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Stephen A. Cernkovich

Peggy C. Giordano

STABILITY AND CHANGE IN ANTISOCIAL BEHAVIOR:

THE TRANSITION FROM ADOLESCENCE TO EARLY ADULTHOOD[*]

Stephen A. Cernkovich

Peggy C. Giordano

Department of Sociology

Bowling Green State University

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Abstract

Because of the strong relationship between age and antisocial behavior most criminological theory and research has concentrated on adolescents. Comparatively little work has focused on other age groups or on important transitional periods in the life course. In contrast this research, based on longitudinal data collected from two samples of young adults who were differentially involved in delinquency as teenagers, focuses on factors responsible for stability and change in antisocial behavior during the transition from adolescence to early adulthood. We evaluate the relative explanatory merit of two theoretical models—latent trait and life course—that stress different causal mechanisms in accounting for the temporal persistence of antisocial behavior. Among the respondents in our general household sample the data are consistent with both the latent trait and life course perspectives, supporting a mixed model comprised of prior delinquency and social bonding as significant predictors of continued criminality over the life course. The data for our sample of previously institutionalized respondents, on the other hand, are most consistent with the latent trait model. That is, while prior delinquency is a stable and consistent predictor of adult antisocial behavior, the impact of social bonding influences is minimal. These findings are generally consistent with the view that there is a small segment of the offending population who are more likely than others to become involved in serious and persistent antisocial behavior and who have weak social bonds to others. Over time, their bonding levels and antisocial behavior are more resistant to change than the majority of those who make up the offending population.

STABILITY AND CHANGE IN ANTISOCIAL BEHAVIOR:
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The well-established relationship between age and antisocial behavior has resulted in an extensive criminological literature on adolescent crime and delinquency. By comparison, relatively little theory and research has focused on other age groups or on important transitional periods in the life course, such as that from late adolescence to early adulthood. Nonetheless, criminologists, policy makers and the general public have become increasingly concerned with the relatively small group of offenders who do not age out of crime, but who instead continue their involvement in serious and persistent antisocial behavior well beyond adolescence. Two currently popular theoretical perspectives—the latent trait and life course models—have responded to these concerns by offering accounts of the general aging-out of antisocial behavior that occurs among most adolescents as they enter young adulthood. Both also offer explanations for why some of these youths continue or even escalate their antisocial involvement into adulthood.

The latent trait mode, a variant of the population heterogeneity perspective (Bushway, Brame and Paternoster, 1999; Nagin and Paternoster, 1991), is perhaps best represented by the work of Gottfredson and Hirschi (1990) and Wilson and Herrnstein (1985). These models suggest that while actual involvement in criminal behavior decreases with advancing age, there is no substantial change in the underlying propensity of individuals to be more or less crime-prone. That is, crime is a function of an underlying latent trait (low self-control in Gottfredson and Hirschi's theory; high impulsivity in Wilson and Herrnstein's model) established early in life that does not vary substantially over the life course. Those individuals who are the most crime-prone as teenagers will be the most crime-prone as young, middle-aged and older adults. They may well commit fewer crimes as they age, but this is due not to a change in the underlying propensity to do so, but to the "inexorable aging of the organism" (Gottfredson and Hirschi, 1990:141). While less crime-prone individuals also commit fewer crimes as they age, the crime-prone are more likely than the noncrime-prone to engage in criminal behavior at all ages.

The life course model, a variant of the state dependence perspective (Bushway, Brame and Paternoster, 1999; Nagin and Paternoster, 1991) and represented most prominently by Sampson and Laub (1990, 1993, 1997) and Patterson et al. (1989, 1992), also recognizes that individuals commit fewer crimes as they age. However, this perspective attributes the decrease in antisocial behavior evidenced by adolescents as they approach adulthood to enhanced social bonding. That is, as adolescents enter young adulthood they become increasingly committed to educational and vocational training, take jobs, get married and have children. All of these events are incompatible with the time, effort and risks associated with criminal behavior. They also reflect an increased commitment to conventionality and serve as informal social controls over antisocial behavior. Thus the life course model attributes maturation out of criminality not to the inexorable aging process, but to the increased social bonding that accompanies movement into adult roles and responsibilities.

Although they are not incompatible with one another, the latent trait and life course models stress different causal mechanisms to account for the continuity/discontinuity of antisocial behavior over time. Simons et al. (1998) have recently evaluated the explanatory merit of these two models in regard to the increase in antisocial behavior that typically occurs during the transition from childhood to adolescence. We build on their work in this research, but focus on a different phase of the life course, young adulthood—that time when involvement in antisocial behavior begins to decrease for the majority of youthful offenders. Our research is based on longitudinal data collected from two samples of young adults who were differentially involved in delinquency as teenagers. Our specific goals are to evaluate the relative explanatory power of the latent trait and life course models, identify which factors best account for behavioral stability and change during the transition from adolescence to early adulthood, and determine whether a mixed model might better capture the processes occurring than either model singly.

STABILITY AND CHANGE IN ANTISOCIAL BEHAVIOR

The distribution of antisocial behavior over time reveals an apparent paradox: both stability and change are supported by the research evidence. One explanation for these contradictory trends is methodological. *Retrospective research* on adult criminals shows that most have a history of antisocial

and delinquent behavior in their backgrounds. On the other hand, *prospective studies* of young children and adolescents reveal that while some do go on to adult criminal careers, most mature into relatively conforming adults (Sampson and Laub, 1993: 14; also see Robins, 1978; Thornberry, 1997b). A related explanation suggests that two different groups of offenders are reflected in the opposing trends. That is, while most childhood and juvenile offenders mature out of crime, a small minority of youthful offenders continues or even escalates their involvement in antisocial behavior. In fact, some research suggests that the continuity of antisocial behavior over time is characteristic only of a small group of serious chronic offenders (Sampson and Laub, 1993:13; also see Caspi and Moffitt, 1992; Loeber, 1982; Moffitt, 1993, 1997; Thornberry, 1997b). In this regard Moffitt (1993, 1997) makes a critical distinction between "adolescent-limited offenders" who make up the vast majority of the offending population and who age out of crime in their late teen years, and the relatively rare "life-course-persistent offenders" whose antisocial behavior remains generally stable over the life course.

Thus while there is evidence that differences in antisocial behavior are stable across the life course—that antisocial adolescents tend to become antisocial adults, while conforming adolescents tend to become conforming adults—this stability is far from perfect. Even though childhood misbehavior and adolescent delinquency are among the best predictors of criminality among adults, we know that most antisocial children do not become antisocial adults. That is, the stability of the age-crime curve supports the argument that most juvenile delinquents mature out of crime to become generally conforming adults. Yet we also know that a small but significant segment of the offending population continues to be involved in antisocial activities at relatively high levels throughout the life course (Sampson and Laub, 1993:10-12; also see Caspi et al., 1987; Elliott et al., 1985; Gottfredson and Hirschi, 1990; Gove, 1985; Jessor et al., 1977, 1991; Loeber, 1982; Moffitt, 1993, 1997; Robins, 1966; Shannon, 1988; West and Farrington, 1977; Wolfgang et al., 1987).

On a theoretical level both the latent trait and life course perspectives agree that there is a general tendency toward the stability of antisocial behavior over time. This stability is self-evident from the latent trait perspective: the underlying trait responsible for antisocial behavior during childhood and adolescence continues to be influential throughout adulthood as well. Once established, the latent trait is

relatively impervious to change, so that those who possess it will be more likely to engage in antisocial behavior at all phases of the life course than those who do not possess it. Those possessing the latent trait are also unlikely to establish meaningful relationships with others, and this too contributes to their continued criminality. In other words, the latent trait perspective does not believe that leopards change their spots—i.e. that antisocial adolescents become social adults or that unbonded youths become bonded adults.

The life course model, on the other hand, asserts that childhood and adolescent involvement in antisocial behavior causes a deterioration in social bonding to conventional others and institutions, and that these weakened bonds, in turn, lead to continued involvement in antisocial activities. Those who fail to establish meaningful social bonds in adulthood are expected to continue or even escalate their involvement in antisocial behavior. Those who are able to establish conventional bonds, however, are expected to reduce or cease their involvement in antisocial activities. Presumably, the distinctive shape of the age-crime curve is a function of the fact that most young adults establish meaningful bonds to family, friends and career once they enter adulthood. The relatively small number of offenders who graduate to adult careers in crime do so in large part because of their failure to develop such bonds.

In summary, there are two possible solutions to the apparent stability-change paradox. The first is that the opposing trends apply to different populations. That is, most antisocial adolescents mature out of crime (they change), but a small group of serious chronic offenders continue to be involved in antisocial behavior as adults at a relatively high level (their involvement is stable). This *population heterogeneity* explanation assumes that individuals vary in their underlying propensity to engage in antisocial behavior and that this propensity is persistent over time. The second explanation of the stability-change paradox is that the mediating effect of such factors as bonding to conventional others determines whether or not those involved in antisocial behavior relatively early in life will continue this involvement at subsequent phases of the life course. This *state dependence* explanation assumes that initial involvement in antisocial behavior has real and significant effects on the individual (by reducing inhibitions to deviance and/or by attenuating bonds to conventional others, for example), and these effects, in turn, influence the likelihood of future offending (Nagin and Paternoster, 1991: 163).

Whichever model is most accurate, both are capable of accounting for the paradox. However, there is scant research testing the relative efficacy of these two explanations of the continuity/discontinuity of antisocial behavior from adolescence to young adulthood. Such a comparative test is the focus of this research. Specifically, based on the underlying assumptions of the population heterogeneity/latent trait and state dependence/life-course models, we seek to evaluate the veracity of the following hypotheses:

H1: There is a positive relationship between adolescent involvement in delinquency and adult involvement in criminal behavior.

