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Conflict-Related Social Cognitions as Predictors of Aggression
and Close Friendship Competence in Adolescence

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Abstract

We examined the link between aggression and close friendship competence in adolescence and explored the hypothesis that conflict-related social cognitions underlie both, promoting aggression and impeding close friendship competence. Adolescents ($N=81$) were assessed at age 15 and again two years later. As predicted, a strong link between aggression and close friendship competence was not found. However, self-efficacy expectations in conflict situations and beliefs supporting aggression, the two types of social cognitions examined, were consistently related to aggression and close friendship competence. Adolescents whose self-efficacy expectations were low and those whose beliefs were more supportive of aggression were more aggressive and less competent in close friendships as rated by their close peers. Those whose beliefs were more supportive of aggression maintained a higher level of aggression than other adolescents and became less competent in close friendships from age 15 to 17, and those with low self-efficacy decreased in close friendship competence over time. By adolescence, social cognitions related to interpersonal conflict appear to underlie both aggression and close friendship competence and could place individuals at risk for difficulties in social relationships in adulthood.

Conflict-Related Social Cognitions as Predictors of Aggression

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The establishment of close, confiding friendships is widely recognized as a major task of social development in adolescence (Berndt, 1996; Buhrmester, 1990; Hartup, 1989). Among the potential risk factors for difficulties in forming close friendships, research in childhood suggests that aggressive behavior should be prominent. Yet, while childhood aggression is strongly associated with myriad problems in forming positive peer relationships (Coie, Dodge, & Kupersmidt, 1990; Crick, Casas, & Mosher, 1997; Dodge, Coie, Pettit, & Price, 1990; Newcomb, Bukowski, & Pattee, 1993), in adolescence the link between aggression and friendship leads to equivocal, inconclusive, and even some opposite findings (Cairns, Cairns, Neckerman, Gest, & Garipey, 1988; Coie et al., 1990; Dishion, Andrews, & Crosby, 1995; Dodge, Price, Bachorowski, & Newman, 1990; Luthar & McMahon, 1996).

A developmental perspective suggests that the connection between aggression and peer relationships observed in childhood is less likely to disappear in adolescence than to undergo transformations in form and expression as developmental tasks change and new cognitive capacities emerge and that difficulties managing conflict may form a common underlying risk basis for problems in interpersonal relationships across ages (Allen, Leadbeater, & Aber, 1994; Sroufe & Jacobvitz, 1989). In childhood, controlling overt aggression toward peers is a primary social developmental task. The corresponding task in adolescence is likely to be managing conflict in forming and maintaining close, confiding friendships. By adolescence, the prevalence of overt acts of aggression has declined and cognitive capacity has increased greatly, allowing for self-regulation of behavior via social cognitions (Bandura, 1986; Bierman, Smoot, & Aumiller, 1993;

Cairns, Cairns, Neckerman, Ferguson, & Garipey, 1989; Coie et al., 1990). A social-cognitive developmental model proposes that social cognitions, such as self-efficacy expectations and beliefs supporting aggression, are likely to influence aggression and potentially other social behaviors as well (Bandura, 1986; 1997; Huesmann, 1988; Guerra, Huesmann, & Hanish, 1995; Slaby & Roedell, 1982). Conflict-related social cognitions underlying aggression may become directly associated with close friendship competence as the direct link between aggression and close friendship competence attenuates.

Both normative beliefs supporting aggression (Guerra et al., 1995; Guerra & Slaby, 1990; Huesmann, 1988; Slaby & Guerra, 1988) and low self-efficacy expectations in conflict situations appear likely to affect the processing of social information (Guerra et al., 1995; Huesmann, 1988) in ways that would increase the prevalence of hostile behavior and undermine close friendships. These social cognitions constitute response-outcome expectancies and standards of conduct which govern the self-regulation of behavior (Bandura, 1986; 1997; Guerra et al., 1995; Huesmann, 1988). Social cognitions can be measured in childhood, and become more individualized and stable in adolescence (Huesmann, 1988; Huesmann, Guerra, Zelli, & Miller, 1992; Slaby & Guerra, 1988). While considerable research has been devoted to the role of specific social cognitions in children's aggression, much less attention has been directed toward their function in adolescents' aggression (Dodge, Price, et al., 1990; Parke & Slaby, 1983; Slaby & Guerra, 1988). Virtually no research has examined a link between conflict-related social cognitions and close friendship competence in adolescence.

