

Forbidden Friends as Forbidden Fruit: Parental Supervision of Friendships, Contact With Deviant Peers, and Adolescent Delinquency

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Spending leisure time with deviant peers may have strong influences on adolescents' delinquency. The current 3-wave multi-informant study examined how parental control and parental prohibition of friendships relate to these undesirable peer influences. To this end, annual questionnaires were administered to 497 Dutch youths (283 boys, mean age = 13 years at baseline), their best friends, and both parents. Cross-lagged panel analyses revealed strong longitudinal links from contacts with deviant peers to adolescent delinquency, but not vice versa. Parent-reported prohibition of friendships positively predicted contacts with deviant peers and indirectly predicted higher adolescent delinquency. Similar indirect effects were not found for parental control. The results suggest that forbidden friends may become "forbidden fruit," leading to unintended increases in adolescents' own delinquency.

During adolescence, youths tend to spend less time with their parents than during childhood and increasingly spend their time in the company of peers (Brown, 2004; Larson, Richards, Moneta, Holmbeck, & Duckett, 1996). In addition, youths become increasingly involved in delinquent behavior, such as vandalism and shoplifting (Moffitt, 1993). Teens' delinquency may be especially affected when they spend most of their leisure time in the company of deviant peers (Haynie & Osgood, 2005; Moffitt, 1993; Thornberry, Lizotte, Krohn, Farnworth, & Jang, 1994). It has also been suggested, however, that adequate parental supervision of friendships may help to counter these undesirable peer influences (Dishion, Nelson, & Bullock, 2004; Mounst, 2000). The current longitudinal study focuses on ways in which parental super-

vision of friendships and peer influences are intertwined in the prediction of adolescent delinquency. It examines whether parental prohibition of friendships and parental control can affect contacts with deviant peers, which subsequently lead to higher delinquency.

Contact With Deviant Peers and Adolescent Delinquency

Criminologists and developmental psychologists have long acknowledged that deviant peers represent an important etiological factor in the development of adolescents' delinquency. Differential association theory (Sutherland, 1947) poses that spending time with delinquent friends may increase exposure to delinquent beliefs and norms, thereby increasing adolescents' own engagement in delinquency. In addition to having delinquent friends, the development of adolescent delinquency is also positively associated with having a strong orientation toward friends at an early age, and spending a great deal of one's leisure time with

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friends (Fuligni, Eccles, Barber, & Clements, 2001; Osgood, Wilson, O'Malley, Bachman, & Johnston, 1996; Warr, 1993). That is, spending time away from the family in the more unstructured context of friends may create more opportunities for becoming delinquent (Osgood et al., 1996). Hence, although these two major views on the influences of friends on adolescent delinquency take a somewhat different point of view, they are also complementary and state that both friends' deviancy, as well as time spent with friends, may increase adolescents' own delinquency.

Numerous empirical studies have indeed shown that peers' delinquent behavior and spending time with delinquent peers promote the development and maintenance of adolescents' own delinquency (e.g., Elliott, Huizinga, & Ageton, 1985; Keijsers, Branje, Van der Valk, & Meeus, 2010; Loeber, Farrington, Stouthamer-Loeber, Moffitt, & Caspi, 1998; Osgood et al., 1996; Patterson & Dishion, 1985; Vitaro, Brendgen, & Tremblay, 2000) and that both influences take place simultaneously (Agnew, 1991; Haynie & Osgood, 2005). Moreover, contact with deviant peers exerts influences on adolescent delinquency above and beyond youths' tendencies to select and spend more time with deviant friends when they are more delinquent, themselves (Matsueda & Anderson, 1998; Selfhout, Branje, & Meeus, 2008; Thornberry et al., 1994). To tap both of these processes by which friends may affect adolescent own delinquency (i.e., time with friends and delinquency of friends), the current study used a general latent construct of *contact with deviant peers*, comprised best friends' reports of their own delinquency, adolescents' reports of peer delinquency, and adolescents' reports of the intensity of contact with their peers. That is, this construct tapped whether adolescents have deviant friends *and* the intensity of these contacts. The *first aim* of the current longitudinal study was to examine the effects of these contacts with deviant peers on adolescent delinquency, while controlling for and examining effects of the adolescents' own delinquency on contacts with deviant peers.

Parents' Supervision of Friendships, Contact With Deviant Peers, and Adolescent Delinquency

Parents' roles change in the adolescent years, as children spend more of their leisure time free from supervision and as peers become increasingly important in adolescents' lives. Previous studies have suggested that direct influences of parental monitoring behaviors on adolescent delinquency

are not only small but are also reduced during the adolescent years (e.g., Keijsers, Frijns, Branje, & Meeus, 2009; Stattin & Kerr, 2000). In fact, when pitting peer contact and parental supervision against each other, the former construct may predict a much larger portion of the interindividual variance in adolescent delinquent activities (e.g., Aseltine, 1995; Dishion et al., 2004; Goldstein, Davis-Kean, & Eccles, 2005; Warr, 1993). However, it may also be that parents' supervision of contact with friends and other age-mates affect adolescents' affiliation with deviant peers (Mounts, 2000, 2008). Hence, to understand how and why peers can have such an important influence on adolescent delinquency, it is of critical importance to understand whether parental supervision of friendships plays a role in reducing the influence of time spent with deviant peers (Kandel, 1996).

The stage-environment fit perspective holds that adolescents who experience a mismatch between their autonomy needs and the level of autonomy that parents grant (i.e., either when the level of parental control and regulation of friendships is too high or too low for their developmental stage), they may turn away from the family context and search for increased (and potentially premature) autonomy in the peer context, resulting in higher levels of adolescent delinquency (Eccles et al., 1991; Eccles et al., 1993; Fuligni & Eccles, 1993; Fuligni et al., 2001; for a similar reasoning, see Moffitt, 1993). When parental control and regulation are too high, and parents continue to treat maturing adolescents as children (i.e., they are not allowed to go out, choose their own friends, etc.), youths may be tempted to mimic the antisocial behavior of peers. These antisocial youths seem to make their own rules in life and do whatever they please, and their behavior thus appears relatively independent from their families. Conversely, parents' provisions of sufficient guidance and leadership can be compromised when decreases in parental control and regulation are too strong (i.e., unsupervised autonomy comes too early) and may thus also lead to and amplify contact with deviant peers (Dishion, Poulin, & Medici Skaggs, 2000; Dishion et al., 2004).

The present longitudinal study therefore focuses on parental supervision of friendships, defined as helping adolescents to avoid undesirable contacts with friends by directing children's actions and providing rules or guidelines for peer interactions (Mounts, 2000, 2008). In this study, two related parenting practices that compose supervision of friendships (Mounts, 2000, 2008) are examined. First, parents may try to affect contact with deviant peers

by prohibiting deviant friendships. This is considered to be a rather restrictive parenting strategy, comprised the communication of disapproval and forbidding of particular friendships (Mounts, 2001, 2002). Second, parents may monitor and keep a close eye on adolescents' activities, whereabouts, and friendships by controlling leisure-time activities and controlling access to information about leisure time activities, which is considered less restrictive (Dishion & McMahon, 1998; Mounts, 2000; Stattin & Kerr, 2000).