H2: There is a negative relationship between adolescent involvement in delinquency and social bonding in both adolescence and adulthood.

H3: The relationship between adolescent delinquency and adult criminality will be attenuated when adult social bonds are statistically controlled.

Both the life course and latent trait perspectives assume a positive relationship between adolescent delinquency and adult criminality and a negative relationship between adolescent delinquency and social bonding, though the specific nature of these relationships are differentially conceived by the two theories. The latent trait explanation is the more straightforward of the two: an underlying trait established early in life and relatively impervious to change is responsible for the temporal persistence of antisocial behavior. This latent trait is also responsible for weak levels of social bonding. From this perspective the persistence of antisocial behavior over time is self-evident: it is a result of a stable latent trait. According to the logic of this model, the bivariate relationship between adolescent delinquency and adult crime should be little affected by controls for adult social bonds. As Simons, et al (1998: 220) have noted, since weak adult bonding is a consequence of adolescent involvement in antisocial behavior, controlling for bonding variables should have no effect on the relationship between adolescent delinquency and adult crime. Any relationship between social bonding and criminal involvement is spurious—both share the common cause of prior delinquency.

According to the life course model, on the other hand, individuals who continue their antisocial behavior from adolescence into adulthood do so not because of some latent trait, but because their early antisocial involvement weakens conventional bonding. The social bonds that are attenuated by this early involvement, in turn, *mediate* the relationship between that early involvement and subsequent antisocial behavior. Early involvement in antisocial behavior is related to subsequent criminal behavior primarily because it weakens social bonds. It is these weakened bonds that are the proximal cause of subsequent criminality. And unlike the latent trait perspective, the life course model allows for the possibility that some antisocial individuals may experience a strengthening of their bonding to others. To the extent that this occurs, such individuals can be expected to moderate or discontinue their involvement in antisocial behavior. In any event, the life course perspective assumes that the bivariate relationship between adolescent delinquency and adult crime will be attenuated once the mediating effects of social bonding are taken into account (Simons, et al, 1998: 222-223; also see Laub and Sampson, 1993; Sampson and Laub, 1990, 1993).

In summary, both the latent trait and life course perspectives predict that those who are the most delinquent as adolescents will be the most likely to become adult criminals, but the two models account for this temporal stability via different causal mechanisms. This research evaluates the extent to which the mechanisms identified by these models characterize two samples of young adults who were differentially involved in delinquency as adolescents. However, it is important at the outset to note a potential complication introduced by our operationalization (discussed in detail below) of the latent trait model. Because we do not have a direct measure of the latent trait construct in the form of a self-control or impulsivity index, for example, we use adolescent delinquency as a proxy measure. Such a measure is consistent with Gottfredson and Hirschi's (1990) statement of the theory as well as with their preference for behavioral over attitudinal indices of the latent trait. Nonetheless, it also would be consistent with the theory to use level of social bonding as a proxy measure of the latent trait. This operational interchangeability of prior delinquency and social bonding leads to some inferential complications. Because the latent trait model proposes that adolescent delinquency, adult criminality and weak bonding are all consequences (and indices) of an underlying trait, any empirical analyses showing an attenuated

effect of prior delinquency on adult criminality when social bonding variables are added to the model are not inconsistent with a latent trait interpretation. By the same logic that identifies prior delinquency as a predictor of adult criminality, weak bonding also should be a predictor. If both are predictors then a model that includes the two sets of variables should produce an attenuated effect of prior delinquency when compared to a model that includes prior delinquency only.

If this interpretation of the latent trait model is correct, then social bonding is a correlate of adult criminality in both the latent trait and life course models, confounding our attempt to compare the explanatory merit of the two. While such an interpretation is certainly consistent with the major propositions of the two theories, it is important to recognize the different role that bonding assumes in the two models. Specifically, as Agnew (1995) and Jarjoura (1996:236) have noted, when the effect of a given variable can be accounted for by more than one theoretical perspective, it is essential to focus on the *intervening processes* implied by the competing explanations. In the life course model social bonding is an important *mediator* of the relationship between prior delinquency and subsequent antisocial behavior; that is, social bonding acts as an important *causal agent*; it is the mechanism through which prior delinquency influences adult criminality. In the latent trait model, on the other hand, it is the latent trait that is *the* causal agent; social bonding and prior delinquency are simply indices of this trait. Furthermore, there is no compelling theoretical rationale in the latent trait model to suppose that either of these two indices will have a greater impact than the other on adult criminality. Both prior delinquency and social bonding are consequences and indices of the underlying trait, and logic dictates that the two should be roughly equivalent in the magnitude of their impact on adult criminality. On the other hand, the life course model does offer a theoretical rationale for expecting that social bonding variables will have a greater causal impact than prior delinquency. In fact, in its extreme version the life course model proposes that the impact of prior delinquency will be reduced to nonsignificance when social bonding variables are included in the empirical model. Even in the less rigorous but more realistic version of this model, wherein both prior offending and social bonding assume causal roles, we would expect the impact of the bonding variables to be greater than that of prior delinquency. This is because the life course model proposes that prior delinquency influences adult criminality precisely because it weakens social

bonds; it is these weakened bonds that are the proximal cause of continued criminality. The latent trait model makes no such theoretical claim.

Finally, it is important to reiterate that although we have discussed the life course and latent trait models as alternative explanations, the two are in fact quite compatible with one another. For example, Sampson and Laub's life-course theory emphasizes both stability and change, and is actually a mixed-model that recognizes the importance of predispositions to antisocial behavior while simultaneously emphasizing developmental and bonding processes that influence such behavior over the life course. Similarly, Moffitt notes that antisocial patterns of behavior later in life reflect both early individual differences and the fact that these initial differences are "perpetuated or exacerbated by interaction with the social environment" (Moffitt, 1997:21). In short, even though the latent trait and life course perspectives emphasize different causal mechanisms, we believe that the processes implied by both theories operate to influence antisocial behavior over time. In this regard, we do not expect our data to support one theory over the other in any definitive sense. Rather, we anticipate that prior delinquency will be a strong predictor of adult criminality, even after controlling for the influence of social bonding. Similarly, we expect social bonding to be significantly related to antisocial behavior net of the influence of prior delinquency.

RESEARCH DESIGN

SAMPLE

Two related data sources are the basis for this study: a sample of individuals living in private households and a sample of previously institutionalized offenders. Respondents in both of these samples were interviewed initially in 1982 when they were adolescents and subsequently in 1992 (the household sample) and in 1995 (the institutional respondents) as young adults.[1] Table 1 presents comparative data regarding the demographic characteristics of the two samples.

Because of the possibility of differential reliability of our indicators across sample type, and since the underlying causal structure represented by our variables might differ for the household and previously institutionalized respondents, all of our analyses will be conducted separately for the two samples. This

decision was supported by the estimation of a general regression model—including all of our measured variables—conducted separately for the household and institutional samples and evaluated via a Chow test (Chow, 1960; DeMaris, In Press) to determine whether there were any significant differences in the regression parameters across the two groups. The resulting F-value of 7.608 (p < .001) indicated that the general model does not apply equally to the two samples, and that the analyses should be conducted separately for the two groups.

The differences between our two samples have some important theoretical and analytical advantages for the current study. If the apparent stability-change paradox is indeed due to the existence of two distinct groups of offenders (i.e., adolescence-limited and life-course persistent) reflecting opposing trends in antisocial behavior (i.e., desistance in the late teenage years vs. continuation or escalation over the life course), then our two samples allow for the possibility that we have both types of offenders represented in our data. That is, because our neighborhood sample is a general youth sample, it is reasonable to assume that it is most likely to include adolescence-limited delinquents—those youths whose involvement in antisocial behavior does not generally persist beyond the teenage years. On the other hand, our institutional sample is more likely to include life-course-persistent offenders—those with an early and long history of involvement in serious antisocial behavior and who are likely to continue this behavior throughout the life course. However, since we do not have complete social, psychological and behavioral histories of our respondents, there is no guarantee that we have sampled from these two offender populations. Nonetheless, such an assumption is not unreasonable. Regardless of the validity of this supposition, however, our samples at the very minimum contain a wide range of offender types and offending levels—from non-offenders at one extreme to serious chronic offenders at the other.

Household Sample

The 1982 household study was based on a sample of 942 youth 12-19 years of age living in private households in the Toledo, Ohio metropolitan area. A multi-stage modified probability sampling procedure was employed, in which area segments were selected with known probability. The most recent census data available at the time (Bureau of the Census, 1980) were used to stratify the sample by racial

composition and average housing value. Within area segments, eligible household respondents were selected to fill specified sex and race quotas; no specific age quotas were allocated, although the ages of respondents were tracked as the interviews were conducted to ensure adequate representation of all age groups. The respondents were equally divided among males and females and blacks and whites.

An effort was made in 1992 to locate and re-interview all of the original 942 household respondents. Subjects who had moved considerable distances from the region completed mailed questionnaires. Most respondents, however, lived in geographically proximate areas and were interviewed personally. The overall completion rate for the second wave of interviews was 77% of the original sample (adjusting the base rate for 10 confirmed deaths); of these, 82% completed personal interviews. Of the 721 respondents interviewed at Time 2, 45% were male and 47% were white. Of the non-whites, the majority (95%) was African-American. The subjects ranged in age from 22 to 29 years, with a mean of 25.31 years at the time of the re-interview. The average household income of the respondents was $21,100. Thirty percent of the household respondents were unemployed at the time of the reinterview.

