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THE DEVELOPMENTAL PROCESS OF CRIMINALITY

by

Allison Hupp

B.A. Miami University, Ohio. 1999

presented in partial fulfillment of the requirements

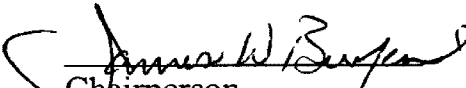
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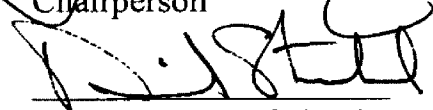
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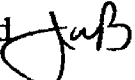
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The Developmental Process of Criminality.

Director: James W. Burfeind 

While most criminological perspectives try to answer the question of why individuals deviate from societal norms and engage in deviant acts, life-course theory asks why individuals conform to societal norms and why they refrain from committing deviant acts. This study explored the developmental process of criminal offending over an individual's life span. The purpose of this research was to develop and test a theoretical model of delinquency, criminality and informal social control based on life-course theory. Presentence reports, written for the United States District Court by the Federal Probation Office, were used for the longitudinal assessment of the life-course perspective. Formal methods of statistical modeling, such as factor and internal reliability analyses, linear multiple regression, logistical regression and path analysis, were used in this study. In examining the overall explanatory power of the path model, weak support was found for the life-course perspective.

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THE DEVELOPMENTAL PROCESS OF CRIMINALITY

While most criminological perspectives try to answer the question of why individuals deviate from societal norms and engage in deviant acts, life-course theory asks why individuals conform to societal norms and why they refrain from committing deviant acts. This study explores the developmental process of criminal offending over an individual's life span. The purpose of this research is to develop and test a theoretical model of delinquency, criminality and informal social control based on life-course theory. To begin, a conceptual understanding of social control theory is needed to interpret the underlying notions of the life-course perspective. Second, a theoretical exploration of the life-course theory will be completed to comprehend the stability and change of an individual's behavior over the life course. Finally, formal methods of statistical modeling, such as factor and internal reliability analyses, linear multiple regression, logistic regression and path analysis, will be used to explain the developmental process of criminality.

SOCIAL CONTROL THEORIES

Social control theories share a pessimistic view of human nature that assumes individuals are naturally greedy, hedonistic, and capable of committing antisocial behavior, including crime (Barkan 1997:195). This perspective asserts individuals are motivated to commit crimes because norm violations can be both pleasurable and profitable (Liska and Reed 1985:547). Individuals have the propensity to be criminals because they are criminal at heart (Curran and Renzetti 1994:199). This perspective assumes there "is no individual variation in motivations to commit crime; the impetus

toward crime is uniform or evenly distributed across society” (Akers 1997:79). The question then is “if humans’ natural pursuit of gratification makes crime attractive, what is it that stops them from acting on this impulse?” (Cullen and Agnew 1999:162). With some variation, social control theories assume that “delinquent acts result when an individual’s bond to society is weak or broken” (Hirschi 1969:16). Strong ties to conventional societal institutions constrain individuals from acting upon their inner deviant tendencies. If social controls are present, individuals will refrain from breaking the law. This study will explore the effects that social controls, in the form of social bonds, have on constraining criminality. Prior to analyzing the implications of social bonds, it is important to understand the development and complexities of social bonds through a theoretical exploration of control theory. In conjunction, the following theorists develop the argument that the strength of attachment to social members and norms influences deviancy and criminality.

Emile Durkheim (1951), the father of social control theory, focused on the social structure and social order of culture. Durkheim concentrated on how society and its large-scale structures influence the thoughts and actions of individuals within society. He stated sociology's purpose was to study "social facts." Durkheim (1897/1951:313) defined social facts as forces and structures that are “external to, and coercive of, the actor.” He empirically studied social facts in his comprehensive study of suicide. Durkheim deemed suicide as a private and personal act caused by social currents of integration and regulation. He conceived attachment to social groups and the regulation of an individual’s values, beliefs, and norms as predictors of suicide. Linked to high and

low levels of integration and regulation of society, Durkheim identified four types of suicide: egoistic, altruistic, fatalistic, and anomic. Integration is the extent to which collective societal opinions are shared. Altruistic suicide is attributed to high levels of integration and egoistic suicide with low levels of integration. Regulation is the amount of external constraint on individuals. Fatalistic suicide is associated with high levels of regulation, anomic suicide with low levels (Durkheim 1897/1951:214-276). Durkheim theorized that if attachment to social groups and regulation of an individual's values, beliefs, and norms could predict suicide, then they are applicable to the study of conformity, crime and deviance. Social attachments and external constraints impact delinquency and criminality by either strengthening or weakening an individual's bond to society. The stronger the social bond, the less likely an individual will participate in deviant acts.

Building off Durkheim's idea of social integration into society, Albert J. Reiss, Jr. observed that juvenile delinquency is caused by the failure of personal and social controls. Reiss (1951:196) defined delinquency as the "behavior consequent to the failure of personal and social controls to produce behavior in conformity with the norms of the social system to which legal penalties are attached." Personal controls are "the ability of the individual to refrain from meeting needs in ways which conflict with the norms and rules of the community" (Reiss 1951:196). These controls reflect an individual's sensitivity to the opinions and views of societal members. Individuals are less likely to violate norms if the consequences could potentially weaken their bonds to society. Social controls are "the ability of small groups or institutions to make norms and

rules effective” (Reiss 1951:196). If personal or social controls ever deteriorate, individuals become freer to fulfill their criminal urges. Personal and social controls in conjunction with strong attachments to society keep juveniles from committing crimes. Reiss’s (1951) empirical study of 1,110 white male juvenile delinquents, isolated personal and social controls related to delinquent recidivism. He discovered the quality of personal controls and the individual acceptance or submission of social controls, predicted delinquent juvenile recidivism (1951:206). Thus, insufficient integration and socialization lead to juvenile delinquency.

David Matza and Gresham Sykes, two leading social control theorists, contend even the most active delinquents participate in law-abiding activities. Matza and Sykes (1952) asserted that juveniles who have no commitment to either societal or criminal norms will drift in and out of delinquency. Delinquents drift in and out of delinquency because they are experimenting with criminal pursuits. Drift is a continuum where juveniles lie in transition between criminal and noncriminal activities. Juveniles do not view delinquent behavior as norm violations. Juveniles assimilate “subterranean values,” which are described as “the element of adventure, the desire for a soft job where one earns money as quickly and painlessly as possible, the pursuit of conspicuous consumption, and an acceptance of aggression and violence” (Matza and Sykes 1961:716). These values pressure juveniles to accept and neutralize criminal behavior as a way of obtaining goals. Delinquency is a process of neutralization whereby norm violations are justified and rationalized by the juvenile. Temporary legitimization of law-breaking frees juveniles to commit deviant acts (Sykes and Matza 1957:664). Matza and

Sykes identified five techniques neutralization: denial of responsibility, denial of injury, denial of victim, condemnation of condemners, and appeal to higher authorities. Denial of responsibility refers to how the delinquent denies responsibility by asserting that it was not his or her fault. Denial of injury occurs when the deviant maintains his or her actions did not injure or harm the victim. Denial of the victim refers to the idea the victim deserved the consequences. Condemnation of the condemners is where the deviant asserts wrongdoing by parents, government, accusers and other authority figures. Appeal to higher loyalties refers to conceptualization that the norms of a group are more significant than societal norms (Sykes and Matza 1957:664-670). Neutralization techniques precede deviant acts. The techniques weaken moral controls that prevent delinquency.

Recidivism is probable once the delinquent act is neutralized. Individuals do not commit deviant acts when they are governed by a strong moral front. Strong morals and values constrain juveniles from neutralizing criminal activity. Thus, the impact of parental and societal socialization regarding amoral behavior is key in thwarting delinquency and criminality.

In his 1969 book, *Causes of Delinquency*, Travis Hirschi specified why individuals, in particular juveniles, do not commit crime. Hirschi argued that ties to the established moral order of society restrain individuals from committing criminal activities. Social bonds are the accumulation of social and environmental forces that connect individuals to society and its established norms. Hirschi (1969:16) argued “delinquent acts result when an individual’s bond to society is weak or broken.” Based on Durkheim’s (1952:209) conceptualization of criminality, Hirschi agreed that “the

more weaken the groups to which [the individual] belongs, the less he depends on them, the more he consequently depends on himself and recognizes no other rules of conduct than what are founded on his private interests.” When bonds to conventional social institutions are weakened, individuals become freer to pursue law-breaking activities (Hirschi 1969:31-34). The stronger the social bond, the less likely an individual will participate in deviant acts. Bond development between individuals and society consists of four elements: attachment, commitment, involvement, and belief. The strength and weakness of these four bonds, independently and in combination, directly relate to an individual’s propensity to become deviant. Hirschi tested his social bond theory with a sample of 4,000 San Francisco Bay area male junior and senior high students. He asked questions pertaining to their delinquency and the four social bonds.

