conscious awareness (Erdley, 1990), in a manner similar to the automatic preemptive information processing evident in aggressive children's social problem solving (Lochman, Lampron, & Rabiner, 1989; Rabiner, Lenhart, & Lochman, 1990). This conceptual model suggests that aggressive children's expectations of interpersonal aggression derived from their schemas of self and others would be likely to influence their subsequent perceptions heavily and automatically, because their schemas on this dimension would be strong, salient, and nonpermeable.

Contextual factors such as boys' ethnic status could be associated with boys' perceptions and expectations. This study will control this contextual factor within dyads by using only same-race peer partners and will examine the effects of this contextual factor on boys' behavior and perceptual distortions.

In summary, the current study was designed to extend research on aggressive children's distorted perceptions by examining three areas of research questions or hypotheses. First, it is hypothesized that aggressive boys will have distorted perceptions of aggressive behavior, in comparison to nonaggressive boys following brief interaction tasks. In addition, we will examine whether this pattern of distorted perceptions by aggressive boys will differ between the two age levels examined (preadolescent, early adolescent), will differ between situations with greater overt demand for conflict as well as with less overt demand for conflict, and will be influenced by boys' ethnic status. Second, it is hypothesized that the boys' perceptual distortions evident during one interaction period would influence their behavior in a subsequent interaction period. Third, it is hypothesized that aggressive boys' perceptions of self and other after an initial encounter with a peer partner will be more heavily influenced by prior expectations and less influenced by social cues, in contrast to the nonaggressive boys' perceptions.

Method

Subjects

The sample consisted of 96 boys who filled four cells in the research design. There were two levels of the Group variable (Nonaggressive, Aggressive) and two age levels (Preadolescent, Early Adolescent) in the cross-sectional developmental design. Boys in the fourth and seventh grades were identified by school teachers as Aggressive (AGG) or as Nonaggressive (NON), and these differences were confirmed with standardized behavioral ratings. In group meetings at their schools, Language Arts and Math teachers in the fourth and seventh grades identified 200 highly aggressive and disruptive boys in their classes from a total of 2,800 boys in two cohorts. Teachers were given class rosters and were asked to nominate those boys who had

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frequent problems with physically aggressive, verbally aggressive, and disruptive behaviors and they identified 7% of the boys as highly aggressive according to this definition. An unlimited nomination procedure was used. Next, these teachers were asked to identify a separate list of boys who did not have difficulty with aggressive behavior, matching this pool of nonaggressive boys to the list of aggressive boys on ethnic group status and approximate cognitive ability level. Of the 400 boys identified, parental consent was obtained for 248 (62%). Next, a primary teacher who had the most daily contact with each boy (language arts or math), a resource teacher who had less frequent contact with each boy (science, civics, PE), and the boys' primary parental caretakers were asked to complete the 19-item Aggression Subscale of the Missouri Children's Behavior Checklist (Sines, 1986; Sines, Pauker, Sines, & Owens, 1969) for each boy. Boys were retained in the AGG group for this study if they received a raw score of at least five on the MCBC Aggression scale from their primary teacher (M = 9.8, SD = 2.6 for fourth grade; M = 7.4, SD = 3.0 for seventh grade; the fourth graders mean score was significantly higher than the seventh graders). This criterion level on the MCBC was selected because prior research with similar samples from the same school system had indicated discriminant validity for aggressive groups at a similar cutoff level (Lochman, 1987; Lochman, Lampron, & Rabiner, 1989). Similarly, boys were retained in the NON group if they had a raw score of 2 or less from their primary teacher (M = 0.4, SD = 0.6 for fourth grade; M = 0.7, SD = 0.5 for seventh grade). A total of 32 boys were dropped because they did not meet these MCBC criteria, leaving 172 of 192 potential AGG boys and 196 of 208 potential NON boys.

Because we wanted the members of each dyad to have the same ethnic status and age, for each cell to have the same ethnic group ratio, for each dyad to be opposite status (aggressive–nonaggressive), and for the four cells to have the same number of subjects, 96 subjects (24 per cell) participated in this study.[1] The mean age at the time of selection for both of the preadolescent groups was 10, and the mean age for both of the adolescent groups was 13. The verbal intelligence of subjects was assessed with the school-administered Cognitive Abilities Test (Thorndike & Hagen, 1982) for the NON and AGG groups. An analysis of variance using Verbal IQ as the dependent measure produced significant main effects for Group, (1, 81) = 8.0, $p <$ .007, and for Age, $F(1, 81) = 5.1$, $p < .03$. The mean Verbal IQ was 110 for NON-PRE, 103 for NON-ADOL, 101 for AGG-PRE, and 91 for AGG-ADOL. For the 11 subjects who did not have an IQ score on file (2 in AGG-PRE, 3 in AGG-ADOL, 4 in NON-PRE, 2 in NON-ADOL), their Verbal IQ score was estimated as the average for their research cell. Each cell had 10 African American boys and 14 Caucasian boys. Due to the differences in Verbal IQ across cells, Verbal IQ was used as a covariate in data analyses. Only boys were selected for this study because (a) boys are identified as aggressive at three times the rate for girls, thus making it difficult to select a

1. Out of the pool of 248 boys who were in 5 middle schools and 15 elementary schools and who met the MCBC selection criteria for this study, our smallest cell was NON African American preadolescent boys. Only 10 of theses 19 boys fell within the selection criteria and could be matched with an African American, AGG boy from their same school. Similarly, only 14 Caucasian, AGG-ADOL boys (out of 24) could be matched with a Caucasian, NON-ADOL boy from their school. With this limit on cell size (10 African American, 14 Caucasian), we randomly selected boys from the appropriate lists to create matched pairs of same ethnic status, same age, and same school, with one member of a pair AGG, and the other member NON. This matching procedure produced a slightly higher rate of AGG boys (50%) in the sample (n = 96) for this study, in comparison to the rate of AGG boys (46%) in the overall pool (N – 248). However, the sample of selected boys (SEL; n = 96) was similar to the nonselected boys in the pool (NONSEL; n = 152) in boys' Verbal I.Q. scores (SEL = 101, NONSEL = 100), ethnic status (SEL = 42% African American, NONSEL = 42%, African American), and age (both SEL and NONSEL had mean ages of 10 for preadolescents, and 13 for adolescents). The selected and nonselected boys came from urban and suburban areas of a small southern city, and the sample was primarily low to low average socioeconomic status.

