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The Effects of Parenting and Peer Variables on Delinquency for Early and Late Onset Offenders

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INTRODUCTION

Aggression and antisocial behavior appear to be stable developmental characteristics that begin in the early years of life and continue into adulthood. Stable patterns of externalizing behavior can begin in early adolescence and these early patterns significantly predict later negative outcomes such as juvenile delinquency and adult criminality (Caspi, Elder, and Herbener, 1990; Coie, Terry, Lenox, Lochman, and Hyman, 1995; Farrington, 1991; Farrington, Loeber, and Van Kammen, 1990; Moffitt, 1993). If these early forms of delinquency and antisocial behavior are indeed precursors to later deviant acts, then it is of primary importance to understand the manifestation of these behaviors in order to alter their trajectories into adulthood.

Past research has offered strong support for the importance of both parenting factors and affiliation with delinquent peers in predicting delinquency in youth and adolescence. There have been numerous studies that have linked family variables with antisocial behavior. For instance, research has indicated that inconsistent parenting, parental negativity, and insecure parent-child attachment patterns predict externalizing behavior problems in childhood and early adolescence (e.g., Booth, Rose-Krasnor, McKinnon, and Rubin, 1994; Loeber and Dishion, 1983; Sroufe, 1983). In addition, research focused on the peer influences of delinquent behavior have found strong associations between affiliation with delinquent friends and involvement in delinquent behavior and substance use (e.g., Cairns and Cairns, 1994; Tremblay, Masse, Vitaro, and Dobkin, 1995; Thornberry and Krohn, 1997). Although there is strong support for the association between both parenting and peer factors and adolescent delinquency, researchers have disagreed in their theoretical explanations as to the importance of parenting and peer factors in the etiology of antisocial behavior.

The theoretical explanations for delinquency during adolescence vary in the importance that is placed on peer and parenting factors in the manifestation of delinquency. For example, one widely accepted theoretical perspective posits that adolescent behavior is a direct result of peer influence (Akers, 1998; Elliott, Ageton, and Canter, 1979; Elliott, Huizinga, and Ageton,

1985; Sutherland, 1939). More specifically, this theory suggests that adolescents engage in antisocial or delinquent behavior because these are the types of behaviors that are learned, encouraged and supported within their peer networks. In addition, according to Elliott and colleagues (1979; 1985), parenting values and practices may influence the choice of peer networks, but do not directly relate to adolescent delinquency after controlling for the effects of deviant peers. Thus, Elliott and colleagues argue that poor parenting practices lead to the association with deviant peers, and it is this association with deviant peers that directly predicts an increase in the likelihood of involvement in delinquent behaviors.

In contrast, a second theoretical framework suggests that the impact of peers plays a trivial role in the development of delinquency. This perspective argues for the importance of parenting practices in the manifestation of delinquency in youth and adolescence (Glueck and Glueck, 1950; Gottfredson and Hirschi, 1990), and considers affiliation with antisocial peers as indicative of similar peers gathering together. According to this opposing theory, children displaying weak attachments to their primary caregivers will develop characteristics such as impulsivity and defiance, which will in turn lead to an affiliation with similar peers. It is these antisocial characteristics which have developed due to inept parenting practices, such as inconsistent discipline and poor supervision, that then lead to both delinquency and the involvement with delinquent peers. Thus, this point of view explains delinquency as evolving from antisocial traits that have developed as a result of poor parenting practices.

A third theoretical viewpoint of delinquency takes into account both parenting practices and peer affiliation in explaining delinquency in adolescence (Patterson, Capaldi and Bank, 1991; Patterson and Yoerger, 1993). This model suggests that there may be two different pathways leading to delinquency based on the age of onset of the delinquent behavior. Past research has indicated that there may be a distinction between individuals who begin engaging in delinquent acts during childhood versus adolescence. For example, studies have indicated that adolescents with an earlier age of onset have a faster progression toward serious behavior and are more likely to display continuity in their antisocial behavior (Loeber, 1991; Loeber, Green, Lahey, Christ, and

Frick, 1992; Moffitt, 1993). Patterson and colleagues (1991; 1993) indicate that for those individuals who begin engaging in delinquent behavior in childhood or early adolescence, poor parenting practices play a prominent role in the manifestation of delinquent behavior. Similar to the second theoretical perspective mentioned above (Glueck and Glueck, 1950), adolescents who display an early onset of delinquent acts develop antisocial characteristics as a result of poor relations with their caregivers, and in turn also establish friendships with similar peers. However, unlike Glueck and Glueck's theory, Patterson believes that the involvement with these deviant peer networks then serves to increase or strengthen adolescents' delinquent behavior.

