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Journal of Emotional and Behavioral Disorders 1999 7: 168

DOI: 10.1177/106342669900700305

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Proactive and Reactive Aggression and Boys' Friendship Quality in Mainstream Classrooms

FRANÇOIS POULIN AND MICHEL BOIVIN

There is a growing consensus as to the developmental and etiological relevance of examining the friendship relationships of students with emotional and behavioral disorders (EBD). Preadolescent friendships have a unique contribution in predicting adult adjustment (Bagwell, Newcomb, & Bukowski, 1998). Furthermore, "an inability to build or maintain satisfactory interpersonal relationships with peers and teachers" is one of the main criteria for identifying children with serious emotional disturbance (SED) according to the U.S. Department of Health, Education, and Welfare (1997, p. 42478). Finally, recent innovations in school-based interventions for students with EBD include the use of friends as agents to reduce problem behavior (Quinn, Jannasch-Pennell, & Rutherford, 1995; Searcy, 1996).

Research on the social relationships of students with EBD has focused on two distinct components of peer experience in the classroom: *peer status* (i.e., the extent to which a student is liked or disliked by his or her classmates, as reflected by sociometric nominations) and *participation in classroom friendship networks* (Farmer & Farmer, 1996). Studies of these two components yielded paradoxical findings, particularly with regard to students with conduct disorders. On the one hand, students with EBD tend to be rejected by their peers

In this study, the authors examined the concurrent and predictive relationships between boys' proactive and reactive aggression and the quality of their friendships. At the beginning and the end of the school year, 149 boys ages 10 to 12 participated in a sociometric interview and completed a questionnaire on the quality of their relationship with their best friends. Teachers provided ratings of proactive and reactive aggression for the boys and for their best friends. Results indicated that boys' proactive aggression was associated with a supportive, satisfying, and low-conflict friendship at the beginning of the year but predicted an increase in conflict in stable friendship throughout the year. Furthermore, their friends' proactive aggression was related to conflict in and dissatisfaction with the friendship. In contrast, boys' reactive aggression was negatively associated with friendship quality at the beginning of the year but predicted a decrease in conflict in stable friendship over the year. These results suggest that although proactive aggression plays a functional role in the formation of friendship, it is also associated with a deterioration in relationship quality over time. The implications of these results for developmental research and intervention for students with emotional and behavioral disorders are discussed.

(Coie, Belding, & Underwood, 1988) and characterized by social skill deficits (Dodge, Pettit, McClaskey, & Brown, 1986), indicating that they could have problems developing friendship bonds. On the other hand, these children do have friends and seem to be well integrated into the classroom social structure (Cairns, Cairns, Neckerman, Gest, & Gariépy, 1988; Farmer & Farmer, 1996), which suggests they probably have the necessary skills to form and maintain significant relationships with some of their peers.

Students with conduct disorder tend to develop friendships with peers who present similar behavior problems (Boivin & Poulin, 1993; Cairns et al.,

1988; Dishion, Andrews, & Crosby, 1995; Kupersmidt, DeRosier, & Patterson, 1995). According to a social interactional theory of antisocial behavior (Patterson, Reid, & Dishion, 1992), friendships among antisocial youth increase the level of risk for a variety of negative outcomes. For instance, they contribute to the maintenance of aggressive behaviors in the classroom (Boivin & Vitaro, 1995), and they are the strongest proximal correlate of delinquency, violence, and substance use in adolescence (Dishion, Spracklen, Andrews, & Patterson, 1996; Elliott, Huizinga, & Menard, 1989). Understanding the characteristics of these friendships appears critical for the design of intervention

strategies aimed at preventing social problems of students with, or at risk of developing, EBD.

FRIENDSHIP QUALITY OF STUDENTS WITH EBD

According to Parker and Asher (1993), childhood and adolescence friendship relations may be differentiated along six qualitative dimensions:

1. validation and caring,
2. conflict and betrayal,
3. companionship and recreation,
4. help and guidance,
5. intimate exchange, and
6. conflict resolution.