Indirect Effects of Parenting on Adolescent Delinquency, Through Contact With Deviant Peers

Parents who adequately supervise adolescents' relationships with peers are thought to stimulate positive relationships with well-adjusted friends and, as a consequence, to foster positive adolescent adjustment (Mounts, 2001, 2002, 2008). In contrast, parents who fail to supervise their youths in an age-adequate manner may stimulate friendships with deviant peers. Hence, there may be indirect effects of parental supervision of friendships upon the development of adolescent delinquency, via affiliations with deviant peers (Dishion, Capaldi, Spracklen, & Li, 1995; Dishion et al., 2000; Fuligni & Eccles, 1993; Fuligni et al., 2001; Kandel, 1996).

Empirical studies examining whether parental control and regulation of friendships predict deviant peer contact, most of which are cross-sectional, paint a somewhat inconsistent picture. Some findings suggest that aspects of behavioral control, such as rule setting and parental monitoring, were negatively associated with adolescents' affiliation with deviant friends (e.g., Dishion, Patterson, Stoolmiller, & Skinner, 1991; Dishion et al., 2000; Dishion et al., 2004), and that interventions aimed at improving such family management practices also appear to reduce deviant friendships (Dishion, Bullock, & Granic, 2002). Other studies, however, have shown positive associations between highly restrictive levels of parental control and friendship prohibition, on the one hand, and affiliation with deviant friends, on the other hand. Such findings suggest that these parenting practices can also lead to more, rather than less, contact with deviant peers (Goldstein et al., 2005; Soenens, Vansteenkiste, & Niemiec, 2009; Soenens et al., 2007). Hence, these studies suggest that more contact with deviant peers may occur either when supervision is too lax or too strict.

Although several studies examined the link between parental supervision of friendships and

affiliations with deviant peers, we were able to locate only one study that actually tested whether supervision of friendships indirectly affects adolescent delinquency over time via affiliations with deviant peers. Goldstein et al. (2005) showed that parental intrusiveness at a given year (i.e., overly high levels of parental control) predicted higher levels of unsupervised socializing and negative peer characteristics 1 year later, which subsequently predicted higher levels of adolescent delinquency 4 years later. Although this longitudinal study controlled for stability of antisocial behavior, it did not examine or control for reverse effects from deviant friends or adolescent delinquency upon parenting (cf. Dishion et al., 2004; Stice & Barrera, 1995; Tilton-Weaver & Galambos, 2003).

Examination of and controlling for these reverse effects of delinquency on subsequent parenting is essential; parents may not only affect their children, but children could also strongly affect their parents' behaviors, especially when children misbehave (Bell, 1968; Lytton, 1990; Stice & Barrera, 1995). For instance, coercive family process theory (Patterson & Reid, 1982) argues that parents respond to children's naturally occurring oppositional and aggressive behavior by engaging in less monitoring and structuring. In addition, the premature autonomy perspective (Dishion et al., 2000; Dishion et al., 2004) stresses that family management and deviant peer processes may be bidirectionally linked. Especially when children are involved with deviant peers, parents may "give up" on their adolescent. Equally possible, however, is that parents respond to adolescents' associations with deviant peers by communicating disapproval (Tilton-Weaver & Galambos, 2003) and trying to prohibit contact with these friends (Mounts, 2001, 2008).

Hence, previous research (Goldstein et al., 2005) has suggested that indirect effects may occur from parenting to deviant peer processes to adolescent delinquency. The direction of this indirect effect is not fully clarified, however, due to potential alternative explanations for the link between parenting, on the one hand, and adolescent delinquency and contact with deviant peers, on the other hand. The *second aim* of the current study is to test for longitudinal indirect effects from parental control and prohibition of friendships to adolescent delinquency, via contact with deviant peers, while also accounting for effects that adolescent delinquency and contact with deviant peers have upon parenting.

Overview of the Study

Taken together, the present study aimed to add to the existing literature by taking a bidirectional perspective on the interplay between parenting and peer influences upon adolescent delinquency. We used, a multi-informant, longitudinal design, which enabled us to test indirect longitudinal effects of parenting upon adolescent delinquency, via contact with deviant peers. These longitudinal results offer much stronger evidence, compared to cross-sectional mediation analyses (Maxwell & Cole, 2007). In addition, the use of longitudinal data in these analyses allowed us to examine and control for reverse causal effects from contact with deviant peers and adolescent delinquency to parenting, and from adolescent delinquency to contact with deviant peers. Hence, the direction of effects was tested.

Our research question was: *How does parental supervision of friendships relate to deviant peer associations in the prediction of adolescent delinquency?* We hypothesized that we would find indirect effects from parenting to adolescent delinquency, via contacts with deviant peers. Two hypotheses underlie such indirect effects. That is, we hypothesized that more intense contact with deviant peers predicts higher levels of adolescent delinquency over time (H1). In addition, according to the stage–environment fit perspective, both parental prohibition of friendships and overly high levels of parental control would relate to more contact with deviant peers (i.e., selecting more delinquent peers and spending an increased amount of time in their company; H2a). The premature autonomy perspective, in contrast, would suggest that *lower* levels of parental control predict more contact with deviant peers and higher subsequent delinquency (H2b). We also expected reverse effects from adolescent delinquency to increased contacts with deviant friends (H3), and effects from adolescent delinquency and contacts with deviant peers to lower levels of parental control and prohibition of friendships (H4). We controlled for these reverse effects in testing Hypotheses 1, 2a, and 2b.

Method

Participants

Data for the current study were taken from an ongoing longitudinal project in the Netherlands, entitled RADAR (Research on Adolescent Development and Relationships). The RADAR study is a

population-based prospective cohort study, designed to identify processes of influence from the family and peer contexts on adolescents' normal and abnormal behavioral development. In this longitudinal study, adolescents, their families, and best friends are followed from age 12 to 18 years. For the current study, data were used from three waves of questionnaire data that were annually collected among 497 youths, their self-nominated best friends, and their fathers and mothers.

The sample was composed of 283 boys and 214 girls, who were in the first grade of junior high (corresponding to seventh grade in the United States) and were 13 years old on average ($SD = 0.5$) at the first measurement (T1). Their ethnic backgrounds were rather homogeneous, because only families of which both parents had a good understanding of the Dutch language were selected for participation. Of the youths, 95.2% identified themselves as being Dutch, 1.4% identified themselves as Surinamese, and 3.4% identified themselves as another ethnicity, such as French, Australian, English, or Indonesian. Of the adolescents, 85.2% lived with both biological parents, 4.5% lived with mother and stepfather, 8.3% lived with their mother, 0.6% with their father, and 1.4% lived in other family compositions. In this sample, 27.8% of the mothers and 14.8% of the fathers was unemployed or held an elementary job (e.g., construction worker, janitor, truck driver). In 10.8% of the families, both father and mother fit this criterion and these families were classified as low socioeconomic status (SES; i.e., unemployed or holding an elementary job; Statistics-Netherlands, 1993). Family SES was medium or high for the other 89.2% of the families, which implies that at least of one the parents' jobs was classified as medium level (e.g., police officer, physician's assistant) or high level (e.g., doctor, scientist, high school teacher). Fathers were 46.8 years old, on average ($SD = 5.1$), and mothers were 44.5 years, on average ($SD = 4.5$).

