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The Role of Adolescent Friends, Romantic Partners, and Siblings in the Emergence of the Adult Antisocial Lifestyle

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Abstract

This study investigated the contribution of social processes in boys' adolescent relationships in 3 key domains—same-sex friends, cross-sex romantic partners, and younger siblings—to continued association with delinquent peers in young adulthood and, therefore, to continuance of an antisocial lifestyle. It was hypothesized that levels of negative interaction and antisocial talk observed during problem-solving discussions would be associated across the 3 domains. The influences of negative interactions and antisocial talk in the adolescent relationships on young-adult delinquent peer association were compared in 2 mediational models. It was posited that antisocial talk would be more predictive of continued association with delinquent peers than would negative interactions. Hypotheses were tested on an at-risk sample of young men (the Oregon Youth Study). Findings were generally in keeping with the hypotheses.

Involvement with delinquent peers plays a critical role in the developmental trajectories of conduct-disordered children, regardless of age of onset of their problem behaviors (Moffitt, 1993; Patterson, Capaldi, & Bank, 1991), and has been associated with escalating delinquent behaviors (Elliott, Huizinga, & Ageton, 1985; Keenan, Loeber, & Green, 1999; Simons, Whitbeck, Conger, & Conger, 1991) and related problems such as substance abuse in adolescence (Dishion & Andrews, 1995). Thus far, little is known about the continuity of delinquent peer association and antisocial behavior from adolescence into young adulthood and the social processes that influence its continuity. The prevalence of delinquent behavior declines in late adolescence and young adulthood; however, continued interactions with delinquent peers have been associated with persistence in offending in young adulthood (Wiesner & Capaldi, 2001) and characterize a delinquent style of life (West & Farrington, 1977). Understanding the processes related to continued offending in adulthood is a critical issue and one for which we have sparse information. In this study, we investigated social processes embedded within key adolescent relationships that may influence the continuance of social risk context into adulthood and also continued association with delinquent peers.

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The influences of two different social processes in these relationships, namely negative interactions (as previously learned within the family) and delinquency training (as previously learned within the peer group), were examined for their effect on young-adult delinquent peer association.

Family Negativity

Children learn many of their social behaviors in their family of origin (e.g., Maccoby & Martin, 1983); thus, the family plays an important role in the development of peer relations (e.g., Parke & Ladd, 1992). Children socialized in family environments characterized by coercive exchanges and poor family management behaviors (e.g., inconsistent, ineffective discipline; poor monitoring and supervision), in which positive social skills are not modeled or reinforced, learn to use coercive and aggressive strategies to influence others (Patterson, 1982; Simons et al., 1991). Negativity in family interaction can characterize the family climate and involve other children, particularly siblings (Brody, Stoneman, & McCoy, 1994; Patterson, 1982, 1984). In fact, sibling interaction in families with aggressive children appears to be another context in which children fail to acquire positive social skills and provides a training ground for learning coercive exchanges (Patterson, 1986). When children's use of coercive interpersonal style generalizes from the family to peers outside the home, children face rejection by their more socially skilled peers (Coie & Kupersmidt, 1983) and become vulnerable to drifting into associations with peers who are similarly aggressive and unskilled (Patterson & Yoerger, 1993).

Adolescence can be considered a transitional period in children's development and a time of significant changes in children's relationships with both their parents and their peers. Children appear to distance themselves from their parents while simultaneously orienting toward peers (Fulgini & Eccles, 1993) and report that they find friendships the most satisfying of all relationships (Buhrmester & Furman, 1987). During adolescence, there is an increase in the amount of unsupervised time spent with friends and peers (Larson & Richards, 1991) and a heightened susceptibility to peer influence (Steinberg & Silverberg, 1986). Adolescents are at risk for associating with delinquent peers, particularly if their unskilled and antisocial behaviors have led to rejection by nondelinquent peers (Dishion, Patterson, Stoolmiller, & Skinner, 1991; Thornberry & Krohn, 1997). The strong influences of delinquent peers can be illustrated by the outcomes of an intervention that treated high-risk boys in a group setting. Participation in the peer group interventions had the inadvertent consequence of leading to an increase in boys' tobacco use and to more behavior problems at school at 1-year (Dishion & Andrews, 1995) and 3-year follow ups (Dishion, McCord, & Poulin, 1999). Family influences have been found to have even longer term consequences for key relationships beyond sibling and peer interactions. Poor parenting has been found to predict increased risk for antisocial behavior that, in turn, was associated with increased risk of aggression toward a romantic partner in late adolescence (Capaldi & Clark, 1998). Furthermore, interactions with parents and with siblings during adolescence have been found to predict the quality of couples' interactions in young adulthood (Conger, Cui, Bryant, & Elder, 2000).

Delinquency Training Within Friendships

Adolescence has been identified as an important time for children to establish peer networks outside the family (Dishion, Poulin, & Medici Skaggs, 2000). In contrast to the parent-child relationships that are organized hierarchically, these adolescent relationships are considered horizontal and egalitarian relationships (Hartup, 1979). These egalitarian qualities make it possible that processes that take place within peer relationships may be more salient to development than family processes are during adolescence. Regarding influences of

delinquent peers, what appears critical is not simply the level of the peers' delinquency and whether they have been arrested but also the pattern of interactions that takes place between the peers (Dishion, Spracklen, Andrews, & Patterson, 1996). By examining peer interactions and the topics of their discussions, the study revealed that the common ground for delinquent dyads was talk about antisocial topics of a rule-breaking nature and that the adolescents derived enjoyment and shared positive affect in these antisocial exchanges (Dishion et al., 1996). The anti-social talk and positive affective response were conceptualized as delinquency training, by which delinquent peers encouraged each other to engage in new types of delinquent behavior and reinforced and maintained on-going delinquent behavior. In addition to escalating delinquency, delinquency training has been associated with increases in violent behaviors and substance use (Dishion, Capaldi, Spracklen, & Li, 1995; Dishion, Eddy, Haas, Li, & Spracklen, 1997; Dishion et al., 1996).

Developmental Model

In the current study, we hypothesized that observed relationship behaviors would generalize across the type of relationship; thus, the Oregon Youth Study (OYS) young men would exhibit similarly unskilled and negative interaction styles and antisocial talk with friends, partners, and siblings, and these behaviors would be associated with prior negative interactions in the family of origin. First, the levels of negative interaction and antisocial talk were examined, then the influences of negative interaction and antisocial talk on delinquent peer association in early adulthood were compared. We placed association with delinquent peers within the adolescents' developmental trajectories by considering contributions of the family and the child's own antisocial behavior. The hypothesized developmental model is depicted in Figure 1.