Parker and Asher reported that these features were substantially correlated with each other, suggesting that they could be collapsed into global descriptions of support and conflict. Previous studies also revealed that both reciprocity of relationship and peer status were associated with these qualitative dimensions of students' friendships. Specifically, reciprocated friends reported higher levels of friendship quality than non-reciprocated friends (Bukowski, Hoza, & Boivin, 1994), and students who were rejected by their peers reported more conflict and a lower level of support within their friendships (Parker & Asher, 1993).

The quality of friendship relations also varies as a function of the students' levels of aggression. Dishion, Andrews, and Crosby (1995) observed that the friendships of boys who are aggressive were less satisfying, were of shorter duration, and tended to end in discord. These negative characteristics were not caused by a lack of positive interactions between the two friends, but rather by authoritarian and coercive behaviors within the relationship. More specifically, the interactions within the friendship dyads of boys who are aggressive were characterized by the use of directives (request, command) and the reciprocal use of negative exchange (verbal attack, coercion, and physical aggression). Another study by Giordano,

Cernkovich, and Pugh (1986) indicated that although friendships of boys who are aggressive presented negative features (conflict and imbalance), they were also characterized by positive dimensions (intimacy, validation, and trust). Although these friendships were conflictual, they did not differ on positive dimensions from those of boys who are not aggressive.

PROACTIVE AGGRESSION VERSUS REACTIVE AGGRESSION

Studies focusing on the relationships between the aggressive behavior of youth and their friendships quality have typically embraced a nondifferentiated definition of aggression. Theoretical considerations, as well as a growing body of empirical studies, support the distinction between two forms of aggression: *proactive* and *reactive*. According to Dodge and Coie (1987), a proactive aggressive behavior involves attempts to influence another through aversive means in an unprovoked situation. In other words, such behavior can be defined as goal-directed, with the intent to harm and dominate. In contrast, a reactive aggressive behavior is an impulsive and hostile act displayed in response to a perceived threat or provocation.

Proactive and reactive aggressive behavior each present a distinct pattern of relations with relevant sociocognitive and behavioral dimensions. For instance, children who are proactively aggressive attach a positive value to the use of aggressive behavior (Crick & Dodge, 1996), whereas children who are reactively aggressive are characterized by hostile attributional biases and deficits when interpreting intention cues (Dodge & Coie, 1987). Proactive aggression is positively associated with leadership and sense of humor (Dodge & Coie, 1987), whereas reactive aggression is positively related to attention deficits and impulsivity (Dodge, Harnish, Lochman, Bates, & Pettit, 1997) and to peer victimization (Schwartz, 1995). Although proactive and reactive aggression are substantially correlated when rated by teachers ($r = .76$; Dodge & Coie, 1987), at least one confirmatory factor analy-

sis showed that a two-factor model provided a better fit to the data than a one-factor model (Poulin & Boivin, 1998a).

Proactive and reactive aggressive behaviors also have a distinct impact on classroom social structure. For instance, reactive aggressive behaviors elicit negative responses from classmates, resulting in peer rejection, whereas proactive aggressive behaviors are more likely to be related to peer acceptance in the classroom (Dodge et al., 1997; Price & Dodge, 1989). Moreover, friends tend to be similar on proactive aggression but not on reactive aggression (Poulin & Boivin, 1998b; Poulin et al., 1997). A study of the formation of friendships over the school year revealed that this similarity resulted from boys who are proactively aggressive selecting each other as friends (Poulin & Boivin, 1998b). These results suggest that in contrast to reactive aggression, proactive aggression plays a functional role in the formation of boys' friendships in the classroom. Thus, it is likely that the use of these two forms of aggression by students has a different impact on the quality of their friendships.

The first goal of this study was to examine the relations between the two types of aggression and friendship quality. In addition to boys' proactive and reactive aggression, their friends' proactive and reactive aggression were also considered. Other investigators have stressed the relevance of including friends' individual characteristics in the examination of friendships and their impact on individual adjustment (Bagwell & Newcomb, 1995; Boivin & Poulin, 1993). These relationships were examined controlling for the students' peer status and the reciprocity of the friendship because these variables have previously been found to account for the variability in friendship quality (Bukowski et al., 1994; Parker & Asher, 1993). Three dimensions of friendship quality—*supportive dimension*, *conflict dimension*, and *satisfaction*—were considered. We hypothesized that proactive aggression and reactive aggression have distinct relationships with these dimensions, more specifically:

- Proactive aggression would relate positively to the supportive dimension of friendship quality and to satisfaction;
- Proactive aggression would be associated positively with the conflict dimension of friendship quality;
- Reactive aggression would be associated with a high level of conflict in the friendship, a low level of support, and a low level of satisfaction.