A second, distinct pathway in explaining delinquency emerges for individuals who begin engaging in delinquent acts in middle or late adolescence. Patterson's model argues for the importance of peer affiliation in predicting delinquency for individuals who display a later onset of delinquency. Similar to the theory posited by Elliott and colleagues, Patterson's model for late starters stresses the importance of peer networks as a cause for involvement in delinquent acts, with poor parenting practices having only an indirect effect on involvement. Therefore, according to Patterson and colleagues, there are two distinct pathways to delinquency based on the age of onset: Adolescents who begin engaging in deviant behavior at an early age are more affected by inept parenting styles, whereas adolescents who onset at a later age are more affected by affiliation with deviant peers.

Similar to the argument proposed by Patterson and colleagues, Moffitt (1993) claims that there are two qualitatively distinct categories of antisocial behavior with separate theoretical etiologies. According to her model, there is a group of individuals whose antisocial behavior onsets in preadolescence and persists throughout adulthood (life-course-persistent), and a second group of individuals whose criminal career begins in adolescence and is of shorter duration (adolescence-limited). Moffitt believes that poor parent-child relations, problem parenting, and family adversity are among the key factors in the etiology of delinquency among life-course-persistent individuals. On the other hand, adolescence-limited delinquency is attributed to factors such as exposure to delinquent peers. These adolescence-limited offenders view the delinquent

behavior of their life-course-persistent counterparts as providing a highly valued mature status and seek to imitate the delinquent behaviors in order to obtain similar status. Thus, antisocial behavior offers a means for achieving two very important goals during adolescence, autonomy and maturity (Goldstein, 1990). Delinquency is likely to end for these adolescence-limited offenders as they move into adulthood and exit the maturity gap between biological and social age (Moffitt, 1993).

Moffitt (1997: 42-43) provides explicit hypotheses concerning the different predictions for life-course-persistent and adolescence-limited offenders. She states that for life-course-persistent offenders "the strongest prospective predictors of persistent antisocial behavior are anticipated to be measures of individual and family characteristics." Moffitt lists family attachment bonds among these measures. On the other hand, Moffitt suggests that "individual differences should play little or no role in the prediction of short-term adolescent offending careers. Instead, the strongest prospective predictors of short-term offending should be knowledge of peer delinquency, attitudes toward adulthood and autonomy...." Moffitt concludes by stating that "If life-course persistent and adolescence-limited delinquents, defined on the basis of their natural histories, do not show the predicted differential patterns of correlates, then that part of the theory is wrong."

Research conducted by Simons, Wu, Conger, and Lorenz (1994) has examined the various contrasting theoretical perspectives regarding the etiology of delinquency in adolescence. Their results most clearly align with Patterson's model of delinquency. Namely, Simons et al. have found that for late starters, affiliation with delinquent peers plays a significant role in predicting delinquent activity. On the other hand, involvement in criminal behavior was highest for early starters who displayed antisocial characteristics and associated with delinquent peers. Thus, antisocial characteristics are indirectly related to delinquency through association with deviant peers. The quality of parenting is related to delinquency only through its effect on levels of defiance and antisocial characteristics.

Both Patterson's and Moffitt's categorization of dichotomous pathways to delinquency based on age of onset is questionable (Thornberry and Krohn, forthcoming). Based on their interactional theory of delinquency, Thornberry and Krohn propose that it may not be necessary to consider two separate etiological pathways of delinquency. Rather, they indicate that the causal influences of delinquency are similar across the onset continuum and only differ in strength at different onset ages. It is the absence of strong bonds of attachment, along with opportunities to engage in delinquent behavior and structural adversity that produce antisocial behavior. These factors together play a causal role in the manifestation of delinquency and it is the potency of the causal factors that changes with age of onset. As the intensity of the causal factors increases, the age of onset decreases. Therefore, as bonding increases and deviant affiliation decreases, the age of onset will increase.