Two alternative models were compared; in each model, an aspect of relationship process in late adolescence was hypothesized to mediate the continuity of association with delinquent peers from midadolescence into young adulthood. In the first model, late-adolescent relationship process was assessed by antisocial talk and, in the second model, by adolescent negative interaction with others. We predicted that both family negative interactions observed in the home and the adolescent's own prior level of antisocial behavior in early adolescence would be important antecedent conditions to midadolescent delinquent peer association. It was expected that delinquent peer association in midadolescence, in turn, would predict both negative interactions and antisocial talk with others in late adolescence and that the effects of family negative interaction and antisocial behavior would be mediated entirely by midadolescent delinquent peer association. Although we predicted that the conflict and rejection associated with unskilled negative interaction with others in late adolescence would make a contribution to association with delinquent peers in young adulthood, we hypothesized that antisocial talk with others would be a stronger predictor of later association with delinquent peers, even when competing for variance with prior and concurrent delinquent peer association. Antisocial talk reflects the social orientation of those involved with respect to societal norms, and it was hypothesized to be an important process related to remaining in a high-risk social context (i.e., engagement with antisocial peers in young adulthood). For the tests of mediated effects, we present direct associations in the form of correlations between the latent variables. If the direct association was significant but became nonsignificant in the presence of the hypothesized mediated pathways, the association could be best described as mediated (Baron & Kenny, 1986; Holmbeck, 1997).

Method

Participants were part of the OYS, a longitudinal study of 206 boys at risk for juvenile delinquency and their families. This community sample was recruited from public schools

located in neighborhoods with a higher than usual incidence of juvenile delinquency for a medium-sized metropolitan area in the Pacific Northwest. All boys in Grade 4 were invited to participate across a 2-year span to form two cohorts of families. The recruitment rate was 74%, and comparison of teacher ratings of the boys' academic skills and problem behavior indicated that boys who declined to participate had slightly less problem behavior than participants (Capaldi & Patterson, 1987). The sampling design was such that the boys had an elevated risk for delinquency (as indexed by the neighborhood). Although the majority of the boys did not have conduct problems in Grade 4, the majority were arrested by young adulthood, with 25% arrested before the age of 14, 29% arrested between the ages of 14 and 17, and 3% arrested after the age of 17. The participants were largely European American (90%) and from families that were lower and working class (75%). As participants in the OYS, the boys and their families were assessed yearly. By use of a multiagent, multimethod assessment strategy, data were collected from home visits; parent and child interviews; parent, child, and teacher questionnaires; brief parent and child telephone interviews; videotaped interaction tasks; school records; and court records. Participation rates in late adolescence and young adulthood averaged about 98% (Capaldi, Chamberlain, Fetrow, & Wilson, 1997).

Procedure

During Grade 6, when the boys were in early adolescence (ages 11–12), three in-home family observations were conducted that resulted in 60 min of focused observations of the boys interacting with their parent(s) and sibling(s). When the boys were in late adolescence, Grade 12 or beyond (ages 17–20), 178 of the boys participated in a friend's assessment with a same-sex friend (average friend age was 18 years, with ages ranging from 14 to 35 years), 170 of the boys participated in a couple's assessment with a cross-sex romantic partner (average partner age was 19, with ages ranging from 14 to 37), and 72 of the boys participated in a sibling's assessment with their younger sibling (average sibling age was 16, with ages ranging from 11 to 22 years). Although there were many boys who did not have younger siblings, of those who did, very few boys and their younger siblings elected not to participate. These assessments included interviews, questionnaires, and videotaped dyadic discussions between the boy and his accompanying participant. For comparability across relationships, in the current study, we focused exclusively on the problem-solving discussions of each dyad. These problem-solving discussions were 10 min long (5 min on a topic the boy chose to discuss and 5 min on a topic the other participant chose to discuss) and were preceded by a warm-up task of planning a party.

Measures

Family negativity in early adolescence—The home observations were coded in person by an observer using the Family Process Code (FPC; Dishion et al., 1983) with codes that provided a measure of family negative behavior (boy's behavior toward parent(s) and younger sibling as well as the latter's behavior toward the boy). The FPC has been described in numerous publications (e.g., Patterson, Reid, & Dishion, 1992). When coding the family interactions, the coder assigned each behavior 1 of 25 FPC content codes defining the interactive content of the behavior and one of six affective ratings from positive to negative affect. Family negative behavior included the following: noncompliance and refusals (e.g., disobeying); negative verbal behavior (e.g., expressions of disapproval) and nonverbal behavior (e.g., negative facial expressions); verbal attacks; coercive and ambiguous coercive behavior (e.g., threatening directives that express a demand); and physical aggression and attacks (e.g., hitting) in combination with all affective ratings.

Two observers coded a randomly selected 15% of the home visits to assess interobserver reliability. The kappa across FPC content codes was .72. The kappa for family negative

behavior was .63. Kappas were computed for the following individual content codes in family negative behavior: noncompliance, negative verbal, verbal attacks, refusals, negative nonverbal, and physical aggression. Using Fleiss's criteria (Fleiss, 1981), we found that of the individual kappas computed, 80% were between .40 and .59 and considered fair and 20% were below .40 and considered poor. The affective ratings kappas were .74 for positive affect, .73 for neutral affect, and .67 for negative affect. Because low base rates can lead to low kappas and low kappas can be the result of either low base rates or coding inaccuracy (Gardner, 1995), kappas were not computed for following low-base-rate codes that were observed, on average, less than one time per reliability session: coerce, ambiguous coerce, and physical attacks. Because the kappa for family negative behavior as a cluster, the unit of analysis, was adequate (Bakeman & Casey, 1995), individual content codes with low kappas and low base rates were retained in family negative behavior.

Negative interaction in late adolescence—The dyadic problem-solving discussions from the friend, partner, and sibling interactions were all coded with the Peer Process Code (PPC; Dishion et al., 1990), which provides specific codes to assess negative interaction. The PPC is a relatively minor adaptation of the FPC with somewhat greater clarification of positive and negative behaviors. When coding the dyadic interactions, the coder assigned each behavior to 1 of 30 PPC content codes and one of six affective ratings from positive to negative affect. Negative interaction included the following: (a) negative verbal statements (e.g., disapproval) and nonverbal behavior (e.g., negative facial expressions); verbal attacks (e.g., name calling); coercive and ambiguous coercive behavior (e.g., threatening directives that express a demand); requests and ambiguous requests; commands and ambiguous commands (e.g., directives); and physical aggression (e.g., shoving), in combination with all affective ratings, and (b) positive verbal statements, talk, and self-disclosure (e.g., evaluation); positive and neutral nonverbal behavior (e.g., head nods); and touch, holding, and physical interaction (e.g., holding hands), in combination with negative affect.