The second goal of this study was to examine whether initial levels of proactive aggression and reactive aggression would predict changes in the quality of stable friendships throughout the school year. These predictive relationships were hypothesized to be similar to those observed at the beginning of the school year between the two forms of aggression and friendship quality.

METHOD

Participants

Study participants were 149 Caucasian boys (Grades 4, 5, and 6; mean age = 10.5 years) from 16 general education classrooms in four French-speaking schools located in a middle class socioeconomic neighborhood in Québec (Ministère de l'Éducation du Québec, 1992). All boys in these classrooms were invited to take part in this study, but only those for whom the parents provided written permission to participate were included in the sample (78%). The boys were interviewed in the school during the fall (November, T1) and again during the spring (May, T2).

Procedures

Participants were assessed using a two-step procedure. First, the boys participated in a 10-min individual interview conducted in the school by a research assistant. They were asked to answer a series of sociometric questions designed to (a) identify their very best friend, (b) determine the reciprocity of the relationship with their very best friend, and (c) identify their peer status.

The specific questions and the criteria for these three components will be described later.

In order to facilitate the students' task, a picture nomination technique was used. For each sociometric question, the boys had to indicate their choices by pointing at the Polaroid pictures of their classmates, which were displayed on a desk in front of them. The interviewer then recorded their choices. The second step of this procedure took place in the classroom, where the boys individually completed a questionnaire on the quality of their relationship with the very best friend. The two steps of this assessment were repeated at T1 and T2. Finally, teachers were asked to fill out questionnaires on the proactive and the reactive aggressive behaviors of their students at T1.

Measures

Quality of Relationship with the Very Best Friend. We assessed students' perceptions of various qualitative aspects of the relationship they have with the very best friend they nominated during the individual interview. Only the nominations directed toward other boys were considered. Six boys were eliminated because they chose a girl as their very best friend. This instrument combined the six scales of the Friendship Quality Questionnaire (FQQ; Parker & Asher, 1993) with a scale measuring conflict and competition in friendship (Berndt & Keefe, 1995). To ensure that the students answered questions with regard to their very best friend, the name of this friend was written at the top of the questionnaire. The students rated each item on a 5-point scale (1 = *not at all true*; 5 = *really true*). The scoring for each of the seven scales comes from a mean score of the items. The internal consistency of each scale was satisfactory:

- help and guidance (9 items, alpha = .92);
- validation and caring (10 items, alpha = .88);
- intimate exchange (6 items, alpha = .84);

- conflict and betrayal (7 items, alpha = .76);
- companionship and recreation (5 items, alpha = .83);
- conflict resolution (3 items, alpha = .78), and
- conflict and competition (8 items, alpha = .90).

A principal-components analysis (varimax rotation) conducted on the boys' scores from these seven scales resulted in two factors with eigenvalues greater than 1 (4.45 and 1.17). Examination of the structure coefficients (> .30) for each scale revealed that the first factor corresponded to a supportive dimension of friendship quality (i.e., help and guidance, validation and caring, companionship and recreation, intimate exchange, and conflict resolution), whereas the second factor corresponded to a conflict dimension (i.e., conflict and betrayal, conflict and competition). Two factor scores were generated (*supportive dimension* and *conflict dimension*) and were used in the analyses.

Friendship Satisfaction. Based on the work of Parker and Asher (1993) and Dishion, Andrews, and Crosby (1995), three items were used to assess friendship satisfaction:

- “How happy are you with this friendship?”
- “How is this friendship going?”
- “How much would you like to have him as a friend in the future?”

For each item, the boy had to indicate his satisfaction by choosing from a continuum of five faces illustrating facial expressions of happiness and unhappiness. The ratings for the three items were averaged into a single satisfaction score (alpha = .87).