The debate as to the relative importance of parenting and peer factors in the etiology of youth and adolescent delinquency is one that needs to be further explored in order to understand the pathways to maladjustment. Although all models acknowledge the contribution of both these factors, the theoretical viewpoints indicate differential causal pathways leading to delinquency. The theoretical explanations reviewed above provide competing hypotheses as to the pathways to delinquency. According to Patterson's and Moffitt's etiological theories, early and late onset groups would differ in the relative importance of family and peer factors in the development of delinquency: early starters (life-course-persistent) would be directly influenced by parenting variables, and late starters (adolescence-limited) would be directly affected by peer affiliations. On the other hand, the interactional perspective (Thornberry and Krohn, forthcoming) would argue that both earlier and later onset groups would be characterized by the same causal pathways, and it is only the intensity of the factors that would change with age of onset.

Few empirical studies have directly compared the influence of parent and peer factors in the earlier and later onset of delinquent behavior. The present investigation attempts to test the two rival hypotheses above using longitudinal data of individuals tested over a two-and-a-half-year period.

METHODS

The analysis is conducted with data from the Rochester Youth Development Study (RYDS), a multi-wave panel study of the development of drug use and delinquent behavior among adolescents and young adults. Since 1988, sample members and the adult primarily responsible for their care have been interviewed; data on subjects were also collected from school, police, courts and social service agency records. Interviews were conducted at six month intervals through the first nine waves of data collection[1] and, after a two-and-a-half year period during which interviews were not conducted, Waves 10 through 12 data were collected annually. At Wave 1 the adolescents were in the Spring semester of seventh and eighth grades, and the average age was 13.5. By Wave 12, subjects were 22 years of age on average. For the current analysis, only Waves 2 through 9 are used.

Sample

The sampling plan of the RYDS was designed to oversample youth at high risk for serious delinquency and drug use since the base rates for these behaviors are relatively low (Elliott, Huizinga, and Menard, 1989; Wolfgang, Thornberry, and Figlio, 1987). To accomplish this while still being able to generalize the findings to a population of urban adolescents, the following strategy was used. The target population was limited to seventh and eighth grade students in the public schools of Rochester, New York, a city that has a diverse population and a relatively high crime rate.

The sample was then stratified on two dimensions. First, males were oversampled (75% versus 25%) because they are more likely than females to be chronic offenders and to engage in serious delinquency (Blumstein, Cohen, Roth, and Visher, 1986) Second, students from high crime areas of the city were oversampled on the premise that subjects residing in high crime areas are at greater risk of offending. To identify high crime areas, each census tract in Rochester was

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[1] Parental interviews were not done in Wave 9 because of funding problems, but were resumed in Waves 10 through 12.

assigned a resident arrest rate reflecting the proportion of the tract's population arrested by the Rochester police in 1986.

Because the true probability of each adolescent being selected is known, the sample can be weighted to represent all seventh and eighth graders in the Rochester Public Schools. The sample is weighted in the analysis to follow.

There are 1,000 seventh and eighth grade adolescents in the base panel. The current analysis is based on 786 adolescents for whom student interviews at Waves 2 through 9 and parent interviews at Waves 2 through 8 were completed. This represents a retention of 79%. Comparing the characteristics of respondents interviewed from Waves 2 through 9 with those of the total sample indicates that attrition did not bias the sample. (See Thornberry, Bjerregaard, and Miles, 1993, for a more complete discussion of the sample and of case attrition.) The analyses presented here eliminate adolescents who have never engaged in delinquent activity and whose age of onset occurred after age 15.

Interviews were conducted in person by RYDS staff. For Waves 2 through 9, adolescents were generally interviewed in private rooms in the school setting. Students who could not be interviewed at school were interviewed at home. Parents were interviewed at their homes. Interviews lasted between one and one-and-a-half hours.

MEASUREMENT

Delinquent Behavior

Delinquency is measured with two scales that are taken from a 38-item index that was originally adapted from the National Youth Survey (Elliott et al., 1985). For each of the items the respondents are asked if they have done a particular delinquent act in the last six months. If they respond in the affirmative they are asked a detailed set of follow-up questions including how many times they did it and a series of questions about the only (or most serious) time they engaged in the behavior. The follow-up questions are used to screen responses in order to determine if they are actually delinquent acts.