Because the larger longitudinal study focused on delinquency development, the aim was to oversample adolescents at risk of developing such behavior (200 at-risk adolescents, 300 normal-risk adolescents). Before the start of the study, children were screened in sixth grade for the presence of externalizing problems with a Teacher's Report Form (Achenbach, 1991). Children classified as "at-risk" (those having a score at or above the borderline clinical range of the TRF externalizing scale, T score ≥ 60 ; Achenbach & Rescorla, 2001) were over-represented ($n = 206$) in this sample.

Procedure

Before the start of the study, adolescents and their parents received written information about the study and parents provided written informed consent for each of the participating family members. Within each year of the study, trained research assistants made appointments for annual home visits. Such appointments were made with the adolescent's mother (or the primary caretaker), who was also asked to ensure that all participating family members and the adolescent's friend were present during the home visit.

The target adolescent was asked to invite his or her best friend to participate, and to provide contact information about this friend. The parents of this friend were then contacted by phone and were told that the target adolescent had invited their child to participate in the RADAR study. These parents were also asked to provide informed consent for the friend to participate. A brochure with information about the study was sent to their home address. Of the target adolescents, 91.8% had a participating best friend at T1 and 78.7% had a best friend participating at all measurement waves. Of the adolescents with a participating friend at each wave, 63.7% nominated the same friend each wave, 28.4% changed friends once, and 7.9% changed friends every measurement.

To test whether the participating best friend was a "true friend," target adolescents were asked to provide the names of their best friends (maximum of eight). The large majority (97.6%) of the participating best friends appeared in this list. In fact, 84.7% of the participating best friends were also mentioned as the best friend in this context (i.e., first position on list), 92.4% were mentioned in the top three, and 95.2% were mentioned in the top five. Moreover, to test for the reciprocity in these friendships, the participating best friends were also asked to provide the names of their best friends. The large majority (93%) of best friends mentioned the target adolescent on this list, and 74.7% of the friends mentioned the target adolescent as best friend.

During the actual home visits, the target adolescent, family members (mother, father, sibling), and the friend of the adolescent completed a large battery of questionnaires. Research assistants provided verbal instructions in addition to the written instructions that accompanied the questionnaires. Families received the equivalent of \$150 per home visit.

Questionnaires

Parental control was assessed among fathers and mothers, who completed a five-item questionnaire (Stattin & Kerr, 2000). This scale measured parenting control efforts that encompass imposing rules and restrictions on adolescents' behaviors and associates, thereby limiting the amount of freedom children have to do things without telling them. Sample items include "Must your child have your permission to go out during the weeknights?" and "Do you always require that your child tells you where he/she is at night, who he/she is with, and what he/she will do?" Cronbach's alpha of this scale was acceptable for all measurement waves, ranging between .82 and .85. Factorial and external validity of this scale is also adequate for a Dutch sample (Hawk, Hale, Raaijmakers, & Meeus, 2008; Keijsers, Branje, Van der Valk, et al., 2010).

Prohibition of friendship was measured with father and mother reports of a six-item subscale of the Parental Management of Peer Relationships questionnaire (Mounts, 2000, 2002). This prohibition subscale was used to measure direct parental involvement in peer relations (letting the adolescent know that they do not want him or her to associate with particular peers) and includes both the communication of disapproval and the actual prohibition of certain friends. Sample items include "I forbid my child to hang around with certain kids" and "I tell my child that I don't like his/her friends" Answers were rated on a 4-point scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). Cronbach's alpha reliability of this scale was within acceptable ranges (between .69 and .73). In line with previous confirmatory factor analyses (Mounts, 2000, 2002), the factorial validity of this scale was also found to be adequate in the current study. That is, exploratory factor analyses indicated a one-dimensional factor structure: A first factor had eigenvalues ranging between 2.39 and 2.58 (explaining 39.78%–43.00% of the variance) and a second factor had much smaller eigenvalues ranging between 0.89 and 1.01 (explaining 17.78%–16.94% of additional variance). Scree plots confirmed the one-factor structure. Moreover, factor loadings of this one-factor solution ranged between 0.29 and 0.80 and were thus satisfactory (Tabachnick & Fidell, 2001).

To test whether prohibition of friendships by parents may have affected the friend nomination process (described in Procedures), we tested whether parental prohibition was correlated with

the position of the nominated friend on the target adolescents' lists of friends. If prohibition would affect the nomination, we would predict that not the best friend but a friend who is lower on the list would be invited and that a negative correlation is present. This effect was not supported by our data, however (for fathers' prohibition $r = -.02$, $p = .72$, and for mothers' prohibition $r = .00$, $p = .97$).

Intensity of peer contact was measured with five items asking about the amount of time (i.e., days and hours) that adolescents spend in the company of their current friends on school days and on weekends (Weerman & Smeenk, 2005). The instruction with this and the *friends' delinquency* scale was: "These questions are about your current friends." Adolescents indicated their answers on 3- or 4-point Likert scales, which were adjusted per item. Sample items regarding the week days are "How often do you spend time with your friends after school on week days?": 1 (*almost never*) to 3 (*3 days or more*). How much time do you spend with them on those days? (1 = *less than an hour*, 2 = *1 to a few hours*, 3 = *the entire afternoon and evening*). Cronbach's alpha reliabilities were acceptable, ranging from .68 to .70. Exploratory factor analyses indicated that these items patterned onto a single factor. That is, only the first factor had eigenvalues over 1 (2.30, 2.34, and 2.42 on T1, T2, and T3, respectively), and these first factors explained 46.05%–48.30% of the variance in this scale. The second factor had eigenvalues between 0.77 and 0.88 and explained only 15.30%–17.19% additional variance. Hence, a one-factor solution was preferred for this scale. With this solution, factor loadings were all satisfactory, ranging between 0.37 and 0.72 across waves (Tabachnick & Fidell, 2001).