Institutional Sample

The initial institutional data were derived from 254 personal interviews conducted in 1982, using the same interview schedule as for the household subjects. The respondents were drawn from the populations of three male juvenile institutions in the state of Ohio, and the entire population of the only female juvenile institution in the state. Fifty percent of the sample was female. Sixty five percent of the institutionalized respondents were white; the remaining non-whites were predominantly black (32% of the institutional sample).

In 1995 the previously institutionalized respondents were relocated, and a total of 210 of the initial 254 respondents were re-interviewed. This represents an 83% re-interview rate (85% when the sample is adjusted for deceased respondents). The second wave of data was collected via face-to-face interviews (91%) as well as through a mailed version of the interview schedule. Forty-eight percent of the re-interviewed respondents were male and 63% were white. Of the non-white respondents, 84% were

African-American. The respondents ranged in age from 29 to 34 years at the time of the reinterview, with a mean of 29.30 years. The average household income of the institutional respondents was $14,900. Thirty-nine percent of the respondents were unemployed at the time of the second interview.

TABLE 1 ABOUT HERE

Because of the small number of other minorities included in the two samples, the present analysis is limited to African-American and white respondents from the household (n=684) and institutional (n=197) samples. Logistic regression modeling of response/non-response indicated that follow-up respondents were slightly more likely to be white and female, although there were no significant social class or age differences between the two groups. Analysis of responses derived from the questionnaires in contrast to the personal interviews revealed few significant differences; however, those who completed the mailed version were somewhat more likely to be white and to report higher social status scores. Because of the possibility of over-representing the more conforming individuals from the original samples, several sources of information (e.g., records of military service, driver license registration lists, criminal offender data bases, relatives and neighbors of the respondent) for re-locating and re-interviewing difficult-to-find respondents were utilized and successfully implemented. That these procedures were successful is reflected in a relocation rate for the previously institutionalized respondents (85%) this was higher than that for the household respondents (77%). Further analysis revealed no differences in prior delinquency involvement among those who participated in the reinterview and those who did not. In short, we are confident that those youth that were the most conforming in 1982 were not over-represented among the reinterviewed respondents.

A potentially more serious problem has to do with differential measurement error by race. Hindelang, Hirschi, and Weis (1981) have presented evidence that black males' self-reports of delinquency involvement are less valid than those of other groups. African-American males may provide inaccurate estimates on a variety of other measures as well. If this is the case, and if misreporting is more common among serious offenders, our parameter estimates could be affected, especially if our indicators

are better predictors of serious as opposed to minor delinquency (or vice versa). While this has important implications for our analysis, we do not believe that such potential measurement error invalidates the data provided by the black males in our sample. There are several good reasons to believe that it does not.

First, Hindelang, Hirschi and Weis conclude that while differential validity by race means that self-reports are poor *social indicators* of the absolute volume of crime and delinquency among black males, such data can still be quite useful in *etiological research.* Etiological research is less interested in the absolute frequency of delinquency than with how individual or group rankings on delinquency are associated with individual or group rankings on various independent variables of interest (1981:215-16). The latter is clearly the focus of our research. Second, Hindelang, Hirschi and Weis note that while the differential validity problem makes comparison *across groups* potentially misleading, analysis *within groups* is not compromised. In this research we assess the explanatory power of the variables included in our models controlling statistically for the influence of race; the analyses involve no comparisons across race groups. A third mitigating factor is our reliance on face-to-face interviews in the collection of these data—the method Hindelang, Hirschi and Weis found to produce the least biased self-reports among black males (1981:178). Finally, confidence in the validity of these data is bolstered by our previous research on the relationship between delinquency and family, school and peer relations (Cernkovich and Giordano, 1987; 1992; Giordano and Cernkovich, 1986), which suggests that if black males are misreporting, they are not doing so in consistent and predictable directions. That is, the several family, peer, school and crime and delinquency scales we have created evoke among black males the full range of responses, in both a positive and a negative direction, and in ways that do not suggest social desirability or response set biases.

A related problem is the potential of differential validity and reliability of our measures across sample type. Although there have been numerous studies examining the measurement properties of scales created from the self-reports of respondents similar to those in our household sample, we actually know very little about this issue in regard to serious and persistent offenders (see, for example, Hagan, et al., 1997). Although not the focus of this research, our data are quite encouraging on this matter. The reliabilities of our scales are generally comparable for the institutional and household respondents; in fact,

the alpha coefficients are actually higher among the institutional respondents for two-thirds of the scales used in the current research. In short, we do not believe that differential reliability is a problem in these data. Simply because our scale reliabilities are acceptable does not mean, of course, that there is not a problem of differential validity across sample type. However, as was the case regarding race differences in validity, we believe that the likelihood of this sort of bias has been minimized by our data collection and analytic procedures, our focus on theory testing and our within-sample analyses.

Additional data not used in the current analysis but gathered as part of this research also support the conclusion that differential validity across race and sample type is not a significant problem. First, formal arrest history data collected from police agencies throughout the state are strongly correlated with respondents' self-reports of their offending and arrest careers; this is true across all groups of offenders, including African-Americans and those previously institutionalized. Second, in-depth narrative data derived from semi-structured interviews conducted after completion of the structured survey indicate that our interviewers established very high levels of rapport with the respondents. This is evidenced by their voluntary disclosure of quite sensitive and discrediting types of information, bolstering our confidence in the veracity of the information provided in all portions of the interview. In short, these supplementary sources of respondent information further increase our confidence in the general validity of the data.

MEASURES

Criminal Involvement (Household sample alpha = .839; Institutional sample alpha = .910), the dependent variable in this research, was measured at Time 2 by a modified version of Elliott and Ageton's (1980) self-report delinquency scale.[2] This scale indexes the respondent's reported level of involvement in property and personal crimes, as well as in drug and alcohol offenses, during the past year. Items were deleted which would have been inappropriate for an adult sample (i.e., status offenses). Responses were coded from 1 (Never) through 9 (More than once a day). Each offense item was assigned a ratio-score seriousness weight derived from the National Survey of Crime Severity (Wolfgang, et. al. 1985:46-50; also see Cernkovich and Giordano, 1992), ranging from 1.42 for drug use to 25.85 for rape. The adult

criminal involvement score for a respondent is the mean of the sum of the products of each item's frequency and its seriousness weight.[3]

Prior Delinquency Involvement (Household alpha = .784; Institutional alpha = .875) is measured at Time 1 as the self-reported involvement (over the past 12 months) in a variety of status, property, and violent offenses.[4] As was the case with the criminal involvement scale, the prior delinquency measure is based on a modified version of Elliott and Ageton's (1980) self-report delinquency scale. The scale items were weighted and a total delinquency score calculated in the manner described above.

Following Gottfredson and Hirschi (1990) we assume that antisocial behavior is a reasonable and valid indicator of the latent trait construct. At the same time, it is important to recognize that we do not measure the latent trait variable independently of antisocial behavior. This presents potential interpretation problems, of course, and Gottfredson and Hirschi have been criticized for the tautological nature of their theory and related measurement strategies (see, for example, Akers, 1997:92-93; but also see Matsueda and Anderson, 1998: 284, for a justification of the use prior delinquency as a meaningful index of the latent trait). Given the purposes of our research, however, we believe that our measure permits us to conduct a valid assessment of the research hypotheses. That is, we are interested in evaluating the very specific predictions that the life course and latent trait models make about the impact of *adolescent delinquency* on adult criminality, predictions which are independent of the specific way in which any underlying trait is measured. While the latent trait model is certainly not the only theory to propose an association between prior and subsequent antisocial behavior, other models that assume such a relationship generally propose some intervening mechanism linking the behaviors. For instance, the life course model asserts that social bonding mediates the relationship between past and future antisocial behavior; social learning theory emphasizes the role of association with deviant peers as a linking mechanism; and societal reaction theory stresses the corrosive effect that negative labeling has on subsequent behavior. In contrast to these explanations, the latent trait model proposes that none of these intervening mechanisms matter—prior delinquency increases the likelihood of future criminality regardless of level of social bonding, the influence of antisocial peers, negative labeling or other potential intervening factors. Thus, in spite of how any underlying predisposition to antisocial behavior in

operationalized, the latent trait model is consistent in its assertion that, net of other potential influences, early involvement in antisocial behavior is a strong and stable predictor of later involvement in antisocial behavior. In this research we are simply evaluating this claim for one set of intervening variables. Of course, because we are evaluating only the influence of social bonding, we cannot rule out to possibility that some other intervening mechanisms are responsible for the positive relationship between adolescent delinquent and adult criminality. In addition, to the extent that weak social bonding is also a consequence of an underlying latent trait, we would expect the effect of prior delinquency to be attenuated somewhat when bonding variables are added to the empirical model. Nonetheless, prior delinquency should continue to have a substantial influence on adult criminality. There is no theoretical justification in the latent trait model for assuming that social bonding will have a greater impact than prior delinquency on adult criminality. That is, contrary to the life course model, the latent trait model does not propose that social bonding mediates the relationship between prior and subsequent antisocial behavior.

The family, peer and economic satisfaction scales described below were initially identified via separate orthogonal (Varimax) factor analytic solutions of all of the family, peer and economic satisfaction-related items included in our interview schedule. Using these mathematical solutions as a starting point, we then modified the scales in an effort to derive a set of substantively meaningful, theoretically justifiable and empirically reliable scales. That is, once the scales were defined mathematically by the factor analysis, we performed a series of reliability analyses and examined each item and scale for its face and construct validity. Items that detracted from the internal consistency of the scale in question, and/or those that were not theoretically consistent with the other items comprising the scale were eliminated. Thus, although we generally maintained the dimensional structure identified in the factor analyses, we modified this structure when it was empirically and/or conceptually appropriate to do so. All scale scores were computed as the arithmetic mean of the items comprising them. Unless otherwise indicated, no temporal reference period for the questions comprising the scales was given.