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large enough sample of highly aggressive girls from this population and (b) the resources available for this project did not permit a doubling of the sample size, which would have been required to test for gender effects.

Boys' group status was confirmed with 2 × 2 analyses of covariance (ANCOVAs) which were conducted with the MCBC Aggression subscale completed by resource teachers and primary parental caretakers as the dependent variables, group and age level as independent variables, and Verbal IQ as the covariate. The AGG boys were found to be significantly more aggressive than NON boys on MCBC ratings by fourth and seventh grade resource teachers, $F(1, 80) = 31.6$, $p < .0001$. When the primary adult caretakers' MCBC ratings ($n = 94$) were examined, the AGG boys were rated as being significantly more aggressive than the NON boys, $F(1, 92) = 22.6$, $p < 0001$.

Procedures

Approximately 6 months after their selection into the study, subjects completed the 45-min dyadic interaction task at their school. The interaction task had three interaction periods. All instructions and measures were read to subjects to avoid potential problems with illiteracy. Subjects and families received $25 for participation in the overall project, which included longitudinal assessment of family conflict and other social cognitive processes, in addition to this interaction task.

The interaction task paradigm was based on a dyadic conflict task that had been successfully used in a prior study of boys' interpersonal perceptions (Lochman, 1987). The first two interaction task segments were preceded by competitive instructions to the subjects and the third by cooperative instructions. The first two segments were designed to provoke disagreement, whereas the third segment permitted an assessment of carryover effects of the prior conflict. A standard order was used for the competitive and cooperative instructions, rather than counterbalancing the order of tasks, because the study was planned in part to examine the influence of expectations on subjects' perceptions following the type of competitive interaction examined in a prior study (Lochman, 1987). The two subjects in each dyad (the composition of dyads is noted below) were brought to separate rooms by two research assistants who were uninformed about the subject's status and to the specific purposes of the study. Each subject was read a vignette about two boys who accidently bumped into each other in a school hallway. The vignette ended with the two boys engaging in a verbally and physically aggressive interchange. The cause of the conflict in the vignette was ambiguous, with neither vignette character being identified as an aggressor or as a victim. The research assistant then wrote down the subjects' responses to questions about the conflict after inquiring about the subjects' perceptions of what the problem was for one of the vignette characters, who caused the problem, how the problem could have been resolved, and what the boys were thinking and feeling during the story. One subject in each dyad was asked to think about the problem from the perspective of one vignette character, whereas the other subject was asked to think about the problem from the other character's perspective. The AGG and NON subject in each dyad were randomly assigned to consider the perspective of one or the other of these vignette characters. The research assistant then read the subject's responses back to the subject and told him that in the upcoming discussion with his partner, he should try to win and to get his partner to go along with his opinion. Subjects then completed ratings of their expectations for their own behavior and their partner's behavior during the first 4-min interaction. The current study is designed to assess subjects' initial Time 1 expectations prior to their experience of interacting together on the tasks, thus measuring generalized expectations. This study does not examine changes in expectations prior to the last two interaction tasks.

When the subjects were brought together, they were instructed to discuss their answers to the questions about the story jointly for 4 min. They were told they would probably disagree about their answers, that they should try

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to convince the partner of their opinion, and that the purpose of this task was mainly to see which of them would win. The research assistant started the videotape equipment that was in the room, and both research assistants then left the room. After the end of the first interaction segment, the subjects were again taken to separate areas by the research assistants, and the subjects indicated their perceptions of themselves and their partner on a rating form, with instruction only to rate the 4-min interaction.

This procedure was repeated for the second interaction segment. Again, subjects separately heard a story about a problem situation, and responded to questions from the research assistant about a randomly selected vignette character. Subjects received the same competitive induction as was used for the first segment, and they were told that subjects typically had more disagreements on the second task. After the 4-min interaction, subjects completed ratings of their own and their partner's behavior during the second interaction.

In contrast to the competitive induction for the first two segments, the instructions for the third interaction segment overtly directed subjects to work cooperatively. The instructions to each pair were, "You're going to do something different now. This time we want you to work together on a game. Here is the maze game you'll use. You try to get this ball through the maze without letting it fall through one of the holes, and get the highest score you can, as a team. You need to follow this path on the board and keep the ball on the path. You will see how well your team does in comparison to other teams." Pairs were permitted to restart the marble at the start of the maze as many times as they could during the 4-min interaction. Each member of the pair was told he should control one of the two handles on the maze box, and they should work together. One handle tilted the maze sideways, the other handle tilted the maze forward and back. To move the ball through the maze, coordinated movement of the two handles was required.

The overt situational goal given to subjects prior to the third segment was to work together for a common team outcome, which was in contrast to the overtly competitive situational goal provided by the instructions for the first two segments. It was anticipated that subjects, especially aggressive subjects, may have difficulty maintaining cooperative teamwork, and a difficult task was chosen for this third segment to maximize the possibility of continued controlling and competitive behavior by some subjects. Children may find the maze task to be frustrating because the team's performance depends in part on the partner's performance. Thus, the three segments differed in the overt instructions provided for cooperative or competitive behavior, but it was anticipated that some competitive behavior could be present in all three time periods. No blatant physical conflicts occurred within any of the dyads at any of the time periods. Subjects completed ratings of their own and their partner's behavior after the third interactional segment.

Composition of dyads

Each dyad had an AGG and a NON subject. Prior research with this interaction task paradigm (Lochman, 1987) had indicated that perceptual distortion effects were only apparent in different status pairs and not in same status pairs.