Attachment, the most important social bond, refers to the degree in which an individual is conscience of the emotional thoughts, feelings and perceptions of people important to the individual. Sensitivity to the opinions and views of others constrain individuals from committing crime. Without attachments, individuals are free to commit deviant acts. When strong relationships exist, individuals are less likely to violate norms because they do not want to jeopardize the relationship. Juveniles who have strong attachments to social members and institutions are less likely to be delinquent than youths without such bonds. Juveniles’ attachments to peers, school, and especially the family are crucial because they promote the internalization of societal norms, development of moral standards and other social controls.

Derived from juveniles’ sensitivity to their parent’s preferences and wishes, social

controls, especially indirect controls, are important because in their teenage years, juveniles are often outside of their parents physical proximity. Hirschi (1969:88) argued that when parental attachments are strong, “the parent is psychologically present when temptation to commit a crime appears. If, in the situation of temptation, no thought is given to parental reaction, the child is to this extent free to commit the act.” The “quality” of attachment also influences delinquency and criminality. Effective parental controls and supervision are keys to thwarting delinquency (Wells and Rankin 1991). However, research has suggested that excessive punishment and parental controls can lead to delinquency regardless of the strength of attachments (Rankin and Wells 1990:163). Also, testing the quality of attachments and delinquency regarding home life, found dysfunctional homes, not broken homes were good predictors of delinquency (McCord and McCord 1959; Voorhis et al. 1988:240).

Critics of the attachment theory have questioned the influence that effective ties to delinquent peers have on delinquency. They contend that if Hirschi’s theory is true, then strong attachments to delinquent friends will have a delinquency-producing effect. Hirschi negates this hypothesis by claiming that even attachments to delinquent friends encourages societal conformity. Empirical contradictions, conceptual variable difficulties, and discussion of the distinction between social controls, have prompted many researchers to question Hirschi’s use of attachment to explain delinquency.

Commitment refers to the interest an individual has in conformity. It is the investment of an individual’s time, energy, emotions and money to conventional pursuits, such as marriage and employment. Commitment reflects the cost component involved in

breaking the law (Krohn and Massey 1980:531). Hirschi argued the stronger a juvenile's commitment was to conventional endeavors, the less likely they were to risk investments by engaging in delinquency. The more social and economic resources an individual has accumulated, the less likely they will participate in activities that could jeopardize those resources. Criminal activities bring about consequences many juveniles refuse to chance. Individuals in society accumulate material and nonmaterial goods that act as "society's insurance that they will abide by the rules" (Hirschi 1969:21). Delinquency is restrained by the commitments of juveniles to the social norms, values and rules. Juveniles that have nothing to lose are unconstrained and more able to commit deviant acts.

Involvement, the opportunity social bond, refers to the amount of time and energy an individual spends on conventional activities. Juveniles involvement in school and extracurricular activities facilitates control. The more time spent pursuing these socially accepted endeavors, the less opportunity a juvenile has to break the law. Hirschi (1969:127) argued, "people may be simply too busy doing conventional things to find time to engage in deviant behavior." However, when tested, little empirical support for the relationship between involvement in conventional pursuits and juvenile delinquency was found (Hirschi 1969). Critics asserted the notion of involvement does not have the conceptual or empirical delineation to separate it from the other social bonds. They questioned how an individual could be involved in the conventional activities without being attached or committed to the pursuit (Conger 1976:20).

Belief refers to the extent to which a juvenile accepts the norms and values of the conventional society (Hirschi 1969:26). Juveniles are socialized by parents, peers and

school to believe in a common value system. Crime is prevalent because there is a variation in the belief of the correctness of societal norms. The less a person accepts the values, rules and norms of society, the more likely they will commit deviant acts. Hirschi (1969:198) argued, “delinquency is not caused by beliefs that require delinquency, but rather made possible by the absence of (effective) beliefs that forbid delinquency.” The absence of conforming beliefs frees individuals from social controls that deter criminal activities.

Social bond theory contends the strength of a juvenile’s attachment, commitment, involvement, and belief to society is associated with criminal behavior (Hirschi 1969). Hirschi argued that individuals become freer to break the law when their bonds to traditional institutions are weakened. Overall, there is fairly consistent support for the social bond theory. However, there are several criticisms. Paternoster and his colleagues (1983), argued delinquency may have a causal impact on social control. They contended it may not be the lack of social ties that causes criminal activities, but delinquency may actually jeopardize an individual’s bonds to conventional institutions. Krohn and Massey (1980) claimed that Hirschi exaggerated the impact and explanatory power of social bonds. They argued there is only an association between social bonds and minor delinquency. Their research found that social bonds explain only 15 percent of the variance in moderately serious forms of crime, and only 1-2 percent of the variance in future delinquency. Empey (1978:239) argued that Hirschi did not consider the cumulative affect of the four social bonds on criminality. Instead of empirically testing the affect of the four social bonds, Hirschi just alluded to their connection. Wiatrowski,

Griswold and Roberts (1981: 526) contended the conceptualization of the four bonds is vague. They questioned why Hirschi needed to formulate four distinctive elements when most of the explained variance in the model is accounted by the shared criterion. Haller and Portes (1973) argued that Hirschi does not consider the implications of the influence of significant others, family socioeconomic level and individual ability, which research has discovered are important in understanding the origins of delinquency.

With some variation, the preceding control theorists agree that individuals are born to break the law but will refrain if social controls are present. In conjunction, they developed the argument that the strength of attachment to social members and norms influences criminal behavior. These early control theorists, especially Reiss, Matza, Sykes and Hirschi, indicated that juveniles account for a disproportionate amount of crime. They asserted because crime peaks in the teenage years and then declines sharply thereafter, there is little reason to study adult criminality. These control theorists contend that “ordinary life events (for example, jobs, getting married, becoming a parent) have little effect on criminal behavior because crime rates decline with age whether or not these events occur” (Gottfredson and Hirschi 1990: 238) Traditional social variables are not important in modifying life trajectories because crime emerges before sociological variables appear (Wilson and Herrnstein, 1985). As a result, these early control theorists have focused their attention solely upon the delinquent activities of children and adolescents. Other control theorists, however, disagree with these conclusions and argue that social bonding extends past the age-crime curve.

LIFE-COURSE THEORY

Sampson and Laub (1993) challenged the notion that adult factors have no importance to the study of crime and deviance by arguing that social bonding extends over the life course. Unlike Hirschi, Sampson and Laub (1993) claimed that although criminal behavior peaks in the teenage years, antisocial behavior is stable and continuous across the stages of life. They asserted the following paradox, “adult criminality seems to always be preceded by childhood misconduct, but most conduct-disordered children do not become antisocial or criminal adults” (Sampson and Laub 1993:14). Sampson and Laub (1997:146) emphasized “the role of age-graded informal social control as reflected in the structure of interpersonal bonds linking members of society to one another and to wider social institutions.” Social bonds reinforce social controls by mediating pathways of conformity. For example, the more an individual invests in their social and psychological resources, such as marriage and relationships with peers, the less likely they will jeopardize those resources by committing crime.

Sampson and Laub argued that individual differences in antisocial behavior and criminal behavior can emerge in childhood and remain stable across the life course (Huesmann et al. 1987). They acknowledged the latent trait model, which states that given the opportunity, a latent trait establishes a propensity that influences all aspects of life. Sampson and Laub explained the consistency of antisocial behavior through homotypic and heterotypic continuity. Homotypic continuity refers to the “continuity of similar behaviors or phenotypic attributes over time” (Caspi and Bem 1990:553). For example, aggression can be viewed as a persistent latent trait that possesses substantial

consistency over an individual's life course. Heterotypic continuity is the "continuity of an inferred genotypic attribute presumed to underlie diverse phenotypic behaviors" (Caspi and Bem 1990:533). For example, a specific type of antisocial behavior in adolescence might not be identical adulthood but might still be associated with other antisocial behaviors. Sampson and Laub argued that the continuity of antisocial behavior over time mortgages an individual's future by "knifing off" opportunities and options for a conventional life (Sampson and Laub 1995:150). This developmental model called state dependence, asserts that antisocial behavior has an attenuating effect on the social bonds that bridge adults to society. Sampson and Laub (1995:150) contend:

The cumulative continuity of disadvantage is thus not only a result of stable individual differences in criminal propensity, but a dynamic process whereby childhood antisocial behavior and delinquency intensify adult crime through severance of social bonds.

Sampson and Laub (1997) argued there are events and circumstances that can change and redirect criminal and noncriminal pathways. They stated there is continuity between childhood behavior and later adult outcomes, which can be altered during an individual's life course through social influences and prominent life events (Sampson and Laub 1993). Changes in short-term behavior patterns, such as marriage, can modify long-term patterns of behavior, by changing the effectiveness of social controls and levels of criminality. Thus, stability and change of criminal behaviors are present over the life course, and need to be explained. Life-course perspective explains the stability and change of offending through trajectories, transitions and turning points. Sampson and Laub cited the interlocking nature of these concepts helps comprehend crime over the life

span.

Trajectories are long-term patterns of behavior developed through life in areas such as parenthood, work, marriage and criminal activities (Sampson and Laub 1993:8). Life trajectories are age-graded and reflect stability. They imply a strong correlation between child events and adulthood experiences. Trajectories have three dimensions: entrance, success and timing of lives. These dimensions impact an individual's criminal trajectory depending on when and how they transpire. For example, depending on one's life stage when they have a child, consequences and ramifications of that action could affect criminality (Thornberry 1997).