Normative beliefs have been defined as the personal standards of acceptable and unacceptable behavior that are specific to (i.e., normative for) each individual (Guerra et al.,

1995). Research with both children and adolescents has linked beliefs supporting aggression to higher levels of overt aggression (Bentley & Li, 1995; Guerra et al., 1995; Guerra & Slaby, 1990; Huesmann, 1988; Parke & Slaby, 1983; Perry, Perry, & Rasmussen, 1986; Slaby & Guerra, 1988). Change in beliefs supporting aggression in challenging situations has been found to be a strong post-test predictor of adolescents' actual aggression in interventions using cognitive mediation techniques (Guerra & Slaby, 1990). We propose that beliefs supporting aggression may reflect an underlying predisposition toward hostility in the face of interpersonal conflict that may not only promote aggression but may also interfere with the development of close friendships. For example, a hostile adolescent may believe that physical confrontation and harm is acceptable in interpersonal conflicts and thus need to maintain a guarded stance even with friends. Such an adolescent would be unlikely to inspire the trust or confidence of peers. Beliefs supporting aggression thus seem potentially to underlie both adolescents' aggression and their deficits in close friendship competence and seem likely to predict changes in levels of aggression and competence over time, a proposition which has not yet been empirically examined.

In addition to beliefs supporting aggression, low self-efficacy expectations in situations involving conflict appears particularly likely both to reflect vulnerabilities to aggression and to create problems in close friendships. Self-efficacy expectations refer to individuals' beliefs about their ability to perform competent behaviors should they attempt them, and these beliefs influence the amount of effort and persistence an individual will devote to performing prosocial behaviors (Bandura, 1997). In conflictual social situations, low self-efficacy expectations are cross-sectionally linked to being less likely to adopt and maintain proactive, skillful strategies and being more likely to resort to maladaptive and aggressive ones (Allen, Leadbeater, & Aber, 1990; 1994;

Bandura, 1997; Dodge, Bates, & Pettit, 1990; Dodge, Pettit, McClaskey, & Brown, 1986).

Children who respond aggressively to ambiguous provocation have been found to have lower self-efficacy expectations with respect to prosocial responses (Erdley & Asher, 1996). Given that conflict and other difficulties commonly arise in adolescents' close friendships (Berndt, 1996; Laursen, 1995), an adolescent who does not feel that she or he can behave prosocially in problem situations may be less likely to handle the challenge of forming and maintaining close friendships successfully. As with beliefs supporting aggression, low self-efficacy expectations may promote aggression and also may undermine close relationships with peers, a possibility that prior research has not yet addressed.

In summary, the association between aggression and close friendship in adolescence is not well understood. A developmental perspective suggests that the task of acquiring basic control of physical aggression in childhood peer relationships may evolve into the more subtle challenge of learning to handle conflictual interactions with close friends in relationship-maintaining ways in adolescence. Low self-efficacy expectations in conflictual situations and beliefs supporting aggression -- two types of conflict-related social cognitions -- appear likely to underlie both aggression and poor social functioning in adolescence. The relation of conflict-related social cognitions to aggression in adolescence has received only limited attention in primarily cross-sectional research, but more importantly, the possibility that these social cognitions also may explain problems in close friendships in adolescence has not been empirically explored in the existing literature.