Family Caring was measured by the following items at both Time 1 and Time 2: My parents often ask about what I am doing in school (the Time 1 reference to "in school" was replaced with "at

work or in college or during the day" at Time 2); My parents give me the right amount of affection; One of the worst things that could happen to me would be finding out that I let my parents down; My parents are usually proud of me when I've finished something I've worked hard at; My parents trust me; I'm closer to my parents than a lot of kids my age are ("most people my age" at Time 2). All responses were coded along a five-point Likert scale from Strongly Agree (5) to Strongly Disagree (1). High scale scores reflect high levels of family caring. The alpha reliabilities for the scales are .761 (Time 1 Household), .806 (Time 1 Institutional), .724 (Time 2 Household) and .746 (Time 2 Institutional).

Intimate Family Communication. Three items indexed this dimension at Time 1: How often do you talk to your parents about the boy/girl whom you like very much? Questions or problems about sex? Things you have done about which you feel guilty? At Time 2 respondents were asked about how often they talked to one or both of their parents (or closest living relative if parents are deceased) about these things: Your marriage (or boyfriends/girlfriends); Things you have done about which you feel guilty. Reposes at both time periods were coded along a five-point scale from Never (1) to Very Often (5). High scores on this scale are indicative of high levels of intimate family communication. The alpha reliabilities are .677 (Time 1 Household), .725 (Time 1 Institutional), .630 (Time 2 Household) and .524 (Time 2 Institutional).

Instrumental Family Communication at Time 1 was measured by the following items: How often do you talk to your parents about problems you have at school? About your job plans for the future? Problems with your friends? How well you get along with your teachers? At Time 2 respondents were asked about how often they talk to one or both of their parents (or closest living relative if parents are deceased) about these things: Things that are really bothering you; Money matters; Things having to do with employment (or job responsibilities/possibilities); Your relationships with your friends. Responses were coded along a five-point continuum from Never (1) to Very Often (5). High levels of instrumental communication are represented by high scale scores. The alpha reliabilities of the scales are .646 (Time 1 Household), .779 (Time 1 Institutional), .712 (Time 2 Household) and .744 (Time 2 Institutional).

Family Identity Support was measured by the following negatively worded items at both Time 1 (Household alpha = .680; Institutional alpha = .727) and Time 2 (Household alpha = .798; Institutional alpha = .756): My parents sometimes put me down in front of other people; Sometimes my parents won't listen to me or my opinions; My parents sometimes give me the feeling that I'm not living up to their expectations; My parents seem to wish I were a different type of person. Responses were coded from Strongly Agree (1) to Strongly Disagree (5). High scores on these scales indicate high levels of family identity support.

Imbalanced Peer Relationships at Time 1 and Time 2 were indexed by the following items: Sometimes my friends just won't listen to me or my opinion; I think I like most of the people in my group ("my friends" at Time 2) more than they like me; There is too much competition in the group ("among my friends" at Time 2); There is too much jealousy in the group ("among my friends" at Time 2). Responses were coded from 1 (Strongly Disagree) to 5 (Strongly Agree). High scale scores are indicative of imbalanced peer relationships. The reliabilities of the scales are as follows: .501 (Time 1 Household), .615 (Time 1 Institutional), .598 (Time 2 Household) and .623 (Time 2 Institutional).

Peer Caring was measured by the following items at Time 1 (Household alpha = .716; Institutional alpha = .768) and Time 2 (Household alpha = .735; Institutional alpha = .715): I feel comfortable calling my friends when I have a problem; I can trust them—I can tell them private things and know they won't tell other people; They're easy to talk to; They care about me and what happens to me. Reponses were coded along a five-point scale from Strongly Agree (5) to Strongly Disagree (1). High scale scores reflect high levels of peer caring.

Peer Communication at Time 1 was measured by the following items asking respondents how often they talked to their friends about each of the following issues: Problems you have at school; The boy/girl whom you like very much; Questions or problems about sex; How your parents treat you;

Whether your parents understand you; Things you have done about which you feel guilty. At Time 2 respondents were asked how often they talked to their friends about: Your marriage (or romantic relationships); Things that really bother you; Your relationship with your parents; Things that have to do with employment or job responsibilities/possibilities; Money matters; Things you have done which you feel guilty about. Responses were coded along a five-point scale from Never (1) to Very Often (5). High scale scores are indicative of high levels of peer communication. The alpha reliabilities of the scales are .682 (Time 1 Household), .625 (Time 1 Institutional), .782 (Time 2 Household) and .707 (Time 2 Institutional).

Peer Conflict was measured by the following two items at Time 1 and Time 2: How often in the past 12 months have you had disagreements or arguments with any of your friends? How often have you purposely not talked to them because you were mad at them? At Time 1 the responses were coded from 1 (Hardly ever or never) to 6 (Two or more times a week), while at Time 2 the categories ranged from Never (1) to Almost every day (6). At both time periods, high scales scores reflect high levels of peer conflict. The reliabilities of the scales are .489 (Time 1 Household), .580 (Time 1 Institutional), .682 (Time 2 Household) and .659 (Time 2 Institutional).

Economic Satisfaction. At Time 2 respondents were asked "How satisfied are you these days" with your employment (or job prospects)? Financial situation? Personal achievement? Educational achievement? Economic prospects for the future? Material Possessions? Responses ranged from Not satisfied at all (1) to Completely satisfied (4), with high scores representing high levels of economic satisfaction. The alpha reliabilities of the scale were .761 (Household) and .796 (Institutional).

Marital Happiness. At Time 2 respondents were asked to circle the number on a line from 1 (Extremely Unhappy) to 7 (Perfect) that best describes the level of happiness, all things considered, of their current relationship with their spouse/partner or girl/boyfriend. They were told that the middle point

(4 = Happy) represents the degree of happiness of most relationships. High scores on this item indicate high levels of marital happiness.

ANALYSIS AND FINDINGS

To begin our analysis we make a basic distinction between those respondents who scored above and below the Time 1 delinquency median (2.05 and 89.01 for the household and institutional respondents, respectively). This dichotomy permits us to explore some of the general differences between the more and less delinquent respondents in our samples. We turn our attention first to the household sample. Consistent with a large body of research suggesting a continuity of antisocial behavior over the life course (e.g., Caspi and Moffitt, 1992; Loeber, 1982; Moffitt, 1993, 1997; Patterson, et al., 1992; Sampson and Laub, 1993; Simons, et al., 1998), the data in Table 2 show that those respondents who were above the delinquency median at Time 1 were significantly more criminal at Time 2 than those who were below the Time 1 delinquency median (7.71 vs. 7.12). The gap in criminal involvement between the two groups, however, has narrowed considerably from the Time 1 delinquency difference (17.85 vs. 0.51), due in all likelihood to both maturation and regression to the mean among both groups. The data for the institutional respondents reflect the same pattern of behavioral continuity (12.11 vs. 8.68 at Time 2; 202.03 vs. 34.91 at Time 1).

Regarding the bonding measures, the household data show that while there were several significant differences in the expected direction (i.e., high levels of delinquency are associated with low levels of bonding) at Time 1 between those above and below the delinquency median, all but one of these differences (Family Caring and Trust) have disappeared by Time 2. The Time 1 differences in bonding are consistent with both the latent trait and life course models since both predict a negative relationship between antisocial behavior and social bonding. On the other hand, the similarity in bonding levels across the two groups at Time 2 is more consistent with the life course model; that is, these data show that differences in antisocial behavior have become smaller at the same time that differences in social bonding have diminished to nonsignificance. This suggests—but certainly does not establish—that one reason

those respondents who reported high levels of antisocial behavior at Time 1 report lower levels at Time 2 is because they have become more strongly bonded to others over time.

This explanation is not applicable to the institutional respondents, however, insofar as there are no differences in social bonding at either Time 1 or Time 2 between those above and below the delinquency median. These data are, however, consistent with the latent trait model that suggests that there is a group of persistent offenders who do not form strong attachments to others at any point during the life course. While there is variation in the extent of antisocial behavior among the institutional respondents, there is no question that, as a group, they are significantly more involved in antisocial behavior than even the most serious and persistent offenders in the household sample at both Time 2 (F=16.76, p< .001 for those below the T1 delinquency median; F=68.16, p< .001 for those above the T1 delinquency median), and Time 1 (F=612.65, p< .001 for those below the T1 delinquency median; F=1097.59, p< .001 for those above the T1 delinquency median). In this sense, they certainly qualify as serious chronic offenders (for a comparison of the delinquency involvement of respondents from the two samples see Cernkovich, et al., 1985). Insofar as *all* of the institutional respondents were serious and persistent offenders at Time 1 (by virtue of their institutionalization and according to their own self-reports), the lack of bonding differences between those scoring above and below the delinquency median is not inconsistent with the latent trait model.