Trajectories are marked by a sequence of transitions that evolve over a shorter time span (Elder 1985:31-32; Sampson and Laub 1993:8). Embedded in trajectories, transitions can be either age-graded or not. What Sampson and Laub (1993:8) deemed important are the duration, timing, and ordering of life events and their implications for later social development. Transitions are consequential in regards to how they can strengthen or weaken existing patterns of behavior (Rutter and Rutter 1993). If overlapped, transitions can often manifest conflicting obligations that can later produce criminal activities. In conjunction, trajectories and transitions may generate turning points in an individual's life course (Elder 1985:32). These turning points, either gradual or abrupt, can modify and redirect an individual's pathway. Transitions and turning points, reflect Sampson and Laub's conceptualization of change. Events and circumstances, like historical events and life experiences, can change and redirect criminal and noncriminal pathways. Thus, Sampson and Laub concluded antisocial

behavior can be continuous across the entire life course unless altered by salient life events or strong social influences. Terrie Moffitt further explained stability and change through his dual taxonomy.

Moffitt (1993:674) claimed antisocial behavior continues over time, but its prevalence changes dramatically. Like Sampson and Laub (1993:14), Moffitt agreed that “adult criminality seems to always be preceded by childhood misconduct, but most conduct-disordered children do not become antisocial or criminal adults.” According to Moffitt, there are two types of offenders: adolescent-limited and life-course-persistent. Adolescent-limited offenders exhibit both delinquency and conforming behavior. Moffitt argued that during adolescence, juveniles encounter causal forces, such as status frustration, that allow negative influences and pressures from society to impact juveniles’ behavior. Adolescent-limited offenders learn antisocial behavior and participate in criminal activities when they are deemed rewarding. Thus, juveniles can control their antisocial behavior. Adolescent-limited offenders are capable of having intermittent and crime-free intervals. Upon aging, adolescent-limited offenders realize that social consequences, such as incarceration and loss of relationships, outweigh rewards. This stops adolescent-limited offenders from committing delinquent acts. Life-course-persistent offenders reflect the stability in criminal behavior. These offenders participate in early delinquency, and continue in this behavior throughout their life span. Moffitt argued the lack of social controls contributes to a juvenile’s antisocial tendencies. Life-course-persistent offenders continue to carry antisocial traits into adulthood, which offers little opportunity to change. Although this taxonomy and the Sampson and Laub version

of the life course perspective vary, they both reflect the issue of stability and change in criminal behavior. A summary of the influences that shape offending behavior through developmental processes over the life course follows.

In short, while most criminological perspectives try to answer the question of why individuals deviate from societal norms and engage in deviate acts, life-course theory asks why individuals conform to norms and why they refrain from committing deviant acts. Life course perspective answers by claiming that the strength of social bonds influences delinquency and criminality. Social bonds serve as a conceptual “building block” for the life course perspective by creating a causal model for delinquency. Embedded within the life-course perspective, the degree of attachment, commitment, involvement and belief of societal values and structures influences an individual’s propensity to become delinquent. Adding to Hirschi’s conception of the impact of social bonds, Sampson and Laub proposed an “age-graded theory of informal control.” Sampson and Laub (1993) stated there is continuity between childhood behavior and later adult outcomes, which can be altered during an individual’s life course through social influences and prominent life events. Thus, stability and change of criminal behaviors are present over the life course.

Research has found support for this theory. Using data from Sheldon and Eleanor Glueck’s (1950) longitudinal study of 500 white nondelinquent boys and 500 delinquent boys, Sampson and Laub (1990:625) tested their sociogenic model of crime and deviance. They found

Consistent with a model of adult development and informal social control, we have shown that job stability and marital attachment in adulthood are significantly related to changes in adult crime-the stronger the adult ties to work and family, the less crime and deviance among both delinquents and controls.

Other research has also provided support for the life course theory. Nagin, Farrington and Moffitt (1995) examined the distinguishing individual characteristics, behaviors and social circumstances of four distinctive offending trajectories. The most salient findings were associated with Sampson and Laub's conceptualization of change in the life course. Nagin and his colleagues found by the age of 32, adolescent-limited offenders work records were indistinguishable from those never convicted and considerably better than chronic offenders. Horney, Osgood and Marshall (1995) using hierarchal linear modeling techniques, found support for Sampson and Laub's age-graded theory of informal control. Administering life event history calendars to a sample of male felons, identified criminal incidents and changes in life events. Results revealed offending patterns were directly related with life changes in local circumstances. Huesmann and his colleagues (1984) found support for the stability of aggression over time and generations. They concluded "whatever its causes, aggression can be viewed as a persistent trait that may be influenced by situational variables but possesses substantial cross-sectional constancy" (1984:1120). Paternoster and his associates (1997), using a longitudinal data set, found both stability and change are attributed to criminality. They discovered overall, stability and change effects do not vary between high and low criminal propensity groups (1997:231). Laub, Nagin and Sampson (1998:225), using longitudinal data from Glueck's study of criminal careers, concluded "desistance from

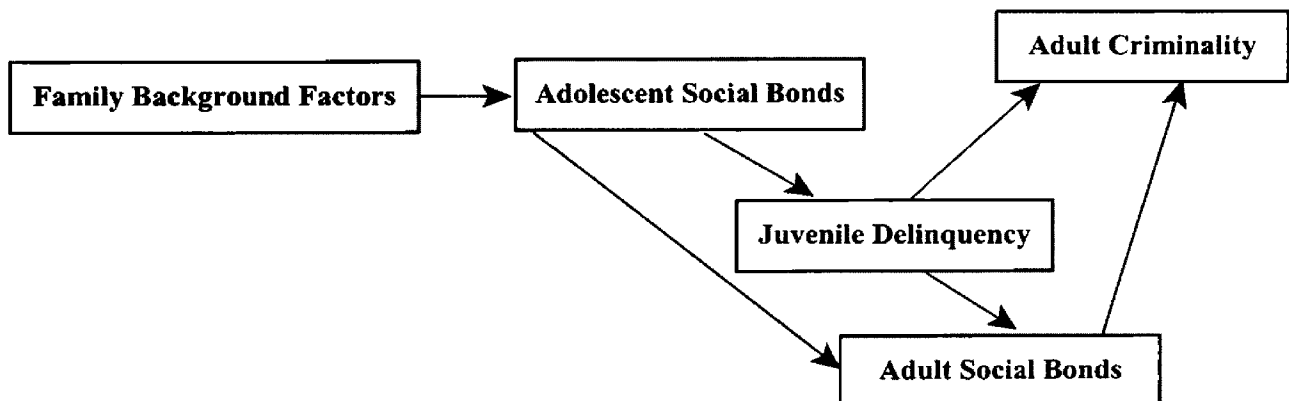
crime is facilitated by the development of quality marital bonds, and that this influence is gradual and cumulative over time.” Overall, there is fairly consistent support for the life-course perspective.

METHODOLOGY

The purpose of this research is to develop and test a theoretical model of delinquency, criminality and informal social control over the life course. This study focuses on a “sociogenic” model of crime, which attempts to integrate both stability and change over the life course (Sampson and Laub 1993:7). This research advances the field by directly analyzing the causal impact of social bonds on juvenile and adult criminality. Accomplishing this task requires the development of a path model, which can analyze an individual’s life course by looking at the influence that family background factors, adolescent social bonds, delinquency, and adult social bonds have on adult criminality.

Figure 1 depicts the causal model of the life-course theory.

Figure 1.
The Causal Model of the Life-Course Theory.



Key questions stemming from this path model include:

- Do exogenous and family background factors influence the development of childhood social bonds?
- Do family background factors directly and/or indirectly influence delinquency through adolescent social bonds?
- Does the strength of adolescent social bonds affect delinquency?
- Does both juvenile delinquency and strength of adult social bonds influence adult criminality?

Answering these questions requires a study based on the Sampson and Laub's age-graded theory of informal social control. This study attempts to retest their theoretical model through a detailed analysis of a unique longitudinal data set.

DATA

Presentence reports, written for the United States District Court by the Federal Probation Office, are used for the longitudinal assessment of the life course perspective. Comprised of specific information regarding a convicted federal offender's life history and criminal background, these reports provide detailed information regarding the individual's family background factors and social bonds that could influence their criminality. Probation officers verified the offender's responses through the following sources: family, friends, present and past employers, police records, probation officers, doctors, school records, financial forms, and military records.

Due to their sensitive material, presentence reports are restricted to the confinements of the Federal Probation Office. Data collection took place within the Montana Federal Probation Office under the supervision of United States Probation Officer Jean Keiley. To ensure anonymity, identifiers were not extracted from the presentence reports. A complete data set for all variables was obtained for the entire

population of convicted federal offenders from the year 2000. Two cases were dropped from the sample because the offenders were under the age of eighteen, leaving a sample size of one hundred and three to be analyzed. The sample population was composed of 77.7 percent males and 22.3 percent females with ages ranging from nineteen to seventy years old. The racial makeup of the population was White (63.1%), American Indian/Alaskan Native (21.4%), Hispanic (12.6%), or Black (2.9%). The number of cases collected and the longitudinal comparison assured the reasonable representativeness of the Montana federal offender population and generality of the findings.