Friends' delinquency. Adolescents also indicated, using a six-item scale, how many of their current friends had committed vandalism, theft under 5 euro, theft over 5 euro, assault, burglary, or robbery in the last 3 months (Weerman & Smeenk, 2005). These questions followed immediately after the intensity of peer contact questions. Adolescents used 3-point Likert scales (0 = *none*, 2 = *all of them*) to answer these questions. Reliability of this scale was within acceptable ranges (between .66 and .85). Exploratory factor analyses indicated that the scale had a clear single-factor structure, with the first factor explaining 46.37%–61.97% of the variance (eigenvalues between 2.78 and 3.72). The second factor did not add much to the explanation of variance in this scale (14.13%–16.84% explained variance, with eigenvalues between 0.85 and 1.01). All factor loadings on the first factor were adequate, ranging from 0.42 to 0.79 (Tabachnick & Fidell,

2001). Hence, this scale has a satisfactory one-dimensional factor structure.

Adolescent own delinquency and best friends' own delinquency were measured using 19 items asking about common adolescent delinquent activities, such as vandalism, graffiti, shoplifting, stealing at home or at school, and buying or selling stolen goods in the past year (Junger-Tas, Terlouw, & Klein, 1994). This self-reported delinquency scale was based on a large international comparative study on delinquency, the International Self Report Delinquency Study (for an overview, see: Enzmann et al., 2010). Frequency of these offenses was scored on 5-point Likert scales ranging from 0 (*never*) to 4 (*more than 10 times*). Adolescents and adolescent-nominated best friends independently rated their own delinquent behavior. These scales had good reliability, ranging from .83 to .89 for adolescents and from .82 to .87 for best friends. For relatively mild delinquency that will lead to only few convictions, self-reported measures are considered as most suitable and reliable (Jolliffe et al., 2003; Junger-Tas & Marshall, 1999; Thornberry & Krohn, 2000). Moreover, they are considered a valid way of measuring adolescent delinquency. For instance, these self-reported measures generally correlate strongly with official police records (for reviews, see Junger-Tas & Marshall, 1999; Thornberry & Krohn, 2000). Additionally, in this study, the external validity of this scale was demonstrated by its substantial correlation with the delinquency subscale of the Youth Self Report (YSR; $r = .47$, $p < .001$). Because these scales were positively skewed (skewness between 3.61 and 5.32), they were log-10 transformed. After this transformation, skewness and kurtosis fell within acceptable ranges (between 0.67 and 1.45; Tabachnick & Fidell, 2001).

Attrition

Attrition in the current study was low. The number of families participating in the study was 497 at T1, 466 at T2 (6.2% attrition), and 474 at T3 (4.6% attrition). For each variable, a maximum of 16.5% of the cases was missing (the average percentage of missing values per variable was 8.8%). To estimate the pattern of missing values, Little's (1988) Missing Completely at Random (MCAR) test was conducted. Although this very stringent test was significant, $\chi^2(N = 497, df = 1041) = 1,141.13$, $p = .02$, the χ^2/df ratio of 1.10 indicated a good fit between sample scores with and without imputation (Bollen, 1989). Participants with partially missing data could thus be included in the analyses.

Strategy of Analyses

To answer our research questions, we used structural equation modeling in Mplus, with a full-information maximum likelihood (Enders & Bandalos, 2001) estimation. Different structural equation models were estimated.

First, to form a basis for all the subsequent models, we aimed to create multiinformant latent factors for contact with deviant peers. A mediator should best be without any measurement error (Cole & Maxwell, 2003; Maxwell & Cole, 2007), and this was accomplished by using a latent factor. This so-called measurement model was composed of adolescents' reports of intensity of peer contacts, adolescents' reports of friends' delinquency, and best friends' reports of their own delinquency.

To test whether this construct was equivalent over time, factor loadings were constrained to be equal between measurements. This modification did not worsen model fit, $\Delta\chi^2(N = 497, 7) = 5.62, p = .59$, hence, the model was time-invariant. In addition, within-trait across-wave covariances were added (Cole & Maxwell, 2003). This measurement model yielded excellent model fit statistics, $\chi^2(N = 497, 42) = 55.19$, comparative fit index (CFI) = .99, Tucker-Lewis index (TLI) = .99, root mean square error of approximation (RMSEA) = .03, and formed the basis for the other models.

Second, to test the longitudinal associations between adolescent delinquency and contact with deviant peers, we used a cross-lagged panel model on three waves of adolescent delinquency and three latent constructs for deviant peer contacts. We added the 1- and 2-year stability effects for both variables, and concurrent (within-time) correlations between the variables. Finally, we added longitudinal cross-lagged effects of adolescent delinquency on contacts with deviant peers 1 year later, and vice versa, of contacts with deviant peers on adolescent delinquency.

These cross-lagged paths were found to be time-invariant. That is, constraining the effects of contact with deviant peers to adolescent delinquency, and the reverse effects, to be time invariant did not significantly worsen model fit, $\Delta\chi^2(N = 497, 2) = 2.67, p = .26$. This modification was therefore retained. To further trim the model, reverse effects from adolescent delinquency to contact with deviant peers could be constrained to zero without worsening model fit (following suggestions by Cole & Maxwell, 2003).

Third, in a separate model for each parent-child variable, we added the parent-child variables to

this cross-lagged panel design in order to test the proposed *longitudinal indirect effects* from parenting to contact with delinquent peers to adolescents' own delinquency. In these models, the parenting variable was correlated with delinquency and with contact with deviant peers at all measurement waves. In addition, all cross-lagged effects from parenting to contact with deviant peers and delinquency were added, as well as the reverse effects of delinquency and contact with deviant peers on subsequent parenting. When both the cross-lagged effects of parenting on contact with deviant peers and the cross-lagged effects of contact with deviant peers on adolescent delinquency were significant, longitudinal indirect effects were tested by estimating the joint significance of the paths that comprise the indirect pathway (MacKinnon, Lockwood, & Williams, 2004). These final models were thus used to test for longitudinal indirect effects of parenting on adolescent delinquency via peer contact.

Results

Table 1 displays descriptive statistics, correlations at T1, and 1-year stabilities of the variables in this study. Of the adolescents in our study, 73.2% engaged in one or more delinquent acts during the 3 years of this study (engagement in delinquency at T1: 59.7%, T2: 42%, and T3: 44.1%). The most frequently reported offenses at T1 were vandalism at school (30.8%), graffiti (21.1%), shoplifting (13.1%), fire setting (9.4%), theft at home (8.8%), theft at school (7.0%), purposefully damaging someone else's belongings (6.5%), and buying stolen goods (5.3%). Approximately two thirds of these offenses were reported to be often committed in company of others.

Contacts With Deviant Peers and Adolescent Delinquency

We used a three-wave cross-lagged panel model, including adolescents' own delinquency and a latent construct for deviant peer contact to test longitudinal relations between these two constructs (see Strategy of Analyses).

