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Longitudinal Investigation of the Link Between Proactive and Reactive Aggression and Disciplinary Actions in an After-School Care Program

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Abstract The current study longitudinally investigated relations between proactive (goal-oriented, calculated) and reactive (response to perceived threat) aggression and disciplinary actions in an after-school care program in a sample of 147 school-age children (Mean age = 8.22 years; 54.4% male). In addition, perceived best friend delinquency was examined as a moderator of the relations between proactive and reactive aggression and disciplinary actions. As expected, high levels of proactive aggression were associated with high levels of disciplinary actions. Reactive aggression, in contrast, was negatively associated with disciplinary actions 2-months later. Finally, perceived best friend delinquency moderated the association between proactive, but not reactive, aggression and disciplinary actions. However, this interaction effect was only marginally statistically significant (p=.06). Implications for findings and future directions are discussed.

Keywords Proactive and reactive aggression · Perceived best friend delinquency · Disciplinary actions

Aggressive behavior is often dichotomized by the motivation behind the behavior, or proactive (goal-directed) versus reactive (in response to perceived threat) aggression. Proactive and reactive aggression represent distinct but correlated subdimensions of aggression that appear to have unique developmental patterns of behavior (Vitaro, Brendgen, & Barker, 2006). However, no research has examined how these subtypes of aggression are linked to disciplinary actions (or caregiver notification of negative child behavior). The prevention of disciplinary actions within structured environments (e.g., after-school care) is important, as children who receive multiple disciplinary actions are at risk for chronic disciplinary problems in addition to program suspension (e.g. Tobin & Sugai, 1999). Being suspended is associated with the exacerbation of problem behavior including violence and delinquency (e.g., National Research Council and Institute of Medicine, 2002). Thus, understanding how proactive and reactive subtypes of aggression are related to disciplinary actions within the context of after-school care could provide information about which behaviors to target for the prevention of disciplinary problems and subsequent negative outcomes. Moreover, these subtypes of aggression may interact with other risk factors of problem behavior, such as delinquent peer behavior, to predict whether or not a child experiences disciplinary actions. Accordingly, the current study examined relations between proactive and reactive aggression and disciplinary actions in an after-school care program. These associations were examined while also considering the influence of best friend delinquency as well as the stability of disciplinary actions. Additionally, perceived best friend delinquency was examined as a moderator of the associations between proactive and reactive aggression and disciplinary actions.

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Proactive and Reactive Aggression

Although some have argued against the distinction of proactive and reactive aggression due to their statistical overlap (Bushman & Anderson, 2001), factor analytic work

has consistently demonstrated that proactive and reactive aggression represent distinct subtypes of aggression. This distinction has been demonstrated in community and clinical samples (e.g., Dodge & Coie, 1987; Fite, Colder, & Pelham, 2006; Poulin & Boivin, 2000; Kempes et al. 2006; Raine et al. 2006). As stated above, proactive aggression involves planning and forethought and is calculated in nature (Dodge, 1991). An example of proactive aggression is a child threatening to hit a peer if the peer does not comply with his/her demands. Reactive aggression, on the other hand, is aggressive behavior that occurs in response to a perceived threat (Dodge & Coie, 1987). An example of reactive aggression is a child striking out at a peer when they are tripped on the playground. Proactive aggression may be best explained by social learning theory, which suggests that individuals engage in aggressive behavior because they have learned that aggression will help them to obtain a desired goal or object. In contrast, reactive aggression may be best explained by the frustration aggression hypothesis, which posits that aggression develops from hostile reactions to frustration (Berkowitz, 1978). Furthermore, this model posits that aversive events provoke a fear response and contribute to the development of reactive aggression.

Consistent with theory and evidence suggesting distinct dimensions of aggression, proactive and reactive aggression are differentially associated with social and behavioral outcomes (for a review see Card and Little, 2006). However, no research to date has examined how proactive and reactive aggression are linked to disciplinary actions.