As a check on the degree of prior relationship that dyadic partners had, subjects were asked how well they knew their dyadic partner. A 4-point scale was used for this rating ranging from not knowing the partner at all to seeing him everyday. As expected, χ^2 analysis indicated that the two subject groups did not differ in the degree of prior relationship. Six percent of the subjects did not know their partner prior to the interaction (NON: 4%, AGG: 8%), 34% saw their partner sometimes (NON: 29%, AGG: 38%), and 60% saw their partners moderately to very often (NON: 67%, AGG: 54%). This rating item was used to form a Frequency of Prior Interaction variable which was then used as a covariate in analyses, to remove the effect of different degrees of prior interaction contact between dyads.[2]

2. This study was not designed to specifically test whether familiarity with peer partner had an effect on

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Measures

Before the first interaction segment (Time 1 expectation ratings), and after all three interaction segments (Time 1, Time 2, and Time 3 perception ratings), subjects rated their partners and themselves on seven semantic differential items, using a 6-point scale for each item. The six points between the bipolar adjectives were: Very, Some, A Little, A Little, Some, Very. The seven items were originally selected to represent the dimensions of activity (talkative–silent), potency (powerful–helpless, strong–weak, controlling–being controlled), and evaluation (cruel–kind, unaggressive–aggressive, aggreeable–not agreeable) described by Osgood, Suci, and Tannenbaum (1957). Each item was read individually to the boy by the research assistant, and the research assistant illustrated how the 6-point scales were to be used. The boys were instructed to make their ratings based on their understanding of the words anchoring each end of the semantic differential items (e.g., talkative . . . silent).

When making their ratings later from the videotapes, raters were asked to consider boys' verbal and nonverbal behaviors. Research assistants made their ratings after two viewings of the interaction, first rating one subject, then the partner. Talkative–Silent was defined as the amount of verbalization, not the emotion, posturing, or effectiveness of what was said. Powerful–Helpless was a measure of a child's persuasiveness or ability to influence their partner, and was dependent on the child's effective influence on the outcome of the interaction. Cruel–Kind was defined as not only indicating aggressiveness but also the intention to be mean and disrespectful. Aggressive–Unaggressive was defined as agitated, mean, and obnoxious verbal, and nonverbal behavior. Strong–Weak was defined as presenting opinions and ideas in loud, vigorous or sustained ways. Agreeable–Not Agreeable was defined as verbal and nonverbal (e.g., head nods, head shakes) cues of agreement or disagreement with the partners' ideas and opinions, with high Not Agreeable scores indicating frequent, intense, and hostile disagreements. Controlling–Being Controlled indicate the child's attempts (not necessarily successful) to control the interaction through initiation of talk and demands placed on the partner. These semantic differential ratings have been successfully used in prior research using dyadic interaction task paradigms (Lochman, 1987; Lochman & Allen, 1979, 1981). Two research assistants, who were uninformed of the boys' behavior status and the purpose of the study, later rated each subject in the videotaped interactions with the rating form items, and their ratings were averaged. A separate principal component analysis, using a Varimax rotation, was computed on the rating form items from each rating source (subject, peer, and research assistant).[3] Because difference scores were derived by finding the differences between rating sources' data, it was important to identify replicated components that emerged across the three sources (see computation of these difference

boys' distorted perceptions. To optimally test this question, dyads should be composed of either dyads in which partners knew each other well or dyads in which there were strangers. However, in the present study, boys' relationship histories were on a continuum going from not knowing each other to seeing their partners very often. To test in a preliminary way whether degree of familiarity seemed to affect boys' distorted perceptions, within the constraints of the current study, we created a Peer Familiarity variable with two categorical levels (little familiarity: 40% of sample; moderate familiarity: 60% of sample). In repeated measures ANCOVAs, Peer Familiarity was included as a between-subject independent variable, along with Group Status, Age Level, and Ethnic Group. When the aggression distorted perception score was used as a dependent variable, there was still a Group main effect, $F(1, 79) = 9.5$, $p < .01$, similar to the findings in the Results section, and Peer Familiarity did not have direct or interaction effects on the distorted perception variable. Thus, peer familiarity does not appear to influence the distorted perceptions assessed in this interaction task.

3. A table containing the 11 principal component analysis results (for the subjects' rating of Self after Time 1, Time 2, and Time 3; the subject's rating of Partner after Time 1, Time 2, and Time 3; the research assistants' ratings of Subjects during Time 1, Time 2, and Time 3; the subjects' expectation for Self prior to Time 1 and the subjects' expectations for Partner prior to Time 1) can be obtained from the first author. This table indicates the components on which items primarily loaded.

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scores at end of section). The principal-component factor analyses found that 8 of the 11 analyses yielded clear and consistent results with two factors as prior research with these semantic differential items have indicated (Lochman, 1987; Lochman & Allen, 1979, 1981). The principal-component analyses indicate a Verbal Dominance component with four items (the Talkative–Silent item loading along with Powerful–Helpless, Strong–Weak, Controlling–Being Controlled) and an Aggression component with three items (Cruel–Kind, Unaggressive–Aggressive, Agreeable–Not Agreeable) were evident.

In the other three analyses, (Time 3 Subject Self-Rating, Time 3 RA rating, Time 1 Self-Expectation Rating), a weak third factor also emerged. In all three of these analyses, the Cruel and Disagree items loaded on the Aggression component, and the Strong and Control items loaded on the Dominance component, in a pattern consistent with the other 10 factor analyses. The remaining three items loaded either on the conceptually appropriate component or the third factor in some or all of these three analyses. None of the items loaded primarily on a conceptually inappropriate factor (e.g., powerful item on Aggression component). In general, the Aggression and Verbal Dominance component were concluded to be commonly constructed across rating sources, across time periods, and across type of rating (Expectation vs. Perception). Aggression and Verbal Dominance component scores were calculated by summing subjects' responses to the three items which loaded highest on the Aggression factor and the four items which loaded highest on the Dominance factor. Because each factor has only three or four items, the stability of these scores over time may be limited. Interrater agreement was calculated for these two component scores and for each of the seven individual items using Pearson correlation coefficients between the two research assistants' ratings at each of the three time periods. The correlations for the Aggression component scores were .84 (Time 1), .84 (Time 2), and .77 (Time 3), and the correlations for Verbal Dominance were .81 (Time 1), .88 (Time 2), and .70 (Time 3). The interrater correlations for the individual rating items at the Time 1, Time 2, and Time 3 periods, respectively, were .80, .83, and .71 for Talkative; .64, .69, and .57 for Powerful; .67, .66, and .66 for Cruel; .81, .85, and .76 for Aggressive; .65, .76, and .52 for Strong; .72, .73, and .47 for Not Agreeable; and .66, .70, and .62 for Controlling. Interrater reliability was somewhat lower for Time 3, apparently because raters had greater difficulty using the semantic-differential items, which had been defined for use in competitive interactions (e.g., Lochman, 1987), with a more overtly cooperative task. Overall, adequate interrater reliability was obtained and component scores were averaged across the two raters.