As shown in Figure 1, there was a strong T1 association between adolescents' own delinquency and deviant peer contact ($\beta = .66$). In addition, and in line with hypotheses, higher levels of contact with deviant peers strongly predicted adolescent delinquency 1 year later (β s = .42 and .40 from T1 to T2 and from T2 to T3, respectively). However,

Table 1
Descriptive Statistics for Variables Under Study for Time 1, Time 2, and Time 3

Variable	Descriptives						Stability ^a		Correlations							
	M _{T1}	SD _{T1}	M _{T2}	SD _{T2}	M _{T3}	SD _{T3}	T1-T2	T2-T3	1	2	3	4	5	6	7	8
Adolescent delinquency (A) ^b	2.27	4.97	1.92	4.53	2.18	4.76	.51	.52	1.00							
Best friends' delinquency (BF) ^b	3.02	5.15	3.11	5.70	3.32	6.51	.52	.47	.29**	1.00						
Intensity of friend contact (A)	10.10	2.08	10.30	1.94	10.66	1.96	.53	.59	.19**	.15**	1.00					
Delinquency of friends (A)	6.91	1.28	6.89	1.56	7.06	1.78	.45	.57	.56**	.18**	.25**	1.00				
Parental control (M)	4.59	0.76	4.41	0.81	4.16	0.95	.36	.53	-.01	-.01	.06	.01	1.00			
Parental control (F)	4.30	0.87	4.19	0.89	3.96	0.94	.45	.52	-.11*	-.07	.06	-.02	.03	1.00		
Parental prohibition of friends (M)	14.19	2.70	13.76	2.65	13.84	2.74	.60	.62	.06	.07	.11*	.10*	.14**	.04	1.00	
Parental prohibition of friends (F)	14.23	2.73	14.08	2.77	14.01	2.80	.60	.66	.11*	.09	.10*	.09	.02	.14**	.34**	1.00

Note. Informants are indicated between parentheses. A = adolescent; BF = best friend; M = mother; F = father.
^aStability was assessed using Pearson *r*. ^bRaw scores are presented here. Log-10 transformations are applied to correct for positive skewness of the delinquency measures.
 p* < .05. *p* < .01.

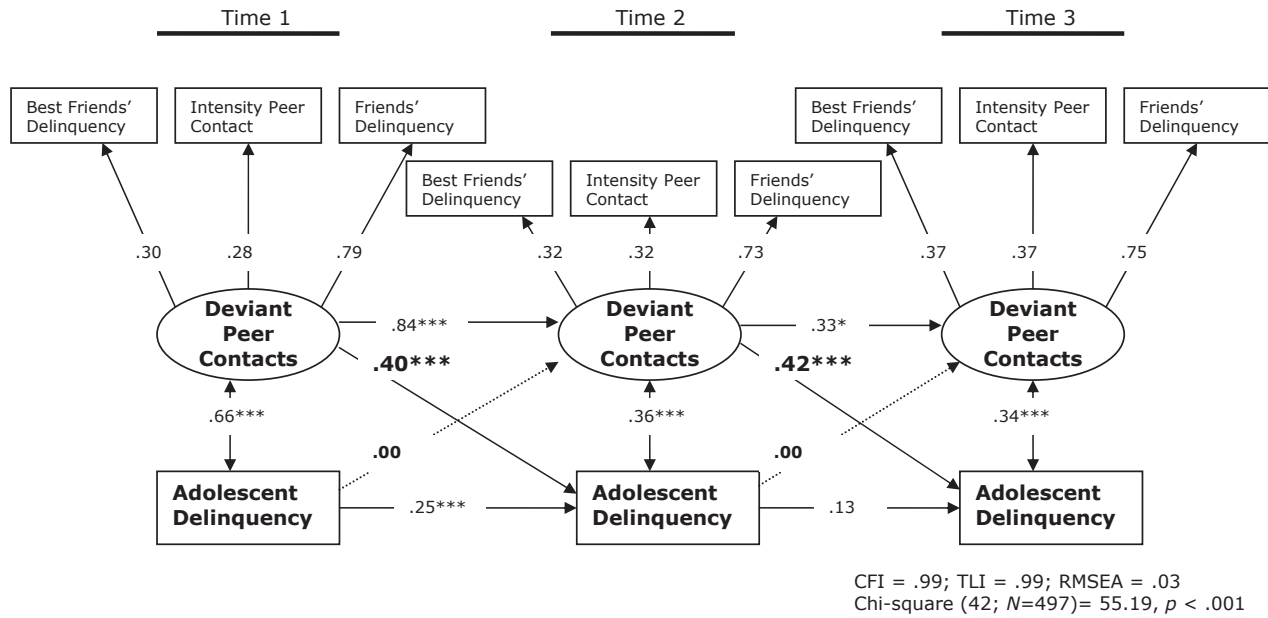


Figure 1. Cross-lagged panel model with contact with deviant peers and adolescent delinquency.
 p* < .05. **p* < .001.

cross-lagged paths from delinquency to contact with deviant peers were not significant, and this was in contrast to our hypotheses. Thus, having contact with deviant peers was a strong predictor of adolescent delinquency, but no reverse effects from adolescent delinquency to contact with deviant peers were found.

Subsequently, we ran some additional tests on this model. First, one could question whether the direction of effects was influenced by the fact that contact with deviant peers was modeled as a latent

construct, while delinquency was observed. Therefore, we ran a model with a latent construct for contact with deviant peers and a latent construct for delinquency. In this well-fitting, fully latent model, $\chi^2(N = 497, df = 58) = 81.54$, CFI = .99, TLI = .98, RMSEA = .03, we also found significant T1 associations between contact with deviant peers and adolescent delinquency ($r = .72, p < .001$). In addition, cross-lagged effects from contact with deviant peers to adolescent delinquency were found ($\beta = .82, p < .001$ and $\beta = .69, p < .001$ for the two subse-

quent intervals). However, no cross-lagged effects from delinquency to contact with deviant peers were present ($\beta = .13, p = .22$ and $\beta = .14, p = .22$). Hence, a fully latent model replicated the results from the basic model presented in this study. However, because a fully latent model could not be used for mediation analyses (no convergence was found, probably because such models are too complex for the sample size), we retained the model with contact with deviant peers as a latent construct and delinquency as an observed measurement as the basic model.

Second, because strong associations are typically found between adolescents' reports of their friends' delinquency and adolescents' own delinquency (Kandel, 1996), we checked whether contact with deviant peers would still predict adolescent delinquency when adolescents' reports of friends' delinquency were eliminated. This was indeed found.

Third, we tested whether this basic model would hold for boys and girls. Therefore, we constrained the T1 associations, correlated change at T2 and T3, and the cross-lagged effects to be equal for boys and girls in a multigroup structural model (groups defined by gender). The chi-square model fit did not change significantly when the model was con-

strained to be equal for boys and girls on all structural estimates, $\Delta\chi^2(N = 497, df = 21) = 29.63, p = .10$, nor did the cross-path from contact with deviant peers to adolescent delinquency vary by gender, $\Delta\chi^2(N = 497, df = 1) = 2.55, p = .11$.

It can thus be concluded that this basic model, in which contact with deviant peers predicts adolescent delinquency, but not vice versa, holds with different modeling strategies and also for boys and girls.