Disciplinary Actions

There is literature linking disciplinary actions within the school setting to general measures of aggression and violent behavior (e.g., McConville & Cornell, 2003; Valois et al. 1998; 2002). Furthermore, receiving disciplinary actions in school is associated with subsequent chronic delinquent behavior and school suspension (e.g. Gottfredson, Gottfredson, & Weisman, 2001; National Research Council and Institute of Medicine, 2002; Tobin & Sugai, 1999). Findings appear to suggest that suspension is not a solution to problem behavior. Rather, being suspended appears to further exacerbate the problem behavior. Note that disciplinary action within the school setting has been the sole focus of this literature. However, disciplinary actions during after-school care can arguably be just as (if not more) important than disciplinary action in schools. That is, children are most likely to engage in delinquent behavior in the hours between when school has been dismissed and when parents return home from work, and children who are not attend after-school care have been found to be more delinquent than those in after-school care (Gottfredson, Gottfredson, & Weisman, 2001). Understanding who is at risk for disciplinary action during after school care could identify who is most likely to be removed from after-school programs and perhaps ultimately aid the in the prevention of subsequent/chronic antisocial behavior. Accordingly, the current study examined the link between proactive and reactive aggression and disciplinary actions within an after-school care program.

As stated above, no previous literature has examined the link between proactive and reactive aggression and disciplinary actions (during school or after-school care program). There is some evidence, however, suggesting differential relations between proactive and reactive aggression and delinquent behavior. The majority of evidence links proactive, not reactive, aggression to delinquency and other antisocial behavior (Brendgen, Vitaro, Tremblay, & Lavoie, 2001; Fite, Colder, Lochman & Wells, 2007, 2008a & 2008b; Fite, Stoppelbein, & Greening, 2009). Note, however, some studies have found a link between reactive aggression and delinquency when examining relations cross-sectionally in normative samples (Card & Little, 2006); but this link has not been found over time or in at-risk, aggressive, or incarcerated samples (e.g., Coralijn, Orobio De Castro, & Koops, 2005; Fite et al. 2008a; Fite et al. 2010; Fite et al. 2011). Additionally, other research has found an association between reactive, not proactive, aggression and classroom rule violations, such as problems with respecting others, remaining in seat, raising hand to speak, and working quietly in a normative sample (Waschbusch, Willoughby, & Pelham, 1998). This may suggest a link between both proactive and reactive aggression and disciplinary actions. Alternatively, it may be that reactive aggression is associated with the more minor misbehaviors that are annoying but don't necessarily result in formal disciplinary action. Furthermore, there is evidence suggesting that anxiety protects aggressive youth from future delinquent behavior (Kerr, Tremblay, Pagani & Vitario, 1997; Tremblay et al. 1994), and reactive aggression is associated with internalizing symptoms across various sample types (Card & Little, 2006; Fite et al. 2010; Fite, Stoppelbein, & Greening, 2009; Vitaro, Brendgen, & Tremblay, 2002). Thus, it may be that proactive aggression is positively associated and reactive aggression is unrelated to disciplinary actions.

Moreover, the link between aggression and other problem behavior does not occur in a vacuum. Socialization factors also play a role in the developmental course of child problem behavior (e.g., Bronfenbrenner, 1979). That is, child behavior is influenced by many social and contextual factors, including parents, peers, and neighborhoods (e.g., Bronfenbrenner, 1979; Loeber et al. 2008). Therefore, it is also important to examine socialization factors that may impact the association between the aggression subtypes and

their subsequent outcomes. One such socialization factor may be best friend delinquency. School age children spend increasing amounts of time with peers (e.g., Aboud & Mendelson, 1998; Rubin, Bukowski, & Parker, 1998), suggesting that peer behavior may be an important factor to consider when determining the link between aggression and disciplinary actions in after-school care.

Best Friend Delinquency

There is substantial evidence to suggest that delinquent peer affiliations are associated with increases in delinquent behavior over time in all types of samples (Dishion & Owen, 2002; Fite, Colder, & O'Connor, 2006; Reitz, Dekovic, Meijer, & Engels, 2006), and delinquent best friendship relationships may be particularly important to consider in the exacerbation of youth problem behavior. For example, Reitz, et al. (2006) found that best friend deviance was associated with increased adolescent externalizing behavior over the period of 1 year. Additionally, adolescents who perceive that their best friends are engaging in antisocial behavior are more likely to rate their own behavior as antisocial and to be rated by teachers as engaging in antisocial behavior (Laird, et al. 1999). Moreover, in an nationally representative sample, Haynie (2001) found that aspects of the peer relationships, including the strength of the peer association, may exacerbate delinquent behavior.