PROCEDURES

Understanding the probabilistic links in the chain of events from family background variables to adult criminality helps explain the theoretical and empirical model seen in Figure 1. Conceptualizing the constructs of family background factors, adolescent social bonds, delinquency, adult social bonds and criminality yields a greater understanding of what the path model can predict and explain. The constructs and variables used in this study are modeled from Sampson and Laub's book *Crime in the Making*. The following discussion describes each variable and causally links each construct to the path model.

VARIABLES

Exogenous Variables. Exogenous variables seek to understand the nature of relationships between variables. The exogenous variables controlled for in this study are sex, race and age. Sex is a dichotomous variable measured by male and female. The offender's race is classified as White, Black, American Indian/Alaskan Native, or

Hispanic. The age variable refers to the individual's age at the time of the presentence investigation interview.

Family Background Factors. Family background factors consist of family economic status, residential mobility, citizenship, parental divorce, domestic abuse, parental alcohol/drug use and parental criminality. These factors are important to examine because of their causal influence on an individual's life course. Insulating youths from negative pressures and pulls caused by structural background variables can prevent delinquency by strengthening social bonds.

Family economic status, based on the probationer officer's overall assessment and offender's self-report, refers to the potential economic and social opportunities the offender had during their childhood. This variable deals specifically with the opportunity structure afforded to some families compared to others. For example, if both parents from a lower class are working, a child is more likely to have weak attachments to their parents, which can cause delinquency. Family economic status is measured on an ordinal scale indicating whether the individual grew up in a lower, middle or upper class family.

Residential mobility and citizenship variables influence delinquency through their effects on the family and community bond processes. Residential mobility measures the number of times the individual's family moved during his/her childhood. Citizenship refers to the country in which the individual was born. This variable is important because language and cultural barriers could effect social control processes. The degree of mobility and citizenship effect family and community control mechanisms by creating problems regarding the supervision and monitoring of children. Mobility and citizenship

decrease neighborhood cohesion and effectiveness of parental supervision by weakening societal bonds. Residential mobility is classified as either having moved a few (1-3) or many times (4 or more). Citizenship is a dichotomous variable where individuals were coded either as foreign born or as a United States citizen.

Parental divorce, domestic abuse, parental criminality and parental alcohol/drug use variables influence delinquency through their effects on the family bond process. Supervisory capacity, strength of social bonds and disciplinary roles of parents may be jeopardized if a child stems from a divorced family. Parental divorce, which includes parental separation, is measured with the indication of either yes or no. The variable domestic abuse evaluated whether there was any abuse within the relationship. If an adult is abused or is the abuser, they are less likely to have strong social bonds with their partner. The weaker the domestic social bonds, the more likely an individual will become criminal. Domestic abuse is a dichotomous variable measured by an indication of either yes or no. In conjunction, parental criminality and parental alcohol/drug use are key factors that can influence a child's delinquency through the disruption of social control. Poor parental influences may also push a child toward delinquency by giving them an introduction to the "criminal world." Parental delinquency and parental alcohol/drug use are coded according to the offender's response of yes or no.

Adolescent Social Bonds. Adolescent social bonds were measured in terms of relationship with parents, parental abuse, school activities and education level. These bonds are important to examine because of their causal influence on delinquency, as depicted in Hirschi's social control theory. As theorized, the stronger the social bond, the

less likely an individual will participate in deviant acts. Bond development between individuals and society consists of four elements: attachment, commitment, involvement, and belief. The strength and weakness of these four bonds, independently and in combination, directly relate to an individual's propensity to become deviant. Within the context of this study, social bonds are not identified separately. Each variable reflects an integral bond element that may influence conformity or delinquency.

Relationship with parents reflects the bond, or connection an individual had with their parents. Strong social relationships with parents may increase the internalization of societal norms, development of moral standards and other social controls. When parental attachments are strong, the propensity of a child becoming delinquent is less likely. The measurement for the relationship with parents is coded good, moderate or bad. Parental abuse parallels the relationship with parents variable. If a child is abused, they are less apt to have strong bonds with their parents. Parental abuse is measured by an indication of yes, no, or declined to answer.

School activities and educational level indicate the degree of involvement and commitment an individual had to conventional endeavors. The more an individual invests time, energy, and emotions into school activities and academic success, the less opportunity and desire a juvenile has to break the law. Strong involvement and commitment to school activities and academic success facilitates social control. School activities variable is coded as either having high level of involvement or low level involvement. Education level is based on the following grade level achievement scale: less than high school, some high school, high school graduate (GED), some college,

college graduate and further college education.

Juvenile Delinquency. The juvenile delinquency construct includes the variables degree of delinquency and alcohol/drug use. Examining these variables sheds light on the causal impact that family background factors and adolescent social bonds have on juvenile delinquency. The degree and amount of deviant behavior may stem from indirect and/or direct affects of family background variables, and/or weak adolescent social bonds. Understanding juvenile delinquency is important in comprehending the influences of deviant behavior on adult social bonds and later adult criminality. Degree of delinquency is assessed by analyzing the individual's juvenile record and self-report. The variable is measured by three categories: no juvenile record, low to medium amount of delinquency and high level of delinquency. The alcohol/drug use variable assesses whether or not an individual used or abused alcohol and drugs as a juvenile. Alcohol/drug use is classified as yes, no, or declined to answer.

Adult Social Bonds. Adult social bonds consist of the variables marriage, remarriage, domestic abuse, children, relationship with children, relationship with family, job stability, military and net worth. Adult social bonds are important to examine because of their causal influence on criminality. Understanding adult social bonds also allows for implications to be made regarding the influences of adolescent social bonds and delinquency on the strength of adult social bonds. Like adolescent social bonds, the stronger the adult social bond, the less likely an individual will participate in deviant acts. "Adult bonds are important insofar as they create interdependent systems of obligations and restraint that propose costs for translating criminal propensities into action"

(Sampson and Laub 1993:141). This social capital inhibits individuals from committing deviant acts.

Stability and change of crime and deviance are first addressed in this step of the path model. The strength of adult social bonds modifies life course pathways of crime and conformity. During the formation of adult social bonds, the propensity for criminality can be altered by social influences and prominent life events. Negatively or positively, these transitions could modify life trajectories by changing the effectiveness of adult social controls and later criminality. Conversely, this construct can also show the influence of behavioral continuity of weak social bonds on criminality over the life course. Stability and change of individual criminal behavior varies according to the effects of the following adult social bonds.

Relationship with domestic partner, family and children variables influence criminality through their effects on the family bond process. Commitment, involvement and attachment of individual to their spouse represents the marriage variable. Marriage symbolizes strong family bonds. If divorced, an individual is more likely to become criminal because there are no social or emotional attachments thwarting the deviant behavior. Marriage is a variable measured by the following categories: single, dating, married, or divorced/separated. The remarriage variable is used to evaluate the consistency or changing pattern of an individual's relationship bond. Remarriage is classified as the following: as not having remarried, remarried, divorced, or not applicable. The variable domestic abuse measures whether there is any abuse within the relationship. If an adult is abused or is the abuser, they are less likely to have strong

social bonds with their partner. The weaker the domestic social bonds, the more likely an individual will become criminal. Domestic abuse is measured by an indication of yes, no, or not applicable. The children variable measures whether the individual has any children. Children are important to analyze because they represent an opportunity for strong attachments. The variables relationship with children and relationship with family are measured to see if they were good, moderate or bad. These variables represent a form of social capital because one is less likely to commit crime if they fear they will lose a valuable social bond.

Job stability was measured by steadily employed, employed sporadically, chronically unemployed, retired, on disability, student, or other, represents an individual's commitment to their economic and social stability. The larger the investment of an individual's time, energy, emotions and money to conventional endeavors, like their occupation, the less likely they will commit criminal acts. Involvement in the workforce also limits one's opportunity to become criminal because it restricts their "free time." The military participation variable questions whether or not an individual served in the armed forces. As previously mentioned, limited criminal time constraints and personal investment in the armed services can potentially prevent an individual from criminal behavior. The variable net worth represents the economic resources the offender has accumulated. The more money or assets an individual has gained, the less likely they will participate in activities that could jeopardize those resources. The offender's net worth is assessed by the defendant's personal financial statement, Social Security reports, Internal Revenue Service files and bank records. Net

worth is the final calculation of the offender's total debts and assets.

Adult Criminality. The adult criminality construct contains the variables past criminal activity and alcohol/drug use. The alcohol/drug use variable determines whether or not an individual used or abused alcohol/drugs as an adult. Past criminal activity is assessed by analyzing the individual's past adult criminal record. The variable is measured by two categories: low past criminal activity and high past criminal activity. Examining these variables permits one to see the causal impact that structural background factors, adolescent social bonds, juvenile delinquency and adult social bonds have on adult criminality. This construct gives a full analysis of the theoretical model of delinquency, criminality and informal social control over the life course.