TABLE 2 ABOUT HERE

Table 3 examines in more detail the degree to which levels of family and peer bonding changed from Time 1 to Time 2 for those reporting high and low levels of prior delinquency involvement. Because of the corrosive effect of delinquency involvement on social relationships, particularly family relationships, both the latent trait and life course models predict that bonding levels should decrease more among those high on delinquency at Time 1 than among those reporting low levels of prior delinquency involvement. Both models lead us to expect any gap in bonding levels between the more and less delinquent groups evident at Time 1 to persist and perhaps become even larger at Time 2. Beginning

with the household respondents, it is clear that the data in Table 3 do not support this expectation. While the data show that there is a decrease from Time 1 to Time 2 in levels of family caring and trust, instrumental family communication, imbalanced peer relationships, peer communication, and peer conflict, this decrease characterizes *both* the more and less delinquent respondents. Similarly, for *both* groups there are increases from Time 1 to Time 2 in levels of intimate family communication, family identity support, and peer caring and trust. Four of these eight differences in altered levels of social bonding between the more and less delinquent groups of household respondents are statistically significant. But contrary to the expectations of both the latent trait and life course models, the nature of these change is in all instances to bring the more delinquent group *closer* to the less delinquent group in level of social bonding. For example, although the level of family caring and trust decreased for both groups, it decreased less for the more delinquent respondents, who had the lower caring and trust levels at Time 1. Similarly, while peer conflict decreased for both groups, it decreased more for the more delinquent respondents, who reported higher levels of conflict at Time 1. Overall then, the gap in social bonding between the more and less delinquent respondents has actually grown smaller over time, a pattern clearly at odds with the basic tenets of the life course and latent trait models.

The data for the institutional respondents presented in Table 3 reveal the same general pattern that characterized the household subjects. Levels of family caring and trust, instrumental and intimate family communication, imbalanced peer relations, peer communication and peer conflict decreased over time for *both* the high and low prior delinquency groups, while levels of family identity support and peer caring and trust increased for *both* groups. None of these differences, however, are statistically significant. This is consistent with the data from Table 2 and again suggests that there may be a small group of serious and persistent offenders with low bonding levels that do not change appreciably over time. However, consistent with the general aging-out phenomenon, the behavior of our respondents did change over time. The level of antisocial behavior decreased among both groups of institutional offenders, with this reduction being quite dramatic for those who reported high levels of delinquency at Time 1. Among the household respondents, the more delinquent group also evidenced a decrease in antisocial behavior from Time 1 to Time 2, but the less delinquent group actually reported a slight increase. The change in

antisocial behavior over time is no doubt partly a function of regression to the mean, but it also likely reflects a real aging out process for the more delinquent respondents in both samples. Nonetheless, the institutional respondents continue to be substantially more antisocial than their household counterparts at Time 2, just as they were at Time 1 (see F-values presented above).

TABLE 3 ABOUT HERE

Overall, the supposition of both the latent trait and life course models that bonding levels should over time decrease most among those reporting the highest levels of prior delinquency involvement is not supported by our data. Rather than widening, any bonding gap evident at Time 1 between the two delinquency groups either decreases by Time 2 (among the household respondents) or remains essentially unchanged over time (among the institutional respondents). While the narrowing of the criminal involvement gap between the two groups over time might be explained by the increased levels of social bonding among the more delinquent respondents in the household sample, this narrowing of differences in antisocial behavior appears to be independent of any variation in bonding among the institutional respondents

Before we can draw any firm conclusions about the impact of social bonding on antisocial behavior over time, and thus evaluate the relative merits of the latent trait and life course models, it is necessary to examine more systematically the degree to which Time 1 delinquency is predictive of Time 2 criminality, net of variation in social bonding. Both the latent trait and life course models predict that those who were more delinquent at Time 1 should be more criminally involved at Time 2. However, the mechanism accounting for this behavioral continuity is quite different in the two theories. The life course model asserts that it is level of social bonding that is critical in accounting for the persistence of antisocial behavior over time. That is, Time 1 delinquency leads to Time 2 crime through the *intervening mechanism* of weak bonding: delinquency involvement leads to an attenuation of social bonds and these weakened bonds, in turn, lead to continued or increased criminal involvement in adulthood. Consequently, the life course model predicts that Time 1 delinquency will have little impact on Time 2

crime once the influence of the bonding variables is taken into account. The latent trait model, on the other hand, predicts that level of bonding at Time 2 will not affect the continuity of antisocial behavior. That is, Time 1 delinquency will predict Time 2 crime regardless of level of bonding at Time 2. Alternatively, it is not inconsistent with the latent trait perspective to expect *both* social bonding and prior delinquency to be significant predictors of adult criminality. Still, the latent trait model provides no theoretical justification for expecting that social bonding will *mediate* the relationship between prior and subsequent antisocial behavior. Only the life course model makes this assertion.

Table 4 presents the results from several regression analyses pertinent to evaluating the claims of the latent trait and life course models. In addition to the bonding variable discussed above, three control variables—sex, race and age—and two additional bonding measures—marital happiness and economic satisfaction—are included in these analyses. These two bonding variables are central to the life course model and are viewed as primary determinants of maturation out of crime (see Sampson and Laub, 1990; 1993): those who form strong marital and employment bonds are expected to reduce their level of criminal involvement over time. Those who fail to form these bonds in adulthood are expected to continue their criminal involvement at a relatively high level. While the life course model thus views the continuity of antisocial behavior to be contingent on the level of adult bonding, the latent trait perspective proposes that any change in behavior, beyond that due to aging, is unlikely (see Gottfredson and Hirschi, 1990)—economic satisfaction, marital happiness and other indicators of social bonding should have no effect on adult criminality. Alternatively, even if we affirm that the latent trait model proposes that *both* prior delinquency and social bonding are predictive of adult criminality, there is no theoretical rationale for assuming that prior delinquency has its effect *through* its impact on social bonding. Rather, since both are consequences and indices of the latent trait, it is more reasonable to assume that bonding and prior delinquency will be approximately equal contributors to continued antisocial behavior.

TABLE 4 ABOUT HERE

Table 4 presents four regression models for the household and institutional respondents: one that includes only prior delinquency and the demographic variables, another that adds the Time 2 family and peer bonding variables, a third that incorporates marital happiness and economic satisfaction, and a final trimmed model that includes only the statistically significant correlates of adult criminality. For the household respondents, Model 1 shows that prior delinquency is a significant predictor of Time 2 crime, even after controlling for demographic influences. This is consistent with both the latent trait and life course models. Model 2 permits an evaluation of the relative efficacy of the two theoretical perspectives. That is, if the life course model is correct, the introduction of the bonding variables should reduce substantially the impact of prior delinquency on adult criminality. The data in Table 4 show that this is not the case. Even though the difference in the magnitude of the unstandardized prior delinquency coefficient is significantly different from that reported in Model 1 (t = 3.036, p < .005),[5] this difference is substantively trivial and prior delinquency continues to be a significant correlate of Time 2 crime even when the bonding variables are added to the equation. Indeed, the influence of prior delinquency (Beta = .116) is greater than that of any other variable in the Model 2. Still, three of the bonding variables—imbalanced peer relationships, peer caring and peer conflict—and the three demographic variables are significant predictors as well. In fact, the influence of peer conflict and imbalanced peer relationships is almost as strong as that of prior delinquency. Model 3 adds the marital happiness and economic satisfaction variables to the equation, but of the two, only economic satisfaction is a significant correlate of criminality. The introduction of the new variables does not significantly reduce the impact of prior delinquency over that reflected in Model 2 (t = 0.0), although its impact is significantly different from that in the base Model 1 (t = 2.812, p < .005); significantly, in the full Model 3 prior delinquency continues to one of the strongest predictors of adult criminality. The final trimmed model reflects the continuing influence of prior delinquency on adult criminality, but it is clear that level of social bonding is important as well. In fact, two life course variables—economic satisfaction and peer conflict—are the strongest predictors in the model.

In summary, we believe the data for the household respondents provide support for *both* the latent trait and life course models. Only a very strict test of the life course model would hypothesize that the

effect of prior delinquency is reduced to nonsignificance when the bonding variables are introduced into the equation. Such an expectation would be inconsistent with such models as those of Sampson and Laub and Moffitt, which emphasize both stability (the influence of the latent trait) and change (the influence of social bonding). Similarly, the hypothesis that the introduction of the social bonding variables into the equation will have no effect on adult criminality nor attenuate the influence of prior delinquency is inconsistent with the basic tenets of the latent trait model, which views both prior delinquency and social bonding to be consequences and indices of the underlying trait (see Gottfredson and Hirschi, 1990). In short, we do not believe that the latent trait model is invalidated simply because several social bonding variables continue to be strong correlates of antisocial behavior even after ten effects of prior delinquency are statistically controlled. The influence of *both* prior delinquency and social bonding is perfectly consistent with the latent trait model. Nor do we believe that the life course model is invalidated by our data merely because prior delinquency remains a strong predictor of adult criminality once the bonding variables are added to the model. Rather, our data suggest that the processes implied by both perspectives are operating to influence the antisocial behavior of the household respondents.

Support for both theories is not as evident among the institutional respondents. While the four models account for substantially more variance in antisocial behavior among the institutional subjects than was the case for their household counterparts, fewer variables are statistically significant predictors. Model 1 shows that prior delinquency is a very strong correlate of antisocial behavior, even after controlling for demographic influences. The introduction of the social bonding variables in Model 2 does attenuate the impact of prior delinquency compared to its effect in Model 1 (t = 3.665, p < .001), but this difference across the two models is substantively trivial and the influence of prior delinquency remains substantial in Model 2. On the other hand, only one of the bonding variables—peer conflict—is a significant predictor. The economic and marital satisfaction variables, added to the equation in Model 3, have no significant impact, and while the influence of prior delinquency is attenuated compared to its effect in Model 1 (t = 3.162, p < .005), its impact is not significantly different from that evidenced in Model 2 (t = 0.0). Importantly, in both Models 2 and 3, prior delinquency continues to have a substantial influence on adult criminality. The final trimmed model shows that of the ten bonding variables originally

examined only peer conflict is significantly associated with antisocial behavior. In short, these data offer very limited support for the life course model. Among the institutional respondents, it is clear that the influence of prior delinquency on adult criminality is not mediated by the social bonding variables. Prior delinquency continues to have a substantial influence on antisocial behavior, even after the impact of the demographic and bonding variables have been controlled.