Despite the wealth of research suggesting an association between delinquent peer affiliations and child delinquency in all types of samples (Snyder et al. 2005; Fergusson et al. 2002; Dishion et al. 1996; Elliott et al. 1985), not all children who associate with deviant peers develop problems with delinquency (Vitaro, Tremblay, Kerr, Pagani, & Bukowski, 1997). Haynie and Osgood (2005) have warned that overestimating the effects of peer delinquency in past research results in underestimating the influence of other factors. That is, delinquency is a complex picture arising from many sources. Recent research has investigated this complexity and found that individual factors do in fact interact with peer delinquency to influence child problem behavior, including delinquency (Meldrum, Young, & Weerman, 2009; Fergusson, Vitaro, Wanner, Brendgen, 2007). Thus, it is important to also examine whether the subtypes of aggression interact with levels of best friend delinquency to predict disciplinary actions. Recent research by Vitulano, Fite, and Rathert (2010) found that deviant peer affiliations have less of an influence on impulsive, rather than non-impulsive, individuals' delinquent behavior in a community sample. Reactively aggressive behavior is impulsive by nature (Dodge, 1991). Therefore, reactively aggressive behavior may be less influenced by other factors, such as best friend delinquency. In contrast, proactively aggressive behavior may be influenced by delinquent peers, as previous research suggests that proactive aggression is associated with peer delinquency in aggressive, community recruited, and clinic referred samples (e.g., Connor, Steingard, Anderson, & Melloni, 2003; Fite et al. 2008b; Fite, Raine, Stouthamer-Loeber, Loeber & Pardini, 2010). Delinquent peer affiliations may provide more opportunities for behavior that will result in disciplinary actions, and as such, proactive aggression is expected to be most strongly associated with disciplinary problems when delinquent peer behavior is present.

Current Study

In sum, the current study longitudinally examined unique relations between proactive and reactive aggression and disciplinary actions in a community-based after-school care program for school-age youth. More specifically, baseline proactive and reactive aggression were examined as predictors of disciplinary actions 2-months later while also taking into account prior disciplinary actions and the influence of perceived best friend delinquency. Finally, perceived best friend delinquency was examined as a moderator of the relations between proactive and reactive aggression and disciplinary actions. Proactive, not reactive, aggression was expected to be positively associated with disciplinary actions, even when considering the influence of best friend delinquency and prior disciplinary actions. Moreover, perceived best friend delinquency was expected to moderate the link between proactive, not reactive, aggression and disciplinary actions. That is, proactive aggression was expected to be more strongly associated with increases in disciplinary actions at high levels of best friend delinquency when compared to low levels of best friend delinquency.

Methods

Participants

Participants were recruited from a mid-sized, southeastern community-based facility that provides low-cost after-school and summer care for between 200 and 300 school-age children daily. A table with a sign that said "Earn $5.00" was setup in the main hallway where parents come in to pick up their children for 1 week (5 days). Only families who approached the table were informed of the study. One hundred forty-seven children were enrolled in the study by caregivers.

Children ranged from 5 to 13 years of age (M=8.22, SD=1.99). Just over half of the children were male (54.4%). The racial composition of the sample was 67%

African American, 20.5% Caucasian, 5% Hispanic/Latino, and 7.5% biracial or identified with another racial/ethnic group. The majority of study participants (96%) received a fee reduction for their children to attend the program, and 87% of all children received government assistance in paying fees. Most children (86%) attended the program daily, with only 7% attending the program on average 3 or fewer days per week.

Program staff responded to questions on all 147 children at baseline and follow-up; however, only 133 children responded to questions at baseline. The caregiver for 1 child agreed for staff to report on their child's behavior, but did not want their children to participate. One additional child could not read and had difficulty comprehending questions. Accordingly, participation was terminated (with compensation). The remaining 12 children did not attend the club during the week of data collection. Nonetheless, based on the data analytic techniques employed, data from all 147 children were included in analyses.