MISSING DATA

The variables missing data were parental abuse, juvenile alcohol/drug use, domestic abuse, relationship with children and adult alcohol/drug use. Except for the variable relationship with children, the number of missing data did not influence the results of the analysis. Due to the large number of missing values, the variable relationship with children was dropped from the study. The missing values for the other variables were calculated through the process of crosstabulation. A crosstabulation shows the numbers of cases that have particular combinations of values for variables. This process creates a table that reflects the likelihood of an individual's response to the situation based on another variable. Thus, a predication is made regarding how an individual might have answered a question. For this data set, all missing data were crosstabulated against the variable past criminal activity. Past criminal activity was

chosen as the predictor because of this study's focus on criminality over the life course.

RECODING VARIABLES

If not naturally dichotomous, the variables were recoded into nonmetric dummy variables (0,1). Dummy variables act as replacement predictor variables by representing one category of a nonmetric independent variable versus all others. Based on percentages, recoding into dummy variables allowed for a simple comparison and understanding of the variables. The process created the opportunity for linear relationships between dependent and independent variables to be examined. The following discussion describes each recoded variable.

Exogenous Variables. As previously stated, control variables seek to understand the nature of relationships between variables. The recoded control variables are race and age. The offender's race was classified as White (63.1%), Black (2.9%), American Indian/Alaskan Native (21.4%), or Hispanic (12.6%). Due to large percentage of Whites and the smaller percentages in the other categories, this variable was recoded to Whites and Non-Whites. The age variable refers to the individual's age at the time of the presentence investigation interview. This variable was recoded into the dichotomous variable of less than thirty-five years old (49.5%) and thirty-five years old or older (50.5%). The age range was chosen based on percentages.

Family Background Factors. Beyond the naturally occurring dichotomies cited above, family economic status was an ordinal scale indicating whether the individual grew up in a lower, middle or upper class family. However, based on the probation officer's overall assessment and offender's self-report, deciphering the line between what

is considered upper and middle class was somewhat ambiguous. Thus, family economic status was recoded as lower class (51.5%) and middle to upper class (48.5%).

Adolescent Social Bonds. The recoded childhood social bond variables are relationship with parents and education level. The measurement for the relationship with parents was coded good, moderate or bad. Based on percentages, the variable was recoded into a dichotomus variable categorized by good (54.4%), or moderate or bad (45.6%). Education level was based on the following grade level achievement scale: less than high school, some high school, high school graduate (GED), some college, college graduate and further college education. To simplify the results, this variable was recoded as having completed less than high school (35.9%) or high school graduate or more education (64.1%).

Adult Social Bonds. The recoded adult social bond variables are marriage, remarriage, relationship with children, relationship with family, job stability and net worth. Marriage was a variable measured by the following categories: single, dating, married, or divorced/separated. Remarriage was classified as the following: as not having remarried, remarried, divorced, or not applicable. A crosstabulation was done to evaluate the consistency or changing pattern of an individual's relationship bond. The following categories were created through the crosstabulation: single, dating, divorced/never remarried, divorced/divorced, divorced/remarried and marriage. Based on percentages, a new variable called current relationship status was created. The variable is coded as being in a relationship (47.5%) or not in a relationship (52.5%). The variables relationship with children and relationship with family were measured to see if they were

good, bad or moderate. These variables were recoded based on percentages.

Relationship with children was reclassified as good (49.5%) or moderate to bad (50.5%).

Relationship with family was recoded as good (43.7%) or moderate to bad (56.3%).

Job stability was measured by the following categories: steadily employed, employed

sporadically, chronically unemployed, retired, on disability, student, or other. To

simplify the results, this variable was recoded as steadily employed (39.8%) or other

(60.2%). The offender's total net worth was the calculation of the offender's total debts

and assets. Due to large range of the population's total net worth, the variable was

recoded as having a either having a positive net worth (48.5%), meaning more than zero,

or a negative net worth (51.5%), indicating less.

DATA REDUCTION AND INDEX CONSTRUCTION

This study focuses on a "sociogenic" model of crime, which attempts to integrate

both stability and change over the life course (Sampson and Laub 1993:7). Figure 1

analyzes an individual's life course by looking at the influence that family background

factors, adolescent social bonds, delinquency, and adult social bonds have on criminality.

Formal methods of statistical modeling, such as factor and internal reliability

analyses, linear multiple regression, logistic regression and path analysis, were used in

this study. Due to the number of variables within each construct and the low number of

cases selected, combining variables by using factor analysis was imperative for simplicity

and for the stability and reliability of constructed indices. Factor analysis decreased the

large number of variables by loading them into one or a few factors. This statistical

method ensured face validity of the construct, by combining variables that share the same

underlying dimension. Factor analysis readied relevant variables that explained the most variance, while constructing reliable indices. In factor analysis, factors are formed to maximize their explanation of the conceptual underpinnings of the variables used in the analysis.

The Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO), Bartlett's Test of Sphericity and initial eigenvalues were examined to determine whether or not the information could be condensed to a smaller set of factors or components. The KMO test evaluated the appropriateness of applying factor analysis to the entire correlation matrix and/or each individual variable. Values above .50 for either the correlation matrix or an individual variable exhibit suitability for factor analysis (Hair, Anderson, Tatham and Black 1984:366). Bartlett's Test of Sphericity evaluated the significance of all relationships within a correlation matrix; a p value of $\leq .05$ indicates that the data do not differ significantly from an identity matrix, meaning the correlation matrix was suitable for factor analysis. Initial eigenvalues represented the amount of total variance explained by a factor. These values confirmed that the variables do form one or more factors rather than separate items.

Based on information from several trial analyses, factor matrices were examined and created. However, before variables were used to construct the factors, the reliability of the constructs was tested, where reliability is the degree in which a set of variables share in the measurement of a construct. It is the extent to which variables are consistent in the dimension they measure. If the measure is reliable, variables can be added together based on Cronbach alpha. Cronbach alpha measures the reliability for a set of items

comprising factors. Values range on a scale from 0 to 1, with the higher values indicating higher reliability among indicators (Hair, Anderson, Tatham and Black 1984:618).

Hotelling's T-Squared and Tukey's tests of additivity were examined to determine the additivity of the variables comprising constructs. Hotelling's T-Squared analyzed the impact of the difference between a set of means. If means are similar, then constructs are easier to create. Tukey's test of additivity estimated the power to which observations must be raised to achieve additivity. It is a test for additive linear dependency between variables. The following discussion assesses the factor analyses and the reliability of created constructs for family background factors, adolescent social bonds, juvenile delinquency, adult social bonds and adult criminality.

Family Background Factors. From the variables citizenship, family economic status, residential mobility, parental divorce, parental domestic abuse, parental alcohol/drug use and parental criminality, two factors emerged through the processes of factor and reliability analysis. The initial KMO test reflected a value of .631 for the correlation matrix, signifying the appropriateness for the factor analysis. Bartlett's Test of Sphericity indicated a p value of .000, meaning the correlation matrix was suitable for factor analysis. The eigenvalue 2.0 for the first rotated factor, which included the following variables: parental divorce, parental domestic abuse, parental alcohol/drug use and parental criminality, explained 28.5 percent of variance. The eigenvalue 1.5 for second rotated factor, comprised of the variables family economic status, residential mobility and citizenship, accounted for 22 percent of the variance. Although the initial factor analysis developed two factors, the factors were not additive. Therefore, the

variables were manipulated to form factors that measured the same underlying dimensions. Two new factors resulted from this manipulation.

The main factor that emerged included the variables parental domestic abuse, parental alcohol/drug use and parental criminality. The KMO test reported a value of .558 for the correlation matrix. Although this value was a weak indicator of the intercorrelations between these variables, the variables were factor analyzed. Bartlett's Test of Sphericity displayed a significance of .000, thus the correlation matrix had significant correlations among the variables and was factor analyzed. The eigenvalue 1.68 for these three variables in the factor accounted for 55.9 percent of the variance. The Cronbach alpha test reported an unstandardized value of .596, meaning the factor was reliable. Similar means, noted by the Hotelling's T-Squared value, and Tukey's estimate of additivity value of 3.74, meant that the variables were somewhat additive. Adding the variables parental domestic abuse, parental alcohol/drug use and parental criminality formulated a new construct called "parental deviance."

Another factor that developed included the linear combination of the variables family economic status, residential mobility and parental divorce. The KMO test reflected a value of .607 for the correlation matrix, which expressed the variables appropriateness for factor analysis. Bartlett's Test of Sphericity indicated a p value of .000, meaning the correlation matrix was suitable for factor analysis. The eigenvalue 1.553 for the three variables in the second factor explained 51.78 percent of the variance. This confirmed that the variables did form one factor rather than separate dimensions. The factor proved reliable with an unstandardized Cronbach alpha of .533. The value for

the Hotelling's T-Squared indicated that the variables' means were comparable and could be added. Tukey's estimate of power to which observations must be raised to achieve additivity was .3, meaning that the variables were reasonably additive. Thus, a new construct was formed. Based on their degree of additivity, the variables family economic status, residential mobility and parental divorce were recoded into the new construct labeled "family factors."