To examine the relation between the research assistant ratings and subjects' ratings of self and of partner, Pearson correlation coefficients were calculated. The correlations at the Time 1, Time 2, and Time 3 periods, respectively, were .37 ($p < .001$), .25 ($p < .001$), and .12 ($p = .06$) for the research assistant and self-ratings of aggression; .37 ($p < .001$), .29 ($p < .001$), and .17 ($p = .005$) for the research assistant and self-ratings of dominance; .45 ($p < .001$), .33 ($p < .001$), and .16 ($p = .01$) for the research assistant ratings and rating of partner aggression; and .23 ($p < .001$), .16 ($p = .009$), and .12 ($p = .06$) for the research assistant rating and rating of partner dominance. These correlations indicate a moderate relation between observer ratings and subjects' ratings of self and of partner. The correlations suggest that the agreement between subject and observer ratings was strongest at the beginning of the task and decayed somewhat over time. The decay at Time 3 may have been partially due to greater difficulty using the rating items on a cooperative task, as noted previously. In addition, some children appear to use rigid ratings that were dependent on their initial expectations rather than actual behavior, as will be seen in the Results section.

With the use of these component scores for aggression and verbal dominance, three variables assessing subjects' distorted perceptions were derived for each component (Lochman, 1987). *Peer perceptual difference* was computed by subtracting the research assistant's

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rating of a subject's peer partner on a particular factor from the subjects' rating of the same peer on the same factor. *Self-perceptual difference* was computed by subtracting the overall research assistant's rating of the subject from the subject's self-rating. The more negative the score on these variables, the more the subjects underestimated either their peers' behavior or their own behavior on the rated dimension. The third variable, *distorted interpersonal perceptions*, was computed by subtracting self-perceptual difference scores from peer perceptual difference scores, and represented whether distortions were more evident in perception of partner or in perception of self ([rating of partner minus research assistant rating of partner] minus [rating of self minus research assistant rating of self]). When this score was positive, subjects erroneously attributed more of the specific behavior (aggression or dominance) to their partners than to themselves, and when the score was negative, subjects erroneously attributed more of the behavior to themselves. When the score was near 0, the subject's rating of relative differences between himself and his peer was congruent with the research assistant's rating of the relative differences between the dyadic partners. Thus, if the research assistant rated the subject as being more aggressive than the partner, and if the subject rated himself, in a similar way, as being more aggressive than the partner, the distorted interpersonal perception score would be near zero. In contrast, if a subject rated his partner as being somewhat more aggressive than the research assistant had rated the partner (10 – 8), and if the subject rated himself as being less aggressive than the research assistant (5 – 9), then the aggression perception distortion score ([10 – 8] – [5 – 9] = 6) would indicate that the subject erroneously attributed relatively more aggression to the partner and less to the self than he should have. The distorted interpersonal perception variable served as the measure of distortion in this study. To examine the internal consistency of the distorted interpersonal perception scores, Chronbach alphas were computed with the constituent elements of scores, at each time period. For the distorted interpersonal perception of aggression, the alphas for the 12 constituent elements (ratings of Cruel, Aggressive, and Not Agreeable by subject of self, by subject of partner, by research assistant of subject, and by research assistant of partner), were .82 (Time 1), .86 (Time 2), and .70 (Time 3). For the distorted interpersonal perception of dominance score, the alphas for the 16 constituent elements (subject and research assistant ratings of Talkative, Powerful, Strong, and Controlling) were .83 (Time 1), .77 (Time 2), and .76 (Time 3). Adequate internal consistency was evident for these two composite scores.

Results

Results were computed in four steps. The first set of analyses examined whether the two groups of boys differed in their overt Aggression and Verbal Dominance behavior during the interaction tasks according to research assistant ratings, and according to subjects' ratings of their own behavior and their partner's behavior. The second set of analyses tested the hypothesis that the two groups would differ in their distorted interpersonal perception for aggressive behavior during the interaction. This hypothesis was tested by examining the Group effect in repeated measures ANCOVAs. The third set of analyses was an exploratory examination of the relation between the behavioral variables and distorted interpersonal perception variables which discriminated between the groups. This analysis provided indications of how boys' perceptual distortions at one time period might influence their behavior in subsequent time periods. Finally, the fourth set of analyses consisted of two multiple regression analyses examining the hypothesized effects of prior expectations and subjects' actual behavior on subjects' ratings of their own aggressive behavior and their partners' aggressive behavior during the first interaction task. It was anticipated that AGG boys' perceptions of the aggressive behavior displayed by self and other would be heavily influenced by their schematic expectations, and relatively less influenced by their actual dyadic behavior, in comparison to NON boys.

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Table 1. *Independent observers' ratings of subject's behavior during the interaction task*

	Time 1		Time 2		Time 3	
	AA	C	AA	C	AA	C
Aggression ratings						
Nonaggressive group						
Preadolescent	8.4 (1.3)	8.2 (1.6)	8.6 (1.0)	8.5 (2.1)	8.3 (0.8)	8.4 (1.2)
Adolescent	9.1 (1.6)	8.8 (1.1)	9.6 (2.1)	8.5 (1.2)	8.0 (1.1)	8.4 (1.1)
Aggressive group						
Preadolescent	9.0 (2.4)	8.8 (2.2)	9.9 (3.1)	9.0 (1.7)	9.3 (1.3)	9.2 (1.6)
Adolescent	9.5 (1.6)	8.4 (1.7)	9.7 (1.7)	8.9 (1.4)	8.4 (1.1)	8.9 (0.9)
Dominance ratings						
Nonaggressive						
Group preadolescent	13.8 (1.9)	13.9 (1.8)	13.7 (1.8)	14.9 (2.6)	12.5 (2.7)	14.4 (3.3)
Adolescent	14.1 (3.3)	13.2 (2.2)	14.9 (3.2)	14.4 (1.8)	13.1 (3.1)	12.9 (2.4)
Aggressive group						
Preadolescent	14.1 (3.2)	15.2 (2.5)	15.1 (2.8)	15.8 (2.2)	15.1 (2.8)	15.5 (3.4)
Adolescent	14.8 (3.4)	13.6 (3.4)	14.7 (2.8)	14.7 (3.0)	13.6 (2.2)	15.3 (1.8)

Note: AA, African American; C, Caucasian. The numbers in parentheses are standard deviations.