Procedures

Data collection occurred at baseline and 2-months later. Child data was collected at baseline over the course of 1 week. Children were administered questionnaires in small groups that ranged from 3 to 15 children at a time, depending on age and the number of study staff members available during the data collection session. For younger children (less than 3rd grade), there was never less than 1 study staff member per 2 children. For older children (3rd grade and up), there was never less than 1 study staff member per 5 children. All questionnaires were read aloud by a study staff member and children then reported their own answers using paper-pencil measures. Study staff monitored the room in order to ensure that children were staying on pace and following along. Children were instructed to raise their hand if they had a question and a staff member would then address the individual child. There were a few occasions (<10) in which a child could not keep up with the group. These children were pulled aside and the items were read to them individually. The interviews were typically completed in approximately 25 min, and children received $5.00. Note that facility staff were not privy to the children's answers and waited just outside the testing room while children completed the measures in order to ensure confidentiality and increase accuracy in reporting.

Director reports of child demographic information and behavior were collected at baseline and 2 months later using Medialab interview software. The director was provided a laptop for 2 weeks to respond to questions for children whose parents who signed consent forms. Interviews were completed in less than 5 minutes per child and the director was compensated $2.00 per child at each timepoint.

Measures

Proactive and Reactive Aggression. Child reports of the Dodge and Coie (1987) proactive and reactive aggression questionnaire were collected at baseline. Children responded to 6 items, 3 proactive and 3 reactive, using a 5-point likert scale (1 = "Never" to 5 = "Almost Always"). A sample proactive aggression item is "I get other kids to gang up on somebody that I do not like" and a sample reactive aggression item is "When I have been teased or threatened, I get angry easily and strike back." This measure has been found to be reliable and valid (Dodge et al. 1997; Waschbusch et al. 1998). Moreover, child reports of proactive and reactive aggression have been found to be valid and reliable for children as young as age 6 (e.g., Fite, Stoppelbein & Greening, 2009; Raine et al. 2006). Internal consistencies of the scales were adequate (proactive aggression α=.68 and reactive aggression α=.80). Average scale scores were computed and used for analyses.

Perceived Best Friend Delinquency. Child reports of perceived best friend delinquency were assessed at baseline (Fergusson et al. 1999). Children were asked to identify on paper their best friend and to provide their best estimate (responding "yes" or "no") as to whether the child's best friend engaged in a 14-item list of delinquent behaviors (e.g., Purposefully set fire to a building, a car, or other property, or tried to do so?). There is literature to suggest that when using unilateral best friendship nominations, the child who provides the nomination is knowledgeable about the identified best friend's behavior (Ladd & Emerson, 1984). Moreover, child reports of peer delinquency have been found to have similar correlates of other informants of peer delinquency (e.g., Fite, Wynn, & Pardini, 2009). Items were summed to create a best friend delinquency score that was used in analyses. Internal consistency of the scale was good (α=.82).

Disciplinary Actions. Formal chart review was used to report the number of times formal disciplinary action (i.e., write-ups) took place for each child at baseline and 2 months later. Note that the program is a licensed after-school program, receiving the highest star rating possible from the state. The program meets all state-mandated staff to child ratios and the entire facility is under 24 h video surveillance, providing sufficient monitoring of child behavior. Disciplinary write-ups result from more serious behavior or minor misbehavior that has not ceased with after several attempts to correct the behavior. Reasons for write-ups include: fighting, sexually inappropriate behavior, cursing or inappropriate language, repeatedly refusing to follow directions, destruction of property, and stealing. Within the program only two staff members can impose a formal write-up, the Director and the Program Director,

providing consistency over what behaviors result in formal disciplinary action. At baseline data collection, the number of disciplinary write-ups over the past academic year (approximately 6 months) were reported and at follow-up the number of disciplinary write-ups within the past 2 months was reported. A 5-point likert scale (1 = "zero", 2 = "one time", 3 = "two times", 4 = "3 times", and 5 = "4 or more") was used. At baseline approximately 55% of the children had received no write-ups, 7% received 1 write-up, 9.5% received 2 write-ups, 4% received 3 write-ups, and 24.5% received 4 or more write-ups. At the 2 month follow-up, approximately 64.5% received no write-ups, 13.5% received 1 write-up, 7.5% received two write-ups, 7% received 3 write-ups and 7.5% received 4 or more write-ups.