Adolescent Social Bonds. From the variables relationship with parents, parental abuse, school activities and education level, two distinct dimensions emerged through the processes of factor and reliability analysis. The initial KMO test reflected a value of .519 for the correlation matrix. Although this value could be better, the variables were factored. Bartlett's Test of Sphericity displayed a significance level of .000, which showed that the variables did not produce an identity matrix. Thus, the variables were correlated and able to be factored.

The variables relationship with parents and parental abuse constituted the main factor. The eigenvalue 1.5 for the rotated factor explained 36 percent of the variance. This factor proved to be reliable because the variables had an unstandardized Cronbach alpha of .589 and similar means. Tukey's estimate of power to which observations must be raised to achieve additivity was 1.464, which suggested that the variables were additive. Adding the variables relationship with parents and parental abuse generated a new construct named "parental bonds."

The second factor included the variables school activities and education level. The eigenvalue 1.21 for the rotated factor accounted for 31.6 percent of the variance.

This confirmed that the variables formed one factor rather than separate dimensions. The Cronbach alpha test reported an unstandardized value of .4, meaning the factor was somewhat reliable. Similar means and Tukey's estimate of additivity value of .7, revealed that the variables measured the same dimension. Adding the variables school activities and education level produced a new factor called "education."

Juvenile Delinquency. The process of factor analysis generated only one factor for juvenile delinquency. Juvenile alcohol/drug was its own factor because the degree of delinquency variable could not be used. Due to individuals not reporting their past delinquent involvement and the difficulty in retrieving juvenile records, the variable did not adequately reflect the offender's juvenile delinquency and was dropped from the study.

Adult Social Bonds. From the variables children, military, current relationship status, domestic abuse, relationship with family, job stability and total net worth, three distinct factors were formed. The initial KMO test reflected a value of .482 for the correlation matrix. Although this value is weak, the variables were factor analyzed. Bartlett's Test of Sphericity indicated a p value of $\leq .05$, meaning the correlation matrix was suitable for factor analysis. The eigenvalue was 1.36 for the first rotated factor, which included the following variables: relationship with family and job stability, explained 19.4 percent of variance. The eigenvalue 1.32 for the second rotated factor, comprised of the variables marriage, domestic abuse and military accounted for 18.8 percent of the variance. The eigenvalue 1.14 for the third factor, which included the variables children and total net worth, explained 16.3 percent of the variance. Although

the initial factor analysis developed three factors, only the first factor was somewhat additive. The factor proved slightly reliable with a Cronbach alpha of .33. The value for Hotelling's T-Squared indicated that the variables' means were comparable and could be added. Tukey's estimate of power to which observations must be raised to reach additivity was .936, meaning that the variables were reasonably additive. Adding the variables job stability and relationship with family, created a new construct called "stability."

Through the manipulation of the aforementioned variables, another factor emerged. The variables current relationship status and domestic abuse constituted this new factor. The KMO test displayed a p value of .500 for the entire correlation matrix, indicating the variables could be factor analyzed. Bartlett's Test of Sphericity test indicated a value of .048. Although extremely weak, the value implied that there is a correlation between the two variables. The eigenvalue 1.2 for this factor explained 59.8 percent of the variance. This factor proved to be somewhat reliable because the variables had an unstandardized Cronbach alpha of .327 and similar means. Tukey's estimate of power to which observations must be raised to achieve additivity was 1.321, proposing that the variables were additive. Adding the variables current relationship status and domestic abuse created a new construct entitled "domestic relationship."

Adult Criminality. The process of factor analysis generated only one factor for adult criminality. The KMO test value for the variables alcohol/drug use and past adult criminality was .500. Bartlett's Test of Sphericity reported a p value of $\leq .05$, indicating that the correlation matrix was suitable for factor analysis. The eigenvalue 1.33 for the

factor accounted for 66.5 percent of the variance. The factor proved minimally reliable with an unstandardized score of .494. The value for the Hotelling's T-Squared indicated that the means were comparable. Tukey's estimate of power to which observations must be raised to achieve additivity was .711, meaning the variables could be added. Adding the variables alcohol/drug use and past criminality created a new factor called "offender criminal behavior."

After constructing these additive indices, predictions regarding the causal influences that exogenous variables, family background factors, adolescent social bonds, delinquency, and adult social bonds have on adult criminality were tested through the processes of multiple linear regression and logistic regression.

DATA ANALYSIS

Multiple linear regression was used to predict values of a dependent variable from a set of independent variables. This method was used to explain the stability and change of criminality over the life course by measuring and connecting relevant constructs. Multiple regression generated B values, meaning slope or weighted constant for each dependent variable. The larger the absolute B value, the greater the influence the independent variables had on the value of the dependent variable. The smaller the absolute B value, the less influence the independent variables had on the dependent variable. However, absolute B values were not directly compared because the variables were measured on different scales. A standardized score called Beta, allowed for a direct comparison of the relative strengths of relationships between variables. Beta generally ranges between ± 1.0 and is similar to a partial correlation. A partial correlation is the

correlation between two variables in which the influence of the other variables in the equation have been partialled out. Similarly the partial Beta weight, often called the standardized regression coefficient, was the measurement used to show the magnitude and direction of the relationships between the dependent variables and all of the independent variables in the model.

Stepwise variable selection was used to remove variables whose importance diminished as more powerful predictors were considered. This method computed which predictor variable had the highest bivariate correlation with the dependent variable. Additional independent variables were selected in terms of the incremental explanatory power they added to the regression model. Independent variables were added as long as their partial correlations were statistically significant. By default, regression ceased to add new variables when the p value associated with the inclusion of an additional variable increased above the .05 level of significance. The measure of the strength of relationship between independent variables and the dependent variable was referred to as multiple R. The number squared (R^2), or coefficient of determination, yielded a value that represented the proportion of variance in the dependent variable that was explained by the independent variables. R^2 , the goodness-of-fit measure of a linear model, ranges in value from 0 to 1. Small values signify that the model does not fit well.

Path diagrams were created to indicate the causal order between the dependent and independent variables. Each dependent construct was regressed to determine the amount of correlation between that dependent variable and the pool of independent predictor variables. The amount of total variance explained between dependent and

independent variable in the final model was calculated by multiplying the Beta by the Zero-order correlation. The unexplained variance (V) was determined by the following formula: $1-R^2$. The percentage of the explained variance accounted for by each of the independent variables was calculated by dividing that variance by R^2 . The following charts and diagrams analyze the correlations between the dependent and independent variables.

Family Background Factors. The variables family factors and parental deviance were separately regressed on the entire pool of exogenous variables. Table 1 and Table 2 portray the impact that the exogenous variables had on family factors. The variable age proved to be the only variable that significantly explained family factors. The Beta value of .230 displayed a weak correlation between these factors and age. Although weak, the correlation indicated that offenders over the age of thirty-five tended to grow up in middle to upper class households, rarely moved around, and had parents that remained married. The R-Squared value indicated that about 5.3 percent of the variance in family factors was explained by age. The large amount of unexplained variance (94.7 %) indicated that other undefined factors influenced the family factors variable. Figure 2 illustrates the causal impact that age had on family factors.

Table 1.
Variation of Family Factors Explained by Age ^b

Model	R	R Square	Adjusted R Square
1	.230 ^a	.053	.044

a. Predictors: (Constant), Age
 b. Dependent Variable: Family Factors

Table 2. Correlation Between Family Factors and Age

	Unstandardized Coefficients		Beta	Zero-order	Partial	Proportion of Explained Variance	Proportion of Total Variance
	B	Std. Error					
(Constant)	.399	.049				1.000	
Age	.165	.070	.230	.230	.230		.053

a. Dependent Variable: Family Factors

Figure 2.
The Causal Impact of Age on Family Factors.

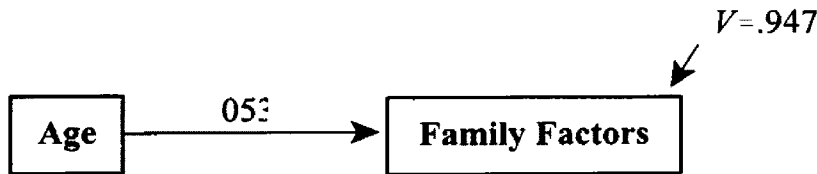


Table 3 and Table 4 depict the impact that the exogenous variables had on parental deviance. The only variable found to significantly influence parental deviance was race. In comparison to whites, non-white offenders were more likely to have parents that used or abused alcohol/drugs, participated in criminal activities, and experienced domestic abuse. However, the Beta value of -.200 revealed an extremely weak

relationship between the dependent and independent variables. The R-Squared value asserted that only 4.0 percent of the variance in parental deviance was explained by race. The weak correlation between the variables and large amount of unexplained variance (96%), confirmed that other unknown factors affect parental deviance. Figure 3 displays the weak causal relationship between parental deviance and race.