Indirect Effects of Parenting on Adolescent Delinquency, via Contact With Deviant Peers

To test the hypothesized *longitudinal indirect effects* from parental supervision to contact with delinquent peers to adolescents' own delinquency, we added the parenting variables to this model. The hypothesized indirect effects are shown with bold arrows in Figure 2, and the final estimates of the models can be found in Table 2. Figure 3 shows the full model for prohibition of friendships by mothers.

Prohibition of friendships by mothers and fathers at T1 predicted higher levels of contact with deviant peers at T2 ($\beta_{\text{Mothers}} = .11$ and $\beta_{\text{Fathers}} = .10$). In addition, T1 and T2 contacts with deviant peers

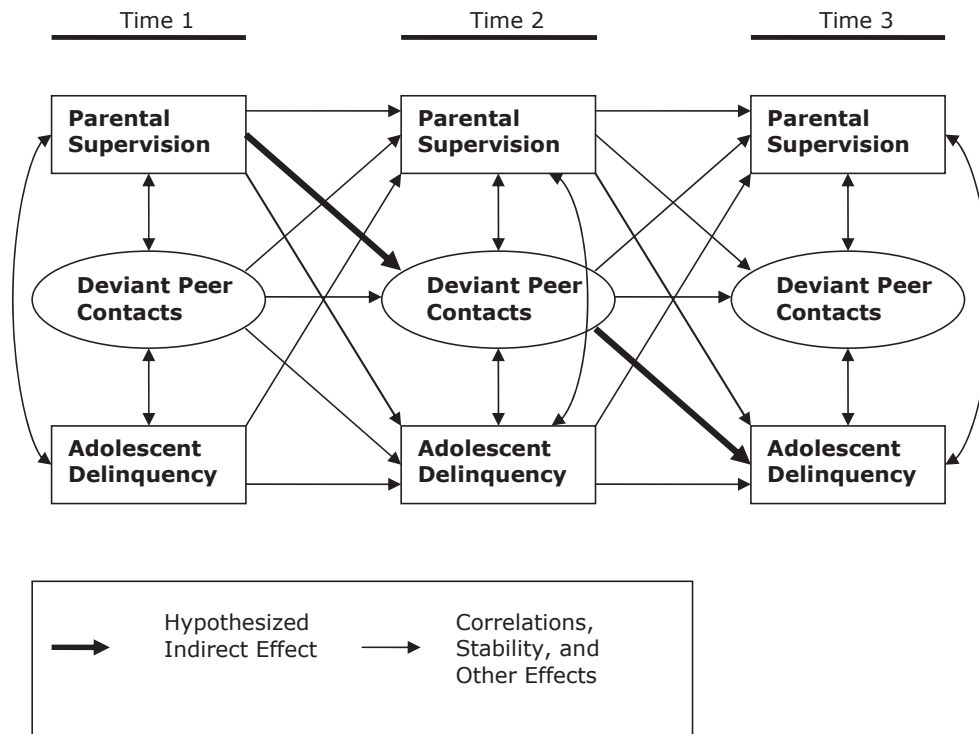


Figure 2. Structural equation model for testing longitudinal indirect effects from parenting to adolescent delinquency via contact with deviant peers (see Table 2 for results).

Table 2

Cross-Lagged Structural Equation Model on the Indirect Effects of Parental Supervision of Friendships, to Contact With Deviant Peers, to Adolescent Delinquency

Model parameters	Parental prohibition of friendships		Parental control	
	β_{Mothers}	β_{Fathers}	β_{Mothers}	β_{Fathers}
T1 associations				
T1 parental supervision ↔ T1 deviant peers	.18**	.15***	.01	-.05
T1 deviant peers ↔ T1 adolescent delinquency	.69***	.70***	.69***	.69***
T1 parental supervision ↔ T1 adolescent delinquency	.12**	.13*	.01	-.03
Cross-lagged effects				
T1 parental supervision → T2 deviant peers	.11*	.10*	.05	.02
T2 parental supervision → T3 deviant peers	.01	.01	-.08	.03
T1 deviant peers → T2 adolescent delinquency	.48***	.51***	.50***	.49***
T2 deviant peers → T3 adolescent delinquency	.50***	.52***	.51***	.51***
T1 deviant peers → T2 parental supervision	.08	.13	.02	.10
T2 deviant peers → T3 parental supervision	.08	.13	.02	.10
T1 adolescent delinquency → T2 deviant peers ^a	.00	.00	.00	.00
T2 adolescent delinquency → T3 deviant peers ^a	.00	.00	.00	.00
T1 delinquency → T2 parental supervision	.01	-.06	.05	-.09
T2 delinquency → T3 parental supervision	.01	-.06	.04	-.09
T1 parental supervision → T2 adolescent delinquency	-.01	-.02	.03	.00
T2 parental supervision → T3 adolescent delinquency	-.01	-.02	.03	.00
Indirect effects				
T1 parental supervision → T2 deviant peers → T3 adolescent delinquency	.06*	.05*	.03	.02

Note. See also Figure 2 for a graphical presentation of this cross-lagged model and Figure 3 for the model of mothers' prohibition of friendships. One-year stability of parental supervision and correlated change were also included but not reported in this table. Model fit statistics were acceptable, $\chi^2(69) \leq 165.25$, CFI $\geq .94$, TLI $\geq .91$, RMSEA $\leq .05$.

^aThese effects were constrained to 0.

* $p < .05$. ** $p < .01$. *** $p < .001$.

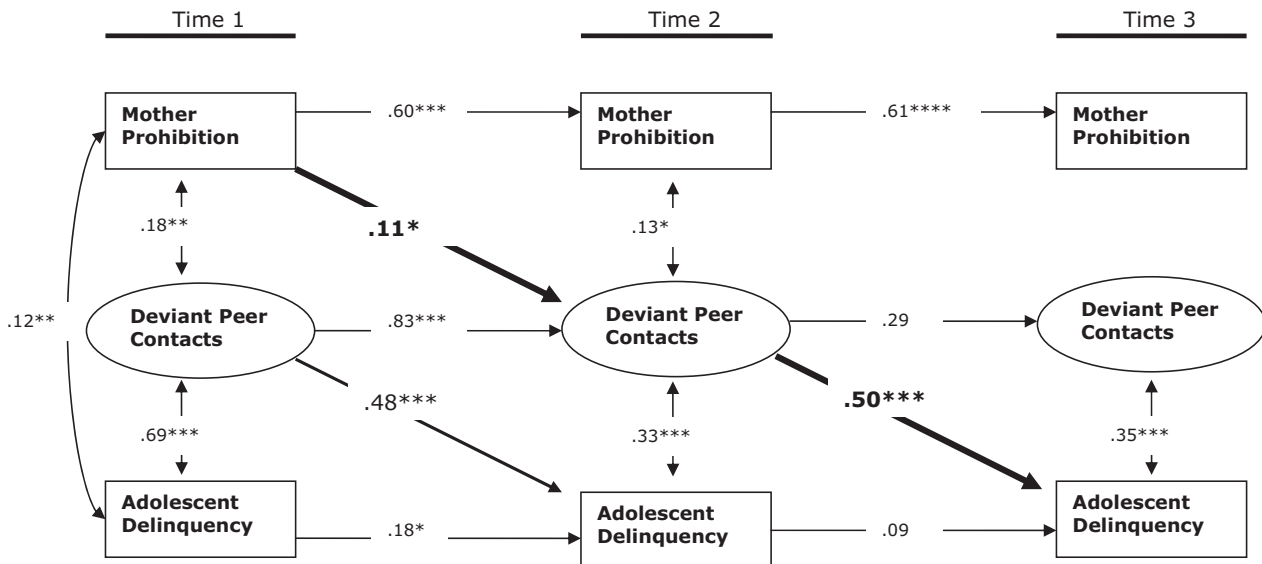


Figure 3. Structural equation model for testing longitudinal indirect effects from mothers' prohibition of friendships to adolescent delinquency, via contact with deviant peers.