Friendship Reciprocity. In order to determine whether each student's relationship with his very best friend was reciprocated, we followed a procedure suggested by Parker and Asher (1993). During the individual interview, the boys were asked to nominate their three best friends among their classmates (includ-

ing their very best friend). Boys' very best friend choices were considered reciprocated if the classmate they nominated as their very best friend had also included them among his list of three best-friend choices.

Peer Status Assessment. The nominations used to compute the peer status were collected during the individual interview. Each boy answered six questions, three for "liked most" (LM) choices and three for "liked least" (LL) choices. These questions covered three situations: play, invitation to a birthday party, and sit next to on the bus on an excursion day. For each question, the student identified three choices among his classmates. We obtained the LM and LL scores by summing the choices each student received from all classmates on all three questions. These scores were standardized within each class. In the present study, these scores were highly reliable (LM score alpha = .91; LL score alpha = .96). Social preference (SP) was obtained by the subtraction of the LL score from the LM score. We used the social preference score as an indicator of peer status.

Teacher Ratings of Aggression. The teachers completed a questionnaire that

included a three-item proactive aggression (PA) scale and a three-item reactive aggression (RA) scale developed by Dodge and Coie (1987). The PA scale included the following items:

- "Gets others to gang up on a peer."
- "Uses force to dominate peers."
- "Threatens and bullies to get own way."

The RA scale included the following items:

- "Overreacts angrily to accidents."
- "Blames others in fights."
- "Strikes back when teased."

Responses were rated on a 5-point Likert scale (1 = *never*; 5 = *almost always*) and described how frequently the statement applied to a particular child. PA and RA scores were created by averaging across the three items for each scale. Internal consistency of the two scales were high (alphas = .91 and .91, respectively).

RESULTS

This section is divided into three parts. In the first part, correlations between the measures are presented. Then the

specific contributions of the boys' proactive and reactive aggression and their friends' proactive and reactive aggression to the quality of their friendships are examined through a series of hierarchical regression analyses. Finally, we look at prediction of changes in the quality of the friendships over the course of the school year through the use of similar analyses conducted with friendship dyads that remained stable from T1 to T2.

Measure Correlations

Correlations among the boys' social preference, aggressive behavior, their friends' aggressive behavior, and their reports of friendship quality are presented in Table 1. These correlations revealed that although proactive aggression and reactive aggression were substantially correlated, the magnitude of correlation was not so extensive as to raise concerns regarding multicollinearity problems in the next series of multiple regression analyses (Cohen & Cohen, 1983). Stability coefficients were also computed for each dimension of friendship quality between T1 and T2 and are presented in Table 1. Boys' reports of the supportive dimension and the conflict dimension were relatively stable across the school year;

TABLE 1
Correlations Among Social Preference, Aggression, and Friendship Quality Measures

Measure	BPA	BRA	FPA	FRA	SUP	CON	SAT
Social preference	-.32**	-.41**	-.11	.01	.24**	-.21**	.26**
Boys' proactive aggression		.75**	.24**	.07	.03	.01	<u>.09</u>
Boys' reactive aggression			.18*	.12	-.12	.16*	-.18*
Friends' proactive aggression				.71**	-.09	.27**	-.22**
Friends' reactive aggression					-.15	.20*	-.19*
Supportive dimension					<u>.62**</u>	.00	.51**
Conflict dimension						<u>.66**</u>	-.60**
Satisfaction							<u>.18</u>

Note. BPA = boys' proactive aggression; BRA = boys' reactive aggression; FPA = friends' proactive aggression; FRA = friends' reactive aggression; SUP = supportive dimension of the friendship; CON = Conflict dimension of the friendship; SAT = friendship satisfaction. Stability coefficients for boys who named the same very best friend at T1 and T2 ($n = 69$) appear on the diagonal and are underlined.

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

however, their reports of satisfaction with their friendship were not stable during the same period.