This study addressed these issues in an ethnically and socio-economically diverse sample of moderately at-risk 9th and 10th graders. The sample was selected to allow assessments within

a maximally meaningful range of psychosocial functioning, including substantial numbers of adolescents functioning both adequately and poorly. In this multi-method, multi-reporter, longitudinal study, we first examined whether close friendship competence is linked directly to aggressive behavior in adolescence -- a link that existing research suggests will be weak at best. Second, we considered the role of low self-efficacy expectations and beliefs supporting aggression as social cognitions that may form an underlying basis of risk in social development. We expected low self-efficacy expectations and beliefs supporting aggression to be associated with both greater aggression and poorer close friendship competence, and, furthermore, to be related to changes in levels of aggression and close friendship competence over a two year period during mid-adolescence. Additionally, we considered potential sex differences when examining each of these questions, as sex differences are frequently observed in both studies of aggression and close friendship competence (Buhrmester, 1996; Olweus, 1993; Parke & Slaby, 1983; Shulman, Laursen, Kalman, & Karpovsky, 1997).

Method

Participants

Data were collected from 81 adolescents (38 male and 43 female) and their close friends at two time periods approximately two years apart. Adolescents were in the middle of their 15th year on average ($M = 15.48$, $SD = 0.79$) at the first time period, which will be referred to as the age 15 assessment. Adolescents were in the middle of their 17th year ($M = 17.57$, $SD = .095$) at the second time period, which will be referred to as the age 17 assessment. The self-identified racial/ethnic background of the adolescents was 69% European-American, 30% African-American, and 1% Native American. Data were obtained from an additional 21 adolescents who

were unable to nominate close friends who could participate at one or both time points. Given the reliance upon peers as reporters of adolescents' close friendship competence, these 21 adolescents could not be included in the primary analyses. Comparison of these adolescents to the 81 with close friend data are presented in the preliminary analyses.

Adolescents were recruited from ninth and tenth grade students in two public school systems drawing from rural, suburban, and urban populations. Adolescents with risk factors including one or more failing grades in a term, a history of suspensions, 10 or more absences in a term, and/or being older than usual for their grade were targeted. These broad selection criteria were established to sample a sizeable range of adolescents who could be identified from academic records as having the potential for future academic and social difficulties, including both adolescents already experiencing serious difficulties and those performing adequately with only occasional, minor problems. As intended, these criteria identified approximately one-half of all 9th and 10th grade students as eligible for the study.

Peers were recruited through participating adolescents. At both assessment periods, adolescents nominated several friends who knew them well. An effort was made to recruit two friends of each adolescent at each time period. Age 15 peers reported on average that they had known the adolescents who nominated them nearly 5 years. The median period of acquaintance was over three-and-a-half years. Age 17 peers reported on average that they had known the adolescents who nominated them more than 6 years. The median period of acquaintance was five years.

Procedure

High school personnel identified adolescents who met the study's inclusion criteria of

being at-risk for school failure. Parents of these youth were contacted first by letters, which described the study as an ongoing investigation into the lives of teenagers and families. Families who indicated they were interested in the study were contacted by telephone. The adolescent and parent(s) in approximately 50% of the families who were contacted agreed to participate. At age 15, adolescents and their parents participated in two three-hour interview sessions for which the family received \$105. Adolescents who participated in the age 17 sessions earned a total of \$65. Interviews took place in private rooms within a university clinic.

Peers of the adolescents who provided names and gave consent for their friends to be contacted were reached via telephone and asked to participate. Peers received \$10 at age 15 and \$20 at age 17 for participating in a one-hour private interview session. When two peers reported on an adolescent, the responses of those two peers were averaged.

All participants gave active, informed consent before each interview session, and parents provided informed consent for teenagers under 18 years of age. Confidentiality of data was guaranteed in the introductions to each session, in the informed consent agreement, and during the sessions. A U.S. Department of Health and Human Services Confidentiality Certificate protected participants' data from subpoena by local, state, and federal courts. All participants were told they should skip questions and decline any portion of the interview with which they felt uncomfortable or to which they felt they could not respond honestly.