Independent observers' ratings and subjects' ratings

To determine whether subjects' aggressive and verbal dominance behaviors varied by group across the interactions tasks, two repeated measures ANCOVAs were conducted on the Time 1, Time 2, and Time 3 Aggression and Dominance ratings. Group Status, Age Level, and Ethnic Group were between-subject independent variables and Verbal IQ and Frequency of Prior Intervention were the covariates. The within-subject independent variable was Time (1, 2, or 3).

There were no significant main effects in the ANCOVA for Aggression scores, and no interaction effects involving the Group variable. This finding is consistent with prior research with this interaction task paradigm (Lochman, 1987). Thus, any subsequent differences in subjects' ratings in the current study were due to perceptual differences rather than to actual behavioral differences. There was a significant interaction effect for Ethnic Group × Time, $F(2, 170) = 3.8$, $p < .03$, for Aggression scores. Inspection of the means in Table 1 indicates that African American boys decreased their aggression in the third interaction task from earlier levels while the Caucasian boys maintained the same level of aggression over the last two time periods.

For the Verbal Dominance ANCOVA, there was a significant main effect for Group, $F(1, 85) = 6.0$, $p < .02$. When the cell means are examined (see Table 1), the AGG boys displayed higher levels of verbally dominant behavior than did NON boys.

Table 2 provides mean scores for subjects ratings of self and of partner on the two dependent measures. These analyses were not the central purpose for this study but provide descriptive information about subjects' ratings, independent of the research assistant ratings. There were no significant main effects and no interaction effects involving the Group variable in the two repeated measure ANCOVAs using subjects ratings of self Aggression and ratings of partner Aggression. An Ethnic Group × Time interaction $F(2, 170) = 3.4$, $p < .04$, in the analysis of self-ratings of Aggression indicated that African American subjects decreased in their self-ratings of aggression more over time than did Caucasian subjects, consistent with the pattern in research assistant ratings. An Age Level × Race interaction effect, $F(1, 85) = 5.5$, $p < .03$, indicated that adolescent African American subjects rated their partner as being more aggressive than did Caucasian subjects and younger African American subjects. There were no main effects for Group in the two ANCOVAs on subjects ratings of self and of

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Table 2. *Subjects' ratings of own behavior at the end of each interaction*

	Time 1		Time 2		Time 3	
	AA	C	AA	C	AA	C
Aggression ratings						
Nonaggressive group						
Preadolescent	7.0 (3.8)	6.4 (2.5)	7.0 (4.7)	7.2 (3.6)	4.4 (2.1)	5.9 (2.0)
Adolescent	7.7 (3.7)	7.3 (2.7)	8.0 (5.2)	7.4 (3.4)	5.4 (2.1)	6.3 (3.8)
Aggressive group						
Preadolescent	6.5 (2.8)	7.5 (3.1)	6.7 (2.7)	7.1 (4.0)	5.3 (2.9)	6.0 (3.4)
Adolescent	8.0 (4.1)	6.1 (2.5)	10.1 (4.8)	6.1 (3.0)	5.0 (2.3)	5.6 (3.4)
Dominance ratings						
Nonaggressive						
Group preadolescent	19.1 (3.1)	17.3 (3.2)	19.3 (3.2)	19.6 (3.2)	17.2 (5.2)	17.6 (3.7)
Adolescent	19.9 (3.1)	18.1 (2.9)	21.9 (2.1)	20.1 (2.4)	19.0 (2.6)	19.1 (3.3)
Aggressive group						
Preadolescent	19.4 (5.3)	17.0 (5.0)	21.2 (2.4)	18.8 (2.6)	19.1 (3.7)	18.6 (3.7)
Adolescent	19.8 (4.9)	17.6 (4.2)	21.7 (2.5)	19.1 (3.0)	19.0 (4.0)	18.9 (2.6)
Aggression ratings						
Nonaggressive group						
Preadolescent	6.2 (3.5)	6.6 (2.8)	6.9 (4.7)	7.3 (4.2)	4.4 (1.6)	6.6 (3.4)
Adolescent	7.2 (4.5)	6.9 (3.1)	7.6 (4.6)	6.8 (2.7)	5.8 (2.3)	5.9 (2.8)
Aggressive group						
Preadolescent	7.3 (2.6)	7.3 (2.5)	6.2 (2.6)	6.8 (3.6)	5.5 (2.7)	6.1 (2.8)
Adolescent	9.1 (4.2)	5.9 (2.9)	10.8 (5.3)	5.8 (2.5)	5.9 (3.3)	4.9 (2.3)
Dominance ratings						
Nonaggressive						
Group preadolescent	19.6 (4.4)	16.7 (5.1)	20.5 (3.0)	18.6 (4.4)	18.4 (5.7)	15.9 (4.9)
Adolescent	19.6 (3.6)	17.4 (3.6)	19.7 (4.2)	18.4 (4.0)	19.8 (3.3)	18.9 (3.2)
Aggressive group						
Preadolescent	18.1 (4.8)	18.3 (3.7)	18.5 (4.8)	18.5 (3.7)	18.9 (4.3)	19.6 (2.8)
Adolescent	17.3 (4.9)	16.4 (3.3)	20.6 (3.3)	17.4 (4.3)	18.4 (4.3)	17.6 (3.8)

Note: AA, African American; C, Caucasian. The numbers in parentheses are standard deviations.

partner Verbal Dominance. A main effect for Ethnic Group, $F(1, 85) = 4.5$, $p < .04$, and a Time × Ethnic Group interaction effect, $F(1, 85) = 3.6$, $p < .03$, indicated that African Americans rated their partners as more dominant than did Caucasians in the initial interactions, but that both ethnic groups perceived similar levels of dominance by the third interaction task. A main effect for Time, $F(2, 170) = 3.6$, $p < .04$, and a Time × Group × Age Level interaction effect, $F(2, 170) = 3.7$, $p < .03$, indicated that by the third time period preadolescent AGG subjects rated their partners as being more dominant than did NON subjects, but this pattern was reversed for adolescent subjects. Overall, the subjects ratings of aggression did not vary by Group, similar to research assistant ratings, but the subjects, through their ratings of self and partner dominance, did not generally perceive the Group differences in dominance (except for Time 3 preadolescent ratings of partner dominance) which the research assistants rated in their subsequent codings of the videotaped interactions.