Two observers independently coded a randomly selected 15% of interactions with friends, partners, and siblings. The kappas across PPC content codes were .81 for friends, .78 for couples, and .80 for siblings. The kappas for negative interaction were .75 for friends, .84 for couples, and .82 for siblings. Kappas were computed for the following individual content codes in negative interactions for friends, couples, and siblings: physical aggression, negative verbal, verbal attack, coerce, command, ambiguous command, positive verbal, self-disclosure, vocal, positive nonverbal, and neutral nonverbal. For couples only (these codes were low base rate for friends and siblings), kappas for negative nonverbal, unqualified positive regard, touch and hold, and physical interact were also computed. Using Fleiss's criteria (Fleiss, 1981), coders found that 35% of the individual kappas computed were over .75 and considered excellent, 43% were between .60 and .75 and considered good, 19% were between .40 and .59 and considered fair, and 3% were below .40 and considered poor. For affective ratings, the kappas for positive affect were .88 for friends, .87 for couples, and .88 for siblings; the kappas for neutral affect were .88 for friends, .86 for couples, and .87 for siblings; the kappas for negative affect were .36 for friends, .74 for couples, and .58 for siblings. Kappas were not computed for the following low-base-rate codes (Gardner, 1995) that were observed, on average, less than one time per reliability session: (a) request; ambiguous request; and ambiguous coercion for friends, couples, and siblings; and (b) negative nonverbal; touch and hold; physical interaction; and unqualified positive regard for friends and siblings. As the kappas for the negative interaction were adequate for friends, couples, and siblings clusters—the units of analysis used in the study (Bakeman & Casey, 1995)—individual content codes with low kappas and low base rates were retained.

Antisocial talk in late adolescence—Coders also completed observer ratings (Capaldi, Dishion, & Crosby, 1991) after coding each dyad, which provided a measure of antisocial

talk. Antisocial talk was derived from three items: (a) boy made delinquent, antisocial suggestions during problem solving (e.g., “You could tell mom ‘ok’ and then just do what you want”) rated from 1 (*never*) to 4 (*often*); (b) boy mentioned or planned antisocial activities (e.g., “I’ll pick you up, and then we’ll go get drunk”) rated from 1 (*almost all prosocial activities*) to 5 (*almost all antisocial activities*); and (c) boy swore during the session (e.g., “No s. . .!”) rated from 1 (*never*) to 5 (*very often*). A fourth item of antisocial talk, boy indicated that peers were antisocial, was not included to avoid overlap with the measure of delinquent peer association. Antisocial suggestions and activities involved talk of illegal behavior, rule breaking, violations of societal norms, and deceptive and dishonest behavior. Swearing typically took the form of swear words used in expressions for emphasis. Swearing was correlated with the other two items. For the boy’s antisocial talk toward his dyadic participant, Cronbach’s alpha was .66 for friends, .79 for couples, and .68 for siblings.

Antisocial behavior in early adolescence and delinquent peer association in midadolescence, late adolescence, and young adulthood—The items included in the antisocial behavior and delinquent peer association constructs are outlined in Table 1. Listed for each measure is the respondent, number of items included in the score, sample items, and available reliability information. A detailed description of construct development procedures used in OYS can be found in Capaldi and Patterson (1989). The young-adult delinquent peer association construct that was measured when the boys were young men ages 23–24 years was similar to the adolescent delinquent peer association construct, except for the absence of teacher reports.

Analysis Strategy

Repeated-measures analyses and correlational analyses on the social behaviors in the three relationships were conducted with all available data and pairwise deletion. The Amos program (Arbuckle, 1996) was used to evaluate the two mediational models using all available data and full information maximum-likelihood estimation for missing data. Differential mediational effects by type of relationship were then examined with multiple regression analyses and listwise deletion. Note that for the modeling analyses, the indicators underwent transformation (square root, log linear, or inverse) to correct for skewed distributions.

Using a structural equation modeling approach to test for mediated effects while controlling for measurement error, we tested the models with six constructs: early adolescent family negative interaction, boys’ early adolescent antisocial behavior, boys’ midadolescent association with delinquent peers, boys’ late-adolescent association with delinquent peers, boys’ late-adolescent relationship process (antisocial talk with others or negative interaction with others), and young men’s association with delinquent peers in young adulthood. The standard error of measurement models were first estimated on families with data on every indicator. Then, using full information maximum likelihood (FIML) estimation procedures, the models were re-estimated with the full sample, and standardized path coefficients were generated.

The sample size of each indicator can be found in Table 2. The sibling indicators ($n = 81$ and $n = 72$) and the teacher report of delinquent peer association in late adolescence ($n = 97$) were the only indicators that fell below 100. The missing sibling data largely reflect the absence of younger siblings for 90 boys who did not have a younger sibling or who had a younger sibling who did not participate. These FIML procedures have been demonstrated to produce unbiased estimates when the data are missing at random (MAR). Although the missing sibling data might not meet the MAR criterion for FIML estimation, the use of

FIML has been found to produce fewer biased estimates than listwise or pairwise deletion procedures even when the MAR assumption is not strictly met (Little & Rubin, 1989; Muthén, Kaplan, & Hollis, 1987). Whereas the bias due to listwise or pairwise deletion procedures increases with the amount of missing data, the FIML parameter estimates are not as affected by the amount of missing data (Enders & Bandalos, 2001). No significant differences in association with delinquent peers at midadolescence, $F(1, 197) = 0.21, p = .647$; late adolescence, $F(1, 201) = 0.85, p = .359$; or young adulthood, $F(1, 203) = 0.05, p = .815$, were found between OYS boys with sibling data and without sibling data. Given the missing sibling data, the models were run with the sibling indicators and then run without the sibling indicators.

Results

Associations Between Behavior in Three Relationships in Late Adolescence

The boys' observed negative interaction and antisocial talk with friend, partner, and sibling were subjected to repeated-measures analysis of variance to examine similarities and differences between the types of relationship. Means and standard deviations can be found in Table 3. The boys, as a group, showed higher levels of negative interaction with their partners compared with their friends, $F(1, 149) = 42.18, p < .001$, and with their siblings compared with their friends, $F(1, 63) = 22.82, p < .001$. No significant differences were found in the boys' levels of negative interaction with partners and with siblings, $F(1, 60) = 1.93, p = .170$. The boys engaged in significantly more antisocial talk with friends than with partners, $F(1, 149) = 6.97, p < .001$. No significant differences were found in the levels of boys' antisocial talk with friends compared with siblings, $F(1, 63) = 3.44, p = .068$, and with partners compared with siblings, $F(1, 60) = 0.68, p = .412$.