Note. Only significant effects are displayed (see first column of Table 2 for results).

* $p < .05$. ** $p < .01$. *** $p < .001$.

predicted higher levels of delinquency at T2 and T3, respectively (β s between .48 and .52). There was a significant indirect effect ($\beta = .06$) from prohibition of friendships by mothers to adolescent delinquency 2 years later, via contact with deviant peers. A similarly significant indirect effect ($\beta = .06$) was found for fathers' prohibition of friendships. In contrast, neither fathers' nor mothers' control related significantly to contact with deviant peers. Thus, no indirect effects were found from parental control to adolescent delinquency through contact with deviant peers.

In addition, we tested (and controlled for) cross-lagged effects of contact with deviant peers and of adolescent delinquency on these parenting variables, from the perspective that child misbehavior and contact with deviant peers may also affect parenting. Although prohibition of friendships related to more contact with deviant peers at T1, no support was found for reverse cross-lagged effects from contact with deviant peers to parental control or to prohibition of friendships. Also, prohibition of friendships related to higher levels of adolescent delinquency at T1, but no direct prospective linkages between adolescent delinquency and subsequent parenting practices were found. That is, reverse effects of delinquency were not found. Adolescent delinquency did not predict subsequent parental control and parental prohibition of friendships.

Again some additional tests were conducted. First, we tested whether these models would hold for subgroups with different risk backgrounds. Of the youths, 206 were classified to be at higher risk for the development of externalizing problems (see Procedure of Data Collection). The cross-lagged effects in our model were constrained to be equal for low- and high-risk adolescents, yet this did not change any of the chi-square model fits, $\Delta\chi^2(N = 497, df = 6) \leq 6.58, p = .36$. Hence, the longitudinal effects in this model were not significantly different for the high- and low-risk groups.

Second, we have checked whether friendship characteristics (i.e., number of friends, reciprocity, and stability of friendships) or SES and risk profile may have affected these findings. Adding these control variables to the model by regressing these variables on all observed and latent constructs in our model, however, yielded highly similar results: Longitudinal indirect effects from parental prohibition of friendships to delinquency, via contact with deviant peers, remained significant.

Third, gender differences on the indirect effects were tested by constraining the indirect effects to

be equal for boys and girls. Chi-square model fit statistics were compared between the constrained and unconstrained model and no significant gender differences emerged, $\Delta\chi^2(N = 497, df = 2) \leq 2.55, p = .11$.

In sum, these models showed support for the hypothesized indirect effects from prohibition of friendships to adolescent delinquency, through increased contact with deviant peers, yet reverse effects of adolescent delinquency and contact with deviant peers on subsequent parenting were not found. These effects were independent of the adolescents' risk background, friendship characteristics, and gender.

Discussion

The current longitudinal study examined how peer influences and parental supervision of friendships are intertwined in the prediction of adolescent delinquency. Multiinformant cross-lagged panel analyses revealed that mother- and father-reported prohibition and disapproval of friendships predict more contact with deviant peers 1 year later, and indirectly predict higher levels of adolescent delinquency 2 years later. These results were observed even when controlling for reverse effects that deviant peers and adolescent delinquency may have on the quality of subsequent parenting. We discuss the implications of these findings next.

Parental Supervision of Friendships Predicts Contact With Deviant Peers and Adolescents' Subsequent Delinquency

During the transitional phase of adolescence, peers become a more salient influence in adolescents' lives. Especially when adolescents spend most of their leisure time in the company of deviant peers, teens may become more delinquent, themselves (Haynie & Osgood, 2005; Moffitt, 1993; Thornberry et al., 1994). The results of the current study suggest that parents can, by attempting to prohibit adolescent's friendships, actually push their children into the company of delinquent friends. This is indicated by longitudinal indirect effects from prohibition of friendships to contact with deviant peers to subsequent adolescent delinquency. This is the first study to show such indirect effects over time.

The finding that prohibition and disapproval of friendships relates to more contact with deviant peers can be understood from the

stage–environment fit perspective (Eccles et al., 1991; Eccles et al., 1993). This perspective states that a mismatch between adolescent developmental needs and the level of control that parents exert may increase adolescents' likelihood of spending time with peers, and the likelihood of peers affecting children's behavior. Hence, adolescents who cannot adequately develop into autonomous individuals, because their parents' level of regulation is suboptimal, may be more likely to spend time with delinquent peers. A similar process was described by Moffitt (1993). Children who experience a maturity gap, because they become physically adult but are socially treated as children (i.e., they are not allowed to work, drive a car, drink, etc.), may be tempted to mimic the antisocial behavior of peers. As antisocial youths appear relatively free from their families, and seem to make their own rules in life and do whatever they please, these peers can become more interesting to normally developing adolescents. Our finding that prohibition of friendships may increase contact with deviant peers, and may indirectly predict higher levels of delinquency, thus matches the theoretical notion that overly restrictive levels of control by parents may lead to higher involvement in deviant peer groups. Bad friends seem to become the "forbidden fruit" that appear attractive to adolescents when their autonomy is hindered.

Why prohibition and disapproval of friendships may be considered overly controlling and autonomy restrictive by adolescents can be understood from a social domain perspective. The regulation of decisions regarding friendships falls within a domain about which children and parents may hold different views about legitimate parental authority (Smetana, 1988). Whereas the majority of children indicate that it should be the individual's right to choose friends (Tisak, 1986), parents may focus on the prudential acts of deviant peers and claim authority on such issues (Smetana, 1988). As such, parents may find it justifiable to regulate adolescent friendships, whereas children find such regulation attempts to be outside the bounds of parental authority. This may result in a mismatch between adolescents' needs for autonomous decision-making and parents' efforts to regulate adolescents' decisions.