Perceptual differences

Table 3 provides the means and standard deviations for the distorted interpersonal perception scores for aggression and dominance after each of the three interaction periods. Two repeated measures ANCOVAs were calculated on these data to determine whether there were any significant shifts in the groups' distorted perceptions across tasks. Group Status, Age Level, and Ethnic Group were between-subject independent variables, Verbal IQ and Frequency of Prior Interaction were

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Table 3. *Distorted interpersonal perception ratings*

	Time 1		Time 2		Time 3	
	AA	C	AA	C	AA	C
Aggression ratings						
Nonaggressive						
Preadolescent	–1.7 (3.1)	–0.6 (1.8)	–1.4 (2.9)	–0.7 (1.7)	–1.5 (1.9)	–0.1 (2.1)
Adolescent	–0.6 (2.5)	0.1 (2.1)	–0.3 (2.8)	–1.0 (2.0)	0.1 (1.2)	–0.9 (4.2)
Aggressive						
Preadolescent	1.3 (4.4)	0.6 (2.4)	0.9 (2.7)	0.5 (2.0)	1.2 (2.1)	1.2 (2.4)
Adolescent	1.6 (2.2)	–0.7 (2.5)	0.6 (2.3)	0.1 (1.8)	1.0 (2.7)	–0.3 (2.6)
Dominance ratings						
Nonaggressive						
Preadolescent	0.2 (2.9)	–1.9 (5.6)	–0.3 (2.5)	–1.9 (6.0)	–1.8 (4.4)	–2.4 (8.2)
Adolescent	–1.4 (4.9)	–1.1 (3.9)	–1.9 (4.7)	–2.1 (4.8)	0.6 (4.1)	–2.5 (4.7)
Aggressive						
Preadolescent	–1.0 (7.5)	2.8 (4.0)	–1.4 (3.3)	0.7 (5.2)	2.6 (3.1)	1.2 (5.4)
Adolescent	–1.9 (4.6)	–0.9 (5.4)	–1.5 (4.7)	–1.3 (5.2)	–0.5 (5.8)	0.5 (2.9)

Note: AA, African American; C, Caucasian. The numbers in parentheses are standard deviations.

covariates, and Time Period (1, 2, 3) was a within-subject independent variable. Dependent variables were the aggression and dominance distorted interpersonal perception scores. The ANCOVA for the aggression score yielded an overall main effect of Group $F(1, 85) = 14.59$, $p < .001$. Over all three time periods, the Aggressive boys ($M = .7$) had more externalized distorted perceptions for aggression than did nonaggressive boys ($M = -.7$). The valence of the mean scores indicates that the AGG boys tended to overperceive the aggressiveness of their peer partners relative to themselves, whereas the NON boys tended to overperceive their own aggressiveness relative to their peer partners. When subject's mean ratings of self and of partner are examined in Table 2, it is apparent that aggressive boys' mean raw ratings of partners' aggressiveness generally exceed their raw ratings of their own behavior (e.g., 6.5 self-rating vs. 7.3 partner-rating for AA AGG-PRE), but not in all cases (e.g., 7.5 self-rating vs. 7.3 partner-rating for C. AGG-PRE). Thus, some aggressive boys may be more accurately described as being nondiscriminant judges of both their own and their partner's behavior, not perceiving the differences in dyadic behavior rated by the independent observers, rather than having distorted relative judgements of self and partner. Thus, our use of "distorted perceptions" here refers to nondiscriminant perceptions as well as distorted relative judgements. There were no significant interactions between the Group variable and the other independent variables of Time, Ethnicity, and Peer Familiarity. Because the Group main effect was not moderated by a Group × Time interaction, the results indicate that the differences between the aggressive and nonaggressive boys continued and were maintained in the third interaction period which had less overt demand for conflict. The ANCOVA for the dominance score produced no overall significant effects, consistent with prior findings using this interaction task paradigm (Lochman, 1987).

Analyses of relations between variables that discriminate groups

The prior analyses indicate that AGG boys have higher levels of dominance behavior, and distorted perceptions of their peer partners' aggressive behavior relative to their own aggressive behavior, in comparison to NON boys. In an effort to examine the relation between these two variables across the three time periods of the study (e.g., Time 1 aggression distorted interpersonal perceptions of aggression score correlated with dominance behavior at Times 1, 2, and 3, etc.), Pearson correlations were computed. Because aggressive behavior on this task did not differentiate

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groups, correlations were not conducted between aggressive behavior and distorted interpersonal perception scores. Three of the nine correlations were statistically significant. Distorted perception of aggression at the first interaction period was associated with higher levels of dominance behavior during the first, $r(96) = .21$, $p < .05$, and second, $r(96) = .23$, $p < .03$, interaction periods. Distorted perception of aggression during the second interaction period was associated with higher lever of dominance during the third time period, $r(96) = .22$, $p < .03$. Thus, distorted perceptions of aggression were notably associated with immediately subsequent dominance behavior.

Prediction of perceptions of aggression from expectations and behavior

Finally, at the last phase of analyses, two multiple regression analyses were computed to test the hypothesis that AGG subjects' perception ratings of their own aggressive behavior and of their partners' aggressive behavior after the first interaction period would be less influenced by actual levels of aggression (as indexed by observer's reports), and relatively more influenced by the AGG subjects' initial expectation ratings, than would be the case for NON subjects. These regression analyses were conducted only with ratings of aggressive behavior (rather than dominance behavior) because prior research (Lochman, 1987) and this study had found distorted perceptions of only for aggressive behavior, not for dominance behavior. Thus, Time 1 expectations and observers' ratings were used to predict subjects' perceptions immediately after Time 1. In addition to the expectation ratings and the observer ratings, predictor variables included the Group status variable (Aggressive, Nonaggressive), and the interaction effects for expectation ratings × Group and observer ratings × Groups. Simultaneous entry of all five predictor variables was used in the regression analyses. The effects of primary importance here were the interaction effects, because they indicate that the expectation or observer ratings operate in different ways in the two groups to predict subjects' perceptions of self or of partners.