Continuity in behavior across relationships and interaction participants was examined by using correlations. Antisocial talk was significantly correlated across the three different types of relationship. The boys' antisocial talk with friends was significantly correlated with such talk with partners, $r(150) = .38, p < .001$, and siblings, $r(64) = .37, p < .01$, and the boys' antisocial talk with partners was significantly correlated with such talk with siblings, $r(61) = .51, p < .001$. The boys' negative interaction with friends was significantly correlated with negative interaction with partners, $r(150) = .36, p < .001$, and siblings, $r(64) = .30, p < .05$. The association between boys' negative interaction with partners and negative interaction with siblings was not significant, $r(61) = .24, p = .065$.

The first model examined the role of antisocial talk as a mediator of midadolescent and young-adult delinquent peer association, and the second model examined the role of negative interaction as a mediator. It was hypothesized that antisocial talk with others during late adolescence, more so than negative interaction with others, would mediate the relation between midadolescent and young-adult delinquent peer association. Given the small sibling sample, the first set of models was run with the sibling indicators and a second set of models was run without the sibling indicators. As both sets of models yielded comparable results (i.e., path coefficients), the models with the sibling data are presented. The correlation matrix of transformed indicators for the two models can be found in Table 2, and the factor loadings with standard errors for the constructs can be found in Table 4. Correlations among the latent variables from the measurement models are in Table 5. Although antisocial talk and negative interaction were both significantly associated with young-adult delinquent peer association, antisocial talk was more strongly predictive than was negative interaction. Contrary to prediction, family negative interaction was not associated with midadolescent association with delinquent peers.

Model 1: Prediction With Antisocial Talk

In Model 1 (see Figure 2), we tested the role of antisocial talk as the mediator between midadolescent delinquent peer association and later delinquent peer association in young adulthood. Overall, the model was an acceptable fit to the data, $\chi^2(88, N=206) = 89.68, p = .430$ (Bentler–Bonnett normed fit index = .984; Bentler–Bonnett nonnormed fit index = 1.000; comparative fit index = 1.000) and accounted for 51% of the variance. The path from early adolescent family negative interaction to midadolescent delinquent peer association was not significant, with early adolescent antisocial behavior competing for variance in that outcome. Therefore, the association between family negative interaction and late-adolescent antisocial talk could not be described as mediated by delinquent peer association. Also, the direct path from family interaction to antisocial talk was not significant. The path coefficients indicated that the association between midadolescent and young-adult delinquent peer association was best described as being mediated by the boys' antisocial talk with others, including peers, in late adolescence.

Model 2: Prediction With Negative Interaction

The equivalent model was tested for negative interaction (see Figure 3), and the model did not fit as well as the model that included antisocial talk, $\chi^2(92, N=206) = 110.75, p = .089$ (Bentler–Bonnett normed fit index = .981; Bentler–Bonnett nonnormed fit index = .995; comparative fit index = .997) and accounted for 43% of the variance. As in Model 1 (see Figure 2), the path from early adolescent family negative interaction to midadolescent delinquent peer association was not significant. Therefore, the association between family negative interaction and late-adolescent negative behavior could not be described as mediated by delinquent peer association. Also, the direct path from family negative interaction to negative interaction with others was not significant. The nonsignificant path coefficient from negative interaction to young-adult delinquent peer association and the significant direct paths from midadolescent to late-adolescent delinquent peer association and from late-adolescent delinquent peer association to young-adult delinquent peer association indicated that the association between the midadolescent and young adolescent delinquent peer association did not appear to be mediated through the boys' negative interaction with others in late adolescence. In summary, antisocial talk with peers, partners, and siblings in late adolescence was found to mediate the association between delinquent peers in midadolescence and association with delinquent peers in early adulthood even in the context of concurrent late-adolescent delinquent peer association, and the model with antisocial talk better described the data than the model with negative interaction.¹

Differential Mediational Effects

To determine whether the mediational effects of the boys' antisocial talk varied as a function of type of relationship, we examined antisocial talk by relationship type on young-adult delinquent peer association using multiple regression. The boys' young-adult delinquent peer association was regressed on late-adolescent antisocial talk with partner, friend, and sibling after controlling for mid- and late-adolescent delinquent peer association. The boys' mid- and late-adolescent peer association variables were forced into the equation first, then the late-adolescent antisocial talk variables were entered in a stepwise fashion. The regression model indicated that antisocial talk with partner, $\beta = .34; t(52) = 2.09, p < .05$, and friend, $\beta = .28; t(52) = 2.16, p < .05$, during late adolescence contributed significantly to the prediction of young-adult delinquent peer association after controlling for mid- and late-delinquent peer association, $F(5, 52) = 6.10, p < .001$, for the model as a whole ($R^2 = .39$).

¹As suggested by one of the reviewers, a model with both antisocial talk and negative interaction as mediators was run. This model, $\chi^2(125, N=206) = 59.21, p = .076$, did not fit as well as the model with antisocial talk. The findings were similar with antisocial talk mediating the relationship between midadolescent and young-adult association with delinquent peers.

Antisocial talk with partners and friends in late adolescence was more predictive than antisocial talk with siblings. Differential mediational effects of negative interaction were not examined, as negative interaction with others during late adolescence did not mediate the relationship between midadolescent delinquent peer association and young-adult delinquent peer association.

Discussion

This study highlights the salience of antisocial talk in late-adolescent relationships to continued engagement with a delinquent peer group in young adulthood and to remaining in an antisocial trajectory into adulthood. The late-adolescent boys carried over their use of antisocial talk from one social context to another. Although antisocial talk occurred most often in the context of late-adolescent peer relationships, antisocial talk also took place in the context of late-adolescent romantic and sibling relationships. These findings extend the previous work of Dishion and colleagues, who focused on antisocial talk within the friendships of delinquent adolescent boys as indicating both positive endorsement of antisocial behavior and delinquency training. Dishion et al. (1996) observed the boys' behavior with friends over time and found that although the boys brought in different friends over the years, the processes involving antisocial talk were similar. The current study demonstrates some similarity of these processes in other key dyadic interactions in late adolescence, namely with partners and siblings.