The *General Delinquency* scale is comprised of between 26 and 30 items ranging in seriousness from being drunk in a public place to attacking someone with a weapon. To ensure that items are age appropriate, the items included in this scale vary to some extent. For example, at Wave 7 when subjects were on average 16 years old, items such as running away from home were eliminated from the scale while items such as illegal gambling were added. *Serious Delinquency* is a subscale of the general delinquency scale including only serious property crime and crimes against persons. The eight items included in this scale remain constant throughout the waves of data collection.

Family and Peer Variables

In order to examine the relative effects of family and peer relationships on delinquent behavior for the different age of onset offenders, one variable from each domain was selected. The intent is to give each domain the best chance to predict delinquency; therefore, one variable was selected from each domain that both previous research (see Loeber and Stouthamer-Loeber, 1986; Thornberry and Krohn, 1997) and our own findings have shown to be strongly related to delinquent behavior. From the family domain we chose parental attachment and from the peer domain, we chose association with delinquent peers. The *parental attachment* measure is derived from Hudson's Index of Parental Attitudes (Hudson, 1982) which is asked of one of the respondent's parents or caretakers. The 11-item scale measures the parents' feelings of warmth, liking and absence of hostility towards their child. The scale has high reliability with Cronbach's alpha measures ranging from .86 to .89.

Association with delinquent peers is a 7- or 8-item scale measuring the extent to which the respondent's friends committed delinquent acts. Items range from damaging to destroying property to stealing and assault. In Wave 8 the item asking whether friends were truant from school was eliminated. Response categories range from most of them to none of them. Cronbach's alpha for the scale range from .86 to .92.

Control Variables

Race/ethnicity is measured by two dummy variables indicating whether the respondent is African American or Hispanic; whites are the excluded category. *Gender* is also measured by a dummy variable with male being assigned a 1 and female a 0.

Onset of Delinquency

Onset is determined by the respondent's report of the earliest age at which he or she engaged in any one of the thirty delinquent acts in the general delinquency scale or used drugs. Respondents were divided into three categories for the purposes of the current analysis. Those respondents who reported engaging in delinquency at ages 4-10 are considered very early onset offenders. Consistent with the literature (Loeber et al., 1992; Moffitt, 1993, 1997; Patterson et al., 1991) those respondents reporting onset at ages 11 or 12 are considered early onset offenders. Respondents reporting onset at ages 13 and 14 are considered late starters. Those who did not report any delinquent activity or who did not onset until the age of 15 were not included in the analysis. Table 1 provides the frequencies for the three onset groups.

(TABLE 1 ABOUT HERE)

RESULTS

The basic issue in this analysis is whether the relative impact of family and peers on delinquency varies for groups of offenders defined by their age of onset. Some theoretical perspectives, notably those by Patterson et al. (1991) and Moffitt (1993), argue that family influences are more pronounced for early starters while peer influences are more pronounced for late starters. Alternate perspectives, such as that recently proposed by Thornberry and Krohn (forthcoming) suggest that the same causal processes are at play during the same developmental period, regardless of when the delinquent career began.

In Table 2 we present data to test these rival assertions, using general delinquency as the dependent variable. For each of three age-of-onset groups—onset less than 10, at 11 or 12, and at 13 or 14—we estimate two models. In the first we regress general delinquency on attachment to parents and the control variables. In the second model we add association with delinquent

peers to the equation. If the typological theory is correct, one would expect that the effect of the family variable would be more pronounced for the early onset group and that the effect of the peer variable would be more pronounced for the later onset group. The dependent variable is measured at each of five data collection points, from Wave 5 (average age is 15.5) to Wave 9 (average age is 17.5). In each case the family and peer variables are measured at the preceding wave, Waves 4 through 8, respectively.[2]

(TABLE 2 ABOUT HERE)

General Delinquency

The top section in Table 2 shows that there appears to be very little support for the typological models in the equations for predicting Wave 5 delinquency. Indeed, contrary to those expectations, the impact of the family is not significant for the very young onset group but is significant for the two later onset groups. For those who began offending earliest the family effect is not significant (β = -.04) while there is a substantial impact of associating with delinquent peers (β = .49). For the other two groups the effect for the family variable is smaller than the effect for the peer variable. For those who onset at 11 or 12, for example, the standardized coefficient for attachment to parents is -.19 but the standardized coefficient for association with delinquent peers is .34.