Overall, the data for the institutional respondents are most consistent with the latent trait model; support for the life course model is relatively weak compared to its predictive power among the household respondents. These findings are consistent with the data presented in Tables 2 and 3 and indicate that social bonding variables are less salient predictors of antisocial behavior among serious chronic offenders than among their nonchronic counterparts. To the extent that the latent trait model proposes that both weak bonding and prior delinquency are consequences and indices of the underlying trait, we certainly would expect *both* to be equally strong correlates of adult criminality. But while this was the case among the household respondents, the bonding variables have little impact among the institutional respondents. This may be due, at least in part, to the fact that bonding levels among the institutional respondents do not differ significantly for those above and below the Time 1 delinquency medians, nor do they change significantly over time (see Tables 2 and 3). Consequently, weak social bonding is a relative constant among the institutional respondents. Whatever the explanation, these findings again support the contention that there is a small segment of the offending population which, for a variety of reasons, fails to form strong social attachments to others. These same individuals, again for a variety of reasons, are also more likely to become involved in serious and persistent antisocial behavior. Over time, their bonding levels and behavior are more resistant to change than that of the majority of those who make up the offending population.[6]

Since the models presented in Table 4 consistently show that race and sex are significant correlates of adult criminality among both the household and institutional respondents, it is important to evaluate the extent to which the underlying structure of our model might differ across race and sex subgroups. Because of the small size of the institutional sample, any regression analyses performed on the sample split into race or sex subgroups would yield results in which we have little confidence. As an

alternative, we examined whether there were any interaction effects between race, gender and the other variables included in the trimmed model. For the sake of consistency we followed the same strategy for the household respondents, even though sample size was not a problem in this instance. With the exception of race and sex (which are dummy coded), all of the variables making up the product terms were centered at their means (i.e., expressed as deviation scores so that their means are zero). This procedure minimizes collinearity problems and permits a more meaningful and straightforward interpretation of the interaction effects (Aiken and West 1991: 9, 12-15, 35-38).

Because our goal was to evaluate the empirical veracity of each of the conditional relationships, each product term was entered into the equation singly and tested for its explanatory contribution (data not shown). Only one of the nine product terms we evaluated for the household respondents was a significant correlate of antisocial behavior. These data show that the effect of economic satisfaction on antisocial behavior is substantially greater among blacks (b = -1.058) than among whites (b = -.014). Among the institutional respondents, on the other hand, three of the five product terms we evaluated were significant predictors. While prior delinquency increased the likelihood of adult antisocial behavior among all respondents, this effect was greater among blacks (b = .037) than among whites (b = .012). Similarly, peer conflict was a much stronger predictor among the institutional males (b = 2.271) than among their female counterparts (b = .362). Finally, while race was strongly correlated with antisocial behavior across gender groups, this effect was substantially greater among females (b = 11.384) than among males (b = 7. 605).

SUMMARY AND CONCLUSIONS

Sampson and Laub (1993:6-7) are among the numerous scholars to remark on the profound impact that the age-crime curve has had on the conduct of criminological research. Because involvement in most criminal offenses peaks in the mid- to late teenage years, research and theorizing in the field has focused primarily on adolescents. While this is an understandable orientation, it has resulted in an underrepresentation of research efforts dedicated to other age groups and to important transitional periods, such at that from adolescence to early adulthood. Sampson and Laub's own work has gone a long way

toward rectifying this deficit, of course, but research in this area still lags behind the overwhelming emphasis on the peak-crime adolescent years. At the theoretical level explanations of crime and delinquency have paid relatively little attention to the age variable, and they have been roundly criticized for their inability to account for the aging-out phenomenon. However, two currently popular theoretical perspectives—the latent trait and life course models—do deal directly with the issue of stability and change in antisocial behavior.

The latent trait perspective, a variant of the population heterogeneity model, asserts that an underlying trait, established early in life and relatively impervious to change, is responsible for a stable pattern of antisocial behavior over time. In contrast to the majority of youths who cease their antisocial involvement once they enter adulthood, this model assumes that there is a small group of chronic offenders who do not age of out crime. For these youths possession of the latent trait assures their continued involvement in antisocial behavior. On the other hand, the life course perspective, a variant of the state dependence model, contends that individuals who continue their youthful antisocial behavior into adulthood do so not because of some latent trait, but because their early antisocial involvement produces weak social bonds to others which, in turn, increase the likelihood of antisocial behavior. That is, the social bonds that are attenuated by early involvement in antisocial behavior *mediate* the relationship between that early involvement and subsequent antisocial behavior. Thus both the latent trait and life course perspectives predict that those who are more delinquent as adolescents are more likely than their less delinquent counterparts to become criminal adults, but the two theories attribute this behavioral stability to different causal mechanisms. This research, using longitudinal data, was an evaluation of the extent to which these mechanisms were predictive of the antisocial behavior of two samples of young adults—one household-based (n=684), the other institution-based (n=197)—who were differentially involved in delinquency as adolescents.

Our initial analysis showed that differences in the level of antisocial behavior between respondents identified as more and less delinquent at Time 1 had become substantially smaller by Time 2. Furthermore, among the household respondents this movement toward greater behavioral similarity was accompanied by a reduction to nonsignificance at Time 2 of all social bonding differences evident

between the two groups at Time 1. This suggests that one reason that those respondents who reported high levels of antisocial behavior at Time 1 reported lower levels at Time 2 is because they became more strongly bonded to others over time. This explanation did not hold for the institutional respondents, however, insofar as there were no differences in social bonding at either Time 1 or Time 2 between those above and below the Time 1 delinquency median. Additional analyses revealed that the expectation of the latent trait and life course models that bonding levels should over time decrease most among those reporting the highest levels of prior delinquency was not supported by the data. Rather than widening, any bonding gap evident at Time 1 between the two delinquency groups either decreased by Time 2 (among the household respondents) or remained essentially unchanged over time (among the institutional respondents). Thus while the narrowing of the criminal involvement gap between the two delinquency groups over time might be attributed to the increased levels of social bonding among the more delinquent respondents in the household sample, this narrowing of behavioral differences was independent of any variation in bonding among the institutional respondents.

To examine this issue more thoroughly we conducted several regression analyses for both samples of respondents. The final trimmed model for the household respondents showed that while prior delinquency had a substantial effect on adult criminality, several bonding variables were significant predictors as well. One interpretation of these findings suggests that the household data provide support for both the latent trait and life course perspectives, indicating that a mixed model may most accurately capture the processes responsible for the continuity and discontinuity of antisocial behavior over time. An alternative interpretation, based on the assumption that both prior delinquency and social bonding are indices of the underlying trait, suggests that these data are uniquely supportive of the latent trait model. In this case, reference to a mixed latent-trait/life course model is unnecessary.

The final trimmed model for the institutional respondents showed that of the ten bonding variables originally examined, only one was significantly associated with adult criminality. However, prior delinquency continued to have a substantial influence on the antisocial behavior of these respondents, even after the impact of the demographic and bonding variables had been controlled. The data for the institutional respondents thus appear to be most consistent with the latent trait model; support

for the life course model is relatively weak compared to its predictive power among the household respondents. However, it is important to recall that bonding levels among the institutional respondents did not differ significantly among those more and less involved in antisocial behavior at Times 1 and 2, nor did the level of bonding change appreciably over time among these respondents. This suggests that weak social bonding is a relative constant among these more chronic offenders. To the extent that this is the case, it would be premature to conclude that bonding is a uniformly and consistently unimportant correlate of antisocial behavior. In addition, there may be sources of bonding that affect antisocial behavior among subsets of respondents that were not captured in our analytic framework.

For example, an in-process analysis of in-depth narrative data derived from interviews conducted after the structured portion of the Time 2 survey are quite illuminating in this regard. These data document that some of the institutional respondents have been strongly and positively influenced by bonds of marital attachment; that is, marital bonding had a substantial influence on their decision to discontinue involvement in antisocial activities. However, the respondents so affected constitute a small subset within the institutional sample that is not easily highlighted using traditional analytic strategies (such as our regression analysis) that necessarily focus on central tendencies. The life history data also point to several additional sources of bonding that served as catalysts for change, such as radical religious conversions, which were not included in our quantitative analyses. Such data provide a basis for a more complicated view of the role of social bonding in the stability/change process. We believe, for example, that high levels of bonding to significant others will tend to be rather ineffectual as a mechanism for change unless the others' behavioral repertoire is itself pro-social, or at a minimum headed in a pro-social direction. This is exemplified by a respondent who scored high on the quantitative measure of marital satisfaction, but whose partner was currently serving time for drug trafficking and child endangerment, and another who felt that she related better to her mother now that they were both addicted to crack cocaine. Finally, our ongoing qualitative analysis highlights the importance of considering the reciprocal relationship between the actor and his/her environment. We have found that it is not the mere presence of a particular environmental feature that is necessarily related to significant changes in life direction (i.e., movement from a criminal to a non-criminal lifestyle). Rather, chances for change are enhanced when

these factors are associated with cognitive shifts, often involving a transformation in the actor's conception of self (see e.g., Elder, 1998).