The findings of this study support a model of continuity in delinquent peer association into young adulthood as a function of the boys' late-adolescent relationship with others and the boys' prior history of antisocial behavior and association with delinquent peers. Delinquent peer group association in midadolescence was associated with prior antisocial behavior. Negative behavior in the family with parents and siblings during early adolescence was not predictive of midadolescent delinquent peer association. It should be noted that these family interaction processes, as measured in the current study, were not equivalent to family management behaviors such as supervision and discipline (cf. Capaldi & Patterson, 1994). There are also recent findings indicating that parental antisocial behavior (as measured by police contact and moving traffic violations) can be predictive of delinquent processes between adolescent friends even after controlling for parent management behaviors (Dishion, Bullock, & Owen, 2002).

The findings suggest that delinquent peer group association may be maintained from midadolescence to young adulthood through the process of antisocial talk and, presumably, by reinforcement of such talk within the context of late-adolescent relationships with other age mates, namely self-selected friends, romantic partners, and siblings. At the least, these important associates in the late-adolescents' lives appear to tolerate their antisocial behaviors and talk enough to continue associating with them. They are likely to be engaging in similar behaviors themselves. Capaldi and Crosby (1997) found assortative partnering by antisocial behavior in late adolescence for the OYS men and their romantic partners. Although midadolescent association with delinquent peers was predictive of negative engagement with others in late adolescence, negative interaction or poor social skills did not appear to be involved in maintaining the association with delinquent peers into young adulthood.

Given that antisocial talk took place across three different types of late-adolescent relationships and that delinquency training has been associated with increases in delinquent behavior (Dishion et al., 1999), this antisocial talk appears to be an important and generally overlooked social influence process. This may help to explain why it is difficult to intervene effectively in interrupting the development of delinquency in adolescence (Thornberry &

Krohn, 1997). The findings of the current study, along with related work on the current sample (Wiesner & Capaldi, 2001), suggest that this process also may be related to the persistence of criminal behavior from adolescence to young adulthood. Boys who desist from delinquent behaviors as young adults (Farrington, 1982) may be the ones who did not engage in antisocial talk and delinquency training in their late-adolescent relationships and discontinued associating with delinquent peers and more antisocial romantic partners.

Findings also suggest that observations of late-adolescent sibling and romantic relationships, in addition to friendships, can provide a window on the developmental functioning of adolescents, supporting the growing emphasis on relationships as important developmental contexts (e.g., Collins & Lauren, 1999) and the research on the development of adolescent romantic relationships (e.g., Furman, Brown, & Feiring, 1999). That the older brothers in this study participated in antisocial talk with their younger siblings when the brothers were in late adolescence adds to the evidence that older antisocial siblings can have deleterious effects on their younger family members (e.g., Slomkowski, Rende, Conger, Simons, & Conger, 2001). As delinquency training occurs within the peer group, younger siblings of delinquent older siblings appear to be vulnerable not only to influences of the older sibling but also to influences of the older siblings' friends (Rowe, Linver, & Rodgers, 1996). Thus, a counterpoint to this line of thinking is that the current analyses may have underestimated the contribution of sibling relationships because late-adolescent interaction data with older siblings were not available for the OYS sample. Relationships with delinquent brothers and delinquent boyfriends during adolescence may be avenues for girls' exposure to antisocial talk and delinquency training or a context for supporting their own delinquent activity. Similar to boys, girls with childhood histories of externalizing behavior problems become familiar with delinquent peers during early adolescence (Caspi, Lynam, Moffitt, & Silva, 1993). Interviews with delinquent adolescent girls indicate that they are also involved in friendship networks that encourage their delinquent behavior (Giordano & Cernkovich, 1997).

One additional point of considerable interest in the current study was that observed rates of negative interaction were significantly higher by a factor of three or more in the late-adolescent interactions with romantic partners and siblings than in those with friends. This may indicate that conflict and associated negative behavior are less likely to occur in friendships. This may also indicate that romantic relationships, even in the relatively early stages of dating in late adolescence, involve more conflict than friendships and resemble conflict levels found in family relationships (e.g., among siblings). This study is unique for its inclusion of observation data of adolescent boys with their friends, their romantic partners, and their siblings and for its home observations with parents and siblings. Findings indicate that behaviors in these key social relationships in late adolescence may be strongly predictive of engagement with delinquent friends in young adulthood and, thus, of a problematic transition to adulthood.

Limitations

The proportion of the sample that participated in all three tasks was relatively low, mainly for developmental or family structure reasons (e.g., not having a romantic partner, not having a younger sibling). However, a relatively large proportion of the sample participated with both a friend and a partner, and the FIML model testing approach allowed for model estimation that used all available data for each participant. The sample was of adolescent boys and was predominantly European American and lower socioeconomic status. Although romantic partners and sisters were included in the study, the developmental model tests were focused on male youths. The generalizability of the findings to families of different ethnic and socioeconomic status and to girls awaits further study.

Whereas the study focused on comparing two alternative models to predict young-adult delinquent peer association and processes of late-adolescent negative interaction and antisocial talk as mediators, the role of concurrent late-adolescent delinquent peer association in the model with antisocial talk was less clear. Although midadolescent delinquent peer association predicted late-adolescent antisocial talk and late-adolescent delinquent peer association, the findings suggest that late-adolescent antisocial talk was a better predictor of young-adult delinquent peer association than late-adolescent delinquent peer association. It may well be that some association with delinquent peers is normative for late adolescence, whereas antisocial talk with friends, romantic partners, and siblings is less normative and indicative of problem behavior. Similarly, alcohol use in adolescence was not found to be a good predictor of young-adult alcohol use or abuse because of the normalcy of such behavior in late adolescence (Dishion & Owen, 2002). Late-adolescent antisocial talk and delinquent peer association were highly correlated and competing for variance in the model, and antisocial talk had the stronger relationship with midadolescent and young-adult delinquent peer association of the two. It is striking how strongly related midadolescent delinquent peer association was with late-adolescent antisocial talk, despite the facts that these two constructs were measured at different points in time and that there was no method or agent overlap between the adjacent constructs. Midadolescent delinquent peer association was constructed from indicators of parent, teacher, and child reports, and antisocial talk was formed from indicators of observer ratings of the boys' talk in interactions with friend, partner, and sibling.

Although we took efforts to minimize method variance and used multiple-method and multiple-agent measures within a prospective and longitudinal study (Bank, Dishion, Skinner, & Patterson, 1990), the two models with antisocial talk and negative interaction contained some method and agent overlap, as the antisocial behavior and delinquent peer association constructs used reports from parents, teachers, and children and involved parents and children as reporters at multiple time points. The mediators of negative interaction and antisocial talk did not have method or agent overlap with each other or with midadolescent or young-adult delinquent peer association.