The results are very similar for Wave 6 delinquency. Again, only the peer effect is significant for those with the youngest age of onset. For the two older age-of-onset groups both effects are significant but the peer effect is larger.

As we move toward middle adolescence—delinquency measured at Waves 7 and 8—the pattern conforms to the expectations of the typological theories. In these instances, only the family variable is statistically significant for the youngest onset group. For example, for Wave 7 delinquency the impact of family is -.26 (p < .001) and the impact of peers is .03 (ns) for those whose onset is less than 10. For the older onset groups the effect of peers is much larger. For

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[2] The coefficients for the control variables, gender and race/ethinicity are not presented but they are available upon request.

those who began offending at 13 or 14 the impact of the family is -.08 (ns) but the impact of peers is .27 (p < .001).

Finally, when delinquency is measured at Wave 9 the results again suggest a similar causal structure across the onset groups. For the youngest two age-of-onset groups the peer variable is significant while the family variable is not. For the oldest age-of-onset group both effects are significant with the family variable being slightly larger.

Overall, these results, although somewhat ambiguous, are not very consistent with the sharp demarcations suggested by the typological theories. For the very early onset offenders it is not the case that family influences, represented here by attachment to parents, are consistently more influential than are peer influences, represented here by association with delinquent peers. While that pattern is observed at two time periods (Waves 7 and 8) it is not observed at the other three (Waves 5, 6, and 9). Indeed, the general picture that emerges from the equations presented in Table 2 is one in which peer effects have a larger impact on delinquency than do family effects, regardless of the age of onset of delinquency. This is the case in three of the five equations for those who onset before age 10 and in all of the equations for those who begin offending at ages 11 or 12, a group generally categorized as "early starters" by the typological theories (e.g., Patterson et al., 1991; Simons et al., 1994). In general, there appear to be more similarities than differences in the forces that produce delinquency.

Serious Delinquency

The previous analysis used general delinquency as the dependent variable. This omnibus index includes a mix of both trivial and serious delinquent acts and it is possible that the results are, in large part, produced by the more trivial forms of delinquency and that the relative influence of family and peer effects on serious delinquency would conform more to the hypothesis of the typological theories. This is an important issue since those models portray the early starters as more serious and more persistent offenders than the late starters. Moffitt (1997: 40-41) states that "Adolescence-limited offenders should engage in proportionately more crimes that symbolize adult privilege or that demonstrate autonomy from parental control," whereas "life-course-

persistent offenders...should commit proportionately more of the victim-oriented offenses, such as violence and fraud." To examine this possibility, Table 3 estimates these equations using the 8-item index of serious delinquency as the dependent variable.

(TABLE 3 ABOUT HERE)

For the equations in which serious delinquency at Wave 5 is the dependent variable, the top section of Table 3, we see little support for this contention. Indeed, in this case the results are not particularly concordant with the hypotheses of either the typological theories or interactional theory. Contrary to interactional theory, the results are not consistent across onset groups and contrary to the typological theories the relative impact of family is more important for later onset groups while the impact of peers is important for earlier onset groups.

At the next time point, Wave 6, the impact of peers on serious delinquency is generally larger than the impact of family across onset groups. The coefficients are almost identical for those who begin offending at ages 11 or 12, though.

The results are most consistent with the hypothesis of the typological theories when Wave 7 serious delinquency is the dependent variable. In this case, family—but not peers—is significant for the youngest onset group. After that the impact of peers increases although the two variables are virtually identical for those who begin offending during early adolescence (ages 13 or 14).

At the last two time periods—serious delinquency measured at Wave 8 or at Wave 9—the peer effect is generally more pronounced than the family effect. This is the case in four of the six comparisons. In the other two—Wave 8 serious delinquency for the youngest onset group and Wave 9 serious delinquency for the oldest—neither variable is statistically significant.