Measures

Aggression. Aggression was assessed at ages 15 and 17 by compositing separate measures of adolescents' self-reported aggressive behavior and peers' reports of adolescents' aggressive behavior. Self-reported aggression data were obtained from the aggression subscale of

the Youth Self-Perception Profile, a widely-used measure with good reliability and validity (Achenbach, 1991). Adolescents were asked to rate how well a variety of descriptions of symptomatic behaviors, such as "I threaten to hurt people," applied to them during the previous six months on a scale of 0="not true," 1="somewhat or sometimes true," and 2="very or often true." Cronbach's alpha coefficient for the self-reported aggression items was .86 at age 15 and .82 at age 17. Peer-reported aggression data were obtained by asking peers to respond to two items presented using the format of the Self-Perception Profile for Adolescents (Harter, 1988), which is designed to reduce social desirability effects. Items assessed frequency of fighting and of more serious criminal violence (i.e., jumpings and muggings). Peers rated how true each item was of the target adolescents on a four-point scale. Cronbach's alpha coefficient for the peer-reported aggression items was .66 at age 15 and .57 at age 17. The adolescent-reported and peer-reported aggression scores were standardized and summed to form a multi-reporter measure of aggression. This composite measure demonstrated expected relations with other indices of problematic behavior in the sample (e.g., positive relations with delinquent acts and school suspensions). This approach to measurement has been previously found to yield highly reliable and valid data with a similar sample (Allen, Moore, Kuperminc, & Bell, 1998).

Close Friendship Competence. Adolescents' ability to make close friends with whom they can share personal thoughts and secrets was assessed by their peers using the close-friendship competence subscale from a modified version of the Self-Perception Profile for Adolescents (Harter, 1988) at ages 15 and 17. Instead of rating themselves as the instrument was originally designed, peers rated how true each of the five close friendship subscale items were for the target adolescents. A sample item was "Some people are able to make really close friends BUT Other

people find it hard to make really close friends.” Peers rated whether the statement on the right or the left of the “BUT” was “really true” or “sort of true” of their friend, yielding a 4-point rating scale. Cronbach’s alpha coefficient for the close friendship competence subscale was .82 at age 15 and .75 at age 17.

Self-Efficacy Expectations. Self-efficacy expectations (Bandura, 1997) were measured at age 15 using a subset of nine vignettes adapted from the Adolescent Problem Inventory (API) for boys (Freedman, Rosenthal, Donahoe, Schlundt, & McFall, 1978) and the Problem Inventory for Girls (PIAG) (Gaffney & McFall, 1981). Adolescents listened to audiotaped descriptions of nine different situations involving problems with peers, teachers, parents, and other adult authorities. The items were substantially similar for males and females. Self-efficacy expectations were assessed by providing a competent response to each vignette from an unnamed teen as rated by the API and PIAG coding manuals and then asking, "If you were in the situation, do you think you could do what that teen did if you tried to?" Each response was scored on a 10-point Likert scale ranging from 1="Definitely COULD NOT do it" to 10="Definitely COULD do it." Extensive reliability and validity data on the API and PIAG have been reported (Allen et al., 1990; Freedman et al., 1978; Gaffney & McFall, 1981; Hunter & Kelley, 1986; Leadbeater, Hellner, Allen, & Aber, 1989; Ward & McFall, 1986). Cronbach’s alpha coefficient was .75 for boys and .57 for girls in the current sample.

Beliefs Supporting Aggression. At age 17, adolescents completed a survey of their beliefs supporting aggression comprised of four subscales (aggression is legitimate, aggression increases self-esteem, aggression helps avoid a negative image, and victims of aggression deserve that aggression) from the Beliefs Supporting Aggression scale developed by Guerra (1986) and Slaby

and Guerra (1988). Adolescents responded to 15 items, such as "It's O.K. to hit someone if you don't like him or her," on a 5-point Likert scale ranging from "strongly disagree" to "strongly agree." The Beliefs Supporting Aggression scale has been found to have acceptable reliability and validity (Slaby & Guerra, 1988). Cronbach's alpha coefficient for the beliefs supporting aggression items in this study was .77.