Interestingly, this social domain perspective also suggests that regulation of friendships may be considered more legitimate for children than for adolescents. Children's perceptions over parental authority change during early adolescence, with teenagers considering an increasing number of

issues to fall under the personal domain and under their own jurisdiction (Petronio, 2002; Smetana, Campione-Barr, & Daddis, 2004). Age differences in the effects of autonomy upon child adjustment suggest that there is an optimal level of autonomy that should match an adolescent's developmental stage. For instance, greater autonomy over multifaceted issues in early adolescence was associated with poorer adjustment, whereas in late adolescence it was also related to lower levels of depression (Smetana et al., 2004). Although our findings could not substantiate this idea, given the limited time frame of our study, future research may examine whether prohibition of friendships shows its more positive sides in childhood.

Comparing friendship prohibition to other forms of peer regulation (Mounts, 2002, 2008), prohibition seems the most autonomy-restrictive form, which may conflict with adolescent autonomy needs most strongly. Other forms, such as offering support and guidance, may have more beneficial outcomes (Mounts, 2002, 2008). Hence, disapproving of and prohibiting friendships likely results in a mismatch between adolescent autonomy needs and the environment parents provide. This may lead to more frequent and intense contact with peers who show higher levels of delinquency, and to higher levels of adolescents' own delinquency, in turn. When the forbidding of friendships is well explained by parents, however, and takes place in an autonomy-supportive fashion, it may have much more positive effects and relate to less affiliation with deviant peers (Soenens et al., 2009).

It may be, for a similar reason, that we did not find similar indirect effects for parental control, a construct composed of parents' attempts to regulate adolescents' behavior and attempts to claim information about what adolescents do in their unsupervised leisure time (Stattin & Kerr, 2000). Parental control may allow parents to keep track of their adolescents' leisure time activities and friendships, while still permitting greater autonomy. That is, children are not directly told with whom they cannot associate but are required to disclose to their parents information about their leisure time activities. In response to parental efforts to control adolescents' lives and acquire information about them, adolescents can use a great variety of information management strategies, such as full disclosure, telling a partial truth, secrecy, or lying (Frijns, Keijsers, Branje, & Meeus, 2010; Marshall, Tilton-Weaver, & Bosdet, 2005). Hence, although parental control may be considered an act of privacy invasion (Hawk et al., 2008; Kakiyama & Tilton-Weaver,

2009), parental control does not necessarily conflict with adolescents' desires to decide for themselves with whom they will associate. For instance, adolescents find it legitimate that parents have authority on prudential and moral-conventional issues (Smetana, 1988). Hence, parental control does not necessarily lead to a stage-environment mismatch, and does not always relate to higher delinquency (Keijsers, Branje, Van der Valk, et al., 2010; Stattin & Kerr, 2000).

Moreover, the absence of these linkages between parental control and contact with deviant peers seems consistent with recent ideas that parental monitoring has only marginal effects on adolescent delinquency (Kerr & Stattin, 2000; Stattin & Kerr, 2000) and that children are active agents in their own socialization. Scholars are only starting to understand that, through voluntarily disclosing or actively concealing information, adolescents themselves may play an important role in enabling parents' guidance and support (e.g., Keijsers, Branje, Frijns, Finkenauer, & Meeus, 2010; Keijsers & Laird, 2010; Marshall et al., 2005).

This new interpretation of the monitoring literature (Stattin & Kerr, 2000) and the premature autonomy perspective (Dishion et al., 2000; Dishion et al., 2004) both take into account that parental control may occur in response to adolescent deviancy. Although previous studies have shown that parents may adjust their levels of parental control when children become delinquent (Huh, Tristan, Wade, & Stice, 2006; Stice & Barrera, 1995) or have deviant peers (Dishion et al., 2004; Tilton-Weaver & Galambos, 2003), this bidirectional perspective on the parenting-delinquency link was not substantiated by our findings. That is, none of the effects of deviant peers or adolescents' own delinquency on subsequent parenting were found to be significant.

Strengths and Limitations

The longitudinal, multiinformant design used in the present study has several important advantages. The longitudinal design enables the control of reverse effects from adolescent delinquency and contact with deviant peers upon parenting. Further, the use of multiple measurement waves allows testing for indirect effects over time, which offers much stronger evidence for indirect effects than does cross-sectional mediation (Maxwell & Cole, 2007). Including multiple informants for adolescent delinquency, parenting, and contact with deviant peers additionally overcomes issues of shared source variance (for arguments, see Asel-

tine, 1995). The study is also characterized by some limitations, however.

First, there were measurement limitations. For instance, the parental prohibition construct that was used in this and many other studies measures both prohibition of friendships and communication of disapproval; it is unclear exactly why and how parents communicate this disapproval or try to forbid friendships. Subsequent studies are needed to clarify the family processes underlying this parenting behavior, and how prohibition of friendships relates to other parenting practices. We also used a latent construct for deviant peer contacts. Although latent concepts suffer less from measurement error than do observed measures (Kline, 2005), and are therefore essential to mediation analyses (Maxwell & Cole, 2007), they cannot be one-on-one compared with studies using separate measures for intensity of peer contact and delinquency of peers. Further, our measure for intensity of peer contact did not tap into the activities in which adolescents and their friends actually engage. Given that structured activities may relate differently to adolescent delinquency than unstructured ones (Flannery, Williams, & Vazsonyi, 1999; Mahoney & Stattin, 2000), this issue deserves future examination.

Second, the procedure may have affected the scores. Although best friends and target adolescents were instructed to complete the questionnaires independently and without communicating, the mere presence of the two adolescents in the same house may have affected their answers on the delinquency scale. In future studies, it would be even better if target adolescents and friends completed their questionnaires in different locations.

Third, this study focused on Dutch youths in their early to middle adolescence. Although this may be the most important time frame for studying influences of deviant peers, findings cannot be extrapolated to late adolescence and emerging adulthood. In addition, the vast majority of studies on peer influences upon adolescent delinquency are conducted in North America. Although levels of adolescent delinquency may not differ between the United States and the Netherlands (Verhulst et al., 2003) and the underlying processes may also be highly comparable (Van Lier & Koot, 2008), further cross-cultural studies are needed to test for cultural differences. Also related to issues of generalizability, additional studies are needed to test whether results differ for families with different socioeconomic backgrounds.

Fourth, although longitudinal studies can be informative in highlighting the direction of effects

over time, they do not provide insight into the possible mechanism(s) that may underlie such effects. More detailed methodology, such as focus groups or in-depth interviews, may give a more nuanced understanding of the underlying processes.

Despite these limitations, this study provides important information regarding the prediction of adolescent delinquency by detailing the interplay between parental supervision of friendships and contact with deviant peers. Findings suggest that prohibition of friendships by fathers and mothers may lead to more frequent associations with more deviant peers, which may subsequently result in higher levels of delinquency among adolescents. These findings show that to facilitate an understanding of the influences of deviant peers on adolescent delinquency, it is of importance to also consider the role of parental supervision of friendships. Forbidden friends may become "forbidden fruit" for adolescents and lead to unintended negative consequences for youths' own delinquent behavior.

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