In general, when the analysis is restricted to more serious forms of self-reported delinquency the results tend to replicate those presented earlier for general delinquency. There is no consistent evidence that the family is a more salient predictor of serious delinquency than are peers for the early starters, nor that peers are a more salient predictor than family for the late starters. Overall, the results in Table 3 suggest that both family and peer effects are important,

that peer effects are somewhat stronger and, importantly, that these effects do not vary systematically by the age-of-onset of the offenders.

DISCUSSION

Some developmental theories have suggested that people who exhibit antisocial conduct at young ages are different from those who begin offending in their adolescent years (Moffitt, 1997; Simons et al., 1994; Patterson et al., 1991). These theories suggest that early starters not only will have deviant careers that are longer and involve more serious forms of delinquency than later starters, but also the pathways to delinquent behavior will be different. Specifically, individual level factors such as parenting are expected to be more highly correlated with delinquency for early starters than they are for later starters, while social interactional variables such as associations with delinquent peers are predicted to be more highly correlated with delinquency for later starters than they are for early starters. Alternatively, other developmental theories (e.g., Thornberry, 1987; Thornberry and Krohn, forthcoming) suggest that both early and late starters will be characterized by the same causal pathways, and it is only the intensity of the factors that will be different for the two groups.

We begin to examine these hypotheses by estimating the relative effects of parental attachment and association with delinquent peers on delinquent behavior for several time points over the adolescent years for very early onset offenders, early onset offenders and later onset offenders. The findings suggest that there is no consistent evidence that the family is a more salient predictor of either general or serious delinquency than are peers for the early starters nor are peers more predictive of delinquency than family for the late starters. It is clear that these results bring into serious question at least part of Moffitt's theory concerning the different pathways for life-course-persistent and adolescence-limited offenders.

On the other hand, the results do not provide unambiguous support for interactional theory. Although there are more similarities than differences across the onset groups, the results are not entirely consistent across groups or across time.

It must be pointed out that we have only included a single measure of both family attachment and association with peers. It is possible that alternative measures of these constructs or a measurement model approach with multiple indicators of each construct would generate different findings. Simons et al. (1994), however, did use a multiple indicator approach and found that family factors did not have a direct effect on later delinquency for either early or late starters, whereas peers did for both groups. They did find different indirect effects of effective parenting through their measure of oppositional/defiant orientation for early and late starters. Examining alternative or expanded measures of family and peers or examining more complex models with the RYDS data set is being planned for future research.

The present study has found that family and peer variables do not relate to delinquent behavior in fundamentally different ways for early onset offenders as compared with later onset offenders. There is no support found for those developmental theories that suggest that early and later onset offenders require two distinct pathways or explanations for their delinquent behavior. Rather, we found that there are more similarities than differences in the relative predictive power of family and peer variables for the two groups.

References

Akers, R.L. (1998). *Social Learning and Social Structure: A General Theory of Crime and Deviance*. Boston: Northeastern University Press.

Blumstein, A., J. Cohen, J.A. Roth, and C.A. Visher (1986). *Criminal Careers and "Career Criminals"*. Washington, DC: National Academy Press.

Booth, C.L., L. Rose-Krasnor, J. McKinnon, and K.H. Rubin (1994). Predicting social adjustment in middle childhood: The role of preschool attachment security and maternal style. *Social Development* 3:189-204.

Cairns, R.B. and B.D. Cairns (1994). *Lifelines and Risks: Pathways of Youth in Our Time*. New York: Cambridge University Press.

Caspi, A., G.H. Elder, and E.S. Herbener (1990). Childhood personality and the prediction of life course patterns. In L.N. Robins and M. Rutter (eds.), *Straight and Devious Pathways From Childhood to Adulthood*. New York: Cambridge University.

Coie, J.D., R. Terry, K. Lenox, J. Lochman, and C. Hyman (1995). Childhood peer rejection and aggression as predictors of stable patterns of adolescent disorder. *Development and Psychopathology* 7:697-713.

Elliott, D.S., S.S. Ageton, and R.J. Canter (1979). An integrated theoretical perspective on delinquent behavior. *Journal of Research in Crime and Delinquency* 16:3-27.