Table 3.
Variation of Parental Deviance Explained by Age ^b

Model	R	R Square	Adjusted R Square
1	.200 ^a	.040	.031

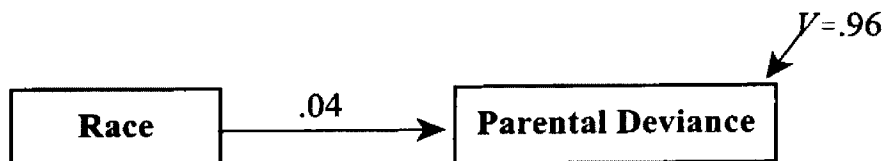
- a. Predictors: (Constant), Race
- b. Dependent Variable: Parental Deviance

Table 4.
Correlation Between Parental Deviance and Race ^a

	Unstandardized Coefficients		Beta	Zero-order	Partial	Proportion of Explained Variance	Proportion of Total Variance
	B	Std. Error					
(Constant)	.846	.035				1.000	
Race	-.118	.057	-.200	-.200	-.200	.040	

- a. Dependent Variable: Parental Deviance

Figure 3.
The Causal Impact of Race on Parental Deviance.



Adolescent Social Bonds. The variables parental bonds and education were separately regressed on both family background factors and exogenous variables. Table 5 and Table 6 portray the impact that family background factors and exogenous variables had on parental bonds. The two variables that were significantly correlated with parental bonds were family factors and parental deviance. The R-Squared value indicated that about 50.1 percent of the variance in parental bonds was explained by family factors and parental deviance. The Beta value of .573 asserted a strong correlation between parental bonds and parental deviance. The positive correlation showed that an offender who had a poor relationship with their parents and were abused as children, were more likely to have had parents that used or abused alcohol/drugs, participated in criminal activities, and experienced domestic abuse. Parental deviance explained 75.6 percent of explained variance accounted for by the regression model. The Beta value of .267 depicted the weaker correlation between parental bonds and family factors. Although weak, the correlation suggested that those offenders that grew up in middle to upper class households, rarely moved around, and had parents that remained married, were more likely to have had a good relationship with their parents and were not abused as children. Family factors accounted for 24.4 percent of the explained variance. Figure 4 illustrates the causal impact that parental deviance and family factors had on parental bonds.

Table 5.
Variation of Parental Bonds Explained by
Parental Deviance and Family Factors.

Model	R	R Square	Adjusted R Square
1	.661 ^a	.437	.432
2	.708 ^b	.501	.491

- a. Predictors: (Constant), Parental Deviance
 b. Predictors: (Constant), Parental Deviance, Family Factors
 c. Dependent Variable: Parental Bonds

Table 6.
Correlation Between Parental Bonds and Parental Deviance/Family Factors

	Unstandardized Coefficients		Beta	Zero-order	Partial	Proportion of Explained Variance	Proportion of Total Variance
	B	Std. Error					
(Constant)	-.131	.090					
Parental Deviance	.938	.106	.661	.661	.661		
(Constant)	-.175	.086					
Parental Deviance	.812	.106	.573	.661	.608	.756	.379
Family Factors	.300	.084	.267	.457	.336	.244	.122

- a. Dependent Variable: Parental Bonds

Figure 4.
The Causal Impact of Parental Deviance and Family Factors on Parental Bonds.

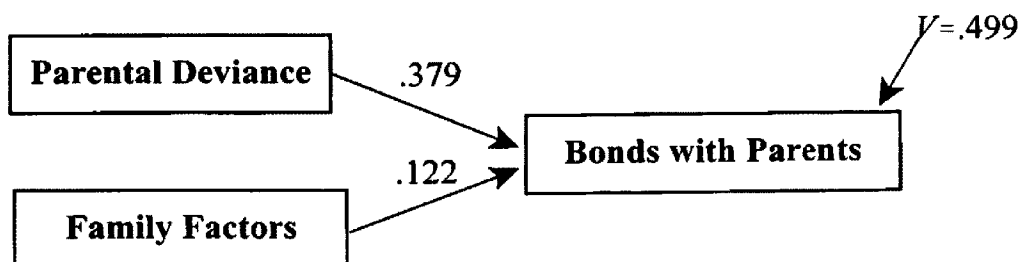


Table 7 and Table 8 interpret the impact that family background factors and exogenous variables had on education. The three variables that significantly influenced education were family factors, citizenship and sex. The R-Squared value indicated that about 21.4 percent of the variance in education was explained by significant independent variables. The positive correlation indicated that male offenders who were born in the United States, grew up in middle to upper class households, rarely moved around and had parents that remained married, typically graduated from high school. However, the Beta values for all of the variables showed a weak correlation to education. Family factors accounted for 40.2 percent of the explained variance, whereas citizenship and sex explained 33.8 percent and 25.8 percent respectively. The large amount of unexplained variance for each independent variable confirmed that other undefined factors influenced education. Figure 5 displays the weak causal relationship between education and the significant independent variables.

Table 7.
Variation of Education Explained by Family
Factors, Citizenship and Sex

Model	R	R Square	Adjusted R Square
1	.328 ^a	.107	.099
2	.416 ^b	.173	.157
3	.462 ^c	.214	.190

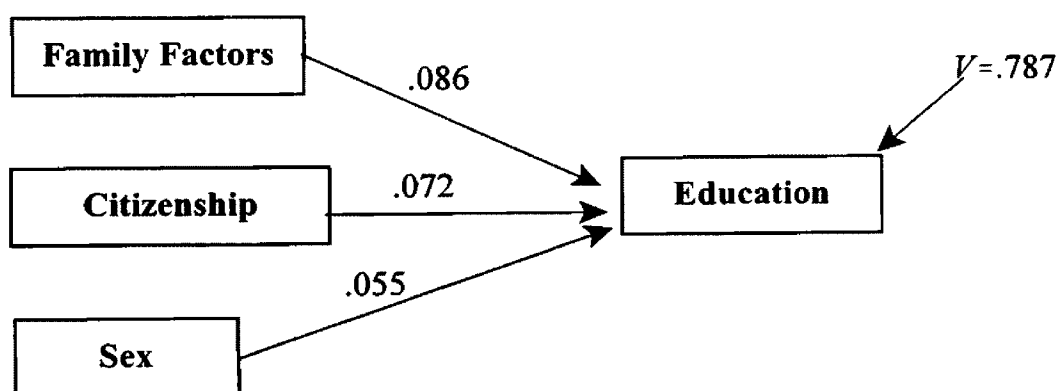
- a. Predictors: (Constant), Family Factors
- b. Predictors: (Constant), Family Factors, Citizenship
- c. Predictors: (Constant), Family Factors, Citizenship, Sex
- d. Dependent Variable: Education

Table 8.
Correlation Between Education and Family Factors/Citizenship/Sex ^a

	Unstandardized Coefficients		Beta	Zero-order	Partial	Proportion of Explained Variance	Proportion of Total Variance
	B	Std. Error					
(Constant)	.261	.054					
Family Factors	.314	.090	.328	.328	.328		
(Constant)	.033	.096					
Family Factors	.277	.088	.289	.328	.299		
Citizenship	.279	.099	.260	.303	.272		
(Constant)	.027	.094					
Family Factors	.251	.087	.262	.328	.278	.402	.086
Citizenship	.256	.097	.239	.303	.256	.338	.072
Sex	.169	.075	.204	.271	.221	.258	.055

^a. Dependent Variable: Education

Figure 5.
The Causal Impact of Family Factors, Citizenship and Sex on Education.



Juvenile Delinquency. Logistic regression was used to test the effects that exogenous variables, family background factors and adolescent social bonds had on juvenile delinquency. Multiple linear regression was not used because the variable

juvenile alcohol/drug use is a dichotomous dependent variable. Using this dichotomous dependent variable for multiple regression would violate the assumption of normality, because the variable is binomially distributed. The logistic method utilized was Forward: LR. This method builds an equation by entering variables one at a time, using likelihood ratio estimates to determine which variable will add the most to the regression equation. The results of the analysis concluded that exogenous variables, family background factors and adolescent social bonds did not influence juvenile alcohol/drug use.

Adult Social Bonds. The variable stability was multiply regressed on juvenile delinquency, adolescent social bonds, family background factors and exogenous variables. Table 9 and Table 10 depict the impact that these variables had on stability. The three variables that were significantly correlated with stability were parental bonds, education and age. The R-Squared value indicated that about 22.1 percent of the variance in stability was explained by these independent variables. This correlation proposed that if an offender had a poor relationship with their family and was not steadily employed, as children they were more likely to have had a poor relationship with their parents and been abused. Also, this type of offender tended to be younger than thirty-five and had not graduated from high school. However, the Beta values for parental bonds (.341), education (.262) and age (-.213) asserted a weak correlation between stability and the independent variables. Parental bonds accounted for 58.5 percent of explained variance accounted for by the regression model, whereas education and age explained 26.9 percent and 14.7 percent respectively. The large amount of unexplained variance for each variable indicated that other unspecified factors influenced adult social bonds. Figure 6

illustrates the causal impact that parental bonds, education and age had on stability.