Data Analyses

Models were estimated using Mplus 5.2 Statistical Software (Muthen & Muthen, 2009). All variables were standardized prior to path analysis. Skewness of study variables did not exceed a value of 3 (values ranging from .68 to 3.00), suggesting that non-normality was not a concern (Kline, 2005). Accordingly, maximum likelihood estimation was used to evaluate models. More specifically, full information maximum likelihood estimation (FIMLE) was used in order to accommodate missing data, allowing the full sample to be included in analyses (n=147). FIMLE uses all available data to calculate parameter estimates and does not exclude missing data (Kline, 2005). FIMLE has been found to be less biased and more efficient than other techniques used to handle missing data, such as pairwise and listwise deletion (Arbuckle, 1996). The path models were fully saturated (i.e., 0 degrees of freedom), resulting in a perfect fit to the data (Kline, 2005). Accordingly, model fit statistics are not reported. Note that age and gender were originally considered as covariates in models; however, they were unrelated to disciplinary actions (in both correlation and path analyses). Accordingly they were not included in subsequent analyses in order to provide the most parsimonious model. Also note that the models evaluate rank order change in the number of write-ups; thus differing timeframes (i.e., past 6 months versus last 2 months) in the reporting of disciplinary actions did not effect the results.

Standardized path coefficients can be interpreted as r-values (Durlak 2009), with r-values hovering around .10 considered small effects, r-values around .30 considered medium effects, and r-values .50 or greater considered large effects (Cohen, 1988).

Results

Descriptive Statistics

Means, standard deviations, and correlations between study variables are reported in Table 1. Consistent with previous research, proactive and reactive aggression were strongly positively related (e.g., Fite, Stoppelbein, & Greening, 2009). Disciplinary actions were stable over time. As expected, proactive aggression was associated with disciplinary actions cross-sectionally as well as across time. However, note that this association was only a marginally statistically significant association across time. Reactive aggression was also positively associated with disciplinary actions cross-sectionally, but not across time. Unexpectedly, best friend delinquency was unrelated to disciplinary actions cross-sectionally or across time.

Path Analysis

As illustrated in Fig. 1, baseline proactive and reactive aggression were examined as predictors of disciplinary actions 2-months later while also taking into account the stability of disciplinary actions and the variance associated with best friend delinquency. As expected, high levels of proactive aggression were predictive of high levels of disciplinary actions, even when also considering the variance associated with reactive aggression, prior disciplinary actions, and peer delinquency. However, the effect size of this association was small. Interestingly, reactive aggression was negatively related to disciplinary actions, such that high levels of reactive aggression were associated with low levels of disciplinary actions, and this was a small to medium effect. Disciplinary actions were quite stable over time. However, best friend delinquency was unrelated to disciplinary actions.

Interaction Effects

Next, the interaction between proactive aggression and best friend delinquency was added as a predictor to the above path model. The proactive aggression by best friend delinquency interaction was found to predict disciplinary actions; however this interaction effect was small and only marginally statistically significant (B=−.07, p=.06). At high levels of best friend delinquency, proactive aggression was unrelated to disciplinary actions (B=.11, p=.17; See Fig. 2). However, at low levels of best friend delinquency, proactive aggression was positively associated with disciplinary actions (B=.26, p=.01), suggesting a small to medium effect.