Elliott, D.S., D. Huizinga, and S.S. Ageton (1985). *Explaining Delinquency and Drug Use*. Beverly Hills: Sage.

Elliott, D.S., D.H. Huizinga, and S. Menard (1989). *Multiple Problem Youth: Delinquency, Substance Use, and Mental Health Problems*. New York: Springer-Verlag.

Farrington, D.P. (1991). Childhood aggression and adult violence: Early precursors and later life outcomes. In D.J. Pepler and K.H. Rubin (eds.), *The Development and Treatment of Childhood Aggression*. Hillsdale, NJ: Erlbaum.

Farrington, D.P., R. Loeber, and W.B. Van Kammen (1990). Long-term criminal outcomes of hyperactivity-impulsivity-attention deficit and conduct problems in childhood. Pp. 62-81 in L.N. Robins and M. Rutter (eds.), *Straight and Devious Pathways From Childhood to Adulthood*. New York: Cambridge University Press

Goldstein, A.P. (1990). *Delinquents on Delinquency*. Champaign, IL: Research Press.

Glueck, S. and E. Glueck (1950). *Unraveling Juvenile Delinquency*. New York: Commonwealth Fund.

Gottfredson, M., and T. Hirschi (1990). *A General Theory of Crime*. Stanford: Stanford University Press.

Hudson, Walter. 1982. *The Clinical Measurement Package: A Field Manual*. Homewood, IL: Dorsey Press.

Loeber, R. (1991). Antisocial behavior: More enduring than changeable? *Journal of the American Academy of Child and Adolescent Psychiatry* 30:393-396.

Loeber, R. and T. Dishion (1983). Early predictors of male delinquency: A review. *Psychological Bulletin* 94:68-99.

Loeber, R., S.M. Green, B.B. Lahey, M.A.G. Christ, and P.J. Frick (1992). Developmental sequences in the age of onset of disruptive child behaviors. *Journal of Child and Family Studies* 1:21-41.

Loeber, R. and M. Stouthamer-Loeber (1986). Family factors as correlates and predictors of juvenile conduct problems and delinquency. Pp. 29-149 in N. Morris and M. Tonry (eds.), *Criminal Justice: An Annual Review of Research, Vol. 7*. Chicago: University of Chicago Press.

Moffitt, T.E. (1993). Adolescence-limited and life-course-persistent antisocial behavior: A developmental taxonomy. *Psychological Review* 100:674-701.

Moffitt, T.E. (1997). Adolescence-limited and life-course-persistent offending: A complementary pair of developmental theories. Pp. 11-54 in T.P. Thornberry (ed.), *Developmental Theories of Crime and Delinquency, Vol. 7: Advances in Criminological Theory*. New Brunswick, NJ: Transaction Publishers.

Patterson, G.R., D. Capaldi, and L. Bank (1991). An early starter model for predicting delinquency. In D.J. Pepler and K.H. Rubin (eds.), *The Development and Treatment of Childhood Aggression*. Hillsdale, NJ: Erlbaum.

Patterson, G.R. and K. Yoerger (1993). Developmental models for delinquent behavior. In S. Hodgins (ed.), *Mental Disorder and Crime*. Newbury Park: Sage.

Simons, R.N., C. Wu, R.D. Conger, and F.O. Lorenz (1994). Two routes to delinquency: Differences between early and late starters in the impact of parenting and deviant peers. *Criminology* 32:247-275.

Sroufe, L.A. (1983). Infant caregiver attachment and patterns of adaptation in preschool: The roots of maladaptation and competence. Pp. 41-81 in M. Perlmutter (ed.), *Minnesota Symposium on Child Psychology*, Vol. 16. Hillsdale, NJ: Erlbaum.

Sutherland, E.H. (1939). *Principles of Criminology* (Third Edition). Philadelphia: Lippincott.

Thornberry, T.P. (1987). Toward an interactional theory of delinquency. *Criminology* 25:863-891.

Thornberry, T.P., B. Bjerregaard, and W. Miles (1993). The consequences of respondent attrition in panel studies: A simulation based on the Rochester Youth Development Study. *Journal of Quantitative Criminology* 9:127-158.