Table 9.
Variation of Stability Explained by Parental Bonds, Education and Age

Model	R	R Square	Adjusted R Square
1	.379 ^a	.143	.135
2	.425 ^b	.181	.164
3	.470 ^c	.221	.197

a. Predictors: (Constant), Parental Bonds

b. Predictors: (Constant), Parental Bonds, Education

c. Predictors: (Constant), Parental Bonds, Education , Age

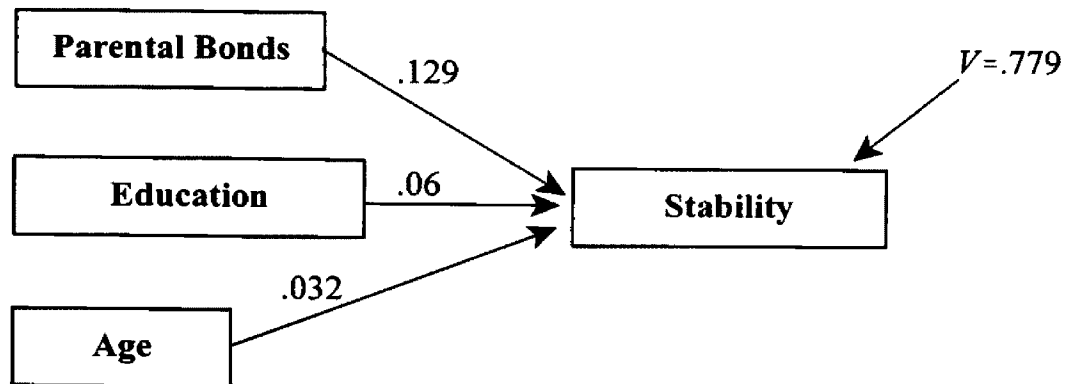
d. Dependent Variable: Stability

Table 10.
Correlation Between Stability and Parental Bonds/ Education/Age ^a

	Unstandardized Coefficients		Beta	Zero-order	Partial	Proportion of Explained Variance	Proportion of Total Variance
	B	Std. Error					
(Constant)	.258	.064					
Parental Bonds	.358	.087	.379	.379	.379		
(Constant)	.180	.073					
Parental Bonds	.341	.086	.361	.379	.369		
Education	.214	.101	.194	.227	.208		
(Constant)	.243	.077					
Parental Bonds	.322	.085	.341	.379	.357	.585	.129
Education	.290	.104	.262	.227	.270	.269	.060
Age	-.162	.072	-.213	-.152	-.222	.147	.032

a. Dependent Variable: Stability

Figure 6.
The Causal Impact of Parental Bonds, Education and Age on Stability.



Adult Criminality. The variable offender criminal behavior was regressed on adult social bonds, juvenile delinquency, adolescent social bonds, family background factors and exogenous variables. The only variable found to significantly influence offender criminal behavior was juvenile alcohol/drug use. Table 11 and Table 12 depict the impact that juvenile alcohol/drug use had on offender criminal behavior. The Beta value of .581 revealed an strong relationship between the dependent and independent variables. The positive correlation asserted that offenders who used or abused alcohol/drugs and had a high level of past criminal history were more likely to have used or abused alcohol/drugs as a juvenile. The R-Squared value asserted that only 38.8 percent of the variance in offender criminal behavior was explained by juvenile alcohol/drug use. Juvenile alcohol/drug use explained 100 percent of explained variance accounted for by the regression model. Figure 7 demonstrates the causal impact that juvenile alcohol/drug use had on offender criminal behavior.

Table 11.
Variation of Offender Criminal Behavior
Explained by Juvenile Alcohol/Drug Use ^b

Model	R	R Square	Adjusted R Square
1	.581 ^a	.338	.331

a. Predictors: (Constant), Juvenile Alcohol/Drug Use

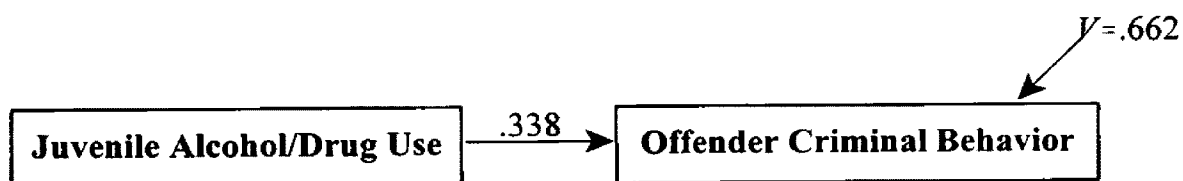
b. Dependent Variable: Offender Criminal Behavior

Table 12.
Correlation Between Offender Criminal and Juvenile Alcohol/Drug Use ^a

	Unstandardized Coefficients		Beta	Zero-order	Partial	Proportion of Explained Variance	Proportion of Total Variance
	B	Std. Error					
(Constant)	.220	.039					
Juvenile Alcohol /Drug Use	.469	.065	.581	.581	.581	1.000	.338

a. Dependent Variable: Offender Criminal Behavior

Figure 7.
The Causal Impact of Juvenile Alcohol/Drug Use on Offender Criminal Behavior.



DISCUSSION

The purpose of this research was to develop and test a theoretical model of delinquency, criminality and informal social control based on the life course theory. While most criminological perspectives try to answer the question of why individuals deviate from societal norms and engage in deviate acts, life-course theory asks why individuals conform to norms and why they refrain from committing deviant acts. Life-course perspective answers by claiming that the strength of social bonds influences delinquency and criminality. Social bonds serve as a conceptual “building block” for the life course perspective by creating a causal model for criminality. Sampson and Laub argued that although criminal behavior peaks in the teenage years, antisocial behavior is often stable and continuous across the stages of life. Thus, stability and change of criminal behaviors are present over the life course.

This study analyzed an individual’s life course by looking at the influence that family background factors, adolescent social bonds, delinquency, and adult social bonds have on criminality. The analytic objective was to answer the following questions:

- Do exogenous and family background factors influence the development of childhood social bonds?
- Do family background factors directly and/or indirectly influence delinquency through adolescent social bonds?
- Does the strength of adolescent social bonds affect delinquency?
- Does both juvenile delinquency and strength of adult social bonds influence adult criminality?

Formal methods of statistical modeling, such as factor and internal reliability analyses, linear multiple regression, logistic regression and path analysis, were used in this study. Findings suggest that exogenous variables and family background factors

influence the development of childhood social bonds. The magnitude and direction of the relationships support the underlying life course model. Regression equations showed that parental deviance and family factors were important determinants of parental bonds, while family factors, citizenship and sex were weakly correlated with education.

Although life-course perspective claims that family background factors directly and/or indirectly influence delinquency through adolescent social bonds, the proposition was not supported by the results. When logistically regressed, juvenile delinquency was not correlated with any family background factors or adolescent bonds.

The findings also indicate that exogenous variables, family background factors and adolescent social bonds had causal impact on adult social bonds. However, the influence of parental bonds, education and age on an individual's stability was weak. These independent variables accounted for only 22.1 percent of the variance in stability. It is important to recognize that age does not causally impact stability. Rather, the age of the offender serves as a historical marker. Differences in birth years, mean differences in historical environments. Historical effects on the life course take the form of a cohort effect in which social change defines the life patterns of successive cohorts. The structure of social opportunities and differing labels attached to behaviors vary depending on when individuals are born. Thus, the period effect might account for the differences between those offenders over the age of thirty-five and those younger than thirty-five with regards to their job stability and relationship with their family.

Finally, the main finding stems from Sampson and Laub's argument that individual differences in antisocial behavior and criminal behavior emerges in childhood

and remain stable across the life course (Huesmann et al. 1987). They acknowledged the latent trait model, which states that given the opportunity, a latent trait establishes a propensity that influences all aspects of life (Gottfredson and Hirschi 1990). However, Sampson and Laub (1995:150) added on to the latent trait perspective by asserting that continuity of antisocial behavior over time hinders an individual's future by "knifing off" opportunities and options for a conventional life. They asserted that antisocial behavior has an attenuating effect on the social bonds that bridge adults to society. The findings of this study are inconsistent with what Sampson and Laub proposed. The results provide support for just the latent trait approach. When regressed, juvenile alcohol/drug use was the only factor that significantly influenced adult criminal behavior. Juvenile alcohol/drug use explained 100 percent of the explained variance and over one third (33.8%) of the total variance accounted for by the regression model. Thus, adolescent and adult social bonds do not influence adult criminality. The findings affirm that antisocial behavior is stable across an individual's life course and cannot be altered by salient life events or strong social bonds.

In examining the overall explanatory power of the path model, weak support was found for the life-course perspective. The unsubstantial predictive power of the constructs suggests that it might be profitable to expand the numbers and the types of data collected. Although recoding into dummy variables allowed for a simple comparison and understanding of the variables, this process decreased the explanatory power of the variables. Dichotomous variables reduced the variance by combining attributes that distinguished cases from each other. If the variables had not been recoded, the

correlations between the independent and dependent variables might have been stronger.

Also, relationships between social bonds and criminality could have possibly been

discovered, which would have provided support for the life-course perspective.

Gathering data over time instead of using retrospective case histories would also increase

the accuracy and the validity of the research. Additionally, information regarding early

childhood measures of antisocial behavior should be collected to accurately compare the

latent trait model and the life course perspective. Future research should logistically

regress all of the dichotomus variables not analyzed in this study. If examined, these

variables could provide stronger correlations among the path model constructs.

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