Table 1 Correlations, Means, and Standard Deviations

	1	2	3	4	5
1. T1 Proactive Aggression	–				
2. T1 Reactive Aggression	.50**	–			
3. T1Best Friend Delinquency	.27*	.11	–		
4. T1 Disciplinary Actions	.19*	.25*	.05	–	
5. T2 Disciplinary Actions	.15***	.01	.00	.64**	–
Mean	1.42	2.08	0.94	2.36	1.79
Standard Deviation	0.85	1.07	1.90	1.70	1.28

T1 Time 1 (Baseline), *T2* Time 2 (2-Month Follow-up); ** = $p<.001$, * = $p<.05$, *** = $p<.10$

In a separate model, the interaction between reactive aggression and peer delinquency was then added as a predictor to the model; however the interaction was unrelated to disciplinary actions ($B=-.06$, $p=.46$).[1, 2]

Discussion

The current study examined relations between proactive and reactive aggression and disciplinary actions in an after-school care program while also taking into account the stability in disciplinary actions and the influence of best friend delinquency. Findings suggested a positive link between proactive aggression and disciplinary actions and a negative link between reactive aggression and disciplinary actions over time. Furthermore, a trend for best friend delinquency to moderate the link between proactive, not reactive, aggression and disciplinary actions was found. Findings and their implications are discussed in turn.

Proactive Aggression and Disciplinary Actions

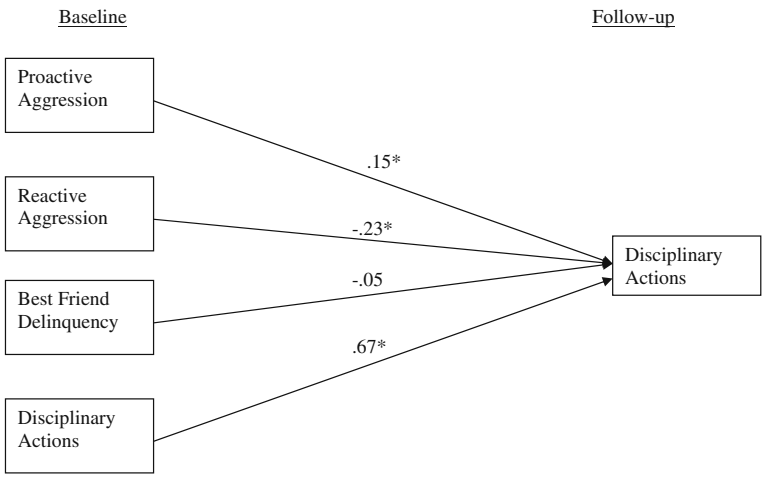
As expected, proactive aggression was positively associated with disciplinary actions 2-months later while also taking into account the stability of disciplinary actions. Findings are consistent with previous research linking proactively aggressive behavior to more serious problem behavior (e.g., Fite et al. 2008a), and suggest the importance of identifying and targeting proactively aggressive behavior for the prevention of future disciplinary problems.

Moreover, the relation between proactive aggression and disciplinary actions was moderated by best friend delinquency. At high levels of best friend delinquency, proactive aggression was unrelated to disciplinary actions. However, at low levels of best friend delinquency, as levels of proactive aggression increased the number of disciplinary actions increased, and this was a small to medium effect size. As seen in Fig. 2, and consistent with expectation, low levels of both proactive aggression and low levels best friend delinquency were associated with the fewest number of disciplinary problems. Surprisingly, however, high levels of proactive aggression in combination with low levels of best friend delinquency were associated with the most disciplinary problems. This is contrary to expectation and previous research suggesting that best friend delinquency exacerbates problem behavior (e.g., Haynie, 2001). However, this is the first study to examine the outcome of disciplinary problems, and it may be that delinquent peer behavior is associated with delinquent behavior but not necessarily disciplinary action. Proactively aggressive behavior can be manipulative, and the scale of proactive aggression includes the item "I get other kids to gang up on somebody that I do not like." It may be that children who exhibit proactively aggressive behavior and have friends who engage in delinquent behavior are able to get their friends to do their "dirty work" so to speak and, accordingly, do not experience as many disciplinary actions themselves. However, youths with less delinquent best friends may be more likely to engage in the behavior themselves, resulting in more disciplinary problems. Alternatively, it may be that proactive aggression is more relevant in situations in which children are not delinquent. That is, at high levels of best friend delinquency children are more likely to get into

[1] Some may have concerns regarding the validity of findings across the broad age span included in the current sample. More specifically, some may question the impact of the inclusion of younger children on the current results. Accordingly, follow-up analyses were conducted in order to evaluate the stability of the current findings. First, two- and three-way interactions with age were added to the models to determine if age moderated the previously reported effects. No significant interactions were found, suggesting that age did not impact these associations. Furthermore, models were re-estimated using only children in 3rd grade and up. Findings were stable, with proactive aggression positively associated with disciplinary actions and reactive aggression negatively associated with disciplinary actions. Thus, the links between reactive and proactive aggression and disciplinary actions do not appear to be affected by the inclusion of younger children.