Effect of Aggression on Friendship Quality

To examine the contributions of both the boys' and their friends' levels of proactive and reactive aggression on the variability observed in friendship quality, we conducted a series of hierarchical regression analyses using data collected at T1. Boys' social preference scores and the reciprocity of the friendships (1 = *reciprocated*; 0 = *nonreciprocated*) were entered first in the model (Step 1) in order to control for these variables. Next, the boys' PA and RA scores (Step 2), and the best friends' PA and RA scores (Step 3) were entered. The best friends' scores were included after—and in a separate step from—the boys' scores because examining the impact of the friends' aggression on the boys' report of friendship quality went beyond what was done in previous studies. These independent variables were used to explain variability in the three aspects of friendship quality: supportive dimension, conflict dimension, and satisfaction.

The results of these analyses are presented in Table 2. The model accounted for 12% of the variance for the supportive dimension, $F(6,136) = 3.24, p < .01$. In the first step, social preference and reciprocity significantly contributed to this variance. Once included in the model, the boys' levels of aggression accounted for a significant increase in the amount of explained variance. Boys' PA scores were positively associated with the supportive dimension, whereas their RA scores were negatively, but marginally, associated with it ($p < .07$, see Note). Finally, best friends' levels of proactive and reactive aggression did not add significantly to the model.

With respect to the conflict dimension of friendship quality, the model accounted for 16% of the variance, $F(6,136) = 4.22, p < .001$. Boys' social preference scores explained a significant portion of the variance: boys with high social preference scores reported low levels of conflict in their friendships. Once included in the model, boys' aggression scores added a significant portion of variance. Specifically, boys with high PA scores reported less conflict in their friendships, whereas high RA scores were associated with more conflict. In the last step, only the friends'

PA scores added a significant portion of variance; these scores were positively associated with the boys' perceptions of conflict in their friendships.

Finally, the last hierarchical regression analysis revealed that the model accounted for 26% of the variance in friendship satisfaction, $F(6,136) = 7.75, p < .0001$. Boys' social preference scores contributed a significant portion of this variance: The higher a boy's social preference, the higher his level of friendship satisfaction. Once included in the model, boys' aggression scores also accounted for a significant portion of the variance. Specifically, boys' PA scores were positively associated with friendship satisfaction, whereas their RA scores were negatively related to it. In the last step, the friends' PA scores added significantly to the explained variance and were negatively associated with the boys' report of satisfaction in the friendship.

In sum, both the boys' and their friends' aggressive behavior (both proactive and reactive) explained a significant portion of variability in friendship quality, even after controlling for social preference and reciprocity. For instance, greater levels of proactive aggression exhibited by the boys were related to a satisfying friendship that was both sup-

TABLE 2
Hierarchical Multiple Regression of Friendship Quality on Social Preference, Reciprocity, and Aggression

Independent variable	Dependent variable					
	Supportive dimension		Conflict dimension		Satisfaction	
	R ² change	β	R ² change	β	R ² change	β
Step 1	.06**		.05*		.07**	
Social preference		.15		-.21*		.19*
Reciprocity		.14		-.03		.12
Step 2	.04*		.04*		.13**	
Boys' proactive aggression		.30*		-.24*		.51**
Boys' reactive aggression		-.23		.31*		-.49**
Step 3	.02		.07*		.06**	
Friends' proactive aggression		.02		.28*		-.26**
Friends' reactive aggression		-.16		-.01		.02

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

portive and not conflictual. In contrast, greater levels of reactive aggression were associated with less satisfaction, less support, and more conflict within the friendship. Finally, having a best friend whose level of proactive aggression was high was related to less satisfaction and more conflict within that friendship.

Prediction of Changes in Friendship Quality

Because we were interested in predicting changes in the quality of friendships that remained stable during the school year, we conducted the next series of analyses only on boys who completed the friendship quality questionnaire by referring to the same friends at T1 and T2 ($n = 69$). These boys were not different from the rest of the sample with respect to PA and RA scores at T1. The following hierarchical regression model was used to predict change in the three dimensions of friendship quality. In the first step, the friendship quality score at T1 was entered in the model so that the predictive relationship between aggression at T1 and the dimension of friend-

ship quality at T2 would focus on the change in that dimension from T1 to T2. Afterward, the boys' social preference scores at T1 and reciprocity at T1 (Step 2), the boys' PA and RA scores at T1 (Step 3), and the friends' PA and RA scores at T1 (Step 4) were successively entered in the model.