Thornberry, T.P. and M.D. Krohn (1997). Peers, drug use, and delinquency. Pp. 218-233 in David M. Stoff, James Breiling, and Jack D. Maser (eds.), *Handbook of Antisocial Behavior*. New York: Wiley.

Thornberry, T.P. and M.D. Krohn (Forthcoming). The development of delinquency: An interactional perspective. In Susan O. White (ed.), *Handbook of Law and Social Science: Youth and Justice*. New York: Plenum.

Tremblay, R.E., L.C. Masse, F. Vitaro, and P.L. Dobkin (1995). The impact of friends' deviant behavior on early onset of delinquency: Longitudinal data from 6 to 13 years of age. *Development and Psychopathology* 7:649-666.

Wolfgang, M.E., T.P. Thornberry, and R.M. Figlio (1987). *From Boy to Man, From Delinquency to Crime*. Chicago: University of Chicago Press.

Table 1. Range in the Number of Respondents Within Each Onset Group Across Waves 4
through 9.

Age of Onset	N (smallest/largest)[a]
< 11 years of age	81/102
11-12 years of age	107/127
13-14 years of age	224/274

[a]The number of respondents varies for each analysis due both to attrition and missing data.

Table 2. The Impact of Attachment to Parents and Association with Delinquent Peers on the Frequency of General Delinquency for Earlier Versus Later Onset Groups (Standardized OLS Coefficients)[a]

Delinquency Measured at:	Onset Less Than 10		Onset 11-12		Onset 13-14	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Wave 5						
Family	-.14	-.04	-.18	-.19*	-.16**	-.13*
Peers	---	.49***	---	.34***	---	.23***
R^2	.08*	.30***	.09*	.20***	.05**	.10***
Wave 6						
Family	.02	.03	-.28***	-.28***	-.20***	-.16***
Peers	---	.29**	---	.40***	---	.39***
R^2	.05	.17**	.15***	.35***	.04*	.18***
Wave 7						
Family	-.26**	-.26**	.03	.07	-.12*	-.08
Peers	---	.03	---	.40***	---	.27***
R^2	.18**	.18**	.06	.21***	.04*	.11***
Wave 8						
Family	-.19*	-.23*	-.01	.01	-.19**	-.15**
Peers	---	.13	---	.22**	---	.38***
R^2	.06	.10*	.15***	.18***	.06**	.20***
Wave 9						
Family	-.14*	-.17	.04	.01	-.21***	-.18**
Peers	---	.31**	---	.21*	---	.12*
R^2	.05	.14*	.03	.07	.05**	.05*

*p < .05, **p < .01, *** p < .001

[a]The independent variables are measured at the interview wave prior to the measurement of delinquency. Gender and race/ethnicity are controlled in all equations.

Table 3. The Impact of Attachment to Parents and Association with Delinquent Peers on the Frequency of Serious Delinquency for Earlier Versus Later Onset Groups (Standardized OLS Coefficients)[a]

Delinquency Measured at:	Onset Less Than 10		Onset 11-12		Onset 13-14	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Wave 5						
Family	-.16	-.09	-.25**	-.26**	-.16**	-.15**
Peers	---	.35***	---	.19*	---	.07
R^2	.08*	.20***	.14***	.17***	.06**	.06**
Wave 6						
Family	.04	.04	-.26**	-.22**	-.18**	-.08
Peers	---	.23*	---	.24**	---	.18**
R^2	.05	.10*	.13***	.19***	.04*	.06**
Wave 7						
Family	-.23*	-.23*	-.00	.02	-.14*	-.12*
Peers	---	.05	---	.34***	---	.13*
R^2	.10*	.10*	.02	.13**	.03	.04*
Wave 8						
Family	-.16	-.14	-.08	-.04	-.16**	-.16**
Peers	---	.11	---	.40**	---	.28***
R^2	.09*	.09	.02	.17***	.06**	.15***
Wave 9						
Family	-.23*	-.22*	-.02	-.05	-.09	-.10
Peers	---	.28**	---	.35***	---	.09
R^2	.09*	.18*	.03	.16**	.05*	.07**

*p < .05, **p < .01, *** p < .001

[a]The independent variables are measured at the interview wave prior to the measurement of delinquency. Gender and race/ethnicity are controlled in all equations.