Implications for Application and Public Policy

The developmental transition from adolescence to young adulthood presents an opportunity for discontinuity or continuity (Schulenberg, Maggs, & Hurrelmann, 1997). This study identifies antisocial talk within adolescents' dyadic relationships as a process that fosters continuity, such that association with delinquent peers developed during formative years is a behavior that is likely to continue from one developmental period to another without intervention. Although the earlier the intervention the better the outcome, and intervening with children in preadolescence would be ideal, it is important to remember that adolescents actively shape their environment (Scarr & McCartney, 1983) and interventions can moderate the link between adolescent and young-adult problem behavior. The consequences of not intervening may be far reaching, for as the adolescents become autonomous from their families of origin and begin families of their own, partners and children are also affected. Intervention programs may need to target adolescents' relationships with key age mates as well as factors in the family of origin because there appear to be multiple, interacting influences on problem behavior (Jessor, 1993). Relationships can provide a compelling source of influence, and this study emphasizes the importance of considering the relationships of adolescents even when prevention and intervention efforts are focused on individual behavior. We caution, however, against aggregating youth in intervention programs, because there is evidence for short- and long-term iatrogenic effects on problem behavior with high-risk youth resulting from these peer group type interventions (Dishion et al., 1999).

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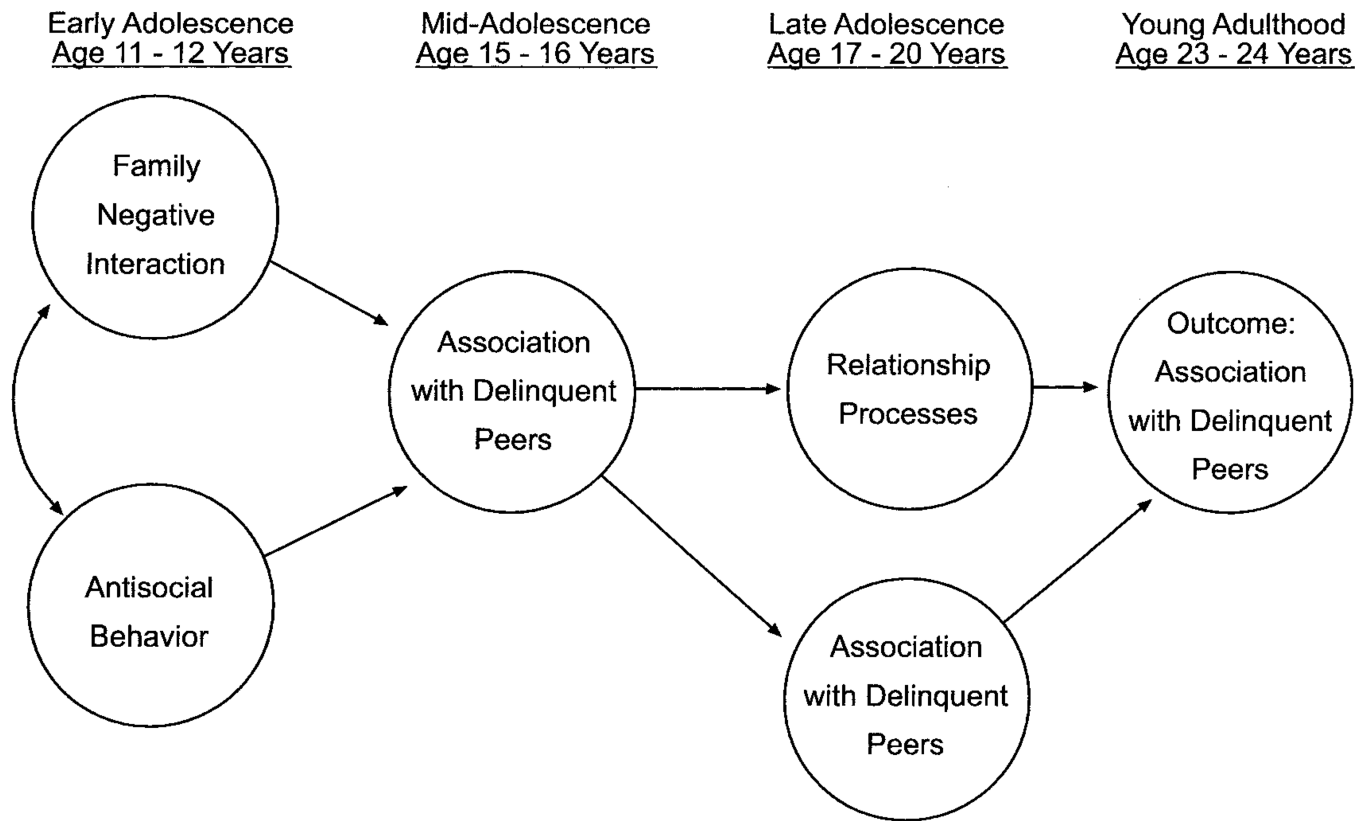


Figure 1.
Hypothesized developmental model: a mediational model of delinquent peer association.