Results

Preliminary analyses

Adolescents without peers. Adolescents who were unable to name peers who could participate in the study rated themselves as significantly more aggressive at age 15 ($t(100) = -2.07, p < .05$), had lower self-efficacy expectations ($t(98) = 2.09, p < .05$) and had beliefs more supportive of aggression ($t(100) = -3.26, p < .01$) than adolescents who named peers who participated. These findings are consistent with the hypothesized associations between close friendship competence, aggression, self-efficacy, and beliefs supporting aggression, although they don't permit further analyses using the peer measure of close friendship competence. All succeeding analyses were conducted on the 81 adolescents who named friends who came in for the study.

Demographics. The relation of sex, minority status, and age to aggression, close friendship competence, self-efficacy expectations, and beliefs supporting aggression was examined. Only beliefs supporting aggression differed significantly between boys and girls. Boys had beliefs that were more supportive of aggression ($t(79) = 3.41, p < .001$). None of the variables of interest differed significantly by minority status, and age was significantly related to aggression at age 15 only, with older adolescents having higher levels. Several trend level (i.e., p

< .10) associations also were found: girls were higher in close friendship competence at age 15 and had greater self-efficacy expectations; minority adolescents had higher levels of aggression at age 17 and beliefs that were more supportive of aggression; and older adolescents had lower close friendship competence at age 15 and lower self-efficacy expectations.

Given the significant and trend-level associations between the demographic and other variables, sex, minority status, and age were entered in a block in all hierarchical regression equations in order to assure that associations between the predictor and outcome variables were not artifacts of demographic differences among the adolescents. Interactions between the demographic and predictor variables were entered in a block as a final step in all regression models. The block of interaction terms did not significantly contribute to any of the models tested, indicating that the demographic variables did not moderate any of the effects, and thus interactions are not presented or discussed further below.

Absolute change from age 15 to age 17. Aggression scores decreased over time, $t(80) = 12.47, p < .001$. Age 15 close friendship competence did not differ significantly from age 17 ratings, $t(80) = -1.63, p > .05$.

Correlations. Zero-order correlations between aggression, close friendship competence, self-efficacy expectations, and beliefs supporting aggression are presented in Table 1. Moderate correlations were found both across measures and across time. These correlations will be examined further in the regression analyses that follow.

Primary analyses

Aggression and close friendship competence. First, the prediction of close friendship competence from aggression was examined cross-sectionally using hierarchical regression

analysis. At age 15, aggression predicted close friendship competence, accounting for 5% of the variance in the model (Table 2). Adolescents who were less aggressive were rated as having greater close friendship competence at age 15. At age 17, aggression was no longer significantly related to close friendship competence. Next, longitudinal predictions were examined. Age 15 aggression was a significant predictor of age 17 close friendship competence at the trend level only (i.e., $p < .10$). When age 15 close friendship competence was covaried, age 15 aggression did not significantly predict change in close friendship competence over time.

Aggression and social cognitions. A hierarchical regression analysis was used to predict aggression at age 17 from self-efficacy expectations and beliefs supporting aggression (Table 3). After the demographic factors, self-efficacy expectations at age 15 were entered and accounted for 7% of the variance in aggression. Beliefs supporting aggression was entered next and contributed significantly to the model, explaining an additional 14% of the variance. Adolescents with lower self-efficacy expectations and beliefs more supportive of aggression were more aggressive.

Predictors of changing levels of aggression over time (predicting aggression at age 17 after accounting for corresponding levels at age 15) were examined next. Aggression was relatively stable over time, $r = .61$, $p < .001$. After age 15 aggression and the demographic variables were entered, self-efficacy expectations did not account for additional variance in the model. When beliefs supporting aggression was entered, it was associated with change in aggression over time, accounting for an additional 6% of the variance in age 17 aggression. Adolescents with beliefs more supportive of aggression maintained a higher level of aggression over time than the other adolescents.