The results of these analyses are presented in Table 3. The model accounted for 44% of the variance of the supportive dimension of friendship quality at T2, $F(7, 58) = 6.41, p < .0001$, of which 38% was accounted for by the supportive dimension score at T1. No other variable added a significant portion of variance. With respect to the conflict dimension, the model accounted for 58% of the variance, $F(7, 58) = 11.38, p < .0001$. Again, a substantial amount of this variance was explained by the conflict dimension score at T1 (43%). The boys' social preference scores added a significant amount of variance. Specifically, a lower social preference score at T1 predicted an increase in conflict in the friendship during the school year. Once included in the model, the boys' PA and RA scores at T1 significantly improved the prediction. Specifically,

greater levels of PA exhibited by the boys at T1 predicted an increase in conflict at T2. Conversely, greater levels of RA exhibited by the boys at T1 predicted a decrease in conflict at T2. The friends' aggressive behavior did not add significantly to the prediction of conflict in the friendship. Finally, the prediction of friendship satisfaction was not significant, $F(7, 58) = 1.72, ns$.

DISCUSSION

Friendship in preadolescence plays an important function in normal (Sullivan, 1953) and abnormal (Dishion et al., 1996) social development. The purpose of the present study was to assess whether or not proactive and reactive aggression presented distinct relationships with friendship quality, both concurrently and longitudinally. By focusing on aggressive behavior and quality of friendship in general education classrooms, we were hoping to generate information that may help prevent or ameliorate the social problems of students with or at risk of developing EBD.

In general, the results supported our main hypothesis: Proactive aggression

TABLE 3
Hierarchical Multiple Regression of Friendship Quality (T2) on Friendship Quality (T1), Social Preference, Reciprocity, and Aggression

Independent variable	Dependent variable					
	Supportive dimension (T2)		Conflict dimension (T2)		Satisfaction (T2)	
	R ² change	β	R ² change	β	R ² change	β
Step 1	.38**		.43**		.03	
Dependent variable (T1)		.62**		.65**		.18
Step 2	.03		.07*		.08	
Social preference		-.08		-.27*		.26
Reciprocity		-.12		.01		.05
Step 3	.00		.06*		.03	
Boys' proactive aggression		-.03		.36**		-.15
Boys' reactive aggression		-.01		-.33**		.27
Step 4	.03		.02		.03	
Friends' proactive aggression		.08		-.17		.27
Friends' reactive aggression		.10		.23		-.20

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

and reactive aggression presented distinct patterns of significant relationships with the quality of friendship relations. These relationships were observed even after controlling for the reciprocity of the friendship and the peer status of the students. At the beginning of the school year, proactive aggressive behavior was associated positively with boys' reports of friendship quality and satisfaction; specifically, the higher their level of proactive aggression, the more the boys perceived their friendships as being supportive, satisfying, and not conflictual.

Aside from the conflict dimension, these results supported the hypotheses put forward regarding this form of aggression. The results differed when the friends' proactive aggressive behavior was considered. This behavior was positively associated with the boys' reports of conflict and negatively associated with their reports of satisfaction. Thus, according to the boys' perception, having a proactively aggressive best friend made the friendship less satisfying and more conflictual. Although relatively tolerated and accepted at the group level (Dodge et al., 1997; Price & Dodge, 1989), the manifestation of proactive aggression seemed to arouse negative reactions within the friendship. One possible explanation is that a student might be the recipient of his friend's proactive aggression. If that occurs, friendships constitute a social context in which students display proactive aggression.

Among friendship dyads that remained stable throughout the school year, boys' proactive aggression predicted an increase in the level of conflict in their friendships during that period. A possible explanation could be that the boys' proactive aggression contributed to an escalation in aggressive exchanges between the two friends. Although this coercive cycle would result in more conflict in the friendship, it did not seem to affect the levels of support and satisfaction, as suggested by the absence of predictive relationships between these two qualitative dimensions and the boys' and their friends' levels of proactive aggression. This explanation is consistent with the findings of Dishion,

Andrews, and Crosby (1995) and Gior-dano et al. (1986) and suggests that despite the presence of conflict, the friendships of boys who are proactively aggressive can be supportive and satisfying.