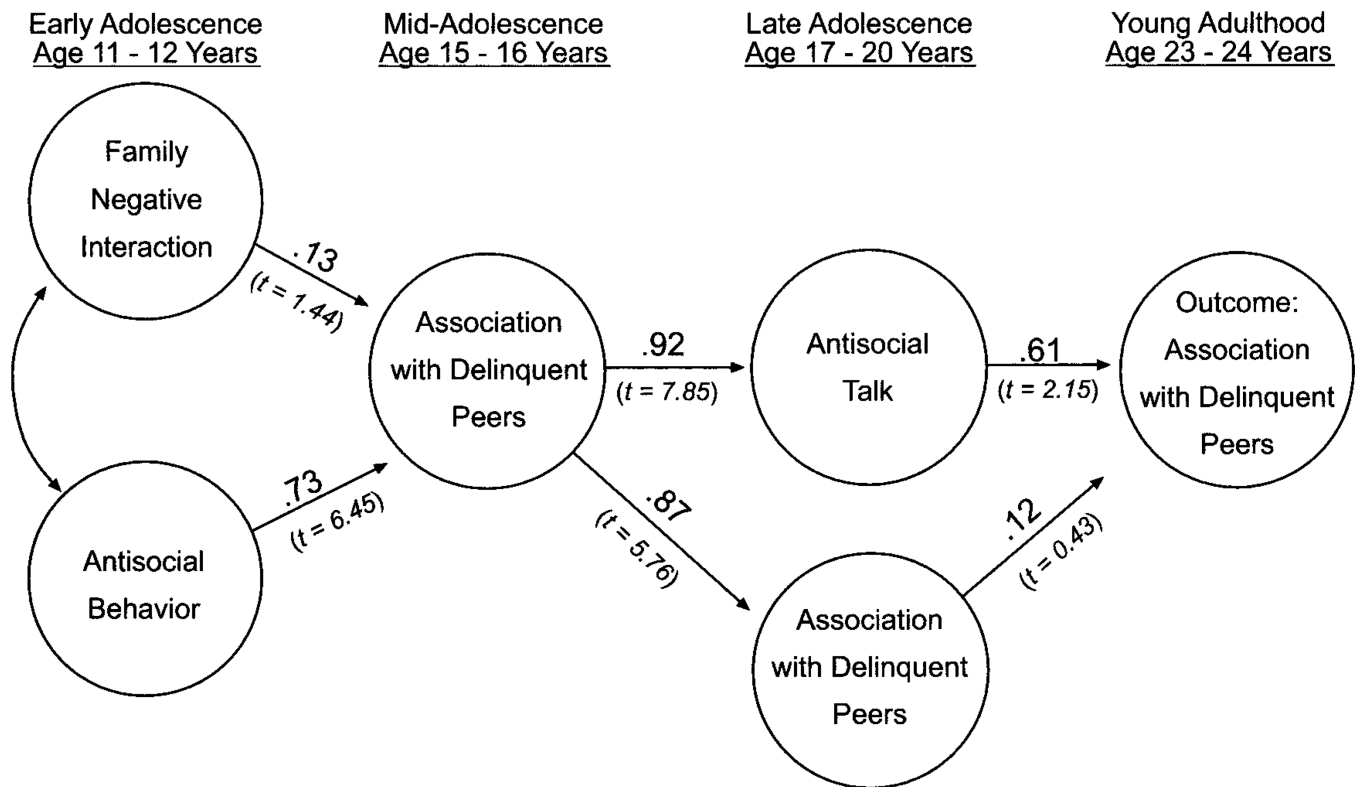


Figure 2.
Model 1: Prediction with antisocial talk as a mediator of delinquent peer association.

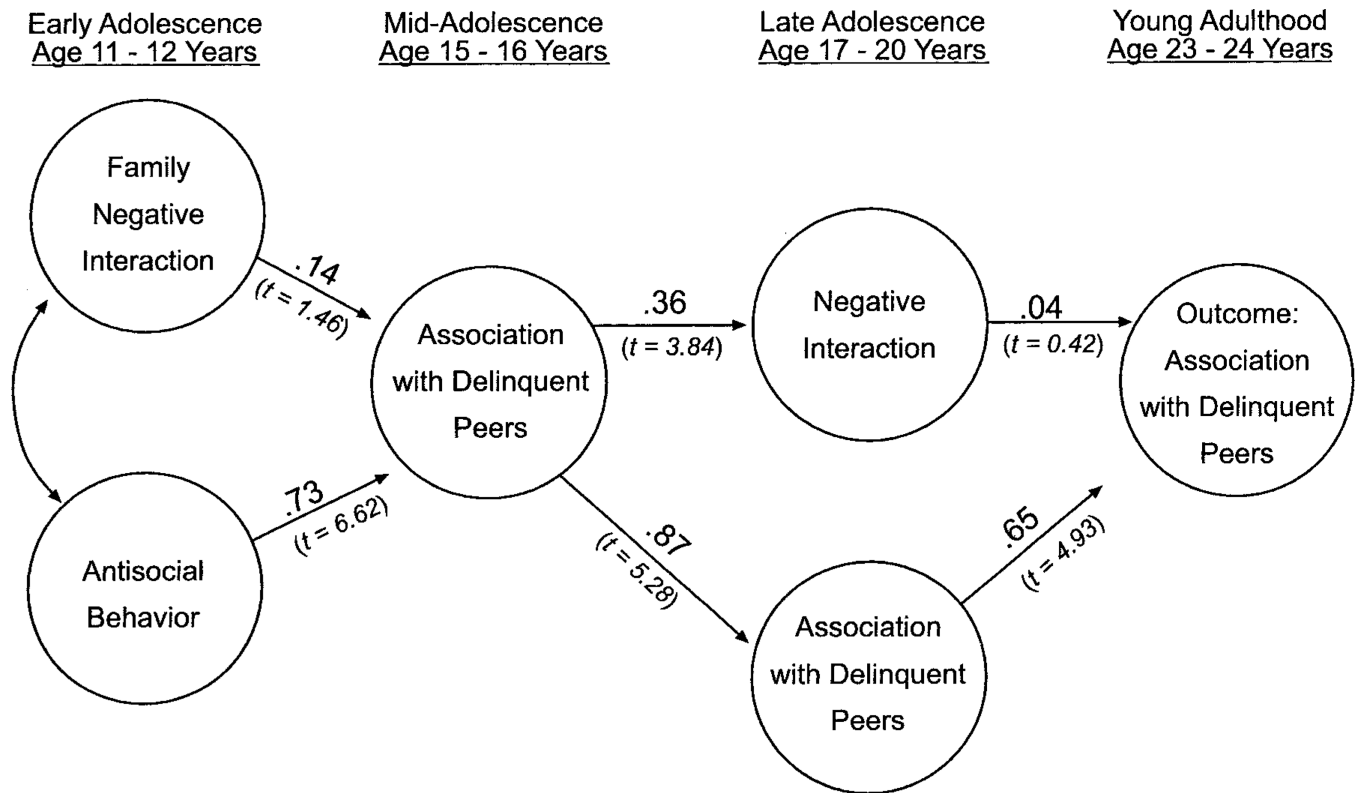


Figure 3.
Model 2: Prediction with negative interaction as a mediator of delinquent peer association.