Close friendship competence and social cognitions. The association of adolescents' conflict-related social cognitions with close friendship competence was evaluated next. A hierarchical regression analysis was used to examine the prediction of age 17 close friendship competence (Table 4). Demographic factors and aggression at age 15 were entered first, followed by self-efficacy expectations, and then beliefs supporting aggression. Both types of social cognitions significantly contributed to the model, with self-efficacy accounting for an additional 8% and beliefs accounting for 5% more of the variance in age 17 close friendship competence. Adolescents with lower self-efficacy expectations and beliefs more supportive of aggression had lower close friendship competence as rated by their peers.

Finally, we examined predictors of changing levels of close friendship competence over time (predicting close friendship competence at age 17 after accounting for corresponding levels at age 15). In these models, both self-efficacy expectations and beliefs supporting aggression were significantly associated with change over time in close friendship competence. Adolescents who had lower self-efficacy expectations and those who had beliefs more supportive of aggression were more likely to decrease in close friendship competence over the two-year span of the study.

Discussion

We examined the link between aggression and close friendship competence during adolescence and explored the hypothesis that conflict-related social cognitions underlie both during this time period. As predicted, a strong link between aggression and close friendship competence was not found. In contrast, social cognitions related to conflict in interpersonal relationships were associated with both levels of aggression and close friendship competence. Adolescents' self-efficacy expectations in conflict situations and beliefs supporting aggression, the

two types of social cognitions examined, were independently related to both aggression and close friendship competence as hypothesized. Adolescents whose self-efficacy expectations were low and whose beliefs were more supportive of aggression were both more aggressive and less competent in close friendships as rated by their close peers.

This study suggests that conflict-related social cognitions that have been previously linked to deviance and aggression also are predictive of competence in close friendships in adolescence. Adolescents who had lower self-efficacy expectations and beliefs more supportive of aggression had lower close friendship competence cross-sectionally and decreased in level of close friendship competence from age 15 to 17, which is consistent with Cairns and Cairns' (1991) proposition that adolescents' deviant beliefs and values affect not only specific behaviors but also their views of relationships. Bugental (1993) has suggested that when adults lack perceived control of a situation (e.g., via low self-efficacy), they may experience levels of autonomic arousal in conflictual situations that interfere with appropriate social behavior. When faced with conflict in social situations, adolescents with low self-efficacy expectations and beliefs more supportive of aggression may thus be less able to discuss and solve the conflict in a thoughtful and nonaggressive manner. Furthermore, adolescents are likely to have friends with similar social-cognitive expectations and beliefs (Snyder, Dishion, & Patterson, 1986; Cairns et al., 1988). It may be emotionally and physically safer for friends with low self-efficacy and beliefs supporting aggression not to confide in and rely on each other. Given the primacy of the developmental task of learning to establish intimate relationships with peers in adolescence (Berndt, 1996; Buhrmester, 1990; Hartup, 1989), these findings suggest that conflict-related social cognitions may be central to social development during this period.

Regarding predictors of aggression, our findings are consistent with prior research linking aggression and beliefs supporting aggression (Bentley & Li, 1995; Guerra et al., 1995; Guerra & Slaby, 1990; Huesmann, 1988; Parke & Slaby, 1983; Perry, Perry, & Rasmussen, 1986; Slaby & Guerra, 1988). This study extends these findings by including self-efficacy expectations as an additional important social-cognitive factor. Both self-efficacy expectations and beliefs supporting aggression independently contributed to explaining adolescents' aggressive behavior. Low self-efficacy expectations in conflictual situations may influence an adolescent to implement hostile strategies over and above the effect of beliefs that support aggression. This study also extends prior cross-sectional research by examining whether conflict-related social cognitions may be useful in understanding change over time in levels of aggressive behavior. Beliefs supporting aggression were associated with aggression at age 17 even after covarying levels of aggression at age 15; these beliefs were linked to changes in levels of aggressive behavior during this part of adolescence.