[2] Gender differences in associations were examined using a multiple group model approach (Kline, 2005). Specifically, a model in which parameters were free to vary across the gender groups was first estimated. A second model in which causal paths and exogenous variable covariances were constrained to be equal across the gender groups was then estimated, and a chi-square diff test was conducting in order to determine if constraining the paths to be equal across the groups resulted in a significant decrement in the model chi-square. Constraining the paths to be equal across the groups did not result in a significant decrement in the model chi-square ($\Delta\chi^2(10)= 17.14$, $p > .07$), suggesting the model did not differ across gender groups.

Fig. 1 Estimated path model



* =$p < .05$. Covariances between exogenous variables are not depicted in the figure for clarity purposes.

trouble, regardless of their level of aggression. Note that this interaction effect was small and only marginally significant (p=.06); thus future research is needed to further understand this association.

Reactive Aggression and Disciplinary Actions

Reactive aggressive behavior was positively associated with disciplinary actions cross-sectionally but not across time. In fact, reactive aggression was negatively related to disciplinary problems over time when also accounting for the variance associated with proactive aggression and peer delinquency, suggesting a suppressor effect. That is when taking into account the shared variance among proactive and reactive aggression, as estimated in the regression model, the unique variance associated with reactive aggression is negatively associated with disciplinary problems two-months later. Findings are somewhat consistent with prior research (using at risk community samples) that links reactive aggression to delinquent behavior cross-sectionally but not across time (e.g., Fite et al. 2010). It may be that cross-sectionally reactively aggressive behavior is associated with disciplinary problems due to the impulsive nature of the behavior (Dodge, 1991). However, reactively aggressive behavior and disciplinary actions appear to be unrelated at the bivariate level and negatively associated when examining unique effects over time. These associations may be due to reactive aggression's link to hypervigilance to threat and punishment (e.g., Dodge, 1991). In particular, reactive aggression is associated with internalizing difficulties, including anxiety (e.g., Bubier & Drabick, 2009; Card & Little, 2006; Fite et al. 2010; Scarpa, Haden, Tanaka, 2009), and there is evidence to suggest that anxiety buffers aggressive youth from future delinquent behavior (Kerr, Tremblay, Pagani & Vitaro, 1997; Tremblay et al. 1994). Thus, it may be that the anxiety experienced in response to disciplinary actions may lead to a negative relation between reactive aggressive behavior and future disciplinary actions.

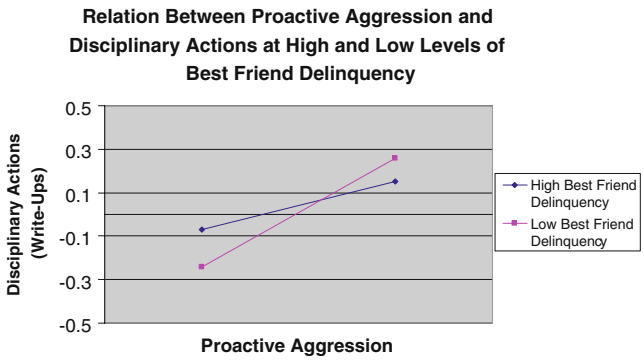


Fig. 2 Relation between proactive aggression and disciplinary actions at high and low levels of best friend delinquency

Finally, it should be noted that best friend delinquency was unrelated to disciplinary actions cross-sectionally as well as longitudinally, which is contrary to previous research linking best friend delinquency to child externalizing behavior (e.g., Reitz, et al. 2006). Perhaps peer delinquency becomes a stronger direct predictor of problem behavior in adolescence (e.g., Vitaro, Wanner, Brendgen, Gosselin, & Gendreau, 2004). Alternatively, perhaps delinquent peer behavior is associated with delinquent behavior, but that may not translate to actually experiencing disciplinary sanctions. Further research is needed before conclusions should be drawn regarding this null finding.