Table 1

Antisocial and Delinquent Peer Association Constructs

Construct and measure	Respondent	Item	Sample item	Reliability: Cohort 1/Cohort 2 α
Early Adolescent Antisocial Behavior				
Parent Questionnaire: Overt Antisocial Child Behavior Checklist. (CBC; Achenbach & Edelbrock, 1983)	Parents	7	Disobedient at home	.82/.77 (M); .76/.82 (F)
Parent Questionnaire: Covert Antisocial, CBC	Parents	8	Steals at home	.71/.62 (M); .79/.76 (F)
Parent Questionnaire: Overt Antisocial	Parents	11	Hits siblings or other children	.87/.86 (M); .86/.92 (F)
Parent Questionnaire: Covert Antisocial	Parents	21	Takes other kids' things	.85/.80 (M); .84/.85 (F)
Parent Telephone Interview: Overt Antisocial	Parents	7	Physical fights in past 24 hr	.74/.82
Parent Questionnaire	Parents	1	Gets into arguments	
Teacher Questionnaire: Overt Antisocial CBC	Teacher	11	Disobedient at school	.93/.91
Teacher Questionnaire: Covert Antisocial, CBC	Teacher	7	Feels guilty after misbehaving	.85/.79
Teacher Questionnaire: Walker-McConnell (Walker & McConnell, 1988)	Teacher	1	Exerts negative influence on peers	
Child Interview: Overt Antisocial	Boy	9	Disobeys adults	.78/.82
Child Interview: Covert Antisocial	Boy	24	Steals things worth < \$5	.87/.88
Child Telephone Interview: Overt Antisocial	Boy	8	Fights in past 24 hr	.88/.90
Interview ratings	Interviewer	1	Likelihood of trouble with police	
Coder ratings	Coder	4	Physically attacked family	.81/.86
Adolescent Delinquent Peer Association				
Parent Questionnaires including CBC	Parents	3	Hangs with kids who fight	.84/.80 (M); .82/.87 (F)
Teacher Questionnaires including CBC and Walker-McConnell social skills	Teacher	4	Hangs out with troublemakers	.92/.92
Child Interview/Questionnaires	Boy	15	Peers have stolen something < \$5	.86/.80

Note. M = mother report; F = father report.

Table 2

Correlation Matrix Between Transformed Indicators in Models 1 and 2

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
1. To and/or from sibling (81)																				
2. To and/or from parent (196)	.46**																			
3. Child report (202)	.31**	.11																		
4. Parent report (202)	.34**	.13	.42**																	
5. Teacher report (203)	.26*	.21**	.40**	.47**																
6. Child report (199)	.27*	.11	.49**	.30**	.34**															
7. Parent report (197)	.22*	.25**	.46**	.44**	.36**	.57**														
8. Teacher report (167)	.27*	.20**	.41**	.34**	.51**	.40**	.51**													
9. Child report (201)	.15	.04	.37**	.14	.22**	.60**	.32**	.25**												
10. Parent report (199)	.13	.23	.30**	.41**	.32**	.45**	.60**	.42**	.35**											
11. Teacher report (97)	-.04	.07	.03	.27**	.24*	.37**	.34**	.31**	.24*	.41**										
12. With friend (178)	.03	.13	-.03	-.04	.07	.07	.02	.03	.08	-.01	.10									
13. With partner (170)	-.04	.07	.14	.25**	.15	.23**	.22**	.23**	.24**	.30**	.32**	.20*								
14. With sibling (72)	.18	.20	-.17	.00	.12	-.18	-.03	.01	-.18	-.14	.18	.40**	.08							
15. With friend (178)	.26*	.24**	.30**	.24**	.39**	.45**	.33**	.35**	.35**	.34**	.27*	.25**	.19*	-.04						
16. With partner (170)	.23	.12	.29**	.30**	.26**	.50**	.47**	.41**	.33**	.36**	.38**	.14	.39**	-.05	.38**					
17. With sibling (72)	.19	.12	.30**	.45**	.29*	.48**	.49**	.34**	.34**	.49**	.37*	.19	.33**	.08	.37**	.51**				
18. Child report (202)	.25**	.06	.22**	.06	.12	.47**	.23**	.21**	.49**	.22**	.00	.16*	.05	-.06	.28**	.22**	.37**			
19. Parent report (176)	.11	.22**	.25**	.30**	.23**	.38**	.47**	.38**	.23**	.55**	.23*	.13	.24**	.04	.26**	.44**	.36**	.40**		

Note. Pairwise correlations. Sample size n for each transformed indicator is in parentheses.

* $p < .05$.

** $p < .01$.

Table 3

Means (and Standard Deviations) From Pairwise Comparisons Between Boys' Behavior and Same-Sex Friends, Cross-Sex Romantic Partners, and Younger Siblings During Problem-Solving Tasks

Variable	Friends	Partners	Siblings	Pairwise <i>n</i>
Observed behavior, rate per min				
Negative interaction	0.27 (0.46)	0.77 (1.00)		150
Negative interaction	0.30 (0.39)		1.16 (1.50)	64
Negative interaction		0.89 (1.21)	1.20 (1.53)	61
Coder rating				
Antisocial talk	2.13 (0.84)	1.93 (0.86)		150
Antisocial talk	2.15 (0.94)		1.92 (0.85)	64
Antisocial talk		1.98 (0.91)	1.89 (0.85)	61

Table 4

Factor Loadings (and Standard Errors) for Models 1 and 2

Variable	Model 1 with antisocial talk	Model 2 with negative interaction
Early adolescent family negative interaction		
To and/or from sibling	.84 (.67)	.82 (.63)
To and/or from parents	.72 (fixed)	.75 (fixed)
Early adolescent antisocial behavior		
Child report	.63 (.12)	.62 (.12)
Parent report	.70 (fixed)	.71 (fixed)
Teacher report	.63 (.15)	.62 (.14)
Midadolescent delinquent peer association		
Child report	.71 (.06)	.65 (.06)
Parent report	.79 (fixed)	.83 (fixed)
Teacher report	.63 (.09)	.62 (.08)
Late-adolescent delinquent peer association		
Child report	.49 (fixed)	.43 (fixed)
Parent report	.74 (.23)	.83 (.30)
Teacher report	.73 (.26)	.62 (.28)
Late-adolescent negative interaction with others		
Negative interaction with friend		.22 (.18)
Negative interaction with partner		.87 (fixed)
Negative interaction with sibling		.15 (.18)
Late-adolescent antisocial talk with others		
Antisocial talk with friend	.53 (.19)	
Antisocial talk with partner	.68 (fixed)	
Antisocial talk with sibling	.65 (.17)	
Young-adult delinquent peer association		
Child report	.46 (.11)	.40 (.10)
Parent report	.82 (fixed)	.96 (fixed)

Table 5

Correlation Matrix of Latent Factors From Measurement Models

Variable	1	2	3	4	5	6	7
1. Family negative interaction	—						
2. Early adolescent antisocial behavior	.34*	—					
3. Midadolescent delinquent peer association	.38**	.78**	—				
4. Late-adolescent delinquent peer association	.33*	.67**	.87**	—			
5. Late-adolescent negative interaction with others	.14	.28*	.36*	.32*	—		
6. Late-adolescent antisocial talk with others	.35*	.71**	.92**	.80**	.20	—	
7. Young-adult delinquent peer association	.26*	.52**	.67**	.61**	.24*	.71**	—

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