Although sex differences in aggression and close friendship have been well documented, our findings were generally consistent for boys and girls. The at-risk nature of the sample may have included a higher proportion of aggressive girls than would appear in a normative sample and therefore the expected sex differences in aggression and close friendship may not have been found. One exception to the absence of sex differences is the association of sex and beliefs supporting aggression. Male adolescents' beliefs were more supportive of aggression than female adolescents' beliefs. Thus, the greater approval of aggression by second- through fourth-grade boys in comparison to girls found by Huesmann et al. (1992) appears to continue into adolescence.

Overall, the findings indicate that the association between aggression and close friendship is not as direct in adolescence as in childhood and instead appears to be mediated by conflict-related social cognitions. Although our data do not allow us to examine social functioning from childhood to adolescence, these findings suggest the hypothesis that there is heterotypic continuity across this time span in the association of aggression and problematic social functioning. As overt aggression decreases, the underlying risk basis for aggressive behavior may come to lie in conflict-related social cognitions which are linked to age-specific functional impairments not only in aggression but also in close friendship competence. The idea that lack of close friendship competence is an age-specific manifestation of problems in managing conflict additionally is consistent with findings that aggression in adult social relationships (e.g., spousal and child abuse) is related to problems in forming and maintaining intimate relationships and even to low efficacy expectations (Bugental, Blue, Cortez, & Fleck, 1993; Bugental, Blue, & Cruzcosa, 1989; Bugental, Mantyla, & Lewis, 1989; Cooney, 1996).

Furthermore, the finding that social cognitions may be more tightly linked than actual physical aggression to close friendship competence may partly explain a discrepancy in the literature in the description of delinquent adolescents' friendships. Some researchers have emphasized that delinquent adolescents have close friendships (Cairns et al., 1988; Claes & Simard, 1992; Giordano, Cernkovich, & Pugh, 1986), while others have stressed that these friendships are often of low quality (Dishion et al., 1995; Hirschi, 1969; Marcus, 1996). Cairns et al. (1988) suggest that while highly aggressive adolescents may not be liked by many peers, they are able to form reciprocated best friendships and these friendships may be "no less meaningful" (p. 822) than those of less aggressive adolescents. While aggression may not directly hinder the

quality of adolescents' friendships because it usually is directed outside the dyad, low self-efficacy expectations and beliefs supporting aggression may nevertheless interfere. Aggressive adolescents who have beliefs that do not support aggression and who have high self-efficacy expectations indeed may have close friendships of good quality. In contrast, those who have low self-efficacy and beliefs supporting aggression may experience close friendships as another context in which to practice coercion (Dishion et al., 1995).

Several limitations must be considered in interpreting the results of this study, each of which suggests directions for future research. One primary limitation concerns the sample. Although the examination of moderately at-risk adolescents assured that levels of aggression and friendship difficulties were likely to be of sufficient magnitude to warrant concern, results should not be generalized beyond this population and replication of this study using other at-risk and normative samples is needed. Furthermore, approximately one-fifth of the sample could not name peers who could provide data at one or both assessment points. These adolescents were significantly more aggressive, had lower self-efficacy expectations, and had beliefs more supportive of aggression than those not missing data. Given the links found between conflict-related social cognitions, aggression, and close friendship competence, one explanation for these findings is that these adolescents may have lacked friends who were close enough to be nominated or willing to participate, a possibility that should be examined in future research. Excluding these more extreme adolescents from the sample may well have led to underestimates of effect sizes in the primary analyses.

Another limitation is that although the observed effects occur in longitudinal data, they remain correlational, not causal in nature. It is proposed that social cognitions underlie

aggression and close friendship competence in adolescence, implying that these factors causally affect aggression and close friendship competence. However, effects could easily be bidirectional in nature, as has been hypothesized with respect to childhood aggression and peer relationships. Children who are aggressive and consequently rejected by peers may become hostile which then may cause them to become more aggressive and more likely to experience difficulties in peer relationships (Rubin, Booth, Rose-Krasnor, & Mills, 1995). This cyclical process could continue into adolescence by which point social cognitions related to interpersonal conflict may have gained prominence and come to be associated more directly with close friendship competence. Future studies should examine the directionality of the effects of social cognitions, aggression, and difficulties in close interpersonal relationships and investigate how aggression and social functioning are associated across the life span.