The results regarding reactive aggression contrast with those observed for proactive aggression. As expected, boys' reactive aggression was negatively associated with their reports of conflict and satisfaction at the beginning of the school year. These results are consistent with our hypotheses and support the viewpoint that reactive aggression is associated with interpersonal difficulties. Besides emerging at the peer group level (Dodge et al., 1997; Price & Dodge, 1989), the problems associated with reactive aggression also appeared within the boys' relationships with their best friends, resulting in a negative appraisal of this friendship.

Surprisingly, the friends' level of reactive aggression was not associated with friendship quality. In short, when their friends displayed proactive aggression, the boys claimed to be dissatisfied with their friendship and reported more conflict; however, when their friends manifested reactive aggression, it did not seem to affect the perception of friendship quality. One explanation could be that the boys who were most reactively aggressive were never selected as a very best friend. An a posteriori analysis supported this hypothesis: Boys who were not selected as very best friends were more reactively aggressive than those who were selected, $M = 2.21$ vs. $M = 1.74$; $t(74.80) = 2.32$, $p < .05$. The two groups were no different with respect to proactive aggression, $M = 1.61$ vs. $M = 1.32$; $t(74.19) = 1.79$, ns ; therefore, it may be less relevant to study friendship quality in students who are reactively aggressive, as they are simply less likely to have friends.

The predictive relationships between boys' initial levels of reactive aggression and changes in friendship quality revealed a different picture than the one observed at the beginning of the school year. Although boys' reactive aggression was associated with reports of conflict and dissatisfaction, it predicted a

decrease in the level of reported conflict within their friendships throughout the year. This suggests that in the long run, reactive aggression might not have a negative impact on the quality of stable friendships and is less likely to result in a coercive cycle within the friendship, as we speculated for proactive aggression.

Limitations

Several explanations for the observed results remain speculative and will require a more detailed examination of students' aggressive behavior and friendship relations. An appropriate methodological approach would include direct observations in the school setting in order to identify the targets (i.e., the friends vs. the other classmates) of the students' proactive and reactive aggressive behaviors. Moreover, a systematic examination of the interactions between the students and their friends will be necessary to test the hypothesis that friendships might constitute a social context promoting the use of proactive aggression through a coercive process. An interesting example of this approach was provided by Dishion et al. (1996), who observed friendship dyads of boys who were antisocial during a 25-min videotaped problem-solving task discussion. They found that rule-breaking topics of discussion were followed by a laugh response. This reinforcement process, labeled "deviancy training," predicted delinquency, violence, and substance use 2 years later (Dishion, Capaldi, Spracklen, & Li, 1995; Dishion, Eddy, Haas, Li, & Spracklen, 1997; Dishion et al., 1996).

The findings of this study should be interpreted cautiously, and some limitations must be mentioned. The sample was composed of boys from mainstream classrooms in a middle class neighborhood. Replication of this study should be conducted with an at-risk sample, including students with EBD. Also, the data collection procedure included only self-reported and rating scale measures. Observational data are needed for a more refined examination of friendship processes (Dishion et al., 1996) and for a

more reliable assessment of proactive and reactive aggression (Price & Dodge, 1989). Finally, other social settings need to be considered, as boys who are aggressive tend to develop friendships with peers from the same neighborhood who do not necessarily attend the same school (Dishion, Andrews, & Crosby, 1995).

Implications for EBD

We consider this study an initial step in the examination of the relationships between students' levels of proactive and reactive aggression and the characteristics of their friendships. Implications for interventions for and prevention of EBD emerged from the present study, although they remain tentative at this point.