A recognition of such complicating factors notwithstanding, the data presented in the current research are consistent with the population heterogeneity model's assertion that there is a small group of offenders who begin their criminal careers early and continue them well beyond the time most other offenders have matured out of crime. However, it is important to note that we were not able measure the behavior and bonding characteristics of our respondents prior to early adolescence. This lack of an *initial conditions baseline* makes it difficult to sort out definitively the influence of population heterogeneity and state dependence influences on subsequent behavior (Nagin and Paternoster, 1991:184). Although it is almost always the case that criminal propensity is incompletely and imperfectly measured (Nagin and Paternoster (1991:165-66), the reader also should be cognizant of unobserved differences in criminal propensity when interpreting our findings. That is, the use of prior delinquency or any other indicator or combination of indicators of population heterogeneity will invariably omit other important measures of the presumed underlying trait. The same is true of our bonding measures. There is certainly some unknown degree of measurement error in our indices and it is clear that we have not modeled all sources of bonding that might be influential. Nonetheless, because we were interested in evaluating the very specific claims of two theoretical models regarding the relationship between prior and subsequent antisocial behavior, we do not believe that unmeasured heterogeneity poses critical problems for this research. That is, independent of the specific operationalization of the latent trait and social bonding constructs, the population heterogeneity model is consistent in proposing that early involvement in antisocial behavior is a strong and stable predictor of later involvement in antisocial behavior, regardless of the influence of any intervening variables. Similarly, the life course model proposes that any effect of prior delinquency will be mediated by such intervening mechanisms as social bonding. Of course, because our evaluation was limited to the mediating influence of selected social bonding variables, we cannot rule out to possibility that some other intervening mechanisms are responsible for the relationship between adolescent delinquency and adult criminality. For example, Sampson and Laub (1997) recently have proposed a cumulative disadvantage model wherein attempts to label and suppress antisocial

behavior produce a number of negative consequences—as proposed by labeling theory—that accumulate over time to increase the likelihood of subsequent antisocial behavior.

Another limitation of our research is the lack of a direct measure of the latent trait construct. We employed prior delinquency as a proxy measure of this construct, an approach consistent with Gottfredson and Hirschi's (1990) statement of the theory and their explicit preference for such behavioral measures. Still, such a measure poses tautological problems, and because social bonding variables also are reasonable proxy measures of the latent trait, interpretational difficulties as well. That is, our results showing an attenuated effect of prior delinquency on adult criminality once social bonding variables are added to the regression model are not inconsistent with a latent trait interpretation. In short, if both social bonding and prior delinquency are indices of the underlying latent trait, then a model that includes both *should* attenuate the effect of prior delinquency when compared to a model that includes prior delinquency only. Following this line of reasoning leads us to expect that social bonding should be a correlate of adult criminality in *both* the latent trait and life course models. If this is the case, then a straightforward evaluation of our research hypotheses becomes compromised.

However, it is important to recall the distinctly different role that social bonding assumes in the two models. In the life course model bonding *mediates* the relationship between prior delinquency and subsequent antisocial behavior. That is, social bonding is an important *causal agent*; it is the mechanism through which prior delinquency influences adult criminality. In the latent trait model, on the other hand, it is the latent trait that is *the* causal agent; social bonding and prior delinquency are merely indices of this trait. Furthermore, there is no compelling theoretical rationale in the latent trait model for assuming that one of these indices—prior delinquency or social bonding—will have a greater impact than the other on adult criminality. That is, both are consequences and indices of the underlying trait, and logic dictates that the two should be approximately equivalent in their impact on adult criminality. On the other hand, the life course model does offer a theoretical rationale for expecting that social bonding variables will have a greater causal impact than prior delinquency. The life course model proposes that prior delinquency influences adult criminality precisely because it weakens social bonds; it is these weakened bonds that are the proximal cause of continued criminality. Nonetheless, the interpretational

complications introduced by the operational interchangeability of prior delinquency and social bonding in this study could have been avoided had we used a more direct measure of the underlying trait, such as an impulsivity or self-control scale.

The limitations of our research notwithstanding, we believe that our findings have important implications regarding the utility of the population heterogeneity and state dependence perspectives. On the one hand, it is clear that the two theories are not best viewed as antithetical to one another. Although the two models stress different causal mechanisms, the processes central to the latent trait and life-course perspectives are certainly not incompatible with one another. Among both the household and institutional respondents, the consistent pattern revealed in our data is the significant impact of prior delinquency on adult criminality. Similarly, while their introduction did not substantially reduce the impact of prior delinquency, several life course variables were important predictors of adult criminality among the household respondents. In this sense, a model emphasizing the role of both population heterogeneity and state dependence influences seems to best capture the dynamics of behavioral change/stability during the transition from adolescence to early adulthood. As noted above, however, the operational interchangeability of prior delinquency and our bonding measures as indices of an underlying trait also suggests that a pure latent trait model is consistent with these findings. Thus we cannot say with certainty that a mixed theoretical model is the preferable interpretation.

Our data also indicate that the underlying causal processes responsible for the continuity of antisocial behavior may differ for serious chronic offenders and their nonchronic counterparts. In particular, while prior delinquency was a strong predictor of adult antisocial behavior among the institutional respondents, the social bonding factors we examined were not as salient for this group as was the case for their household counterparts. These differential findings across the two samples are not inconsistent with the distinction Moffitt (1993, 1997) has made between "adolescent-limited offenders," who begin their antisocial careers in adolescence and age out of crime in their late teen years, and the comparatively rare "life-course-persistent offenders," whose antisocial behavior begins earlier and remains relatively stable over the life course. Thus our differential findings across sample type may

reflect the fact that our household sample represents mostly adolescent-limited offenders, while the institutional sample is primarily comprised of life-course persistent offenders.

It would be instructive to follow our respondents, particularly those still involved in significant antisocial behavior as young adults, even further into adulthood in order the gauge the persistence of their antisocial activities over the longer term. It is unlikely that all of those still involved in antisocial behavior as young adults will continue this conduct throughout the entire life-course. Instead, some of these offenders will most likely desist later in life as bonding and other influences become more consequential. In short, it is important to remain cognizant of the fact that not all offenders discontinue their antisocial activities at the same pace or at the same time. While most youthful offenders obtain stable employment, get married, begin families and cease involvement in criminal activities by early adulthood, others continue to live a hedonistic and irresponsible style of life during these years, an orientation conducive to continued antisocial behavior. Other forces, such as chronic unemployment, for example, no doubt also operate to sustain a pattern of antisocial behavior among many offenders. For some of these individuals, the bonding and other influences so critical for maturation out of crime may intervene later in life than is the case for the majority of offenders. All of this suggests that the age-crime curve, while descriptive of the temporal patterning of antisocial behavior among most offenders, masks a much more complicated process of stability and change among a smaller chronic offending segment of the population.

If we accept the premise that there is a small group of offenders who do not begin and age out of crime in the same fashion as most offenders, then it is important that researchers examine in greater detail the extent to which the stability-change paradox is a function of the existence of two distinct populations of offenders. Both the latent trait and life-course models are capable of accounting for the observation that although past behavior is a consistent and stable predictor of future behavior, most youthful offenders do mature out of crime. However, this issue has not been systematically examined, in part because of the relatively scant (though increasing) research focusing on serious chronic offenders—those whose early, frequent and serious involvement in antisocial behavior puts them at high risk for the continuation and escalation of such behavior. It is essential that the research agenda be expanded to include an even

greater focus on this group, and equally important that it include attention to patterns of antisocial activity prior to and beyond the adolescent years. In short, the disproportional attention that has been directed to the peak-crime adolescent years should be balanced by a focus on other age groups and on important transitional periods in the life course. It also is clear that race and gender condition the influence that many factors have on the stability of antisocial behavior, and this too suggests the need for additional research exploring such differences in more detail.   Not only will this broader focus help us to better understand the processes involved in the onset, persistence, escalation and desistance of antisocial careers, but it may also reveal that different mechanisms are operating during various transitional periods, among different demographic groups and among different types of offenders.   We are encouraged that criminologists have become increasingly aware of such issues and that research is moving systematically in this direction.

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NOTES

[1]While these samples were drawn to include a wide range of offender types and offending levels, they are not equal probability of selection samples. The reader is therefore cautioned against generalizing beyond the data presented here. It also is important to note that the re-interview periods were different for the two samples (1992 for the household respondents, 1995 for the institutional subjects). We believe that any bias introduced by this will likely be a conservative one, resulting in institutional respondents who are less criminal than they would have been had they been interviewed earlier. Simply put, they have had three additional years to "mature out" of crime. Alternatively, it could be argued that these respondents have had additional time and opportunity to establish themselves in criminal careers; in this case, their reported criminal involvement in 1995 would be greater than that reported had they been reinterviewed in 1992. Regardless of which of these two opposing arguments is correct, the institutional respondents are considerably more delinquent/criminal than the household subjects, and consistent with our rationale for interviewing them for this research in the first place, their inclusion permits us to represent a wide range of offending levels in our analysis.

[2]The criminal involvement scale was based on responses to the following nineteen items: Damage or destroy property; Steal (or try to steal) a motor vehicle, such as a car or motorcycle; Steal (or try to steal) something worth more than $50; Carry a hidden weapon other than a plain pocket knife; Steal (or try to steal) things worth $5 or less; Attack someone with the idea of seriously hurting him/her; Get involved in a gang fight; Sell marijuana or hashish ("pot", "grass", or "hash"); Hit (or threaten to hit) somebody; Sell hard drugs such as heroin, cocaine, or LSD; Have (or try to have) sexual relations with someone against their will; Get drunk in a public place; Break into a building or vehicle (or try to break into) to steal something or just to look around; Use drugs to get high (not because you were sick); Cheat on your income tax; Take little things from work; Take things from work worth more than $50; Use or try to use credit cards without owner's permission or passed a bad check (intentionally overdrafting); Embezzle; that is, used money or funds entrusted in your care for purposes other than intended?