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Table 1

Correlations

	1.	2.	3.	4.	5.	6.
1. Aggression Age 15	--	61***	-27**	-23*	-31**	34**
2. Aggression Age 17		--	-08	-18	-28**	51***
3. Close Friendship Competence Age 15			--	22*	26*	-21+
4. Close Friendship Age 17				--	32**	-35***
5. Self-Efficacy Age 15					--	-54***
6. Beliefs Supporting Aggression Age 17						--

Note. All correlations are multiplied by 100. *** $p \leq .001$. ** $p \leq .01$. * $p \leq .05$. + $p \leq .10$.

Table 2

Aggression as a Predictor of Close Friendship Competence

<u>Step</u>	<u>Close Friendship Competence Age 15</u>		
	<u>β</u>	<u>R^2</u>	<u>ΔR^2</u>
1. Sex (1=Male, 2=Female)	.18		
Minority Status (1=Nonmin., 2=Min.)	.02		
Age	-.17	.07	
2. Aggression Age 15	-.24*	.12*	.05*

Note. β -weights are value at entry into the model. * $p \leq .05$.

Table 3

Self-Efficacy Expectations and Beliefs Supporting Aggression as Predictors of Aggression

	<u>Aggression Age 17</u>		
<u>Step</u>	<u>β</u>	<u>R^2</u>	<u>ΔR^2</u>
1. Sex (1=Male, 2=Female)	-.11		
Minority Status (1=Nonmin., 2=Min.)	.19		
Age	.08	.06	
2. Self-Efficacy Expectations Age 15	-.29**	.13*	.07**
3. Beliefs Supporting Aggression Age 17	.49***	.27***	.14***
		<u>Aggression Age 17 (Age 15 Covaried)</u>	
<u>Step</u>	<u>β</u>	<u>R^2</u>	<u>ΔR^2</u>
1. Aggression Age 15	.61***	.37***	
2. Sex (1=Male, 2=Female)	-.11		
Minority Status (1=Nonmin., 2=Min.)	.12		
Age	-.11	.42***	.05
3. Self-Efficacy Expectations Age 15	-.12	.43***	.01
4. Beliefs Supporting Aggression Age 17	.33**	.49***	.06**

Note. β -weights are value at entry into the model. *** $p \leq .001$. ** $p \leq .01$. * $p \leq .05$.

Table 4

Self-Efficacy Expectations and Beliefs Supporting Aggression as Predictors of Close FriendshipCompetence

<u>Step</u>	<u>Close Friendship Age 17</u>		
	<u>β</u>	<u>R^2</u>	<u>ΔR</u>
1. Sex (1=Male, 2=Female)	-.04		
Minority Status (1=Nonmin., 2=Min.)	-.03		
Age	-.15	.02	
2. Aggression Age 15	-.21+	.06	.04+
3. Self-Efficacy Expectations Age 15	.30**	.14*	.08**
4. Beliefs Supporting Aggression Age 17	-.32*	.19**	.05*
		<u>Close Friendship Age 17</u>	
<u>Step</u>	<u>β</u>	<u>R^2</u>	<u>ΔR</u>
1. Close Friendship Competence Age 15	.22*	.05*	
2. Sex (1=Male, 2=Female)	-.08		
Minority Status (1=Nonmin., 2=Min.)	-.02		
Age	-.08	.06	.01
3. Aggression Age 15	-.18	.09	.03
4. Self-Efficacy Expectations Age 15	.28*	.15+	.06*
5. Beliefs Supporting Aggression Age 17	-.32*	.20*	.05*

Note. β -weights are value at entry into the model. ** $p \leq .01$. * $p < .05$. + $p < .10$.