Limitations and Conclusions

Findings need to be interpreted while also considering the current study's limitations. First, the current study was

correlational in nature, and correlation does not equate to causation. Second, the current study only examined associations across 2 months, and relations may look quite different over larger time spans. Third, disciplinary actions were recorded using a likert scale that lumped disciplinary actions greater than 4 together, which may have attenuated relations. Furthermore, we were unable to determine what type of behavior led to the disciplinary actions in the current study. Note, however, that relations were found despite these potential limitations. Nonetheless, future research should use a more refined measure of that identifies what type of offense led to the disciplinary action and that is continuous in nature with no ceiling regarding the number of disciplinary actions the child received. Furthermore, to our knowledge, this is one of the first studies to examine disciplinary actions within an after-school care program, and we relied on the director's formal record of disciplinary actions. Future research establishing the reliability/validity of this measure is needed. Fourth, the adequate to low internal consistency associated with proactive aggression may have attenuated findings; yet again relations were found. Future studies should use a more internally consistent measure of proactive aggression. We also relied on child reports of aggression and peer delinquency, and children may have reported in a socially desirable manner. Children have been found to be valid and reliable reporters of externalizing behavior (e.g., Cashel, 2003; Darrick et al. 2003; Moore & Ames, 2002), proactive and reactive subtype of aggression in particular (Fite, Stoppelbein & Greening, 2009; Raine et al. 2006). Nonetheless it will be important for future research to further examine current relations using other informants of behavior. Finally, there are additional limitations associated with our measure of peer delinquency. First, there is literature indicating that children can attribute some of their own behavior to the behavior of their peers, which may suggest that children are not the best informants of peer delinquency (Bauman & Ennett, 1996; Haynie, 2001). Future research should use additional assessments of peer behavior, included peer self-reports. Secondly, the current study allowed children to identify who they perceived as their best friend, regardless of whether or not the child attended the program, because we felt that this was the most accurate assessment of perceived best friend delinquency. Furthermore, even if the best friend does not attend the after-school program, it does not mean that the best friend was incapable of carrying out behavior that prevents a child from experiencing disciplinary action within the after-school care program. Nonetheless, future research may benefit from focusing specifically on delinquent peer behavior within the after-school program.

Despite these limitations, the current study provides evidence for a link between proactive aggression and disciplinary problems, suggesting that goal-oriented and calculated aggressive behavior is positively linked to disciplinary action. Moreover, this association appears to be most evident in situations in which the child does not have a delinquent best friend. Proactively aggressive behavior appears to not only put children at risk for disciplinary problems but also for future problem behavior (e.g., Fite et al. 2008a; Fite et al. 2011), and as such proactively aggressive behavior needs to be targeted for the prevention of more serious antisocial behavior. Proactive aggression is associated with focusing on the positive outcomes of aggression (e.g., Crick & Dodge, 1996; Dodge et al. 1997). It may be that interventions need to include a focus on the potentially negative outcomes associated with aggressive behavior, including disciplinary action and ultimate program suspension. Likewise, it may be beneficial to emphasize the importance of caregiver and program staff monitoring/supervising child behavior, as being unsupervised is a risk factor for the exacerbation of problem behavior (Gottfredson, Gottfredson, & Weisman, 2001; National Research Council and Institute of Medicine, 2002).

Furthermore, study findings suggest that reactive aggression may be negatively associated with subsequent disciplinary problems. This finding should not be interpreted to mean that reactively aggressive behavior is not associated with future problem behavior, as reactive aggression appears to be associated with more internalizing rather than externalizing problem behavior (e.g., Fite et al. 2010; Fite, Stoppelbein, & Greening, 2009). Rather, findings further support the notion of different developmental pathways for subtypes of aggression, suggesting the need to tailor interventions accordingly.

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