Both regression analyses were significant, both expectation and behavior serving as significant predictors in each analysis (see Table 4). A significant hypothesized observer × Group interaction term was found in the Time 1 regression analysis for self-ratings. The observer rating × Group interaction effect significantly added to the prediction of Time 1 Rating of Self-Aggression, $t(1, 90) = 2.34$, $p < .03$. Figure 1 illustrates the linear relation between the variables involved in the interactions (Jaccard, Turrisi & Wan, 1990). Figure 1 indicates three points (−1 *SD*, *M*, and +1 *S*D) for the observer rating of aggression using the linear regression equations plotted for each of the two subject groups. As the observers' ratings of aggression increased, the NON boys' self-ratings of their own aggression increased more markedly than did the AGG boys' self-ratings, which were relatively less affected by the actual observed level of aggressive behavior. In the prediction of Time 1 Self-Rated Aggression using a hierarchical regression analysis, the main effects predictors accounted for 35% of the variance, and the observer rating × Group interaction accounted for an additional 3% of the variance. To examine the relative effects of observed behavior after taking into account boys' expectations for their own aggression, two additional hierarchical regression analyses were conducted within each of the subject groups, using Time 1 Rating of Self-Aggression as the criterion variable, Time 1 Expectations of Self-Aggression as the first step predictor variable, and Time 1 Observer Rating of Aggression as the second step predictor variable. As expected, within the AGG Group, the expectation rating (partial $R^2 = .31$) was a stronger predictor than observed behavior (partial $R^2 = .07$). However, as anticipated, the opposite pattern was evident in the NON Group, as the expectation rating (partial $R^2 = .15$) was a less robust predictor than the observed behavior (partial $R^2 = .29$).

Discussion

As hypothesized, aggressive boys were found to display distorted perceptions of distorted aggressive behavior in dyadic conflict situa-

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Table 4. *Main and interaction effects in multiple regression prediction of ratings of aggression of partner and self*

	Self-Rating		Rating of Partner	
	Parameter Estimate	Standard Error	Parameter Estimate	Standard Error
Time 1				
Group	−2.45	1.40	1.13	1.67
Expectation rating	.41**	.09	.42**	.11
Observer rating	.43*	.18	.73*	.32
Expectation × group	−.07	.07	−.01	.08
Observer × group	.36*	.15	−.16	.19
Model adjusted R^2		.38		.31

*$p < .05$. **$p < .01$.

tions. Aggressive boys attributed more aggression to their partner and less to themselves in comparison to the independent observers' ratings of these dyadic interactions. These results replicate previous findings that these distortions do operate in AGG boys' actual interpersonal interactions and extend prior findings by indicating that the distortions continue to be apparent over time within a social exchange and are apparent at both of the age levels examined in this study. Consistent with prior findings (Lochman, 1987), NON boys' perceptions were also distorted, but in the opposite direction.

Nonaggressive boys overemphasized how aggressive they themselves were in comparison to the independent observers' ratings. Because the AGG boys readily overestimated their partners' aggressiveness relative to their own, the AGG boys were likely to perceive themselves as less responsible for the conflict, and to believe they would be justified in taking stronger action. As we have found previously (Lochman, 1987), this pattern of perceptual distortions occurs only with interpersonal aggression and not with interpersonal dominance, suggesting that schemas about responsibility for interpersonal aggression are especially compelling and strong for AGG boys. This pattern of findings supports the specific linkage between boys' distorted perceptions of aggressive behavior and their history of actual aggressive behavior at school and at home, and further supports the validity of the hypothesis that AGG boys display distorted perceptions of aggression (Lochman, 1987).

The AGG boys' distortions were present even when the overt demand from task instructions changed from competitive to cooperative. The AGG boys displayed significant distorted perceptions during the two 4-min competitive interaction periods, and then the distortions did not abate during the third interaction period. Once activated, perceptual distortions appear to be self-sustaining for AGG boys. The AGG boys are unable to adjust their perceptual processing to meet the cooperative instructional demands of the third interaction period. The AGG boys continued to overperceive partners' aggressiveness in the third interaction period, suggesting that they may have remained competitive despite the cooperative instructions. Future research can examine whether the perceptions of children would have a different pattern if the more cooperative task preceded the competitive task for some subjects, whether NON children would display more accurate perceptions if they were interacting with other NON children, rather than AGG children on cooperative tasks, and whether a more benign form of a cooperative task might produce more accurate perceptions by NON children.

It is also notable that these distorted perceptions of partner's aggression and self-aggression do not differ across the preadolescent to early adolescent age levels assessed in this cross-sectional design. Hence, it may be that the distorted perceptual processing of aggres-

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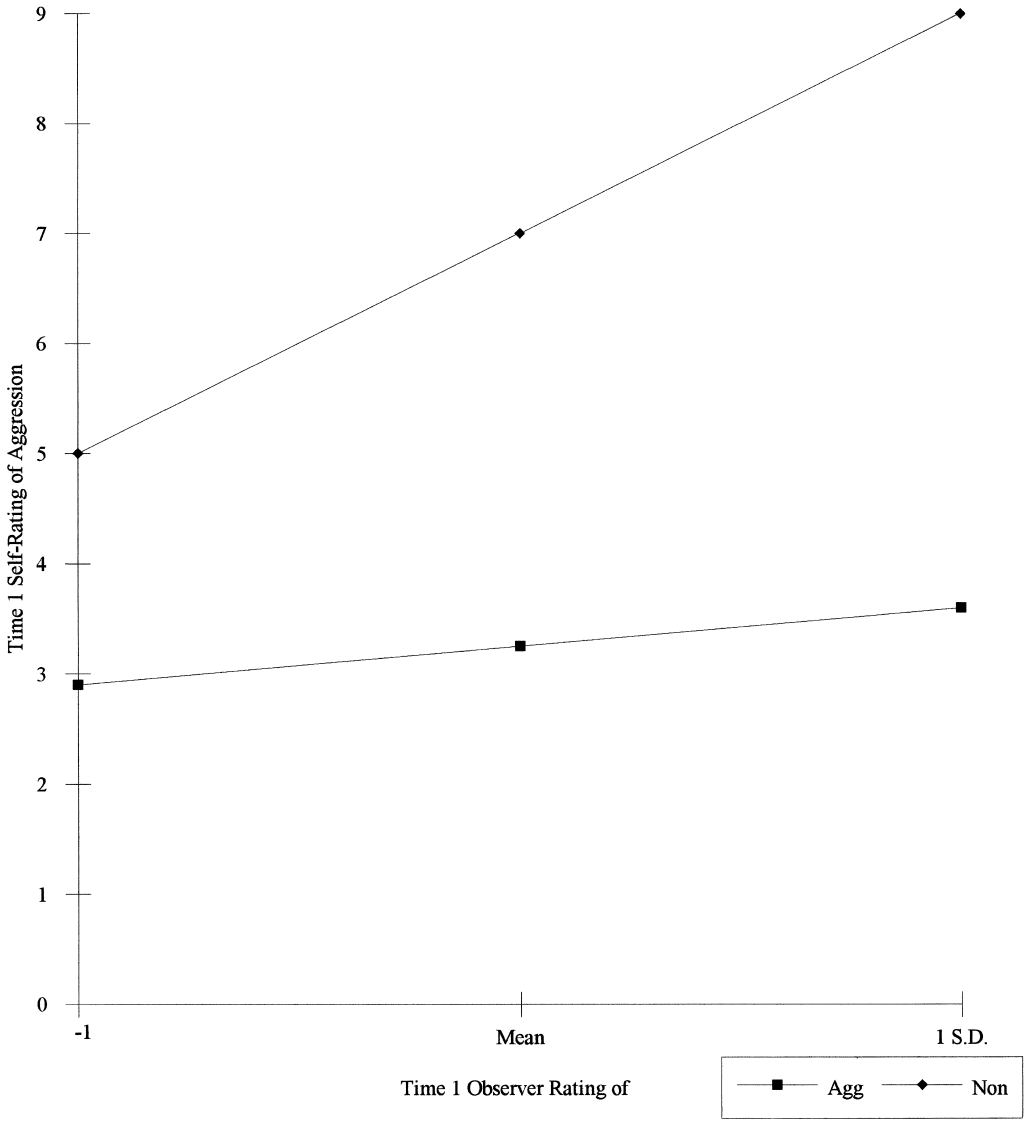