The opposite pattern of relationships with friendship quality that proactive and reactive aggression presented provided empirical support for the construct validity of the proactive-reactive distinction and underscored its usefulness in the study of students' friendship experiences. This is consistent with a growing quantity of empirical evidence demonstrating that although they are substantially correlated, these two forms of aggression have different developmental histories (Dodge et al., 1997); present distinct social, cognitive, and behavioral correlates in childhood (Crick & Dodge, 1996; Dodge & Coie, 1987; Schwartz, 1995); and are associated with different developmental trajectories in adolescence and adulthood (Pulkkinen, 1996; Vitaro, Gendreau, Tremblay, & Oigny, 1998). Dodge et al. (1997) recently proposed that a subclassification of conduct disorder should be made based on the type of aggressive behavior displayed by the child. Their findings suggested that among children with conduct disorder, those with attention-deficit/hyperactivity disorder (ADHD) might in fact be reactively aggressive, whereas those without ADHD might be proactively aggressive.

One implication of the distinction between proactive and reactive aggression is that there are reasons to believe intervention strategies should be implemented in different ways to treat either proactive or reactive aggression (Coie,

Underwood, & Lochman, 1991). From that perspective, the results of this study, as well as previous reports (Poulin & Boivin, 1998b), suggest that school-based intervention programs aimed at reducing proactive aggression should focus not only on the students but also on their friendship network. Students who are proactively aggressive tend to seek out the company of similar classmates and form friendships with them. Such friendships could create an environment that promotes the use of these behaviors, either through a coercive process, as hypothesized here, or through a positive reinforcement process (Dishion et al., 1996).

The social learning origins of proactive aggression have led researchers to suggest the use of behavior management interventions involving punishment of aggressive behaviors and reinforcement of nonaggressive responses in problematic situations (Coie et al., 1991; Dodge, 1991). Clearly, this type of intervention should consider the friendship networks of students who are proactively aggressive. For example, friends could actively be involved in an intervention by teaching them to respond differently to aggressive behavior displayed by the target students (Bierman, 1989). Another promising approach might be to modify the social structure of the classroom. Such an intervention involves restructuring the peer environment by breaking up friendship networks made up of students who are proactively aggressive and promoting friendships with classmates who have more prosocial skills. Researchers have suggested a series of strategies to set up the class environment in order to promote the development of new friendships (Falvey & Rosenberg, 1995; Searcy, 1996). Using cooperative learning, establishing learning centers that promote interaction, setting friendship goals with children who have EBD, and using activities with friends as a reinforcers are examples of such strategies (see Searcy, 1996)

Interventions targeting friendship networks may be less relevant for students whose behavior most often reflects reactive aggression. The a posteriori analysis reported earlier revealed that these

students were less likely to be selected as a friend and were also less likely to associate with aggressive classmates (Poulin & Boivin, 1998b). However, these students do experience severe difficulties in the peer domains, as suggested by their lack of friends and by the negative relationships observed between reactive aggression and social preference. Social skills training interventions, through mentoring or peer tutoring, would appear to be appropriate for these children. Finally, interventions focusing on anger-control training and accuracy in intention cues detection are also indicated in dealing with students who are reactively aggressive (Dodge, 1991). Examples of such interventions are the Anger Coping Program described by Lochman and Wells (1996) and social-role-taking activities in which children learn to understand others' thoughts and feelings.

Understanding the characteristics of the friendships of students with EBD is critical, considering the impact these social relationships have on the development and maintenance of various forms of behavior problems in adolescence (Boivin & Vitaro, 1995; Dishion et al., 1996; Elliot et al., 1989). This study supports the usefulness of the distinction between proactive and reactive aggression in this inquiry. Relationships between proactive aggression and friendship quality suggest that friendships could rapidly become a new social context for adverse exchanges among students who are proactively aggressive.

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Authors' Notes

1. This study was made possible through research grants to the second author from the Social Sciences and Humanities Re-

search Council of Canada (Grant No. 410-93-1204) and Quebec FCAR Fund.

2. The authors wish to thank the teachers and the children of the Commission scolaire de la Jeune Lorette.

Note

Another way to examine the contribution of the two types of aggression is to perform the multiple regression analyses using the following variables: (a) proactive + reactive aggression and (b) proactive – reactive aggression. The results of this analysis indicated that the portion of variance explained by these two variables was identical to the previous analysis. Moreover, only the beta for the proactive – reactive aggression variable was significant.

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