[3]The criminal involvement items are weighted in order to avoid the swamping effect of high frequency-low seriousness behaviors in the calculation of the total criminal involvement score. That is, our goal was to construct a scale that recognizes the importance of both frequency and seriousness of offending. Simple frequency scales give undue weight to minor offenses because they tend to be committed at a much higher frequency than more serious offenses. Weighted scales, on the other hand, use both seriousness and frequency in the calculation of a total involvement score. For example, our weighted scale assigns a respondent who commits one rape a higher score than a respondent who reports three shoplifting incidents. In a simple frequency scale, the shoplifter would receive the higher score of the two. Our strategy is also consistent with Moffitt's (1997:46) argument that research which fails to appreciate the heterogeneity of antisocial involvement obscures the role of certain causal factors and underestimates the influence of others. Such underestimates are particularly likely for the relatively small number of persistent and serious offenders in any given sample, since the data on antisocial involvement they provide typically is swamped by the reports from the much larger number of less serious offenders.

[4]The 27 items making up the prior delinquency scale are as follows: vandalism, motor vehicle theft, theft more than $50, bought/sold/possess stolen goods, thrown objects at cars or people, run away, lied about age, carried hidden weapon, theft less than $5, aggravated assault, prostitution, sexual intercourse, gang fighting, selling marijuana, cheating on tests, simple assault, disturbing the peace, selling hard drugs, joyriding, rape, unarmed robbery, public drunkenness, theft $5-$50, breaking and entering, truancy, drug use, and alcohol use.

[5]Here and subsequently we use the formula proposed by Clogg, et al. (1995) to evaluate the statistical significance of differences in the magnitude of regression coefficients in the reduced and full models:

$$ t \ = \ b_{full} - \ b_{reduced} \ / \sqrt{S^2 b_{full} - S^2 b_{reduced}} * MSE_{full} / MSE_{reduced} $$

See Paternoster, et al. (1998) for a discussion of the conditions under which this and related tests are most appropriate.

[6]Separate regression analyses (not shown) that added the eight Time 1 bonding measures to the equations resulted in no significant changes in the models presented in Table 4. That is, none of the Time 1 bonding variables had an effect on Time 2 antisocial behavior, and their inclusion did not alter the effect

of any of the other variables initially included in the models. We also modeled Time 1 delinquency to examine the effect of Time 1 bonding, net of the influence of race, sex and age. These results showed that three of the bonding variables—peer conflict, instrumental family communication and family caring—had a significant impact on Time 1 delinquency among the household respondents, with the model accounting for 6 percent of the variance. For the institutional respondents, the model explained only 2.8 percent of the variance in Time 1 delinquency, and none of the Time 1 bonding measures were significant predictors.

Table 1. Demographic Characteristics of Samples (Percentage Distribution)

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Variable (Coding)	Household Sample	Institutional Sample
Sex		
Male (0)	45	48
Female (1)	55	52
Race		
White (0)	47	63
Black (1)	50	31
Education		
Less than high school (1)	16	70
High school graduate (2)	43	20
Some college (3)	29	9
College Graduate (4)	8	1
Post-college (5)	3	--
Occupational Status		
Executive, administrative, managerial (7)	4	--
Professional specialties (6)	9	2
Administrative support; clerical (5)	15	10
Sales; technical; military (4)	18	8
Protective services; production (3)	10	16
Private household; machine operators (2)	17	21
Nonhousehold service; laborers (1)	27	42
Employment status		
Employed (1)	70	61
Unemployed (0)	30	39
Household Income		
Less than $7,000 (1)	12	27
$7,000-$9,999 (2)	8	15
$10,000-$13,999 (3)	8	11
$14,000-$17,999 (4)	9	10
$18,000-$20,999 (5)	6	5
$21,000-$24,999 (6)	9	7
$25,000-$29,999 (7)	10	4
$30,000-$34,999 (8)	10	6
$35,000-$39,999 (9)	9	7
$40,000-$49,999 (10)	7	4
$50,000 or more (11)	12	4

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TABLE 2. TIME 1 AND TIME 2 MEAN FAMILY AND PEER BONDING SCORES, BY TIME 1 DELINQUENCY STATUS

	Below T1 Delinquency Median		Above Time 1 Delinquency Median		F-Value (*p<.05)	
	Household	Institution	Household	Institution	Household	Institution
T1 Family Caring and Trust	4.10	3.81	3.83	3.72	27.23*	0.53
T1 Instrument Family Communication	3.62	3.08	3.30	2.85	28.35*	2.21
T1 Intimate Family Communication	2.69	2.78	2.53	2.71	4.80*	0.23
T1 Family Identity Support	3.51	2.94	3.12	3.11	33.43*	1.67
T1 Imbalanced Peer Relationships	2.45	2.61	2.43	2.65	0.04	0.18
T1 Peer Caring and Trust	3.92	3.57	3.95	3.56	0.21	0.01
T1 Peer Communication	3.18	3.17	3.29	3.09	3.62	0.56
T1 Peer Conflict	2.30	3.15	2.75	3.30	15.69*	0.39
T2 Family Caring and Trust	3.91	3.37	3.80	3.38	5.45*	0.01
T2 Instrument Family Communication	3.25	2.81	3.20	2.83	0.76	0.02
T2 Intimate Family Communication	2.80	2.69	2.80	2.59	.001	.048
T2 Family Identity Support	3.78	3.16	3.73	3.15	0.54	0.01
T2 Imbalanced Peer Relationships	2.16	2.43	2.21	2.34	0.95	1.58
T2 Peer Caring and Trust	4.09	3.85	4.06	3.88	0.38	0.16
T2 Peer Communication	3.12	2.94	3.14	3.08	0.08	1.54
T2 Peer Conflict	1.74	1.86	1.87	2.06	3.00	1.57
T1 Delinquency Involvement	0.51	34.91	17.85	202.03	132.47*	320.05*
T2 Criminal Involvement	7.12	8.68	7.71	12.11	8.40*	11.82*

Table 3. Changes in Mean Levels of Family and Peer Bonding from Time 1 to Time 2, by Time 1 Delinquency Status

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	Below T1 Delinquency Median		Above Time 1 Delinquency Median		F-Value (*p<.05)	
	Household	Institution	Household	Institution	Household	Institution
Family Caring and Trust	-0.18	-0.44	-0.03	-0.33	7.13*	0.59
Instrument Family Communication	-0.36	-0.28	-0.09	-0.01	11.71*	2.00
Intimate Family Communication	0.12	-0.07	0.27	-0.13	2.55	0.08
Family Identity Support	0.28	0.23	0.61	0.04	15.43*	1.31
Imbalanced Peer Relationships	-0.29	-0.15	-0.22	-0.30	1.14	1.26
Peer Caring and Trust	0.15	0.30	0.12	0.32	0.32	0.01
Peer Communication	-0.07	-0.19	-0.15	0.00	1.07	2.28
Peer Conflict	-0.59	-1.27	-0.87	-1.23	4.39*	0.02
Delinquent/Criminal Involvement	6.62	-26.58	-10.22	-188.54	122.00*	303.55*

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Table 4. Standardized (unstandardized) Regression Coefficients, for Household and Institutional Samples

MODEL	MODEL 1		MODEL 2		MODEL 3		TRIMMED	
	Household	Institution	Household	Institution	Household	Institution	Household	Institution
Sex	-.093 (-.462)*	-.138 (-1.956)*	-.097 (-.483)*	-.152 (-2.151)*	-.107 (-.535)*	-.148 (-2.090)*	-.113 (-.565)*	-.146 (-2.058)*
Race	.133 (.662)*	.379 (5.693)*	.097 (.484)*	.363 (5.448)*	.092 (.460)*	.342 (5.137)*	.100 (.499)*	.357 (5.371)*
Age	-.087 (-.113)*	-.065 (-.339)	-.081 (-.105)*	-.077 (-.402)	-.081 (-.105)*	-.083 (-.433)	-.078 (-.101)*	
Prior Delinquency	.133 (.015)*	.318 (.021)*	.116 (.013)*	.278 (.018)*	.111 (.013)*	.276 (.018)*	.113 (.013)*	.279 (.018)*
Family Caring			.016 (.064)	-.098 (-.881)	.027 (.112)	-.072 (-.647)		
Instrumental Family Communication			-.056 (-.175)	.071 (.521)	-.056 (-.175)	.071 (.520)		
Intimate Family Communication			-.002 (-.005)	.091 (.596)	.005 (.012)	.074 (.489)		
Family Identity Support			-.058 (-.160)	.060 (.450)	-.036 (-.101)	.071 (.535)		
Imbalanced Peer Relationships			-.112 (-.463)*	-.019 (-.209)	-.113 (-.468)*	-.028 (-.308)	-.083 (-.341)*	
Peer Caring			-.105 (-.449)*	.020 (.220)	-.081 (-.346)	.029 (.319)		
Peer Communication			.055 (.189)	-.019 (-.176)	.044 (.151)	-.004 (-.038)		
Peer Conflict			.113 (.306)*	.217 (1.366)*	.113 (.304)*	.200 (1.263)*	.127 (.344)*	.209 (1.320)*
Marital Happiness					-.049 (-.095)	-.086 (-.418)		
Economic Satisfaction					-.097 (-.437)*	-.086 (-1.019)	-.135 (-.606)*	
	$R^2 = .049$	$R^2 = .237$	$R^2 = .069$	$R^2 = .269$	$R^2 = .079$	$R^2 = .278$	$R^2 = .080$	$R^2 = .276$

* $p < .05$