Figure 1. The linear relation between the variables involved in the interaction.

sive youth becomes set in place prior to middle childhood and continues into adolescence (e.g., Lochman & Dodge, 1994). The tendency to distort perceptions may arise out of interactions with family members and peers in the early years of elementary school or in the preschool period. In addition, AGG boys, regardless of whether they are African American or Caucasian, have similar propensities to misperceive the aggressiveness of self and other, indicating that ethnic status does not influence the longer-term activation of these perceptual distortions.

Aggressive boys' distorted perceptions of the dyad's relative aggression during the three interaction periods was accompanied by their heightened dominance behaviors throughout the three interaction periods. Aggressive and nonaggressive boys did not differ in their actual aggressive behavior during the brief interaction task periods. Lochman (1987) had hypothesized little difference in aggressive behavior for AGG and NON children during this interaction task paradigm because prior research had indicated that behaviorally disordered and nondisordered children displayed

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their behavioral differences only after more extended contact in research settings (Coie & Kupersmidt, 1983) and because of the potential reactivity of the videotaping procedure. It appears, however, that group differences in dominance behavior appear more readily in contrived interaction task paradigms and that boys' dominance behavior may be less subject to the reactivity effects of videotaping. Accumulating distorted perceptions of how aggressive the partner was relative to oneself may have further led the AGG boys to feel justified in being more dominating as the interaction developed. Thus, these AGG boys' erroneous perceptions of their partners' relative aggression may contribute to evolving dominance behaviors by the AGG boys. The results indicate a linkage between perceptions of aggression and dominance behavior. Dominance behavior covaries with distorted interpersonal perceptions of aggression during the first interaction period, and boys' distortions in perceptions for aggression predicts boys' subsequent dominance behavior in the next interactional period. This temporal linkage between distorted perceptions and dominance behavior was repeated for both Time 1 distortions and Time 2 behavior and for Time 2 distortions and Time 3 behavior. Further research can further explore the possible causal linkage between these cognitive and behavioral variables.

The boys' dominance behaviors may be partially motivated by desires to control and get back at peers perceived to be more aggressive than they were. This pattern would be consistent with previous findings that AGG boys place higher value on social goals for dominance and revenge than do NON boys (Lochman, Meyer, Rabiner, & White, 1991; Lochman, Wayland, & White, 1993). Individuals' goals may thus influence, and be influenced by, their interpretation of events (Erdley et al., 1991). If AGG children's initial efforts to exert dominance over others fail, they may begin to escalate their use of increasingly aggressive (and from their point of view, justified aggressive) behavior to control and dominate others.

These findings also contribute to our understanding of the process through which perceptions of the self are made. The findings indicate that AGG boys do not base their perceptions of their own aggressive behavior on the behavior itself. Thus, AGG boys' schemas and internalized representational models appear to be relatively closed, and not open to new information about their own behavior. In contrast, NON boys were found to display more appropriate information processing, as they base their perceptions of their own aggression more on the actual level of aggressive behavior displayed. The NON boys are more flexible in that they give up their expectations in favor of current actual experience. Aggressive boys' expectations may override their objective perception of their own behavior, indicating an excessive cognitive rigidity between expectations and perceptions. It should be noted, however, that this hypothesized pattern was only partially supported because the groups differed significantly only in their use of actual behavior to form perceptions of self, and the groups did not differ at all in their use of expectations or of actual behavior in forming perceptions of their partner. The biasing effect of expectations on AGG boys' perceptions appear to be most evident in boys' self-perceptions rather than their partner perceptions, and are evident indirectly in the AGG boys' relative lack of awareness of actual behavior in their formation of self-perceptions.

In addition to this caveat about the narrow support for the effect of expectations on perceptions for AGG boys, several other limitations of the current findings are evident. Future research can use interaction tasks which are more benignly cooperative than the arousing maze game used here, can examine how interpersonal perceptions relate to adjustment in girls, and can use peer partners who are completely unknown versus well known to assess the effects of degree of familiarity with peers. Future research can also examine changes in situationally based expectations over time, and can extend examinations of children's accuracy of perceptions of their own and partner's behavior after brief interaction periods by examining the effects of expectations on children's moment to moment, on-line processing of social events which in

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turn could then affect children's perceptions of interpersonal behavior. Despite these limitations, the current results indicate the importance of including preexisting expectations into social cognition models and indicate that cognitive-behavioral treatment (e.g., Lochman, 1992; Lochman & Wells, 1996) should include modification of AGG boys' preexisting expectations and distorted perceptions for their own and peers' aggressive behavior.

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